***I

REPORT


Committee on Industry, Research and Energy

Rapporteur: Teresa Riera Madurell
**Symbols for procedures**

* Consultation procedure  
*** Consent procedure  
***I Ordinary legislative procedure (first reading)  
***II Ordinary legislative procedure (second reading)  
***III Ordinary legislative procedure (third reading)  

(The type of procedure depends on the legal basis proposed by the draft act.)

**Amendments to a draft act**

In amendments by Parliament, amendments to draft acts are highlighted in **bold italics**. Highlighting in *normal italics* is an indication for the relevant departments showing parts of the draft act which may require correction when the final text is prepared – for instance, obvious errors or omissions in a language version. Suggested corrections of this kind are subject to the agreement of the departments concerned.

The heading for any amendment to an existing act that the draft act seeks to amend includes a third line identifying the existing act and a fourth line identifying the provision in that act that Parliament wishes to amend. Passages in an existing act that Parliament wishes to amend, but that the draft act has left unchanged, are highlighted in **bold**. Any deletions that Parliament wishes to make in such passages are indicated thus: [...]
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DRAFT EUROPEAN PARLIAMENT LEGISLATIVE RESOLUTION


(Ordinary legislative procedure: first reading)

The European Parliament,

– having regard to the Commission proposal to Parliament and the Council (COM(2011)0809),

– having regard to Article 294(2) and Articles 173(3) and 182(1) of the Treaty on the Functioning of the European Union, pursuant to which the Commission submitted the proposal to Parliament (C7-0466/2011),

– having regard to Article 294(3) of the Treaty on the Functioning of the European Union, 

– having regard to the opinion of the Committee of the Regions of 19 July 2012\(^1\)

– having regard to the opinion of the European Economic Social Committee of 28 March 2012\(^2\),

– having regard to Rules 55 of its Rules of Procedure,

– having regard to the report of the Committee on Industry, Research and Energy and the opinions of the Committee on Foreign Affairs, the Committee on Development, the Committee on Budgets, the Committee on the Environment, Public Health and Food Safety, the Committee on Transport and Tourism, the Committee on Regional Development, the Committee on Agriculture and Rural Development, the Committee on Fisheries, the Committee on Culture and Education, the Committee on Legal Affairs and the Committee on Women's Rights and Gender Equality (A7-0427/2012),

1. Adopts its position at first reading hereinafter set out;

2. Points out that the financial envelope specified in the legislative proposal constitutes only an indication to the legislative authority and that it can not be fixed until agreement is reached on the proposal for a regulation laying down the multiannual financial framework for the years 2014-2020;

3. Recalls its resolution of 8 June 2011 on Investing in the future: a new Multiannual Financial Framework (MFF) for a competitive, sustainable and inclusive Europe\(^3\); reiterates that sufficient additional resources are needed in the next MFF in order to enable

\(^{1}\) OJ C 277, 13.9.2012, p. 143.


\(^{3}\) Texts adopted, P7_TA(2011)0266.
the Union to fulfil its existing policy priorities and the new tasks provided for in the
Treaty of Lisbon, as well as to respond to unforeseen events; points out that even with an
increase in the level of resources for the next MFF of at least 5% compared to the 2013
level only a limited contribution can be made to the achievement of the Union's agreed
objectives and commitments and the principle of Union solidarity; challenges the Council
if it does not share this approach, to clearly identify which of its political priorities or
projects could be dropped altogether, despite their proven European added value;

4. Recalls, in particular, that in the same resolution the European Parliament calls for a
significant increase in relevant expenditure from 2013, in order to enhance, stimulate and
secure the financing of research, development and innovation in the Union;

5. Recalls, furthermore, its position that next MFF should see a greater concentration of
budgetary resources in areas that stimulate economic growth and competitiveness, such a
research and innovation according to the principles of European added value and
excellence;

6. Calls on the Commission to refer the matter to Parliament again if it intends to amend its
proposal substantially or replace it with another text;

7. Instructs its President to forward its position to the Council, the Commission and the
national parliaments.

Amendment 1

Proposal for a regulation
Recital 1

Text proposed by the Commission

(1) The Union has the objective of strengthening its scientific and
technological bases by achieving a European Research Area ("ERA") in which researchers, scientific knowledge and
technology circulate freely, and encouraging the Union to become competitive, including in its industry. To
pursue those objectives the Union should carry out activities to implement research, technological development and
demonstration, promote international cooperation, disseminate and optimise

Amendment

(1) The Union has the objective of strengthening its scientific and
technological bases by achieving a European Research Area ("ERA") in which researchers, scientific knowledge and
technology circulate freely, and encouraging the Union to become a knowledge society and a world leading
sustainable, competitive and resilient economy including in its industry. To pursue those objectives the Union should carry out activities to implement research and innovation, technological
results and stimulate training and mobility.

development and demonstration, promote international cooperation, disseminate and optimise results and stimulate training and mobility.

Amendment 2

Proposal for a regulation

Recital 3

(3) The Union is committed to achieving the Europe 2020 strategy, which has set the objectives of smart, sustainable and inclusive growth, highlighting the role of research and innovation as key drivers of social and economic prosperity and of environmental sustainability and setting itself the goal to increase spending on Research and Development to reach 3% of gross domestic product (GDP) by 2020 while developing an innovation intensity indicator. In this context, the Innovation Union flagship initiative sets out a strategic and integrated approach to research and innovation, setting the framework and objectives to which future Union research and innovation funding should contribute. Research and innovation are also key factors for other Europe 2020 flagship initiatives, notably on resource efficient Europe, an industrial policy for the globalisation era, and a digital agenda for Europe. Moreover, for achieving the Europe 2020 objectives relating to research and innovation, Cohesion policy has a key role to play through building capacity and providing a stairway to excellence.

(3) The Union is committed to achieving the Europe 2020 strategy, which has set the objectives of smart, sustainable and inclusive growth, highlighting the role of research and innovation as key drivers of social and economic prosperity and of environmental sustainability and setting itself the goal to increase public spending on Research and Development in order to attract private investment of up to two thirds of total investments, thereby reaching an accumulative total of 3% of gross domestic product (GDP) by 2020 while developing an innovation intensity indicator. The Union budget should mirror this ambitious goal by making a radical shift towards funding future-oriented investments, such as R&D and innovation (R&D&I), and this should be clearly visible in a considerable increase in funding for Union R&D&I compared to the funding level of 2013. In this context, the Innovation Union flagship initiative sets out a strategic and integrated approach to research and innovation, setting the framework and objectives to which future Union research and innovation funding should contribute. Research and innovation are also key factors for other Europe 2020 flagship initiatives and policy objectives, notably on resource efficient Europe, an industrial policy for the globalisation era, climate and energy policy, and a digital agenda for
(4) At its meeting of 4 February 2011, the European Council supported the concept of the Common Strategic Framework for Union Research and Innovation funding to improve the efficiency of research and innovation funding at national and Union levels and called on the Union to rapidly address remaining obstacles to attracting talent and investment in order to complete the ERA by 2014 and achieve a genuine single market for knowledge, research and innovation. This requires increasing significantly the budget for the next seven-year period to reinforce the innovation capacity of the Union while attracting significant private sector funds for the Union's activities.

(5) The European Parliament has called for a radical simplification of Union research and innovation funding in its Resolution of 11 November 2010, has highlighted the importance of the Innovation Union to transform Europe for post-crisis world, in its resolution of 12 May 2011, has drawn attention to important lessons to be learned following the interim evaluation of the Seventh Framework Programme in its resolution of 8 June 2011 and has supported the concept of a common
strategic framework for research and innovation funding in its resolution of 27 September 2011.

Amendment 5

Proposal for a regulation
Recital 10

(10) In the Communication 'A Budget for Europe 2020', the Commission proposed to address with a single Common Strategic Framework for Research and Innovation the areas covered in the period 2007-2013 under the Seventh Framework Programme for Research and the innovation part of the Competitiveness and Innovation Framework Programme, as well as the European Institute of Innovation and Technology (EIT) in order to serve the Europe 2020 Strategy target of raising spending on Research and Development to 3 % of GDP by 2020. In that Communication, the Commission also committed to mainstream climate change into Union spending programmes and to direct at least 20 % of the Union budget to climate-related objectives. Climate action and resource efficiency are mutually reinforcing objectives for achieving sustainable development. The specific objectives relating to both should be complemented through the other specific objectives of Horizon 2020. As a result it is expected that at least 60% of the overall Horizon 2020 budget should be related to sustainable development. It is also expected that climate-related expenditure should exceed 35% of the budget, including mutually compatible measures improving resource efficiency. The Commission should provide information.
on the scale and results of support to climate change objectives. Climate-related expenditure under Horizon 2020 should be tracked in accordance with the methodology stated in that Communication.

Amendment 6

Proposal for a regulation
Recital 10 a (new)

Text proposed by the Commission

(10a) In its White Paper entitled ‘Roadmap to a Single European Transport Area - Towards a competitive and resource-efficient transport system’, the Commission takes the view that research and innovation policy in the field of transport should provide growing and consistent support for the development of key technologies with a view to transforming the European transport system into a modern, efficient, sustainable and accessible service. The White Paper establishes the objective of achieving by 2050 a 60% reduction in the 1990 level of greenhouse gas emissions.

1 COM(2011)0144

Amendment 7

Proposal for a regulation
Recital 11

Text proposed by the Commission

(11) Horizon 2020 - the Framework Programme for Research and Innovation in the European Union (hereinafter 'Horizon 2020'), focuses on three priorities, namely generating excellent science in order to strengthen the Union's world-class
excellence in science, fostering industrial leadership to support business, including small and medium-sized enterprises (SME) and innovation and tackling societal challenges, in order to respond directly to the challenges identified in the Europe 2020 strategy by supporting activities covering the entire spectrum from research to market. Horizon 2020 should support all stages in the innovation chain, especially activities closer to the market including innovative financial instruments, as well as non-technological and social innovation, and aims to satisfy the research needs of a broad spectrum of Union policies by placing emphasis on the widest possible use and dissemination of knowledge generated by the supported activities up to its commercial exploitation. The priorities of Horizon 2020 should also be supported through a programme under the Euratom Treaty on nuclear research and training.

excellence in science, fostering industrial leadership to support business, including small and medium-sized enterprises (SME) and innovation and tackling societal challenges, in order to respond directly to the challenges identified in the Europe 2020 strategy by supporting activities covering the entire spectrum from research to market. While the Union added value lies mainly in funding pre-competitive, transnational, collaborative research, which should attain in Horizon 2020 at least the levels of the Seven Framework Programme, it is also necessary to place special emphasis on funding innovation within Horizon 2020. Horizon 2020 also aims to satisfy the research needs of a broad spectrum of Union policies by placing emphasis on the widest possible use and dissemination of knowledge generated by the supported activities up to its commercial exploitation. Therefore, Horizon 2020 should ensure all stages in the research and innovation chain, including frontier and applied research, knowledge transfer and closer to the market activities, innovative financial instruments, as well as non-technological and social innovation. Horizon 2020 should apply a differentiated scale, whereby the closer to the market the supported activity comes, the smaller the part should be that will be funded by Horizon 2020, and the bigger the part that should attract funding from other sources, such as the Structural Funds, national/regional funding or the private sector. The priorities of Horizon 2020 should also be supported through a programme under the Euratom Treaty on nuclear research and training.

Amendment 8
Proposal for a regulation
Recital 12 a (new)
Text proposed by the Commission

(12a) It is important to emphasise that all Horizon 2020 activities should be open to new participants with a view to ensuring there is extensive cooperation with partners throughout the Union and establishing an integrated ERA.

Amendment 9
Proposal for a regulation
Recital 13

Text proposed by the Commission

(13) In the context of the knowledge triangle of research, education and innovation, the Knowledge and Innovation Communities under the European Institute of Innovation and Technology should strongly contribute to addressing the objectives of Horizon 2020, including the societal challenges, notably by integrating research, education and innovation. In order to ensure complementarities across Horizon 2020 and the adequate absorption of funds, the financial contribution to the European Institute of Innovation and Technology should be made in two allocations, with the second subject to a review.

Amendment

(13) In the context of the knowledge triangle of research, education and innovation, the Knowledge and Innovation Communities (KICs) under the EIT should strongly contribute to addressing the objectives of Horizon 2020, including the societal challenges, notably by integrating research, education and innovation. The EIT is the main instrument within the Horizon 2020 framework to have a strong emphasis on the educational dimension of the knowledge triangle, and aims at tackling the 'European paradox through entrepreneurial education that will lead to the creation of innovative knowledge-based start-ups and spin-offs.

Amendment 10
Proposal for a regulation
Recital 15

Text proposed by the Commission

(15) Simplification is a central aim of Horizon 2020 which should be fully reflected in its design, rules, financial management and implementation. Horizon 2020 should aim to attract the strong

Amendment

(15) Simplification is a central aim of Horizon 2020 which should be fully reflected in its design, rules, financial management and implementation. Horizon 2020 should aim to attract the strong...
participation of universities, research centres, industry and specifically SMEs and be open to new participants, as it brings together the full range of research and innovation support in one common strategic framework, including a streamlined set of forms of support and uses rules for participation with principles applicable to all actions under the programme. Simpler funding rules should reduce the administrative costs for participation and will contribute to a reduction of financial errors.

Horizon 2020 brings together the full range of research and innovation support in one common strategic framework, including a streamlined set of forms of support and uses rules for participation with principles applicable to all actions under the programme. Simpler funding rules should reduce the administrative costs for participation and will contribute to the prevention and the reduction of financial errors.

If steps towards a further externalisation of the Union’s research and innovation funding were to be taken (such as Joint Technology Initiatives, Public-Private Partnerships or Research Executive Agencies), the method and the extent of externalisation should be determined according to the results of an independent impact assessment.

Amendment 11
Proposal for a regulation
Recital 15 a (new)

Text proposed by the Commission

(15a) In order to achieve appropriate balance between consensus-based and more disruptive R&D&I, the use of open calls - following a bottom-up logic - with accelerated procedures should be fostered to ensure fast realisation of innovative projects. Furthermore, the right balance should be struck within the societal challenges and the enabling and industrial technologies between smaller and bigger projects, taking into account the specific sector structure, type of
Amendment 12

Proposal for a regulation
Recital 16

Text proposed by the Commission

(16) In accordance with Article 182(1) TFEU, the framework programme fixes the maximum overall amount and the detailed rules for Union financial participation in the framework programme and the respective shares in each of the activities provided for.

Amendment

(16) In accordance with Article 182(1) of the Treaty on the Functioning of the European Union (TFEU), the framework programme fixes the maximum overall amount and the detailed rules for Union financial participation in the framework programme and the respective shares in each of the activities provided for in Article 180 TFEU.

Amendment 13

Proposal for a regulation
Recital 17 a (new)

Text proposed by the Commission

(17a) In order for the European Parliament to be able to exercise its function of political control and to ensure transparency and accountability, as stipulated in the Treaties, the Commission should duly and regularly inform the European Parliament of all relevant aspects of the implementation of Horizon 2020, including the preparation and drawing-up of the work programmes, the execution and possible need for adjustment of the budgetary breakdown, and the development of the performance indicators in terms of objectives pursued and expected results.

Amendment
Amendment 14

Proposal for a regulation
Recital 18

Text proposed by the Commission

(18) It is appropriate to ensure a correct closure of Horizon 2020 and its predecessor programmes, in particular regarding the continuation of multi-annual arrangements for their management, such as the financing of technical and administrative assistance.

Amendment

(18) It is appropriate to ensure a correct closure of Horizon 2020 and its predecessor programmes, in particular regarding the continuation of multi-annual arrangements for their management, such as the financing of strictly necessary technical and administrative assistance.

Amendment 15

Proposal for a regulation
Recital 19

Text proposed by the Commission

(19) The implementation of Horizon 2020 may give rise to supplementary programmes involving the participation of certain Member States only, the participation of the Union in programmes undertaken by several Member States, or the setting up of joint undertakings or other arrangements within the meaning of Articles 184, 185 and 187 TFEU.

Amendment

(19) The implementation of Horizon 2020 may give rise - under specific and transparent conditions and on a case-by-case basis - to supplementary programmes involving the participation of certain Member States only, the participation of the Union in programmes undertaken by several Member States, or the setting up of joint undertakings or other arrangements within the meaning of Articles 184, 185 and 187 TFEU. These supplementary programmes or arrangements should have a clear Union added value, be based on genuine partnerships, complement other activities under Horizon 2020, have demonstrated that no other type of financing mechanisms can deliver the same objectives, and be as inclusive as possible in terms of participation.
Amendment 16

Proposal for a regulation
Recital 20

Text proposed by the Commission

(20) With the aim of deepening the relationship between science and society and reinforcing public confidence in science, Horizon 2020 should favour an informed engagement of citizens and civil society on research and innovation matters by promoting science education, by making scientific knowledge more accessible, by developing responsible research and innovation agendas that meet citizens' and civil society's concerns and expectations and by facilitating their participation in Horizon 2020 activities.

Amendment

(20) With the aim of deepening the relationship between science and society Horizon 2020 should:

- promote active participation and informed engagement of citizens and civil society in the research and innovation process;
- ensure due consideration of the gender dimension;
- promote excellent science education;
- increase the accessibility and re-use of the results of publicly funded research, in particular scientific publications and data, namely through the creation of a repository for research results;
- close the digital, research and innovation divide;
- develop responsible research and innovation and governance framework agendas that meet citizens' and civil society's concerns and expectations and reinforce their participation in the setting of research priorities of Horizon 2020 activities. The engagement of citizens and civil society should be coupled by public outreach activities to generate and sustain public support to the programme.
Amendment 17
Proposal for a regulation
Recital 20 a (new)

Text proposed by the Commission

(20a) Any documents issued by the Commission in relation to Horizon 2020 shall be provided upon request in accessible formats, including large print, Braille, easy-to-read text, audio, video, and electronic format.

Justification

Persons with disabilities should have equal access to information and communication actions concerning Horizon 2020, including communication concerning supported projects and results, all the more so given that it is about public funding.

Amendment 18
Proposal for a regulation
Recital 20 b (new)

Text proposed by the Commission

(20b) Horizon 2020 should be used to promote, in addition to research diversity, linguistic diversity in academic and scientific publishing, including as part of cooperation with third countries, as well as to ensure that the principles of independent research and peer validation of publications are adhered to.

Amendment 19
Proposal for a regulation
Recital 21

Text proposed by the Commission

(21) The implementation of Horizon 2020 should respond to the evolving opportunities and needs from science and
technology, industry, policies and society. As such, the agendas should be set in close liaison with stakeholders from all sectors concerned, and sufficient flexibility should be allowed for new developments. External advice should be sought on a continuous basis during Horizon 2020, also making use of relevant structures such as European Technology Platforms, Joint Programming Initiatives and the European Innovation Partnerships.

Therefore balanced external advice should be sought on a continuous basis during Horizon 2020. In particular, the cross- and transdisciplinary nature of the societal challenges, as well as the need for cross-cutting linkages and interfaces within Horizon 2020, requires the setting up of dedicated strategic scientific panels. The input of relevant structures such as European Technology Platforms, Joint Programming Initiatives and the European Innovation Partnerships should be taken into account where possible in the process of identifying the research needs.

Amendment 20

Proposal for a regulation
Recital 21 a (new)

Text proposed by the Commission

(21a) In order to ensure a transparent and efficient implementation process, multiannual indicative roadmaps should be set at the beginning of the programming for each specific objective and cross-cutting theme and a short and transparent drafting process of the annual work programmes should be strived at. The Commission, when preparing and drawing-up the roadmaps and work programmes should involve and inform the European Parliament and the Council in a timely and appropriate manner. External advice should be sought on a continuous basis during Horizon 2020, also making use of relevant structures such as sectoral advisory boards, the newly established Steering Boards, European Technology Platforms, Joint Programming Initiatives and the European Innovation Partnerships.
**Amendment 21**  
Proposal for a regulation  
Recital 21 b (new)

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<td><em>(21b)</em> In order to be able to compete globally, to effectively address the grand societal challenges, and to attain the goals of the Union 2020 Strategy, the Union should make full use of its human resources. Horizon 2020 should be a catalyser and a powerful stimulus for completing the ERA by supporting across the line activities that attract, retain, train and develop research and innovation talent. To reach this aim and to enhance the knowledge transfer and the quantity and quality of researchers human capital building activities, including those focused specifically at young people and women, should be a standard element in all research and innovation activities funded by the Union.</td>
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**Justification**

Other parts of the world are performing better than Europe in terms of attracting and maintaining the best talent. If Europe wants to remain competitive at the global stage it needs to improve its attractiveness. For this reason, research and innovation activities with the financial support of the EU must pay special attention to human resources. In particular Horizon 2020 has to be a stimulus for completing the European research Area and improve the human capital in the European research and innovation system.

**Amendment 22**  
Proposal for a regulation  
Recital 21 c (new)

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<td><em>(21c)</em> In order to allow for sufficient flexibility over the life-time of Horizon 2020 to address new needs and developments and to take stock and possibly adjust the interaction and cross-cutting between and within the different</td>
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priorities, the power to adopt acts in accordance with Article 290 TFEU should be delegated to the Commission in respect of reviewing the amounts for the specific objectives and priorities and transferring appropriations between them on the basis of the mid-term review of Horizon 2020.

It is of particular importance that the Commission carry out appropriate consultations during its preparatory work, including at expert level. The Commission, when preparing and drawing-up delegated acts, should ensure a simultaneous, timely and appropriate transmission of relevant documents to the European Parliament and to the Council.

**Justification**

*It is important to have some budgetary flexibility built in to allow for sufficient room to address future needs and developments, including for so-called "cross-cutting actions". The best procedure to do this is via a delegated act to ensure democratic accountability and quick decision making.*

**Amendment 23**

**Proposal for a regulation**

**Recital 22**

**Text proposed by the Commission**

(22) Horizon 2020 should contribute to the attractiveness of the research profession in the Union. Adequate attention should be paid to the European Charter for Researchers and Code of Conduct for the Recruitment of Researchers, together with other relevant reference frameworks defined in the context of the European Research Area, **while respecting their voluntary nature.**

**Amendment**

(22) Horizon 2020 should contribute to the attractiveness of the research profession in the Union, **promoting adequate working conditions for researchers. Full** attention should be paid to the European Charter for Researchers and Code of Conduct for the Recruitment of Researchers, together with other relevant reference frameworks defined in the context of the European Research Area **in order to tackle the continuing phenomenon of brain drain and convert it into a brain gain.**
Amendment 24
Proposal for a regulation
Recital 22 a (new)

Text proposed by the Commission

(22a) Horizon 2020 should contribute to achieving the ERA, help European researchers to remain in Europe, attract researchers from the whole world and make Europe a more attractive destination for the best researchers. The compatibility of grants as a funding instrument for mobile researchers should be guaranteed in the interests of mobility within Europe. Tax-related issues should be resolved and adequate social protection of European scientists be promoted.

Amendment 25
Proposal for a regulation
Recital 22 b (new)

Text proposed by the Commission

(22b) A glass ceiling still exists for women who wish to pursue a career in science and research, women are significantly underrepresented in some disciplines, such as engineering and technologies, and there is no decreasing trend in the gender pay gap. Horizon 2020 should therefore correct the imbalances in the participation of female scientists at all stages of research careers and in various fields of research.
Amendment 26

Proposal for a regulation
Recital 23

Text proposed by the Commission

(23) The activities developed under Horizon 2020 should **aim at promoting** equality between men and women in research and innovation, by addressing in particular the underlying causes of gender imbalance, by exploiting the full potential of both female and male researchers, and by integrating the gender dimension into the content of projects in order to improve the quality of research and stimulate innovation. Activities should also aim at the implementation of the principles relating to the equality between women and men as laid down in Articles 2 and 3 of the Treaty on European Union and Article 8 TFEU.

Amendment

(23) The activities developed under Horizon 2020 should **promote** equality between men and women in research and innovation, **identifying and eliminating the principal** causes of gender imbalance, **so as to exploit** the full potential and qualifications of both female and male researchers. **Furthermore Horizon 2020 should ensure that** the gender dimension is **integrated in** the content of research and innovation activities at all stages of the process in order to improve the quality of research and stimulate innovation. Activities should also aim at the implementation of the principles relating to the equality between women and men as laid down in Articles 2 and 3 of the Treaty on European Union and Article 8 TFEU, **as well as in Article 23 of the EU Charter of Fundamental Rights.**

Amendment 27

Proposal for a regulation
Recital 23 a (new)

Text proposed by the Commission

(23a) Horizon 2020 should encourage women’s participation in all European research, projects and scientific disciplines, not only for advisory groups and among evaluators but also for all structures related to Horizon 2020 (EIT, European Research Council (ERC), JRC, Steering Groups, High-Level Groups, Expert Groups, etc.) as well as in universities and research institutions.

Amendment
Amendment 28
Proposal for a regulation
Recital 23 b (new)

Text proposed by the Commission

(23b) Research and innovation build on the capacity of scientists, research institutions, businesses and citizens to access, share and use scientific information. To increase the circulation and exploitation of knowledge, open access to scientific publications should be mandatory if a decision to publish is taken for scientific publications which receive public funding from Horizon 2020. Furthermore, Horizon 2020 should promote open access to scientific data resulting from publicly funded research under Horizon 2020, taking into account constraints pertaining to privacy, national security or intellectual property rights.

Amendment 29
Proposal for a regulation
Recital 23 c (new)

Text proposed by the Commission

(23c) Horizon 2020 will encourage and support activities towards exploiting Europe's leadership in the race to develop new processes and technologies promoting sustainable development, in a broad sense, and combating climate change. Such horizontal approach, fully integrated in all Horizon 2020 priorities, will help the Union to prosper in a low-carbon, resource constrained world while building a resource efficient, sustainable and competitive economy.

Amendment 30
Proposal for a regulation
Recital 23 d (new)

Text proposed by the Commission

(23d) Each participant that has received Union funding should make its best efforts to exploit the results it owns in further research or commercially, or to have them exploited by another legal entity for these purposes, in particular through transfer and licensing of results in accordance with Article 41 of Regulation (EU) No xxxx/2012 [Rules for Participation]

Amendment

Proposal for a regulation
Recital 24

Text proposed by the Commission

(24) Research and innovation activities supported by Horizon 2020 should respect fundamental ethical principles. The opinions of the European Group on Ethics in Science and New Technologies should be taken into account. Research activities should also take into account Article 13 TFEU and reduce the use of animals in research and testing, with a view ultimately to replacing animal use. All activities should be carried out ensuring a high level of human health protection in accordance with Article 168 TFEU.

Amendment

(24) Research and innovation activities supported by Horizon 2020 should respect fundamental ethical principles and human rights. The reasoned and updated opinions of the European Group on Ethics (EGE) in Science and New Technologies should be taken into account as well as the opinion of the EU Agency for Fundamental Rights and the EU Data Protection Supervisor where relevant. Horizon 2020 funding should respect the legislative and administrative provisions of the Member States. Research activities should be carried out in accordance with Article 13 TFEU and respect the obligation to replace or reduce the use of animals for scientific purposes or improve the conditions under which this takes place. All activities should be carried out ensuring a high level of human health protection in accordance with Article 168 TFEU.
Amendment 32
Proposal for a regulation
Recital 25

Text proposed by the Commission

(25) The European Commission does not explicitly solicit the use of human embryonic stem cells. The use of human stem cells, be they adult or embryonic, if any, depends on the judgement of the scientists in view of the objectives they want to achieve and is subject to stringent Ethics Review. No project involving the use of human embryonic stem cells should be funded that does not obtain the necessary approvals from the Member States. No activity should be funded that is forbidden in all Member States. No activity should be funded in a Member State where such activity is forbidden.

Amendment

(25) The European Commission does not explicitly solicit the use of human embryonic stem cells. The use of human stem cells, be they adult or embryonic, if any, depends on the judgement of the scientists in view of the objectives they want to achieve and is subject to stringent Ethics Review. No project involving the use of human embryonic stem cells should be funded that does not obtain the necessary approvals under the law of the Member State concerned. No activity should be funded that is forbidden in all Member States. No activity should be funded in a Member State where such activity is forbidden.

Amendment 33
Proposal for a regulation
Recital 26

Text proposed by the Commission

(26) To achieve maximum impact, Horizon 2020 should develop close synergies with other Union programmes in areas such as education, space, environment, competitiveness and SMEs, the internal security, culture and media and with the Cohesion Policy funds and Rural Development Policy, which can specifically help to strengthen national and regional research and innovation capabilities in the context of smart specialisation strategies.

Amendment

(26) To achieve maximum impact, Horizon 2020 should develop close synergies with other Union programmes in areas such as education, space, environment, energy, agriculture and fisheries, competitiveness and SMEs, internal security, culture and media.
(26a) Both Horizon 2020 and the cohesion policy seek a more comprehensive alignment with the Europe 2020 objectives of smart, sustainable and inclusive growth through their respective Common Strategic Frameworks (CSF). This new strategic direction calls for an increased and systematised cooperation of both CSF in order to fully mobilise the research and innovation potential at regional, national and European level. Therefore, an appropriate articulation of Horizon 2020 with the cohesion policy will help reduce the research and innovation gap in the Union, by fostering the "stairway to excellence" taking into account of the specific characteristics of the regions referred to in Articles 274, 349 and 355 TFEU. Moreover, Structural funds should be deployed to their full extent to support capacity and R&D infrastructure building in the regions; support actions such as ERC, Marie Curie or collaborative actions that have been positively evaluated, but for which no Horizon 2020 funding is available.

(26b) European local and regional authorities have an important role to play in implementing the ERA and in ensuring an efficient coordination of the Union financial instruments, in particular in fostering linkages between Horizon 2020
and the Structural Funds, within the framework of regional innovation strategies based on smart specialisation. Regions also have a role in the dissemination and implementation of Horizon 2020 results and in offering complementary funding instruments, including public procurement.

Amendment 36
Proposal for a regulation
Recital 26 c (new)

Text proposed by the Commission

(26c) Horizon 2020 should aim at spreading and promoting excellent research throughout all the European regions as a precondition for a geographically balanced growth and innovation strategy of the Union. It should also aim at fostering the mobility of researchers as a means for preventing forms of brain-drain among the Member States.

Amendment 37
Proposal for a regulation
Recital 27

Text proposed by the Commission

(27) SMEs constitute a significant source of innovation and growth in Europe. Therefore a strong participation of SMEs, as defined in Commission Recommendation 2003/361/EC of 6 May 2003, is needed in Horizon 2020. This should support the aims of the Small Business Act.

Amendment

(27) SMEs constitute an essential source of innovation, growth and jobs in Europe. Therefore a strong participation of SMEs, as defined in Commission Recommendation 2003/361/EC of 6 May 2003, is needed in Horizon 2020. This should support the aims of the Small Business Act. Constituting more than 95% of all enterprises in the Union, there are, however, significant differences between SMEs and a flexible approach is required. Therefore, Horizon 2020 should provide...
for a tool-box of different instruments to support the research and innovation activities and capacities of SMEs along the different stages of the innovation cycle,

Horizon 2020 should allocate at least 20% of priority 2.1 and 3 for SMEs. In particular, at least 4.0% of the Horizon 2020 budget should be delivered through a dedicated SME instrument which should be managed and implemented by a single dedicated administrative structure.

Amendment 38
Proposal for a regulation
Recital 27 a (new)

Text proposed by the Commission

(27a) The economic significance of public procurement in the Union, which the Commission puts at 19.4% of GDP in its working document 'Public procurement indicators 2009', makes the public procurement market a strategic instrument in the economic and social policy of which it forms part. Moreover, the immediate aim of public procurement is to equip administrations with solutions that will enable them to provide better services to citizens, and there is no doubt that innovation is one means of improving and expanding the provision of conventional products, works and services, and that it makes management processes more efficient. Nevertheless, only a very small part of the total amount involved in public contracts in the Union goes to innovative products and services, and this represents a serious lost opportunity.

Amendment 39
Proposal for a regulation
Recital 27 b (new)
Text proposed by the Commission

(27b) In order to maximize the impact of Horizon 2020 special consideration should be given to multidisciplinary and interdisciplinary approaches as necessary elements for major scientific progress. Breakthroughs in science take often place at the boundaries or intersections of disciplines. Furthermore, the complexity of the problems and challenges that Europe is facing requires solutions that can only be tackled from several disciplines working together.

Justification

Multidisciplinary and interdisciplinary are crucial for advancing in science and innovation. The complexity of the present problems cannot be often tackled by a scientific discipline alone. Consequently common objectives or common cognitive structures among disciplines are regularly needed to find and develop the best solutions. For this reason, Horizon 2020 should not only foresee but also promote multidisciplinary and interdisciplinary.

Amendment 40

Proposal for a regulation
Recital 27 c (new)

Text proposed by the Commission

(27c) The implementation of Horizon 2020 should fully recognise the fundamental role that Universities play within the scientific and technological base of the Union as basic institutions of excellence, both in training and research, having an essential role of linking the implementation of the European Higher Education Area to the ERA. Research and technology organisations bring together different players across the whole innovation chain, from fundamental to technological research, from product and process development to prototyping and demonstration, and on to full-scale implementation in the public and private
Amendment 41
Proposal for a regulation
Recital 28

Text proposed by the Commission

(28) With the aim to achieve the greatest possible impact of Union funding, Horizon 2020 is to develop closer synergies, which may also take the form of public-public partnerships, with national and regional programmes that support research and innovation.

Amendment

(28) With the aim to achieve the greatest possible impact of Union funding, Horizon 2020 is to develop closer synergies, which may also take the form of public-public partnerships, with international, national and regional programmes that support research and innovation. The coordination and monitoring carried out as part of Horizon 2020 should guarantee the optimum use of resources and avoid unnecessary duplications of expenditure, regardless of what sources of funding are involved.

Amendment 42
Proposal for a regulation
Recital 28 a (new)

Text proposed by the Commission

(28a) The Commission should encourage regional stakeholders to formulate regional strategies reflecting the specific needs of the regions so as to combine existing forms of public or private funding at Union level. The activities under Horizon 2020 should be adapted to these strategies, since closer involvement of regional and local authorities in the design and implementation of the funds and research and innovation programmes is of crucial importance in view of the impossibility of applying the same development strategies in all regions.
Amendment 43
Proposal for a regulation
Recital 29

Text proposed by the Commission

(29) A greater impact should also be achieved by combining Horizon 2020 and private sector funds within public-private partnerships in key areas where research and innovation could contribute to Europe’s wider competitiveness goals and help tackle societal challenges. The public-private partnerships in the form of Joint Technology Initiatives launched under Decision No 1982/2006/EC of the European Parliament and of the Council of 18 December 2006 concerning the Seventh Framework programme of the European Community for research, technological development and demonstration activities (2007-13) may be continued using more fit-for-purpose structures.

Amendment

(29) A greater impact should also be achieved by combining Horizon 2020 and private sector funds within public-private partnerships in key areas where research and innovation could contribute to Europe's wider competitiveness goals, unlock private funds and help tackle societal challenges. These partnerships should be based on a real partnership, including in terms of commitments and contributions from the private sector, be accountable to concrete targets to be reached, and be aligned with the rest of the Horizon 2020 in terms of its Rules of Participation and the Union's R&D&I strategic agenda. Their governance and functioning should ensure open, transparent, effective and efficient functioning and give the opportunity to a wide range of stakeholder active in their specific areas to participate. The existing public-private partnerships in the form of Joint Technology Initiatives may be continued using more fit-for-purpose structures and respecting the above mentioned principles.

Amendment 44
Proposal for a regulation
Recital 30

Text proposed by the Commission

(30) Horizon 2020 should promote cooperation with third countries based on common interest and mutual benefit. International cooperation in science, technology and innovation should be targeted to contribute to achieving the Europe 2020 objectives to strengthen

Amendment

(30) Horizon 2020 should promote cooperation with third countries based on common interest, mutual benefit and reciprocity, where appropriate, in coherence with Union foreign and development policies. International cooperation in science, technology and
competitiveness, contribute to tackling societal challenges and support Union external and development policies, including by developing synergies with external programmes and contributing to the Union's international commitments such as the achievement of Millennium Development Goals.

innovation should be targeted to contribute to achieving the Europe 2020 objectives to strengthen competitiveness, contribute to tackling societal challenges and support Union external and development collaborative international research networks and policies, including by developing synergies with external programmes and contributing to the Union's international commitments such as the achievement of Millennium Development Goals and the RIO+20 targets. Account should be taken, in international cooperation, of the capabilities and potential role of the outermost regions of the Union and the overseas countries and territories associated with the Union within their respective areas of the world.

Amendment 45
Proposal for a regulation
Recital 30 a (new)

Text proposed by the Commission

(30a) It should be contemplated to encourage the participation of research teams in different projects in order to reinforce the research and innovation (R&I) quality and to increase the possibility of international co-operation.

Amendment 46
Proposal for a regulation
Recital 31

Text proposed by the Commission

(31) In order to maintain a level playing field for all undertakings active in the internal market, funding provided by Horizon 2020 should be designed in accordance with state aid rules so as to ensure the effectiveness of public spending

Amendment

(31) In order to maintain a level playing field for all undertakings active in the internal market, funding provided by Horizon 2020 should be designed in accordance with state aid rules, including the Community framework for state aid
and prevent market distortions such as crowding-out of private funding, creating ineffective market structures or preserving inefficient firms.

for research and development and innovation\(^1\) and taking into account its current review, so as to ensure the effectiveness of public spending and prevent market distortions such as crowding-out of private funding, creating ineffective market structures or preserving inefficient firms.

\(^1\) OJ C 323, 30.12.2006 p. 1

Justification

Shifting the balance too much towards funding short-term, close-to-market innovation could distort competition and come at the detriment of more long-term, fundamental research that is often the source of radical, disruptive innovation. Therefore, not only the letter but also the spirit of the R&D State aid rules should be taken into account.

Amendment 47

Proposal for a regulation
Recital 31 a (new)

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
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<tbody>
<tr>
<td>(31a) The spending of Union and Member States’ funds on research and innovation should be better coordinated in order to assure complementarity, better efficiency and visibility, as well as to achieve better synergies. In the context of the evaluation process foreseen in this Regulation, the Commission should provide concrete evidence, if available of the complementarity and synergies achieved between the Union budget and the Member States budgets in achieving the Europe 2020 R&amp;D target as well as the Europe 2020 innovation headline indicator.</td>
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Amendment 48

Proposal for a regulation
Recital 32
(32) The need for a new approach to control and risk management in Union research funding was recognised by the European Council of 4 February 2011, asking for a new balance between trust and control and between risk-taking and risk avoidance. The European Parliament, in its Resolution of 11 November 2010 on simplifying the implementation of the Research Framework Programmes, called for a pragmatic shift towards administrative and financial simplification and states that the management of European research funding should be more trust-based and risk-tolerant towards participants. The interim evaluation report of the Seventh Framework Programme for Research (2007-2013) concludes that a more radical approach is needed to attain a quantum leap in simplification, and that the risk-trust balance needs to be redressed.

Amendment 49

Proposal for a regulation
Recital 32 a (new)

(32a) Horizon 2020 should ensure utmost transparency, accountability and democratic scrutiny of innovative financial instruments and mechanisms that involve the Union budget, especially as regards their contribution, both expected and achieved, to reaching Union objectives.
Amendment 50

Proposal for a regulation
Recital 35

Text proposed by the Commission

(35) Effective performance management, including evaluation and monitoring, requires development of specific performance indicators which can be measured over time; are both realistic and reflect the logic of the intervention; and relevant to the appropriate hierarchy of objectives and activities. Appropriate coordination mechanisms should be put in place between the implementation and monitoring of Horizon 2020, and the monitoring of progress, achievements and functioning of the ERA.

Amendment

(35) Effective performance management, including evaluation and monitoring, requires development of specific common European performance indicators which can be measured over time; are both realistic and reflect the logic of the intervention; and relevant to the appropriate hierarchy of objectives and activities. Appropriate coordination mechanisms should be put in place between the implementation and monitoring of Horizon 2020, and the monitoring of progress, achievements and functioning of the ERA.

Amendment 51

Proposal for a regulation
Recital 35 a (new)

Text proposed by the Commission

(35a) By 2017, the Commission should undertake a comprehensive assessment and review of the different types of public-private partnerships established under its research and innovation programmes (including KICs, JTIs and PPPs), with a view to rationalising and simplifying the landscape in the future framework programme, and to identifying the most effective, open and transparent governance that will enable the widest participation of stakeholders while avoiding conflict of interests.

Amendment

(35a) By 2017, the Commission should undertake a comprehensive assessment and review of the different types of public-private partnerships established under its research and innovation programmes (including KICs, JTIs and PPPs), with a view to rationalising and simplifying the landscape in the future framework programme, and to identifying the most effective, open and transparent governance that will enable the widest participation of stakeholders while avoiding conflict of interests.
Amendment 52

Proposal for a regulation
Article 1

Text proposed by the Commission

Subject matter
This Regulation establishes Horizon 2020 - the Framework Programme for Research and Innovation (2014-2020) ("Horizon 2020") and determines the framework governing Union support to research and innovation activities and fostering better exploitation of the industrial potential of policies of innovation, research and technological development.

Amendment

Subject matter
This Regulation establishes Horizon 2020 - the Framework Programme for Research and Innovation (2014-2020) ("Horizon 2020") and determines the framework governing Union support to research and innovation activities, strengthening the European scientific and technological base and fostering better exploitation of the societal, economic and industrial potential of policies of innovation, research and technological development.

Amendment 53

Proposal for a regulation
Article 2

Text proposed by the Commission

Definitions
For the purposes of this Regulation the following definitions apply:

(a) 'research and innovation activities' means the whole spectrum of activities of research, technological development, demonstration and innovation, including the promotion of cooperation with third countries and international organisations, dissemination and optimisation of results and stimulation of the training and mobility of researchers in the Union;

(b) 'direct actions' mean research and innovation activities undertaken by the Commission through its Joint Research Centre;

(c) 'indirect actions' mean research and

Amendment

Definitions
For the purposes of this Regulation the following definitions apply:

(a) 'research and innovation activities' means the whole spectrum of activities of research, technological development, demonstration and innovation, including the promotion of cooperation with third countries and international organisations, dissemination and optimisation of results and stimulation of the high quality, targeted training and mobility of researchers in the Union;

(b) 'direct actions' mean research and innovation activities undertaken by the Commission through its Joint Research Centre;

(c) 'indirect actions' mean research and
innovation activities to which the Union provides financial support and which are undertaken by participants;

(d) 'public-private partnership' means a partnership where private sector partners, the Union and, where appropriate, other partners, commit to jointly support the development and implementation of a research and innovation programme or activities;

(e) 'public-public partnership' means a partnership where public sector bodies or bodies with a public service mission at regional, national or international level commit with the Union to jointly support the development and implementation of a research and innovation programme or activities.

(ea) 'research infrastructures' (RI) means facilities, resources, organisational systems and services that are used by the research communities to conduct research and innovation in their fields. Where relevant, they may be used beyond research, e.g. for education or public services. RI includes: major scientific equipment (or sets of instruments); knowledge-based resources such as collections, archives or scientific data; e-infrastructures, such as data, computing and software systems, communication networks and systems to promote openness and digital trust; any other infrastructure of a unique nature essential to achieve excellence in research and innovation;

(eb) 'smart specialisation' means the concept underpinning for the development of the Union's R&D&I policy, the objective of which is to promote efficient and effective use of public investment using synergies among countries and regions and strengthening
their innovation capacity.

(ec) "smart specialisation strategy" means a strategy comprised of a multi-
annual strategy programme whose goal is to develop a functional national or
regional research innovation system.

**Amendment 54**

**Proposal for a regulation**

**Article 4**

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
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<tr>
<td>Union added value</td>
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<tr>
<td>Horizon 2020 shall play a central role in the delivery of the Europe 2020 strategy for smart, sustainable and inclusive growth by providing a common strategic framework for the Union's research and innovation funding, thus acting as a vehicle for leveraging private investment, creating new job opportunities and ensuring Europe's long-term sustainable growth and competitiveness.</td>
<td>Horizon 2020 shall play a central role in the delivery of the Europe 2020 strategy for smart, sustainable and inclusive growth by providing a common strategic framework for funding excellent research and innovation in the Union, thus acting as a vehicle for leveraging public and private investment, creating new job opportunities and ensuring Europe's long-term sustainability, economic development, social inclusion and industrial competitiveness. Support under Horizon 2020 shall be targeted towards activities where intervention at Union level brings added value compared to intervention at national or regional level.</td>
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**Amendment 55**

**Proposal for a regulation**

**Article 5**

<table>
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<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
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<tbody>
<tr>
<td>General objective, priorities and specific objectives</td>
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<tr>
<td>1. Horizon 2020 shall contribute to building an economy based on knowledge and innovation across the whole Union by</td>
<td>1. Horizon 2020 shall contribute to building a knowledge and innovation based economy across the whole Union by</td>
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</table>
leveraging sufficient additional research, development and innovation funding. Thereby, it shall support the implementation of the Europe 2020 strategy and other Union policies, as well as the achievement and functioning of the European Research Area (ERA). The relevant performance indicators are set out in the introduction of Annex I.

2. This general objective shall be pursued through three mutually reinforcing priorities dedicated to:

(a) excellent science;
(b) industrial leadership;
(c) societal challenges.

The specific objectives corresponding to each of those three priorities are set out in Parts I to III of Annex I, together with the broad lines of the activities.

3. The Joint Research Centre shall contribute to the general objective and priorities set out in paragraphs 1 and 2 by providing scientific and technical support to Union policies. The broad lines of the activities are set out in Part IV of Annex I.

4. The European Institute of Innovation and Technology (EIT) set up by Regulation (EU) No 294/2008 of the European Parliament and of the Council shall contribute to the general objective and priorities set out in paragraphs 1 and 2 with the specific objective of integrating the knowledge triangle of research, innovation and education. The relevant performance indicators for the European Institute of Innovation and Technology are set out in the introduction of Annex I and the broad lines of that specific objective and the activities...
lines of that specific objective and the activities are set out in Part V of Annex I.

5. Within the priorities and broad lines referred to in paragraph 2, account may be taken of new and unforeseen needs that arise during the period of implementation of Horizon 2020. This may include responses to emerging opportunities, crises and threats, to needs relating to the development of new Union policies, and to the piloting of actions foreseen for support under future programmes.

Amendment 56
Proposal for a regulation
Article 6

Text proposed by the Commission

Budget

1. The financial envelope for the implementation of Horizon 2020 shall be EUR 87740 million, of which a maximum of EUR 86198 million shall be allocated to activities under Title XIX of the Treaty on the Functioning of the European Union (TFEU).

2. The amount for activities under Title XIX TFEU shall be distributed among the priorities set out in Article 5(2) as follows:
   (a) Excellent science, EUR 27818 million;
   (b) Industrial leadership, EUR 20280 million;
   (c) Societal challenges, EUR 35888 million.

The maximum overall amount for the Union financial contribution from Horizon 2020 to the non-nuclear direct actions of the Joint Research Centre shall be EUR 2212 million.

The indicative breakdown for the specific

Amendment

Budget

1. The financial envelope for the implementation of Horizon 2020 shall be EUR xxx million, of which a maximum of 98,2% shall be allocated to activities under Title XIX of the Treaty on the Functioning of the European Union (TFEU).

2. The amount for activities under Title XIX TFEU shall be distributed among the priorities set out in Article 5(2) as follows:
   (a) Excellent science, 32,6% of the total budget;
   (b) Industrial leadership, 24,3% of the total budget;
   (c) Societal challenges, 37,5% of the total budget;

The maximum overall amount for the Union financial contribution from Horizon 2020 to the non-nuclear direct actions of the Joint Research Centre shall be 2,4% of the total Horizon 2020 budget.

The breakdown for the specific objectives
objectives within the priorities and the maximum overall amount of the contribution to the non-nuclear direct actions of the Joint Research Centre are set out in Annex II.

3. The European Institute of Innovation and Technology shall be financed through a maximum contribution from Horizon 2020 of **EUR 3194 million** as set out in Annex II. A **first allocation of EUR 1542 million** shall be provided to the European Institute of Innovation and Technology for activities under Title XVII of the Treaty on the Functioning of the European Union. A **second allocation of up to EUR 1652 million** shall be provided, subject to the review set out in Article 26 (1). This additional amount shall be provided on a pro-rata basis, as indicated in Annex II, from the amount for the specific objective ‘Leadership in enabling and industrial technologies’ within the priority on industrial leadership set out in paragraph 2(b) and from the amount for the priority on societal challenges set out in 2(c).

This funding in two multiannual allocations shall cover:

(a) in the first allocation, the ongoing developments of the current Knowledge and Innovation Communities (hereinafter KICs) and seed money for the launch of the second wave of three new KICs

(b) in the second allocation, the ongoing developments of the KICs already launched and the seed money for the launch of the third wave of three new KICs

The second allocation shall be made within the priorities and the maximum overall amount of the contribution to the non-nuclear direct actions of the Joint Research Centre are set out in Annex II.

**The Commission shall set aside an appropriate amount of money to allocate to calls which receive more bids evaluated to be of a high standard of excellence than anticipated in order to fund more than one project where appropriate.**

3. The European Institute of Innovation and Technology shall be financed through a maximum contribution from Horizon 2020 of 3,3% of the **total budget** as set out in Annex II.
available following the review set out in Article 26(1) taking into account in particular:

(a) the agreed timing of the creation of the third wave of KICs;

(b) the programmed financial needs of the existing ones according to their specific development;

(c) the contribution of the European Institute of Innovation and Technology and its KICs to the Horizon 2020 objectives.

4. The financial envelope of Horizon 2020 may cover expenses pertaining to preparatory, monitoring, control, audit and evaluation activities which are required for the management of Horizon 2020 and the achievement of its objectives, in particular studies and meetings of experts, as far as they are related to the objectives of Horizon 2020, expenses linked to information technology networks focusing on information processing and exchange, together with all other technical and administrative assistance expenses incurred by the Commission for the management of Horizon 2020.

Where necessary, appropriations may be entered in the budget beyond 2020 to cover technical and administrative assistance expenses, in order to enable the management of actions not yet completed by 31 December 2020.

5. In order to respond to unforeseen situations or new developments and needs, and to take into account the provisions of paragraph 3 of this article, the Commission may, following the interim evaluation of Horizon 2020 as referred to in Article 26(1)(a) of this Regulation, within the annual budgetary procedure review the amounts set out for the priorities in paragraph 2 and the indicative breakdown by specific objectives within these priorities set out in

This Regulation shall not fund the Commission’s administrative expenditure to execute Horizon 2020, nor the construction nor the operation of large European infrastructural projects, such as Galileo, GMES or ITER.

5. In order to respond to the evolving nature of science, technology and innovation and to adapt Horizon 2020 to new developments and needs as necessary, the Commission may, without prejudice to the annual budgetary procedure, following the mid-term review set out in Article 26(1)(b), adopt delegated acts in accordance with Articles 26a to modify the breakdown set out in Annex II by up to 15% of the total initial allocation for each priority and specific objective.
Annex II and transfer appropriations between the priorities and specific objectives up to 10% of the total initial allocation of each priority and up to 10% of the initial indicative breakdown of each specific objective. This does not concern the amount set out for the direct actions of the Joint Research Centre in paragraph 2 or the contribution to the European Institute of Innovation and Technology set out in paragraph 3.

In modifying Annexes I and II, the Commission shall in particular take into account:

(a) the contribution of the different parts of Horizon 2020 to its objectives;
(b) the development of the key indicators for assessing results and impacts of the different parts of Horizon 2020 as specified in Annex II of the specific programme referred to in Article 8 of this Regulation;
(c) the envisaged future financial needs of the different parts and instruments of Horizon 2020.

Amendment 57

Proposal for a regulation
Article 7

Text proposed by the Commission

Association of third countries

1. Horizon 2020 shall be open to the association of:

(a) acceding countries, candidate countries and potential candidates, in accordance with the general principles and general terms and conditions for the participation of those countries in Union programmes established in the respective framework agreements and decisions of association councils or similar agreements;

Amendment

Association of third countries

1. Horizon 2020 shall be open to the association of:

(a) acceding countries, candidate countries and potential candidates, in accordance with the general principles and general terms and conditions for the participation of those countries in Union programmes established in the respective framework agreements and decisions of association councils or similar agreements;
(b) selected third countries that fulfil all of the following criteria:

(i) have a good capacity in science, technology and innovation;

(ii) have a good track record of participation in Union research and innovation programmes;

(iii) have close economic and geographical links to the Union;

(iv) are European Free Trade Association (EFTA) members or countries or territories listed in the Annex to Regulation (EU) No XX/2012 of the European Parliament and the Council establishing a European Neighbourhood Instrument.

Specific terms and conditions regarding the participation of associated countries in Horizon 2020, including the financial contribution, based on the gross domestic product of the associated country shall be determined by international agreements between the Union and the associated countries.

(b) selected third countries that fulfil the following criteria:

(i) have a good capacity in science, technology and innovation;

(ii) have a good track record of participation in Union research and innovation programmes;

(iii) have close economic and geographical links to the Union or maintain special historical and cultural ties with Member States;

(iv) are European Free Trade Association (EFTA) members or countries or territories listed in the Annex to Regulation (EU) No XX/2012 of the European Parliament and the Council establishing a European Neighbourhood Instrument. The terms and conditions regarding the participation of the EFTA States that are party to the EEA Agreement shall be in accordance with the provisions of that Agreement.

Horizon 2020 shall be open to participation by the overseas countries and territories referred to in Council Decision 2001/822/EC of 27 November 2001 on the association of the overseas countries and territories with the European Community (‘Overseas Association Decision’) 1 subject to the specific conditions laid down therein.

Specific terms and conditions regarding the participation of associated countries in Horizon 2020, including the financial contribution, based on the gross domestic product of the associated country shall be determined by international agreements between the Union and the associated countries.

Amendment 58
Proposal for a regulation
Article 8 – paragraph 2 a (new)

Text proposed by the Commission

Effective coordination between the three main pillars of Horizon 2020 shall be ensured.

Justification

Coordination among the three pillars of Horizon 2020 is necessary in order to achieve the objectives set in the Programme.

Amendment 59
Proposal for a regulation
Article 10 – paragraph 1

Text proposed by the Commission

1. Horizon 2020 shall support indirect actions through one or several of the forms of funding provided for by Regulation (EU) No XX/2012 [New Financial Regulation] in particular grants, prizes, procurement and financial instruments.

Amendment

1. Horizon 2020 shall support indirect actions through one or several of the forms of funding provided for by Regulation (EU, Euratom) No 966/2012 in particular grants, prizes, procurement and financial instruments. The latter shall be the predominant form of funding for activities close to market, supported under Horizon 2020.

Amendment 60
Proposal for a regulation
Article 11 a (new)

Text proposed by the Commission

Article 11a

Strategic Advice and Coordination

Strategic advice and coordination of research and innovation aiming at common objectives and requiring synergies across Horizon 2020 shall be
Amendment 61

Proposal for a regulation
Article 12 – paragraph 1

Text proposed by the Commission

External advice and societal engagement

1. For the implementation of Horizon 2020, account shall be taken of advice and inputs provided by: advisory groups of independent, high level experts set up by the Commission; dialogue structures created under international science and technology agreements; forward looking activities; targeted public consultations; and transparent and interactive processes that ensure responsible research and innovation is supported.

Amendment

External advice and societal engagement

1. For the implementation of Horizon 2020, account shall be taken of advice and inputs provided by: advisory groups of independent, high level experts set up by the Commission, from a wide variety of sectors, disciplines and backgrounds, and in which input from civil society organisations is included; dialogue structures created under international science and technology agreements; forward looking activities; targeted public consultations; and transparent and interactive processes that ensure responsible research and innovation is supported through a streamlined set of measures that avoids duplication and overlapping of funding structures.

1a. In drawing up the work programmes stipulated in Article 5 of Council Decision No XXXX/EU of ... [Specific Programme H2020], the Commission shall take account of the widest advice and input provided by the stakeholders, the Member States, the European Parliament and the Council. The Committee responsible in the European Parliament may invite representatives of the Commission to present to the Committee the draft work programmes.
Amendment 62

Proposal for a regulation
Article 12 – paragraph 2

Text proposed by the Commission

2. Full account shall also be taken of relevant aspects of the research and innovation agendas established by European Technology Platforms, Joint Programming Initiatives and European Innovation Partnerships.

Amendment

2. Full account shall also be taken of relevant aspects of the research and innovation agendas established by the EIT and the KICs, European Technology Platforms, Joint Programming Initiatives, and European international research organisations, provided those agendas have been drafted in consultation with a wide range of experts and stakeholders.

Amendment 63

Proposal for a regulation
Article 13 – paragraph 1

Text proposed by the Commission

Cross-cutting actions

1. Linkages and interfaces shall be implemented across and within the priorities of Horizon 2020. Particular attention shall be paid in this respect to the development and application of key enabling and industrial technologies, to bridging from discovery to market application, to cross-disciplinary research and innovation, to social and economic sciences and humanities, to fostering the functioning and achievement of the ERA, to cooperation with third countries, to responsible research and innovation including gender, and to enhancing the attractiveness of the research profession and to facilitating cross-border and cross-sector mobility of researchers.

Amendment

Cross-cutting actions

1. Linkages and interfaces shall be implemented across and within the priorities of Horizon 2020. Particular attention shall be paid in this respect to the development and application of key enabling and industrial technologies, to bridging from discovery to market application, to multi-, cross-, trans- and inter-disciplinary research and innovation, to social and economic sciences and humanities, to climate change and sustainable development, to fostering the functioning and achievement of the ERA, to widening participation across the Union and closing the research and innovation divide in Europe, to broader private sector participation, to involving SMEs, to cooperation with third countries, to responsible research and innovation, including the gender perspective in projects, to a more inclusive governance.
of research, and to enhancing the attractiveness of the research profession and to facilitating cross-border and cross-sector mobility of researchers.

Amendment 64
Proposal for a regulation
Article 14

Text proposed by the Commission

Evolving nature of science, technology, innovation, markets and society
Horizon 2020 shall be implemented in a manner ensuring that the priorities and actions supported are relevant to changing needs and take account of the evolving nature of science, technology, innovation, markets and society, where innovation includes business, organisational and social aspects.

Amendment

Evolving nature of science, technology, innovation, markets and society
Horizon 2020 shall be implemented in a manner ensuring that the priorities and actions supported are relevant to changing needs and take account of the evolving nature of science, technology, innovation, economies and society in a globalised world, where innovation includes business, organisational, technological, social and environmental aspects as well as transfer of science results to all levels of education and training.

Amendment 65
Proposal for a regulation
Article 15

Text proposed by the Commission

Gender equality
Horizon 2020 shall ensure the effective promotion of gender equality and the gender dimension in research and innovation content.

Amendment

Gender equality
Horizon 2020 shall ensure the effective promotion of gender equality and the gender dimension in research and innovation content. Particular attention shall be paid to ensuring gender balance in bodies such as selection boards, advisory groups, committees and expert groups.

Amendment 66

PE489.637v03-00 48/595 RR:\922943EN.doc
Proposal for a regulation  
Article 15 – paragraph 1 a (new)

Text proposed by the Commission

Horizon 2020 shall ensure that the gender dimension is properly considered in research and innovation content at all stages of the process, from priority setting, to definition of calls and proposals, to evaluation and monitoring of programs and projects, to negotiations and agreements.

Amendment

Amendment 67

Proposal for a regulation  
Article 15 – paragraph 1 b (new)

Text proposed by the Commission

In order to promote gender equality, specific measures shall be implemented to assist those who take a career break to return to work.

Amendment

Amendment 68

Proposal for a regulation  
Article 15 a (new)

Text proposed by the Commission

Article 15a  
Non-discrimination

Horizon 2020 shall ensure the effective promotion of equal treatment and non-discrimination and properly consider that aspect in research and innovation content at all stages of the process.
Amendment 69

Proposal for a regulation
Article 15 b (new)

Text proposed by the Commission

Amendment

Article 15b

Researchers’ careers

Fostering human resources for science, technology and innovation across Europe shall be a priority in Horizon 2020. Horizon 2020 shall be implemented in accordance with Regulation (EU) No xx/2013 [Rules for Participation], which shall contribute to the reinforcement of a single market for researchers and attractiveness of researchers’ careers across the Union in the context of the ERA, by taking into account the transnational character of the actions supported under it.

Amendment 70

Proposal for a regulation
Article 15 c (new)

Text proposed by the Commission

Amendment

Article 15c

Open Access

1. Where a decision to publish is taken, open access to scientific publications resulting from publicly funded research under Horizon 2020 shall be mandatory.

2. Open access to scientific data resulting from publicly funded research under Horizon 2020 shall be promoted, taking into account constraints pertaining to privacy, national security and intellectual property rights.

3. The Commission shall evaluate, before the end of the financing period of Horizon
2020, the impact of the practice of open access to data on the circulation of scientific knowledge and the acceleration of innovation. This shall be done with a view to defining the further policy on open access and its implementation in the next Union research framework programme.

Amendment 71

Proposal for a regulation
Article 16 – paragraph 1 – subparagraph 1

Text proposed by the Commission

1. All the research and innovation activities carried out under Horizon 2020 shall comply with ethical principles and relevant national, Union and international legislation, including the Charter of Fundamental Rights of the European Union and the European Convention on Human Rights and its Supplementary Protocols.

Amendment

1. All research and innovation activities carried out under Horizon 2020 shall comply with ethical principles and relevant national, Union and international legislation, including the Charter of Fundamental Rights of the European Union and the European Convention on Human Rights and its Supplementary Protocols. The opinions of the European Group on Ethics in Science and New Technologies shall be taken into account.

Amendment 72

Proposal for a regulation
Article 16 – paragraph 3 and 4

Text proposed by the Commission

3. The following fields of research shall not be financed:
   (a) research activity aiming at human cloning for reproductive purposes;
   (b) research activity intended to modify the genetic heritage of human beings which could make such changes heritable;
   (c) research activities intended to create human embryos solely for the purpose of

Amendment

3. The following fields of research shall not be financed:
   (a) research activity aiming at human cloning for reproductive purposes;
   (b) research activity intended to modify the genetic heritage of human beings which could make such changes heritable;
   (c) activities intended to create human embryos solely for the purpose of research
research or for the purpose of stem cell procurement, including by means of somatic cell nuclear transfer.

4. Research on human stem cells, both adult and embryonic, may be financed, depending both on the contents of the scientific proposal and the legal framework of the Member States involved. No funding shall be granted for research activities that are prohibited in all the Member States. No activity shall be funded in a Member State where such activity is forbidden.

Amendment 73
Proposal for a regulation
Article 17

Text proposed by the Commission

Complementarity with other Union programmes
Horizon 2020 shall be implemented in a way which is complementary to other Union funding programmes, including the Structural Funds.

Amendment

Complementarity with other Union programmes
Horizon 2020 shall be implemented in a way which is complementary to other Union funding programmes.

Amendment 74
Proposal for a regulation
Article 17 a (new)

Text proposed by the Commission

Article 17a
Synergies with the Structural Funds
Horizon 2020 shall contribute to the closing of the research and innovation divide within the Union by enabling synergies with the Structural Funds in support of research and innovation through the implementation of complementary measures in a coordinated way. Where possible, the interoperability
between Horizon 2020 and the Structural Funds shall be promoted and cumulative or combined funding shall be encouraged.

Amendment 75

Proposal for a regulation
Article 18 – paragraph 1

Text proposed by the Commission
1. Particular attention shall be paid to ensuring the adequate participation of, and innovation impact on, small and medium-sized enterprises (SME) in Horizon 2020. Quantitative and qualitative assessments of SME participation shall be undertaken as part of the evaluation and monitoring arrangements.

Amendment
1. Particular attention shall be paid to ensuring the increased participation of, and research and innovation impact on, small and medium-sized enterprises (SME) throughout the implementation of Horizon 2020. Quantitative and qualitative assessments of SME participation shall be undertaken as part of the evaluation and monitoring arrangements.

Amendment 76

Proposal for a regulation
Article 18 – paragraph 2

Text proposed by the Commission
2. Specific actions shall be undertaken within the specific objective "Leadership in enabling and industrial technologies" set out in Point 1 of Part II of Annex I and each of the specific objectives under the priority "Societal challenges" set out in Points 1 to 6 of Part III of Annex I. These specific actions shall take the form of a dedicated SME instrument that is targeted at all types of SMEs with an innovation potential and shall be implemented in a consistent manner and tailored to the needs of SMEs as set out under the specific objective "Innovation in SMEs" in Point 3.3.(a) of Part II of Annex I.

Amendment
2. Specific actions for SMEs shall be undertaken to ensure that SMEs are integrated within the whole value chain and get access to all opportunities in Horizon 2020. Such actions include those set out under point 3.3 of part II of Annex I.

A dedicated SME instrument targeted at all types of SMEs with an innovation potential...
potential shall be created under a single management body and shall be implemented primarily in a bottom-up manner as set out under the specific objective "Innovation in SMEs" in Point 3.3.(a) of part II of Annex I. This instrument shall thematically relate to the specific objective "Leadership in enabling and industrial technologies" set out in Point 1 of Part II of Annex I and each of the specific objectives under the priority "Societal challenges" set out in Points 1 to 7 of Part III of Annex I.

Amendment 77

Proposal for a regulation

Article 18 – paragraph 3

Text proposed by the Commission

3. The integrated approach set out in paragraphs 1 and 2 is expected to lead to around 15% of the total combined budget for the specific objective on "Leadership in enabling and industrial technologies" and the priority "Societal challenges" going to SMEs.

Amendment

3. The integrated approach set out in paragraphs 1 and 2 and the simplification of the application procedures should reach at least 20% of the total combined budget for the specific objective on "Leadership in enabling and industrial technologies" and the priority "Societal challenges" going to SMEs.

3a. In accordance with paragraphs 1 and 3, the Commission shall carry out evaluations and record the rate of participation by SMEs in the research programmes. Should the target rate of 20% not be achieved, the Commission shall examine the reasons for this situation and shall propose, without delay, new measures for achieving the target.

3b. Particular attention shall also be paid to the adequate participation and representation of SMEs in the governing structures of the ERA and in particular of public-private partnerships.

Amendment 78
Proposal for a regulation  
Article 18 a (new)

Text proposed by the Commission

Amendment

Article 18a

Fast Track to Innovation

1. To accelerate the commercialisation and diffusion of innovation, a significant amount of the Union funding within the specific objective 'Leadership in enabling and industrial technologies' and in each of the 'Societal challenges' in Part III of Annex I shall be set aside for the 'Fast Track to Innovation'.

2. The 'Fast track to innovation' is an instrument following a bottom-up-driven logic that will speed up time from idea to market significantly and is expected to increase industry participation in Horizon 2020 as well as the participation of SMEs and first-time applicants from the public and non-profit research sector. Thereby it shall stimulate private sector R&D&I investment, promote research and innovation with a focus on value creation and accelerate the maturing of new technologies into innovative products being in demand, which will underpin future businesses and economic growth and employment.

3. Activities shall cover the whole innovation cycle, but shall focus on innovation-related activities, experimental and pre-commercial development, comprising the development stages from technology demonstration up to market uptake, including piloting, demonstration, test-beds, pre-normative research and standard setting, and market uptake of innovations.

4. The 'Fast track to innovation' shall be implemented as a visible funding instrument presenting a simple and fast entry into applied collaborative research, following a special selection process as set
out in Regulation (EU) No xxxx/2012 [Rules for Participation and Dissemination].

5. While synergies between the 'Fast Track to Innovation' and the dedicated SME instrument shall be taking into account, the two instruments shall be implemented in parallel as two separate procedures, taking due account of the respective targeted participant groups, and without affecting the budget that has been ringfenced for the SME instrument.

Justification

Taking due account of the programme's intended shift towards innovation, Horizon 2020 needs to provide at least one instrument that systematically allows innovative ideas to be evaluated and funded at any time, applying a fast, standardized and reliable procedure. An 'open call' or 'bottom up' instrument with a guaranteed six months of time-to-grant', will ensure that innovative ideas do not risk to be outdated once the project can finally start. This will also increase industry participation.

Amendment 79

Proposal for a regulation

Article 19

Text proposed by the Commission

Public-private partnerships

1. Horizon 2020 may be implemented through public-private partnerships where all the partners concerned commit to support the development and implementation of research and innovation activities of strategic importance to the Union's competitiveness and industrial leadership or to address specific societal challenges.

2. Involvement of the Union in those partnerships may take one of the following forms:

(a) financial contributions from the Union

Amendment

Public-private partnerships

1. Horizon 2020 may be implemented through public-private partnerships where all the partners concerned commit to support the development and implementation of pre-competitive research and innovation activities of strategic importance to the Union's competitiveness and industrial leadership or to address specific societal challenges. Excellence shall be key in selecting the participants.

2. Involvement of the Union in those partnerships may take one of the following forms:

(a) financial contributions from the Union
to joint undertakings established on the basis of Article 187 TFEU under the Seventh Framework Programme, subject to the amendment of their basic acts; to new public-private partnerships set up on the basis of Article 187 TFEU; and to other funding bodies referred to in Article [55(1)(b)(v) or (vii)] of Regulation (EU) No XX/2012 [New Financial Regulation]. This form of partnerships shall only be implemented where the scope of the objectives pursued and the scale of the resources required justify it; taking full account of the results of the cost benefit analysis to be conducted under the foreseen impact assessment of this instrument; to new public-private partnerships set up on the basis of Article 187 TFEU; and to other funding bodies referred to in Article [55(1)(b)(v) or (vii)] of Regulation (EU, Euratom) No 966/2012. This form of partnerships shall only be implemented where the scope of the objectives pursued, the consistency with existing Union policy objectives and the scale of the resources required justify it and where other forms of partnerships will not fulfil the objectives or will not generate the necessary leverage;

(b) entering a contractual agreement between the partners referred to in paragraph 1, which specifies the objectives of the partnership, respective commitments of the partners, key performance indicators, and outputs to be delivered including the identification of research and innovation activities that require support from Horizon 2020.

3. Public-private partnerships shall be identified in an open and transparent way based on all of the following criteria:

(a) the added value of action at Union level;

(b) the scale of impact on industrial competitiveness, sustainable growth and socio-economic issues;

(c) the long-term commitment from all partners based on a shared vision and clearly defined objectives;

(d) the scale of the resources involved and

(b) entering a contractual agreement between the partners referred to in paragraph 1, which specifies the objectives of the partnership, respective commitments of the partners, key performance indicators, and outputs to be delivered including the identification of research and innovation activities that require support from Horizon 2020.

3. Public-private partnerships shall be identified and implemented on the criteria of openness, transparency, effectiveness and efficiency as well as the fulfilment of the criterion set out in Article X of Regulation (EU) No xxxx/2012 [Rules for participation].
the ability to leverage additional investments in research and innovation;
(e) a clear definition of roles for each of the partners and agreed key performance indicators over the period chosen.

3a. The research priorities covered by public-private partnerships shall also be funded through the work programmes in regular calls for proposal.

Amendment 80
Proposal for a regulation
Article 20

Text proposed by the Commission

Public-public partnerships

1. Horizon 2020 shall contribute to the strengthening of public-public partnerships where actions at regional, national or international level are jointly implemented within the Union.

Particular attention shall be paid to joint programming initiatives between Member States.

2. Public-public partnerships may be supported either within, or across, the priorities set out in Article 5(2), in particular through:
(a) an ERA-NET instrument using grants to support public-public partnerships in their preparation, establishment of networking structures, design,

Amendment

Public-public partnerships

1. Horizon 2020 shall contribute to the strengthening of public-public partnerships where actions at regional, national or international level are jointly implemented within the Union.

Particular attention shall be paid to joint programming initiatives between Member States, and such initiatives may include regions and cities where relevant. The financial contribution of the Union shall be of a limited nature and shall always be conditional on the demonstration of transparency, large participation of Member States, the existence of a Union added value and the additionality of the resources. Top-up funding will be restricted to initiatives permanently open to participation from all Member States.

2. Public-public partnerships may be supported either within, or across, the priorities set out in Article 5(2), in particular through:
(a) an ERA-NET instrument using grants to support public-public partnerships in their preparation, establishment of networking structures, design,
implementation and coordination of joint activities as well as topping up of individual joint calls and of actions of a transnational nature;

(b) Union participation in programmes undertaken by several Member States in accordance with Article 185 TFEU.

For the purposes of point (a), top-up funding shall be conditional on a significant level of prior financial commitments of the participating entities to the joint calls and actions. The ERA-NET instrument may include an objective to harmonise rules and implementation modalities of the joint calls and actions. It may also be used in order to prepare for an initiative pursuant to Article 185 TFEU.

For the purposes of point (b) such initiatives shall only be proposed in cases where there is a need for a dedicated implementation structure and where there is a high level of commitment of the participating countries to integration at scientific, management and financial levels. In addition, proposals for initiatives referred to in point (b) shall be identified on the basis of all of the following criteria:

(a) a clear definition of the objective to be pursued and its relevance to the objectives of Horizon 2020 and broader Union policy objectives;

(b) clear financial commitments of the participating countries, including prior commitments to pool national and/or regional investments for transnational research and innovation;

(c) the added value of action at Union level;

(d) the critical mass, with regard to the size and the number of programmes involved, the similarity of activities and
the share of relevant research they cover;
(e) the efficiency of Article 185 TFEU as the most appropriate means for achieving the objectives.

Amendment 81
Proposal for a regulation
Article 21 – paragraph 1 – introductory part

Text proposed by the Commission

1. Entities established in third countries and international organisations shall be eligible to participate in indirect actions of Horizon 2020 under the conditions set out in Regulation (EU) XX/XX [Rules for Participation]. International cooperation with third countries and international organisations shall be promoted across and within Horizon 2020 to achieve, in particular, the following objectives:

Amendment

1. Entities established in third countries and international organisations shall be eligible to participate in indirect actions of Horizon 2020 under the conditions set out in Regulation (EU) XX/XX [Rules for Participation]. International cooperation with third countries and international organisations shall be promoted and integrated in Horizon 2020 to achieve, in particular, the following objectives:

Amendment 82
Proposal for a regulation
Article 21 – paragraph 1 – point c

Text proposed by the Commission

(c) supporting the Union's external and development policy objectives, complementing external and development programmes.

Amendment

(c) supporting the Union's external and development policy objectives, complementing external and development programmes and international commitments such as the achievement of the Millennium Development Goals;

Amendment 83
Proposal for a regulation
Article 21 – paragraph 1 – point c a (new)

Text proposed by the Commission

(ca) supporting the creation of globally
Amendment 84
Proposal for a regulation
Article 21 – paragraph 2 – subparagraph 1

Text proposed by the Commission

2. Targeted actions with the objective of promoting cooperation with specific third countries or groups of third countries shall be implemented on the basis of common interest and mutual benefit, taking into account their scientific and technological capabilities and market opportunities, and the expected impact.

Amendment

2. Targeted actions with the objective of promoting cooperation with specific third countries or groups of third countries, in particular with the strategic partners of the Union, shall be implemented on the basis of common interest and mutual benefit. Those actions shall include, in particular, research capacity building in developing countries and cooperation projects focusing on those countries’ specific needs. Account shall be taken, in those cooperative activities, of the scientific and technological capabilities of the outermost regions of the Union and the overseas countries and territories associated with the Union.

Amendment 85
Proposal for a regulation
Article 21 – paragraph 2 – subparagraph 2

Text proposed by the Commission

Reciprocal access to third country programmes should be encouraged. In order to maximise impact, coordination and synergies with initiatives of Member States and associated countries shall be promoted.

Amendment

Reciprocal access to third country programmes should be encouraged and periodically monitored. In order to maximise impact, coordination and synergies with initiatives of Member States and associated countries shall be promoted.

Justification

A periodical monitoring of third countries’ programmes is needed in order to make sure that the access guaranteed by the Union to Horizon 2020 is reciprocal. This monitoring shall identify changes in practices in third countries that may undermine this desired reciprocal
Amendment 86
Proposal for a regulation
Article 21 – paragraph 2 – subparagraph 3

Text proposed by the Commission
Cooperation priorities shall take into account developments in Union policy and opportunities for cooperation with third countries, as well as possible deficiencies in third country intellectual property systems.

Amendment
Cooperation priorities shall take into account developments in Union policy including external and development policies.

Justification
The only possible basis for international cooperation activities is the principle of common interest and mutual benefit. The inclusion of certain restrictive criteria at the level of the framework programme as a whole can only be counterproductive. The definition of the targeted actions proposed here is therefore the same as that in Annex I to the 7th Framework Programme. It is consistent with the choice of sectors to which the EU has decided to direct development aid.

Amendment 87
Proposal for a regulation
Article 21 – paragraph 2 – subparagraph 3 a (new)

Text proposed by the Commission

Amendment
Due coordination shall be established with migration, asylum and development policies, in order to avoid a "brain drain" from developing countries.

Amendment 88
Proposal for a regulation
Article 21 – paragraph 3

Text proposed by the Commission
3. In addition, horizontal and cross-cutting

Amendment
3. In addition, horizontal and cross-cutting
activities to promote the strategic development of international cooperation shall be implemented under Horizon 2020 under the specific objective ‘Inclusive, innovative and secure societies’ set out in Point 6.3.2(d) of Part III of Annex I.

Amendment 89
Proposal for a regulation
Article 21 – paragraph 3 a (new)

Text proposed by the Commission

Amendment

3a. In order to reduce the administrative burden for participants, national accounting practices of the beneficiaries shall be accepted by the Commission.

Amendment 90
Proposal for a regulation
Article 21 – paragraph 3 b (new)

Text proposed by the Commission

Amendment

3b. Beneficiaries who have executed their audits in a satisfactory manner for three consecutive years shall be subject to a lighter audit procedure, in order to foster an enhanced trust-based approach.

Amendment 91
Proposal for a regulation
Article 22 – paragraph 1

Text proposed by the Commission

Amendment

The European Commission shall implement information and communication actions concerning Horizon 2020, including communication measures

The Commission shall implement information and communication actions concerning Horizon 2020, including communication measures
supported projects and results. Budget allocated to communication under Horizon 2020 shall also contribute to covering the corporate communication of the Union's political priorities as far as they are related to the general objective of this Regulation.

**Amendment 92**

Proposal for a regulation  
Article 22 – paragraph 2

*Text proposed by the Commission*

Activities to disseminate information and carry out communication activities shall be an integral task under all of the actions supported by Horizon 2020.

*Amendment*

Activities to disseminate information and carry out communication activities shall be an integral task under all of the actions supported by Horizon 2020. All information and communication activities concerning Horizon 2020, including communication measures concerning supported projects, shall be made available and accessible to all citizens, and made public in digital form.

**Amendment 93**

Proposal for a regulation  
Article 22 – paragraph 2 a (new)

*Text proposed by the Commission*

In order to simplify access to information and to develop an instrument with all the information requested by the research community and, having regard the need for a transparency, Cordis, as a digital instrument shall be revised and reformed in a clearer and more flexible way. The New Cordis shall be finalised by 31 May 2013.
**Justification**

At the current time CORDIS is one of the most complex and difficult programs to deal with. If we want to make an easier access of society, researchers and companies to information, it is needed to review the program and to extend the information and make an easier access to all the proposals and grants.

**Amendment 94**

Proposal for a regulation

Article 22 – paragraph 3 – point a

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) initiatives aimed at widening awareness and facilitating access to funding under Horizon 2020, in particular for those regions or types of participant that are underrepresented;</td>
<td>(a) initiatives aimed at widening awareness and facilitating access to funding under Horizon 2020, in particular for those regions, <strong>overseas countries and territories associated with the Union</strong> or types of participant that are underrepresented, <strong>including researchers and participants with disabilities</strong>;</td>
</tr>
</tbody>
</table>

**Justification**

Emphasis must be place on persons with disabilities and their accessibility needs for the activities linked to information, communication and dissemination of Horizon 2020. In addition, there is a need for capacity-building as persons with disabilities and their representative organisations are under-represented groups in research and innovation programmes, as well as in dialogue and consultation with the public.

**Amendment 95**

Proposal for a regulation

Article 22 – paragraph 3 – point b

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
</tr>
</thead>
<tbody>
<tr>
<td>(b) targeted assistance to projects and consortia to provide them with access to the necessary skills to optimise the communication and dissemination of results;</td>
<td>(b) targeted assistance to projects and consortia to provide them with <strong>adequate</strong> access to the necessary skills to optimise the communication and dissemination of results;</td>
</tr>
</tbody>
</table>
Amendment 96

Proposal for a regulation
Article 22 – paragraph 3 – point c

Text proposed by the Commission

(c) actions which bring together results from a range of projects, including those that may be funded from other sources, to provide user-friendly databases and reports that summarise key findings;

Amendment

(c) actions which bring together and evaluate results from a range of projects, including those that may be funded from other sources, to provide user-friendly and accessible digital databases and to draw up reports that summarise key findings, and where relevant communication and dissemination to the scientific community, industry and the general public;

Amendment 97

Proposal for a regulation
Article 22 – paragraph 3 – point e

Text proposed by the Commission

(c) initiatives to foster dialogue and debate on scientific, technological and innovation related issues with the public, and to take advantage of social media and other innovative technologies and methodologies.

Amendment

(c) initiatives to foster dialogue and debate on scientific, technological and innovation related issues with the public through involvement of the academic community, and to take advantage of social media and other innovative technologies and methodologies, especially in order to help raise public awareness of the benefits of research and innovation in meeting society’s challenges;

Amendment 98

Proposal for a regulation
Article 22 – paragraph 3 – point e a (new)

Text proposed by the Commission

(ea) initiatives to include and promote the participation of civil society, and its organisations or institutions, in issues relating to the research and innovation
process and to foster open, science-based debates on major societal issues.

Amendment 99
Proposal for a regulation
Article 23 – paragraph 1

Text proposed by the Commission

1. The control system set up for the implementation of this Regulation shall be designed so as to provide reasonable assurance of achieving adequate management of the risks relating to the effectiveness and efficiency of the operations as well as the legality and regularity of the underlying transactions, taking into account the multi-annual character of programmes as well as the nature of the payments concerned.

Amendment

1. The control system set up for the implementation of this Regulation shall be designed so as to provide reasonable assurance of achieving sufficient reduction and adequate management of the risks relating to the effectiveness and efficiency of the operations as well as the legality and regularity of the underlying transactions, taking into account the multi-annual character of programmes as well as the nature of the payments concerned.

Amendment 100
Proposal for a regulation
Article 23 – paragraph 2

Text proposed by the Commission

2. The control system shall ensure an appropriate balance between trust and control, taking into account administrative and other costs of controls at all levels, so that the objectives of Horizon 2020 can be achieved and the most excellent researchers and the most innovative enterprises can be attracted to it.

Amendment

2. The control system shall ensure an appropriate balance between trust and control, taking into account administrative and other costs of controls at all levels, including at the level of beneficiaries, so that the objectives of Horizon 2020 can be achieved and the most excellent researchers and the most innovative enterprises can be attracted to it.

Justification

The administrative costs that beneficiaries may incur in order to comply with control requirements must be acknowledged and taken into account.

Amendment 101
<table>
<thead>
<tr>
<th>Proposal for a regulation</th>
<th>Amendment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Article 24 – paragraph 1 a (new)</td>
<td>1a. An ad hoc mediator shall be appointed, with responsibility for ensuring uniform interpretation of the rules. In the event of conflict about the interpretation of the rules or procedures, based for example on an independent re-audit produced by any interested party, the Commission may resolve the conflict through a compromise on the advice of the ad hoc mediator.</td>
</tr>
</tbody>
</table>

**Justification**

In the course of the 6th and 7th Framework Programmes there were numerous conflicts with beneficiaries about the interpretation of the rules, and it was clear from the process and results of the audits carried out by the Commission that it would be useful to establish a mediation procedure in order to avoid litigation. For the same purpose, a compromise procedure for rapid conflict resolution needs to be put in place.

**Amendment 102**

Proposal for a regulation
Article 24 – paragraph 2 – subparagraph 2

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without prejudice to paragraph 3, audits by the Commission may be carried out up to <em>four</em> years after the <em>final payment</em>.</td>
<td>Without prejudice to paragraph 3, audits by the Commission may be carried out up to <em>two</em> years after the <em>completion of a project</em>.</td>
</tr>
</tbody>
</table>

**Amendment 103**

Proposal for a regulation
Article 25 – paragraph 1

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The Commission shall annually monitor the implementation of Horizon 2020, its specific programme <em>and</em> the activities of the <em>European Institute of Innovation and</em></td>
<td>1. The Commission shall annually monitor the implementation of Horizon 2020, its specific programme, the activities of the <em>EIT and the implementation and funding</em></td>
</tr>
</tbody>
</table>
Technology. This shall include information on cross-cutting topics such as sustainability and climate change, including information on the amount of climate related expenditure.

of public-private and public-public partnerships. This shall include information and indicators on cross-cutting topics such as gender equality, responsible research and innovation, sustainability and climate change, including information on the amount of climate related expenditure, private sector and SME participation in particular and the real impact of measures to widen the participation.

Amendment 104

Proposal for a regulation
Article 25 – paragraph 1 a (new)

Text proposed by the Commission

1a. In order to deliver a future Union environment that offers a real increase in prosperity and in quality of life, the balance between economic, social and environmental aspects will need to be regularly and effectively monitored during the implementation of Horizon 2020. To this end, the Commission shall set up in advance a clear and transparent mechanism for such monitoring.

Amendment

Amendment 105

Proposal for a regulation
Article 25 – paragraph 2

Text proposed by the Commission

2. The Commission shall report and disseminate the results of that monitoring.

Amendment

2. The Commission shall report and disseminate the results of the monitoring referred to in paragraphs 1 and 1a, using, where appropriate, a set of common key indicators, comparable across the various instruments. In particular, they shall be transmitted to the European Parliament, the Council, the European Economic and Social Committee and the Committee of
Amendment 106  
Proposal for a regulation  
Article 26 – title  

Text proposed by the Commission  
Amendment

Evaluation  
Mid-term review

Amendment 107  
Proposal for a regulation  
Article 26 – paragraph 1 – introductory part  

Text proposed by the Commission  
Amendment

1. Evaluations shall be carried out in a sufficiently timely manner to feed into the decision-making process.

Amendment 108  
Proposal for a regulation  
Article 26 – paragraph 1 – point a  

Text proposed by the Commission  
Amendment

(a) Not later than end 2017, the Commission shall carry out, with the assistance of independent experts, a review of the European Institute of Innovation and Technology. The second allocation of funds to the European Institute of Innovation and Technology as set out in Article 6(3) shall be made available following this review. The review shall assess the progress of the European Institute of Innovation and Technology against all of the following:

(i) the level of consumption of the first allocation of funds set out in Article 6(3), differentiating between the amount of money used for the development of the first wave of KICs and the effect of the seed money for the second phase, and the
ability of the European Institute of Innovation and Technology to attract funds from the partners in the Knowledge and Innovation Communities and from the private sector, as set out in Regulation XX/2012 [revised EIT Regulation];

(ii) the agreed timing for the creation of the third wave of Knowledge and Innovation Communities and the programmed financial needs of existing ones according to their specific development; and

(iii) the contribution of the European Institute of Innovation and Technologies and the Knowledge and Innovation Communities to the priority on societal challenges and the specific objective on ‘leadership in enabling and industrial technologies’ of the programme Horizon 2020.

Justification

The next generation of KICs shall be launched in 2014 and the budget will be phased-in according to their yearly performances. The sectoral landscape in each sector being different, it would seem a healthier approach to base the budgetary decision on each KICs’ own merit rather than deciding on new KICs based on the performance of other KICs.

Amendment 109

Proposal for a regulation
Article 26 – paragraph 1 – point b

<table>
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<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
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<tr>
<td>(b) Not later than end 2017, and taking into account the ex-post evaluation of the Seventh Framework Programme to be completed by the end of 2015 and the review of the European Institute of Innovation and Technology, the Commission shall carry out, with the assistance of independent experts, an interim evaluation of Horizon 2020, its specific programme, including the European Research Council, and the</td>
<td>(b) Not later than end 2017, and taking into account the ex-post evaluation of the Seventh Framework Programme to be completed by the end of 2015, the Commission shall carry out, with the assistance of independent experts, a mid-term review of Horizon 2020, its specific programme, including the European Research Council, and the activities of the EIT.</td>
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activities of the European Institute of Innovation and Technology, on the achievements (at the level of results and progress towards impacts) of the objectives of Horizon 2020 and continued relevance of all the measures, the efficiency and use of resources, the scope for further simplification, and Union added value. That evaluation shall also take into consideration aspects relating to access to funding opportunities for participants in all regions, for SMEs and for promoting gender balance. That evaluation shall additionally take into account the contribution of the measures to the Union priorities of smart, sustainable and inclusive growth and results on the long-term impact of the predecessor measures.

As part of the mid-term review, both existing and new public-private partnerships, including the JTIs, shall be subject to an in-depth assessment in order to analyse their European added value and the Commission shall submit proposals if necessary to improve their governance and functioning, in view of ensuring more effective and efficient impact, open and transparent functioning and avoiding conflicts of interests. The Commission shall present the result of this assessment to the European Parliament and the Council.

If the in-depth assessment reveals that the criterion of European added value is not satisfactorily met, the European Parliament and the Council may decide to no longer provide funding to these public-private partnerships.

The mid-term review shall take into consideration aspects relating to the dissemination and exploitation of research results. The mid-term review shall assess the progress of the different parts of Horizon 2020 against all of the following:

(i) the achievements (at the level of results
and progress towards impacts, based on the indicators outlined in Annex II of the Specific Programme) of the objectives of Horizon 2020 and continued relevance of all the measures;

(ii) the efficiency and use of resources, with particular attention paid to cross-cutting actions and other elements referred to in Article 13(1); and

(iii) the Union added value.

The mid-term review shall also take into consideration the scope for further simplification and aspects relating to access to funding opportunities for participants in all regions, for SMEs and for promoting gender balance. It shall additionally take into account the contribution of the measures to the Union priorities of smart, sustainable and inclusive growth and results on the long-term impact of the predecessor measures. It shall be carried out in association with the Member States so as to ensure that research and innovation policies implemented in the Member States and by local authorities are complementary and offer Union added value.

Amendment 110

Proposal for a regulation
Article 26 – paragraph 1 a (new)

Text proposed by the Commission

Amendment

1a. As part of the mid-term review referred to in point (b) of paragraph 1, the Commission shall provide concrete evidence, if available, of the complementarity and synergies achieved between the Union budget and the Members States' budgets in achieving the Europe 2020 R& D target as well as the Europe 2020 innovation headline indicator.
Amendment 111
Proposal for a regulation
Article 26 – paragraph 1 b (new)

Text proposed by the Commission

Amendment

1b. Not later than 2016, and every two years thereafter, the Commission shall conduct a review of Union organisations’ and third-country organisations’ reciprocal access to research programmes. The review shall be conducted country by country and shall include a comparison between the funding received by third-country organisations from Horizon 2020 and that received by Union organisations from third countries’ research programmes.

Justification

In order to ensure genuine reciprocity for third-country organisations’ access to Horizon 2020, access to the programme should be regularly reviewed and the allocation of Horizon 2020 funding to third-country organisations should be monitored.

Amendment 112
Proposal for a regulation
Article 26 a (new)

Text proposed by the Commission

Amendment

Article 26 a

Exercise of delegation

1. The power to adopt the delegated acts is conferred on the Commission subject to the conditions laid down in this Article.

2. The power to adopt delegated acts referred to in Article 6 shall be conferred on the Commission for a period of five years from [XX]. The Commission shall draw up a report in respect of the delegated power not later than six months
before the end of the five-year period. The delegation of power shall be tacitly extended for periods of an identical duration, unless the European Parliament or the Council opposes such extension not later than three months before the end of each period.

3. The delegation of powers referred to in Article 6 may be revoked at any time by the European Parliament or by the Council. A decision to revoke shall put an end to the delegation of power specified in that decision. It shall take effect the day following the publication of the decision in the Official Journal of the European Union or at a later date specified therein. It shall not affect the validity of any delegated acts already in force.

4. As soon as it adopts a delegated act, the Commission shall notify it simultaneously to the European Parliament and to the Council.

5. A delegated act adopted pursuant to Article 6 shall enter into force only if no objection has been expressed either by the European Parliament or the Council within a period of two months of notification of that act to the European Parliament and the Council or if, before the expiry of that period, the European Parliament and the Council have both informed the Commission that they will not object. That period shall be extended by two months at the initiative of the European Parliament or of the Council.

Amendment 113

Proposal for a regulation
Annex I – Broad lines of the specific objectives and activities – paragraphs 1 to 6

Text proposed by the Commission

Horizon 2020 has the general objective to build an economy based on knowledge and

Amendment

Horizon 2020 has the general objective to build a world-leading economy and a
innovation across the whole Union, while contributing to sustainable development. It will support the Europe 2020 strategy and other Union policies as well as the achievement and functioning of the European Research Area.

The performance indicators for assessing progress against this general objective are:
- the Europe 2020 R&D target (3 % of GDP);
- the Europe 2020 innovation headline indicator.

This general objective shall be pursued through three distinct, yet mutually reinforcing, priorities, each containing a set of specific objectives. They will be implemented in a seamless manner in order to foster interactions between the different specific objectives, avoid any duplication of effort and reinforce their combined impact.

society based on knowledge and innovation across the whole Union, while contributing to sustainable development. It will support the Europe 2020 strategy and other Union policies as well as the achievement and functioning of the European Research Area.

The performance indicators for assessing progress against this general objective are:
- the Europe 2020 R&D target (3 % of GDP);
- the Europe 2020 innovation headline indicator;
- the following human resources indicators: change in the fraction of researchers (FTE) in the active population; change in the proportion of women in the total number of researchers; changes in the attraction of researchers from abroad and in the brain drain of researchers.

All performance indicators shall be used in order to highlight change, to make visible progress in the Union's research participation imbalances and to allow for comparison at international level.

This general objective shall be pursued through three distinct, yet mutually reinforcing, priorities, each containing a set of specific objectives. They will be implemented in a seamless manner in order to foster interactions between the different specific objectives, avoid any duplication of effort and reinforce their combined impact.

All three priorities shall include an international dimension. International scientific and technological cooperation is a critical issue for the Union and is in particular essential for frontier and basic research in order to capture the benefits from emerging science and technology opportunities. As a consequence, the share for the international cooperation activities described in Article 21(2) and
(3) shall be at least maintained at the level of the previous Framework programme. In particular, Horizon 2020 will support three main dimensions of international cooperation:

- promoting scientific and technological (S&T) cooperation with the most advanced centres of knowledge in the world, in order to achieve and share the most advanced standards of excellence, and to pursue competition at the highest levels;

- promoting international S&T cooperation for capacity building, helping institutions in the Union, from the very start, to contribute to and to share the benefits of the fast expansion of R&D capabilities and human resources worldwide;

- promoting S&T cooperation for peace and stability world-wide, recognising the fundamental role that human and societal values of science and research can bring to the consolidation of fragile societies and to the appeasement of international conflicts.

The Joint Research Centre shall contribute to the general objective and priorities of Horizon 2020 with the specific objective of providing customer-driven scientific and technical support to Union policies. The European Institute of Innovation and Technology (EIT) shall contribute to the general objective and priorities of Horizon 2020 with the specific objective of integrating the knowledge triangle of

The Union added value of the Joint Research Centre shall be assessed, inter alia, against the following indicators:

- number of occurrences of tangible specific impacts on Union policies resulting from technical and scientific policy support provided by the Joint Research Centre;

- number of peer reviewed publications.

The European Institute of Innovation and Technology (EIT) shall contribute to the general objective and priorities of Horizon 2020 with the specific objective of integrating the knowledge triangle of
research, innovation and education. The indicators for assessing the performance of the EIT are:

- organisations from universities, business and research integrated in the Knowledge and Innovation Communities;
- collaboration inside the knowledge triangle leading to the development of innovative products and processes.

This Annex sets out the broad lines of those specific objectives and activities referred to in Article 5(2), (3) and (4).

In order to achieve appropriate balance between consensus-based and more disruptive R&D&I, the use of open calls following a bottom-up logic - with accelerated procedures shall be fostered to ensure fast realisation of innovative projects. Furthermore, the right balance shall be struck within the societal challenges and the enabling and industrial technologies between smaller and bigger projects, taking into account the specific sector structure, type of activity, technology and research landscape.

In order to help close the research and innovation divide across areas, regions and Member States in Europe, complementarity and close synergies will be developed with the Structural Funds both upstream (capacity-building in the Member States to better prepare their participation in Horizon 2020) and downstream (exploit and diffuse research and innovation results stemming from Horizon 2020). Where possible, the interoperability between the two instruments will be promoted. Cumulative or combined funding will be encouraged. Synergies will in particular be sought in the activities set out in the "Widening excellence and widening participation" objective, the regional partner facilities of research infrastructure of European
Amendment 114

Proposal for a regulation
Annex I – Broad lines of the specific objectives and activities – Part I

Text proposed by the Commission

This Part aims to reinforce and extend the excellence of the Union's science base and to consolidate the European Research Area in order to make the Union's research and innovation system more competitive on a global scale. It consists of four specific objectives:

(a) The European Research Council (ERC) shall provide attractive and flexible funding to enable talented and creative individual researchers and their teams to pursue the most promising avenues at the frontier of science, on the basis of Union-wide competition.

(b) Future and emerging technologies shall support collaborative research in order to extend Europe's capacity for advanced and paradigm-changing innovation. It shall foster scientific collaboration across disciplines on radically new, high-risk ideas and accelerate development of the most promising emerging areas of science and technology as well as the Union wide structuring of the corresponding scientific communities.

(c) Marie Curie actions shall provide excellent and innovative research training as well as attractive career and knowledge-exchange opportunities through cross-border and cross-sector mobility of researchers to best prepare them to face current and future societal challenges.

Amendment

This Part aims to reinforce and extend the excellence of the Union's science base and to consolidate the European Research Area in order to make the Union's research and innovation system more competitive on a global scale. It consists of five specific objectives:

(a) The European Research Council (ERC) shall provide attractive and flexible funding to enable talented and creative individual researchers and their teams to pursue the most promising avenues at the frontier of science, on the basis of Union-wide competition.

(b) Future and emerging sciences and technologies shall support collaborative research in order to extend Europe's capacity for advanced and paradigm-changing innovation. It shall foster scientific collaboration across disciplines on radically new, high-risk ideas and accelerate development of the most promising emerging areas of science and technology as well as the Union wide structuring of the corresponding scientific communities.

(c) Marie Skłodowska-Curie actions shall provide excellent and innovative research training as well as attractive career and knowledge-exchange opportunities through cross-border and cross-sector mobility of researchers from universities, research organisations and enterprises, including SMEs, to best prepare them to face current and future societal challenges.
(d) Research **infrastructure** shall develop European research **infrastructure for 2020 and beyond**, foster their innovation potential and human capital, and complement this with the related Union policy and **international cooperation**.

Each of these has been proven to have high Union added value. Together, they form a powerful and balanced set of activities which, in concert with activities at national and regional levels, span the breadth of Europe’s needs regarding advanced science and technology. Bringing them together in a single programme will enable them to operate with greater coherence, in a rationalised, simplified and more focused way, while maintaining the continuity which is vital to sustain their effectiveness.

The activities are inherently forward-looking, building skills in the long term, focusing on the next generation of science, technology, researchers and innovations and providing support for emerging talent from across the whole of the Union and associated countries, as well as worldwide. In view of their science-driven nature and largely ‘bottom-up’, investigator-driven funding arrangements, the European scientific community will play a strong role in determining the avenues of research followed under the programme.

(d) Research **infrastructures** shall develop and support excellent existing and new European research **infrastructures** and assist them to operate for the ERA by fostering their innovation potential, attracting world level researchers, training human capital, and complementing this with the **international cooperation** Union policy.

**(da) Spreading excellence and widening participation shall unlock the potential of Europe's talent pool by giving support to policy learning, networking and training opportunities;**

Each of these has been proven to have high Union added value. Together, they form a powerful and balanced set of activities which, in concert with activities at national, regional and **local** levels, span the breadth of Europe’s needs regarding advanced science and technology. Bringing them together in a single programme will enable them to operate with greater coherence, in a rationalised, simplified and more focused way, while maintaining the continuity which is vital to sustain their effectiveness.

The activities are inherently forward-looking, building skills in the long term, focusing on the next generation of science, technology, researchers and innovations and providing support for emerging talent from across the whole of the Union and associated countries, as well as worldwide. In view of their science-driven nature and largely ‘bottom-up’, investigator-driven funding arrangements, the European scientific community will play a strong role in determining the avenues of research followed under the programme.
### Amendment 115

**Proposal for a regulation**  
**Annex I – Broad lines of the specific objectives and activities – Part II**

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
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<tr>
<td>This Part aims to speed up development of the technologies and innovations that will underpin tomorrow's businesses and help innovative European SMEs to grow into world-leading companies. <strong>It</strong> consists of three specific objectives:</td>
<td>This Part aims to speed up development of the technologies and innovations that will underpin tomorrow's businesses and help innovative European SMEs to grow into world-leading companies <strong>as well as harvest the potential of establishing fertile ground for novel SMEs.</strong> <strong>Special attention shall be paid to promoting &quot;innovation consumption&quot;, that is knowledge and technology transfer from public research centres to companies as well as between companies.</strong> This part consists of three specific objectives:</td>
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(a) Leadership in enabling and industrial technologies shall provide dedicated support for research, development and demonstration on ICT, nanotechnology, advanced materials, biotechnology, advanced manufacturing and processing **and** space. Emphasis will be placed on interactions and convergence across and between the different technologies.  

(b) Access to risk finance shall aim to overcome deficits in the availability of debt and equity finance for R&D and innovation-driven companies and projects at all stages of development. Together with the equity instrument of the Programme for the Competitiveness of Enterprises and SMEs, it shall support the development of Union-level venture capital.  

(c) Innovation in SMEs shall **stimulate** all forms of innovation in SMEs, **targeting**

(b) Access to risk finance shall aim to overcome deficits in the availability of debt and equity finance for R&D and innovation-driven companies and projects at all stages of development. Together with the equity instrument of the Programme for the Competitiveness of Enterprises and SMEs, it shall support the development of Union-level **early stage funding and** venture capital.  

(c) "Innovation in SMEs" shall **provide SME-tailored support to** all forms of
those with the potential to grow and internationalise across the single market and beyond.

The activities shall follow a business-driven agenda. The budgets for the specific objectives 'Access to risk finance' and 'Innovation in SMEs' will follow a demand-driven, bottom-up logic, without predetermined priorities. These shall be complemented by the use of financial instruments and a dedicated SME instrument following a policy driven logic within the Part on 'Societal challenges' and the specific objective 'Leadership in enabling and industrial technologies'.

Horizon 2020 will take an integrated approach to the participation of SMEs, which could lead to around 15% of the total combined budgets for all specific objectives on societal challenges and the specific objective 'Leadership in enabling and industrial technologies' being devoted to SMEs.

The specific objective 'Leadership in enabling and industrial technologies' shall follow a technology-driven approach to develop enabling technologies that can be used in multiple areas, industries and services. Applications of these technologies to meet societal challenges shall be supported together with the Societal challenges.

innovation in SMEs, through a toolbox of specialised and customised programmes and instruments including: access to seed funding, grants, access to equity and debt finance, mentoring and coaching services, access to R&D networks and clusters.

The activities shall follow a business-driven agenda. The implementation of the budgets for 'Access to risk finance' and 'Innovation in SMEs' will follow primarily a demand-driven, bottom-up logic. The SME instrument shall be implemented within the thematic priority areas established under the "Societal challenges" and "Leadership in enabling and industrial technology". These shall be complemented by the possible top-down use of the SME instrument as part of pre-commercial procurement or innovative procurement activities, where the pooling at Union level of public procurers needs in the Member States can be demonstrated.

Horizon 2020 will take an integrated approach to the participation of SMEs, taking into account their knowledge and technology transfer needs. Support should lead to over 20% of the total combined budgets for all specific objectives on societal challenges and the specific objective 'Leadership in enabling and industrial technologies' being devoted to SMEs.

The specific objective 'Leadership in enabling and industrial technologies' shall follow a technology-driven approach to develop enabling technologies that can be used in multiple areas, industries and services. Applications of these technologies to meet societal challenges shall be supported together with the Societal challenges.
Amendment 116

Proposal for a regulation
Annex I – Broad lines of the specific objectives and activities – Part III

Text proposed by the Commission

This Part responds directly to the policy priorities and societal challenges identified in the Europe 2020 strategy and aiming to stimulate the critical mass of research and innovation efforts needed to achieve Union's policy goals. Funding shall be focused on the following specific objectives:

(a) Health, demographic change and wellbeing;

(b) Food security, sustainable agriculture, marine and maritime research, and the bio-economy;

(c) Secure, clean and efficient energy;

(d) Smart, green and integrated transport;

(e) Climate action, resource efficiency and raw materials;

(f) Inclusive, innovative and secure societies.

Amendment

This Part responds directly to the policy priorities and societal challenges identified in the Europe 2020 strategy and aiming to stimulate the critical mass of research and innovation efforts needed to achieve Union's policy goals. Funding shall be focused on the following specific objectives:

(a) Health, demographic change and wellbeing;

(b) Food quality, safety and security, sustainable agriculture and forestry, marine and maritime research and the bio-based industries;

(c) Secure, clean and efficient energy;

(d) Smart, green and integrated transport and mobility;

(e) Climate action, environment, resource efficiency and sustainable use of raw materials;

(f) Understanding Europe in a changing world - inclusive, innovative and reflective society;

(fa) Secure societies - Protecting freedom and security of Europe and its citizens.

Funding shall also be provided to a cross-cutting challenge: Science with and for society.

All the activities shall take a challenge-based approach, focusing on policy priorities without predetermining the precise choice of technologies or solutions that should be developed. The emphasis shall be on bringing together a critical mass of resources and knowledge across different fields, technologies and scientific disciplines in order to address the

(f) in which basic science, applied research, knowledge transfer and innovation are equally important and interlinked components, focusing on policy priorities without predetermining the precise choice of technologies or solutions that should be developed. Non-technological, organisational, systems
challenges. The activities shall cover the full cycle from research to market, with a new focus on innovation-related activities, such as piloting, demonstration, test-beds, support for public procurement, design, end-user driven innovation, social innovation and market take-up of innovations.

**innovation and public sector innovation will be given attention in addition to technology driven solutions.** The emphasis shall be on bringing together a critical mass of resources and knowledge across different fields, technologies and scientific disciplines and research infrastructures in order to address the challenges. The activities shall cover the full cycle from fundamental research to market, including innovation-related activities, such as piloting, demonstration, test-beds, support for public procurement, design, end-user driven innovation, social innovation and market take-up of **knowledge transfer and innovations including standardisation at all stages.** In order to achieve the objectives of Horizon 2020, it will be necessary to engage a wide variety of stakeholders in the collaborative projects, from research institutions and enterprises to users from public and private sectors.

In order to take the challenge-based approach, a coordinated strategic planning of research and innovation activities is needed. Coordination can address fragmentation and improve the use of technological and infrastructural resources by the entire research community related to each challenge.

Strategic actions and scientific steering can ensure expert input on policy from the outset, advance innovation and competitiveness by understanding the complexity of the innovation cycle, and encourage participation from more researchers across borders.

Based on need and demand strategic research and innovation coordination on each challenge can be established through Strategic Scientific panels of independent high-level experts from academia, industry, end-users and civil society, selected through an open and transparent process, which will contribute to defining research and innovation programmes based on the best leadership
Social sciences and humanities shall be an integral part of the activities to address all the challenges. In addition, the underpinning development of these disciplines shall be supported under the specific objective ‘Inclusive, innovative and secure societies’. Support will also focus on providing a strong evidence base for policy making at international, Union, national and regional levels. Given the global nature of many of the challenges, strategic cooperation with third countries shall be an integral part of each challenge. In addition, cross-cutting support for international cooperation shall be provided under the specific objective ‘Inclusive, innovative and secure societies’.

The specific objective ‘Inclusive, innovative and secure societies’ also includes an activity to close the research and innovation divide with specific measures to unlock excellence in less developed regions of the Union.

The Joint Research Centre’s activities shall be an integral part of Horizon 2020, in order to provide robust, evidence-based support for Union policies. This shall be driven by customer needs, complemented by forward-looking activities.

The EIT shall play a major role by bringing together excellent research, education and

and will provide the impetus and instruments needed to promote interaction and synergies on a larger scale. The role of these panels would be to provide ongoing strategic advice on the actions being undertaken and planned in under Horizon 2020 and the related Union policy areas.

Social sciences and humanities shall be a horizontal dimension and an integral part of the activities to address all the challenges. They are to be represented in programme committees and experts' groups in charge of project and programme evaluation in all topics and through development of social sciences oriented calls. In addition, the underpinning development of these disciplines shall be supported under the specific objective ‘Understanding Europe in a changing world - inclusive, innovative and reflective society’. Support will also focus on providing a strong evidence base for policy making at international, Union, national, regional and local levels. Given the global nature of many of the challenges, strategic cooperation with third countries shall be an integral part of each challenge paying special attention to supporting global efforts that require a critical mass for Europe to participate and where Europe could take the lead.

The Joint Research Centre’s activities shall be an integral part of Horizon 2020, in order to provide robust, evidence-based support for Union policies. This shall be driven by customer needs, complemented by forward-looking activities.

The EIT shall play a major role by bringing together excellent research, education and
innovation thus integrating the knowledge triangle. The EIT shall do so primarily through the Knowledge and Innovation Communities (KICs). In addition it shall ensure that experiences are shared beyond the KICs through targeted dissemination and knowledge sharing measures, thereby promoting a faster uptake of innovation models across the Union.

Amendment 117
Proposal for a regulation
Annex I – Part I – point 1

Text proposed by the Commission

1. European Research Council (ERC)
1.1 Specific objective
The specific objective is to reinforce the excellence, dynamism and creativity of European research.

Europe has set out its ambition to move to a new economic model based on smart, sustainable and inclusive growth. This type of transformation will need more than incremental improvements to current technologies. It will require much higher capacity for science-based innovation fuelled by radical new knowledge, allowing Europe to take a leading role in creating the technological paradigm shifts which will be the key drivers of productivity growth, competitiveness, wealth and social progress in the future. Such paradigm shifts have historically tended to originate from the public-sector science base before going on to lay the foundations for whole new industries and sectors.

World-leading innovation is closely associated with excellent science. Once the undisputed leader, Europe has fallen

Annex I

Amendment

1. European Research Council (ERC)
1.1 Specific objective
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Europe has set out its ambition to move to a new economic model based on smart, sustainable and inclusive growth. This type of transformation will need more than incremental improvements to current technologies and knowledge. It will require much higher capacity for basic science and science-based innovation fuelled by radical new knowledge, allowing Europe to take a leading role in creating the scientific and technological paradigm shifts which will be the key drivers of productivity growth, competitiveness, wealth and social progress in the future. Such paradigm shifts have historically tended to originate from the public-sector before going on to lay the foundations for whole new industries and sectors.

World-leading innovation is closely associated with excellent science. Once the undisputed leader, Europe has fallen
behind in the race to produce the very best cutting-edge science and has played a secondary role to the United States of America in the major post-war technological advances. Although the Union remains the largest producer of scientific publications in the world, the United States of America produces twice as many of the most influential papers (the top 1% by citation count). Similarly, international university rankings show that US universities dominate the top places. And 70% of the world’s Nobel Prize winners are based in the USA.

One part of the challenge is that, while Europe and the United States of America invest similar amounts in their public-sector science bases, the Union has nearly three times as many public-sector researchers, resulting in significantly lower investment per researcher. Moreover, US funding is more selective about allocating resources to the leading researchers. This helps to explain why the Union’s public-sector researchers are, on average, less productive and, altogether, make less combined scientific impact than their far less numerous US counterparts.

Another major part of the challenge is that in many European countries the public sector still does not offer sufficiently attractive conditions for the best researchers. It can take many years before talented young researchers are able to become independent scientists in their own right. This leads to a dramatic waste of Europe’s research potential by delaying the emergence of the next generation of researchers, who bring new ideas and energy, and by enticing excellent researchers starting their career to seek advancement elsewhere.

One part of the challenge is that, while Europe and the United States of America invest similar amounts in their public-sector science bases, the Union has nearly three times as many public-sector researchers, resulting in significantly lower investment per researcher. Moreover, US funding is more selective about allocating resources to the leading researchers. This helps to explain why the Union’s public-sector researchers are, on average, less productive and, altogether, make less combined scientific impact than their far less numerous US counterparts.

Another major part of the challenge is that in many European countries the public and private sector still does not offer sufficiently attractive conditions for the best researchers. It can take many years before talented young researchers are able to become independent scientists in their own right. This leads to a dramatic waste of Europe’s research potential by delaying the emergence of the next generation of researchers, who bring new ideas and energy, and by enticing excellent researchers starting their career to seek advancement elsewhere. Particular attention should be paid to women scientists, who represent only 18% of grade A researchers, as compared to 27% in the USA, while 60% of European university graduates are women.
Furthermore, these factors compound Europe’s relative unattractiveness in the global competition for scientific talent. The ability of the US system to offer more resources per researcher and better career prospects explains how it continues to attract the best researchers from across the world, including tens of thousands from the Union.

1.2 Rationale and Union added value

The ERC was created to provide Europe’s best researchers, both women and men, with the resources they need to allow them to compete better at global level, by funding individual teams on the basis of pan-European competition. It operates autonomously: an independent Scientific Council made up of scientists, engineers and scholars of the highest repute and expertise establishes the overall scientific strategy and has full authority over decisions on the type of research to be funded. These are essential features of the ERC, guaranteeing the effectiveness of its scientific programme, the quality of its operations and peer-review process and its credibility in the scientific community.

Operating across Europe on a competitive basis, the ERC is able to draw on a wider pool of talents and ideas than would be possible for any national scheme. The best researchers and the best ideas compete against each other. Applicants know they have to perform at the highest level, the reward being flexible funding on a level playing field, irrespective of local bottlenecks or the availability of national funding.

Frontier research funded by the ERC is thereby expected to have a substantial direct impact in the form of advances at the frontiers of knowledge, opening the way to...
new and often unexpected scientific and technological results and new areas for research which, ultimately, can generate the radically new ideas which will drive innovation and business inventiveness and tackle societal challenges. This combination of excellent individual scientists with innovative ideas underpins every stage of the innovation chain.

Beyond this, the ERC has a significant structural impact by generating a powerful stimulus for driving up the quality of the European research system as a whole, over and above the researchers and projects which the ERC funds directly. ERC-funded projects and researchers set a clear and inspirational target for frontier research in Europe, raise its profile and make it more attractive for the best researchers at global level. The prestige of hosting ERC grant-holders and the accompanying ‘stamp of excellence’ are intensifying competition between Europe’s universities and other research organisations to offer the most attractive conditions for top researchers. And the ability of national systems and individual research institutions to attract and host ERC grant-winners sets a benchmark allowing them to assess their relative strengths and weaknesses and reform their policies and practices accordingly. ERC funding is therefore in addition to ongoing efforts at Union, national and regional levels to reform, build capacity and unlock the full potential and attractiveness of the European research system.

1.3 Broad lines of activities

The fundamental activity of the ERC shall be to provide attractive long-term funding to support excellent investigators and their research teams to pursue ground-breaking, high-gain/high-risk research.

ERC funding shall be awarded in...
accordance with the following well-established principles. Scientific excellence shall be the sole criterion on which ERC grants are awarded. The ERC shall operate on a ‘bottom-up’ basis without predetermined priorities. The ERC grants shall be open to individual teams of researchers of any age and from any country in the world, working in Europe. The ERC shall aim to foster healthy competition across Europe. And the ERC shall give particular priority to assisting excellent starting researchers to make the transition to independence by providing adequate support at the critical stage when they are setting up or consolidating their own research team or programme.

The ERC shall also give support, as necessary, to emerging new ways of working in the scientific world with the potential to create breakthrough results and facilitates exploration of the commercial and social innovation potential of the research which it funds.

By 2020, the ERC therefore shall aim to demonstrate: that the best researchers are participating in the ERC’s competitions, that ERC funding has led directly to scientific publications of the highest quality and to the commercialisation and application of innovative technologies and ideas and that the ERC has contributed significantly to making Europe a more attractive environment for the world's best scientists. In particular, the ERC shall target a measurable improvement in the Union's share of the world's top 1% most highly cited publications. In addition it shall aim at a substantial increase in the number of excellent researchers from
outside Europe whom it funds and specific improvements in institutional practices and national policies to support top researchers. at an increase in the number of excellent researchers from outside Europe whom it funds, including an increase of excellent female researchers, and specific improvements in institutional practices and national policies to support top researchers. The ERC shall share experience and best practices with regional and national research funding agencies in order to promote the support of excellent researchers. Moreover, the ERC shall further raise the visibility of its programmes in order to attract excellent researchers.

The ERC's Scientific Council shall continuously monitor the ERC's operations and consider how best to achieve its objectives by means of grant schemes that emphasise clarity, stability and simplicity, both for applicants and in their implementation and management, and, as necessary, to respond to emerging needs. It shall endeavour to sustain and further refine the ERC's world-class peer-review system which is based on transparent, fair and impartial treatment of proposals so that it can identify ground-breaking scientific excellence and talent regardless of a researcher's gender, nationality or age. Finally, the ERC shall continue conducting its own strategic studies to prepare for and support its activities, maintain close contacts with the scientific community and other stakeholders and look to make its activities complement research conducted at other levels.

The ERC's Scientific Council shall continuously monitor the ERC's operations and evaluation procedures and consider how best to achieve its objectives by means of grant schemes that emphasise effectiveness, clarity, stability and simplicity, both for applicants and in their implementation and management, and, as necessary, to respond to emerging needs. It shall endeavour to sustain and further refine the ERC's world-class peer-review system ensuring transparent, fair and impartial treatment of proposals so that it can identify ground-breaking scientific excellence, breakthrough ideas and talent regardless of a researcher's gender, nationality, origin institution or age. The ERC shall continue conducting its own strategic studies to prepare for and support its activities, maintain close contacts with the scientific community and other stakeholders and look to make its activities complement research conducted at other levels avoiding overlap with other research activities.

The ERC will ensure transparency in communication about its activities and results to the scientific community and the general public and maintain updated data from funded projects.
Amendment 118

Proposal for a regulation
Annex I – Part I – point 2 – title – point 2.1

Text proposed by the Commission

2. Future and Emerging Technologies (FET)

The specific objective is to foster radically new technologies by exploring novel and high-risk ideas building on scientific foundations. By providing flexible support to goal-oriented and interdisciplinary collaborative research on various scales and by adopting innovative research practices, the aim is to identify and seize opportunities of long-term benefit for citizens, the economy and society.

Amendment

2. Future and Emerging Sciences and Technologies (FEST)

The specific objective is to foster frontier research, including radically new technologies and high risk ideas with the potential to open new fields for European science and technology. By providing flexible support to goal-oriented and interdisciplinary collaborative research on various scales and by adopting innovative research practices, the aim is to identify and seize opportunities of long-term benefit for citizens, the economy and society. Smart specialisation platforms have a key role to play in this respect, particularly in terms of creation and networking, the exchange of information, twinning schemes and support for research and innovation policies.

FEST will promote excellence through collaborative projects focused on frontier research in future and emerging science and technology opportunities. Spanning the full field of collaborative frontier research from basic frontier science to technological frontier developments, and fostering collaboration across borders from the very early stages of research and onwards, FEST will bring Union added value to the frontier of modern research and will help to build collaborative critical mass in excellent research across Europe.

FET shall promote research beyond what is known, accepted or widely adopted and shall foster novel and visionary thinking to open promising paths towards powerful new technologies, some of which could develop into leading technological and intellectual paradigms for the decades ahead. FET shall foster efforts to pursue
small-scale research opportunities across all areas, including emerging themes and grand scientific and technological (S&T) challenges that require federation and collaboration between programmes across Europe and beyond. This approach shall be driven by excellence and extends to exploring pre-competitive ideas for shaping the future of technology, enabling society to benefit from multi-disciplinary research collaboration that needs to be engaged at European level by making the link between research driven by science and research driven by societal challenges or by industrial competitiveness.

Amendment 119
Proposal for a regulation
Annex I – Part I – point 2 – point 2.2

Text proposed by the Commission

Radical breakthroughs with a transformative impact increasingly rely on intense collaboration across disciplines in science and technology (for instance, information and communication, biology, chemistry, earth system sciences, material sciences, neuro- and cognitive sciences, social sciences or economics) and with the arts and humanities. This requires not only excellence in science and technology but also new attitudes and novel interactions between a broad range of players in research.

While some ideas can be developed on a small scale, others may be so challenging that they require a large federated effort over a substantial period of time. Major economies worldwide have recognised this, and there is growing global competition to identify and pursue emerging technological

Amendment

Radical breakthroughs with a transformative impact increasingly rely on intense collaboration across disciplines in science and technology (for instance, information and communication, biology, bioengineering and robotics, chemistry, physics, mathematics, medicine modelling, earth system sciences, material sciences, neuro- and cognitive sciences, social sciences or economics) and with the arts and humanities. This requires not only excellence in science and technology but also new attitudes and novel interactions between a broad range of players in research.

While some ideas can be developed on a small scale, others may be so challenging that they require a large federated effort over a substantial period of time. Major economies worldwide have recognised this, and there is growing global competition to identify and pursue emerging technological
opportunities at the frontier of science which can generate a considerable impact on innovation and benefits for society. To be effective, these types of activity need to be built up quickly to a large scale, by federating across programmes at European, national and regional levels around common goals to build critical mass, foster synergies and obtain optimum leveraging effects.

The FET programme shall address the entire spectrum of science-driven innovation: from bottom-up, small-scale early explorations of embryonic and fragile ideas to building new research and innovation communities around transformative emerging research areas and large and federated research initiatives built around a research agenda aiming to achieve ambitious and visionary goals. These three levels of engagement each have their own specific value, while being complementary and synergistic. For example, small-scale explorations can reveal needs for developing new themes that can lead to large-scale action based on roadmaps. They involve a wide range of research players, including young researchers and research-intensive SMEs, and stakeholder communities (civil society, policymakers, industry and public researchers), clustered around research agendas as they take shape, mature and diversify.

Amendment 120

Proposal for a regulation
Annex I – Part I – point 2 – point 2.3

Text proposed by the Commission
While the FET programme aims to be visionary, transformative and unconventional, its activities shall follow different logics, from completely open to

Amendment
While the FEST programme aims to be visionary, transformative and unconventional, its activities shall follow different logics, from completely open to
varying degrees of structuring of topics, communities and funding.

The activities shall give firmer shape to different logics for action, on the appropriate scale, identifying and seizing opportunities of long-term benefit for citizens, the economy and society:

(a) By fostering novel ideas ('FET Open'), FET shall support embryonic science and technology research exploring new foundations for radically new future technologies by challenging current paradigms and venturing into unknown areas. A bottom-up selection process widely open to any research ideas shall build up a diverse portfolio of targeted projects. Early detection of promising new areas, developments and trends, along with attracting new and high-potential research and innovation players, will be key.

(b) By nurturing emerging themes and communities ('FET Proactive'), FET shall address a number of promising exploratory research themes with the potential to generate a critical mass of inter-related projects that, together, make up a broad and multi-faceted exploration of the themes and build a European pool of knowledge.

(c) By pursuing grand interdisciplinary S&T challenges ('FET Flagships'), FET shall support ambitious large-scale, science-driven research aiming to achieve a scientific and technological breakthrough. Such activities will benefit from the alignment of European and national agendas. The scientific advance should provide a strong and broad basis for future technological innovation and economic application in a variety of areas, plus novel benefits for society.

The right mix of openness and varying degrees of structuring of topics, communities and funding shall be defined
for each activity in order to address optimally the objectives pursued.

More than half of FEST resources will be devoted to bottom-up collaborative frontier research in all fields.

Evaluation of all FEST projects will follow exclusively strict criteria of scientific and technological excellence.

Amendment 121

Proposal for a regulation
Annex I – Part I – point 3 – title – point 3.1

Text proposed by the Commission

3. Marie Curie Actions
3.1. Specific objective
The specific objective is to ensure optimum development and dynamic use of Europe’s intellectual capital in order to generate new skills and innovation and, thus, to realise its full potential across all sectors and regions.

Well-trained, dynamic and creative researchers are the vital raw material for the best science and the most productive research-based innovation.

Although Europe hosts a large and diversified pool of skilled human resources for research and innovation, this needs to be constantly replenished, improved and adapted to the rapidly evolving needs of the labour market. Today only 46% of this pool works in the business sector, which is much lower than in Europe’s main economic competitors, e.g. 69% in China, 73% in Japan and 80% in the United States. In addition, demographic factors mean that a disproportionate number of researchers will reach retirement age in the next few years. This, combined with the

Amendment

3. Marie Sklodowska-Curie Actions
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Although Europe hosts a large and diversified pool of skilled human resources for research and innovation, this needs to be constantly replenished, improved and adapted to the rapidly evolving needs of the labour market. Today only 46% of this pool works in the business sector, which is much lower than in Europe’s main economic competitors, e.g. 69% in China, 73% in Japan and 80% in the United States. In addition, demographic factors mean that a disproportionate number of researchers will reach retirement age in the next few years. This, combined with the
need for many more high-quality research jobs as the research intensity of the European economy increases, will be one of the main challenges facing European education, research and innovation systems in the years ahead.

The necessary reform must start at the first stages of the researchers’ careers, during their doctoral studies or comparable postgraduate training. Europe must develop state-of-the-art, innovative training schemes, consistent with the highly competitive and increasingly inter-disciplinary requirements of research and innovation. Strong involvement of businesses, including SMEs and other socio-economic actors, will be needed to equip researchers with the innovation skills demanded by the jobs of tomorrow. It will also be important to enhance the mobility of these researchers, as it currently remains at too modest a level: in 2008, only 7% of European doctoral candidates were trained in another Member State, whereas the target is 20% by 2030.

This reform must continue through every stage of researchers’ careers. It is vital to increase the mobility of researchers at all levels, including mid-career mobility, not only between countries but also between the public and private sectors. This creates a strong stimulus for learning and developing new skills. It is also a key factor in cooperation between academics, research centres and industry across

need for many more high-quality research jobs as the research intensity of the European economy increases, will be one of the main challenges facing European education, research and innovation systems in the years ahead.

The necessary reform must start at the first stages of the researchers’ careers, during their doctoral studies or comparable postgraduate training. Special attention has to be paid to mentoring schemes which stimulate transfer of knowledge, experience and networks. Europe must develop state-of-the-art, innovative training schemes, consistent with the highly competitive and increasingly inter-disciplinary requirements of research and innovation. Strong involvement of businesses, including SMEs and other socio-economic actors, will be needed to equip researchers with the cross-cutting innovation and entrepreneurial skills demanded by the jobs of tomorrow and encourage them to consider their careers in industry or in the most innovative companies. It will also be important to enhance the mobility of these researchers, as it currently remains at too modest a level: in 2008, only 7% of European doctoral candidates were trained in another Member State, whereas the target is 20% by 2030.

Increasing mobility of researchers and strengthening the resources of those institutions which attract researchers from other Member States will encourage centres of excellence across the Union.

This reform must continue through every stage of researchers’ careers. It is vital to increase the mobility of researchers at all levels, including mid-career mobility, not only between countries but also between the public and private sectors. This creates a strong stimulus for learning and developing new skills. It is also a key factor in cooperation between academics, research centres and industry across
countries. The human factor is the backbone of sustainable cooperation which is the key driver for an innovative and creative Europe able to face challenges to society, and key to overcoming fragmentation of national policies. Collaborating and sharing knowledge, via individual mobility at all stages of a career and via exchanges of highly skilled research and innovation staff, are essential for Europe to re-take the path to sustainable growth and to tackle societal challenges.

If Europe is to match its competitors in research and innovation, it must entice more young women and men to embark on research careers and provide highly attractive opportunities and environments for research and innovation. The most talented individuals, from Europe and elsewhere, should see Europe as a pre-eminent place to work. Gender equality, high-quality and reliable employment and working conditions plus recognition are crucial aspects that must be secured in a consistent way across the whole of Europe.

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3.2 Rationale and Union added value

Neither Union funding alone nor Member States individually will be able to address this challenge. Although Member States have introduced reforms to improve their tertiary education institutions and modernise their training systems, progress is still uneven across Europe, with big differences between countries. Overall, scientific and technological cooperation between the public and private sectors generally remains weak in Europe. The same applies to gender equality and to the efforts to attract students and researchers from outside the ERA. Currently around 20% of the doctoral candidates in the Union are citizens of third countries, whereas about 35% in the United States of America come from abroad. To speed up this change, a strategic approach that goes beyond national borders is required at Union level. Union funding is crucial to create incentives for and encourage the indispensable structural reforms.

The European Marie Curie actions have made remarkable progress to promote mobility, both transnational and intersectoral, and to open research careers at European and international levels, with excellent employment and working conditions following the European Researchers Charter and Code. There is no equivalent in Member States as far as their scale and scope, funding, international character, generation and transfer of knowledge are concerned. They have strengthened the resources of those institutions able to attract researchers internationally and thereby encouraged the spread of centres of excellence around the
Union. They have served as a role model with a pronounced structuring effect by spreading their best practices at national level. The bottom-up approach taken by Marie Curie actions has also allowed a large majority of those institutions to train and upgrade the skills of a new generation of researchers able to tackle societal challenges.

Further development of the Marie Curie actions will make a significant contribution to development of the European Research Area. With their Europe-wide competitive funding structure, Marie Curie actions will encourage new, creative and innovative types of training such as industrial doctorates, involving education, research and innovation players who will have to compete globally for a reputation of excellence. By providing Union funding for the best research and training programmes following the Principles for Innovative Doctoral Training in Europe, they will also promote wider dissemination and take-up, moving towards more structured doctoral training.

Marie Curie grants will also be extended to the temporary mobility of experienced researchers and engineers from public institutions to the private sector or vice versa, thereby encouraging and supporting universities, research centres and businesses to cooperate with one another on a European and international scale. With the aid of their well-established, transparent and fair evaluation system, Marie Curie actions will identify excellent talents in research and innovation in an international competition which gives prestige and therefore motivation for researchers to advance their career in Europe.

The societal challenges to be addressed by highly skilled researchers and innovation

Union. They have served as a role model with a pronounced structuring effect by spreading their best practices at national level. The bottom-up approach taken by Marie Skłodowska-Curie actions has also allowed a large majority of those institutions to train and upgrade the skills of a new generation of researchers able to tackle societal challenges.

Further development of the Marie Skłodowska-Curie actions will make a significant contribution to development of the European Research Area. With their Europe-wide competitive funding structure, Marie Skłodowska-Curie actions will encourage new, creative and innovative types of training such as joint or multiple doctoral degrees, industrial doctoral degrees, involving education, research and innovation players who will have to compete globally for a reputation of excellence. By providing Union funding for the best research and training programmes following the Principles for Innovative Doctoral Training in Europe, they will also promote wider dissemination and take-up, moving towards more structured doctoral training.

Marie Skłodowska-Curie grants will also be extended to the temporary mobility of early stage and experienced researchers, as well as engineers from public institutions to the private sector or vice versa, thereby encouraging and supporting universities, research centres and businesses to cooperate with one another on a European and international scale. With the aid of their well-established, transparent and fair evaluation system, Marie Skłodowska-Curie actions will identify excellent talents in research and innovation in an international competition which gives prestige and therefore motivation for researchers to advance their career in Europe.

The societal challenges to be addressed by highly skilled researchers and innovation
staff are not just Europe’s problem. These are international challenges of colossal complexity and magnitude. The best researchers in Europe and the world need to work together across countries, sectors and disciplines. Marie Curie actions will play a key role in this respect by supporting staff exchanges that will foster collaborative thinking via the international and intersectoral knowledge-sharing that is so crucial for open innovation.

Extension of the co-funding mechanism of the Marie Curie actions will be crucial to expand Europe’s pool of talents. The numerical and structural impact of Union action will be increased by leveraging regional, national, international and private funding to create new programmes and to open existing ones to international and intersectoral training, mobility and career development. Such a mechanism will forge stronger links between research and education efforts at national and Union levels.

All the activities under this challenge will contribute to creating a whole new mindset in Europe that is crucial for creativity and innovation. Marie Curie funding measures will strengthen pooling of resources in Europe and thereby lead to improvements in coordination and governance of researchers’ training, mobility and career development. They will contribute to the policy goals outlined in the Innovation Union, Youth on the Move and the Agenda for New Skills and Jobs and will be vital to turn the European Research Area into reality.

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Extension of the co-funding mechanism of the Marie Skłodowska-Curie actions will be crucial to expand Europe’s pool of talents. The numerical and structural impact of Union action will be increased by leveraging regional, national, international and public and private funding to create new programmes with similar and complementary goals, and to open existing ones to international and intersectoral training, mobility and career development. Such a mechanism will forge stronger links between research and education efforts at national and Union levels.

All the activities under this challenge will contribute to creating a whole new mindset in Europe that is crucial for creativity and innovation. Marie Skłodowska-Curie funding measures will strengthen pooling of resources in Europe and thereby lead to improvements in coordination and governance of researchers’ training, mobility and career development. They will contribute to the policy goals outlined in the Innovation Union, Youth on the Move and the Agenda for New Skills and Jobs and will be vital to turn the European Research Area into reality.
Amendment 123

Proposal for a regulation
Annex I – Part I – point 3 – point 3.3

Text proposed by the Commission

3.3. Broad lines of the activities
(a) Fostering new skills by means of excellent initial training of researchers

The goal is to train a new generation of creative and innovative researchers, able to convert knowledge and ideas into products and services for economic and social benefit in the Union.

Key activities shall be to provide excellent and innovative training to early-stage researchers at post-graduate level via interdisciplinary projects or doctoral programmes involving universities, research institutions, businesses, SMEs and other socio-economic groups from different countries. This will improve career prospects for young post-graduate researchers in both the public and private sectors.

(b) Nurturing excellence by means of cross-border and cross-sector mobility

The goal is to enhance the creative and innovative potential of experienced researchers at all career levels by creating opportunities for cross-border and cross-sector mobility.

Key activities shall be to encourage experienced researchers to broaden or deepen their skills by means of mobility by opening attractive career opportunities in universities, research institutions, businesses, SMEs and other socio-economic groups all over Europe and beyond. Opportunities to restart a research

Amendment

3.3. Broad lines of the activities
(a) Fostering new skills by means of excellent initial training of researchers

The goal is to train a new generation of creative and innovative researchers, able to convert knowledge and ideas into products and services for economic and social benefit in the Union.

Key activities shall be to provide excellent and innovative training to early-stage researchers at post-graduate level via interdisciplinary projects, mentoring schemes to transfer knowledge and experience between researchers or doctoral programmes allowing researchers to develop their research curriculum and involving universities research institutions, businesses, SMEs and other socio-economic groups from different countries. This will develop and improve career prospects for young post-graduate researchers in both the public and private sectors.

(b) Nurturing excellence by means of cross-border and cross-sector mobility

The goal is to enhance the creative and innovative potential of experienced researchers at all career levels by creating opportunities for cross-border and cross-sector mobility.

Key activities shall be to encourage experienced researchers to broaden or deepen their skills by means of mobility by opening attractive career opportunities in universities, research institutions, businesses, SMEs and other socio-economic groups all over Europe and beyond, offering researchers the
career after a break shall also be supported.

opportunity to be trained and to acquire new knowledge in a third-country high-level research institution, and welcome them back to Europe should they choose to return. Opportunities to restart a research career after a break shall also be supported. In order to enhance the innovativeness in private sector, attention shall also be given to cross-sector mobility.

(c) Stimulating innovation by means of cross-fertilisation of knowledge

The goal is to reinforce international cross-border and cross-sector collaboration in research and innovation by means of exchanges of research and innovation personnel in order to be able to face global challenges better.

Key activities shall be to support short-term exchanges of research and innovation staff among a partnership of universities, research institutions, businesses, SMEs and other socio-economic groups, both within Europe and worldwide. This will include fostering cooperation with third countries.

(d) Increasing the structural impact by co-funding the activities

The goal is, by leveraging additional funds, to increase the numerical and structural impact of Marie Curie actions and to foster excellence at national level in researchers’ training, mobility and career development.

Key activities shall be, with the aid of a co-funding mechanism, to encourage regional, national and international organisations to create new programmes and to open existing ones to international and intersectoral training, mobility and career development. This will increase the quality of research training in Europe at all career stages, including at doctoral level, will foster free circulation of researchers and scientific knowledge in Europe, will promote attractive research careers by

Key activities shall be, with the aid of a co-funding mechanism, to encourage regional, national and international organisations to create new programmes and to adapt existing ones to international and intersectoral training, mobility and career development. This will increase the quality of research training in Europe at all career stages, including at doctoral level, will foster free circulation of researchers and scientific knowledge in Europe, will promote attractive research careers by
offering open recruitment and attractive working conditions and will support research and innovation cooperation between universities, research institutions and enterprises and cooperation with third countries and international organisations.

Attention should be given to excellence and equality.

(e) Specific support and policy action

The goals are to monitor progress, identify gaps in the Marie Curie Actions and to increase their impact. In this context, indicators shall be developed and data related to researchers’ mobility, skills and careers analysed, seeking synergies and close coordination with the policy support actions on researchers, their employers and funders carried out under the specific objective 'Inclusive, innovative and secure societies'. The activity shall further aim at raising awareness of the importance and attractiveness of a research career and at disseminating research and innovation results emanating from work supported by Marie Curie actions.

The goals are to monitor progress, identifying gaps and barriers in the Marie Skłodowska-Curie actions and to increase their impact. In this context, indicators shall be developed and data related to researchers’ mobility, skills, careers and gender equality analysed, seeking synergies and close coordination with the policy support actions on researchers, their employers and funders carried out under the cross cutting challenge 'Science with and for society'. The activity shall further aim at raising awareness of the importance and attractiveness of a research career and at disseminating research and innovation results emanating from work supported by Marie Skłodowska-Curie actions. It shall also include specific measures targeted to remove barriers to career development, including for those who have taken a career break.

Amendment 124

Proposal for a regulation
Annex I – Part I – point 4

Text proposed by the Commission

4. Research Infrastructures
4.1 Specific objective

The specific objective is to endow Europe with world-class research infrastructures which are accessible to all researchers in Europe and beyond and fully exploit their potential for scientific advance and

Amendment

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The specific objective is to endow Europe with world-class research infrastructures which are accessible to all researchers in Europe and beyond and fully exploit their potential for scientific advance and
innovation.

Research infrastructures are key determinants of Europe’s competitiveness across the full breadth of scientific domains and essential to science-based innovation. In many fields research is impossible without access to supercomputers, radiation sources for new materials, clean rooms for nanotechnologies, databases for genomics and social sciences, observatories for Earth sciences, broadband networks for transferring data, etc. Research infrastructures are necessary to carry out the research needed to address grand societal challenges — energy, climate change, bio-economy and lifelong health and wellbeing for all. They propel collaboration across borders and disciplines and create a seamless and open European space for online research. They promote mobility of people and ideas, bring together the best scientists from across Europe and the world and enhance scientific education. They drive excellence within the European research and innovation communities and can be outstanding showcases of science for society at large.

Europe must establish an adequate, stable base for building, maintaining and operating research infrastructures if its research is to remain world-class. This requires substantial and effective cooperation between Union, national and regional funders for which strong links with the cohesion policy will be pursued to ensure synergies and a coherent approach.

innovation.

Research infrastructures are key determinants of Europe’s competitiveness across the full breadth of scientific domains and essential to science-based innovation. In many fields research is impossible without access to supercomputers, analytical facilities, radiation sources for new materials, clean rooms and advanced metrology for nanotechnologies, specially equipped labs for biological and medical research, databases for genomics and social sciences, observatories and sensors for the Earth sciences and the environment, high-speed broadband networks for transferring data, etc. Research infrastructures are necessary to carry out the research needed to address grand societal challenges — energy, climate change, bio-economy and lifelong health and wellbeing for all, among others. They propel collaboration across borders and disciplines and create a seamless and open European space for online research. They promote mobility of people and ideas, bring together the best scientists from across Europe and the world and enhance scientific education. Their construction challenges researchers and innovative companies to develop state of the art technology. By this way, they strengthen Europe's high tech innovative industry. They drive excellence within the European research and innovation communities and can be outstanding showcases of science for society at large.

Europe must establish an adequate, stable base for building, maintaining and operating research infrastructures, and select and prioritize them on the basis of EU added value, quality and relevance criteria if its research is to remain world-class. This requires substantial and effective cooperation between Union, national and regional funders for which strong links with the cohesion policy will be pursued to ensure synergies and a
This specific objective addresses a core commitment of the Innovation Union flagship initiative, which highlights the crucial role played by world-class research infrastructures in making ground-breaking research and innovation possible. The initiative stresses the need to pool resources across Europe, and in some cases globally, in order to build and operate research infrastructures. Equally, the Digital Agenda for Europe flagship initiative emphasises the need to reinforce Europe's e-infrastructures and the importance of developing innovation clusters to build Europe's innovative advantage.

4.2. Rationale and Union added value

State-of-the-art research infrastructures are becoming increasingly complex and costly, often requiring integration of different equipment, services and data sources and extensive transnational collaboration. No single country has enough resources to support all the research infrastructures it needs. The European approach to research infrastructures has made remarkable progress in recent years with implementing the ESFRI roadmap for infrastructures, integrating and opening national research facilities and developing e-infrastructures underpinning a digital European Research Area. The networks of research infrastructures across Europe strengthen its human capital base by providing world-class training for a new generation of researchers and engineers and promoting interdisciplinary collaboration.

Further development and wider use of research infrastructures at Union level will make a significant contribution to development of the European Research Area. While the role of Member States remains central in developing and financing research infrastructures, the coherent approach.

Further development and wider use of the best research infrastructures at European level will make a significant contribution to development of the European Research Area. While the role of Member States remains central in developing and financing research infrastructures, the
Union plays an important part in supporting infrastructure at *Union* level, fostering the emergence of new and integrated facilities, opening up broad access to national and European infrastructures, and making sure that regional, national, European and international policies are consistent and effective. It is *not only* necessary to avoid duplication of *effort and to coordinate and rationalise* use of the facilities, *but also* to pool resources so that the Union can also acquire and operate research infrastructures at world level.

ICT has been transforming science by enabling remote collaboration, massive data processing, in silico experimentation and access to distant resources. Research therefore becomes increasingly transnational and interdisciplinary, requiring the use of ICT infrastructures that are supranational as science itself. It is therefore appropriate for a significant proportion of the budget under this specific objective to go towards research and innovation in e-infrastructures.

The efficiencies of scale and scope achieved by a European approach to construction, use and management of research infrastructures, including e-infrastructures, will make a significant contribution to boosting Europe's research and innovation potential.

4.3. Broad lines of the activities

The activities shall aim at developing the European research infrastructures for 2020 and beyond, fostering their innovation potential and human *capital* and reinforcing European research infrastructure policy.

(a) Developing the European research...
infrastructures for 2020 and beyond

The aims shall be to ensure the implementation and operation of the ESFRI and other world-class research infrastructures, including the development of regional partner facilities; integration of and access to national research infrastructures; and the development, deployment and operation of e-infrastructures.

(b) Fostering the innovation potential of research infrastructures and their human capital

The aims shall be to encourage research infrastructures to act as early adopters of technology, to promote R&D partnerships with industry, to facilitate industrial use of research infrastructures and to stimulate the creation of innovation clusters. This activity shall also support training and/or exchanges of staff managing and operating research infrastructures.

(c) Reinforcing European research infrastructure policy and international cooperation

The aim shall be to support partnerships between relevant policymakers and funding bodies, mapping and monitoring tools for decision-making and also international cooperation activities.

European research infrastructures shall be supported in their international relations activities and consulted in the process of shaping the European strategy for international cooperation in research.

The second and third activities shall be
pursued by their own specific action and, whenever appropriate, as part of the first activity.

Amendment 125
Proposal for a regulation
Annex I – Part I – point 4 a (new)

Text proposed by the Commission

4a. SPREADING EXCELLENCE AND WIDENING PARTICIPATION

4a.1. Specific objective

The specific objective is to fully exploit the potential of Europe's talent pool and to ensure that the benefits of an innovation-led economy are both maximised and fairly distributed across the Union in accordance with the principle of excellence.

When referring to the objectives of the Union's research and technological development policy Article 179(2) TFEU clearly states that "the Union shall, throughout the Union, encourage undertakings, including small and medium-sized undertakings, research centres and universities in their research and technological development activities of high quality".

And indeed, ensuring that research and innovation-related activities are spread widely has long been an important Union policy goal. However, despite a recent tendency for the innovation performances of individual countries to converge, sharp differences among EU27 countries still remain, as it has been stated in the Innovation Union Scoreboard 2011. Furthermore, by putting national budgets under constrain, the current financial crisis is threatening to widen the gap between 'innovation leaders' and 'modest innovators'.
4a.2. Rationale and Union added value

In order to progress towards a sustainable, inclusive and smart society, Europe needs to make the best use of the intelligence that is available in the Union and to unlock untapped R&I potential. This is a real European challenge, decisive for our international competitiveness, and it cannot be solved by the Member States alone.

By nurturing and connecting pools of excellence, the activities proposed will contribute to strengthening the European Research Area.

4a.3. Broad lines of the activities

To assure efficiency of the research and innovation funding, Horizon 2020 needs to be open to a wide range of participants, including new entrants, and make sure that excellence prevails wherever it exists enabling researchers and innovators across Europe to benefit from Horizon 2020's instruments, networks and funding, including the activities of the EIT and its KICs.

In this context, measures will aim at fully exploiting the potential of Europe's talent pool and thereby optimising the economic and social impact of research and innovation and will be distinct yet complementary with regard to policies and actions of the Cohesion policy Funds.

These measures include:

Twinning and networking measures

(a) linking emerging centres of excellence in less innovation performing Member States and regions to international leading counterparts elsewhere in Europe;

(b) launching a competition for the foundation of internationally competitive research centres in less innovation performing regions based on the priorities identified in their regional smart
specialisation strategies: the candidates for the competition should be teams each comprising an innovative but still less innovation performing region and an internationally recognised centre of excellence elsewhere in Europe;

(c) establishing 'ERA Chairs' to attract outstanding academics to institutions with a clear potential for research excellence, in order to help these institutions to fully unlock this potential and thereby create a level playing field for research and innovation in the European Research Area;

(d) attributing "Return Grants" to excellent researchers currently working outside of Europe and who wish to work in Europe or to researchers already working in Europe who wish to move to a less performing region;

(e) support complementary agreements signed among organisations beneficiaries of the collaborative research projects with other entities and organisations established mainly in countries others than those directly involved in the project with the specific objective to facilitate training opportunities (namely doctoral and post-doctoral positions);

(f) strengthening successful networks aiming at establishing high quality institutional networking in research and innovation. Particular attention will be paid to COST in order to promote activities to identify and connect "pockets of excellence" (high-quality scientific communities and young investigators) throughout Europe;

(g) developing specific training mechanisms on how to participate in Horizon 2020, taking full advantage of existing networks such as the National Contact Points;

(h) setting up an online marketplace where intellectual property can be
advertised in order to bring together the owners and users of IPR.

Building synergies with Structural Funds
(a) conferring a "seal of excellence" on positively evaluated ERC, Marie Skłodowska-Curie or collaborative project proposals that have not been able to achieve funding because of budgetary limitations, and also to completed projects in order to facilitate funding of the follow up by national, regional or private sources;
(b) supporting the development and monitoring of smart specialisation strategies. A policy support facility will be developed and policy learning at regional level will be facilitated through international evaluation by peers and best practice sharing.

covered by CA 52 Amendment 126

Proposal for a regulation
Annex I – Part II – point 1 – paragraphs 1 to 20

Text proposed by the Commission
1. Leadership in enabling and industrial technologies
The specific objective is to maintain and build global leadership in enabling technologies and space research and innovation, which underpin competitiveness across a range of existing and emerging industries and sectors.
The global business environment is changing rapidly and the Europe 2020 goals for smart, sustainable and inclusive growth present challenges and opportunities to European industry. Europe needs to accelerate innovation, transforming the knowledge generated to underpin and enhance existing products, services and markets; and to create new ones. Innovation should be exploited in the

Amendment
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widest sense, going beyond technology to include business, organisational and social aspects.

To stay at the forefront of global competition with a strong technological base and industrial capabilities, increased strategic investments in research, development, validation and piloting are required in Information and Communication Technologies (ICT); Nanotechnologies; Advanced Materials; Biotechnology; Advanced Manufacturing and Processing; and Space.

The successful mastering and deployment of enabling technologies by European industry is a key factor in strengthening Europe's productivity and innovation capacity and ensuring Europe has an advanced, sustainable and competitive economy, global leadership in hi-tech application sectors and the ability to develop effective solutions for societal challenges. The pervasive nature of such activities can spur further progress through complementary inventions and applications, ensuring a higher return on investment in these technologies than in any other field.

These activities will contribute to the objectives of the Europe 2020 Flagship initiatives on Innovation Union, Resource Efficient Europe, An industrial policy for the globalisation era, and A Digital Agenda for Europe as well as Union space policy objectives.

Complementarities with other activities in Horizon 2020

The activities under 'Leadership in Enabling and Industrial Technologies' will be primarily based on research and innovation agendas defined by industry and innovation should be exploited in the widest sense, going beyond technology to include business, organisational social and security aspects.

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These activities will contribute to the objectives of the Europe 2020 Flagship initiatives on Innovation Union, Resource Efficient Europe, An industrial policy for the globalisation era, and A Digital Agenda for Europe as well as the Union's Internal Security Strategy and the Union space policy objectives.

Complementarities with other activities in Horizon 2020

The activities under 'Leadership in Enabling and Industrial Technologies' will be primarily based on research and innovation agendas defined by industry,
business, together with the research community and have a strong focus on leveraging private sector investment. The integration of enabling technologies in solutions for the societal challenges shall be supported together with the relevant challenges. Applications of enabling technologies that do not fall under the societal challenges, but are important for reinforcing the competitiveness of European industry, shall be supported under ‘Leadership in Enabling and Industrial Technologies’.

A common approach

The approach shall include both agenda-driven activities and more open areas to promote innovative projects and breakthrough solutions. Emphasis shall be on R&D, large-scale pilots and demonstration activities, test beds and living labs, prototyping and product validation in pilot lines. Activities shall be designed to boost industrial competitiveness by stimulating industry, and in particular SMEs, to make more research and innovation investment.

A major component of ‘Leadership in Enabling and Industrial Technologies’ are Key Enabling Technologies (KETs), defined as micro- and nanoelectronics, photonics, nanotechnology, biotechnology, business and SMEs, together with the research community. Activities will aim not only at addressing common needs and concerns in the specific sector but also at supporting implementation of policy objectives in those specific sectors. Activities will have a strong focus on leveraging private sector investment and innovation.

The integration of enabling technologies in solutions for the societal challenges shall be supported together with the relevant challenges. Applications of enabling technologies that do not fall under the societal challenges, but are important for reinforcing the competitiveness of European industry, shall be supported under ‘Leadership in Enabling and Industrial Technologies’.

A common approach

The approach shall include both agenda-driven activities and more open areas to promote innovative projects and breakthrough solutions. Emphasis shall be on R&D and innovation activities in the pre-commercial and pre-competitive stages, including demonstration activities, test beds and living labs, prototyping and product validation in pilot lines. Activities shall be designed to boost industrial competitiveness by stimulating industry to increase its research and innovation investments. Activities shall support SMEs to invest in and have more access to research and innovation activities. Focus will be given to small and medium scale projects. Direct follow-on activities for projects such as piloting, demonstration and take-up shall be supported through flexible instruments such as open calls.

A major component of ‘Leadership in Enabling and Industrial Technologies’ are Key Enabling Technologies (KETs), defined as micro- and nanoelectronics, photonics, nanotechnology, biotechnology,
advanced materials and advanced manufacturing systems. These multi-disciplinary, knowledge and capital-intensive technologies cut across many diverse sectors providing the basis for significant competitive advantage for European industry. An integrated approach, promoting the combination, convergence and cross-fertilisation effect of KETs in different innovation cycles and value chains can deliver promising research results and open the way to new industrial technologies, products, services and novel applications (e.g. in space, transport, environment, health etc.). The numerous interactions of KETs and enabling technologies will therefore be exploited in a flexible manner, as an important source of innovation. This will complement support for research and innovation in KETs that may be provided by national or regional authorities under the Cohesion Policy Funds within the framework of smart specialisation strategies.

For all the enabling and industrial technologies, including the KETs, a major aim will be to foster interactions between the technologies, and with the applications under the societal challenges. This shall be fully taken into account in developing and implementing the agendas and priorities. It requires that stakeholders representing the different perspectives are fully involved in priority setting and implementation. In certain cases, it will also require actions that are jointly funded by the enabling and industrial technologies, and by the relevant societal challenges. This will include joint funding for public-private partnerships that aim to develop technologies and apply them to address societal challenges.

ICT plays an important role as it embraces some of the KETs and provides the key basic infrastructures, technologies and advanced materials and advanced manufacturing systems. These multi-disciplinary, knowledge and capital-intensive technologies cut across many diverse sectors providing the basis for significant competitive advantage for European industry and for creating new jobs. An integrated approach, promoting the combination, convergence and cross-fertilisation effect of KETs in different innovation cycles and value chains can deliver promising research results and open the way to new industrial technologies, products, services as well as novel applications and sustainable approaches (e.g. in space, transport, environment, health, agriculture etc.). The numerous interactions of KETs and enabling technologies will therefore be exploited in a flexible manner, as an important source of innovation. This will complement support for research and innovation in KETs that may be provided by national or regional authorities under the Cohesion Policy Funds within the framework of smart specialisation strategies.

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ICT plays an important role as it embraces some of the KETs and provides the key basic infrastructures, technologies and
systems for vital economic and social processes and new private and public products and services. European industry needs to remain at the cutting edge of technological developments in ICT, where many technologies are entering a new disruptive phase, opening up new opportunities.

Space is a rapidly growing sector which delivers information vital to many areas of modern society, meeting its fundamental demands, addresses universal scientific questions, and serves to secure the Union's position as a major player on the international stage. Space research underpins all activities undertaken in space, but is currently fragmented in national programmes run by a subset of Union member states. Union level coordination and investment in space research are required (cf. Article 189 TFEU) to maintain the competitive edge, to safeguard Union space infrastructure such as Galileo and to sustain a future role for the Union in space. This shall be achieved in close cooperation between the European Space Agency and national space agencies. In addition, innovative downstream services and applications using space derived information represent an important source of growth and job creation and their development represents an important opportunity for the Union.

Europe can achieve critical mass through partnering, clusters and networks, standardisation, promoting cooperation between different scientific and technological disciplines and sectors with similar research and development needs, leading to breakthroughs, new technologies and innovative solutions.

The development and implementation of research and innovation agendas through public–private partnerships, the building of effective industry-academia links, the leveraging of additional investments, the access to risk finance, standardisation and the support to pre-commercial procurement and the procurement of innovative products

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The development and implementation of research and innovation agendas through European Technology Platforms or public–private partnerships, the building of effective industry-academia links, the leveraging of additional investments, the access to risk finance, standardisation and the support to pre-commercial procurement
and services are all aspects that are essential in addressing competitiveness.

In this regard, strong links with the EIT are also needed to breed entrepreneurial top talents and to speed up innovation by bringing together people from different countries, disciplines and organisations.

Union level collaboration can also support trade opportunities through the development of European or international standards for new emerging products and services and technologies. Activities in support of standardisation and interoperability, safety and pre-regulatory activities will be promoted.

Amendment 127

Proposal for a regulation
Annex I – Part II – point 1 – point 1.1.

Text proposed by the Commission

1.1. Information and Communication Technologies (ICT)

1.1.1. Specific objective for ICT

In line with the Digital Agenda for Europe, the specific objective of ICT research and innovation (R&I) is to enable Europe to develop and exploit the opportunities brought by ICT progress for the benefits of its citizens, businesses and scientific communities.

Amendment

1.1. Information and Communication Technologies (ICT)

1.1.1. Specific objective for ICT

In line with the Digital Agenda for Europe, the specific objective of ICT research and innovation (R&I) is to enable Europe to develop and exploit the opportunities brought by ICT progress for the benefits of its citizens, businesses and scientific communities. "ICT" encompasses all ICT-domains, including amongst others fixed, wireless, optical fibre networks and satellite networks, networked electronic media, computer based smart systems and embedded software as well as the broad fields of Photonics, Molecular Electronics, Magnetoelectronics, Robotics, Nanoelectronics and
As the world's largest economy and representing the largest share of the world's ICT market, today at more than EUR 2600 billion, Europe can have legitimate ambitions for its businesses, governments, research and development centres and universities to lead developments in ICT, to grow new business, and to invest more in ICT innovations.

By 2020, Europe's ICT sector should supply at least the equivalent of its share of the global ICT market, today at about one third. Europe should also grow innovative businesses in ICT so that one third of all business expenditure in ICT R&D, today at more than EUR 35 billion per year, is invested by companies created within the last two decades. This would require a considerable increase in public investments in ICT R&D in ways that leverage private spending, towards the goal of doubling investments in the next decade, and significantly more European poles of world-class excellence in ICT.

To master increasingly complex and multidisciplinary technology and business chains in ICT, partnering, risk-sharing and mobilisation of critical mass across the Union are needed. Union level action helps industry address a single market perspective and achieve economies of scale and scope. Collaboration around common, open technology platforms with spill-over and leverage effects allow a wide range of stakeholders to benefit from new developments and apply further innovations. Federating and partnering at Union level also enables consensus building, establishes a visible focal point for international partners, and leads to the development of Union- and world-wide standards and interoperable solutions.

1.1.2. Rationale and Union added value

ICT underpins innovation and competitiveness across a broad range of Bioelectronics.

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1.1.2. Rationale and Union added value

ICT underpins innovation and competitiveness across a broad range of
private and public markets and sectors, and enables scientific progress in all disciplines. Over the next decade, the transformative impact of digital technologies, ICT components, infrastructures and services will be increasingly visible in all areas of life. **Unlimited** computing, communication and data storage resources will **be available to every citizen on the globe**. Vast amounts of information and data will be generated by sensors, machines and information-enhanced products, making action at a distance a commonplace, enabling global deployment of business processes and sustainable production sites and bringing a wide range of services and applications. Many critical commercial and public services and all key processes of knowledge production in science, learning, business and the public sector will be provided through ICT. ICT will provide the critical infrastructure for production and business processes, communication and transactions. ICT will also be indispensable in contributing to key societal challenges, as well as societal processes such as community formation, consumer behaviour, and public governance, for example by means of social media.

The Union support to ICT research and innovation is a significant component to prepare the next generation technologies and applications as it makes up a large part of total spending on collaborative, mid-to-high risk R&I in Europe. Public investment in ICT research and innovation at Union level has been and remains essential to mobilise the critical mass leading to breakthroughs and to a wider uptake and
better use of innovative solutions, products and services. It continues to play a central role in developing open platforms and technologies applicable across the Union, in testing and piloting innovations in real pan-European settings and in optimising resources when addressing Union competitiveness and tackling common societal challenges. Union support to ICT research and innovation is also enabling high-tech SMEs to grow and capitalise on the size of Union-wide markets. It is strengthening collaboration and excellence amongst Union scientists and engineers, reinforcing synergies with and between national budgets, and acting as a focal point for collaboration with partners outside Europe.

Successive evaluations of ICT activities in the Union's Framework Programme for research and innovation have shown that focused ICT research and innovation investment undertaken at Union level has been instrumental in building industrial leadership in areas like mobile communications, safety-critical ICT systems, and to address challenges like energy-efficiency or demographic change. Union investments in ICT research infrastructures have provided European researchers with the world's best research networking and computing facilities.

1.1.3. Broad lines of the activities

A number of activity lines shall target ICT industrial and technological leadership challenges and cover generic ICT research and innovation agendas, including notably:

(a) A new generation of components and systems: Engineering of advanced and smart embedded components and systems;

(b) Next generation computing: Advanced computing systems and technologies;
(c) Future Internet: Infrastructures, technologies and services

(d) Content technologies and information management: ICT for digital content and creativity;

(e) Advanced interfaces and robots: Robotics and smart spaces;

(f) Micro- and nanoelectronics and photonics: *Key enabling technologies related to micro- and nanoelectronics and to photonics.*

These six major activity lines are expected to cover the full range of needs. These would include industrial leadership in generic ICT-based solutions, products and services needed to tackle major societal challenges as well as application-driven ICT research and innovation agendas which will be supported together with the relevant societal challenge.

(fa) Quantum technologies: next generation of ICT devices through the combination of quantum physics and information science;

These seven major activity lines are expected to cover the full range of needs. These would include industrial leadership in generic ICT-based solutions, products and services needed to tackle major societal challenges as well as application-driven ICT research and innovation agendas which will be supported together with the relevant societal challenge. *Special attention shall be given to ensuring that state-of-the-art ICT solutions are selected for projects funded under the Societal Challenges priority.*

Enhanced support will be provided to research and development of open systems and distributive systems. In order to fully seize the ICT potential, the diversity of research areas and cycles characteristic to ICT research shall be guaranteed through the rules for participation, allowing for long-term cost-intensive large-scale research projects as well as fast opportunity seizing activities identified by the market.

These six activity lines shall also include ICT specific research infrastructures such as living labs for large-scale experimentation, and infrastructures for underlying key enabling technologies and their integration in advanced products and services.

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innovative smart systems, including equipment, tools, support services, clean rooms and access to foundries for prototyping.

Union funding will benefit shared facilities and infrastructure open to multiple actors including in particular small and medium-sized enterprises.

The fundamental rights and freedoms of natural persons and in particular their right to privacy is key in the Union. Horizon 2020 shall support research and development of systems that can give Europe's citizens full control of their communications.

Amendment 128

Proposal for a regulation
Annex I – Part II – point 1 – point 1.2

Text proposed by the Commission

1.2. Nanotechnologies

1.2.1. Specific objective for nanotechnologies

The specific objective of nanotechnologies research and innovation is to secure Union leadership in this high growth global market, by stimulating investment in nanotechnologies and their uptake in high added-value, competitive products and services across a range of applications and sectors.

By 2020, nanotechnologies will be mainstreamed, that is seamlessly integrated with most technologies and applications, driven by consumer benefits, quality of life, sustainable development and the strong industrial potential for achieving previously unavailable solutions for productivity and resource efficiency.

Amendment

1.2. Nanotechnologies

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The specific objective of nanotechnologies research and innovation is to secure Union leadership in this high growth global market, by stimulating investment in nanotechnologies and their uptake in high added-value, competitive products and services across a range of applications and sectors.

By 2020, nanotechnologies will be mainstreamed, that is seamlessly integrated with most technologies and applications, driven by consumer benefits, quality of life, sustainable development and the strong industrial potential for achieving previously unavailable solutions for productivity and resource efficiency. By 2015, the Commission will review all relevant legislation to ensure safety for all applications of nanomaterials in products with potential health, environmental or
Europe must also set the global benchmark on safe and responsible nanotechnology deployment and governance ensuring both high societal and industrial returns.

Products using nanotechnologies represent a world market which Europe cannot afford to ignore. Market estimates of the value of products incorporating nanotechnology as the key component reach EUR 700 billion by 2015 and EUR 2 trillion by 2020, with a corresponding 2 and 6 million jobs respectively. Europe's nanotechnology companies should exploit this double digit market growth and be capable of capturing a market share at least equal to Europe's share of global research funding (i.e. a quarter) by 2020.

1.2.2. Rationale and Union added value

Nanotechnologies are a spectrum of evolving technologies with proven potential, having revolutionary impact in for example materials, ICT, life sciences and healthcare and consumer goods once the research is translated into breakthrough products and production processes.

Nanotechnologies have a critical role to play in addressing the challenges identified by the Europe 2020 strategy for smart, sustainable and inclusive growth. The successful deployment of these key enabling technologies will contribute to the competitiveness of Union industry by enabling novel and improved products or more efficient processes and provide responses to future challenges.

The global research funding for nanotechnologies has doubled from around EUR 6.5 billion in 2004 to around EUR 12.5 billion in 2008, with the Union accounting for about a quarter of this total. The Union has recognised research leadership in nanosciences and

1.2.2. Rationale and Union added value

Nanotechnologies are a spectrum of evolving technologies with proven potential, having revolutionary impact in for example materials, ICT, manufacturing, life sciences and healthcare and consumer goods once the research is translated into breakthrough, sustainable and competitive products and production processes.

Nanotechnologies have a critical role to play in addressing the challenges identified by the Europe 2020 strategy for smart, sustainable and inclusive growth. The successful deployment of these key enabling technologies will contribute to the competitiveness of Union industry by enabling novel and improved products or more efficient processes and provide responses to future challenges.

The global research funding for nanotechnologies has doubled from around EUR 6.5 billion in 2004 to around EUR 12.5 billion in 2008, with the Union accounting for about a quarter of this total. The Union has recognised research leadership in nanosciences and
Europe now needs to secure and build on its position in the global market by promoting wide scale cooperation in and across many different value chains and between different industrial sectors to realise the process scale-up of these technologies into viable commercial products. The issues of risk assessment and management as well as responsible governance are emerging as determining factors of future impact of nanotechnologies on society and the economy.

Thus, the focus of activities shall be on the widespread and responsible application of nanotechnologies into the economy, to enable benefits with high societal and industrial impact. To ensure the potential opportunities, including setting-up new companies and generating new jobs, research should provide the necessary tools to allow for standardisation and regulation to be correctly implemented.

1.2.3. Broad lines of the activities

(a) Developing next generation nanomaterials, nanodevices and nanosystems

Aiming at fundamentally new products enabling sustainable solutions in a wide range of sectors.

(b) Ensuring the safe development and application of nanotechnologies

Advancing scientific knowledge of the potential impact of nanotechnologies and nanosystems on health or on the environment, and providing tools for risk assessment and management along the entire life cycle.

(ba) Developing new tools for designing, simulation, characterization and
manipulations of nanomaterials, components and systems.

Aiming at studying, imaging and controlling the new nanomaterials and systems at the nanoscale.

(c) Developing the social dimension of nanotechnology
Focusing on governance of nanotechnology for societal benefit.

(d) Efficient synthesis and manufacturing of nanomaterials, components and systems
Focusing on new operations, smart integration of new and existing processes, as well as up-scaling to achieve mass production of products and multi-purpose plants that ensures the efficient transfer of knowledge into industrial innovation.

(e) Developing capacity-enhancing techniques, measuring methods and equipment
Focusing on the underpinning technologies supporting the development and market introduction of complex nanomaterials and nanosystems.

Amendment 129

Proposal for a regulation
Annex I – Part II – point 1 – point 1.3

Text proposed by the Commission

1.3. Advanced materials
1.3.1. Specific objective for advanced materials
The specific objective of advanced materials research and innovation is to develop materials with new functionalities and improved in-service performance, for more competitive products that minimise the impact on the environment and the

Amendment

1.3. Advanced materials
1.3.1. Specific objective for advanced materials
The specific objective of advanced materials research and innovation is to develop materials with new functionalities and improved in-service performance, for more competitive products that are more accessible to consumers and minimise the
consumption of resources.

Materials are at the core of industrial innovation and are key enablers. Advanced materials with higher knowledge content, new functionalities and improved performance are indispensable for industrial competitiveness and sustainable development across a range of applications and sectors.

1.3.2. Rationale and Union added value

New advanced materials are needed in developing better performing and sustainable products and processes. Such materials are a part of the solution to our industrial and societal challenges, offering better performance in their use, lower resource and energy requirements, and sustainability at the end-of-life of the products.

Application-driven development often involves the design of totally new materials, with the ability to deliver planned in-service performances. Such materials are an important element in the supply chain of high value manufacturing. They are also the basis for progress in cross-cutting technology areas (for example biosciences, electronics and photonics), and in virtually all market sectors. The materials themselves represent a key step in increasing the value of products and their performance. The estimated value and impact of advanced materials is significant, with an annual growth rate of about 6% and expected market size of the order of EUR 100 billion by 2015.

Materials shall be conceived according to a full life-cycle approach, from the supply of available materials to end of life (cradle to cradle), with innovative approaches to minimise the resources required for their transformation. Continuous use, recycling impact on the environment and the consumption of resources *and improve safety and security.*

Materials are at the core of industrial innovation and are key enablers. Advanced materials with higher knowledge content, new functionalities and improved performance are indispensable for industrial competitiveness and sustainable development across a range of applications and sectors.

1.3.2. Rationale and Union added value

New advanced materials are needed in developing better performing and sustainable products and processes *and for substituting scarce resources.* Such materials are a part of the solution to our industrial and societal challenges, offering better performance in their use, lower resource and energy requirements, and sustainability at the end-of-life of the products.

Application-driven development often involves the design of totally new materials, with the ability to deliver planned in-service performances. Such materials are an important element in the supply chain of high value manufacturing. They are also the basis for progress in cross-cutting technology areas (for example biosciences, electronics and photonics), and in virtually all market sectors. The materials themselves represent a key step in increasing the value of products and their performance. The estimated value and impact of advanced materials is significant, with an annual growth rate of about 6% and expected market size of the order of EUR 100 billion by 2015.

Materials shall be conceived according to a full life-cycle approach, from the supply of available materials to end of life (cradle to cradle), with innovative approaches to minimise the resources required for their transformation. Continuous use, recycling
or secondary end-of-life utilisation of the materials shall also be covered as well as related societal innovation.

To accelerate progress, a multidisciplinary and convergent approach shall be fostered, involving chemistry, physics, engineering sciences, theoretical and computational modelling, biological sciences and increasingly creative industrial design.

Novel green innovation alliances and industrial symbiosis shall be fostered allowing industries to diversify, expand their business models, re-using their waste as a basis for new productions, e.g. CO2 as carbon base for fine chemicals and alternative fuels.

1.3.3. Broad lines of the activities
(a) Cross-cutting and enabling materials technologies
Research on functional materials, multifunctional materials and structural materials, for innovation in all industrial sectors.

(b) Materials development and transformation
Research and development to ensure efficient and sustainable scale up to enable industrial manufacturing of future products

(c) Management of materials components
Research and development for new and innovative techniques and systems.

(d) Materials for a sustainable and low-carbon industry
Developing new products and applications, and consumer behaviour that reduce energy demand, and facilitate low-carbon production.

or secondary end-of-life utilisation of the materials shall also be covered as well as related societal innovation.

To accelerate progress, a multidisciplinary and convergent approach benefitting from world leading European research infrastructure shall be fostered, involving chemistry, physics, engineering sciences, theoretical and computational modelling, biological sciences and increasingly creative industrial design.

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Research on functional materials, multifunctional materials and structural materials, for innovation in all industrial sectors.

(b) Materials development and transformation
Research and development to ensure efficient and sustainable scale up to enable industrial manufacturing of smart future products

(c) Management of materials components
Research and development for new and innovative production techniques for materials, components and systems.

(d) Materials for a sustainable and low-carbon industry
Developing new materials, components, business models and responsible consumer behaviour, products and applications that reduce energy demand and facilitate low-carbon production.
(da) **New raw materials for the chemical industry and carbon usage**

Activities shall focus on the development of an alternative feedstock basis for the chemical industry to environmentally friendly substitute petroleum as carbon source in the medium and long term, as well as CCU systems and technologies to convert CO2 into products.

(c) Materials for creative industries

Applying design and the development of converging technologies to create new business opportunities, including the preservation of materials with historical or cultural value.

(f) Metrology, characterisation, standardisation and quality control

Promoting technologies such as characterisation, non-destructive evaluation and predictive modelling of performance for progress in materials science and engineering.

(g) Optimisation of the use of materials

Research and development to investigate substitution and alternatives to the use of materials and innovative business model approaches.

Amendment 130

Proposal for a regulation
Annex I – Part II – point 1 – point 1.4

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competitive, sustainable and innovative industrial products and processes and contribute as an innovation driver in a number of European sectors like agriculture, food, chemical and health.

A strong scientific, technological and innovation base in biotechnology, will support European industries securing leadership in this key enabling technology. This position will be further strengthened by integrating the safety assessment and management aspects of the overall risks in the deployment of biotechnology.

1.4.2. Rationale and Union added value

Powered by the expansion of the knowledge of living systems, biotechnology is set to deliver a stream of new applications and to strengthen the Union's industrial base and its innovation capacity. Examples of the rising importance of biotechnology are in industrial applications including bio-chemicals, of which the market share is estimated to increase by up to 12 %-20 % of chemical production by 2015. A number of the so-called twelve rules of Green Chemistry are also addressed by biotechnology, due to the selectivity and efficiency of bio-systems. The possible economic burdens for Union enterprises can be reduced by harnessing the potential of biotechnology processes and bio-based products to reduce CO₂ emissions, estimated to range from between 1 to 2.5 billion tons CO₂ equivalent per year by 2030. In Europe's biopharmaceutical sector, already some 20 % of the current medicines are derived from biotechnology, with up to 50 % of new medicines. Biotechnology also opens new avenues for exploiting the huge potential of marine resources for producing innovative industrial, health and environmental applications. The emerging sector of marine (blue) biotechnology has been competitive, sustainable, safe and secure, and innovative industrial products and processes and contribute as an innovation driver in a number of European sectors like health, chemical, energy, agriculture, forestry and food.

A strong scientific, technological and innovation base in biotechnology, will support this technology. This position will be strengthened by integrating the health and safety assessment, the economic and environmental impact of use of the technology and the management aspects of the overall and specific risks in the deployment of biotechnology.

1.4.2. Rationale and Union added value

Powered by the expansion of the knowledge of living systems, biotechnology is set to deliver a stream of new applications and to strengthen the Union's industrial base and its innovation capacity. Examples of the rising importance of biotechnology are in industrial and agricultural applications including biopharmaceuticals, food and feed production, bio-chemicals, of which the market share is estimated to increase by up to 12 %-20 % of chemical production by 2015. A number of the so-called twelve rules of Green Chemistry are also addressed by biotechnology, due to the selectivity and efficiency of bio-systems. The possible economic burdens for Union enterprises can be reduced by harnessing the potential of biotechnology processes and bio-based products to reduce CO₂ emissions, estimated to range from between 1 to 2.5 billion tons CO₂ equivalent per year by 2030. In Europe's biopharmaceutical sector, already some 20 % of the current medicines are derived from biotechnology, with up to 50 % of new medicines. Biotechnology also opens new avenues for exploiting the potential of marine resources for producing innovative industrial, health, energy, chemical and environmental applications. The emerging
predicted to grow by 10% a year.

Other key sources of innovation are at the interface between biotechnology and other enabling and converging technologies, in particular nanotechnologies and ICT, with applications such as sensing and diagnosing.

1.4.3. Broad lines of the activities

(a) Boosting cutting-edge biotechnologies as a future innovation driver

Development of emerging technology areas such as synthetic biology, bioinformatics and systems biology, which hold great promise for completely novel applications.

(b) Biotechnology-based industrial processes

Developing industrial biotechnology for competitive industrial products and processes (e.g. chemical, health, mining, energy, pulp and paper, textile, starch, food processing) and its environmental dimension.

(c) Innovative and competitive platform technologies

Development of platform technologies (e.g. genomics, meta-genomics, proteomics, molecular tools) to enhance leadership and competitive advantage in a wide number of economic sectors.

sector of marine (blue) biotechnology has been predicted to grow by 10% a year.

Other key sources of innovation are at the interface between biotechnology and other enabling and converging technologies, in particular nanotechnologies and ICT, with applications such as sensing and diagnosing.

1.4.3. Broad lines of the activities

(a) Boosting sustainable cutting-edge biotechnologies as a future innovation driver

Development of emerging technology areas such as biology systems, bio-informatic and synthetic biology and systems biology, which hold great promise for completely novel products, applications and technologies, taking into account the precautionary principle.

(b) Biotechnology-based industrial products and processes

Developing industrial biotechnology for competitive industrial, materials, products and sustainable processes (e.g. chemicals, health, mining, energy, pulp and paper, fiber based products and wood textile, starch, food processing) and its environmental and health related dimension.

(c) Innovative and competitive platform technologies

Development of platform technologies (e.g. systems biology genomics, meta-genomics, proteomics, phenomics, molecular tools and cell-based platforms) to enhance leadership and competitive advantage in a wide number of sectors having economic impact. This approach can further advance the potential of novel SMEs significantly.

(c) Environmental, societal and ethical concerns

Development of assessment processes
including broad consultation of stakeholders to take account of environmental, societal and ethical concerns with regard to certain types of technologies.

Amendment 131

Proposal for a regulation
Annex I – Part II – point 1 – point 1.5

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1.5.2. Rationale and union added value

The manufacturing sector is of high importance to the European economy, contributing to around 17% of GDP and accounting for some 22 million jobs in the Union in 2007. With the lowering of economic barriers to trade and the enabling effect of communications technology, manufacturing is subject to strong competition and has been gravitating to countries of lowest overall cost. *Due to high wages*, the European approach to manufacturing therefore has to change radically to remain globally competitive and Horizon 2020 can help bring together all the relevant stakeholders to achieve this.

Europe needs to continue to invest at an
Union level to maintain European leadership and competence in manufacturing technologies and make the transition to high-value, knowledge-intensive goods, creating the conditions and assets for sustainable, production and provision of lifetime service around a manufactured product. Resource intensive manufacturing and process industries need to further mobilise resources and knowledge at Union level and continue to invest in research, development and innovation to enable further progress towards a competitive low carbon economy and to comply with the agreed Union wide reductions in greenhouse gas emissions by 2050 for industrial sectors.

With strong Union policies, Europe would grow its existing industries and nurture the emerging industries of the future. The estimated value and impact of the sector of advanced manufacturing systems is significant, with an expected market size around EUR 150 billion by 2015 and compound annual growth rate of about 5%.

It is crucial to retain knowledge and competence in order to keep manufacturing and processing capacity in Europe. The emphasis of the research and innovation activities shall be on sustainable manufacturing and processing, introducing the necessary technical innovation and customer-orientation to produce high knowledge content products and services with low material and energy consumption. Europe also needs to transfer these enabling technologies and knowledge to other productive sectors, such as construction, which is a major source of greenhouse gases (GHG) with building activities accounting for around 40% of all energy consumption in Europe, giving rise to 36% of the CO₂ emissions. The construction sector, generating 10% of GDP and providing some 16 million jobs

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in Europe in 3 million enterprises, of which 95 % are SMEs, needs to adopt innovative materials and manufacturing approaches to mitigate its environmental impact.

1.5.3. Broad lines of the activities

(a) Technologies for Factories of the Future

Promoting sustainable industrial growth by facilitating a strategic shift in Europe from cost-based manufacturing to an approach based on the creation of high added value.

(b) Technologies enabling Energy-efficient buildings

Reducing energy consumption and CO2 emissions by the development and deployment of sustainable construction technologies.

(c) Sustainable and low-carbon technologies in energy-intensive process industries

Increasing the competitiveness of process industries, by drastically improving resource and energy efficiencies and reducing the environmental impact of such industrial activities through the whole value chain, promoting the adoption of low-carbon technologies.

(d) New sustainable business models

Deriving concepts and methodologies for adaptive, ‘knowledge-based’ business models in customised approaches.
Amendment 132

Proposal for a regulation
Annex I – Part II – point 1.6

Text proposed by the Commission

1.6. Space
1.6.1. Specific objective for space
The specific objective of space research and innovation is to foster a competitive and innovative space industry and research community to develop and exploit space infrastructure to meet future Union policy and societal needs.

Strengthening the European space sector by boosting space research and innovation is vital to maintain and safeguard Europe's capability of access to and operations in space in support of Union policies, international strategic interests and competitiveness amongst established and emerging space faring nations.

1.6.2. Rationale and Union added value
Space is an important, but frequently invisible enabler of diverse services and products crucial to modern day society, such as navigation, communication, weather forecasts, and geographic information. Policy formulation and implementation at European, national and regional levels increasingly depend on space-derived information. The global space sector is rapidly growing and expanding into new regions (e.g. China, South America). European industry is at business models and alternative resource-productive approaches.

Amendment

1.6. Space
1.6.1. Specific objective for space
The specific objective of space research and innovation is to foster a competitive and innovative space industry and research community to exploit space infrastructure, applications and services to meet future Union policy and societal needs.

Strengthening the European public and private, space sector by boosting space research and innovation, earth observation, navigation, science and exploration is vital to maintain and safeguard Europe's capability of access to and operations in space in support of Union policies, international strategic interests and competitiveness amongst established and emerging space faring nations and companies. Activities shall be developed and implemented in a complementary way between the Union, European Space Agency (ESA) and the Member States.

1.6.2. Rationale and Union added value
Space is an important, but frequently invisible enabler of diverse services and products crucial to modern day society, such as navigation and communication, as well as weather forecasts, and geographic information derived from Earth Observation by satellites. Policy formulation and implementation at European, national and regional levels increasingly depend on space-derived information. The global space sector is rapidly growing and expanding into new
present a considerable exporter of first class satellites for commercial and scientific purposes. Increasing global competition is challenging Europe’s position in this area. Thus Europe has an interest in ensuring that its industry continues to thrive in this fiercely competitive market. In addition, data from European science satellites have resulted in some of the most significant scientific breakthroughs in the last decades in Earth sciences and astronomy. With this unique capacity, the European space sector has a critical role to play in addressing the challenges identified by Europe 2020.

Research, technology development and innovation underpin capacities in space which are vital to European society. While the United States of America spends around 25% of their space budget on R&D, the Union spends less than 10%. Moreover, space research in the Union is fragmented in the national programmes of a few Member States. To maintain the technological and competitive edge Union level action is needed to coordinate space research, to promote the participation of researchers from all Member States, and to lower the barriers for collaborative space research projects across national borders. This needs to be done in coordination with the European Space Agency, which has successfully managed industrial satellite development and deep space missions on an intergovernmental basis with a subset of the Member States since 1975. In addition, the information provided by European satellites will offer an increasing potential for further development of innovative satellite-based downstream services. This is a typical activity sector for SMEs and should be supported by research and innovation measures in order to reap the full benefits of this opportunity, and especially of the considerable investments regions (e.g. China, South America and Africa). European industry is at present a considerable exporter of first class satellites for commercial and scientific purposes. Increasing global competition is challenging Europe’s position in this area. Thus Europe has an interest in ensuring that its industry continues to thrive in this fiercely competitive market. In addition, data from European science satellites have resulted in some of the most significant scientific breakthroughs in the last decades in Earth sciences, fundamental physics and astronomy. With this unique capacity, the European space sector has a critical role to play in addressing the challenges identified by Europe 2020.

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made on the two Union flagships Galileo and GMES.

Space naturally transcends terrestrial boundaries, providing a unique vantage point of global dimension, thus giving rise to large scale projects which (e.g. International Space Station, Space Situational Awareness) are carried out in international co-operation. To play a significant role in such international space activities in the next decades, both a common European space policy and European level space research and innovation activities are indispensible.

Space research and innovation under Horizon 2020 aligns with the Union space policy priorities as they continue to be defined by the Union Space Councils and the European Commission.

1.6.3. Broad lines of the activities

(a) Enabling European competitiveness, non-dependence and innovation of the European space sector

This entails safeguarding and developing a competitive and entrepreneurial space industry in combination with a world-class space research community to maintain European leadership and non-dependence in space technology, to foster innovation in the space sector, and to enable space-based terrestrial innovation, for example by using remote sensing and navigation data.

especially of the considerable investments made on the two Union flagships Galileo and GMES but also in the electronic communications sector which shall contribute to achieving the targets of the Union's Digital Agenda.

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Space research and innovation under Horizon 2020 aligns with the Union space policy priorities and the needs of the European operational programmes as they continue to be defined by the Union Space Councils and the European Commission.

1.6.3. Broad lines of the activities

(a) Enabling European competitiveness, non-dependence and innovation of the European space sector

This entails safeguarding and further developing a competitive, sustainable and entrepreneurial space industry in combination with a world-class space research community to maintain and strengthen European leadership by ensuring the availability of needed technologies - with appropriate maturity, the required level of non-dependence, and at competitive conditions - and to maintain and strengthen non-dependence in strategic subsectors such as access to space or critical technologies including clean solutions, to foster innovation in the space sector, and to enable space-based terrestrial innovation, for example by using
(b) Enabling advances in space technologies

This aims at developing advanced space technologies and operational concepts from idea to demonstration in space, including navigation and remote sensing, as well as the protection of space assets from threats such as debris and solar flares. To develop and apply advanced space technologies requires the continuous education and training of highly skilled engineers and scientists.

(c) Enabling exploitation of space data

A considerably increased exploitation of data from European satellites can be achieved if a concerted effort is made to coordinate and organise the processing, validation and standardisation of space data. Innovations in data handling and dissemination can also ensure a higher return on investment of space infrastructure, and contribute to tackling societal challenges, in particular if coordinated in a global effort such as through Global Earth Observation System of Systems, the European satellite navigation programme Galileo or IPCC for climate change issues.
This includes as well the exploitation of data for further scientific investigation.

(d) Enabling European research in support of international space partnerships

Space undertakings have a fundamentally global character. This is particularly clear for activities such as Space Situational Awareness (SSA), and many space science and exploration projects. The development of cutting edge space technology is increasingly taking place within such international partnerships. Ensuring access to these constitutes an important success factor for European researchers and industry.

(d) Securing return on investment on Galileo and EGNOS and European leadership in downstream applications

European satellite navigation systems, EGNOS and Galileo, are strategic investment of Europe and development of innovative downstream applications is necessary to obtain their socio-economic benefits. Professional applications such as precision agriculture, geodesy, timing and synchronization need to leverage EGNOS and Galileo, in synergy with Earth observation services, to secure European industry leadership.

Amendment 133

Proposal for a regulation
Annex I – part II – point 2

Text proposed by the Commission

2. Access to risk finance
2.1. Specific objective
The specific objective is to help remedy market deficiencies in accessing risk finance for research and innovation.

The investment situation in the research and innovation (R&I) domain is dire,
particularly for innovative SMEs and mid-caps with a high potential for growth. There are several major market gaps in the provision of finance, as the innovations required to achieve policy goals are proving too risky, typically, for the market to bear.

A facility for debt (‘Debt facility’) and a facility for equity (‘Equity facility’) will help overcome such problems by improving the financing and risk profiles of the R&I activities concerned. This, in turn, will ease access by firms and other beneficiaries to loans, guarantees and other forms of risk finance; promote early-stage investment and the development of new venture capital funds; improve knowledge transfer and the market in intellectual property; attract funds to the venture capital market; and, overall, help catalyse the passage from the conception, development and demonstration of new products and services to their commercialisation.

The overall effect will be to increase the willingness of the private sector to invest in R&I and hence contribute to reaching a key Europe 2020 target: 3 % of Union GDP invested in R&D by the end of the decade. The use of financial instruments will also help achieve the R&I objectives of all sectors and policy areas crucial for tackling societal challenges (such as climate change, energy and resource efficiency, global food security, healthcare provision and an ageing population), for enhancing competitiveness, and for supporting sustainable, inclusive growth and the provision of environmental and other public goods.

2.2. Rationale and Union added value

A Union-level Debt facility for R&I is needed to increase the likelihood that loans and guarantees are made and R&I policy objectives achieved. The current gap in the market between the demand for and supply particularly for innovative SMEs and mid-caps with a high potential for growth. There are several major market gaps in the provision of finance, as the innovations required to achieve policy goals are proving too risky, typically, for the market to bear.

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2.2. Rationale and Union added value

A Union-level Debt facility for R&I is needed to increase the likelihood that loans and guarantees are made and R&I policy objectives achieved. The current gap in the market between the demand for and supply
Demand for RSFF loan finance has been high since the launch of the facility in mid-2007: in its first phase (2007-2010), its take-up exceeded initial expectations by more than 50% in terms of active loan approvals (EUR 7.6 billion versus a forecast EUR 5 billion).

Furthermore, banks typically lack the ability to value knowledge assets, such as intellectual property, and therefore are often unwilling to invest in knowledge-based companies. The consequence is that many established innovative companies — both large and small — cannot obtain loans for higher-risk R&I activities.

These market gaps stem, at root, from uncertainties, information asymmetries and the high costs of attempting to address these issues: recently established firms have too short a track record to satisfy potential lenders, even established firms often cannot provide enough information, and at the start of an R&I investment, it is not at all certain whether the efforts undertaken will actually result in a successful innovation.

This problem also particularly affects the
processes for transferring knowledge and technology between the sphere of public research, carried out in universities and research centres, and business, where validation is required, in the form of the corresponding proof of concept, to demonstrate the innovatory potential that the knowledge and technology to be transferred will bring to the market.

Additionally, enterprises at the concept development stage or working in emerging areas typically lack sufficient collateral. Another disincentive is that even if R&I activities give rise to a commercial product or process, it is not at all certain that the company that has made the effort will be able to exclusively appropriate the benefits deriving from it.

In terms of Union added value, the Debt facility will help remedy market deficiencies that prevent the private sector from investing in R&I at an optimum level. Its implementation will enable the pooling of a critical mass of resources from the Union budget and, on a risk-sharing basis, from the financial institution(s) entrusted with its implementation. It will stimulate firms to invest more of their own money in R&I than they would otherwise have done.

In addition, the Debt facility will help organisations, both public and private, to reduce the risks of undertaking the pre-commercial procurement or procurement of innovative products and services.

A Union-level Equity facility for R&I is needed to help improve the availability of equity finance for early and growth-stage investments and to boost the development of the Union venture capital market. During the technology transfer and start-up phase, new companies face a ‘valley of death’ where public research grants stop and it is not possible to attract private finance. Public support aiming to leverage private seed and start-up funds to fill this gap is currently too fragmented and intermittent, or its management lacks the
necessary expertise. Furthermore, most venture capital funds in Europe are too small to support the continued growth of innovative companies and do not have the critical mass to specialise and operate transnationally.

The consequences are serious. Before the financial crisis, the amount invested in SMEs by European venture capital funds was about EUR 7 billion a year, while figures for 2009 and 2010 were within the EUR 3-4 billion range. Reduced funding for venture capital has affected the number of start-ups targeted by venture capital funds: in 2007, some 3 000 SMEs received venture capital funding, compared to only around 2 500 in 2010.

In terms of Union added value, the Equity facility for R&I will complement national schemes that cannot cater for cross-border investments in R&I. The early-stage deals will also have a demonstration effect that can benefit public and private investors across Europe. For the growth phase, only at European level it is possible to achieve the necessary scale and the strong participation of private investors that are essential to the functioning of a self-sustaining venture capital market.

The Debt and Equity facilities, supported by a set of accompanying measures, will support the achievement of Horizon 2020’s policy objectives. To this end, they will be dedicated to consolidating and raising the quality of Europe's science base; promoting research and innovation with a business-driven agenda; and addressing societal challenges, with a focus on activities such as piloting, demonstration, test-beds and market uptake.

Specific support actions such as information and coaching activities for SMEs should be provided. Regional authorities, SMEs associations, chambers of commerce and financial intermediaries should be involved in the programming and implementation of
In addition, they will help tackle the R&I objectives of other programmes and policy areas, such as the Common Agricultural Policy, climate action (transition to a low-carbon economy and adaptation to climate change), and the Common Fisheries Policy. Complementarities with national and regional financial instruments will be developed in the context of the Common Strategic Framework for Cohesion Policy, where an increased role for financial instruments is foreseen.

Their design takes account of the need to address the specific market deficiencies, characteristics (such as degree of dynamism and rate of company creation) and financing requirements of these and other areas. Budgetary allocations between the instruments may be adapted during the course of Horizon 2020 in response to changing economic conditions.

The Equity facility and the SME window of the Debt facility will be implemented as part of two EU Financial Instruments that provide equity and debt to support SMEs’ R&I and growth, in conjunction with the equity and debt facilities under the Programme for the Competitiveness of Enterprises and SMEs.

2.3. Broad lines of the activities
(a) The Debt facility providing debt finance for R&I: ‘Union loan & guarantee service for research and innovation’

The goal is to improve access to debt financing loans, guarantees, counter-guarantees and other forms of debt and risk finance for public and private entities and public-private partnerships engaged in research and innovation activities requiring risky investments in order to come to fruition. The focus shall be on supporting research and innovation with a high potential for excellence.

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the project than on the risk related to the company especially for SMEs. In the interests of ensuring critical mass and a whole-innovation-chain approach, they will preferentially target activities resulting from other actions funded under Horizon 2020, including support to Phase 3 of the new dedicated SME instrument.

Given that one of the objectives of Horizon 2020 is to contribute to narrowing the gap between R&D and innovation, helping to bring new or improved products and services to the market, and taking into account the critical role that the proof-of-concept stage plays in the knowledge transfer process, mechanisms will be introduced enabling financing for the proof-of-concept stages that are necessary in order to validate the importance, relevance and future innovatory impact of the research results or invention involved in the transfer.

The target final beneficiaries shall potentially be legal entities of all sizes that can borrow and repay money and, in particular, SMEs with the potential to carry out innovation and grow rapidly; mid-caps and large firms; universities and research institutes; research infrastructures and innovation infrastructures; public-private partnerships; and special-purpose vehicles or projects.

The funding of the Debt facility shall have two main components:

(1) Demand-driven, providing loans and guarantees on a first-come, first-served basis, with specific support for beneficiaries such as SMEs and mid-caps. This component shall respond to the steady and continuing growth seen in the volume of RSFF lending, which is demand-led.

Under the SME window, activities shall be supported that aim to improve access to finance for SMEs and other entities that are R&D- and/or innovation-driven.
(2) Targeted, focusing on policies and key sectors crucial for tackling societal challenges, enhancing competitiveness, supporting sustainable, low-carbon, inclusive growth, and providing environmental and other public goods. This component shall help the Union address research and innovation aspects of sectoral policy objectives.

(b) The Equity facility providing equity finance for R&I: ‘Union Equity Instruments for research and innovation’

The goal is to contribute to overcoming the deficiencies of the European venture capital market and provide equity and quasi-equity to cover the development and financing needs of innovating enterprises from the seed stage through to growth and expansion. The focus shall be on supporting the objectives of Horizon 2020 and related policies.

The target final beneficiaries shall be potentially enterprises of all sizes undertaking or embarking on innovation activities, with a particular focus on innovative SMEs and mid-caps.

The Equity facility will focus on early-stage venture capital funds providing venture capital and quasi-equity (including mezzanine capital) to individual portfolio enterprises. The facility will also have the possibility to make expansion and growth-stage investments in conjunction with the Equity Facility for Growth under the Programme for the Competitiveness of Enterprises and SMEs, to ensure a continuum of support during the start up and development of companies.

The equity facility, which will be primarily demand-driven, shall use a portfolio approach, where venture capital funds and other comparable intermediaries select the firms to be invested in.

IP-backed finance or the use of intangible assets as collateral.

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The equity facility, which will be primarily demand-driven, shall use a portfolio approach, where venture capital funds and other comparable intermediaries select the firms to be invested in.
Earmarking **may** be applied to help achieve particular policy goals, building on the positive experience in the Competitiveness and Innovation Framework Programme with earmarking for eco-innovation.

Earmarking **shall** be applied to help achieve particular policy goals, building on the positive experience in the Competitiveness and Innovation Framework Programme with earmarking for eco-innovation, *in particular for achieving goals related to the identified societal challenges.*

*The proof-of-concept window shall support knowledge and technology transfer processes at the stages prior to the industry uptake phase, with the aim of verifying and, where appropriate, increasing the innovatory market impact of the transfer, thereby reducing the uncertainty and risks inherent in transferring research results and inventions stemming from the sphere of public research to the productive sector.*

The start-up window, supporting the seed and early stages, shall enable equity investments in, amongst others, knowledge-transfer organisations, seed capital funds, cross-border seed funds, business angel co-investment vehicles, intellectual property assets, platforms for the exchange and trading of intellectual property rights, *and* early-stage venture capital funds.

The start-up window, supporting the seed and early stages, shall enable equity investments in, amongst others, knowledge-transfer organisations, seed capital funds, cross-border seed *and early-stage* funds, business angel co-investment vehicles, intellectual property assets, platforms for the exchange and trading of intellectual property rights, early-stage venture capital funds *and funds of start-up funds for cross-border activities, possibly combined with the Equity Facility for Growth (EFG) under the Programme for the Competitiveness of Enterprises and SMEs.*

The growth window shall make expansion and growth-stage investments in conjunction with the *Equity Facility for Growth under the Programme for the Competitiveness of Enterprises and SMEs,* including investments in funds-of-funds operating across borders and investing in venture capital funds, most of which will have a thematic focus that supports the goals of Europe 2020.

The growth window shall make expansion and growth-stage investments in conjunction with the *EFG,* including investments in *private and public sector* funds-of-funds operating across borders and investing in venture capital funds, most of which will have a thematic focus that supports the goals of Europe 2020.
Amendment 134
Proposal for a regulation
Annex 1 – Part 2 – point 2 – point 2.3 – point b – paragraph 7 a (new)

Text proposed by the Commission

Amendment

In the light of the extremely difficult situation in the European venture capital market, and given the urgency involved, it ought to be possible to set up a fund of venture capital funds on a pilot basis by the start of the forthcoming 2014-2020 budgetary period.

Justification
Venture capital is a vital source of funding for thousands of innovative European start-ups and SMEs with rapid-growth potential, which find it very difficult to obtain finance from banks because their business model, although promising, is untested. Setting up a fund of venture capital funds on a pilot basis, and thus maximising the leverage effect of the EU budget, would help to combat the crisis.

Amendment 135
Proposal for a regulation
Annex 1 – Part 2 – point 2 – point 2.3 – point b – paragraph 7 b (new)

Text proposed by the Commission

Amendment

The Equity facility providing equity finance shall be operated in conjunction with the EFG as a single, integrated EU instrument to provide enterprises with venture capital funding for innovation and growth from the seed phase through to the growth phase.

Justification
In practice, the two facilities for supporting venture capital, under the Horizon 2020 and the COSME programmes, should be a single, integrated financing instrument so that they function efficiently and meet the needs of the market.
Amendment 136

Proposal for a regulation
Annex I – part II – point 3

**Text proposed by the Commission**

3. Innovation in Small and Medium-Sized Enterprises

3.1 Specific objective

The specific objective is to stimulate growth by means of increasing the levels of innovation in SMEs, covering their different innovation needs over the whole innovation cycle for all types of innovation, thereby creating more fast-growing, internationally active SMEs.

Considering the central role of SMEs in Europe's economy, research and innovation in SMEs will play a crucial role in increasing competitiveness, boosting economic growth and job creation and thus in achieving the objectives of Europe 2020 and notably its flagship initiative Innovation Union.

However, SMEs have – despite their important economic and employment share and significant innovation potential – size-related problems to become more innovative and more competitive. Although Europe produces a similar number of start-up companies than the United States of America, European SMEs are finding it much harder to grow into large companies than their US counterparts. The internationalised business environment with increasingly interlinked value chains puts further pressure on them. SMEs need to enhance their innovation capacity. They need to generate, take up and commercialise new knowledge and business ideas faster and to a greater extent to compete successfully on fast evolving global markets. The challenge is to stimulate more innovation in SMEs,

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**Amendment**

3. Innovation in Small and Medium-Sized Enterprises

3.1 Specific objective

The specific objective is to stimulate sustainable economic growth by means of increasing the levels of innovation in SMEs, covering their different innovation needs over the whole innovation cycle for all types of innovation, thereby creating more fast-growing, internationally active SMEs.

Considering the central role of SMEs in Europe's economy, research and innovation in SMEs will play a crucial role in increasing competitiveness, boosting economic growth and job creation and thus in achieving the objectives of Europe 2020 and notably its flagship initiative Innovation Union.

However, SMEs have – despite their important economic and employment share and significant innovation potential – several types of problems to become more innovative and more competitive including shortage of financial resources and access to finance, shortage in skills in innovation management, weaknesses in networking and cooperation with external parties and insufficient use of public procurement to foster innovation in SMEs. Although Europe produces a similar number of start-up companies than the United States of America, European SMEs are finding it much harder to grow into large companies than their US counterparts. The internationalised business environment with increasingly interlinked value chains puts further pressure on them. SMEs need to enhance their research and innovation
thereby enhancing their competitiveness and growth.

The proposed actions aim to complement national and regional business innovation policies and programmes, to foster cooperation between SMEs and other innovation-relevant actors, to bridge the gap between research/development and successful market uptake, to provide a more business innovation friendly environment, including demand-side measures, and support taking into account the changing nature of innovation processes, new technologies, markets and business models.

Strong links with industry-specific Union policies, notably the Programme for the Competitiveness of Enterprises and SMEs and Cohesion Policy funds, will be established to ensure synergies and a coherent approach.

3.2. Rationale and Union added value

SMEs are key drivers of innovation thanks to their ability to quickly and efficiently transform new ideas in successful businesses. They serve as important conduits of knowledge spill-over bringing research results to the market. The last twenty years have shown that entire sectors have been renewed and new industries created driven by innovative SMEs. Fast growing enterprises are crucial for the development of emerging industries and for the acceleration of the structural changes that Europe needs to become a knowledge based and low carbon economy with sustained growth and high quality jobs.
SMEs can be found in all sectors of the economy. They form a more important part of the European economy than of other regions such as the United States of America. All types of SMEs can innovate. They need to be **encouraged and supported** to invest in research and innovation. In doing so they should be able to draw on the full innovative potential of the internal market and the ERA so as to create new business opportunities in Europe and beyond and to contribute to find solutions to key societal challenges.

Participation in Union research and innovation strengthens the R&D and technology capability of SMEs, increases their capacity to generate, absorb and use new knowledge, enhances the economic exploitation of new solutions, boosts innovation in products, services and business models, promotes business activities in larger markets and internationalises the knowledge networks of SMEs. SMEs that have a good innovation management in place, thereby often relying on external expertise and skills, outperform others. **SMEs also have a key role to play as recipients of technology and knowledge transfer processes, contributing to the market transfer of innovations stemming from the research carried out in universities, public research bodies and research performing SMEs.**

Cross-border collaborations are an important element in the innovation strategy of SMEs to overcome some of their size-related problems, such as access to technological and scientific competences and new markets. They contribute to turn ideas into profit and company growth and in return to increase private investment in research and innovation. **Training and technology transfer to SMEs can be key components in increasing their**
Regional and national programmes for research and innovation, often backed by European cohesion policy, play an essential role in promoting SMEs. In particular, Cohesion Policy funds have a key role to play through building capacity and providing a stairway to excellence for SMEs in order to develop excellent projects that may compete for funding under Horizon 2020. Nevertheless, only a few national and regional programmes provide funding for transnational research and innovation activities carried out by SMEs, the Union-wide diffusion and uptake of innovative solutions or cross-border innovation support services. The challenge is to provide SMEs with thematically open support to realise international projects in line with companies' innovation strategies. Actions at Union level are therefore necessary to complement activities undertaken at national and regional level, to enhance their impact and to open up the research and innovation support systems.

3.3. Broad lines of the activities

(a) Mainstreaming SME support

**SMEs shall be supported across Horizon 2020. For this purpose** a dedicated SME instrument shall provide staged and seamless support covering the whole innovation cycle. The SME instrument shall be targeted at all types of **innovative SMEs showing a strong ambition to develop, grow and internationalise.** It shall be provided for all types of innovation, including service, non-technological and social innovations. The aim is to develop and capitalise on the innovation potential of SMEs by filling the gap in funding for early stage high risk research and innovation, stimulating innovations and increasing private-sector commercialisation of research results.

**competitiveness and innovation potential.**

Regional and national programmes for research and innovation, often backed by European cohesion policy, play an essential role in promoting SMEs. In particular, Cohesion Policy funds have a key role to play through building capacity and providing a stairway to excellence for SMEs in order to develop excellent projects that may compete for funding under Horizon 2020. Nevertheless, only a few national and regional programmes provide funding for transnational research and innovation activities carried out by SMEs, the Union-wide diffusion and uptake of innovative solutions or cross-border innovation support services. The challenge is to provide SMEs with thematically open support to realise international projects in line with companies' innovation strategies. Actions at Union level are therefore necessary to complement activities undertaken at national and regional level, to enhance their impact and to open up the research and innovation support systems.

3.3. Broad lines of the activities

(a) Support to SMEs through a dedicated SME Instrument

A dedicated SME instrument shall provide staged and seamless support covering the whole innovation cycle. The SME instrument shall be targeted at all types of **innovation in SMEs showing a strong ambition to develop, grow, internationalise and innovate, with a particular focus on start-ups, spin-offs and fast growing SMEs. The SMEs will be the main applicant, but will be encouraged to cooperate with research institutes and other companies.** It shall be provided for all types of innovation, including service, non-technological and social innovations, **given each activity has a clear Union added-value.** The aim is to develop and capitalise on the innovation potential of
SMEs by filling the gap in funding for early stage high risk research and innovation, stimulating innovations and increasing private-sector commercialisation of research results. The instrument will provide a quality label for successful SMEs in view of their participation in public procurement.

The instrument will operate under a single management structure, light administrative regime and a single entry point. It shall be implemented in a bottom-up logic with open calls.

Dedicated innovation support services for the SMEs participating in the SME instrument will be implemented, building on existing structures such as the Enterprise Europe Network and other innovation service providers and mentoring/coaching schemes.

All of the specific objectives on societal challenges and on leadership in enabling and industrial technologies will apply the dedicated SME instrument and will allocate an amount for this.

(b) Support for research intensive SMEs

The goal is to promote market-oriented innovation of R&D performing SMEs. A specific action shall target research intensive SMEs in high-technology sectors that show the capability to commercially exploit the project results.

(c) Enhancing the innovation capacity of SMEs

Activities assisting the implementation and complementing the SME specific measures

(b) Support for research intensive SMEs

The goal is to promote market-oriented innovation of R&D performing SMEs. A specific action shall target research intensive SMEs in high-technology sectors that show the capability to commercially exploit the project results.

(c) Mainstreaming SME support and enhancing the innovation capacity of SMEs

SMEs shall be supported throughout Horizon 2020. For this purpose, activities
across Horizon 2020 shall be supported, notably to enhance the innovation capacity of SMEs.

(d) Supporting market-driven innovation

Supporting market-driven innovation to improve the framework conditions for innovation and tackling the specific barriers preventing, in particular, the growth of innovative SMEs.

across Horizon 2020 and creating better conditions for SMEs shall be supported, notably to enhance the innovation capacity of SMEs, including by providing funding for European applied research institutes to work on projects agreed with individual SMEs.

(d) Supporting market-driven innovation

Supporting market-driven innovation to improve the framework conditions for innovation, tackling the specific barriers preventing, in particular, the growth of innovation in SMEs, and introducing an innovation clause enabling the selection of SMEs proposing innovative products.

(da) Supporting the transfer of knowledge and technology between public research and the market

Supporting the transfer processes between the sphere of public research and innovatory SMEs, as an effective mechanism for the market transfer of research results and inventions generated by universities, research centres and research performing SMEs.

Amendment 137

Proposal for a regulation
Annex I – part III – point -1(new)

Text proposed by the Commission

Amendment

-1. Science with and for society : A cross-cutting Challenge

-1.1. Specific objective

The specific objective is to build an effective cooperation between science and society, to recruit new talent for science and to pair scientific excellence with social awareness and responsibility.
Rapid advances in contemporary scientific research and innovation have led to a rise of important ethical, legal and social issues that require a reinforced relationship and engagement between science and society.

Finding the right answers to the challenges Europe is facing requires the involvement of as many diverse actors as possible in the research and innovation process. Traditionally, interaction between science and society has been limited to a one-way, top-down, transfer of knowledge from experts to citizens. Advancing towards an open, effective and democratic knowledge-based society requires a change to a more bidirectional dialogue and active cooperation beyond traditional science education or the current conception of citizens as mere consumers of research findings. This dialogic relationship and active cooperation will undoubtedly allow science and innovation to proceed more responsibly.

The Union needs all its talents to boost its competitive edge in a global economy. To meet the 1 million net additional researchers needed in Europe by 2020 to reach the objective of a R&D intensity of 3% of GDP the Union needs its young people to pursue a career in science and it needs a diverse and gender-balanced workforce.

Yet it has been increasingly difficult to attract a higher proportion of young people to science and technology and there is a growing concern in Europe that many talented young people do not opt for a career in these domains. In addition, it is also necessary to ensure that people who have embarked on a scientific or technological career can retain their enthusiasm and motivation and have opportunities for personal development, without having to abandon their
disciplines.

There is also a clear gender imbalance in science. If Europe wants to make sure it funds an effective and efficient research and innovation programme, special attention needs to be paid to the under-representation of women in science and the lack of consideration to gender differences within research and innovation.

-1.2. Rationale and Union added value

Improving the cooperation between science and society to enable a widening of the social and political support to science and to technology in all Member States is increasingly a crucial issue that the current economic crisis has greatly exacerbated. In democratic societies, priority to public investment in science requires a vast social and political constituency sharing the values of science, educated in its processes and able to recognise its contributions to knowledge, to society and to economic progress.

This can only be achieved if a fruitful and rich dialogue and active cooperation between science and society is developed to ensure a more responsible science and to enable the development of policies more relevant to citizens.

Moreover, promoting in such an interactive way a scientific culture in Europe will strengthen democratic values and will help increasing the interest in science and technology. The strength of the European science and technology system depends on its capacity to harness talent and ideas from wherever they exist.

-1.3. Broad lines of the activities

Measures should aim at attracting new talent to the study of science and technology in European societies and bridging the gender gap in human resources working in research in the
Union. Increasing our capacity to incorporate science and technological knowledge and methods in decision-making processes, developing mechanisms allowing for the broadening and deepening of the social appraisal of scientific options and making sure ethical and social values are taken on board in the whole innovation process will also be supported.

The focus of activities shall be to:

a) make scientific and technological careers attractive to young students, and foster sustainable interaction between schools, research institutions, industry and civil society organisations;

b) promote gender equality in both its dimensions by supporting changes in: (i) the organisation of research institutions and (ii) the design of research programmes. This encompasses its various dimensions relating in particular to: ensuring equality in research careers, decision-making and including the gender dimension in the research and innovation content;

c) integrate society in science and innovation issues in order to integrate citizens' interests and values and to increase the quality, relevance, acceptability and sustainability of the research and innovation outcomes;

d) encourage citizens to engage in science through formal and informal science education, and promote the diffusion of science-based activities, namely in science centres and other appropriate channels;

e) enhance the open access to scientific results and data in order to augment scientific excellence and economic competitiveness;

f) develop the governance for the development of responsible research and innovation by all stakeholders.
(researchers, public authorities, industry and civil society organisations), which is sensitive to society needs and demands; promote an ethics framework for research and innovation;

(g) improve knowledge on science communication in order to improve the quality and effectiveness of interactions between scientists, general media and the public.

Amendment 138

Proposal for a regulation
Annex I – Part III – point 1

Text proposed by the Commission

1. Health, demographic change and wellbeing

1.1. Specific objective

The specific objective is to improve the lifelong health and wellbeing of all.

Lifelong health and wellbeing for all, high-quality and economically sustainable health and care systems, and opportunities for new jobs and growth are the aims of support to research and innovation in response to this challenge and will make a major contribution to Europe 2020.

The cost of Union health and social care systems is rising with care and prevention measures in all ages increasingly expensive, the number of Europeans aged over 65 expected to nearly double from 85 million in 2008 to 151 million by 2060, and those over 80 to rise from 22 to 61 million in the same period. Reducing or containing these costs such that they do not become unsustainable depends in part on ensuring the lifelong health and wellbeing of all and therefore on the effective

Amendment

1. Health, demographic change and wellbeing

1.1. Specific objective

The specific objective is to improve the lifelong health and wellbeing of all.

Lifelong health and wellbeing for all, high-quality and economically sustainable safe and secure health and care systems ensuring social welfare, and solutions to deal with the autonomy of an ageing population and opportunities for new jobs and growth are the aims of support to research and innovation in response to this challenge and will make a major contribution to Europe 2020.

Eradicating inequalities in health is a major concern in Europe as they are on the increase while the cost of Union health and social care systems is rising with care and prevention measures in all ages increasingly expensive, the number of Europeans aged over 65 expected to nearly double from 85 million in 2008 to 151 million by 2060, and those over 80 to rise from 22 to 61 million in the same period. Costs also result from discrimination on the basis of disability and from the
prevention, treatment and management of disease and disability.

Chronic conditions such as cardiovascular disease (CVD), cancer, diabetes, neurological and mental health disorders, overweight and obesity and various functional limitations are major causes of disability, ill-health and premature death, and present considerable social and economic costs.

In the Union, CVD annually accounts for more than 2 million deaths and costs the economy more than EUR 192 billion while cancer accounts for a quarter of all deaths and is the number one cause of death in people aged 45-64. Over 27 million people in the Union suffer from diabetes and the total cost of brain disorders (including, but not limited to those affecting mental health) has been estimated at EUR 800 billion. Environmental, life-style and

creation of physical and social environments which are inaccessible to persons with disabilities. Reducing or containing these costs such that they do not become unsustainable depends in part on informing people better and encouraging responsible health choices so as to optimise the lifelong health and well-being of all and therefore on the effective prevention, treatment and management of disease and disability. Incremental development, based solely on present knowledge, will not meet these needs; radical novel ideas and knowledge must be sought and implemented. Close collaboration between academia, industry, healthcare providers and regulatory agencies will be needed to meet the challenges.

Chronic conditions such as cardiovascular disease (CVD), cancer, diabetes, respiratory, rheumatic, musculoskeletal, neurodegenerative and autoimmune diseases, neurological and mental health disorders, overweight and obesity and various functional limitations are major causes of disability, ill-health and premature death, and present considerable social and economic costs. In the case of other conditions, in particular neurodegenerative diseases, if prevention strategies are to be effective a major boost will need to be given to etiological research and better early diagnosis and treatment options will need to be developed.

In the Union, CVD annually accounts for more than 2 million deaths and costs the economy more than EUR 192 billion while cancer accounts for a quarter of all deaths and is the number one cause of death in people aged 45-64. Over 27 million people in the Union suffer from diabetes and over 120 million from rheumatic and musculoskeletal conditions. The total cost of brain disorders (including, but not limited to those affecting mental health)
socio-economic factors are relevant in several of these conditions with up to one third of the global disease burden estimated to be related to these.

has been estimated at EUR 800 billion. This figure will continue to rise dramatically, largely as a result of Europe's ageing population and the associated increases in neurodegenerative diseases. Environmental, life-style and socio-economic factors are relevant in several of these conditions with up to one third of the global disease burden estimated to be related to these. It is estimated that depression alone affects 165 million people in the Union, at a cost of EUR 118 000 million. For neurodegenerative diseases, amongst other conditions, effective prevention strategies will first require a considerable boost in research into their causes and the development of better early diagnosis and treatment options, including, where appropriate, personalised advanced therapies.

Rare diseases remain a major challenge, affecting approx. 30 million people across Europe. Effective treatments can only be developed if member states cooperate, as the cases in any given member state are not enough for effective research to be done.

Diseases in children, including premature born children.

Children's health is a top priority for the European Union. As in the case of rare diseases, effective research and treatment can only be developed within the framework of a common European strategy.

Infectious diseases (e.g. HIV/AIDS, tuberculosis and malaria), are a global concern, accounting for 41 % of the 1.5 billion disability adjusted life years worldwide, with 8 % of these in Europe. Emerging epidemics and the threat of increasing anti-microbial resistance must also be prepared for.

Infectious diseases (e.g. HIV/AIDS, tuberculosis, malaria and neglected diseases), are a global concern, accounting for 41 % of the 1.5 billion disability adjusted life years worldwide, with 8 % of these in Europe. Emerging epidemics, re-emerging infectious diseases and the threat of increasing anti-microbial resistance must also be prepared for. Of increasing concern are water related diseases.

Meanwhile, drug and vaccine development
processes are becoming more expensive and less effective. Persistent health inequalities must be addressed, and access to effective and competent health systems must be ensured for all Europeans.

1.2. Rationale and Union added value

Disease and disability are not stopped by national borders. An appropriate European level research and innovation response can and should make a crucial contribution to addressing these challenges, deliver better health and wellbeing for all, and position Europe as a leader in the rapidly expanding global markets for health and wellbeing innovations.

The response depends on excellence in research to improve our fundamental understanding of health, disease, disability, development and ageing (including of life expectancy), and on the seamless and widespread translation of the resulting and existing knowledge into innovative, scalable and effective products, strategies, interventions and services. Furthermore, the pertinence of these challenges across Europe and in many cases, globally, demands a response characterised by long term and coordinated support for cooperation between excellent, multidisciplinary and multi-sector teams.
Similarly, the complexity of the challenge and the interdependency of its components demand a European level response. Many approaches, tools and technologies have applicability across many of the research and innovation areas of this challenge and are best supported at Union level. These include the development of long term cohorts and the conduct of clinical trials, the clinical use of "-omics" or the development of ICT and their applications in healthcare practice, notably e-health. The requirements of specific populations are also best addressed in an integrated manner, for example in the development of stratified and/or personalised medicine, in the treatment of rare diseases, and in providing assisted and independent living solutions.

To maximise the impact of Union level actions, support will be provided to the full spectrum of research and innovation activities. From basic research through translation of knowledge to large trials and demonstration actions, mobilising private investment; to public and pre-commercial procurement for new products, services, scalable solutions, which are when necessary, interoperable and supported by defined standards and/or common guidelines. This co-ordinated, European effort will contribute to the ongoing development of the ERA. It will also interface, as and when appropriate, with activities developed in the context of the development capacity in endemic areas. It is also necessary to address the challenge from the perspective of the social and economic sciences and humanities.

Similarly, the complexity of the challenge and the interdependency of its components demand a European level response. Many approaches, tools and technologies have applicability across many of the research and innovation areas of this challenge and are best supported at Union level. These include understanding the molecular basis of disease, the identification of innovative therapeutic strategies and novel model systems, the multidisciplinary application of knowledge in physics, chemistry and systems biology to health control, the development of long term cohorts and the conduct of clinical trials which focus on the developments and effects of medicines in all age groups, the clinical use of "-omics" or the development of ICT and their applications in healthcare practice, notably e-health. The requirements of specific populations are also best addressed in an integrated manner, for example in the development of stratified and/or personalised medicine, in the treatment of poverty-related, neglected and rare diseases, and in providing assisted and independent living solutions.

In order to foster strategic coordination of health research and innovation across Horizon 2020 and promote transnational medical research,
Health for Growth Programme and the European Innovation Partnership on Active and Health Ageing.

1.3. Broad lines of the activities

Effective health promotion, supported by a robust evidence base, prevents disease, improves wellbeing and is cost effective. Health promotion and disease prevention also depend on an understanding of the determinants of health, on effective preventive tools, such as vaccines, on effective health and disease surveillance and preparedness, and on effective screening programmes.

Successful efforts to prevent, manage, treat and cure disease, disability and reduced functionality are underpinned by the fundamental understanding of their determinants and causes, processes and impacts, as well as factors underlying good health and wellbeing. Effective sharing of data and the linkage of these data with large scale cohort studies is also essential, as is the translation of research findings into the clinic, in particular through the conduct of clinical trials.

The corresponding Scientific steering panels for Health will be established. This coordination can be extended to other programmes and instruments related to this challenge. This co-ordinated European effort will increase the scientific and human capabilities in health research and contribute to the ongoing development of the ERA. It will also interface, as and when appropriate, with activities developed in the context of the Health for Growth Programme and the European Innovation Partnership on Active and Health Ageing.

1.3. Broad lines of the activities

Effective health promotion, supported by a robust evidence base, prevents disease, improves wellbeing and is cost effective. Health promotion and disease prevention, including occupational illnesses, also depend on an understanding of the determinants of health including socio-economic status and gender, on effective preventive tools (such as vaccines and policy interventions targeting social determinants and at risk groups) on effective health and disease surveillance and preparedness, and on effective screening programmes.

Successful efforts to prevent, manage, treat and cure disease, disability and reduced functionality are underpinned by the fundamental understanding of their determinants and causes, processes and impacts, as well as factors underlying good health and wellbeing. Effective sharing of data, standardised data processing and the linkage of these data with large scale cohort studies is also essential, as is the translation of research findings into the clinic, including through the conduct of clinical trials, which should address all age groups to ensure that medicines are adapted to their use.

Poverty related and neglected diseases are a global concern and research gaps must be addressed through creating innovation
driven by patients' needs. The resurgence of old infectious diseases including tuberculosis in the European region, the increased prevalence of vaccine-preventable diseases in developed countries and the growing problem of anti-microbial resistance further underlines the need for a comprehensive approach and increased public support for R&D for those diseases that kill millions of people every year.

Personalised medicine must be developed, in order to generate new preventive and therapeutic strategies which can be adjusted to patient requirements, so as to increase the prevention and early detection of diseases. The factors which influence therapeutic decision-making must be identified, further elucidated and developed through research.

An increasing disease and disability burden in the context of an aging population places further demands on health and care sectors. If effective health and care is to be maintained for all ages, efforts are required to improve decision making in prevention and treatment provision, to identify and support the dissemination of best practice in the health and care sectors, and to support integrated care and the wide uptake of technological, organisational and social innovations empowering in particular older persons as well as disabled persons to remain active and independent. Doing so will contribute to increasing, and lengthening the duration of their physical, social, and mental well-being.

All of these activities shall be undertaken in such a way as to provide support throughout the research and innovation cycle, strengthening the competitiveness of the European based industries and development of new market opportunities.

An increasing disease and disability burden together with problems of mobility and accessibility in the context of an aging population places further demands on health and care sectors. If effective health and care is to be maintained for all ages, efforts are required to improve decision making in prevention and treatment provision, to identify and support the dissemination of best practice in the health and care sectors, and to support integrated care and the wide uptake of technological, organisational and social innovations empowering in particular older persons, persons with chronic diseases as well as disabled persons to remain active and independent. Doing so will contribute to increasing, and lengthening the duration of their physical, social, and mental well-being.

All of these activities shall be undertaken in such a way as to provide support for long term research programmes that covers the full innovation cycle, strengthening the competitiveness of the European based industries and development of new market opportunities.
Emphasis will also be placed on engaging all health stakeholders – including patients and patient organisations – in order to develop a research and innovation agenda that actively involves citizens and reflects their needs and expectations.

Specific activities shall include:
understanding the determinants of health (including environmental and climate related factors), improving health promotion and disease prevention; understanding disease and improving diagnosis; developing effective screening programmes and improving the assessment of disease susceptibility; improving surveillance and preparedness; developing better preventive vaccines; using in-silico medicine for improving disease management and prediction; treating disease; transferring knowledge to clinical practice and scalable innovation actions; better use of health data; active ageing, independent and assisted living; individual empowerment for self-management of health; promotion of integrated care; improving scientific tools and methods to support policy making and regulatory needs; and optimising the efficiency and effectiveness of healthcare systems and reducing inequalities by evidence based decision making and dissemination of best practice, and innovative technologies and approaches.

Specific activities shall include:
understanding the determinants of health (including food genetic, pathogen, environmental, climate, social, gender and poverty related factors), improving health promotion and disease prevention; understanding the basis of disease and improving diagnosis in different socio-economic contexts; developing effective screening programmes and improving the assessment of disease susceptibility; improving the surveillance of infectious diseases in the Union as well as in neighbouring and developing countries and preparedness for combating epidemics and emerging diseases; developing new and better preventive vaccines and drugs; using in-silico medicine for improving disease management and prediction; developing adapted treatments and treating disease; transferring knowledge to clinical practice and scalable innovation actions; better collection and use of health cohort and administrative data; standardised data analysis techniques; healthy and active ageing, independent and assisted living; improving palliative medicine individual empowerment for self-management of health; promotion of integrated care, including psychosocial aspects; improving scientific tools and methods to support policy making and regulatory needs; and optimising the efficiency and effectiveness of healthcare systems and reducing health disparities and inequalities by evidence based decision making and dissemination of best practice, and innovative technologies and approaches. All of these activities shall properly account for gender and sex.
analysis. The activities shall take full advantage of the opportunities presented for a true interdisciplinary approach, combining knowledge from all seven challenges and the other pillars to ensure sustainable solutions within the domain. Active involvement of health care providers must be encouraged in order to secure rapid take-up and implementation of results.

Amendment 139

Proposal for a regulation
Annex I – Part III – point 2

Text proposed by the Commission

2. Food security, sustainable agriculture, marine and maritime research and the bio-economy

2.1 Specific objective
The specific objective is to secure sufficient supplies of safe and high quality food and other bio-based products, by developing productive and resource-efficient primary production systems, fostering related ecosystem services, along side competitive and low carbon supply chains. This will accelerate the transition to a sustainable European bio-economy.

Over the coming decades, Europe will be challenged by increased competition for limited and finite natural resources, by the effects of climate change, in particular on primary production systems (agriculture, forestry, fisheries and aquaculture) and by the need to provide a sustainable, safe and secure food supply for the European and an increasing global population. A 70% increase of the world food supply is estimated to be required to feed the 9 billion global population by 2050.

Amendment

2. Food quality, safety and security, sustainable agriculture and forestry, marine and maritime research and the bio-based industries

2.1 Specific objective
The specific objective is to secure sufficient supplies of safe and high quality healthy food and other bio-based products, by developing productive, sustainable and resource-efficient primary production and food processing systems, fostering related ecosystem services, along side competitive and low carbon supply chains. This will accelerate the transition to a sustainable European bio-economy.

Over the coming decades, Europe will be challenged by increased competition for limited and finite natural resources, by the effects of climate change, in particular on primary production systems (agriculture, forestry, fisheries and aquaculture) and by the need to provide a sustainable, safe and secure food supply for the European and an increasing global population. A 70% increase of the world food supply is estimated to be required to feed the 9 billion global population by 2050.
Agriculture accounts for about 10% of Union greenhouse gases emissions, and while declining in Europe, global emissions from agriculture are projected to increase up to 20% by 2030. Furthermore, Europe will need to ensure sufficient supplies of raw materials, energy and industrial products, under conditions of decreasing fossil carbon resources (oil and liquid gas production expected to decrease by about 60% by 2050), while maintaining its competitiveness. Bio-waste (estimated at up to 138 million tonnes per year in the Union, of which up to 40% is land-filled) represents a huge problem and cost, despite its high potential added value. For example, an estimated 30% of all food produced in developed countries is discarded. Major changes are needed to reduce this amount by 50% in the Union by 2030. In addition, national borders are irrelevant in the spread of animal and plant pests and diseases, including zoonotic diseases, and food borne pathogens. While effective national prevention measures are needed, action at Union level is essential for ultimate control and the effective running of the single market. The challenge is complex, affects a broad range of interconnected sectors and requires a plurality of approaches.

More and more biological resources are needed to satisfy market demand for a secure and healthy food supply, biomaterials, biofuels and bio-based products, ranging from consumer products to bulk chemicals. However the capacities of the terrestrial and aquatic ecosystems required for their production are limited, while there are competing claims for their utilisation, and often not optimally managed, as shown for example by a severe decline in soil carbon content and fertility. There is under-utilised scope for fostering ecosystem services from farmland, forests, marine and fresh waters by integrating agronomic and agriculture accounts for about 10% of Union greenhouse gases emissions, and while declining in Europe, global emissions from agriculture are projected to increase up to 20% by 2030. Furthermore, Europe will need to ensure sufficient supplies of raw materials, clean water resources, energy and industrial products, under conditions of decreasing fossil carbon resources (oil and liquid gas production expected to decrease by about 60% by 2050), while maintaining its competitiveness. Bio-waste (estimated at up to 138 million tonnes per year in the Union, of which up to 40% is land-filled) represents a huge problem and cost, despite its high potential added value. For example, an estimated 30% of all food produced in developed countries is discarded. Major changes are needed to reduce this amount by 50% in the Union by 2030. In addition, national borders are irrelevant in the spread of animal and plant pests and diseases, including zoonotic diseases, and food borne pathogens. While effective national prevention measures are needed, action at Union level is essential for ultimate control and the effective running of the single market. The challenge is complex, affects a broad range of interconnected sectors and requires a plurality of approaches. More and more biological resources are needed to satisfy market demand for a secure and healthy food supply, biomaterials, biofuels and bio-based products, ranging from consumer products to bulk chemicals. However the capacities of the terrestrial and aquatic ecosystems required for their production are limited, while there are competing claims for their utilisation, and often not optimally managed, as shown for example by a severe decline in soil carbon content and fertility and fish stock depletion. There is under-utilised scope for fostering ecosystem services from farmland, forests, marine and fresh waters
environmental goals into sustainable production.

The potential of biological resources and ecosystems could be used in a much more sustainable, efficient and integrated manner. For examples, the potential of biomass from forests and waste streams from agricultural, aquatic, industrial, and also municipal origins could be better harnessed.

In essence, a transition is needed towards an optimal and renewable use of biological resources and towards sustainable primary production and processing systems that can produce more food and other bio-based products with minimised inputs, environmental impact and greenhouse gas emissions, enhanced ecosystem services, zero-waste and adequate societal value. A critical effort of interconnected research and innovation is a key element for this to happen, in Europe and beyond.

2.2 Rationale and Union added value

Agriculture, forestry and fisheries together with the bio-based industries are the major sectors underpinning the bio-economy. This latter represents a large and growing market estimated to be worth over EUR 2 trillion, providing 20 million jobs and accounting for 9% of total employment in the Union in 2009. Investments in research and innovation under this societal challenge will enable Europe to take leadership in the concerned markets and will play a role in achieving the goals of

by integrating agronomic and environmental goals into sustainable production.

The potential of biological resources and ecosystems could be used in a much more sustainable, efficient and integrated manner. For examples, the potential of biomass from agriculture, forests and waste streams from agricultural, aquatic, industrial, and also municipal origins could be better harnessed.

In essence, a transition is needed towards an optimal and renewable use of biological resources and towards sustainable primary production and processing systems that can produce more food, fibre and other bio-based products with minimised inputs, environmental impact and greenhouse gas emissions, enhanced ecosystem services and zero-waste and adequate societal value. The aim is establishing food production systems that - rather than degrading the natural resources they depend upon - strengthen, reinforce and nourish the resource base, which would enable sustainable wealth generation. Responses to the way we generate, distribute, market, consume and regulate food production must be better understood and developed. A critical effort of interconnected research and innovation is a key element for this to happen, in Europe and beyond.
the Europe 2020 strategy and its Innovation Union and Resource Efficient Europe flagship initiatives.

A fully functional European bio-economy – encompassing the sustainable production of renewable resources from land and aquatic environments and their conversion into food, bio-based products and bioenergy as well as the related public goods - will generate high European added value. Managed in a sustainable manner, it can reduce the environmental footprint of primary production and the supply chain as a whole. It can increase their competitiveness and provide jobs and business opportunities for rural and coastal development. The food security, sustainable agriculture, and overall bio-economy – related challenges are of a European and global nature. Actions at Union level are essential to bring together clusters to achieve the necessary breadth and critical mass to complement efforts made by a single or groups of Member States. A multi-actor approach will ensure the necessary cross-fertilising interactions between researcher, businesses, farmers/producers, advisors and end-users. The Union level is also necessary to ensure coherence in addressing this challenge across sectors and with strong links to relevant Union policies. Coordination of research and innovation at Union level will stimulate and help to accelerate the required changes across the Union.

Research and innovation will interface with
a wide spectrum of Union policies and related targets, including the Common Agriculture Policy (in particular the Rural Development Policy) and the European Innovation Partnership 'Agricultural Productivity and Sustainability', the Common Fisheries Policy, the Integrated Maritime Policy, the European Climate Change Programme, the Water Framework Directive, the Marine Strategy Framework Directive, the Forestry Action Plan, the Soil Thematic Strategy, the Union's 2020 Biodiversity Strategy, the Strategic Energy Technology Plan, the Union's innovation and industrial policies, external and development aid policies, plant health strategies, animal health and welfare strategies and regulatory frameworks to protect the environment, health and safety, to promote resource efficiency and climate action, and to reduce waste. A better integration of research and innovation into related Union policies will significantly improve their European added value, provide leverage effects, increase societal relevance and help to further develop sustainable land, seas and oceans management and bio-economy markets.

For the purpose of supporting Union policies related to the bio-economy and to facilitate governance and monitoring of research and innovation, socio-economic research and forward looking activities will be performed in relation to the bio-economy strategy, including development of indicators, data bases, models, foresight and forecast, impact assessment of initiatives on the economy, society and the environment.

Challenge-driven actions focusing on social and economic benefits and the modernisation of the bio-economy associated sectors and markets shall be supported through multi-disciplinary

a wide spectrum of Union policies and related targets, including the Common Agriculture Policy (in particular the Rural Development Policy) and the European Innovation Partnership 'Agricultural Productivity and Sustainability', the European Innovation Partnership on Water, the Common Fisheries Policy, the Integrated Maritime Policy, the European Climate Change Programme, the Water Framework Directive, the Marine Strategy Framework Directive, the Forestry Action Plan, the Soil Thematic Strategy, the Union's 2020 Biodiversity Strategy, the Strategic Energy Technology Plan, the Union's innovation and industrial policies, external and development aid policies, plant health strategies, animal health and welfare strategies and regulatory frameworks to protect the environment, health and safety, to promote resource efficiency and climate action, and to reduce waste. A better integration of the full cycle from fundamental research to innovation into related Union policies will significantly improve their European added value, provide leverage effects, increase societal relevance, provide healthy food products and help to further develop sustainable land, seas and oceans management and bio-economy markets.

For the purpose of supporting Union policies related to the bio-economy and to facilitate governance and monitoring of research and innovation, socio-economic research and forward looking activities will be performed in relation to the bio-economy strategy, including development of indicators, data bases, models, foresight and forecast, impact assessment of initiatives on the economy, society and the environment.

Challenge-driven actions focusing on ecological, social and economic benefits and the modernisation of the bio-economy associated sectors, participating actors and markets shall be supported through multi-
research, driving innovation and leading to the development of new practices, products and processes. It shall also pursue a broad approach to innovation ranging from technological, non-technical, organisational, economic and social innovation to for instance novel business models, branding and services.

2.3 Broad lines of activities
(a) Sustainable agriculture and forestry

The aim is to supply sufficient food, feed, biomass and other raw materials, while safeguarding natural resources and enhancing ecosystems services, including coping with and mitigating climate change. The activities shall focus on more sustainable and productive agriculture and forestry systems which are both resource-efficient (including low carbon) and resilient, while at the same time developing of services, concepts and policies for thriving rural livelihoods.

disciplinary research, driving innovation and leading to the development of new practices, sustainable products and processes. It shall also pursue a broad approach to innovation ranging from technological, non-technical, organisational, economic and social innovation to for instance novel business models, branding and services. The potential of farmers and SMEs to contribute to innovation in the field must be fully recognised. The approach to the bio-based economy shall take account of the importance of local knowledge enhancing local capabilities, while also accommodating diversity and complexity.

2.3 Broad lines of activities
(a) Sustainable and competitive agriculture, livestock farming and forestry

The aim is to supply sufficient food, feed, biomass and other raw materials, while safeguarding the natural resource base and biodiversity, in a European and worldwide perspective and enhancing ecosystems services, including coping with and mitigating climate change. The activities shall focus on more sustainable and productive agriculture, livestock and forestry systems which are resource-efficient (including low carbon, low external input and organic farming) protect natural resources, are diverse, produce less waste can adapt to a changing environment and are resilient, on increasing the quality and value of agricultural products, and at the same time developing services, concepts and policies for diverse food systems and thriving rural livelihoods.

In particular for forestry, the aim is to sustainably produce bio-based products, ecosystems services with due consideration to economical, ecological and social aspects of forestry. Activities will focus on the further development of production and sustainability of resource
(b) Sustainable and competitive agri-food sector for a safe and healthy diet

The aim is to meet the requirements of citizens for safe, healthy and affordable food, and to make food and feed processing and distribution more sustainable and the food sector more competitive. The activities shall focus on healthy and safe foods for all, informed consumer choices, and competitive food processing methods that use less resources and produce less by-products, waste and green-house gases.

(c) Unlocking the potential of aquatic living resources

The aim is to sustainably exploit aquatic living resources to maximise social and economic benefits/returns from Europe's oceans and seas. The activities shall focus on an optimal contribution to secure food supplies by developing sustainable and environmentally friendly fisheries and competitive European aquaculture in the context of the global economy and on boosting marine innovation through biotechnology to fuel smart "blue" growth.

(d) Sustainable and competitive bio-based industries

The aim is the promotion of low carbon, resource efficient, sustainable and competitive European bio-based industries. The activities shall focus on fostering the bio-economy by transforming conventional efficient forestry systems which are instrumental in the strengthening of forest resilience and biodiversity protection.

(b) Sustainable and competitive agri-food sector for a safe, affordable and healthy diet

The aim is to meet the requirements of citizens for safe, healthy and affordable food, and to make food and feed processing and distribution as well as food consumption more sustainable and the food sector more competitive. The activities shall focus on a broad diversity of healthy, high quality and safe foods for all, informed consumer choices, and competitive food processing methods that use less resources and additives and produce less by-products, waste and green-house gases.

(c) Unlocking the potential of fisheries, aquaculture and marine biotechnologies

The aim is to sustainably exploit and maintain aquatic living resources to maximise social and economic benefits/returns from Europe's oceans and seas while protecting biodiversity and ecosystem services. The activities shall focus on an optimal contribution to secure food supplies by developing sustainable and environmentally friendly fisheries and competitive European aquaculture in the context of the global economy and on boosting marine innovation through biotechnology to fuel smart "blue" growth with due respect for both the limitations and the potentials of the marine environment.

(d) Sustainable and competitive bio-based industries

The aim is the promotion of low carbon, resource efficient (including nutrient, energy, carbon, water and soil use efficiency), sustainable and competitive European bio-based industries, while
making bio-waste an asset used at its full potential, for which it is vital to establish a closed circuit of nutrients between urban and rural areas. The activities shall focus on fostering the bio-economy by transforming conventional industrial processes and products into bio-based resource and energy efficient ones, the development of integrated second and third generation biorefineries, producing and utilising biomass and other residues from primary agricultural and forestry production, biowaste and bio-based industry by-products, and transformation of bio-waste in urban areas into agricultural inputs through efficient cleaning, through supporting, where necessary, standardisation, and certification schemes, but also through regulatory and demonstration/field trial activities and others, while taking into account the environmental and socioeconomic implication of the bio-economy on land use and land use changes, as well as the civil society views and concerns.

(d) Cross-cutting marine and maritime research

The exploitation of living and non-living marine resources as well as the use of different sources of marine energy and the wide range of different uses that is made of the seas raise cross-cutting scientific and technological challenges. Seas and oceans also play a crucial role in climate regulation, but they are heavily impacted by inland, coastal and maritime human activities and also by climate change. The overall aim is to develop cross-cutting marine and maritime scientific and technological knowledge (including through study of palegic birds) with a view to unlock the blue growth potential across the range of marine and maritime industries, while protecting the marine environment and adapting to climate change. This strategic coordinated
approach for marine and maritime research across all challenges and pillars of Horizon 2020 will also support the implementation of relevant Union policies to help deliver key blue growth objectives.

Amendment 140

Proposal for a regulation
Annex I – Part III – point 3

Text proposed by the Commission

3. Secure, clean and efficient energy

3.1. Specific objective

The specific objective is to make the transition to a reliable, sustainable and competitive energy system, in the face of increasingly scarce resources, increasing energy needs and climate change.

The Union intends to reduce greenhouse gas emissions by 20% below 1990 levels by 2020, with a further reduction to 80-95% by 2050. In addition, renewables should cover 20% of final energy consumption in 2020 coupled with a 20% energy efficiency target. Achieving these objectives will require an overhaul of the energy system combining low carbon profile, energy security and affordability, while at the same time reinforcing Europe's economic competitiveness. Europe is currently far from this overall goal. 80% of the European energy system still relies on fossil fuels, and the sector produces 80% of all the Union's greenhouse gas emissions. Every year 2.5% of the Union's Gross Domestic Product (GDP) is spent on energy imports and this is likely to increase. This trend would lead to total dependence on oil and gas imports by 2050. Faced with volatile energy prices on the world market, coupled with concerns over security of supply, European

Amendment

3. Secure, clean and efficient energy

3.1. Specific objective

The specific objective is to make the transition to a reliable, affordable, sustainable and competitive energy system, in the face of increasingly scarce resources, increasing energy needs and climate change.

The Union intends to reduce greenhouse gas emissions by 20% below 1990 levels by 2020, with a further reduction to 80-95% by 2050. In addition, renewables should cover 20% of final energy consumption in 2020 coupled with a 20% energy efficiency target. All decarbonisation scenarios in the Energy Roadmap 2050 show that renewable energy technologies will account for the biggest share of energy supply technologies. This must be accompanied by ambitious energy efficiency policies as the most cost-effective way of reaching our long-term decarbonisation goals. It is therefore appropriate for 75% of the budget under this Challenge to go towards research and innovation in renewable energy, end-user-energy efficiency, smart grids and energy storage. An additional 15% shall go to the Intelligent Energy Europe Programme. Achieving these objectives will require an overhaul of the energy system combining the development of
industries and consumers are spending an increasing share of their income on energy. Alternatives to fossil fuels, energy security and affordability, while at the same time reinforcing Europe's economic competitiveness. Europe is currently far from this overall goal. 80% of the European energy system still relies on fossil fuels, and the sector produces 80% of all the Union's greenhouse gas emissions. Every year 2.5% of the Union's Gross Domestic Product (GDP) is spent on energy imports and this is likely to increase. This trend would lead to total dependence on oil and gas imports by 2050. Faced with volatile energy prices on the world market, coupled with concerns over security of supply, European industries and consumers are spending an increasing share of their income on energy.

The roadmap to a competitive low-carbon economy in 2050 shows that the targeted reductions in greenhouse gas emissions will have to be met largely within the territory of the Union. This would entail reducing CO2 emissions by over 90% by 2050 in the power sector, by over 80% in industry, by at least 60% in transport and by about 90% in the residential sector and services.

To achieve the reductions, significant investments need to be made in research, development, demonstration and market roll-out of efficient, safe and reliable low-carbon energy technologies and services. These must go hand in hand with non-technological solutions on both the supply and demand sides. All this must be part of an integrated low-carbon policy, including mastering key enabling technologies, in particular ICT solutions and advanced manufacturing, processing and materials. The goal is to produce efficient energy technologies and services that can be taken up widely on European and international

The roadmap also shows that inter-alia, natural gas, in the short to medium term, can contribute to the transformation of the energy sector combined with the use of CCS technology.

To achieve these reductions, significant investments need to be made in research, development, demonstration and market roll-out at affordable prices of efficient, safe, secure and reliable low-carbon energy technologies and services, including electricity storage and the roll-out of small and micro-scale energy systems. These must go hand in hand with non-technological solutions on both the supply and demand sides. All this must be part of an integrated sustainable low-carbon policy, including mastering key enabling technologies, in particular ICT solutions and advanced manufacturing,
markets and to establish intelligent
demand-side management based on an
open and transparent energy trade market
and intelligent energy efficiency
management systems.

3.2. Rationale and Union added value
New technologies and solutions must compete on cost and reliability against highly optimised energy systems with well-established incumbents and technologies. Research and innovation are critical to make these new, cleaner, low-carbon, more efficient energy sources commercially attractive on the scale needed. Neither industry alone, nor Member States individually, are able to bear the costs and risks, for which the main drivers (transition to a low carbon economy, providing affordable and secure energy) are outside the market.

Speeding up this development will require a strategic approach at Union level, spanning energy supply, demand and use in buildings, services, transport and industrial value chains. This will entail aligning resources across the Union, including cohesion policy funds, in particular through the national and regional strategies for smart specialisation, emission trading schemes (ETS), public procurement and other financing mechanisms. It will also require regulatory and deployment policies for renewables and energy efficiency, tailored technical assistance and capacity-building to remove non-technological barriers.

The Strategic Energy Technology Plan (SET Plan) offers such a strategic approach. It provides a long term agenda to processing and materials. The goal is to produce efficient energy technologies and services that will contribute to tackling energy challenges, mainly linked to the integration of renewable energy, and that can be taken up widely on European and international markets and to establish intelligent demand-side management based on an open and transparent energy trade market and secure intelligent energy efficiency management systems.

3.2. Rationale and Union added value
New technologies and solutions must compete in energy systems designed for historic incumbents and technologies which have absorbed the vast majority of the world and Europe's research funding and subsidies until today. Research and innovation are critical to make new, cleaner, renewable and more efficient energy sources commercially attractive on the scale needed. Neither industry alone, nor Member States individually, are able to bear the costs and risks, for which the main drivers (transition to a low carbon economy, providing affordable and secure energy) are outside the market.

Speeding up this development will require a strategic approach at Union level, spanning energy supply, demand and use in buildings, services, transport and industrial value chains. This will entail aligning resources across the Union, including cohesion policy funds, in particular through the national and regional strategies for smart specialisation, emission trading schemes (ETS), public procurement and other financing mechanisms. It will also require regulatory and deployment policies for renewables, energy efficiency tailored technical assistance and capacity-building to remove non-technological barriers.

The Strategic Energy Technology Plan (SET Plan) offers such a strategic approach. It provides a long term agenda to
address the key innovation bottlenecks that energy technologies are facing at the frontier research and R&D/proof-of-concept stages and at the demonstration stage when companies seek capital to finance large, first-of-a-kind projects and to open the market deployment process. Besides the many technologies represented in the SET-Plan, other newly emerging technologies with disruptive potential will not be neglected.

The resources required to implement the SET Plan in full have been estimated at EUR 8 billion per year over the next 10 years. This is well beyond the capacity of individual Member States or research and industrial stakeholders alone. Investments in research and innovation at Union level are needed, combined with mobilisation of efforts across Europe in the form of joint implementation and risk and capacity sharing. Union funding of energy research and innovation shall therefore complement Member States' activities by focusing on activities with clear Union added value, in particular those with high potential to leverage national resources. Action at Union level shall also support high-risk, high-cost, long-term programmes beyond the reach of individual Member States, pool efforts to reduce investment risks in large-scale activities such as industrial demonstration and develop Europe-wide, interoperable energy solutions.

Implementation of the SET-Plan as the research and innovation pillar of European energy policy will reinforce the Union's security of supply and the transition to a low-carbon economy, help to link research and innovation programmes with trans-European and regional investments in energy infrastructure and increase the willingness of investors to release capital and scale up Member States' activities by focusing on activities with clear Union added value, in particular those with high potential to leverage national resources and create jobs in Europe. Action at Union level shall also support high-risk, high-cost, long-term programmes beyond the reach of individual Member States, pool efforts to reduce investment risks in large-scale activities such as industrial demonstration and develop Europe-wide, interoperable energy solutions. Union funding shall be used to fund sustainable technology, in line with the Union's long-term climate and energy goals.

Implementation of the SET-Plan as the research and innovation pillar of European energy policy will reinforce the Union's security of supply and the transition to a low-carbon economy, help to link research and innovation programmes with trans-European and regional investments in energy infrastructure and increase the willingness of investors to release capital.
for projects with long lead-times and significant technology and market risks. It will create opportunities for innovation for small and large companies and help them become or remain competitive at world level, where opportunities for energy technologies are large and increasing.

On the international scene, the action taken at Union level provides a 'critical mass' to attract interest from other technology leaders and foster international partnerships to achieve the Union's objectives. It will make it easier for international partners to interact with the Union to build common action where there is mutual benefit and interest.

The activities under this challenge will therefore form the technological backbone of European energy and climate policy. They will also contribute to achieving the Innovation Union in the field of energy and the policy goals outlined in 'Resource Efficient Europe', 'An Industrial Policy for the Globalisation Era' and 'A Digital Agenda for Europe'.

Research and innovation activities on nuclear fission and fusion energy are carried out in the EURATOM part of Horizon 2020.

3.3. Broad lines of the activities
(a) Reducing energy consumption and carbon footprint by smart and sustainable use

Activities shall focus on research and full-scale testing of new concepts, non-technological solutions, more efficient, socially acceptable and affordable technology components and systems with

for projects with long lead-times and significant technology and market risks. It will create opportunities for innovation for small and large companies and help them become or remain competitive at world level, where opportunities for energy technologies are large and increasing. The SET-plan technologies will be financed through separate budget lines.

On the international scene, the action taken at Union level provides a 'critical mass' to attract interest from other technology leaders and foster international partnerships to achieve the Union's objectives. It will make it easier for international partners to interact with the Union to build common action where there is mutual benefit and interest.

The activities under this challenge will therefore form the technological backbone of European energy and climate policy. They will also contribute to achieving the Innovation Union in the field of energy and the policy goals outlined in 'Resource Efficient Europe', 'An Industrial Policy for the Globalisation Era' and 'A Digital Agenda for Europe'.

Research and innovation activities on nuclear fusion and on the safety and security aspects of nuclear fission energy are carried out in the EURATOM part of Horizon 2020. Possible synergies between the "secure, clean and efficient energy" challenge and the EURATOM part of HORIZON 2020 shall be envisaged.

3.3. Broad lines of the activities
(a) Increasing energy efficiency and reducing energy consumption and carbon footprint by smart and sustainable and secure use

Activities shall focus on research and full-scale testing of new concepts, non-technological solutions, more efficient, socially acceptable and affordable technology components and systems with
in-built intelligence, to allow real-time energy management for near-zero-emission buildings, renewable heating and cooling, highly efficient industries and mass take-up of energy efficiency solutions by companies, individuals, communities and cities.

(b) Low-cost, low-carbon electricity supply

Activities shall focus on research, development and full scale demonstration - of innovative renewables and carbon capture and storage technologies offering larger scale, lower cost, environmentally safe technologies with higher conversion efficiency and higher availability for different market and operating environments.

(c) Alternative fuels and mobile energy sources

Activities shall focus on research, development and full scale demonstration of technologies and value chains to make bio-energy more competitive and sustainable, to reduce time to market for hydrogen and fuel cells and to bring new options showing long-term potential to maturity.

(d) A single, smart European electricity grid

Activities shall focus on research,

in-built intelligence, to allow real-time energy management for cities and territories, near-zero- and positive energy buildings, retrofitted buildings, renewable heating and cooling, highly efficient industries and mass take-up of energy efficiency and energy saving solutions and services by companies, individuals, communities and cities.

(b) Sustainable low-cost, low-carbon electricity supply

Activities shall focus on research, development and full scale demonstration - of innovative renewables and carbon capture, storage technologies offering larger scale, lower cost, environmentally safe technologies which offer an alternative to fossil fuels or contribute to reducing the carbon footprint of fossil fuels substantially with higher conversion and storage efficiency and higher availability for different market and operating environments.

(c) Alternative fuels and mobile energy sources

Activities shall focus on research, development and full scale demonstration of technologies and value chains to make bio-energy, hydrogen, fuel cells and other alternative liquid or gaseous fuels with potential for more efficient energy conversion more competitive and sustainable.

Activities shall also focus on the development and deployment of back-up and balancing technologies, including conventional power plants, enabling higher flexibility and efficiency in order to successfully cope with the necessity to step in when variable renewable energy are not able to deliver the system and to ensure grid stability.

(d) A single, smart, flexible, European energy grid

Activities shall focus on research,
development and full scale demonstration of new grid technologies, including storage, systems and market designs to plan, monitor, control and safely operate interoperable networks in an open, decarbonised, climate resilient and competitive market, under normal and emergency conditions.

(e) New knowledge and technologies
Activities shall focus on multi-disciplinary research for energy technologies (including visionary actions) and joint implementation of pan-European research programmes and world-class facilities.

(f) Robust decision making and public engagement
Activities shall focus on the development of tools, methods and models for a robust and transparent policy support, including activities on public acceptance and engagement, user involvement and sustainability.

(g) Market uptake of energy innovation
Activities shall focus on applied innovation to facilitate the market uptake of energy technologies and services, to address non-technological barriers and to accelerate the cost effective implementation of the

development and full scale demonstration of new grid technologies, including flexible energy storage systems along the whole electricity chain and market designs to plan, monitor, control and safely operate interoperable and flexible networks and balance an increased share of renewables in an open, decarbonised, environmentally sustainable climate resilient and competitive market, under normal and emergency conditions, thus supporting the full deployment and utilisation of variable renewable energy sources.

Attention shall also be given to 'intelligent grids' in rural areas, which present specific challenges and require innovative technological advances.

(e) New knowledge and technologies
Activities shall focus on multi-disciplinary research for sustainable energy technologies (including visionary actions) and joint implementation of pan-European research programmes and world-class facilities. Technological innovation will be accompanied by policies and initiatives that support non-technological innovation.

(f) Robust decision making and public engagement
Activities shall focus on the development of tools, methods and models such as forward-looking scenarios for a robust and transparent policy support, including activities on public acceptance and engagement, user involvement, environmental impact assessment and sustainability.

(g) Market uptake of energy innovation, empowering markets and consumers through Intelligent Energy Europe III.
Activities shall focus on applied innovation to facilitate the market uptake of sustainable energy technologies and services, to address non-technological barriers and to accelerate the cost effective
Union's energy policies. In this context the Intelligent Energy Europe Programme, successfully implemented throughout the Competitiveness and Innovation Programme shall be continued with an ambitious budgetary allocation under the current Horizon 2020 programme.

Amendment 141

Proposal for a regulation
Annex I – Part III – point 4

Text proposed by the Commission

4. Smart, green and integrated transport

4.1. Specific objective

The specific objective is to achieve a European transport system that is resource-efficient, environmentally-friendly, safe and seamless for the benefit of citizens, the economy and society.

Amendment

4. Smart, green and integrated transport and mobility

4.1. Specific objective

The specific objective is to achieve a European transport system (including its infrastructure networks) that is resource-efficient, affordable, climate- and environmentally-friendly, safe, and interoperable for the benefit of citizens, the Union economy and society. That transport system shall embrace the "healthy ageing" philosophy, benefiting all, regardless of age, sex and disability and taking into consideration the universal design dimensions.

Europe must reconcile the growing mobility needs of its citizens with the imperatives of economic performance and the requirements of a low-carbon society and climate resilient economy. Despite its growth, the transport sector must achieve a substantial reduction in greenhouse gases and other adverse environmental impacts, and must break its dependency on oil, while maintaining high levels of efficiency and mobility.

Europe must reconcile the changing needs in terms of the mobility of its citizens, shaped by new demographic and societal challenges, and territorial cohesion with the imperatives of economic performance and the requirements of an energy efficient, low-carbon society and climate resilient economy. Despite its growth, the transport sector must achieve a substantial reduction in greenhouse gases and other adverse environmental impacts, and must break its dependency on oil and other fossil fuels, while maintaining high levels of efficiency, affordability and mobility.
Sustainable mobility can only be achieved through a radical change in the transport system, inspired by breakthroughs in transport research, far-reaching innovation, and a coherent, Europe-wide implementation of greener, safer and smarter transport solutions.

Research and innovation must bring about focussed and timely advances that will help achieve key Union policy objectives, while boosting economic competitiveness, supporting the transition to a climate-resilient and low-carbon economy, and maintaining global market leadership.

Although the necessary investments in research, innovation and deployment will be significant, failing to improve the sustainability of transport will result in unacceptably high societal, ecological, and economic costs in the long term.

4.2 Rationale and Union added value

Transport is a major driver of Europe's economic competitiveness and growth. It ensures the mobility of people and goods necessary for an integrated European single market and an open and inclusive society. It represents one of Europe's greatest assets in terms of industrial capability and quality of service, playing a leading role in many world markets.

**without increasing the remoteness of regions that are already isolated. Mass transportation systems present security challenges that need to be addressed already in the research stage.**

Sustainable mobility can only be achieved through a radical change in the transport and mobility system, inspired by breakthroughs in its research, far-reaching innovation, and a coherent, Europe-wide implementation of greener, healthier, safer, more reliable and smarter transport and mobility solutions.

Research and innovation must bring about focussed and timely advances for each transport mode that will help achieve key Union policy objectives, while boosting economic competitiveness, supporting the transition to a climate-resilient and renewable based and energy efficient low-carbon economy, increasing mobility across Europe and maintaining global market leadership.

Although the necessary investments in research, innovation and deployment will be significant, failing to improve the sustainability of the whole transport and mobility system will result in unacceptably high societal, ecological, and economic costs in the long term. **Similarly, failing to maintain European technological leadership in transport will hamper the achievement of the above objective and have severe and damaging consequences for European jobs and long term economic growth.**

4.2 Rationale and Union added value

Transport is a major driver of Europe's economic competitiveness and growth. It ensures territorial cohesion and the mobility of people and goods necessary for the integration of the European single market and an open and inclusive society. It represents one of Europe's greatest assets in terms of industrial capability and quality of service, playing a leading role in many
Transport industry and transport equipment manufacturing together represent 6.3% of the Union's GDP. At the same time, the European transport industry faces increasingly fierce competition from other parts of the world. Breakthrough technologies will be required to secure Europe's future competitive edge and to mitigate the drawbacks of our current transport system.

The transport sector is a major contributor to greenhouse gases and generates up to a quarter of all emissions. Transport is 96% dependent on fossil fuels. Meanwhile, congestion is an increasing problem; systems are not yet sufficiently smart; alternatives for shifting between different modes of transport are not always attractive; road fatalities remain dramatically high at 34,000 per year in the Union; citizens and businesses expect a transport system that is safe and secure. The urban context poses specific challenges to the sustainability of transport.

Within a few decades the expected growth rates of transport would drive European traffic into a gridlock and make its economic costs and societal impact unbearable. Passenger-kilometres are predicted to double over the next 40 years and grow twice as fast for air travel. CO₂ emissions would grow 35% by 2050. Congestion costs would increase by about world markets. Transport industry and transport equipment manufacturing alone represent 6.3% of the Union's GDP and around 13 million jobs. However, the transport sector's overall contribution to the Union economy is much greater, given that trade in goods, which accounts for almost 30% of the Union's GDP, many services and workers who travel as part of their jobs depend entirely on efficient transport. The contribution transport makes to society by connecting people is also important, but difficult to quantify, and is fundamental to freedom of movement in Europe. At the same time, the European transport industry faces increasingly fierce competition from other parts of the world. Breakthrough technologies will be required to secure Europe's future competitive edge and to mitigate the drawbacks of our current transport system.

The transport sector is a major contributor to greenhouse gases and generates up to a quarter of all emissions. Transport is 96% dependent on fossil fuels. Meanwhile, congestion is an increasing problem; systems are not yet sufficiently smart; alternatives for shifting towards more sustainable modes of transport are not always attractive; road fatalities remain dramatically high at 34,000 per year in the Union; citizens and businesses expect a transport system that is accessible to all, safe and secure. The urban context poses specific challenges to a better balance of quality of life and the sustainability of transport and mobility.

Within a few decades the expected growth rates of transport would drive European traffic into a gridlock and make its economic costs and societal impact unbearable, with disastrous economic and societal repercussions. If tendencies of the past continue in the future, passenger-kilometres are predicted to double over the next 40 years and grow twice as fast for air
50 %, to nearly EUR 200 billion annually. The external costs of accidents would increase by about EUR 60 billion compared to 2005.

Business-as-usual is therefore not an option. Research and innovation, driven by policy objectives and focused on the key challenges, shall contribute substantially to achieve the Union's targets of limiting global temperature increase to 2°C, cutting 60 % of CO₂ emissions from transport, drastically reduce congestion and accident costs, and virtually eradicating road deaths by 2050.

The problems of pollution, congestion, safety and security are common throughout the Union and call for collaborative Europe-wide responses. Accelerating the development and deployment of new technologies and innovative solutions for vehicles, infrastructures and transport management will be key to achieve a cleaner and more efficient transport system in the Union; to deliver the results necessary to mitigate climate change and improve resource efficiency; to maintain European leadership on the world markets for transport related products and services. These objectives cannot be achieved through fragmented national efforts alone.

Union level funding of transport research and innovation will complement Member States’ activities by focussing on activities with a clear European added-value. This means that emphasis will be placed on

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Business-as-usual is therefore not an option. Research and innovation, driven by policy objectives and focused on the key challenges, shall contribute substantially to achieve the Union's targets of limiting global temperature increase to 2°C, cutting 60 % of CO₂ emissions from transport, drastically reduce congestion and accident costs, and virtually eradicating road deaths by 2050.

The problems of pollution, congestion, safety and security are common throughout the Union and call for collaborative Europe-wide responses. Accelerating the development and deployment of new technologies and innovative solutions for vehicles and which ensure the coherent development of infrastructure and transport management will be key to achieve a cleaner, safer, more secure, accessible and efficient transport system in the Union; to deliver the results necessary to mitigate climate change and improve resource efficiency; to maintain European leadership on the world markets for transport related products and services. These objectives cannot be achieved through fragmented national efforts alone.

It is also essential to support existing solutions by creating effective, smart, interoperable and interconnected systems related to SESAR, Galileo, EGNOS, GMES, ERTMS, RIS, SafeSeaNet, LRIT and ITS systems. Initiatives such as eSafety and eCall must also be continued.

Union level funding of transport research and innovation will complement Member States’ activities by focussing on activities with a clear European added-value. This means that emphasis will be placed on


priority areas that match European policy objectives; where a critical mass of effort is necessary; where Europe-wide, interoperable transport solutions need to be pursued; or where pooling efforts trans-nationally can reduce research investment risks, pioneer common standards and shorten time-to-market of research results.

Research and innovation activities shall include a wide range of initiatives that cover the full innovation chain. Several activities are specifically intended to help bring results to the market: a programmatic approach to research and innovation, demonstration projects, market take-up actions and support for standardisation, regulation and innovative procurement strategies all serve this goal. In addition, using stakeholders' engagement and expertise will help bridge the gap between research results and their deployment in the transport sector.

Investing in research and innovation for a greener, smarter and more integrated transport system will make an important contribution to the Europe 2020 goals of smart, sustainable and inclusive growth and the objectives of the Innovation Union flagship initiative. The activities will support the implementation of the White Paper on Transport aiming at a Single European Transport Area. They will also contribute to the policy goals outlined in the flagship initiatives on 'Resource Efficient Europe', 'An Industrial Policy for the Globalisation Era' and 'A Digital Agenda for Europe'.

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priority areas that match European policy objectives; where a critical mass of effort is necessary; where Europe-wide transport systems, up-to-date sources of propulsion and power, interoperable transport solutions or multimodal integrated transport solutions and infrastructures need to be pursued; or where pooling efforts trans-nationally can remove bottlenecks in the transport system and reduce research investment risks, pioneer common standards and standardisation and shorten time-to-market of research results.
4.3. Broad lines of the activities

(a) Resource efficient transport that respects the environment and public health

The aim is to minimise transport's impact on climate and the environment, as well as on public health, by improving its quality, efficiency and effectiveness in the use of natural resources, diversifying fuel supply sources and by reducing its dependence on fossil fuels while reducing also greenhouse gas emissions. To increase the cost efficiency attention is to be paid to maintenance, repair, retrofitting and recycling for all transport modes.

The focus of activities shall be to reduce resource consumption and greenhouse gas emissions and improve vehicle efficiency, to accelerate the development and deployment of a new generation of electric and other low or zero emission vehicles, including through breakthroughs in engines, batteries and infrastructure; to explore and exploit the potential of alternative fuels and innovative and more efficient propulsion systems, including fuel infrastructure; to optimise the use of infrastructures, by means of intelligent transport systems and smart equipment; and to increase the use of demand management and public and non-motorised transport, particularly in urban areas.

(b) Better mobility, less congestion, more safety and security

The aim is to reconcile the growing mobility needs with improved transport fluidity, through innovative solutions for

(b) Better mobility and accessibility, less congestion, more safety and security

The aim is to reconcile the growing mobility needs with improved transport fluidity, through innovative solutions for
seamless, inclusive, safe, secure and robust transport systems.

The focus of activities shall be to reduce congestion, improve accessibility and match user needs by promoting integrated door-to-door transport and logistics; to enhance inter-modality and the deployment of smart planning and management solutions; and to drastically reduce the occurrence of accidents and the impact of security threats.

(c) Global leadership for the European transport industry
The aim is to reinforce the competitiveness and performance of European transport manufacturing industries and related services.

The focus of activities shall be to develop the next generation of innovative transport means and to prepare the ground for the following one, by working on novel concepts and designs, smart control systems and interoperable standards, efficient production processes, shorter development times and reduced lifecycle costs.

seamless, intermodal, inclusive, accessible, safe, secure, healthy, and robust transport systems, not forgetting the importance of high-quality, innovative and intermodal infrastructure.

The focus of activities shall be to reduce congestion, improve life quality, accessibility and interoperability and match user needs by promoting integrated door-to-door transport logistics and mobility management; to accelerate intermodal solutions for passengers (intermodal ticketing); to enhance inter- and multi-modality and the deployment of smart planning and management solutions; and to drastically reduce the occurrence of accidents and the impact of security threats.

(c) Global leadership for the European transport industry
The aim is to reinforce the competitiveness and performance of European transport manufacturing industries and related services in view of the promising, but highly competitive, future global market. Due attention is to be paid to logistic processes, maintenance, repair, retrofitting and recycling.

The focus of activities shall be to develop the next generation of innovative transport means and to prepare the ground for the following one, by working on novel configurations and technologies, concepts and designs, smart control systems and interoperable standards, efficient production processes, use of advanced materials and biological bi-products which are more sustainable, innovative certification procedures, shorter development times and reduced lifecycle costs, or new more sustainable materials or coatings.

(ca) Smart logistics
The aim is to reconcile growing new consumer patterns with an efficient
resource supply chain and optimal last mile freight distribution.

The focus of activities shall be to better understand the impact of new and future consumer patterns and urban freight logistics, traffic and congestion; develop new IT and management tools for logistics, by improving real time information systems to manage, track and trace freight flows, integration and communication on vehicle and with infrastructure; to develop unconventional systems for goods distribution; to develop competitive intermodal solutions for the supply chain and logistics platforms that improve freight flows.

(d) Socio-economic research and forward looking activities for policy making

The aim is to support improved policy making which is necessary to promote innovation and meet the challenges raised by transport and the societal needs related to it.

The focus of activities shall be to improve the understanding of transport related socio-economic trends and prospects, and provide policy makers with evidence-based data and analyses.

(d) Socio-economic and behavioural research and forward looking activities for policy making

The aim is to support improved policy making which is necessary to promote innovation and meet the challenges raised by transport and mobility and the societal and individual needs related to it.

The focus of activities shall be to improve the understanding of transport related socio-economic trends and prospects, and provide policy makers with evidence-based data and analyses disseminated inter alia via the European Commission's Transport Research Knowledge Centre.

The organisation of all transport-related activities will follow an integrated and mode-specific approach and be in line with the Strategic Research and Innovation agendas of European Technology Platforms. Multiannual visibility and continuity are essential in order to ensure true Union added-value and to take into account the numerous specificities of each transport mode.
Amendment 142
Proposal for a regulation
Annex I – Part III – point 5

Text proposed by the Commission

5. Climate action, resource efficiency and raw materials

5.1. Specific objective

The specific objective is to achieve a resource efficient and climate change resilient economy and a sustainable supply of raw materials, in order to meet the needs of a growing global population within the sustainable limits of the planet's natural resources. Activities will contribute to increasing European competitiveness and improving well being, whilst assuring environmental integrity and sustainability, keeping average global warming below 2 °C and enabling ecosystems and society to adapt to climate change.

Amendment

5. Climate action, environment, resource efficiency and sustainable use of raw materials;

5.1. Specific objective

The specific objective is to achieve a resource efficient, secure and climate change resilient economy and society, the protection and sustainable management of natural resources and ecosystems, a sustainable use and supply of raw materials and water, in order to meet the needs of a growing global population within the sustainable limits of the planet's terrestrial and marine natural resources. Activities will contribute to increasing European competitiveness and raw materials security and improving well being, whilst assuring environmental integrity, resilience and sustainability keeping average global warming below 2 °C, enabling ecosystems and society to adapt to climate change.

During the 20th century, the world increased both its fossil fuel use and the extraction of material resources by of the order of a factor of ten. This era of seemingly plentiful and cheap resources is coming to an end. Raw materials, water, air, biodiversity and terrestrial, aquatic and marine ecosystems are all under pressure. Many of the world’s major ecosystems are being degraded, with up to 60 % of the services that they provide being used unsustainably. In the Union, some 16 tonnes of materials are used per person each year, of which 6 tonnes are wasted, with half going to landfill. The global demand for resources continues to increase with the growing population and rising aspirations, in particular of middle income
earners in emerging economies. There needs to be an absolute decoupling of economic growth from resource use.

The average temperature of the Earth's surface has increased by about 0.8°C over the past 100 years and is projected to increase by between 1.8 to 4°C by the end of the 21st century (relative to the 1980-1999 average). The likely impacts on natural and human systems associated with these changes will challenge the planet and its ability to adapt, as well as threatening future economic development and the well-being of humanity.

The growing impacts from climate change and environmental problems, such as ocean acidification, ice melting in the Arctic, land degradation and use, water shortages, chemical pollution and biodiversity loss, indicate that the planet is approaching its sustainability boundaries. For example, without improvements in efficiency, water demand is projected to overshoot supply by 40% in 20 years time. Forests are disappearing at an alarmingly high rate of 5 million hectares per year. Interactions between resources can cause systemic risks – with the depletion of one resource generating an irreversible tipping point for other resources and ecosystems. Based on current trends, the equivalent of more than two planet Earths will be needed by 2050 to support the growing global population.

The consequences of climate change and pollution, in combination with growing urbanisation, mass tourism, human negligence and the over-exploitation of resources are endangering the fragile cultural fabric of the communities which embody Europe's cultural heritage.
There is an urgent need for integrated water system innovations in Europe. Europe faces an ageing water infrastructure (both waste water and drinking water supply), increased water shortages, higher risks of urban flooding, water pollution and a growing and more specific water demand from agriculture, industries and urban population.

The sustainable supply and resource efficient management of raw materials, including their exploration, extraction, processing, re-use, recycling and substitution, is essential for the functioning of modern societies and their economies. European sectors, such as construction, chemicals, automotive, aerospace, machinery and equipment, which provide a total added value of some EUR 1.3 trillion and employment for approximately 30 million people, heavily depend on access to raw materials. However, the supply of raw materials to the Union is coming under increasing pressure. Furthermore, the Union is highly dependent on imports of strategically important raw materials, which are being affected at an alarming rate by market distortions. Moreover, the Union still has valuable mineral deposits, whose exploration and extraction is limited by a lack of adequate technologies and hampered by increased global competition. Given the importance of raw materials for European competitiveness, the economy and for their application in innovative products, the sustainable supply and resource efficient management of raw materials is a vital priority for the Union.

The ability of the economy to adapt and become more climate change resilient, resource efficient and at the same time remain competitive depends on high levels of eco-innovation, of both a societal and
technological nature. With the global market for eco-innovation worth around EUR 1 trillion per annum and expected to triple by 2030, eco-innovation represents a major opportunity to boost competitiveness and job creation in European economies.

5.2. Rationale and Union added value

Meeting Union and international targets for greenhouse gas emissions and concentrations and coping with climate change impacts requires the development and deployment of cost-effective technologies, and mitigation and adaptation measures. Union and global policy frameworks must ensure that ecosystems and biodiversity are protected, valued and appropriately restored in order to preserve their ability to provide resources and services in the future. Research and innovation can help secure reliable and sustainable access to raw materials and ensure a significant reduction in resource use and wastage.

The focus of Union actions shall therefore be on supporting key Union objectives and policies including: the Europe 2020 strategy; the Innovation Union; Resource-Efficient Europe and the corresponding Roadmap; the Roadmap for moving to a competitive low carbon economy in 2050; Adapting to climate change: Towards a European framework for action; the Raw Materials Initiative; the Union's Sustainable Development Strategy; an Integrated Maritime Policy for the Union; the Marine Strategy Framework Directive; the Eco-innovation Action Plan and the Digital Agenda for Europe. These actions shall reinforce the ability of society to become more resilient to environmental and climate change and ensure the availability of raw materials.

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5.2. Rationale and Union added value

Meeting Union and international targets for greenhouse gas emissions and coping with climate change impacts requires the development and deployment of sustainable and effective non-technological and technological solutions, and mitigation and adaptation measures. Union and global policy frameworks must ensure that ecosystems and biodiversity are protected, valued and appropriately restored in order to preserve their ability to provide resources and services in the future. Research and innovation can help secure reliable and sustainable access to and exploitation of raw materials and ensure a significant reduction in resource use and wastage.

The focus of Union actions shall therefore be on supporting key Union objectives and policies including: the Europe 2020 strategy; the Innovation Union; Resource-Efficient Europe and the corresponding Roadmap; the Roadmap for moving to a competitive low carbon economy in 2050; the Integrated Industrial Policy for the globalisation era; Adapting to climate change: Towards a European framework for action; the Raw Materials Initiative; the Union's Sustainable Development Strategy; an Integrated Maritime Policy for the Union; the Marine Strategy Framework Directive; the Eco-innovation Action Plan; the European Innovation Partnership for Raw Materials; the European Innovation Partnership on Water; and the 7th Environmental Action Programme. These actions shall reinforce the ability of society to become more resilient to environmental and climate change and ensure the
Given the transnational and global nature of the climate and the environment, their scale and complexity, and the international dimension of the raw materials supply chain, activities have to be carried out at the Union level and beyond. The multidisciplinary character of the necessary research requires pooling complementary knowledge and resources in order to effectively tackle this challenge. Reducing resource use and environmental impacts, whilst increasing competitiveness, will require a decisive societal and technological transition to a sustainable economy based on a sustainable relationship between nature and human well-being. Coordinated research and innovation activities will improve the understanding and forecasting of climate and environmental change in a systemic and cross-sectoral perspective, reduce uncertainties, identify and assess vulnerabilities, risks, costs and opportunities, as well as expand the range and improve the effectiveness of societal and policy responses and solutions. Actions will also seek to empower actors at all levels of society to actively participate in this process.

Addressing the availability of raw materials calls for co-ordinated research and innovation efforts across many disciplines and sectors to help provide safe, economically feasible, environmentally sound and socially acceptable solutions along the entire value chain (exploration, extraction, processing, re-use, recycling and substitution). Innovation in these fields will provide opportunities for growth and jobs, as well as innovative options involving science, technology, the economy, policy and governance. For this reason, a European Innovation Partnership on Raw Materials is being prepared.

Given the transnational and global nature of the climate and the environment, their scale and complexity, and the international dimension of the raw materials supply chain, activities have to be carried out at the Union level and beyond. The multidisciplinary character of the necessary research requires pooling complementary knowledge and resources in order to effectively tackle this challenge. Reducing resource use and environmental impacts, whilst increasing competitiveness, will require a decisive societal and technological transition to a sustainable economy based on a mutually beneficial relationship between biodiversity and the human population. Coordinated research and innovation activities will improve the understanding and forecasting of climate and environmental change in a systemic and cross-sectoral perspective, reduce uncertainties, identify and assess vulnerabilities, risks, costs and opportunities, as well as expand the range and improve the effectiveness of societal and policy responses and solutions. Actions will also seek to empower actors at all levels of society to actively participate in this process.

Addressing the sustainable use and availability of raw materials calls for co-ordinated research and innovation efforts across many disciplines and sectors to help provide safe, economically feasible, environmentally sound and socially acceptable solutions along the entire value chain (exploration, extraction, design, processing, re-use, recycling and substitution). Innovation in these fields will provide opportunities for growth and jobs, as well as innovative options involving science, technology, the economy, policy and governance. For this reason, European Innovation Partnerships on Water Efficiency and Raw Materials are being prepared and, for the critical raw
Eco-innovation will provide valuable new opportunities for growth and jobs. Solutions developed through Union level action will counter key threats to industrial competitiveness and enable rapid uptake and replication across the Single Market and beyond. This will enable the transition towards a green economy that takes into account the sustainable use of resources. Partners for this approach will include: International, European and national policy makers; international and Member State research and innovation programmes; European business and industry; the European Environment Agency and national environment agencies; and other relevant stakeholders. In addition to bilateral and regional cooperation, Union level actions will also support relevant international efforts and initiatives, including the Intergovernmental Panel on Climate Change (IPCC), the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) and the Group on Earth Observations (GEO).

5.3. Broad lines of the activities
(a) Fighting and adapting to climate change
The aim is to develop and assess innovative, cost-effective and sustainable adaptation and mitigation measures, targeting both CO2 and non-CO2 greenhouse gases, and underlining both technological and non-technological green solutions, through the generation of evidence for informed, early and effective action and the networking of the required competences. Activities shall focus on: improving the understanding of climate change and the provision of reliable climate projections; assessing impacts, vulnerabilities and developing innovative cost-effective adaptation and risk management strategies, targeting both CO2 and non-CO2 greenhouse gases and particles, rising levels of sea and inland waters; and underlining both technological and non-technological green solutions, through the generation of evidence for informed, early and effective action and the networking of the required competences. Activities shall focus on: improving the understanding of climate change and the risks associated with extreme events and abrupt changes through the provision of reliable climate projections; assessing impacts, vulnerabilities and developing innovative cost-effective adaptation and risk management strategies.
prevention measures; supporting mitigation policies.

projections; understanding the ozone-climate interactions and the water cycle in the atmosphere; assessing impacts at global, regional and local level, vulnerabilities and developing innovative cost-effective adaptation and risk prevention and management measures in key socio-economic sectors (e.g. agriculture, energy, transport, tourism, built environment and cultural heritage); supporting mitigation policies and defining fast-action strategies for climate responses within few decades.

(b) Sustainably managing natural resources and ecosystems

The aim is to provide knowledge for the management of natural resources that achieves a sustainable balance between limited resources and the needs of society and the economy. Activities shall focus on: furthering our understanding of the functioning of ecosystems, their interactions with social systems and their role in sustaining the economy and human well-being; and providing knowledge and tools for effective decision making and public engagement.

(b) Protecting the environment, sustainably managing natural resources, water, biodiversity and ecosystems

The aim is to provide knowledge and tools for the management and protection of natural resources that achieves a sustainable balance between limited resources and the needs of society and the economy. Activities shall focus on: ensuring action to safeguard the sustainable transition, management and use of water resources and water services, furthering our understanding of the functioning of ecosystems, including the regulatory role played by oceans and forests to prevent global warming, their interactions with social systems and their role in sustaining the economy and human well-being; and providing knowledge and tools for effective decision making and public engagement.

(c) Ensuring the sustainable supply of non-energy and non-agricultural raw materials

The aim is to improve the knowledge base on raw materials and develop innovative solutions for the cost-effective and environmentally friendly exploration, extraction, processing, recycling and recovery of raw materials and for their substitution by economically attractive alternatives with a lower environmental impact. Activities shall focus on:

(c) Ensuring the sustainable use, management and supply of non-energy and non-agricultural raw materials

The aim is to improve the knowledge base on raw materials and develop innovative solutions for the cost-effective, resource efficient and environmentally friendly use, re-use and recycling and recovery of raw materials and for their substitution by economically attractive alternatives with a lower environmental impact. Activities shall focus on: improving the knowledge
improving the knowledge base on the availability of raw materials; promoting the sustainable supply and use of raw materials; finding alternatives for critical raw materials; and improving societal awareness and skills on raw materials.

(d) Enabling the transition towards a green economy through eco-innovation

The aim is to foster all forms of eco-innovation that enable the transition to a green economy. Activities shall focus on: strengthening eco-innovative technologies, processes, services and products and boosting their market uptake and replication, with special attention for SMEs; supporting innovative policies and societal changes; measuring and assessing progress towards a green economy; and fostering resource efficiency through digital systems.

(e) Developing comprehensive and sustained global environmental observation and information systems

The aim is to ensure the delivery of the long-term data and information required to base on the availability of raw materials; promoting eco-design; promoting the sustainable supply, efficient use and re-use of raw materials; finding alternatives for critical raw materials, developing closed-loop processes and systems, support recycling and re-use strategies and technology; demand-side measure empowering citizens and consumers for the reduction of raw materials consumption and wastage; and improving societal awareness and skills on raw materials, establishing and stimulating regional and national raw material clusters.

(d) Enabling the transition towards a green economy through eco-innovation

The aim is to foster all forms of eco-innovation that enable the transition to a green economy. Activities shall focus on: strengthening eco-innovative technologies, processes, services and products and boosting their market uptake and replication, with special attention for SMEs; supporting innovative policies sustainable economic models and societal changes; supporting the research of safe substitutes for substances indicated as dangerous under Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 (REACH Regulation); measuring and assessing progress towards a green economy; and fostering resource efficiency through digital systems. In particular the Eco-Innovation Programme successfully implemented under the Competitiveness and Innovation Programme in the previous EU Multi-Annual Financial Framework shall be continued under Horizon 2020.

(e) Developing comprehensive and sustained global environmental observation and information systems

The aim is to ensure the delivery of the long-term data and information required to
address this challenge. Activities shall focus on the capabilities, technologies and data infrastructures for earth observation and monitoring that can continuously provide timely and accurate information, forecasts and projections. Free, open and unrestricted access to interoperable data and information will be encouraged.

Amendment 143
Proposal for a regulation
Annex I – Part III – point 6

Text proposed by the Commission

6. Inclusive, innovative and secure societies

6.1. Specific objective

The specific objective is to foster inclusive, innovative and secure European societies in a context of unprecedented transformations and growing global interdependencies.

Europe is confronted with major socio-economic challenges which significantly affect its future - such as growing economic and cultural interdependencies, ageing, social exclusion and poverty, inequalities and migration flows, closing the digital divide, fostering a culture of innovation and creativity in society and enterprises, as well ensuring security and freedom, trust in democratic institutions and between citizens within and across borders. These challenges are enormous and they call for a common European approach.

Amendment

6. Understanding Europe in a changing world - inclusive, innovative and reflective societies

6.1. Specific objective

The specific objective is to foster inclusive, innovative, creative and reflective European societies through a greater understanding of Europe in a context of unprecedented transformations and growing global interdependencies.

Europe is confronted with major socio-economic challenges which significantly affect its future, such as growing economic and cultural interdependencies, ageing and demographic change, social exclusion and poverty, inequalities and migration flows, closing the digital divide, fostering a culture of science, innovation and creativity in society and enterprises, as well as ensuring trust in democratic institutions and between citizens within and across borders. Moreover the role of public social policies in Europe is increasingly perceived as a critical element for the sustainability of the European social model itself. These challenges are enormous and they call for an increasingly
**First,** significant inequalities persist in the Union both across countries and within them. In 2010 the Human Development Index, an aggregate measure of progress in health, education and income, scores the Union's Member States between 0.743 and 0.895, thus reflecting considerable divergences between countries. Significant gender inequalities also persist: for instance, the gender pay gap in the Union remains at 17.8 % in favour of men. One in every six Union citizens today (around 80 million people) is at risk of poverty. Over the past two decades the poverty of young adults and families with children has risen. The youth unemployment rate is above 20 %. 150 million Europeans (some 25 %) have never used the internet and may never get sufficient digital literacy. Political apathy and polarisation in elections has also risen, reflecting citizen's faltering trust in current political systems. These figures suggest that some social groups and communities are persistently left out of social and economic development and/or democratic politics.

**Second,** Europe's productivity and economic growth rates have been relatively decreasing for four decades. Furthermore, its share of the global knowledge production and its innovation performance lead compared to key emerging economies such as Brazil and China are declining fast. Although Europe has a strong research base, it needs to make this base a powerful asset for innovative goods and services. Whereas it is well-known that Europe needs to invest more in science and innovation, it will also have to coordinate these investments much more smartly than in the past: more than 95 % of national R&D budgets is spent without any coordination across the Union, a formidable potential waste of resources at

**complex mix of approaches, based upon shared scientific knowledge that social sciences and humanities can provide.**

Significant inequalities persist in the Union both across countries and within them. In 2010 the Human Development Index, an aggregate measure of progress in health, education and income, scores the Union's Member States between 0.743 and 0.895, thus reflecting considerable divergences between countries. Significant gender inequalities also persist: for instance, the gender pay gap in the Union remains at 17.8 % in favour of men. One in every six Union citizens today (around 80 million people) is at risk of poverty. Over the past two decades the poverty of young adults and families with children has risen. The youth unemployment rate is above 20 %. 150 million Europeans (some 25 %) have never used the internet and may never get sufficient digital literacy. Political apathy and polarisation in elections has also risen, reflecting citizen's faltering trust in current political systems. These figures suggest that some social groups and communities are persistently left out of social and economic development and/or democratic politics.

Europe's productivity and economic growth rates have been relatively decreasing for four decades. Furthermore, its share of the global knowledge production and its innovation performance lead compared to key emerging economies such as Brazil and China are declining fast. Although Europe has a strong research base, it needs to make this base a powerful asset for innovative goods and services. Whereas it is well-known that Europe needs to invest more in science and innovation, it will also have to coordinate these investments much more smartly than in the past: more than 95 % of national R&D budgets is spent without any coordination across the Union, representing significant inefficiencies at a
a time of shrinking funding possibilities. Furthermore, the innovation capacities of the Member States, despite some recent convergence, remain very different, with large gaps between 'innovation leaders' and 'modest innovators'.

Third, many forms of insecurity, whether crime, violence, terrorism, cyber attacks, privacy abuses and other forms of social and economic disorders increasingly affect citizens. According to estimates, there is likely to be up to 75 million direct victims of crime every year in Europe. The direct cost of crime, terrorism, illegal activities, violence and disasters in Europe has been estimated at at least EUR 650 billion (about 5% of the Union's GDP) in 2010. A vivid example of the consequences of terrorism is the attack against the Twin Towers in Manhattan on 11 September 2001. Thousands of lives were lost and it is estimated that this event caused losses in US productivity amounting to US$ 35 billion, US$ 47 billion in total output and a rise in unemployment by almost 1% in the following quarter. Citizens, firms and institutions are increasingly involved in digital interactions and transactions in social, financial and commercial areas of life but the development of Internet has also led to cyber crime worth billion of Euros each year and breaches of privacy affecting individual or associations across the continent. The development of insecurity in everyday life and because of unexpected situations is likely to affect the citizens' trust not only in institutions but also in each other.

These challenges must be tackled together and in innovative ways because they interact in complex and often unexpected ways. Innovation may lead to weakening inclusiveness, as can be seen, for instance, in the phenomena of digital divide or labour market segmentation. Social innovation, social trust and security are
sometimes difficult to reconcile in policies, for instance in socially depressed areas in large cities in Europe. Besides, the conjunction of innovation and citizens' evolving demands also lead policymakers and economic and social actors to find new answers that ignore established boundaries between sectors, activities, goods or services. Phenomena such as the growth of Internet, of the financial systems, of the ageing economy and of the ecological society abundantly show how it is necessary to think and respond to these issues across their dimensions of inclusiveness, innovation and security at the same time.

The in-built complexity of these challenges and the evolutions of demands thus make it essential to develop innovative research and new smart technologies, processes and methods, social innovation mechanisms, coordinated actions and policies that will anticipate or influence major evolutions for Europe. It calls for understanding the underlying trends and impacts at play in these challenges and rediscovering or reinventing successful forms of solidarity, coordination and creativity that make Europe a distinctive model of inclusive, innovative and secure societies compared to other world regions. It requires a more strategic approach to cooperation with third countries. Finally, as security policies should interact with different social policies, enhancing the societal dimension of security research will be an important aspect of this challenge.

6.2. Rationale and Union added value

These challenges ignore national borders and thus call for more complex comparative analyses of mobility (of people, goods, services and capital but also of competences and knowledge) and forms of institutional cooperation, intercultural interactions and international cooperation. If they are not better understood and anticipated, forces difficult to reconcile in policies, for instance in socially depressed areas in large cities in Europe. Besides, the conjunction of innovation and citizens' evolving demands also lead policymakers and economic and social actors to find new answers that ignore established boundaries between sectors, activities, goods or services. Phenomena such as the growth of Internet, of the financial systems, of the ageing economy and of the ecological society abundantly show how it is necessary to think and respond to these issues across their dimensions of inclusiveness and innovation at the same time.

The in-built complexity of these challenges and the evolutions of demands thus make it essential to develop innovative research and new smart technologies, processes and methods, social innovation mechanisms, coordinated actions and policies that will anticipate or influence major evolutions for Europe. It calls for understanding the underlying trends and impacts at play in these challenges and rediscovering or reinventing successful forms of solidarity, coordination and creativity that make Europe a distinctive model of inclusive and innovative societies compared to other world regions. Both objective-driven research as well as bottom-up research are needed to address effectively those challenges. Finally, a more strategic approach to cooperation with third countries is required.

6.2. Rationale and Union added value

These challenges ignore national borders and thus call for more complex comparative analyses across the European societies. Their links with national and European public policies in the context of globalisation, require not only setting up mutually recognised research agendas but also creating a shared and denser European knowledge base upon which
of globalisation also push European countries to compete with each other rather than cooperate, thus accentuating differences in Europe rather than commonalities and a right balance between cooperation and competition. Addressing such critical socio-economic challenges only at national level carries the danger of inefficient use of resources, externalisation of problems to other European and non-European countries and the accentuation of social, economic and political tensions that may directly affect the aims of the European Treaty regarding its values, in particular Title I of the Treaty on European Union.

In order to build inclusive, innovative and secure societies, Europe requires a response which implies to develop new knowledge, technologies and capabilities as well as the identification of policy options. Such endeavour will help Europe tackle its challenges not only internally but also as a global player on the international scene. This, in turn, will also help Member States benefit from experiences elsewhere and allow them to better define their own specific actions corresponding to their respective contexts.

**Fostering new modes of cooperation between countries within the Union and worldwide, as well as across relevant research and innovation communities, will therefore be a central task under this challenge. Engaging citizens and industry, supporting social and technological innovation processes, encouraging smart and participatory public administration, as well as promoting evidence based policymaking will be systematically pursued in order to enhance the relevance of all these activities for policymakers, social and economic actors and citizens. In this regard, research and innovation will be a precondition for the competitiveness of European industries and services.**

In order to build inclusive, innovative and reflective societies, Europe requires a response which implies to develop new knowledge and technologies as well as the identification of policy options. Such endeavour will help Europe tackle its challenges not only internally but also as a global player on the international scene. This, in turn, will also help Member States benefit from experiences elsewhere and allow them to better define their own specific actions corresponding to their respective contexts.

Encouraging smart and participatory public administration, as well as promoting evidence based policymaking will be systematically pursued in order to enhance the relevance of all these activities for policymakers, social and economic actors and citizens. In this regard, research and innovation will be a precondition for the competitiveness of European industries and services.
security, digital development and privacy protection.

Union funding under this challenge will thus support the development, implementation and adaptation of key Union policies, notably Europe 2020 priorities for smart, sustainable and inclusive growth, the Common Foreign and Security Policy and the Union’s Internal Security Strategy, including policies on disaster prevention and response. Coordination with the Joint Research Centre direct actions will be pursued.

6.3. Broad lines of activities

6.3.1. Inclusive societies

The aim is to enhance solidarity as well as social, economic and political inclusion and positive inter-cultural dynamics in Europe and with international partners, through cutting-edge science and interdisciplinarity, technological advances and organisational innovations. Humanities research can play an important role here. Research shall support policymakers in designing policies that combat poverty and prevent the development of various forms of divisions, discriminations and inequalities in European societies, such as gender inequalities or digital or innovation divides, and with other world regions. It shall in particular feed into the implementation and the adaptation of the Europe 2020 strategy and the broad external action of the Union. Specific measures shall be taken to unlock excellence in less developed regions, thereby widening participation in Horizon 2020.

Union funding under this challenge will thus support the development, implementation and adaptation of key Union policies, notably Europe 2020 priorities for smart, sustainable and inclusive growth. It will interface with Joint Programming Initiatives and coordination with the Joint Research Centre direct actions will be pursued.

6.3. Broad lines of activities

6.3.1. Inclusive societies

The aim is to gain a greater understanding of societal changes in Europe, their impact on social cohesion and economic and political inclusion and the main consequences for the well-being and quality of life of individuals, families and societies. The main challenges to be tackled will address the European models for social cohesion and well-being and the need for a considerable knowledge base in the areas of inequalities and social exclusion, demographic change and the ageing society, life course and family transitions, working and living conditions, migration and mobility, education and lifelong learning, multilingualism, social policies and governance dynamics, while also taking into account the economic and social European diversity. Social sciences and humanities research can play an important role here. Research shall support policymakers in designing policies, combat poverty, conflict, political and social exclusion and prevent the development of various forms of divisions, discriminations and inequalities in European societies, such as gender or digital or innovation divides, and with other world regions. It shall in particular feed into the implementation and the adaptation of the Europe 2020 strategy.
It is also essential to understand and explore as well as promote the access and preservation of Europe's vast cultural heritage as a means of bringing Union citizens closer together and strengthening the cohesion of European society.

The focus of activities shall be to:
(a) promote smart, sustainable and inclusive growth;
(b) build resilient and inclusive societies in Europe;
(c) strengthen Europe's role as a global actor;
(d) close the research and innovation divide in Europe.

6.3.2. Innovative societies
The aim is to foster the development of innovative societies and policies in Europe through the engagement of citizens, enterprises and users in research and innovation and the promotion of coordinated research and innovation policies in the context of globalisation. Particular support will be provided for the development of the ERA and the development of framework conditions for innovation.

The focus of activities shall be to:
(a) strengthen the evidence base and support for the Innovation Union and ERA;
(b) explore new forms of innovation, including social innovation and creativity;
(c) ensure societal engagement in


(ba) address the European models for social cohesion and well-being;

6.3.2. Innovative and reflective societies
The aim is to foster the development of innovative societies and policies in Europe through the engagement of citizens, civil society organisations, enterprises and users in research and innovation and the promotion of coordinated research and innovation policies in the context of globalisation. Support will be provided for research related to the development of the ERA and the development of framework conditions for innovation, including a better understanding of societal constrains and opportunities and their role in the innovation process.

The focus of activities shall be to:
(a) strengthen the evidence base and support for the Innovation Union and ERA;
(b) explore and understand new forms of innovation, including social innovation and creativity;
(ba) explore processes which provide a favourable background to creativity and innovation;
research and innovation;

(d) promote coherent and effective cooperation with third countries.

(d) understand how coherent and effective cooperation in research and advanced training with third countries fosters innovation.

(da) promote cultural heritage and European identity

6.3.3. Secure societies

The aim is to support Union policies for internal and external security and to ensure cyber security, trust and privacy in the Digital Single Market, whilst at the same time improving the competitiveness of the Union's security, ICT and service industries. This will be done by developing innovative technologies and solutions that address security gaps and lead to the prevention of security threats. These mission-oriented actions will integrate the demands of different end-users (citizens, businesses, and administrations, including national and international authorities, civil protections, law enforcement, border guards, etc.) in order to take into account the evolution of security threats and privacy protection and the necessary societal aspects.

The focus of activities shall be to:

(a) fight crime and terrorism;

(b) strengthen security through border management;

(c) provide cyber security;

(d) increase Europe's resilience to crises and disasters;

(e) ensure privacy and freedom in the Internet and enhance the societal dimension of security.
Amendment 144
Proposal for a regulation
Annex I – Part III – point 6 a (new) –

Text proposed by the Commission

6a. Secure societies – protecting freedom and security of Europe and its citizens

6a.1. Specific objective

The specific objective is to protect freedom and foster security in Europe in a context of global interdependencies and sophistication of threats while strengthening the European culture of freedom and justice and its compliance.

Europe has never been so peacefully consolidated and the levels of security enjoyed by European citizens are considerably high compared to other parts of the world. However, Europe’s vulnerability continues to exist in a context of ever-increasing globalisation in which societies are facing security threats and challenges that are growing in scale and sophistication.

The threat of large-scale military aggressions has been subsided and security concerns are focused on new multifaceted, interrelated and transnational threats. Consequently the concept of security has been broadened from a military definition to include other aspects such as human rights, environmental degradation, political stability and democracy, social issues, cultural and religious identity or immigration. In this context the internal and external aspects of security are inextricably linked. The current threats to security and freedom are numerous, complex and fluid and include terrorism, organised crime, cyber attacks, piracy, regional instability or natural and man-made disasters, violence, privacy abuses and other forms of social and economic
disorders. These threats affect citizens and have an impact on notions of trust, care and communication as well as economic and social impact, and therefore demand a corresponding variety of preventive and counter actions.

The direct cost of crime, terrorism, illegal activities, violence and disasters in Europe has been estimated at least EUR 650 billion (about 5 % of the Union's GDP) in 2010. Terrorism has shown its fatal consequences in several parts of Europe costing thousands of lives, and important economic losses.

Citizens, firms and institutions are increasingly involved in digital interactions and transactions in social, financial and commercial areas of life but the development of the Internet has also led to cyber crime worth billions of Euros each year and breaches of privacy affecting individuals or associations across the continent.

Cyber attacks are also having a serious impact on critical infrastructures. The development of insecurity in everyday life and because of unexpected situations is likely to affect the citizens' trust not only in institutions but also in each other.

In order to anticipate, prevent and manage these threats, it is necessary to understand and address the root causes of insecurity and to develop and apply innovative technologies, solutions, foresight tools and knowledge, stimulate cooperation between providers and users, find civil security solutions, improve the competitiveness of the European security and services industries and prevent and combat the abuse of privacy and breaches of human rights in the Internet, and elsewhere, while ensuring European citizens individual rights and freedom.

To enhance better cross-border collaboration between different kinds of emergency services, attention should be
given to interoperability and standardisation.

Finally, as security policies should interact with different social policies, enhancing the societal dimension of security research will be an important aspect of this challenge.

Respecting fundamental values is a building block of each effective security research and policy. Seeking and implementing security solutions implies to respect values such as freedom, democracy, equality and the rule of law. This must be at the base of any activity to provide security to European citizens.

6a.2. Rationale and Union added value

No single Member State is able to respond to threats on its own because most security challenges are cross-border and cross-sectoral and consequently require complex and broad comparative analyses and reinforced forms of institutional and international cooperation.

In order to protect freedom and security, the Union requires effective responses using a comprehensive and innovative suite of security instruments. Research and innovation can play a clear supporting role as a force enabler although it cannot alone guarantee security. Research and innovation activities should aim at understanding, preventing, deterring, preparing and protecting against security threats. Furthermore, security presents fundamental challenges that cannot be resolved by independent and sector-specific treatment but rather need more ambitious, coordinated and holistic approaches.

Cooperation among Member States but also with third countries and international organisations is a central part of this challenge.
Union research and innovation funding under this challenge will thus underpin the development, implementation and adaptation of key Union policies notably Europe 2020 priorities for smart and inclusive growth, the Common Foreign and Security Policy and the Union’s Internal Security Strategy. Coordination with the Joint Research Centre direct actions will be pursued.

6a.3. Broad lines of activities

The aim is to support Union policies for internal and external security and to ensure cyber security, trust and privacy in the Digital Single Market, whilst at the same time improving the competitiveness of the Union’s security, ICT and service industries. The activities will include a focus on understanding the causes of insecurity and conflict and research and development of the next generation of innovative solutions, by working on novel concepts and designs, and interoperable standards. This will be done by developing innovative policies technologies and solutions that address security gaps and lead to the prevention of security threats. These mission-oriented activities will integrate the demands of different end-users (citizens, businesses, civil society organisations and administrations, including national and public sector institutions and agencies) in order to take into account the evolution of security threats and challenges, privacy protection by design and the necessary societal aspects.

Research in this challenge will thus be aimed at preventing, deterring, preparing and protecting against security threats, and supporting the Common Foreign and Security Policy and the Union’s Internal Security Strategy, including policies on disaster prevention and response.

The focus of activities shall be to:
(a) fight crime and terrorism;
(b) protect and improve resilience of critical infrastructures;
(c) strengthen security through border management and maritime security;
(d) provide cyber security;
(e) increase Europe's resilience to crises and disasters;
(f) enhance the societal dimension of security and ensure privacy and freedom in the Internet;
(g) support the Union's internal and external security policies;
(h) strengthen security and the transformation of conflicts within third countries through conflict prevention, peacebuilding, dialogue, mediation and reconciliation and civilian security sector reform;
(i) enhance standardisation and interoperability;

Amendment 145

Proposal for a regulation
Annex I – Part IV

Text proposed by the Commission

1. Specific objective
The specific objective is to provide customer-driven scientific and technical support to Union policies, while flexibly responding to new policy demands.

2. Rationale and Union added value
The Union has defined an ambitious policy agenda to 2020 which addresses a set of complex and interlinked challenges, such as sustainable management of resources and competitiveness. In order to successfully tackle these challenges, robust scientific evidence is needed which cuts
across different scientific disciplines and allows the sound assessment of policy options. The JRC, further strengthening its role as the science service for Union policy making will provide the required scientific and technical support throughout all stages of the policy-making cycle, from conception to implementation and assessment. To this aim it will focus its research clearly on Union policy priorities while enhancing cross-cutting competences. The JRC’s independence of special interests, whether private or national, combined with its scientific-technical reference role enable it to facilitate the necessary consensus building between stakeholders and policy makers. Member States and Union citizens’ benefit from the research of the JRC, most visibly in areas such as health and consumer protection, environment, safety and security, and management of crises and disasters.

The JRC is an integral part of the ERA and will continue to actively support its functioning through close collaboration with peers and stakeholders, opening access to its facilities and through the training of researchers. This will also promote the integration of new Member States and Associated Countries; for these, the JRC will continue to provide dedicated training courses on the scientific-technical basis of the body of Union law. The JRC will establish coordination links with relevant other Horizon 2020 specific objectives. As a complement to its direct actions and for the purpose of further integration and networking in the ERA, the JRC may also participate in Horizon 2020 indirect actions and co-ordination instruments in areas where it has the relevant expertise to produce added value.

3. Broad lines of activities

The JRC is an integral part of the ERA and will continue to actively support its functioning through close collaboration with peers and stakeholders, opening access to its facilities and through the training of researchers. This will also promote the integration of new Member States and Associated Countries; for these, the JRC will continue to provide dedicated training courses on the scientific-technical basis of the body of Union law. The JRC will establish coordination links with relevant other Horizon 2020 specific objectives. As a complement to its direct actions and for the purpose of further integration and networking in the ERA, the JRC may also participate in Horizon 2020 indirect actions and co-ordination instruments in areas where it has the relevant expertise to produce added value.

3. Broad lines of activities
The JRC activities in Horizon 2020 will focus on the Union policy priorities and the societal challenges addressed by them; they are aligned with Europe 2020 and its main objectives of smart, sustainable and inclusive growth, Security and Citizenship, and Global Europe.

The JRC's key competence areas will be energy, transport, environment and climate change, agriculture and food security, health and consumer protection, information and communication technologies, reference materials, and safety and security (including nuclear in the Euratom programme).

These competence areas will be significantly enhanced with capacities to address the full policy cycle and to assess policy options. This includes strengthening capacities in

(a) anticipation and foresight - pro-active strategic intelligence on trends and events in science, technology and society and their possible implications for public policy.
(b) economics - for an integrated service covering both the scientific-technical and the macro-economic aspects.
(c) modelling - focussing on sustainability and economics and making the Commission less dependent on outside suppliers for vital scenario analysis.
(d) policy analysis - to allow cross-sectoral investigation of policy options.
(e) impact assessment - providing scientific evidence to support policy options.

The JRC shall continue to pursue excellence in research as the basis for credible and robust scientific-technical policy support. To that aim, it will

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The JRC's key competence areas will be energy, transport, environment and climate change, agriculture and food security, health and consumer protection, information and communication technologies, reference materials, and safety and security (including nuclear in the Euratom programme). The JRC activities in these areas will be conducted taking into account relevant initiatives at the level of regions, Member States or the Union, within the perspectives of shaping the ERA.

These competence areas will be significantly enhanced with capacities to address the full policy cycle and to assess policy options. This includes strengthening capacities in

(a) anticipation and foresight - pro-active strategic intelligence on trends and events in science, technology and society and their possible implications for public policy.
(b) economics - for an integrated service covering both the scientific-technical and the macro-economic aspects.
(c) modelling - focussing on sustainability and economics and making the Commission less dependent on outside suppliers for vital scenario analysis.
(d) policy analysis - to allow cross-sectoral investigation of policy options.
(e) impact assessment - providing scientific evidence to support policy options.

The JRC shall continue to pursue excellence in research as the basis for credible and robust scientific-technical policy support. To that aim, it will
strengthen collaboration with European and international partners, i.a. by participation in indirect actions. It will also carry out exploratory research and build up competences in emerging, policy-relevant areas on a selective basis.

The JRC shall focus on:

3.1 Excellent science

Carry out research to enhance the scientific evidence base for policy making and examine emerging fields of science and technology, including through an exploratory research programme.

3.2 Industrial leadership

Contribute to European competitiveness through support to the standardisation process and standards with pre-normative research, development of reference materials and measurements, and harmonization of methodologies in five focal areas (energy; transport; Digital Agenda; security and safety; consumer protection). Carry out safety assessments of new technologies in areas such as energy and transport and health and consumer protection. Contribute to facilitating the use, standardisation and validation of space technologies and data, in particular to tackle the societal challenges.

3.3 Societal challenges

(a) Health, demographic change and wellbeing

Contribute to health and consumer protection through scientific and technical support in areas such as food, feed, consumer products; environment and health; health-related diagnostic and screening practices; and nutrition and diets.

(b) Food security, sustainable agriculture, marine and maritime research and the bio-economy

Carry out research to enhance the scientific evidence base for policy making and examine emerging fields of science and technology, including through an exploratory research programme.

3.2 Industrial leadership

Contribute to European competitiveness through support to the standardisation process and standards with pre-normative research, development of reference materials and measurements, and harmonization of methodologies in five focal areas (energy; transport; Digital Agenda; security and safety; consumer protection). Carry out safety assessments of new technologies in areas such as energy and transport and health and consumer protection. Contribute to facilitating the use, standardisation and validation of space technologies and data, in particular to tackle the societal challenges.

3.3 Societal challenges

(a) Health, demographic change and wellbeing

Contribute to health and consumer protection through scientific and technical support in areas such as food, feed, consumer products; environment and health; health-related diagnostic and screening practices; and nutrition and diets.

(b) Food quality, safety and security, sustainable agriculture and forestry, marine and maritime research and the bio-based industries
Support the development, implementation and monitoring of European agriculture and fisheries policies, including food safety and security and the development of a bio-economy through e.g. crop production forecasts, technical and socio-economic analyses and modelling.

(c) Secure, clean and efficient energy
Support the 20/20/20 climate and energy targets with research on technological and economic aspects of energy supply, efficiency, low-carbon technologies, energy/electricity transmission networks.

(d) Smart, green and integrated transport
Support the Union's policy for the sustainable, safe and secure mobility of persons and goods with laboratory studies, modelling and monitoring approaches, including low carbon technologies for transport, such as electrification, clean and efficient vehicles and alternative fuels, and smart mobility systems.

(e) Climate action, resource efficiency and raw materials
Investigate the cross-sectoral challenges of the sustainable management of natural resources through monitoring of key environmental variables and the development of an integrated modelling framework for sustainability assessment.

Support resource efficiency, emission reductions and sustainable supply of raw materials through the integrated social, environmental and economic assessments of clean production processes, technologies, and products and services.

Support Union development policy goals with research to help ensure adequate supplies of essential resources focusing on monitoring environmental and resource parameters, food safety and security related

Support the development, implementation and monitoring of European agriculture and fisheries policies, including food safety and security and the development of a bio-economy through e.g. crop production forecasts, technical and socio-economic analyses and modelling, and promoting healthy and productive seas.

(c) Secure, clean and efficient energy
Support the 20/20/20 climate and energy targets with research on technological and economic aspects of energy supply, efficiency, low-carbon technologies, energy/electricity transmission networks.

(d) Smart, green and integrated transport and mobility
Support the Union's policy for the sustainable, safe and secure mobility of persons and goods with laboratory studies, modelling and monitoring approaches, including low carbon technologies for transport, such as electrification, clean and efficient vehicles and alternative fuels, and smart mobility systems.

(e) Climate action, environment, resource efficiency and sustainable use of raw materials;
Investigate the cross-sectoral challenges of the sustainable management of natural resources through monitoring of key environmental variables and the development of an integrated modelling framework for sustainability assessment.

Support resource efficiency, emission reductions and sustainable supply of raw materials through the integrated social, environmental and economic assessments of clean production processes, technologies, and products and services.

Support Union development policy goals with research to help ensure adequate supplies of essential resources focusing on monitoring environmental and resource parameters, food safety and security related
analyses, and knowledge transfer.

(f) Inclusive, innovative and secure Societies

Contribute to and monitor the implementation of the Innovation Union with macro-economic analyses of the drivers and barriers of research and innovation, and development of methodologies, scoreboards and of indicators.

Support the European Research Area (ERA) by monitoring the functioning of the ERA and analysing drivers of and barriers to some of its key elements; and by research networking, training, opening JRC facilities and databases to users in Member States and Candidate and Associated Countries.

Contribute to the key goals of the Digital Agenda by qualitative and quantitative analyses of economic and social aspects (Digital Economy, Digital Society, Digital Living).

Support internal safety and security through the identification and assessment of the vulnerability of critical infrastructures as vital components of societal functions; and through the operational performance assessment of technologies related to the digital identity; Address global security challenges including emerging or hybrid threats through the development of advanced tools for information mining and analysis as well as for crisis management.

Enhance the Union's capacity for managing natural and man-made disasters by strengthening the monitoring of infrastructures and the development of global multi-hazard early warning and risk management information systems, making

(f) Understanding Europe in a changing world - inclusive, innovative and reflective society

Contribute to and monitor the implementation of the Innovation Union with macro-economic analyses of the drivers and barriers of research and innovation, and development of methodologies, scoreboards and of indicators.

Support the European Research Area (ERA) by monitoring the functioning of the ERA and analysing drivers of and barriers to some of its key elements; and by research networking, training, opening JRC facilities and databases to users in Member States and Candidate and Associated Countries.

Contribute to the key goals of the Digital Agenda by qualitative and quantitative analyses of economic and social aspects (Digital Economy, Digital Society, Digital Living).

(f) Secure societies - Protecting freedom and security of Europe and its citizens

Support internal safety and security through the identification and assessment of the vulnerability of critical infrastructures as vital components of societal functions; and through the operational, social and ethical performance assessment of technologies related to the digital identity; Address global security challenges including emerging or hybrid threats through the development of advanced tools for information mining and analysis as well as for crisis management.

Enhance the Union's capacity for managing natural and man-made disasters by strengthening the monitoring of infrastructures and the development of test facilities, global multi-hazard early warning and risk management information.
use of satellite-based earth observation frameworks.

Amendment 146

Proposal for a regulation
Annex I – Part V

Text proposed by the Commission

1. Specific objective

The specific objective is to integrate the knowledge triangle of research, innovation and education and thus to reinforce the Union's innovation capacity and address societal challenges.

Europe is facing a number of structural weaknesses when it comes to innovation capacity and the ability to deliver new services, products and processes. Among the main issues at hand are Europe's relatively poor record in talent attraction and retention; the underutilisation of existing research strengths in terms of creating economic or social value; low levels of entrepreneurial activity; a scale of resources in poles of excellence which is insufficient to compete globally; and an excessive number of barriers to collaboration within the knowledge triangle of higher education, research and business on a European level.

2. Rationale and Union added value

If Europe is to compete on an international scale, these structural weaknesses need to be overcome. The elements identified above are common across Member States and affect the Union's innovation capacity as a whole.

The EIT will address these issues by promoting structural changes in the systems, making use of satellite-based earth observation frameworks.

Amendment

1. Specific objective

The specific objective is to integrate the knowledge triangle of research, innovation and education and thus to reinforce, accelerate and widen the Union's innovation capacity and address in particular societal challenges.

Europe is facing a number of structural weaknesses when it comes to innovation capacity and the ability to deliver new services, products and processes. Among the main issues at hand are Europe's relatively poor record in talent attraction and retention; the underutilisation of existing research strengths in terms of creating economic or social value; the lack of research results brought to the market; low levels of entrepreneurial activity and mindset; low leverage of private investment in R&D, a scale of resources, including human resources, in poles of excellence which is insufficient to compete globally; and an excessive number of barriers to collaboration within the knowledge triangle of higher education, research and business on a European level.

2. Rationale and Union added value

If Europe is to compete on an international scale, these structural weaknesses need to be overcome. The elements identified above are common across Member States and affect the Union's innovation capacity as a whole.

The EIT will address these issues by promoting structural changes in the
European innovation landscape. It will do so by fostering the integration of higher education, research and innovation of the highest standards, thereby creating new environments conducive to innovation, and by promoting and supporting a new generation of entrepreneurial people. In doing so, the EIT will contribute fully to the objectives of Europe 2020 and notably the Innovation Union and Youth on the Move flagship initiatives.

Integrating education and entrepreneurship with research and innovation

The specific feature of the EIT is to integrate education and entrepreneurship with research and innovation as links in a single innovation chain across the Union and beyond.

Business logic and a results-oriented approach

The EIT, via its KICs, operates in line with business logic. Strong leadership is a pre-requisite: each KIC is driven by a CEO. KIC partners are represented by single legal entities to allow more streamlined decision-making. KICs must produce annual business plans, including an ambitious portfolio of activities from education to business creation, with clear targets and deliverables, looking for both entrepreneurial skills and experiences and by stimulating the creation of innovative spin-offs and start-ups. In doing so, the EIT will contribute fully to the objectives of Europe 2020 and notably the Innovation Union and Youth on the Move flagship initiatives. In particular, the EIT activities through the KICs will contribute to implement the specific objectives of the "societal challenges" and "leadership in enabling and industrial technologies" established under the Horizon 2020 Specific Programme. In addition, the EIT and its KICs should foster synergies and interaction across pillars in Horizon 2020 and with other relevant initiatives.
market and societal impact. The current rules concerning participation, evaluation and monitoring of KICs allow fast-track, business-like decisions. deliverables, looking for both market and societal impact, and clear value added, determined by means of a results-based approach. The current rules concerning participation, evaluation and monitoring of KICs allow fast-track, business-like decisions and the KICs should be able to mobilise investment and long term commitment for the business sector. The KICs, however, being also funded by public sources, need to remain accountable and to function in an open and transparent way, in particular towards other actors in their area of activity.

Overcoming fragmentation with the aid of long-term integrated partnerships

The EIT KICs are highly integrated ventures, bringing together partners from industry, higher education, research and technology institutes, renowned for their excellence. KICs allow world-class partners to unite in new, cross-border configurations, optimise existing resources and open up access to new business opportunities via new value chains, addressing higher-risk, larger-scale challenges.

Overcoming fragmentation with the aid of long-term integrated partnerships

The EIT KICs are highly integrated ventures, bringing together partners from industry, including SME, higher education, research and technology institutes, renowned for their excellence. KICs allow world-class partners to unite in new, cross-border configurations, optimise existing resources and open up access to new business opportunities via new value chains, addressing higher-risk, larger-scale challenges. It is essential that KICs provide the opportunity for SMEs to fully participate in all their activities: widening participation to new entrants bringing new ideas and in particular increasing participation of SMEs should be part of the KICs strategy for growth.

Nurturing Europe's main innovation asset: its highly talented people

Talent is a key ingredient of innovation. The EIT nurtures people and interactions between them, by putting students, researchers and entrepreneurs at the centre of its innovation model. The EIT will provide an entrepreneurial and creative culture and cross-disciplinary education to talented people, via EIT-labelled Masters and PhD degrees, intended to emerge as an internationally recognised brand of

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excellence. In doing so, the EIT strongly promotes mobility within the knowledge triangle.

3. Broad lines of the activities

The EIT shall operate mainly, but not exclusively, via the Knowledge and Innovation Communities (KICs) in areas of societal challenges that are of utmost relevance to Europe's common future. While the KICs have a large degree of autonomy in defining their own strategies and activities, there are a number of innovative features common to all KICs. The EIT will moreover enhance its impact by making the experiences from the KICs available across the Union and by actively fostering a new culture of knowledge sharing.

(a) Transferring and applying higher education, research and innovation activities for new business creation

The EIT shall aim to unleash the innovative potential of people and capitalise on their ideas, irrespective of their place in the innovation chain. Thereby, the EIT will also help to address the 'European paradox' that excellent existing research is far from being harnessed to the full. In doing so, the EIT shall help to bring ideas to the market. Chiefly via its KICs and its focus on fostering entrepreneurial mindsets, it will create new business opportunities in the form of both start-ups and spin-offs but also within existing industry.

The EIT will moreover enhance its impact by making the experiences from the KICs available across the Union, by disseminating good practices on how to integrate the knowledge triangle and the development of entrepreneurship, promoting the inclusion of additional partners and by actively fostering a new culture of knowledge sharing.

(b) Transferring and applying higher education, research and innovation activities for new business creation

The EIT shall aim to unleash the innovative potential of people and capitalise on their ideas, irrespective of their place in the innovation chain. Thereby, the EIT will also help to address the 'European paradox' that excellent existing research is far from being harnessed to the full. In doing so, the EIT shall help to transfer knowledge and technology in order to bring ideas to the market. The EIT must ensure access to all high quality European research communities. Chiefly via its KICs and its focus on fostering entrepreneurial mindsets, it will create new business opportunities in the form of both start-ups
and spin-offs but also within existing industry. Focus will not only be on technological innovations but also on social and non-technological innovation and the promotion of social entrepreneurship.

(b) Cutting-edge and innovation-driven research in areas of key economic and societal interest

The EIT's strategy and activities shall be driven by a focus on societal challenges that are of utmost relevance to the future, such as climate change or sustainable energy. By addressing key societal challenges in a comprehensive way, the EIT will promote inter- and multi-disciplinary approaches and help focus the research efforts of the partners in the KICs. In particular the EIT will develop the potential for non-technological, organisational and systems innovation as well as social entrepreneurship as a necessary complement to its technological and industrial focus.

(c) Development of talented, skilled and entrepreneurial people with the aid of education and training

The EIT shall fully integrate education and training at all stages of careers and develop new and innovative curricula to reflect the need for new profiles engendered by complex societal and economic challenges. To this end, the EIT will play a key role in encouraging recognition of new degrees and diplomas in Member States. A gender dimension shall be integrated in the analysis of needs for new profiles. The EIT shall envisage education and training in a gender-sensitive way and integrate the gender dimension in new curricula as a way to ensure the efficiency and quality of training and education as well as its innovative dimension.
The EIT will also play a substantial role in fine-tuning the concept of ‘entrepreneurship’ via its educational programmes, which promote entrepreneurship in a knowledge-intensive context, building on innovative research and contributing to solutions of high societal relevance.

(d) Dissemination of best practice and systemic knowledge-sharing

The EIT shall aim to pioneer new approaches in innovation and to develop a common innovation and knowledge-transfer culture, among other things by sharing the diverse experience of its KICs via various dissemination mechanisms, such as a stakeholder platform and a fellowship scheme.

(e) International dimension

The EIT acts conscientious of the global context it operates in and shall help to forge links with key international partners. By scaling up centres of excellence via the KICs and by fostering new educational opportunities, it will aim to make Europe more attractive for talent from abroad.

(f) Enhancing European wide impact via an innovative funding model

The EIT will make a strong contribution to the objectives set in Horizon 2020, in particular by addressing societal challenges in a way complementing other initiatives in these areas. It will test out new and simplified approaches to funding and governance and thereby play a pioneering role within the European innovation landscape. Its approach to funding will be firmly based on a strong leverage effect, mobilising both public and private funds. Moreover, it will employ entirely new vehicles for targeted support to individual

The EIT will also play a substantial role in fine-tuning the concept of ‘entrepreneurship’ via its educational programmes, which promote entrepreneurship in a knowledge-intensive context, building on innovative research and contributing to solutions of high societal relevance.

(d) Dissemination of best practice and systemic knowledge-sharing

The EIT shall aim to pioneer new approaches in innovation and to develop a common innovation and knowledge-transfer culture, paying special attention to SMEs. This could happen, among other things, by sharing the diverse experience of its KICs via various dissemination mechanisms, such as a stakeholder platform, awards and competitions, product and process exhibitions, intellectual property and patent pools and a fellowship scheme.

(e) International dimension

The EIT acts conscientious of the global context it operates in and shall help to forge links with key international partners. By scaling up centres of excellence via the KICs and by fostering new educational opportunities, it will aim to make Europe more attractive for talent from abroad.

(f) Enhancing European wide impact via an innovative funding model

The EIT will make a strong contribution to the objectives set in Horizon 2020, in particular by addressing societal challenges in a way complementing other initiatives in these areas. It will test out new and simplified approaches to funding and governance and thereby play a pioneering role within the European innovation landscape. A large part of the annual contribution will be attributed to KICs in a competitive way, based on the evaluation of their annual plans, objectives, obtained results and further
activities through the EIT Foundation.

(g) Linking regional development to European opportunities

Via the KICs and their co-location centres – nodes of excellence, bring together higher education, research and business partners in a given geographical location – the EIT will also be linked to regional policy. In particular, it shall ensure a better connection between higher education institutions and regional innovation and growth, in the context of regional and national smart specialisation strategies. In doing so, it will contribute to the objectives of the Union's Cohesion Policy.

Amendment 147

Proposal for a regulation
Annex II – Breakdown of the budget – table

Text proposed by the Commission

<table>
<thead>
<tr>
<th>The indicative breakdown for Horizon 2020</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>I Excellent science, of which:</td>
<td>27818</td>
</tr>
<tr>
<td>1. The European Research Council</td>
<td>15008</td>
</tr>
<tr>
<td>2. Future and Emerging Technologies</td>
<td>3505</td>
</tr>
<tr>
<td>3. Marie Curie actions on skills, training and career development</td>
<td>6503</td>
</tr>
<tr>
<td>4. European research infrastructures (including eInfrastructures)</td>
<td>2802</td>
</tr>
<tr>
<td>II Industrial leadership, of which:</td>
<td>20280</td>
</tr>
<tr>
<td>1. Leadership in enabling and industrial technologies*</td>
<td>15580 of which 500 for EIT</td>
</tr>
</tbody>
</table>
### Amendment

The breakdown for Horizon 2020 is as follows (in EUR million):

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>I Excellent science, of which:</td>
<td>32.6%</td>
</tr>
<tr>
<td>1. The European Research Council</td>
<td>16.3%</td>
</tr>
<tr>
<td>2. Future and Emerging <em>Science and Technologies</em></td>
<td>3.5%</td>
</tr>
<tr>
<td>3. Marie <em>Skłodowska-Curie</em> actions on skills, training and career development</td>
<td>8.3%</td>
</tr>
<tr>
<td>4. European research infrastructures (including eInfrastructures)</td>
<td>3.6%</td>
</tr>
<tr>
<td>5. <em>Widening Excellence</em></td>
<td>0.9%</td>
</tr>
<tr>
<td>II Industrial leadership, of which:</td>
<td>24.3%</td>
</tr>
<tr>
<td>1. Leadership in enabling and industrial technologies*</td>
<td>15.8%</td>
</tr>
</tbody>
</table>
### Societal challenges, of which:

<table>
<thead>
<tr>
<th>Challenge</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Science for and with Society</strong></td>
<td>0.4%</td>
</tr>
<tr>
<td><strong>2. Food quality, safety and security, sustainable agriculture and forestry, marine and maritime research and the bio-based industries</strong></td>
<td>4.9%</td>
</tr>
<tr>
<td><strong>3. Secure, clean and efficient energy</strong></td>
<td>8.4%</td>
</tr>
<tr>
<td><strong>4. Smart, green and integrated transport and mobility</strong></td>
<td>6.9%</td>
</tr>
<tr>
<td><strong>5. Climate action, environment, resource efficiency and sustainable use of raw materials</strong></td>
<td>4.0%</td>
</tr>
<tr>
<td><strong>6. Understanding Europe in a changing world - inclusive, innovative and reflective society</strong></td>
<td>1.7%</td>
</tr>
<tr>
<td><strong>6a. Protecting freedom and security in Europe</strong></td>
<td>2.1%</td>
</tr>
</tbody>
</table>

**European Institute of Innovation and Technology (EIT)**

**Non-nuclear direct actions of the Joint Research Centre**

**TOTAL**

* According to the Matias and Garriga reports

### Amendment 148

**Proposal for a regulation**

**Annex II – first asterisk**

**Text proposed by the Commission**

*Including EUR 8975 million for Information and Communication Technologies (ICT) of which EUR 1795 million for photonics and micro-and nanoelectronics, EUR 4293 million for nanotechnologies, advanced materials and advanced manufacturing and processing, EUR 575 million for biotechnology and EUR 1737 million for space. As a result, EUR 6663 million will be available to support Key Enabling Technologies.*

**Amendment**

*Including 57.6% for Information and Communication Technologies (ICT) of which 20% for photonics and micro-and nanoelectronics, 27.6% for nanotechnologies, advanced materials and advanced manufacturing and processing, 3.7% for biotechnology and 11.1% for space. As a result, 42.8% million will be available to support Key Enabling Technologies.*
support Key Enabling Technologies.

Amendment 149  
Proposal for a regulation  
Annex II – 2nd asterisk

** Text proposed by the Commission **  
** Amendment **

** Around EUR 1131 million ** of this amount may go towards the implementation of Strategic Energy Technology Plan (SET Plan) projects. Around one third of this may go to SMEs.

** Around 28.3% of this amount may go towards the implementation of Strategic Energy Technology Plan (SET Plan) projects. Around one third of this may go to SMEs.

Amendment 150  
Proposal for a regulation  
Annex II – 3rd asterisk

** Text proposed by the Commission **  
** Amendment **

*** The total amount will be made available through allocations as foreseen in Article 6(3). The second allocation of EUR 1652 million shall be made available pro-rata from the budgets of the Societal challenges and Leadership in enabling and industrial technologies, on an indicative basis and subject to the review set out in Article 26(1)***  
deleted
Amendment 151

Proposal for a regulation
Annex II a (new)

| Text proposed by the Commission | Amendment  

Annex IIa |

HORIZON 2020

"Instruments" Toolbox

The comprehensive nature of Horizon 2020, its multiple objectives, features and the range of activities covered dictate that a variety of implementation means ("instruments") should be available and could be used in a flexible manner.

The aim of this table is to provide an overview of the instruments toolbox proposed in Horizon 2020 which give rise to financial support from the Union.

The toolbox builds on the experience gained throughout the successive research framework programmes, with some improvements and a general effort for the simplification of the instruments. Only a very limited number of new ones
have been introduced in Horizon 2020, which responds to a clear demand from participants and after pilot testing in the Seventh Framework Programme.
<table>
<thead>
<tr>
<th>Primary objectives</th>
<th>Description</th>
<th>Predominant form of funding/implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Support to individuals</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ERC (European Research Council)</td>
<td>Individual researchers performing frontier research</td>
<td>Grants</td>
</tr>
<tr>
<td>Marie Skłodowska-Curie Actions</td>
<td>Research training and career and knowledge-exchange through cross-border and cross-sector mobility</td>
<td>Grants</td>
</tr>
<tr>
<td><strong>Support to collaborative research and innovation</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Collaborative projects | Universities, research performing organisations and enterprises (including SMEs), in joint collaboration with common objectives and shared capacities, to achieve specific research and innovation outcomes.  
[FEST (Future and Emerging Sciences and Technologies)- spans across scientific and engineering disciplines, creating the basis for radically new technologies] | Grants, Prizes, Procurement |
| **Specific Support to SMEs** | | |
| SME measure (SBIR type) | Fill the gap in funding for early stage high risk research and innovation, through staged support covering the whole innovation cycle, targeted at all types of innovative SMEs | Grants  
Financial instruments (debt and equity) |
<p>| Support to high tech SMEs | Market-oriented innovation of R&amp;D performing SMEs, targeting research intensive sectors. | [Article 185 - TFEU] |
| Support to infrastructure | Fostering world-class research infrastructures, accessible to all researchers in Europe and beyond and their full exploitation | Grants, Procurement |
| Support to leverage finance | Overcome deficits in the availability of debt and equity finance for R&amp;D and innovation-driven companies and projects at all stages of development | Financial instruments (debt and equity) |
| <strong>Support to partnership</strong> | | |
| Public-private partnership (contractual PPPs) | Contractual agreement between partners, which specifies the objectives of the partnership, respective commitments of the partners, key performance indicators, and outputs to be delivered | Grants |
| Public-private partnership (JTIs) | Joint undertakings between public and private partners, where there is justifiable scope and scale of the objectives pursued, due commitment from the private sector and the resources required | [Article 187 - TFEU] |
| Public - public | Preparation and establishment of structures towards public public partnerships | Grants |</p>
<table>
<thead>
<tr>
<th>Partnership</th>
<th>Description</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public - public partnership</td>
<td>Joint support to the development and implementation of a research and innovation programme or activities by public sector bodies or bodies with a public service mission at regional, national or international level</td>
<td><a href="#">Article 185 - TFEU</a></td>
</tr>
<tr>
<td>Knowledge and Innovation Communities (KICs)</td>
<td>Highly integrated partnerships, bringing together universities, research centres, small and large companies and other innovation actors on a long-term basis around specific societal challenges</td>
<td><a href="#">Article 173 (3) - TFEU</a></td>
</tr>
</tbody>
</table>

1. There are four basic forms of funding in Horizon 2020: grants, prizes, procurement and financial instruments (debt and equity)

2. The established entity can also use the available forms of funding
EXPLANATORY STATEMENT

From the Seventh Framework Programme to Horizon 2020

The Commission proposal on the Horizon 2020 programme brings together for the first time under one Common Strategic Framework for EU Research and Innovation Funding (CSFRI) various elements which, until now, lacked a shared vision: the successors to the Seventh Framework Programme, the Competitiveness and Innovation Framework Programme and the European Institute of Innovation and Technology. The proposal takes Articles 173 and 182 on industry and research of the Treaty on the Functioning of the European Union as its legal basis.

Listed below are some of the areas proposed under Horizon 2020 that, to a large extent, reflect recommendations put forward by Parliament in previous resolutions (the Merkies, Carvalho, Audy and Matias reports):

- The organisation of the entire innovation chain under a single programme, from basic research to the market;
- A clear focus on global social challenges, by funding research and innovation that is seeking to find answers to people's concerns about issues such as climate change, food security, energy shortages and clean water, among many others;
- More emphasis on the competitiveness of European industries;
- Better opportunities for scientists who wish to extend the boundaries of knowledge, by increasing the proportion of calls for proposals that focus on a bottom-up approach and cutting-edge research;
- More emphasis on a multidisciplinary approach in order to generate new added value;
- A broad definition of innovation policies, including social innovation;
- Progress in efforts to simplify the programme.

Some of the main aims of the programme which are of particular relevance are explained below.

Tackling the crisis

The financial and economic crisis has exposed the weaknesses of the European production model. In order to restore the European economy and for Europe to emerge stronger from the crisis, the Europe 2020 strategy emphasises research and innovation as means for moving towards a knowledge economy that will secure more balanced, diverse and sustainable growth.

However, the economic model advocated by Europe 2020, which is based on high levels of employment, productivity and social cohesion, will only succeed if we ensure that the research and innovation system has sufficient economic and human resources to make it stable. In other words, a reduction in investment in RDI (research, development and innovation) clearly affects the output of the science and technology system and its capacity to generate knowledge, which ultimately has negative repercussions for our competitiveness and social well-being. It is therefore absolutely essential that funding for Community research and innovation policy should be not only unaffected by the budget cuts, but increased. For
this to happen, and given that the new programme embodies the importance of innovation and has a wider spectrum of instruments at its disposal, the rapporteur takes the view that the Horizon 2020 budget should be double that of the Seventh Framework Programme.

As previously mentioned, the second variable on which our competitiveness depends is human resources. Without researchers, there would be no RDI on which to build the economic growth that we are seeking. According to a Commission estimate, one million new researchers need to be brought into the system if the EU is to achieve its aim of investing 3 % of GDP in research. However, all assessments indicate that now is not the best time to achieve these figures: many disciplines are not managing to attract the best students, cuts to research budgets are exacerbating the brain drain and an already too high proportion of researchers are abandoning their careers. It is for these reasons that the rapporteur has included a series of amendments in the report aimed at strengthening our capacity to attract, retain and foster the best talent and including human resource indicators as a key element in assessing Horizon 2020.

Ensuring a continuum in the innovation chain

There is now a large body of literature which attributes the EU's limited competitiveness vis-à-vis its competitors to weak relations between three elements in the innovation chain, namely research, innovation and economic development. For this reason, the rapporteur believes that integrating research and innovation activities into one continuum would be a step in the right direction. It would ensure that knowledge and technology are transferred effectively in a manner that creates scope for employment and the development of products and services.

That being said, the strength of the new structure of the programme could become its main weakness if a balance is not achieved between its separate parts. This is particularly important when it comes to allocating budgetary resources. Transferring the focus to demonstration activities, prototypes and market-ready projects could have an impact on basic research (often the source of groundbreaking innovations that create new needs, markets and uses) and possibly even overshadow applied research. Both types of research require a longer-term vision and sustained funding.

It is also important to ensure that the different stages of the innovation cycle are integrated. In this connection, there is an unprecedented need to define the relationship between the various areas and instruments contained in the programme and to make sure that future links between basic research and the market are coherent and well incorporated into the knowledge transfer process. This report includes some elements in this respect, such as improving internal governance through the establishment of 'Sectoral Steering Boards', strengthening the multidisciplinary aspect and creating a 'proof-of-concept window' under the equity facility.

Consolidating excellence

In terms of scientific production, Europe remains the world's second centre for research and development (R&D) after the United States. However, our competitors are closing the gap. If Europe is to increase the level of expertise of its scientific base and develop the scientific talent of tomorrow, the rapporteur believes that it is entirely appropriate to allocate a third of the programme's total budget to the 'Excellent Science' pillar.
Responding to global challenges

Research and innovation are key components in the pursuit and application of effective responses to the major societal challenges facing Europe. Finding solutions to these challenges also has considerable potential to contribute to economic growth and boost competitiveness.

Given the scale of the problems, it is understandable that the major societal challenges outlined in Horizon 2020 are practically the same as those under the Seventh Framework Programme. One important difference, however, is that energy is now one of Europe's primary concerns, and, as a result, has seen its specific budget significantly increased vis-à-vis the Seventh Framework Programme, a development called for by Parliament in many resolutions. In support of the EU's carbon reduction targets, the rapporteur also wished to provide assurances that two thirds of the appropriations under the 'Secure, clean and efficient energy' objective are earmarked for investment in renewable energy.

The report follows the structure proposed by the Commission, except for the section on 'Inclusive, innovative and secure societies'. This challenge has been divided in two to reflect the specific nature of security challenges: 'Understanding European societies and societal change' and 'Protecting freedom and security in Europe'. Under the first of these new challenges, social sciences and humanities will come to play a decisive role in moving towards more inclusive and innovative societies. It goes without saying that the primary importance attached to social sciences and humanities in this challenge in no way undermines the essential role that they will continue to play in tackling the other six challenges.

Whilst it is clear that current threats to freedom and security are multifaceted and thus partly tackled under all the societal challenges, the importance of protecting freedom and security in Europe is such that it justifies being included as a challenge in its own right. This new challenge will focus specifically on the pursuit and development of responses to internal and external threats to European security.

Safeguarding the organisational role of Horizon 2020

The successive framework programmes have played a key role in the organisation of the European science and technology system, by funding activities that have mobilised excellent researchers and generated excellent ideas. One of the priorities of this report has therefore been to protect what has already been achieved in this area, by seeking to strengthen medium-sized transnational cooperation projects in all fields that involve pre-competitive research in order to counter the trend towards concentrating funding in large-scale projects that could hinder the involvement of new participants and reduce the dynamism of the system.

In the same vein, funding has been increased for Marie Curie actions and research infrastructures (particularly e-infrastructures), and a new specific objective entitled 'Enhancing excellence and boosting participation' has been created under the 'Excellent science' priority in order to strengthen research links across the whole EU. This new specific objective seeks to support twinning, training and network access initiatives, among others.
The need to create synergies between the Structural Funds and the Framework Programme has always been recognised in the corresponding regulations and has been pursued with varying degrees of success. However, the fact that the CSFRI and the Common Strategic Framework for the Cohesion Funds have been brought into line to contribute to the Europe 2020 objective of smart growth has made cooperation between both instruments during this new period unavoidable. In this respect, the Commission proposal on the new ERDF Regulation contains some very positive elements, such as the possibility to combine funding from both sources. However, for cooperation to be fruitful, regional authorities must be both aware of RDI initiatives at the universities, businesses and research centres in their region and use their respective smart specialisation strategies to support such initiatives. It is also important that national and regional authorities have the support of expert advisors when drawing up these strategies, and that the various Commission services work together when assessing them.

**Giving stakeholders a bigger say**

Another main thrust of this report has been the desire to give research centres, universities and businesses a bigger role in putting forward ideas and identifying new opportunities. An amendment has therefore been tabled specifying that at least 15 % of funding for calls relating to the 'Industrial leadership' and 'Societal challenges' priorities should follow a bottom-up approach and that no less than 60 % of funding for FEST should be allocated to FEST Open. The rapporteur also particularly welcomes the increasing focus on the SME instrument, which has been given its own specific funding.

The rapporteur also took the opportunity to strengthen the voice of researchers in the remaining calls for proposals, paving the way for the establishment of 'Sectoral Steering Boards' composed of independent experts who will help define the research and innovation agenda for each societal challenge.

However, finding responses to global challenges and pursuing research that is relevant to EU citizens requires the participation of a broad spectrum of stakeholders. An amendment therefore proposes fostering channels for dialogue under the new specific objective for 'Responsible research and innovation' that would overcome the idea that citizens are merely recipients of the results of research.

Lastly, the rapporteur also warmly welcomes the emphasis placed in Horizon 2020 on user-led open innovation.

**Strengthening Horizon 2020's role as a model programme**

One defining characteristic of the successive framework programmes has been their capacity to serve as an example of good practice. In this respect, Marie Curie actions and, more recently, ERC grants have played a key role in improving people's perception of a career in research in terms of pay and working conditions, which are becoming the norm in universities and research centres.

Horizon 2020 goes one step further by including a specific article on gender equality, a first in
the history of the framework programmes. This report has extended the wording of the article to cover two aspects of gender equality: boosting the representation and promotion of women in Horizon 2020, and incorporating gender analysis into research content.

The rapporteur has also included a new article about free open access to publications resulting from public research funded by the programme. The article also seeks to promote open access to data obtained or collected by projects funded by Horizon 2020.

Both elements will clearly boost efficiency and value for money. Involving women more effectively will increase the pool of experience and generate more ideas, which will, in turn, create fresh opportunities to translate innovation into economic development. Making research results more accessible and available to more people will also undoubtedly facilitate innovation at any location in the EU.

**Underlining the international dimension of Horizon 2020**

International cooperation is the area under Horizon 2020 that offers the greatest development potential. If Europe is to maintain its competitiveness and find solutions to global problems, it must cooperate with world-leading centres of expertise and many researchers on the ground, thus contributing to scientific development at the global level. The implementation of the three priorities around which Horizon 2020 is structured should therefore include a clear international dimension.
19.9.2012

OPINION OF THE COMMITTEE ON FOREIGN AFFAIRS

for the Committee on Industry, Research and Energy


Rapporteur: Sophocles Sophocleous

SHORT JUSTIFICATION

Security-related research is an important aspect of Horizon 2020 - The Framework Programme for Research and Innovation (2014-2020). In the Commission's proposal it is included in the challenge on "Inclusive, Innovative and Secure Societies" under the priority "Societal Challenges".

Secure societies should be able to protect freedom and security of Europe and its citizens. Research and innovation can play a clear leading and supporting role as a force enabler although it cannot alone guarantee security. Research and innovation activities should aim at preventing, deterring, preparing and protecting against security threats. Furthermore, security presents fundamental challenges that cannot be yield to independent and sector-specific treatment but rather need more ambitious, coordinated and holistic approaches. Research and innovation is of paramount importance for the security and defence sector as the basis of competitiveness and resilience of the European defence industry. It is of particular importance for the achievement of the Europe 2020 goals.

In this respect, the rapporteur considers Article 16, Paragraph 2 particularly problematic, as it states that "Research and innovation activities carried out under Horizon 2020 shall have an exclusive focus on civil applications". This wording would exclude any form of defence research from the programme. The rapporteur is of the view that research and innovation activities carried out under Horizon 2020 should not have an exclusive focus on civil applications, because of the importance of the growing number of technologies with dual-use applications and of the increasing complementarities and synergies between European defence and civilian security research programmes. Therefore, the rapporteur pleads for amending Article 16, Paragraph 2, so that defence applications in the context of dual-use will be possible.
Horizon 2020 should support research and innovation relating to the Common Security and Defence Policy, as referred to in Article 42 paragraph 2 and Article 45 of the Treaty of the European Union. To that end, the programme should provide for addressing defence related requirements in "dual use" research and innovation. These activities should aim at building capabilities needed for peace-keeping, conflict prevention and strengthening international security as well as for crisis management activities. Accordingly, the fundamental role of the European Defence Agency should be recognized, because it is the main partner of the European Commission to identify the needs in the capabilities field, to create synergies, to avoid duplication and to support standardisation. Therefore, the European Defence Agency and the Commission, based on the tasking given by the Council in its last conclusions, could be invited to present, by the end of the year, concrete proposals in this field, including those on research and technology.

Finally, the rapporteur would like to stress the importance of the structure and implementation of Horizon 2020. Regarding the priority "Societal Challenges", while their chosen themes and groupings seem to respond to the current global problems, there is doubt on the proposed combination of topics under the challenge "Inclusive, Innovative and Secure Societies". The rapporteur is of the view that security and defence could be better served by maintaining security research as an independent component in Horizon 2020. Moreover, the scope of the 'Security' theme should be expanded to reflect the necessity for innovation and technology transfer between the civil and defence industry. In this context, defence is defined as a way of prevention, so that societies will be ready to prevent and defend themselves from any kind of crisis. In any case, the Treaties of the European Union allow for research on security and defence matters. Its realisation depends on the political will.

AMENDMENTS

The Committee on Foreign Affairs calls on the Committee on Industry, Research and Energy, as the committee responsible, to incorporate the following amendments in its report:

Amendment 1

Proposal for a regulation
Recital 5 a (new)

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
</tr>
</thead>
<tbody>
<tr>
<td>*(5a) In several resolutions, the Parliament recalled the importance of research and innovation in the security and defence sector as the basis for the competitiveness and resilience of the European defence industry, and its importance for the achievement of the Europe 2020 goals of sustainable growth. In this respect,</td>
<td>*(5a) In several resolutions, the Parliament recalled the importance of research and innovation in the security and defence sector as the basis for the competitiveness and resilience of the European defence industry, and its importance for the achievement of the Europe 2020 goals of sustainable growth. In this respect,</td>
</tr>
</tbody>
</table>
it pointed out the mutual spin-offs, complementarities and synergies of civilian and defence research programmes, highlighted the fundamental role of the European Defence Agency in coordinating and planning joint defence research activities and stressed the benefits of research cooperation in terms of improved interoperability. Moreover, it encouraged the Commission, the European Defence Agency and the European Space Agency to pursue their coordination within the European Framework Cooperation. In particular, it stressed that any Union-funded defence research activity should concentrate on the development of European Union crisis management capabilities and focus on research with dual-use applications due to the fact that military and civilian personnel are exposed to similar threats and therefore in need of comparable capabilities. Finally, the Parliament pointed out the provision of Article 185 TFEU allowing an European Union contribution to existing research and development programmes undertaken by a group of Member States, which could be used to speed up the development of capabilities needed for missions and operations conducted under the Common Security and Defence Policy.

Amendment 2

Proposal for a regulation
Recital 6 a (new)

Text proposed by the Commission

(6a) The Council of the European Union, in its conclusions on pooling and sharing of military capabilities adopted at its meeting of 22 and 23 March 2012, acknowledged the wider implications of defence for technology, innovation and growth and noted with concern the overall
reduction of defence Research and Technology investment and its implications on Europe’s ability to develop future defence capabilities. It reiterated its commitment to cooperation in Research and Technology. The Council encouraged the European Defence Agency and the Commission to pursue synergies with European policies and in particular in the field of Research and Technology, including regarding the new European Framework Programme for Research and Technology (Horizon 2020). It reasoned that this would contribute to strengthening the European Defence Industrial and Technological Base. Also, in its Declaration on Strengthening Capabilities of 11 December 2008, the Council of the European Union underlined that Research and Technology is crucial for acquiring the necessary capabilities and also for the future of the European defence industry and its global competitiveness. Moreover, it expressed its wish to continue to ensure the synergies between activities conducted under the framework Research and Development programme and the defence domain in order to reflect the duality of civilian and defence technologies.

Amendment 3
Proposal for a regulation
Recital 11

Text proposed by the Commission

11. Horizon 2020 - the Framework Programme for Research and Innovation in the European Union (hereinafter 'Horizon 2020'), focuses on three priorities, namely generating excellent science in order to strengthen the Union's world-class excellence in science, fostering industrial leadership to support business, including

Amendment

11. Horizon 2020 - the Framework Programme for Research and Innovation in the European Union (hereinafter 'Horizon 2020'), focuses on three priorities, namely generating excellent science in order to strengthen the Union's world-class excellence in science, fostering industrial leadership to support business, including
small and medium-sized enterprises (SME) and innovation and tackling societal challenges, in order to respond directly to the challenges identified in the Europe 2020 strategy by supporting activities covering the entire spectrum from research to market. Horizon 2020 should support all stages in the innovation chain, especially activities closer to the market including innovative financial instruments, as well as non-technological and social innovation, and aims to satisfy the research needs of a broad spectrum of Union policies by placing emphasis on the widest possible use and dissemination of knowledge generated by the supported activities up to its commercial exploitation. The priorities of Horizon 2020 should also be supported through a programme under the Euratom Treaty on nuclear research and training.

Amendment 4
Proposal for a regulation
Recital 26

Text proposed by the Commission

(26) To achieve maximum impact, Horizon 2020 should develop close synergies with other Union programmes in areas such as education, space, environment, competitiveness and SMEs, the internal security, culture and media and with the Cohesion Policy funds and Rural Development Policy, which can specifically help to strengthen national and regional research and innovation capabilities in the context of smart specialisation strategies.

Amendment

(26) To achieve maximum impact Horizon 2020 should develop close synergies with other Union programmes in areas such as education, *space, satellite global navigation and global monitoring*, environment, competitiveness and SMEs, the internal security, culture and media and with the Cohesion Policy funds and Rural Development Policy, which can specifically help to strengthen national and regional research and innovation capabilities in the context of smart specialisation strategies.
Amendment 5
Proposal for a regulation
Recital 26

Text proposed by the Commission
(26) To achieve maximum impact, Horizon 2020 should develop close synergies with other Union programmes in areas such as education, space, environment, competitiveness and SMEs, the internal security, culture and media and with the Cohesion Policy funds and Rural Development Policy, which can specifically help to strengthen national and regional research and innovation capabilities in the context of smart specialisation strategies.

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Amendment 6
Proposal for a regulation
Recital 26 a (new)

Text proposed by the Commission
(26a) Horizon 2020 should support research and innovation relating to the Common Security and Defence Policy as referred to in Articles 42(3) and 45 of the Treaty on European Union. To that end, the Programme should address defence-related requirements in ‘dual use’ research and innovation and should establish specifically targeted joint research and development activities based on Article 185 TFEU. These activities should aim at building capabilities needed for peace-keeping, conflict prevention and strengthening international security as well as for crisis management activities. The role of the European Defence Agency in this regard should be recognised.

Amendment
(26a) Horizon 2020 should support research and innovation relating to the Common Security and Defence Policy as referred to in Articles 42(3) and 45 of the Treaty on European Union. To that end, the Programme should address defence-related requirements in ‘dual use’ research and innovation and should establish specifically targeted joint research and development activities based on Article 185 TFEU. These activities should aim at building capabilities needed for peace-keeping, conflict prevention and strengthening international security as well as for crisis management activities. The role of the European Defence Agency in this regard should be recognised.
Amendment 7

Proposal for a regulation
Recital 28

(28) With the aim to achieve the greatest possible impact of Union funding, Horizon 2020 is to develop closer synergies, which may also take the form of public-public partnerships, with national and regional programmes that support research and innovation.

Amendment

(28) With the aim to achieve the greatest possible impact of Union funding, Horizon 2020 is to develop closer synergies, which may also take the form of public-public partnerships, with international, national and regional programme that support research and innovation.

Amendment 8

Proposal for a regulation
Recital 28

(28) With the aim to achieve the greatest possible impact of Union funding, Horizon 2020 is to develop closer synergies, which may also take the form of public-public partnerships, with national and regional programmes that support research and innovation.

Amendment

(28) With the aim to achieve the greatest possible impact of Union funding, Horizon 2020 is to develop closer synergies, which may also take the form of public-public partnerships, with national and regional programmes that support research and innovation. *This should comprise synergies between civilian and defence technologies, in particular by facilitating ‘dual use’ research and innovation and bridging technologies.*

Amendment 9

Proposal for a regulation
Recital 30

(30) Horizon 2020 should promote cooperation with third countries based on

Amendment

(30) Horizon 2020 should promote cooperation with third countries based on
common interest and mutual benefit. International cooperation in science, technology and innovation should be targeted to contribute to achieving the Europe 2020 objectives to strengthen competitiveness, contribute to tackling societal challenges and support Union external and development policies, including by developing synergies with external programmes and contributing to the Union's international commitments such as the achievement of Millennium Development Goals.

Amendment 10

Proposal for a regulation
Article 12 - paragraph 1

Text proposed by the Commission

1. For the implementation of Horizon 2020, account shall be taken of advice and inputs provided by: advisory groups of independent, high level experts set up by the Commission; dialogue structures created under international science and technology agreements; forward looking activities; targeted public consultations; and transparent and interactive processes that ensure responsible research and innovation is supported.

Amendment

1. For the implementation of Horizon 2020, account shall be taken of advice and inputs provided by: advisory groups of independent, high level experts set up by the Commission; dialogue structures created under international science and technology agreements; forward looking activities; targeted public consultations; and transparent and interactive processes that ensure responsible research and innovation is supported. *If needed, advice shall also be provided by public services such as the European External Action Service.*
Amendment 11
Proposal for a regulation
Article 12 - paragraph 2

Text proposed by the Commission

(2) Full account shall also be taken of relevant aspects of the research and innovation agendas established by European Technology Platforms, Joint Programming Initiatives and European Innovation Partnerships.

Amendment

(2) Full account shall also be taken of relevant aspects of the research and innovation agendas established by European Technology Platforms, Joint Programming Initiatives, European Innovation Partnerships and European bodies dealing with research programmes such as the European Defence Agency and the European Space Agency.

Amendment 12
Proposal for a regulation
Article 12 - paragraph 2 a (new)

Text proposed by the Commission

(2a) Any conflict of interests between an advisory role and the participation in Horizon 2020 must be excluded.

Amendment

1. Linkages and interfaces shall be implemented across and within the priorities of Horizon 2020. Particular attention shall be paid in this respect to the development and application of key enabling and industrial technologies, to bridging from discovery to market application, to cross-disciplinary research and innovation, to social and economic sciences and humanities, to fostering the functioning and achievement of the ERA,

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to cooperation with third countries, to responsible research and innovation including gender, and to enhancing the attractiveness of the research profession and to facilitating cross-border and cross-sector mobility of researchers.

to cooperation with third countries, to responsible research and innovation including gender, and to enhancing the attractiveness of the research profession and to facilitating cross-border and cross-sector mobility of researchers, as well as to synergies between civilian and defence technologies, in particular by facilitating ‘dual use’ research and innovation and bridging technologies.

Amendment 14

Proposal for a regulation
Article 13 – paragraph 1

**Text proposed by the Commission**

1. Linkages and interfaces shall be implemented across and within the priorities of Horizon 2020. Particular attention shall be paid in this respect to the development and application of key enabling and industrial technologies, to bridging from discovery to market application, to cross-disciplinary research and innovation, to social and economic sciences and humanities, to fostering the functioning and achievement of the ERA, to cooperation with third countries, to responsible research and innovation including gender, and to enhancing the attractiveness of the research profession and to facilitating cross-border and cross-sector mobility of researchers.

**Amendment**

1. Linkages and interfaces shall be implemented across and within the priorities of Horizon 2020. Particular attention shall be paid in this respect to the development and application of key enabling and industrial technologies, to bridging from discovery to market application, to cross-disciplinary research and innovation, to social and economic sciences and humanities, to fostering the functioning and achievement of the ERA, to cooperation with third countries, to responsible research and innovation including gender, to enhancing the attractiveness of the research profession, to facilitating cross-border and cross-sector mobility of researchers and to achieving adequate technology non-dependence on a European level.

Amendment 15

Proposal for a regulation
Article 16 – paragraph 1 a (new)
<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1a. Horizon 2020 shall exclude legal entities (including any affiliated entities) whose participation, by the objectives they pursue, their place of establishment, the nature or the location of their activities, would cause the Union to recognize as lawful or render aid or assistance in maintaining a situation created by a serious breach of international law (including international humanitarian law) where such breach has been established by a resolution of the United Nations Security Council or by a judgment or advisory opinion of the International Court of Justice.</td>
<td></td>
</tr>
</tbody>
</table>

Amendment 16

Proposal for a regulation
Article 16 - paragraph 2

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
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</thead>
<tbody>
<tr>
<td>Research and innovation activities carried out under Horizon 2020 shall have an exclusive focus on civil applications.</td>
<td>(2)Research and innovation activities carried out under Horizon 2020 shall focus primarily on civil applications.</td>
</tr>
</tbody>
</table>

Amendment 17

Proposal for a regulation
Article 21 - paragraph 1 – point c

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
</tr>
</thead>
<tbody>
<tr>
<td>(c) supporting the Union's external and development policy objectives, complementing external and development programmes.</td>
<td>(c) supporting the Union's external and development policy objectives, complementing external and development programmes. Any form of cooperation with third countries shall take into account the security and defence interests of the Union and its Member States.</td>
</tr>
</tbody>
</table>
Amendment 18

Proposal for a regulation
Article 21 - paragraph 3

Text proposed by the Commission

(3) In addition, horizontal and cross-cutting activities to promote the strategic development of international cooperation shall be implemented under Horizon 2020 under the specific objective "Inclusive, innovative and secure societies" set out in Point 6.3.2(d) of Part III of Annex I.

Amendment

(3) In addition, horizontal and cross-cutting activities to promote the strategic development of cooperation and activities to promote synergies with research programmes of other agencies, such as the European Defence Agency and the European Space Agency, shall be implemented under the objectives `Europe in a changing world - inclusive and innovative societies’ and `Secure societies - Protecting the freedom and security of Europe and its citizens’ set out respectively in Points 6.3.2(d) and 6.3.3(a)-(e) of Part III of Annex I.

Amendment 19

Proposal for a regulation
Article 25 - paragraph 2

Text proposed by the Commission

2. The Commission shall report and disseminate the results of that monitoring.

Amendment

2. The Commission shall report and disseminate the results of that monitoring. In particular, they shall be transmitted to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions.

Amendment 20

Proposal for a regulation
Annex I - Broad lines of the specific objectives and activities – paragraph 14 – point f

Text proposed by the Commission

(f) Inclusive, innovative and secure societies.

Amendment

(f) Europe in a changing world - inclusive and innovative societies
Amendment 21

Proposal for a regulation
Annex I - Broad lines of the specific objectives and activities – paragraph 14 – point f a
(new)

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
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<tbody>
<tr>
<td>(fa) Secure societies - Protecting freedom and security of Europe and its citizens</td>
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Amendment 22

Proposal for a regulation
Annex I - Broad lines of the specific objectives and activities – paragraph 16

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
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<tbody>
<tr>
<td>Social sciences and humanities shall be an integral part of the activities to address all the challenges. In addition, the underpinning development of these disciplines shall be supported under the specific objective 'Inclusive, innovative and secure societies'. Support will also focus on providing a strong evidence base for policy making at international, Union, national and regional levels. Given the global nature of many of the challenges, strategic cooperation with third countries shall be an integral part of each challenge. In addition, cross-cutting support for international cooperation shall be provided under the specific objective 'Inclusive, innovative and secure societies'.</td>
<td></td>
</tr>
<tr>
<td>Social sciences and humanities shall be an integral part of the activities to address all the challenges. In addition, the underpinning development of these disciplines shall be supported under the specific objective 'Europe in a changing world - inclusive and innovative societies'. Support will also focus on providing a strong evidence base for policy making at international, Union, national and regional levels. Given the global nature of many of the challenges, strategic cooperation with third countries shall be an integral part of each challenge. In addition, cross-cutting support for international cooperation shall be provided under the specific objective 'Europe in a changing world - inclusive and innovative societies'.</td>
<td></td>
</tr>
</tbody>
</table>
Amendment 23
Proposal for a regulation
Annex I - Broad lines of the specific objectives and activities – paragraph 17

Text proposed by the Commission
The specific objective ‘Inclusive, innovative and secure societies’ also includes an activity to close the research and innovation divide with specific measures to unlock excellence in less developed regions of the Union.

Amendment
The specific objective ‘Europe in a changing world - inclusive and innovative societies’ also includes an activity to close the research and innovation divide with specific measures to unlock excellence in less developed regions of the Union.

Amendment 24
Proposal for a regulation
Annex I - Part II - point 1 – paragraph 5

Text proposed by the Commission
These activities will contribute to the objectives of the Europe 2020 Flagship initiatives on Innovation Union, Resource Efficient Europe, An industrial policy for the globalisation era, and A Digital Agenda for Europe as well as Union space policy objectives.

Amendment
These activities will contribute to the objectives of the Europe 2020 Flagship initiatives on Innovation Union, Resource Efficient Europe, An industrial policy for the globalisation era, and A Digital Agenda for Europe as well as the Union flagship space programmes Galileo and GMES policy objectives.

Amendment 25
Proposal for a regulation
Annex I - Part II - point 1.6.3 – point c.

Text proposed by the Commission
(c) A considerably increased exploitation of data from European satellites can be achieved if a concerted effort is made to coordinate and organise the processing, validation and standardisation of space data. Innovations in data handling and dissemination can also ensure a higher return on investment of space infrastructure, and contribute to tackling

Amendment
c) A considerably increased exploitation of data from European satellites can be achieved if a concerted effort is made to coordinate and organise the processing, validation and standardisation of space data. Innovations in data handling and dissemination can also ensure a higher return on investment of space infrastructure, and contribute to tackling
societal challenges, in particular if coordinated in a global effort such as through Global Earth Observation System of Systems, the European satellite navigation programme Galileo or IPCC for climate change issues.

Amendment 26
Proposal for a regulation
Annex 1 – section 3 – point 1 – point 1.2 – paragraph 1

Text proposed by the Commission
Disease and disability are not stopped by national borders. An appropriate European level research and innovation response can and should make a crucial contribution to addressing these challenges, deliver better health and wellbeing for all, and position Europe as a leader in the rapidly expanding global markets for health and wellbeing innovations.

Amendment
Disease and disability are not stopped by national borders. An appropriate European level research and innovation response in partnership with third countries can and should make a crucial contribution to addressing these global challenges, thereby working to achieve the Millennium Development Goals, deliver better health and wellbeing for all, and position Europe as a leader in the rapidly expanding global markets for health and wellbeing innovations.

Amendment 27
Proposal for a regulation
Annex 1 – section 3 – point 1 – point 1.2 – paragraph 2

Text proposed by the Commission
The response depends on excellence in research to improve our fundamental understanding of health, disease, disability, development and ageing (including of life expectancy), and on the seamless and widespread translation of the resulting and existing knowledge into innovative, scalable and effective products, strategies, interventions and services. Furthermore, the pertinence of these challenges across Europe and in many cases, globally,

Amendment
The response depends on excellence in research to improve our fundamental understanding of health, disease, disability, development and ageing (including of life expectancy), and on the seamless and widespread translation of the resulting and existing knowledge into innovative, scalable, effective and accessible products, strategies, interventions and services. Furthermore, the pertinence of these challenges across Europe and in many
demands a response characterised by long term and coordinated support for co-operation between excellent, multidisciplinary and multi-sector teams. cases, globally, demands a response characterised by long term and coordinated support for co-operation between excellent, multidisciplinary and multi-sector teams.

Amendment 28
Proposal for a regulation
Annex I - Part III - point 6 - title

Text proposed by the Commission

6. INCLUSIVE, INNOVATIVE AND SECURE SOCIETIES

Amendment

6. EUROPE IN A CHANGING WORLD - INCLUSIVE AND INNOVATIVE SOCIETIES

Amendment 29
Proposal for a regulation
Annex I – Part III – point 6.1 – paragraph 1

Text proposed by the Commission

The specific objective is to foster inclusive, innovative and secure European societies in a context of unprecedented transformations and growing global interdependencies.

Amendment

The specific objective is to foster inclusive, innovative European societies in a context of unprecedented transformations and growing global interdependencies.

Amendment 30
Proposal for a regulation
Annex I – Part III – point 6.1 – paragraph 5

Text proposed by the Commission

Third, many forms of insecurity, whether crime, violence, terrorism, cyber attacks, privacy abuses and other forms of social and economic disorders increasingly affect citizens. According to estimates, there is likely to be up to 75 million direct victims of crime every year in Europe. The direct cost of crime, terrorism, illegal activities, violence and disasters in

Amendment

deleted
Europe has been estimated at at least EUR 650 billion (about 5% of the Union's GDP) in 2010. A vivid example of the consequences of terrorism is the attack against the Twin Towers in Manhattan on 11 September 2001. Thousands of lives were lost and it is estimated that this event caused losses in US productivity amounting to US$ 35 billion, US$ 47 billion in total output and a rise in unemployment by almost 1% in the following quarter. Citizens, firms and institutions are increasingly involved in digital interactions and transactions in social, financial and commercial areas of life but the development of Internet has also led to cyber crime worth billion of Euros each year and breaches of privacy affecting individual or associations across the continent. The development of insecurity in everyday life and because of unexpected situations is likely to affect the citizens' trust not only in institutions but also in each other.

Amendment 31

Proposal for a regulation
Annex I – Part III – point 6.2 – paragraph 2

In order to build inclusive, innovative and secure societies, Europe requires a response which implies to develop new knowledge, technologies and capabilities as well as the identification of policy options. Such endeavour will help Europe tackle its challenges not only internally but also as a global player on the international scene. This, in turn, will also help Member States benefit from experiences elsewhere and allow them to better define their own specific actions corresponding to their respective contexts.

Text proposed by the Commission

In order to build inclusive and innovative societies, Europe requires a response which implies to develop new knowledge, technologies and capabilities as well as the identification of policy options. Such endeavour will help Europe tackle its challenges not only internally but also as a global player on the international scene. This, in turn, will also help Member States benefit from experiences elsewhere and allow them to better define their own specific actions corresponding to their respective contexts.

Amendment
Amendment 32

Proposal for a regulation
Annex I – Part III – point 6.2 – paragraph 4

**Text proposed by the Commission**

Union funding under this challenge will thus support the development, implementation and adaptation of key Union policies, notably Europe 2020 priorities for smart, sustainable and inclusive growth, the Common Foreign and Security Policy and the Union's Internal Security Strategy, including policies on disaster prevention and response. Coordination with the Joint Research Centre direct actions will be pursued.

**Amendment**

Union funding under this challenge will thus support the development, implementation and adaptation of key Union policies, notably Europe 2020 priorities for smart, sustainable and inclusive growth. Coordination with the Joint Research Centre direct actions will be pursued.

Amendment 33

Proposal for a regulation
Annex I – section 3 – point 6.3 – point 6.3.2 – paragraph 1

**Text proposed by the Commission**

The aim is to foster the development of innovative societies and policies in Europe through the engagement of citizens, enterprises and users in research and innovation and the promotion of coordinated research and innovation policies in the context of globalisation. Particular support will be provided for the development of the ERA and the development of framework conditions for innovation.

**Amendment**

The aim is to foster the development of innovative societies and policies in Europe through the engagement of citizens, civil society organisations, enterprises and users in research and innovation and the promotion of coordinated research and innovation policies in the context of globalisation. Particular support will be provided for the development of the ERA and the development of framework conditions for innovation.

Amendment 34

Proposal for a regulation
Annex I – Part III – point 6.3.3

**Text proposed by the Commission**

6.3.3. Secure societies

**Amendment**

deleted
The aim is to support Union policies for internal and external security and to ensure cyber security, trust and privacy in the Digital Single Market, whilst at the same time improving the competitiveness of the Union's security, ICT and service industries. This will be done by developing innovative technologies and solutions that address security gaps and lead to the prevention of security threats. These mission-oriented actions will integrate the demands of different end-users (citizens, businesses, and administrations, including national and international authorities, civil protections, law enforcement, border guards, etc.) in order to take into account the evolution of security threats and privacy protection and the necessary societal aspects.

The focus of activities shall be to:

(a) fight crime and terrorism;
(b) strengthen security through border management;
(c) provide cyber security;
(d) increase Europe's resilience to crises and disasters;
(e) ensure privacy and freedom in the Internet and enhance the societal dimension of security.

Amendment 35

Proposal for a regulation
Annex I – Part III – point 6 a (new)

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
</tr>
</thead>
<tbody>
<tr>
<td>6a. SECURE SOCIETIES – PROTECTING FREEDOM AND SECURITY OF EUROPE AND ITS CITIZENS</td>
<td></td>
</tr>
<tr>
<td>6a.1. Specific objective</td>
<td></td>
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</tbody>
</table>

EN
The specific objective is to foster secure European societies in a context of unprecedented transformations and growing global interdependencies and threats, while strengthening the European culture of freedom and justice.

There is a widespread perception of insecurity, whether stemming from crime, violence, terrorism, natural/man-made disasters, cyber attacks, privacy abuses or other forms of social and economic disorder. This directly affects citizens and has a wider impact on the notions of trust, care and communication and it links to the level of preparation and organisation of society.

According to estimates, there are probably up to 75 million direct victims of crime every year in Europe. The direct costs of crime, terrorism, illegal activities, violence and disasters in Europe has been estimated to amount to at least EUR 650 billion (about 5% of the Union’s GDP) in 2010. A vivid example of the consequences of terrorism is the attack against the Twin Towers in Manhattan on 11 September 2001. Thousands of lives were lost and it is estimated that this event caused losses in US productivity amounting to US$ 35 billion, US$ 47 billion in total output and a rise in unemployment by almost 1% in the following quarter. It also had a significant cultural and global impact. Citizens, firms and institutions are increasingly involved in digital interactions and transactions in social, financial and commercial areas of life but the development of the internet has also led to cyber crime worth billions of Euros each year and breaches of privacy affecting individuals or associations across the continent. Changes in the nature and perception of insecurity in everyday life are likely to affect citizens’ trust not only in institutions but also in each other.
In order to anticipate, prevent and manage these threats, it is necessary to develop and apply innovative technologies, solutions, foresight tools and knowledge, stimulate cooperation between providers and users, find civil security solutions, improve the competitiveness of the European security industry and services, including ICT, and prevent and combat the abuse of privacy and breaches of human rights in the internet and elsewhere, while ensuring European citizens' individual rights and freedom.

Under this challenge, Horizon 2020 will support research in technologies which are used in the civilian security and the defence domain and research aiming at European capabilities relevant in both remits. To that end, the scope of security research will cover internal and external security including the Common Security and Defence Policy and will support the full range of ‘dual use’ technologies, associating, where necessary, the European Defence Agency with the work of the Commission. When implementing technology research and innovation as well as joint research and development under this challenge, particular attention will be paid to the aspects of standardisation, intrinsic interoperability, key enabling technologies, strategic independence and security of supply through sustaining excellence and innovation in the technology supply chain.

Finally, as security policies should interact with different social policies, enhancing the societal dimension of security research will be an important aspect of this challenge.

6a.2. Rationale and Union added value

Security is a legitimate concern for Europe and its citizens and in this respect represents a major challenge for society.
The Union, its citizens, its industry and its international partners are confronted with a range of security threats such as crime, terrorism, illegal trafficking and mass emergencies caused by man-made or natural disasters. These threats can span across borders and aim at physical targets or the cyberspace with attacks arising from different sources. Attacks against information or communication systems of public authorities and private entities, for instance, not only undermine the citizen's trust in information and communication systems and lead to direct financial losses and a loss of business opportunities, but may also seriously affect critical infrastructure and services such as energy, aviation and other transport, water and food supply, health, finance or telecommunications.

These threats could possibly endanger the inner foundations of our society. Technology and creative design can make an important contribution to any response to be given. Yet, new solutions should be developed while bearing in mind the appropriateness of the means and their adequacy to societal demand, in particular in terms of guarantees for citizens’ fundamental rights and freedoms.

Furthermore, security also represents a major economic challenge. The security market is worth around EUR 100 billion per year worldwide, of which Europe’s share is between 25% and 35%. Moreover, it is a fast growing market despite the present economic crisis. Given the potential impact of some of the threats on services, networks or businesses, the deployment of adequate security solutions has become critical for the economy and European manufacturing competitiveness.

Union funding under this challenge will thus support the development, implementation and adaptation of key
Union policies, notably Europe 2020 priorities for smart sustainable and inclusive growth, the Common Foreign and Security Policy, including the Common Security and Defence Policy, the Union's Internal Security Strategy, including policies on disaster prevention and response, and the Digital Agenda for Europe. Coordination with the Joint Research Centre direct actions will be pursued.

Taking into account the particular nature of security, specific arrangements will be put in place with regard to programming and governance, including arrangements with the Committee referred to in Article 9 of the Council decision establishing the Specific Programme Implementing Horizon 2020 – The Framework Programme for Research and Innovation (2014-2020). Classified or otherwise sensitive information related to security will be protected and particular requirements and criteria for international cooperation may be specified in work programmes. This will also be reflected in the programming and governance arrangements for this challenge, including the comitology aspects.

Finally, as research under this challenge will aim at applications in both the civil security and the defence remit, cooperation with the European Defence Agency will be actively pursued in all aspects related to the implementation of this challenge. To that end, the European Defence Agency should participate in the management, programming and governance arrangements for this challenge, including the inter-service and the comitology aspects. Coordination mechanisms with other relevant Union Agencies such as FRONTEX, EMSA and Europol will also be further strengthened in order to improve the coordination of Union programmes and policies in the
field of both internal and external security, and of other Union initiatives.

6a.3. Broad lines of activities

The aim is to support Union policies for internal and external security and to ensure cyber security, trust and privacy in the Digital Single Market, whilst at the same time improving the competitiveness of the Union’s security industry and services, including ICT. The activities will include a focus on research and development of the next generation of innovative solutions, by working on novel concepts and designs and interoperable standards. This will be done by developing innovative technologies and solutions that address security gaps and lead to a reduction in risks from security threats. These mission-oriented actions will integrate the demands of different end-users (citizens, businesses, and administrations, including national and international authorities, civil protection, law enforcement, border guards, etc.) in order to take into account the evolution of security threats and privacy protection and the necessary societal aspects.

More concretely, Horizon 2020 will support research related to the Common Security and Defence Policy as follows:

(i) Horizon 2020 will support effective technology monitoring of emerging technologies which may significantly reshape future security and defence capabilities or the security environment. Drawing on this monitoring, disruptive, high-payoff research will bridge the gap between innovative concepts and ground-breaking discoveries and their use in security and defence.

(ii) Horizon 2020 will support specifically targeted joint research and development activities undertaken by several Member States with participation of the Union as referred to in Article 185 TFEU. Such initiatives will aim at the effective
improvement of European capabilities meeting the policy objectives of Member States and Union, through developing innovative technologies into actual systems, qualified through test and demonstration. Such cooperation will build on the initiative of Member States.

The focus of activities shall be to:

a) Increasing security of citizen's protection - Fighting crime and terrorism;

b) Protecting and improving the resilience of critical infrastructures;

c) Strengthening security through border management and - maritime security;

d) Providing and improving cyber security;

e) Increasing Europe's resilience to crises and disasters;

f) Enhancing the societal dimension of security and ensuring privacy and freedom in the internet;

g) Strengthening the capability to conduct missions and operations under the Common Security and Defence Policy.

1 COM(2011)0274 final.

Amendment 36

Proposal for a regulation
Annex 1 – section 3 – point 6.3 – point 6.3.3 – paragraph 2 – point a a (new)

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
</tr>
</thead>
<tbody>
<tr>
<td>(aa) strengthen security and the transformation of conflicts within third countries through conflict prevention, peace-building, dialogue, mediation and reconciliation, civilian security sector reform;</td>
<td></td>
</tr>
</tbody>
</table>
## PROCEEDURE

<table>
<thead>
<tr>
<th>Title</th>
<th>Establishment of Horizon 2020 - The Framework Programme for Research and Innovation (2014-2020)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Committee responsible</td>
<td>ITRE</td>
</tr>
<tr>
<td>Date announced in plenary</td>
<td>13.12.2011</td>
</tr>
<tr>
<td>Opinion by</td>
<td>AFET</td>
</tr>
<tr>
<td>Date announced in plenary</td>
<td>15.3.2012</td>
</tr>
<tr>
<td>Rapporteur</td>
<td>Sophocles Sophocleous</td>
</tr>
<tr>
<td>Date appointed</td>
<td>4.9.2012</td>
</tr>
<tr>
<td>Previous rapporteur</td>
<td>Kyriakos Mavronikolas</td>
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| Result of final vote | +: 37  
-: 7  
0: 0 |
| Substitute(s) present for the final vote | Christian Ehler, Diogo Feio, Kinga Gál, Emilio Menéndez del Valle, Norbert Neuser, Alf Svensson, Indrek Tarand |

| Substitute(s) under Rule 187(2) present for the final vote | Martin Ehrenhauser, Judith Sargentini |
5.9.2012

OPINION OF THE COMMITTEE ON DEVELOPMENT

for the Committee on Industry, Research and Energy


Rapporteur: Bill Newton Dunn

SHORT JUSTIFICATION

The Horizon 2020 package establishes one single framework programme governing EU support for research and innovation for the period 2014-2020.

The overall goals are to help implement the Europe 2020 strategy for smart, sustainable and inclusive growth; to improve the link between fundamental research and innovation to market; and to simplify the rules of participation and strengthen SME involvement.

Your rapporteur believes the most significant part for the concerns of the Development Committee is the 'Part III' on societal challenges. This Part addresses areas including health, food security, biodiversity, climate change, and resource and energy efficiency, and includes a specific cross-cutting focus on promoting international cooperation, whilst explicitly recognising the global nature of all the societal challenges. This Part attracts the largest budgetary allocation out of the three identified.

There are many welcome elements in the Commission's proposal, especially the focus on support for the full cycle from fundamental research to innovation and market commercialisation. The emphasis on the international nature of societal challenges is also welcome, but needs to be much further clarified and strengthened.

You rapporteur has chosen to focus the amendments on the following priorities:

- Ensuring Horizon 2020 is open to actors in developing countries in terms of both participation in projects and activities and access to results of the projects, and avoiding the preponderance of a 'fortress Europe' tone in the Regulation.
- Strengthening the potential of the actions foreseen under societal challenge 'Health, demographic change and wellbeing' to contribute to global health imperatives, in
particular tackling poverty-related and neglected infectious diseases. Your rapporteur would like to see a fixed proportion of this health budget being dedicated to actions to tackle all poverty-related and neglected diseases.

- Ensuring that the EU’s external and development policy priorities and commitments are taken into account particularly in the areas of climate change, biodiversity, and resource and energy efficiency, and specifically recalling the role of space research in contributing to tackling these challenges.

All this is of mutual benefit to the EU and its third country partners and also adheres to the principle of Policy Coherence for Development. Furthermore, collaboration in the field of research is one form of cooperation that could be of great use to those countries - particularly MIC’s - that may no longer benefit from EU bilateral aid under the new Development Cooperation Instrument 2014-2020.

AMENDMENTS

The Committee on Development calls on the Committee on Industry, Research and Energy, as the committee responsible, to incorporate the following amendments in its report:

Amendment 1

Proposal for a regulation
Recital 15

Text proposed by the Commission

(15) Simplification is a central aim of Horizon 2020 which should be fully reflected in its design, rules, financial management and implementation. Horizon 2020 should aim to attract the strong participation of universities, research centres, industry and specifically SMEs and be open to new participants, as it brings together the full range of research and innovation support in one common strategic framework, including a streamlined set of forms of support and uses rules for participation with principles applicable to all actions under the programme. Simpler funding rules should reduce the administrative costs for participation and will contribute to a reduction of financial errors.

Amendment

(15) Simplification is a central aim of Horizon 2020 which should be fully reflected in its design, rules, financial management and implementation. Horizon 2020 should aim to attract the strong participation of both Union and associated country and third country universities, research centres, industry and specifically SMEs and be open to new participants, as it brings together the full range of research and innovation support in one common strategic framework, including a streamlined set of forms of support and uses rules for participation with principles applicable to all actions under the programme. Simpler funding rules should reduce the administrative costs for participation and will contribute to a reduction of financial errors.
Amendment 2
Proposal for a regulation
Recital 20

Text proposed by the Commission

(20) With the aim of deepening the relationship between science and society and reinforcing public confidence in science, Horizon 2020 should favour an informed engagement of citizens and civil society on research and innovation matters by promoting science education, by making scientific knowledge more accessible, by developing responsible research and innovation agendas that meet citizens' and civil society's concerns and expectations and by facilitating their participation in Horizon 2020 activities.

Amendment

(20) With the aim of deepening the relationship between science and society Horizon 2020 should: promote informed engagement of citizens and civil society in the process of research and innovation and facilitate their active participation in Horizon 2020 activities; promote science education; guarantee the respect of ethical legislation and promote the emergence of, and adherence to, the highest ethical standards worldwide; increase the accessibility and re-use of the results of publicly funded research, in particular scientific publications and data; develop responsible research and innovation agendas and a governance framework that meet citizens' and civil society's concerns and expectations by reinforcing their participation in the setting of research priorities of Horizon 2020.

Amendment 3
Proposal for a regulation
Recital 23 a (new)

Text proposed by the Commission

(23a) All research and innovation builds on the capacity of scientists, research institutions, businesses and citizens around the world to openly access, share and use scientific information, respecting at the same time intellectual property rights. This is particularly important for actors in developing countries, where local research capacity must be improved and whose collaboration with Union partners can help to tackle common global challenges and contribute to Union
research excellence. To increase the circulation and exploitation of knowledge, free open access to scientific publications, already embraced in the Seventh Framework Programme, should be the general principle for scientific publications which receive public funding from Horizon 2020. Furthermore, Horizon 2020 should promote open access to other scientific data produced or collected by publicly funded research, with the aim that open access to such data becomes the general rule by 2020.

Amendment 4
Proposal for a regulation
Recital 24

Text proposed by the Commission

(24) Research and innovation activities supported by Horizon 2020 should respect fundamental ethical principles. The opinions of the European Group on Ethics in Science and New Technologies should be taken into account. Research activities should also take into account Article 13 TFEU and reduce the use of animals in research and testing, with a view ultimately to replacing animal use. All activities should be carried out ensuring a high level of human health protection in accordance with Article 168 TFEU.

Amendment

(24) Research and innovation activities supported by Horizon 2020 should respect fundamental ethical principles. The opinions of the European Group on Ethics in Science and New Technologies should be taken into account. Research activities should also take into account Article 13 TFEU and reduce the use of animals in research and testing, with a view ultimately to replacing animal use. All activities should be carried out ensuring a high level of human health protection in accordance with Article 168 TFEU. Ethical principles, such as the Helsinki Declaration, require that scientific data produced or collected by publicly funded research conducted on humans are made public, irrespective of where they take place in Europe or elsewhere in the world.
Amendment 5
Proposal for a regulation
Recital 26

Text proposed by the Commission

(26) To achieve maximum impact, Horizon 2020 should develop close synergies with other Union programmes in areas such as education, space, environment, competitiveness and SMEs, the internal security, culture and media and with the Cohesion Policy funds and Rural Development Policy, which can specifically help to strengthen national and regional research and innovation capabilities in the context of smart specialisation strategies.

Amendment

(26) To achieve maximum impact, Horizon 2020 should develop close synergies with other Union programmes in areas such as health, education, space, environment, sustainable energy, competitiveness and SMEs, the internal security, culture and media and with the Cohesion Policy funds and Rural Development Policy, which can specifically help to strengthen national and regional research and innovation capabilities in the context of smart specialisation strategies. Developing synergies with Union external action and development programmes will also help ensure maximum impact of Horizon 2020, whilst fulfilling the principle of Policy Coherence for Development enshrined in Article 208 of the TFEU.

Amendment 6
Proposal for a regulation
Recital 28

Text proposed by the Commission

(28) With the aim to achieve the greatest possible impact of Union funding, Horizon 2020 is to develop closer synergies, which may also take the form of public-public partnerships, with national and regional programmes that support research and innovation.

Amendment

(28) With the aim to achieve the greatest possible impact of Union funding, Horizon 2020 is to develop closer synergies, which may also take the form of public-public partnerships, with international, national and regional programmes that support research and innovation.
Amendment 7
Proposal for a regulation
Recital 30

Text proposed by the Commission
(30) Horizon 2020 should promote cooperation with third countries based on common interest and mutual benefit. International cooperation in science, technology and innovation should be targeted to contribute to achieving the Europe 2020 objectives to strengthen competitiveness, contribute to tackling societal challenges and support Union external and development policies, including by developing synergies with external programmes and contributing to the Union's international commitments such as the achievement of Millennium Development Goals.

Amendment
(30) Horizon 2020 should promote cooperation with third countries based on common interest and mutual benefit. International cooperation in science, technology and innovation should be targeted to contribute to achieving the Europe 2020 objectives to strengthen competitiveness, contribute to tackling societal challenges and support Union external and development policies, including by developing synergies with external programmes. Horizon 2020 should contribute to the Union's international commitments in the field of sustainable development, in particular the achievement of Millennium Development Goals and their subsequent internationally agreed adaptations.

Amendment 8
Proposal for a regulation
Article 13 – paragraph 1

Text proposed by the Commission
1. Linkages and interfaces shall be implemented across and within the priorities of Horizon 2020. Particular attention shall be paid in this respect to the development and application of key enabling and industrial technologies, to bridging from discovery to market application, to cross-disciplinary research and innovation, to social and economic sciences and humanities, to fostering the functioning and achievement of the ERA, to cooperation with third countries, to responsible research and innovation including gender, and to enhancing the

Amendment
1. Linkages and interfaces shall be implemented across and within the priorities of Horizon 2020. Particular attention shall be paid in this respect to the development and application of key enabling and industrial technologies, to bridging from discovery to market application, to cross-disciplinary research and innovation, to social and economic sciences and humanities, to fostering the functioning and achievement of the ERA, to cooperation with third countries, to responsible research and innovation including gender, to enhancing the
attractiveness of the research profession and to facilitating cross-border and cross-sector mobility of researchers.

Amendment 9
Proposal for a regulation
Article 16 – paragraph 1 – subparagraph 1 a (new)

Text proposed by the Commission

Scientific data produced or collected by publicly funded research conducted on humans, for instance in the context of clinical trials, shall be made public and accessible.

Amendment 10
Proposal for a regulation
Article 18 a (new)

Text proposed by the Commission

Civil Society Organisations

(1) Particular attention shall be paid to ensuring the adequate participation of, and innovation impact on, Civil Society Organisations (including those working in development cooperation) in Horizon 2020. Quantitative and qualitative assessments of Civil Society Organisations' (including those working in development cooperation) participation shall be undertaken as part of the evaluation and monitoring arrangements.

(2) Specific attention shall be paid to initiatives aimed at widening awareness and facilitating access to funding under Horizon 2020 of Civil Society Organisations, including those working in...
development cooperation. Horizon 2020 and other Union funding programmes, including the Structural Funds, shall be used for that purpose.

(3) Civil society organisations (including those working in development cooperation) shall be consulted during the implementation, programming, monitoring and evaluation of Horizon 2020.

### Amendment 11

**Proposal for a regulation**

**Article 19 – paragraph 2 – point a**

**Text proposed by the Commission**

(a) financial contributions from the Union to joint undertakings established on the basis of Article 187 TFEU under the Seventh Framework Programme, subject to the amendment of their basic acts; to new public-private partnerships set up on the basis of Article 187 TFEU; and to other funding bodies referred to in Article [55(1)(b)(v) or (vii)] of Regulation (EU) No XX/2012 [New Financial Regulation]. This form of partnerships shall only be implemented where the scope of the objectives pursued and the scale of the resources required justify it;

**Amendment**

(a) financial contributions from the Union to joint undertakings established on the basis of Article 187 TFEU under the Seventh Framework Programme, subject to the amendment of their basic acts; to new public-private partnerships set up on the basis of Article 187 TFEU; to other existing innovative research and innovation partnerships such as product development partnerships, and to other funding bodies referred to in Article [55(1)(b)(v) or (vii)] of Regulation (EU) No XX/2012 [New Financial Regulation]. This form of partnerships shall only be implemented where the scope of the objectives pursued and the scale of the resources required justify it;

### Amendment 12

**Proposal for a regulation**

**Article 19 – paragraph 3 – point b**

**Text proposed by the Commission**

(b) the scale of impact on industrial competitiveness, sustainable growth and

**Amendment**

(b) the scale of impact on industrial competitiveness, sustainable growth and
socio-economic issues; socio-economic issues and the societal challenges, which are global in nature;

Amendment 13

Proposal for a regulation
Article 19 – paragraph 3 a (new)

Text proposed by the Commission

Amendment

3a. The rules for participation and dissemination regarding public-private partnerships created or funded under Horizon 2020 shall fully comply with the rules laid down in Regulation (EU) No XX/XX [the Financial Regulation], as well as the rules laid down in Regulation (EU) No. XX/XX [Rules for participation and dissemination in Horizon 2020] and any derogation provided therein.

Amendment 14

Proposal for a regulation
Article 21 – paragraph 1 – introductory part

Text proposed by the Commission

Amendment

1. Entities established in third countries and international organisations shall be eligible to participate in indirect actions of Horizon 2020 under the conditions set out in Regulation (EU) XX/XX [Rules for Participation]. International cooperation with third countries and international organisations shall be promoted across and within Horizon 2020 to achieve, in particular, the following objectives:

Amendment 15

Proposal for a regulation
Article 21 – paragraph 1 – point c

1. Entities established in third countries and international organisations shall be eligible to participate in indirect actions of Horizon 2020 under the conditions set out in Regulation (EU) XX/XX [Rules for Participation]. International cooperation with third countries and international organisations shall be promoted and integrated in Horizon 2020 to achieve, in particular, the following objectives:
Text proposed by the Commission

(c) supporting the Union's external and development policy objectives, complementing external and development programmes.

Amendment

(c) supporting the Union's external and development policy objectives as set out in the European Consensus on Development and Agenda for Change, complementing external and development programmes, and contributing to the fulfilment of international commitments in the field of sustainable development, in particular the achievement of the Millennium Development Goals and their subsequently internationally agreed adaptations.

Amendment 16

Proposal for a regulation
Article 21 – paragraph 2 – subparagraph 1

Text proposed by the Commission

2. Targeted actions with the objective of promoting cooperation with specific third countries or groups of third countries shall be implemented on the basis of common interest and mutual benefit, taking into account their scientific and technological capabilities and market opportunities, and the expected impact.

Amendment

2. Targeted actions with the objective of promoting cooperation with specific third countries or groups of third countries shall be implemented on the basis of common interest and mutual benefit, taking into account their scientific and technological capabilities and market opportunities, their developmental needs, and the expected impact. They include actions dedicated to the reinforcement of research capacities in developing countries and cooperation actions centred on their specific needs in domains such as health, including research on neglected diseases and epidemics, agriculture, fisheries and environment.
Amendment 17
Proposal for a regulation
Article 21 – paragraph 2 – subparagraph 3

Text proposed by the Commission

Cooperation priorities shall take into account developments in Union policy and opportunities for cooperation with third countries, as well as possible deficiencies in third country intellectual property systems.

Amendment
Cooperation priorities shall take into account developments in Union policy including external and development policies and opportunities for cooperation with third countries, as well as possible deficiencies in third country intellectual property systems.

Amendment 18
Proposal for a regulation
Article 21 – paragraph 2 – subparagraph 3 a (new)

Text proposed by the Commission

Coordination policies will, in addition, work in line with migration, asylum and developmental policies, in order to avoid a "brain drain" from developing countries.

Amendment

Amendment 19
Proposal for a regulation
Article 22 – paragraph 1

Text proposed by the Commission

The European Commission shall implement information and communication actions concerning Horizon 2020, including communication measures concerning supported projects and results. Budget allocated to communication under Horizon 2020 shall also contribute to covering the corporate communication of the Union's political priorities as far as they are related to the general objective of this Regulation.

Amendment

The European Commission shall implement information and communication actions concerning Horizon 2020, including communication measures concerning supported projects and results. In order to increase the circulation and exploitation of knowledge and maximize the efficiency of research efforts, free open online access to scientific publications, already embraced in the Seventh Framework Programme, shall be the general principle for scientific
publications of research receiving public funding from Horizon 2020. Free open access to scientific data produced or collected through research funded by Horizon 2020 shall be promoted and tested. Budget allocated to communication under Horizon 2020 shall also contribute to covering the corporate communication of the Union's political priorities as far as they are related to the general objective of this Regulation.

Amendment 20

Proposal for a regulation
Article 22 – paragraph 3 – point a

Text proposed by the Commission

(a) initiatives aimed at widening awareness and facilitating access to funding under Horizon 2020, in particular for those regions or types of participant that are underrepresented;

Amendment

(a) initiatives aimed at widening awareness and facilitating access to funding under Horizon 2020, in particular for those regions or types of participant that are underrepresented, such as researchers from developing countries and other third countries;

Amendment 21

Proposal for a regulation
Annex I – paragraph 15

Text proposed by the Commission

All the activities shall take a challenge-based approach, focusing on policy priorities without predetermining the precise choice of technologies or solutions that should be developed. The emphasis shall be on bringing together a critical mass of resources and knowledge across different fields, technologies and scientific disciplines in order to address the challenges. The activities shall cover the full cycle from research to market, with a new focus on innovation-related activities,

Amendment

All the activities shall take a challenge-based approach, focusing on policy priorities without predetermining the precise choice of technologies or solutions that should be developed. The emphasis shall be on bringing together a critical mass of resources and knowledge across different fields, technologies and scientific disciplines in order to address the challenges. The activities shall cover the full cycle from research to market, with a new focus on innovation-related activities,
such as piloting, demonstration, test-beds, support for public procurement, design, end-user driven innovation, social innovation and market take-up of innovations.

Amendment 22
Proposal for a regulation
Annex I – paragraph 15 a (new)

Text proposed by the Commission

Amendment

Given the global nature of the challenges and their close relation to Union external policies and international commitments, strategic cooperation with third countries shall be an integral part of each challenge. In addition, cross-cutting support for international cooperation shall be provided under the specific objective ‘Inclusive, innovative and secure societies’.

(The last paragraph of Annex I–paragraph 16 of the Commission text has been modified and becomes new paragraph 15(a))

Amendment 23
Proposal for a regulation
Annex I – paragraph 16

Text proposed by the Commission

Social sciences and humanities shall be an integral part of the activities to address all the challenges. In addition, the underpinning development of these disciplines shall be supported under the specific objective ‘Inclusive, innovative and secure societies’. Support will also focus on providing a strong evidence base for policy making at international, Union,
national and regional levels. **Given the global nature of many of the challenges, strategic cooperation with third countries shall be an integral part of each challenge. In addition, cross-cutting support for international cooperation shall be provided under the specific objective ‘Inclusive, innovative and secure societies’.**

**Amendment 24**

**Proposal for a regulation**

Annex I – part I – point 1.3 – paragraph 5

*Text proposed by the Commission*

By 2020, the ERC therefore shall aim to demonstrate: that the best researchers are participating in the ERC’s competitions, that ERC funding has led directly to scientific publications of the highest quality and to the commercialisation and application of innovative technologies and ideas and that the ERC has contributed significantly to making Europe a more attractive environment for the world’s best scientists. In particular, the ERC shall target a measurable improvement in the Union’s share of the world’s top 1% most highly cited publications. In addition it shall aim at a substantial increase in the number of excellent researchers from outside Europe whom it funds and specific improvements in institutional practices and national policies to support top researchers.

*Amendment*

By 2020, the ERC therefore shall aim to demonstrate: that the best researchers are participating in the ERC’s competitions, that ERC funding has led directly to scientific publications of the highest quality and to the commercialisation and application of innovative technologies and ideas and that the ERC has contributed significantly to making Europe a more attractive environment for the world’s best scientists. In particular, the ERC shall target a measurable improvement in the Union’s share of the world’s top 1% most highly cited publications. In addition it shall aim at an increase in the number of excellent researchers from outside Europe whom it funds, with the provision of support for young researchers from developing countries, and at specific improvements in institutional practices and national policies to support top researchers.
Amendment 25

Proposal for a regulation
Annex I – Part I – point 3.3 point b – paragraph 2

**Text proposed by the Commission**

Key activities shall be to encourage experienced researchers to broaden or deepen their skills by means of mobility by opening attractive career opportunities in universities, research institutions, businesses, SMEs and other socio-economic groups all over Europe and beyond. Opportunities to restart a research career after a break shall also be supported.

**Amendment**

Key activities shall be to encourage experienced researchers to broaden or deepen their skills by means of mobility by opening attractive career opportunities in universities, research institutions, businesses, SMEs and other socio-economic groups all over Europe and beyond, **offering researchers the opportunity to be trained and to enhance their knowledge in a third-country high-level research organisation.** Opportunities to restart a research career after a break shall also be supported.

Amendment 26

Proposal for a regulation
Annex I – Part I – point 3.3 point c – paragraph 2

**Text proposed by the Commission**

Key activities shall be to support short-term exchanges of research and innovation staff among a partnership of universities, research institutions, businesses, SMEs and other socio-economic groups, both within Europe and worldwide. This will include fostering cooperation with third countries.

**Amendment**

Key activities shall be to support short-term exchanges of research and innovation staff among a partnership of universities, research institutions, businesses, SMEs and other socio-economic groups, both within Europe and worldwide. This will include fostering cooperation with third countries, **and, in particular, strengthening scientific partnerships between the Union and middle-income and developing countries.**
Amendment 27

Proposal for a regulation
Annex I – Part I – point 4.3 point c – paragraph 1

*Text proposed by the Commission*

The aim shall be to support partnerships between relevant policymakers and funding bodies, mapping and monitoring tools for decision-making and also international cooperation activities.

*Amendment*

The aim shall be to support partnerships between relevant policymakers and funding bodies, mapping and monitoring tools for decision-making and also international cooperation activities. *European research infrastructures shall be supported in their international relations activities and consulted in the process of shaping the European strategy for international cooperation in research.*

Amendment 28

Proposal for a regulation
Annex I – part I – point 4.3 – point c – paragraph 2 a (new)

*Text proposed by the Commission*

Research Infrastructure partnerships with developing countries, for example as part of the joint Africa-EU Strategy, shall also be addressed.

*Amendment*

Research Infrastructure partnerships with developing countries, for example as part of the joint Africa-EU Strategy, shall also be addressed.

Amendment 29

Proposal for a regulation
Annex I – Part II – point 1 – paragraph 5

*Text proposed by the Commission*

These activities will contribute to the objectives of the Europe 2020 Flagship initiatives on Innovation Union, Resource Efficient Europe, An industrial policy for the globalisation era, and A Digital Agenda for Europe *as well as* Union *space* policy objectives.

*Amendment*

These activities will contribute to the objectives of the Europe 2020 Flagship initiatives on Innovation Union, Resource Efficient Europe, An industrial policy for the globalisation era, and A Digital Agenda for Europe. *They will also contribute to* Union policy objectives *and international commitments in the fields of space, health, environment, energy and food*.
Amendment 30

Proposal for a regulation
Annex I – Part II – point 1 – paragraph 12

*Text proposed by the Commission*

Space is a rapidly growing sector which delivers information vital to many areas of modern society, meeting its fundamental demands, addresses universal scientific questions, and serves to secure the Union's position as a major player on the international stage. Space research underpins all activities undertaken in space, but is currently fragmented in national programmes run by a subset of Union member states. Union level coordination and investment in space research are required (cf. Article 189 TFEU) to maintain the competitive edge, to safeguard Union space infrastructure such as Galileo and to sustain a future role for the Union in space. In addition, innovative downstream services and applications using space derived information represent an important source of growth and job creation.

*Amendment*

Space is a rapidly growing sector which delivers information vital to many areas of modern society, meeting its fundamental demands, addresses universal scientific questions *and global challenges such as climate change*, and serves to secure the Union's position as a major player on the international stage. Space research underpins all activities undertaken in space, but is currently fragmented in national programmes run by a subset of Union member states. Union level coordination and investment in space research are required (cf. Article 189 TFEU) to maintain the competitive edge, to safeguard Union space infrastructure such as Galileo and to sustain a future role for the Union in space. In addition, innovative downstream services and applications using space derived information represent an important source of growth and job creation, *whilst also contributing to the fulfilment of Union external objectives and international commitments in the fields of humanitarian crisis response and environment, for example.*

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Amendment 31

Proposal for a regulation
Annex I – part II – point 1.6.2 – paragraph 1

*Text proposed by the Commission*

Space is an important, but frequently invisible enabler of diverse services and products crucial to modern day society,

*Amendment*

Space is an important, but frequently invisible enabler of diverse services and products crucial to modern day society,
such as navigation, communication, weather forecasts, and geographic information. Policy formulation and implementation at European, national and regional levels increasingly depend on space-derived information. The global space sector is rapidly growing and expanding into new regions (e.g. China, South America). European industry is at present a considerable exporter of first class satellites for commercial and scientific purposes. Increasing global competition is challenging Europe's position in this area. Thus Europe has an interest in ensuring that its industry continues to thrive in this fiercely competitive market. In addition, data from European science satellites have resulted in some of the most significant scientific breakthroughs in the last decades in Earth sciences and astronomy. With this unique capacity, the European space sector has a critical role to play in addressing the challenges identified by Europe 2020.

Amendment 32
Proposal for a regulation
Annex I – part II – point 3.3 – point a – paragraph 1

Text proposed by the Commission

SMEs shall be supported across Horizon 2020. For this purpose a dedicated SME instrument shall provide staged and seamless support covering the whole innovation cycle. The SME instrument shall be targeted at all types of innovative SMEs showing a strong ambition to develop, grow and internationalise. It shall be provided for all types of innovation, including service, non-technological and social innovations. The aim is to develop and capitalise on the innovation potential of SMEs by filling the gap in funding for early stage high risk research and innovation, stimulating innovations and

Amendment

SMEs shall be supported across Horizon 2020. For this purpose a dedicated SME instrument shall provide staged and seamless support covering the whole innovation cycle. The SME instrument shall be targeted at all types of innovative SMEs showing a strong ambition to develop, grow and internationalise and which, when it comes to the opening-up of external markets, implement policies focused on corporate social responsibility, particularly if they are operating in developing countries. It shall be provided for all types of innovation, including service, non-technological and social
increasing private-sector commercialisation of research results.

innovations. The aim is to develop and capitalise on the innovation potential of SMEs by filling the gap in funding for early stage high risk research and innovation, stimulating innovations and increasing private-sector commercialisation of research results.

Amendment 33

Proposal for a regulation
Annex I – part III – point 1.1 – paragraph 4

Text proposed by the Commission

Chronic conditions such as cardiovascular disease (CVD), cancer, diabetes, neurological and mental health disorders, overweight and obesity and various functional limitations are major causes of disability, ill-health and premature death, and present considerable social and economic costs.

Amendment

Chronic conditions such as cardiovascular disease (CVD), cancer, diabetes, neurological and mental health disorders, overweight and obesity and various functional limitations are major causes of disability, ill-health and premature death, and present considerable social and economic costs. **Innovative models for funding and disseminating the results of research work, such as innovation awards, are of essential importance in addressing these societal challenges and enabling researchers in Europe and the rest of the world to play an active and effective part in doing so.**

Amendment 34

Proposal for a regulation
Annex I – part III – point 1.1 – paragraph 6

Text proposed by the Commission

Infectious diseases (e.g. HIV/AIDS, tuberculosis and *malaria*), *are a global concern*, accounting for 41% of the 1.5 billion disability adjusted life years worldwide, with 8% of these in Europe. Emerging epidemics and the threat of increasing anti-microbial resistance must

Amendment

Infectious diseases (e.g. HIV/AIDS, tuberculosis, *malaria* and *neglected diseases*), accounting for 41% of the 1.5 billion disability adjusted life years worldwide, with 8% of these in Europe. Emerging *and re-emerging* epidemics and the threat of increasing anti-microbial resistance must also be prepared for. **The**
also be prepared for. specific field of zoonoses requires attention here, in concert with other supported activities that focus on animal health.

Amendment 35

Proposal for a regulation
Annex I – part III – point 1.1 – paragraph 7

Text proposed by the Commission

Meanwhile, drug and vaccine development processes are becoming more expensive and less effective. Persistent health inequalities must be addressed, and access to effective and competent health systems must be ensured for all Europeans.

Amendment

Meanwhile, drug and vaccine development processes are becoming more expensive and less effective. Persistent health inequalities must be addressed, and access to effective and competent health systems must be ensured globally, in order to assure the best possible health for all Europeans.

Amendment 36

Proposal for a regulation
Annex I – part III – point 1.2 – paragraph 1

Text proposed by the Commission

Disease and disability are not stopped by national borders. An appropriate European level research and innovation response can and should make a crucial contribution to addressing these challenges, deliver better health and wellbeing for all, and position Europe as a leader in the rapidly expanding global markets for health and wellbeing innovations.

Amendment

Disease and disability are not stopped by national borders. An appropriate European-level research and innovation response in partnership with third countries can and should make a crucial contribution to addressing these global challenges, thus helping to achieve the Millennium Development Goals and to deliver better health and well-being for all and to position Europe as a leader in the rapidly expanding global markets for health and well-being innovations.
The response depends on excellence in research to improve our fundamental understanding of health, disease, disability, development and ageing (including of life expectancy), and on the seamless and widespread translation of the resulting and existing knowledge into innovative, scalable and effective products, strategies, interventions and services. Furthermore, the pertinence of these challenges across Europe and in many cases, globally, demands a response characterised by long term and coordinated support for co-operation between excellent, multidisciplinary and multi-sector teams. Furthermore, the pertinence of these challenges across Europe and in many cases, globally, demands a response characterised by long term and coordinated support for co-operation between excellent, multidisciplinary and multi-sector teams globally, including research and development capacity in endemic areas.

Amendment 38

Proposal for a regulation
Annex I – part III – point 1.2 – paragraph 3

Similarly, the complexity of the challenge and the interdependency of its components demand a European level response. Many approaches, tools and technologies have applicability across many of the research and innovation areas of this challenge and are best supported at Union level. These include the development of long term cohorts and the conduct of clinical trials, the clinical use of ‘-omics’ or the development of ICT and their applications in healthcare practice, notably e-health. The requirements of specific populations are also best addressed in an integrated manner, for example in the development of stratified and/or personalised medicine, in the treatment of rare diseases, and in providing assisted and independent living Similarly, the complexity of the challenge and the interdependency of its components demand a European level response. Many approaches, tools and technologies have applicability across many of the research and innovation areas of this challenge and are best supported at Union level. These include international collaboration between researchers in order to acquire the necessary critical mass and expertise, the development of long term cohorts and the conduct of clinical trials, the clinical use of ‘-omics’ or the development of ICT and their applications in healthcare practice, notably e-health. The requirements of specific populations are also best addressed in an integrated manner, for example in the development of stratified and/or personalised medicine, in
the diagnosis, prevention and treatment of poverty-related, neglected and rare and non-communicable diseases, and in providing assisted and independent living solutions.

Amendment 39

Proposal for a regulation
Annex I – Part III – point 1.2 – paragraph 3 a (new)

Text proposed by the Commission

Poverty related and neglected diseases are a global concern and research gaps must be addressed through creating patients’ needs driven innovation. The increased prevalence of such emerging and re-emerging infectious diseases in the European region - often as a result of climate change and global movement of people - and the growing problem of antimicrobial resistance further underline the need for a comprehensive internationally coordinated approach and increased public support for R&D for these diseases that kill millions of people every year around the world.

Amendment 40

Proposal for a regulation
Annex I – part III – point 1.2 – paragraph 4

Text proposed by the Commission

To maximise the impact of Union level actions, support will be provided to the full spectrum of research and innovation activities. From basic research through translation of knowledge to large trials and demonstration actions, mobilising private investment; to public and pre-commercial procurement for new products, services, scalable solutions, which are when necessary, interoperable and supported by

To maximise the impact of Union level actions and create long-term benefits to its objectives, support will be provided to the full spectrum of research and innovation activities. From basic research through translation of knowledge to large trials and demonstration actions, mobilising private investment; to public and pre-commercial procurement for new products, services, scalable solutions, which are when
defined standards and/or common guidelines. This co-ordinated, European effort will contribute to the ongoing development of the ERA. It will also interface, as and when appropriate, with activities developed in the context of the Health for Growth Programme and the European Innovation Partnership on Active and Healthy Ageing.

Amendment 41

Proposal for a regulation
Annex I – Part III – point 1.3 – paragraph 5

Specific activities shall include:
understanding the determinants of health (including environmental and climate related factors), improving health promotion and disease prevention;
understanding disease and improving diagnosis; developing effective screening programmes and improving the assessment of disease susceptibility; improving surveillance and preparedness; developing better preventive vaccines; using in-silico medicine for improving disease management and prediction; treating disease; transferring knowledge to clinical practice and scalable innovation actions; better use of health data; active ageing, independent and assisted living; individual empowerment for self-management of health; promotion of integrated care; improving scientific tools and methods to support policy making and regulatory needs; and optimising the efficiency and effectiveness of healthcare systems and reducing inequalities by evidence based decision making and dissemination of best necessary, interoperable and supported by defined standards and/or common guidelines. This co-ordinated, European effort will contribute to the ongoing development of the ERA. It will also complement and create synergies, as and when appropriate, with activities developed in the context of the Health for Growth Programme and the European Innovation Partnership on Active and Healthy Ageing, the Council Conclusions on the role of the EU in Global Health and Union external programmes and international commitments in the field of global health.

Text proposed by the Commission

Specific activities shall include:
understanding the determinants of health (including environmental, climate and poverty related factors), improving health promotion and disease prevention;
understanding disease and improving diagnosis; developing effective screening programmes and improving the assessment of disease susceptibility; improving surveillance and preparedness; developing new and better preventive vaccines, therapies and treatments; using in-silico medicine for improving disease management and prediction; developing adapted treatments and treating disease; transferring knowledge to clinical practice and scalable innovation actions including psychosocial aspects; improving regulatory procedures and support of access related activities; better collection and use of health data; standardised data analysis techniques; healthy and active ageing, independent and assisted living; individual empowerment for self-management of health; promotion of
practice, and innovative technologies and approaches.

integrated care; improving scientific tools and methods to support policy making and regulatory needs; and optimising the efficiency and effectiveness of healthcare systems and reducing health disparities and inequalities by evidence based decision making and dissemination of best practice, and innovative technologies and approaches, in particular in relation to funding research and disseminating research results in order to share knowledge that will facilitate and speed up innovation in these areas. All of these activities shall properly account for gender and sex analysis.

Amendment 42
Proposal for a regulation
Annex I – Part III – point 1.3 – paragraph 5 a (new)

Text proposed by the Commission

Amendment

In order to meet the challenges for the future of European healthcare and to secure the above-mentioned objectives, appropriate Union funding should be allocated for research and innovation activities in this area.

Amendment 43
Proposal for a regulation
Annex I – part III – point 2.1 – paragraph 2

Text proposed by the Commission

Amendment

Over the coming decades, Europe will be challenged by increased competition for limited and finite natural resources, by the effects of climate change, in particular on primary production systems (agriculture, forestry, fisheries and aquaculture) and by the need to provide a sustainable, safe and secure food supply for the European and an increasing global population. A 70%
increase of the world food supply is estimated to be required to feed the 9 billion global population by 2050. Agriculture accounts for about 10% of Union greenhouse gases emissions, and while declining in Europe, global emissions from agriculture are projected to increase up to 20% by 2030. Furthermore, Europe will need to ensure sufficient supplies of raw materials, energy and industrial products, under conditions of decreasing fossil carbon resources (oil and liquid gas production expected to decrease by about 60% by 2050), while maintaining its competitiveness. Bio-waste (estimated at up to 138 million tonnes per year in the Union, of which up to 40% is land-filled) represents a huge problem and cost, despite its high potential added value. For example, an estimated 30% of all food produced in developed countries is discarded. Major changes are needed to reduce this amount by 50% in the Union by 2030. In addition, national borders are irrelevant in the spread of animal and plant pests and diseases, including zoonotic diseases, and food borne pathogens. While effective national prevention measures are needed, action at Union level is essential for ultimate control and the effective running of the single market. The challenge is complex, affects a broad range of interconnected sectors and requires a plurality of approaches.

Amendment 44

Proposal for a regulation
Annex I – Part III – point 2.2 – paragraph 3

Text proposed by the Commission
Research and innovation will interface with a wide spectrum of Union policies and related targets, including the Common Agriculture Policy (in particular the Rural Development Policy) and the European

Amendment
Research and innovation will interface with a wide spectrum of Union policies and related targets, including the Common Agriculture Policy (in particular the Rural Development Policy) and the European
Innovation Partnership ‘Agricultural Productivity and Sustainability’, the Common Fisheries Policy, the Integrated Maritime Policy, the European Climate Change Programme, the Water Framework Directive, the Marine Strategy Framework Directive, the Forestry Action Plan, the Soil Thematic Strategy, the Union's 2020 Biodiversity Strategy, the Strategic Energy Technology Plan, the Union's innovation and industrial policies, external and development aid policies, plant health strategies, animal health and welfare strategies and regulatory frameworks to protect the environment, health and safety, to promote resource efficiency and climate action, and to reduce waste. A better integration of research and innovation into related Union policies will significantly improve their European added value, provide leverage effects, increase societal relevance and help to further develop sustainable land, seas and oceans management and bio-economy markets.

Amendment 45

Proposal for a regulation
Annex I – part III – point 2.3 – point a – paragraph 1

Text proposed by the Commission

The aim is to supply sufficient food, feed, biomass and other raw-materials, while safeguarding natural resources and enhancing ecosystems services, including coping with and mitigating climate change. The activities shall focus on more sustainable and productive agriculture and forestry systems which are both resource-efficient (including low-carbon) and resilient, while at the same time developing of services, concepts and policies for

Amendment

The aim is to ensure a sufficient global supply of food, feed, biomass and other raw-materials, while safeguarding natural resources both inside and outside the European Union and enhancing ecosystems services, including coping with and mitigating climate change and land grabbing in developing countries. The activities shall focus on more sustainable and productive agriculture and forestry systems globally which are both resource-
thriving rural livelihoods. efficient (including low-carbon) and resilient, while at the same time developing of services, concepts and policies for thriving rural livelihoods. Attention shall be paid to the health and management of livestock, including vaccines and treatments for diseases, including tropical diseases.

Amendment 46
Proposal for a regulation
Annex I – Part III – point 3.2 – paragraph 6

Text proposed by the Commission
On the international scene, the action taken at Union level provides a 'critical mass' to attract interest from other technology leaders and foster international partnerships to achieve the Union's objectives. It will make it easier for international partners to interact with the Union to build common action where there is mutual benefit and interest.

Amendment
On the international scene, the action taken at Union level provides a 'critical mass' to attract interest from other technology leaders and foster international partnerships to achieve the Union's objectives. It will make it easier for international partners to interact with the Union to build common action where there is mutual benefit and interest. In this regard special consideration will be paid to Union initiatives and international commitments on universal energy access and climate change adaptation and mitigation.

Amendment 47
Proposal for a regulation
Annex I – Part III – point 6.1 – paragraph 7

Text proposed by the Commission
The in-built complexity of these challenges and the evolutions of demands thus make it essential to develop innovative research and new smart technologies, processes and methods, social innovation mechanisms, coordinated actions and policies that will anticipate or influence major evolutions for Europe. It calls for understanding the

Amendment
The in-built complexity of these challenges and the evolutions of demands thus make it essential to develop innovative research and new smart technologies, processes and methods, social innovation mechanisms, coordinated actions and policies that will anticipate or influence major evolutions for Europe. It calls for understanding the
underlying trends and impacts at play in these challenges and rediscovering or reinventing successful forms of solidarity, coordination and creativity that make Europe a distinctive model of inclusive, innovative and secure societies compared to other world regions. It requires a more strategic approach to cooperation with third countries. Finally, as security policies should interact with different social policies, enhancing the societal dimension of security research will be an important aspect of this challenge.

Amendment 48

Proposal for a regulation
Annex I – Part III – point 6.3.2 – paragraph 1

Text proposed by the Commission

The aim is to foster the development of innovative societies and policies in Europe through the engagement of citizens, enterprises and users in research and innovation and the promotion of coordinated research and innovation policies in the context of globalisation. Particular support will be provided for the development of the ERA and the development of framework conditions for innovation.

Amendment

The aim is to foster the development of innovative societies and policies in Europe through the engagement of citizens, enterprises and users in research and innovation and the promotion of coordinated research and innovation policies that engage third countries. Particular support will be provided for the development of the ERA and the development of framework conditions for innovation.

Amendment 49

Proposal for a regulation
Annex I – Part III – point 6.3.2 – paragraph 2 - point d

Text proposed by the Commission

(d) promote coherent and effective cooperation with third countries.

Amendment

(d) promote coherent and effective cooperation with third countries including in terms of access to research results and
information.
### PROCEDURE

<table>
<thead>
<tr>
<th>Title</th>
<th>Establishment of Horizon 2020 - The Framework Programme for Research and Innovation (2014-2020)</th>
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<td>Committee responsible</td>
<td>ITRE</td>
</tr>
<tr>
<td>Date announced in plenary</td>
<td>13.12.2011</td>
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<tr>
<td>Opinion by</td>
<td>DEVE</td>
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<tr>
<td>Date announced in plenary</td>
<td>10.5.2012</td>
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<tr>
<td>Rapporteur</td>
<td>Bill Newton Dunn</td>
</tr>
<tr>
<td>Date appointed</td>
<td>27.3.2012</td>
</tr>
<tr>
<td>Discussed in committee</td>
<td>10.7.2012</td>
</tr>
<tr>
<td>Date adopted</td>
<td>3.9.2012</td>
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| Result of final vote | +: 23  
-: 0  
0: 1 |
| Members present for the final vote | Thijs Berman, Ricardo Cortés Lastra, Nirj Deva, Leonidas Donskis, Catherine Grèze, Eva Joly, Filip Kaczmarek, Miguel Angel Martínez Martínez, Gay Mitchell, Norbert Neuser, Bill Newton Dunn, Birgit Schnieber-Jastram, Michèle Striffler, Alf Svensson, Keith Taylor, Patrice Tirolien, Anna Záborská, Iva Zanicchi |
| Substitute(s) present for the final vote | Santiago Fisas Ayxela, Enrique Guerrero Salom, Fiona Hall, Gesine Meissner, Horst Schnellhardt |
| Substitute(s) under Rule 187(2) present for the final vote | Phil Prendergast |
18.9.2012

OPINION OF THE COMMITTEE ON BUDGETS

for the Committee on Industry, Research and Energy


Rapporteur: Nils Torvalds

AMENDMENTS

The Committee on Budgets calls on the Committee on Industry, Research and Energy, as the committee responsible, to incorporate the following amendments in its report:

Amendment 1

Draft legislative resolution
Paragraph 1 a (new)

Text proposed by the Commission

1a. Points out that the financial envelope specified in the legislative proposal constitutes only an indication to the legislative authority and that it can not be fixed until agreement is reached on the proposal for a regulation laying down the multiannual financial framework for the years 2014-2020;

Amendment 2
Draft legislative resolution
Paragraph 1 b (new)

Draft legislative resolution

1b. Recalls its resolution of 8 June 2011 on Investing in the future: a new Multiannual Financial Framework (MFF) for a competitive, sustainable and inclusive Europe; reiterates that sufficient additional resources are needed in the next MFF in order to enable the Union to fulfil its existing policy priorities and the new tasks provided for in the Treaty of Lisbon, as well as to respond to unforeseen events; points out that even with an increase in the level of resources for the next MFF of at least 5% compared to the 2013 level only a limited contribution can be made to the achievement of the Union’s agreed objectives and commitments and the principle of Union solidarity; challenges the Council, if it does not share this approach, to clearly identify which of its political priorities or projects could be dropped altogether, despite their proven European added value;

1 Texts adopted, P7_TA(2011)0266.

Amendment 3

Draft legislative resolution
Paragraph 1 c (new)

Draft legislative resolution

1c. Recalls, in particular, that in the same resolution the European Parliament calls for a significant increase in relevant expenditure from 2013, in order to enhance, stimulate and secure the financing of research, development and innovation in the Union;
Amendment 4

Draft legislative resolution
Paragraph 1 d (new)

Text proposed by the Commission

Id. Recalls, furthermore, its position that next MFF should see a greater concentration of budgetary resources in areas that stimulate economic growth and competitiveness, such as research and innovation according to the principles of European added value and excellence;

Amendment 5

Proposal for a regulation
Recital 3

Text proposed by the Commission

(3) The Union is committed to achieving the Europe 2020 strategy, which has set the objectives of smart, sustainable and inclusive growth, highlighting the role of research and innovation as key drivers of social and economic prosperity and of environmental sustainability and setting itself the goal to increase spending on Research and Development to reach 3 % of gross domestic product (GDP) by 2020 while developing an innovation intensity indicator. In this context, the Innovation Union flagship initiative sets out a strategic and integrated approach to research and innovation, setting the framework and objectives to which future Union research and innovation funding should contribute. Research and innovation are also key factors for other Europe 2020 flagship initiatives, notably on resource efficient Europe, an industrial policy for the globalisation era, and a digital agenda for Europe. Moreover, for achieving the Europe 2020 objectives relating to research and innovation, Cohesion policy has a key

Amendment

(3) The Union is committed to achieving the Europe 2020 strategy, which has set the objectives of smart, sustainable and inclusive growth, highlighting the role of research and innovation as key drivers of social and economic prosperity and of environmental sustainability and setting itself the goal to increase spending on Research and Development to reach 3 % of gross domestic product (GDP) by 2020 while developing an innovation intensity indicator. In this context, the Innovation Union flagship initiative sets out a strategic and integrated approach to research and innovation, setting the framework and objectives to which future Union research and innovation funding should contribute. Research and innovation are also key factors for other Europe 2020 flagship initiatives, notably on resource efficient Europe, an industrial policy for the globalisation era, and a digital agenda for Europe. Moreover, for achieving the Europe 2020 objectives relating to research and innovation, Cohesion policy has a key
role to play through building capacity and providing a stairway to excellence. thereby underlining the importance of fostering stronger synergies and complementarity with the structural funds. However, the selection of projects funded under the concept "stairway to excellence" needs to be based on certain quality standards. In order to ensure their durable success, Projects funded under the concept "stairway to excellence" need to be paid specific attention and have to be closely monitored.

Amendment 6
Proposal for a regulation
Recital 4

Text proposed by the Commission

(4) At its meeting of 4 February 2011, the European Council supported the concept of the Common Strategic Framework for Union Research and Innovation funding to improve the efficiency of research and innovation funding at national and Union levels and called on the Union to rapidly address remaining obstacles to attracting talent and investment in order to complete the ERA by 2014 and achieve a genuine single market for knowledge, research and innovation.

Amendment

(4) At its meeting of 4 February 2011, the European Council supported the concept of the Common Strategic Framework for Union Research and Innovation funding to improve the efficiency of research and innovation funding at national and Union levels and called on the Union to rapidly address remaining obstacles to attracting talent and investment in order to complete the ERA by 2014 and achieve a genuine single market for knowledge, research and innovation. This requires increasing significantly the budget for the next 7-year period to reinforce the innovation capacity of the Union while attracting significant private sector funds for its activities.
Amendment 7
Proposal for a regulation
Recital 5

Text proposed by the Commission

(5) The European Parliament has called for a radical simplification of Union research and innovation funding in its Resolution of 11 November 2010, has highlighted the importance of the Innovation Union to transform Europe for post-crisis world, in its resolution of 12 May 2011, has drawn attention to important lessons to be learned following the interim evaluation of the Seventh Framework Programme in its resolution of 8 June 2011 and has supported the concept of a common strategic framework for research and innovation funding in its resolution of 27 September 2011.

Amendment

(5) The European Parliament has called for a radical simplification of Union research and innovation funding in its resolutions of 11 November 2010 and 8 June 2011\(^1\), that emphasised that any increase of funds should be coupled with a radical simplification of funding procedures, has highlighted the importance of the Innovation Union to transform Europe for post-crisis world in its resolution of 12 May 2011, has drawn attention to important lessons to be learned following the interim evaluation of the Seventh Framework Programme in its resolution of 8 June 2011, has supported the concept of a common strategic framework for research and innovation funding, and has called for doubling of the budget for research and innovation in the next MFF compared to the Seventh Framework Programme in its resolution of 27 September 2011.

\(^1\) Texts adopted, P7_TA(2011)0266.

Amendment 8
Proposal for a regulation
Recital 11

Text proposed by the Commission

(11) Horizon 2020 - the Framework Programme for Research and Innovation in the European Union (hereinafter 'Horizon 2020'), focuses on three priorities, namely generating excellent science in order to strengthen the Union's world-class excellence in science, fostering industrial leadership to support business, including

Amendment

(11) Horizon 2020 - the Framework Programme for Research and Innovation in the European Union (hereinafter 'Horizon 2020'), focuses on three priorities, namely generating excellent science in order to strengthen the Union's world-class excellence in science, fostering industrial leadership to support business, including
small and medium-sized enterprises (SME) and innovation and tackling societal challenges, in order to respond directly to the challenges identified in the Europe 2020 strategy by supporting activities covering the entire spectrum from research to market. Horizon 2020 should support all stages in the innovation chain, especially activities closer to the market including innovative financial instruments, as well as non-technological and social innovation, and aims to satisfy the research needs of a broad spectrum of Union policies by placing emphasis on the widest possible use and dissemination of knowledge generated by the supported activities up to its commercial exploitation. The priorities of Horizon 2020 should also be supported through a programme under the Euratom Treaty on nuclear research and training.

Amendment 9
Proposal for a regulation
Recital 14 a (new)

Text proposed by the Commission

(14a) Funding under Horizon 2020 should be guided by the principle of excellence and provide a clear European Added Value. It should not replace but actually complement national funding of research-related projects.

Amendment 10
Proposal for a regulation
Recital 15

Text proposed by the Commission

(15) Simplification is a central requirement of Horizon 2020 which should be fully reflected in its design,
management and implementation. Horizon 2020 should aim to attract the strong participation of universities, research centres, industry and specifically SMEs and be open to new participants, as it brings together the full range of research and innovation support in one common strategic framework, including a streamlined set of forms of support and uses rules for participation with principles applicable to all actions under the programme. Simpler funding rules should reduce the administrative costs for participation and will contribute to a reduction of financial errors.

Amendment 11

Proposal for a regulation
Recital 15 a (new)

*Text proposed by the Commission*

(15a) Horizon 2020 should ensure a significant decrease in bureaucratic burden for beneficiaries, including SMEs, while allowing for a differentiated approach depending on the type of beneficiary.

Amendment

*Text proposed by the Commission*

(18) It is appropriate to ensure a correct closure of Horizon 2020 and its predecessor programmes, in particular regarding the continuation of multi-annual arrangements for their management, such as the financing of technical and
Amendment 13

Proposal for a regulation
Recital 19

_text proposed by the Commission_

(19) The implementation of Horizon 2020 may give rise to supplementary programmes involving the participation of certain Member States only, the participation of the Union in programmes undertaken by several Member States, or the setting up of joint undertakings or other arrangements within the meaning of Articles 184, 185 and 187 TFEU.

Amendment

(19) The implementation of Horizon 2020 may give rise _under specific and transparent conditions_ - to supplementary programmes involving the participation of certain Member States only, the participation of the Union in programmes undertaken by several Member States, or the setting up of joint undertakings or other arrangements within the meaning of Articles 184, 185 and 187 TFEU.

Amendment 14

Proposal for a regulation
Recital 21 a (new)

_text proposed by the Commission_

(21a) To ensure the appropriate balance between consensus-based and more disruptive R&D&I, at least 15 % of the budget of the "Societal challenges" priority and of the specific objective "Leadership in enabling and industrial technologies" within the "Industrial Leadership" priority should follow a bottom-up, research-driven logic. Furthermore, a right balance should be stricken within the "Societal challenges" and the "Industrial leadership" priorities between smaller and bigger projects, taking into account the specific sector structure, type of activity, technology and research landscape.
Amendment 15
Proposal for a regulation
Recital 26

Text proposed by the Commission

(26) To achieve maximum impact, Horizon 2020 should develop close synergies with other Union programmes in areas such as education, space, environment, competitiveness and SMEs, the internal security, culture and media and with the Cohesion Policy funds and Rural Development Policy, which can specifically help to strengthen national and regional research and innovation capabilities in the context of smart specialisation strategies.

Amendment

(26) To achieve maximum impact, Horizon 2020 should develop close synergies with other Union programmes in areas such as education, space, environment, competitiveness and SMEs, the internal security, culture and media and with the Cohesion Policy funds and Rural Development Policy, which can specifically help to strengthen national and regional research and innovation capabilities in the context of smart specialisation strategies. These synergies should not compromise the principle of excellence that Horizon 2020 should pursue and should not lead to double funding of the same projects.

Amendment 16
Proposal for a regulation
Recital 26 a (new)

Text proposed by the Commission

(26a) Both Horizon 2020 and the Cohesion Policy seek a comprehensive alignment with the Europe 2020 objectives of smart, sustainable and inclusive growth through their respective Common Strategic Frameworks. This new strategic direction calls for an increased and systematised cooperation of both CSFs in order to fully mobilise the research and innovation potential at regional, national and European level. To exploit synergies, stairways to excellence instruments should be introduced in both Horizon 2020 and Cohesion Policy without compromising the principle of excellence.

Amendment

(26a) Both Horizon 2020 and the Cohesion Policy seek a comprehensive alignment with the Europe 2020 objectives of smart, sustainable and inclusive growth through their respective Common Strategic Frameworks. This new strategic direction calls for an increased and systematised cooperation of both CSFs in order to fully mobilise the research and innovation potential at regional, national and European level. To exploit synergies, stairways to excellence instruments should be introduced in both Horizon 2020 and Cohesion Policy without compromising the principle of excellence.
Justification

Although they have different focus, both Horizon 2020 and the Cohesion Policy are extremely important to reach the objectives of Europe 2020. Thus synergies and complementarities between them are really needed. Cohesion policy must prepare regional R&I players to participate in Horizon 2020 projects and, on the other hand, should provide the means to exploit and diffuse swiftly R&I results stemming from Horizon 2020 funded basic research into the market. To build bridges between two programmes, the H2020 should offer some measures for identification of potential (“centres of excellence”), providing the seal of excellence for the best centres.

Amendment 17

Proposal for a regulation
Recital 26 b (new)

Text proposed by the Commission

(26b) European, local, regional as well as national authorities have an important role to play in implementing the European Research Area and in ensuring an efficient coordination of the Union financial instruments, in particular in fostering linkages between Horizon 2020 and the Structural Funds, within the framework of regional innovation strategies based on smart specialisation. Regions also have a key role in the dissemination and implementation of Horizon 2020 results and in offering complementary funding instruments, including public procurement.

Justification

As the main actors in programming and implementing the Cohesion Policy, national and regional authorities will play a relevant role in creating and empowering the necessary synergies between this policy and Horizon 2020. In order to fully exploit the opportunities for synergies, regional authorities must develop their research and innovation strategies for smart specialisation and facilitate the exploitation of results stemming from Horizon 2020, with particular attention to creating friendly market conditions and business environment. Actions taken by the European Commission could support implementation of this concept on the Member States level.

Amendment 18
Proposal for a regulation
Recital 27

Text proposed by the Commission

(27) SMEs constitute a significant source of innovation and growth in Europe. Therefore a strong participation of SMEs, as defined in Commission Recommendation 2003/361/EC of 6 May 2003, is needed in Horizon 2020. This should support the aims of the Small Business Act.

Amendment

(27) SMEs constitute a significant source of innovation and growth in Europe. Therefore a strong participation of SMEs, as defined in Commission Recommendation 2003/361/EC of 6 May 2003, is needed in Horizon 2020. This should support the aims of the Small Business Act. **Horizon 2020 should offer the necessary incentives to attract SMEs to this type of funding at Union level and provide for a set of rules and instruments that significantly improve the access of SMEs to finance.**

Amendment 19

Proposal for a regulation
Recital 31

Text proposed by the Commission

(31) In order to maintain a level playing field for all undertakings active in the internal market, funding provided by Horizon 2020 should be designed in accordance with state aid rules so as to ensure the effectiveness of public spending and prevent market distortions such as crowding-out of private funding, creating ineffective market structures or preserving inefficient firms.

Amendment

(31) In order to maintain a level playing field for all undertakings active in the internal market, funding provided by Horizon 2020 should be designed in accordance with state aid rules, including the Community framework for state aid for research and development and innovation currently under review, so as to ensure the effectiveness of public spending and prevent market distortions such as crowding-out of private funding, creating ineffective market structures or preserving inefficient firms.

Justification

*Shifting the balance too much towards funding short-term, close-to-market innovation could distort competition and come at the detriment of more long-term, fundamental research that is often the source of radical, disruptive innovation. Therefore, not only the letter but also the spirit of the R&D State aid rules should be taken into account.*
Amendment 20

Proposal for a regulation
Recital 31 a (new)

_Text proposed by the Commission_ Amendment

\((31a)\) The spending of Union and Member States’ funds on research and innovation should be better coordinated in order to assure complementarity, better efficiency and visibility, as well as to achieve better synergies. In the context of the evaluation process foreseen in this Regulation, the Commission should provide concrete evidence, if available of the complementarity and synergies achieved between the EU Budget and the Member States budgets in achieving the Europe 2020 R&D target as well as the EU 2020 innovation headline indicator.

Amendment 21

Proposal for a regulation
Recital 32 a (new)

_Text proposed by the Commission_ Amendment

\((32a)\) Horizon 2020 should ensure utmost transparency, accountability and democratic scrutiny of innovative financial instruments and mechanisms that involve the Union budget, especially as regards their contribution, both expected and achieved, to reaching Union objectives.

Amendment 22

Proposal for a regulation
Article 4 – paragraph 1

_Text proposed by the Commission_ Amendment

Horizon 2020 shall play a central role in Horizon 2020 shall play a central role in
the delivery of the Europe 2020 strategy for smart, sustainable and inclusive growth by providing a common strategic framework for the Union's research and innovation funding, thus acting as a vehicle for leveraging private investment, creating new job opportunities and ensuring Europe's long-term sustainable growth and competitiveness.

Justification

In a context of budgetary restrictions due to the financial and economic crisis that Europe is facing one should not undermine smart investments in areas of high added value such as research and innovation. Public financial efforts in these areas must be maintained or increased and Horizon 2020 must play a leverage effect in this sense. On the other hand, the social, economic and territorial cohesion of the Union must be at the heart of all public investments of the UE.

Amendment 23

Proposal for a regulation
Article 5 – paragraph 1

Text proposed by the Commission

1. Horizon 2020 shall contribute to building an economy based on knowledge and innovation across the whole Union by leveraging sufficient additional research, development and innovation funding. Thereby, it shall support the implementation of the Europe 2020 strategy and other Union policies, as well as the achievement and functioning of the European Research Area (ERA). The relevant performance indicators are set out in the introduction of Annex I.

Amendment

1. Horizon 2020 shall contribute to building an economy based on knowledge and innovation across the whole Union by leveraging sufficient additional research, development and innovation funding. Thereby, it shall support the implementation of the Europe 2020 strategy and other Union policies, as well as the achievement and functioning of the European Research Area (ERA). It is estimated that by 2030 Horizon 2020 is expected to generate an extra 0.92 per cent of GDP, 1.37 per cent of exports, -0.15 per cent of imports, and 0.40 per cent of employment. The relevant performance indicators are set out in the introduction of Annex I.
Amendment 24

Proposal for a regulation
Article 6 – paragraph 2

Text proposed by the Commission

2. The amount for activities **under Title XIX TFEU** shall be distributed among the priorities set out in Article 5(2) as follows:

(a) Excellent science, **EUR 27818 million**;

(b) Industrial leadership, **EUR 20280 million**;

(c) Societal challenges, **EUR 35888 million**.

The maximum overall amount for the Union financial contribution from Horizon 2020 to the non-nuclear direct actions of the Joint Research Centre shall be **EUR 2212 million**.

The indicative breakdown for the specific objectives within the priorities and the maximum overall amount of the contribution to the non-nuclear direct actions of the Joint Research Centre are set out in Annex II.

Amendment

2. The amount for activities shall be distributed among the priorities set out in Article 5(2) as follows:

(a) Excellent science, **31,705 % of the financial envelope set out in paragraph 1**;

(b) Industrial leadership, **22,544 % of the financial envelope set out in paragraph 1**;

(c) Societal challenges, **39,589 % of the financial envelope set out in paragraph 1**.

The maximum overall amount for the Union financial contribution from Horizon 2020 to the non-nuclear direct actions of the Joint Research Centre shall be **2,521 % of the financial envelope set out in paragraph 1**.

The indicative breakdown for the specific objectives within the priorities and the maximum overall amount of the contribution to the non-nuclear direct actions of the Joint Research Centre are set out in Annex II. **The annual appropriations shall be authorised by the budgetary authority without prejudice to the provisions of the Regulation laying down the multiannual financial framework for the years 2014-2020 and the Interinstitutional Agreement of xxx/201z between the European Parliament, the Council and the Commission on cooperation in budgetary matters and sound financial management.**
Amendment 25

Proposal for a regulation
Article 6 – paragraph 3 – subparagraph 1

Text proposed by the Commission

3. The European Institute of Innovation and Technology shall be financed through a maximum contribution from Horizon 2020 of EUR 3194 million as set out in Annex II. A first allocation of EUR 1542 million shall be provided to the European Institute of Innovation and Technology for activities under Title XVII of the Treaty on the Functioning of the European Union. A second allocation of up to EUR 1652 million shall be provided, subject to the review set out in Article 26 (1). This additional amount shall be provided on a pro-rata basis, as indicated in Annex II, from the amount for the specific objective "Leadership in enabling and industrial technologies" within the priority on industrial leadership set out in paragraph 2(b) and from the amount for the priority on societal challenges set out in 2(c).

Amendment

3. The European Institute of Innovation and Technology shall be financed through a maximum contribution of 3.64% of the financial envelope set out in paragraph 1.

Amendment 26

Proposal for a regulation
Article 6 – paragraph 3 – subparagraph 3 a (new)

Text proposed by the Commission

The annual appropriations for the EIT shall be authorised by the budgetary authority without prejudice to the provisions of the Regulation laying down the multiannual financial framework for the years 2014-2020 and the Interinstitutional Agreement of xxx/201z between the European Parliament, the Council and the Commission on cooperation in budgetary matters.

Amendment

The annual appropriations for the EIT shall be authorised by the budgetary authority without prejudice to the provisions of the Regulation laying down the multiannual financial framework for the years 2014-2020 and the Interinstitutional Agreement of xxx/201z between the European Parliament, the Council and the Commission on cooperation in budgetary matters.
Amendment 27

Proposal for a regulation
Article 6 – paragraph 5

**Text proposed by the Commission**

5. In order to respond to unforeseen situations or new developments and needs, and to take into account the provisions of paragraph 3 of this article, the Commission may, following the interim evaluation of Horizon 2020 as referred to in Article 26(1)(a) of this Regulation, within the annual budgetary procedure review the amounts set out for the priorities in paragraph 2 and the indicative breakdown by specific objectives within these priorities set out in Annex II and transfer appropriations between the priorities and specific objectives up to 10 % of the total initial allocation of each priority and up to 10 % of the initial indicative breakdown of each specific objective. **This does not concern the amount set out for the direct actions of the Joint Research Centre in paragraph 2 or the contribution to the European Institute of Innovation and Technology set out in paragraph 3.**

**Amendment**

5. In order to respond to unforeseen situations or new developments and needs, and to take into account the provisions of paragraph 3 of this article, the Commission may, following the interim evaluation of Horizon 2020 as referred to in Article 26(1)(a) of this Regulation, **within the annual budgetary procedure and without prejudice to the prerogatives of the budgetary authority** review the amounts set out for the priorities in paragraph 2 and the indicative breakdown by specific objectives within these priorities set out in Annex II and transfer appropriations between the priorities and specific objectives up to 10 % of the total initial allocation of each priority and up to 10 % of the initial indicative breakdown of each specific objective.

Amendment 28

Proposal for a regulation
Article 7 – paragraph 1 – point (b) – point (iv a) (new)

**Text proposed by the Commission**

(iv a) the EFTA States that are party to the EEA Agreement, in accordance with the provisions of that Agreement.

**Amendment**

(iv a) the EFTA States that are party to the EEA Agreement, in accordance with the provisions of that Agreement.
Proposal for a regulation
Article 13 – paragraph 1

**Text proposed by the Commission**
1. Linkages and interfaces shall be implemented across and within the priorities of Horizon 2020. Particular attention shall be paid in this respect to the development and application of key enabling and industrial technologies, to bridging from discovery to market application, to cross-disciplinary research and innovation, to social and economic sciences and humanities, to fostering the functioning and achievement of the ERA, to cooperation with third countries, to responsible research and innovation including gender, and to enhancing the attractiveness of the research profession and to facilitating cross-border and cross-sector mobility of researchers.

**Amendment**
1. Linkages and interfaces shall be implemented across and within the priorities of Horizon 2020. Particular attention shall be paid in this respect to the development and application of key enabling and industrial technologies, to bridging from discovery to market application, to cross-disciplinary research and innovation, to social and economic sciences and humanities, to fostering the functioning and achievement of the ERA, to **widening participation across the Union in research and innovation**, to cooperation with third countries, to responsible research and innovation including gender, and to enhancing the attractiveness of the research profession and to facilitating cross-border and cross-sector mobility of researchers.

**Amendment 30**

Proposal for a regulation
Article 15 a (new)

**Text proposed by the Commission**

**Article 15a**

**Human resources**

*Horizon 2020 shall contribute to the promotion and attractiveness of researchers' careers across Europe. As a result it shall be implemented in a manner to promote the creation of a single market for researchers.*

**Amendment**

**Amendment 31**

Proposal for a regulation
Article 16 – paragraph 1 – subparagraph 2
Text proposed by the Commission

Particular attention shall be paid to the principle of proportionality, the right to privacy, the right to the protection of personal data, the right to the physical and mental integrity of a person, the right to non-discrimination and the need to ensure high levels of human health protection.

Amendment

Particular attention shall be paid to the principle of proportionality, the right to privacy, the right to the protection of personal data, the right to the physical and mental integrity of a person, the right to non-discrimination based on nationality, ethnic origin, disability, religion or belief, age, gender or sexual orientation and the need to ensure high levels of human health protection.

Amendment 32

Proposal for a regulation
Article 17a (new)

Text proposed by the Commission

Article 17a

Synergies with the Structural Funds

Horizon 2020 shall contribute to the closing of the research and innovation divide within the Union by enabling synergies with the Cohesion policy in support to research and innovation through the implementation of complementary measures in a coordinated way. Where possible, the interoperability of the two instruments will be promoted and cumulative or combined funding will be encouraged without compromising the principle of excellence. Horizon 2020 shall contribute to evaluation of the potential, identification of the best centres and improvement of their visibility by providing the seal of excellence.

Justification

As stated in the proposed new Recital 26a, although they have different focus, both Horizon 2020 and the Cohesion Policy are extremely important to reach the objectives of Europe 2020. Thus synergies and complementarities between them are really needed. Cohesion policy must prepare regional R&I players to participate in Horizon 2020 projects and, on the
other hand, should provide the means to exploit and diffuse swiftly R&I results stemming from Horizon 2020 funded basic research into the market.

Amendment 33

Proposal for a regulation
Article 18 – paragraph 1

Text proposed by the Commission

1. Particular attention shall be paid to ensuring the adequate participation of, and innovation impact on, small and medium-sized enterprises (SME) in Horizon 2020. Quantitative and qualitative assessments of SME participation shall be undertaken as part of the evaluation and monitoring arrangements.

Amendment

1. Particular attention shall be paid to ensuring the adequate participation of, and innovation impact on, small and medium-sized enterprises (SME) in Horizon 2020. Quantitative and qualitative assessments of SME participation shall be undertaken as part of the evaluation and monitoring arrangements. The Commission, in particular, shall ensure to the largest possible extent the participation of SMEs in Horizon 2020 by also providing the necessary assistance that will allow them to fulfil the requirements and improve their access to finance under this Programme.

Amendment 34

Proposal for a regulation
Article 18 – paragraph 3

Text proposed by the Commission

3. The integrated approach set out in paragraphs 1 and 2 is expected to lead to around 15% of the total combined budget for the specific objective on "Leadership in enabling and industrial technologies" and the priority "Societal challenges" going to SMEs.

Amendment

3. The integrated approach set out in paragraphs 1 and 2 is expected to lead to (i) not less than 15% of the total combined budget for the specific objective on "Leadership in enabling and industrial technologies" and the priority "Societal challenges" going to SMEs, and (ii) 50% of participating SMEs introducing innovations new to the company or the market (covering the period of the project plus three years).
Amendment 35
Proposal for a regulation
Article 19 – paragraph 3 – point (c)

Text proposed by the Commission
(c) the long-term commitment from all partners based on a shared vision and clearly defined objectives.

Amendment
(c) the long-term financial commitment from all partners based on a shared vision and clearly defined objectives.

Amendment 36
Proposal for a regulation
Article 22 – subparagraph 2

Text proposed by the Commission
Activities to disseminate information and carry out communication activities shall be an integral task under all of the actions supported by Horizon 2020.

Amendment
Activities to disseminate information and carry out communication activities shall be an integral task under all of the actions supported by Horizon 2020, taking particular care of providing this information in a way that facilitates easy access by all, notably persons with disabilities.

Amendment 37
Proposal for a regulation
Article 22 – subparagraph 3 – point (a)

Text proposed by the Commission
(a) initiatives aimed at widening awareness and facilitating access to funding under Horizon 2020, in particular for those regions or types of participant that are underrepresented;

Amendment
(a) initiatives aimed at widening awareness and facilitating access to funding under Horizon 2020, in particular for those regions or types of participant that are underrepresented, as is the case of researchers and participants with disabilities;

Amendment 38
**Proposal for a regulation**  
**Article 26 – paragraph 1 – point (a) – introductory part**

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) <em>Not later than end 2017</em>, the Commission shall carry out, with the</td>
<td>(a) <em>By the end of 2016</em>, the Commission shall carry out, with the assistance of independent experts, a review of the European Institute of Innovation and Technology. The second allocation of funds to the European Institute of Innovation and Technology as set out in Article 6(3) shall be made available following this review. The review shall assess the progress of the European Institute of Innovation and Technology against all of the following:</td>
</tr>
<tr>
<td>assistance of independent experts, a review of the European Institute of</td>
<td></td>
</tr>
<tr>
<td>Innovation and Technology. The second allocation of funds to the European</td>
<td></td>
</tr>
<tr>
<td>Institute of Innovation and Technology as set out in Article 6(3) shall be</td>
<td></td>
</tr>
<tr>
<td>made available following this review. The review shall assess the progress</td>
<td></td>
</tr>
<tr>
<td>of the European Institute of Innovation and Technology against all of the</td>
<td></td>
</tr>
<tr>
<td>following:</td>
<td></td>
</tr>
</tbody>
</table>

**Amendment 39**

**Proposal for a regulation**  
**Article 26 – paragraph 1 – point (a) – point (ii)**

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
</tr>
</thead>
<tbody>
<tr>
<td>(ii) <em>the agreed timing for the creation of the third wave of Knowledge and</em></td>
<td>(ii) <em>the success in creating new Knowledge and Innovation Communities</em></td>
</tr>
<tr>
<td>Innovation Communities and the programmed financial needs of existing ones</td>
<td>and the programmed financial needs of existing ones according to their specific development; and</td>
</tr>
<tr>
<td>according to their specific development; and</td>
<td></td>
</tr>
</tbody>
</table>

**Justification**

*To increase transparency, the EIT funding should be budgeted as one individual budget post. It is also important that the EIT is given full access to its funding in order for it to fulfil its tasks in an optimal way. However the EIT must still prove it can fulfil its' tasks. If the MTE concludes that this is not the case, the activities of the EIT should be concluded and the remaining funding dispersed evenly over the three pillars of the programme.*

**Amendment 40**

**Proposal for a regulation**  
**Article 26 – paragraph 1 – point (a) – point (iii)**
(iii) the contribution of the European Institute of Innovation and Technologies and the Knowledge and Innovation Communities to the priority on societal challenges and the specific objective on ‘leadership in enabling and industrial technologies’ of the programme Horizon 2020.

Justification

The synergies between the EIT and the ERA should be included in the evaluation.

Amendment 41

Proposal for a regulation
Article 26 – paragraph 1 – point (b)

Text proposed by the Commission
(b) Not later than end 2017, and taking into account the ex-post evaluation of the Seventh Framework Programme to be completed by the end of 2015 and the review of the European Institute of Innovation and Technology, the Commission shall carry out, with the assistance of independent experts, an interim evaluation of Horizon 2020, its specific programme, including the European Research Council, and the activities of the European Institute of Innovation and Technology, on the achievements (at the level of results and progress towards impacts) of the objectives of Horizon 2020 and continued relevance of all the measures, the efficiency and use of resources, the scope for further simplification, and Union added value. That evaluation shall also take into consideration aspects relating to access to funding opportunities for participants in all regions, for SMEs and for promoting gender balance. That evaluation shall

Amendment
(b) Not later than end 2017, and taking into account the ex-post evaluation of the Seventh Framework Programme to be completed by the end of 2015 and the review of the European Institute of Innovation and Technology, the Commission shall carry out, with the assistance of independent experts, an interim evaluation of Horizon 2020, its specific programme, including the European Research Council, and the activities of the European Institute of Innovation and Technology, on the achievements (at the level of results and progress towards impacts) of the objectives of Horizon 2020 and continued relevance of all the measures, the efficiency and use of resources, the scope for further simplification, and Union added value. That evaluation shall also take into consideration aspects relating to access to funding opportunities for extending the excellence of the Union’s science and innovation base in all regions, for SMEs
additionally take into account the contribution of the measures to the Union priorities of smart, sustainable and inclusive growth and results on the long-term impact of the predecessor measures.

and for promoting gender balance. That evaluation shall additionally take into account the contribution of the measures to the Union priorities of smart, sustainable and inclusive growth and results on the long-term impact of the predecessor measures.

Amendment 42

Proposal for a regulation
Article 26 – paragraph 1 a (new)

Text proposed by the Commission

1a. In the context of the evaluation process described in point (b) of paragraph 1, the Commission shall provide concrete evidence, if available, of the complementarity and synergies achieved between the Union Budget and the Members States budgets in achieving the Europe 2020 R & D target as well as the Europe 2020 innovation headline indicator.

Amendment

Amendment 43

Proposal for a regulation
Annex I – Introductory part – Part I – point (d)

Text proposed by the Commission

(d) Research infrastructure shall develop European research infrastructure for 2020 and beyond, foster their innovation potential and human capital, and complement this with the related Union policy and international cooperation.

Amendment

(d) Research infrastructure shall develop world-class European research infrastructure for 2020 and beyond, foster and extend the excellence of the Union’s science and innovation base and human capital, and complement this with the related Union policy and international cooperation. Appropriate recourse shall be made to the 'Union loan and guarantee service for research and innovation' in order to leverage additional resources for these investments and promote effective
industry-academia links.

Amendment 44

Proposal for a regulation
Annex I – Introductory part – Part III – paragraph 1 – point (e)

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
</tr>
</thead>
<tbody>
<tr>
<td>(e) Climate action, resource efficiency and raw materials;</td>
<td>(e) Climate action, resource efficiency and sustainable use of raw materials;</td>
</tr>
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</table>

Amendment 45

Proposal for a regulation
Annex I – Introductory part – Part III – paragraph 2

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
</tr>
</thead>
<tbody>
<tr>
<td>All the activities shall take a challenge-based approach, focusing on policy priorities without predetermining the precise choice of technologies or solutions that should be developed. The emphasis shall be on bringing together a critical mass of resources and knowledge across different fields, technologies and scientific disciplines in order to address the challenges. The activities shall cover the full cycle from research to market, with a new focus on innovation-related activities, such as piloting, demonstration, test-beds, support for public procurement, design, end-user driven innovation, social innovation and market take-up of innovations.</td>
<td>All the activities shall take a challenge-based approach, focusing on policy priorities without predetermining the precise choice of technologies or solutions that should be developed. The emphasis shall be on bringing together a critical mass of resources and knowledge across different fields, technologies and scientific disciplines in order to address the challenges. The activities shall cover the full cycle from research to market, as well as its impact on society, with a new focus on innovation-related activities, such as piloting, demonstration, test-beds, support for public procurement, design, end-user driven innovation, social innovation and market take-up of innovations.</td>
</tr>
</tbody>
</table>

Amendment 46

Proposal for a regulation
Annex I – Part I – point 4.1 – paragraph 3

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Europe must establish an adequate, stable</td>
<td>Europe must establish an adequate, stable</td>
</tr>
</tbody>
</table>
base for building, maintaining and operating research infrastructures if its research is to remain world-class. This requires **substantial and effective** cooperation between Union, national and regional funders for which strong links with the cohesion policy will be pursued to ensure synergies and a coherent approach.

**Amendment 47**

**Proposal for a regulation**

**Annex I – Part I – point 4.1 – paragraph 4**

*Text proposed by the Commission*

This specific objective addresses a core commitment of the **Innovation Union** flagship initiative, which highlights the crucial role played by world-class research infrastructures in making ground-breaking research and *innovation possible*. The initiative stresses the need to pool resources across Europe, and in some cases globally, in order to build and operate research infrastructures. Equally, the **Digital Agenda for Europe** flagship initiative emphasises the need to reinforce Europe’s e-infrastructures and the importance of developing innovation clusters to build Europe’s innovative advantage.

*Amendment*

This specific objective addresses a core commitment of the **Innovation Union** flagship initiative, which highlights the crucial role played by world-class research infrastructures in making ground-breaking research and *in reinforcing and extending the excellence of the Union’s science and innovation base*. The initiative stresses the need to pool resources across Europe, and in some cases globally, in order to build and operate research infrastructures. Equally, the **Digital Agenda for Europe** flagship initiative emphasises the need to reinforce Europe’s e-infrastructures and the importance of developing innovation clusters to build Europe’s innovative advantage.

**Amendment 48**

**Proposal for a regulation**

**Annex I – Part II – point 1 – paragraph 10**
For all the enabling and industrial technologies, including the KETs, a major aim will be to foster interactions between the technologies, and with the applications under the societial challenges. This shall be fully taken into account in developing and implementing the agendas and priorities. It requires that stakeholders representing the different perspectives are fully involved in priority setting and implementation. In certain cases, it will also require actions that are jointly funded by the enabling and industrial technologies, and by the relevant societial challenges. This will include joint funding for public-private partnerships that aim to develop technologies and apply them to address societial challenges.

Amendment 49
Proposal for a regulation
Annex I – Part III – point 1.1 – paragraph 4

Chronic conditions such as cardiovascular disease (CVD), cancer, diabetes, neurological and mental health disorders, overweight and obesity and various functional limitations are major causes of disability, ill-health and premature death, and present considerable social and economic costs.

Amendment 50
Proposal for a regulation
Annex I – Part III – point 1.1 – paragraph 5

Chronic conditions such as cardiovascular disease (CVD), cancer, diabetes, rheumatic and musculoskeletal diseases, neurological and mental health disorders, overweight and obesity and various functional limitations are major causes of disability, ill-health and premature death, and present considerable social and economic costs.
In the Union, CVD annually accounts for more than 2 million deaths and costs the economy more than EUR 192 billion while cancer accounts for a quarter of all deaths and is the number one cause of death in people aged 45-64. Over 27 million people in the Union suffer from diabetes and the total cost of brain disorders (including, but not limited to those affecting mental health) has been estimated at EUR 800 billion. Environmental, life-style and socio-economic factors are relevant in several of these conditions with up to one third of the global disease burden estimated to be related to these.

Environmental, life-style and socio-economic factors are relevant in several of these conditions with up to one third of the global disease burden estimated to be related to these.

_Justification_

According to scientific evidence, rheumatic and musculoskeletal diseases are one of the major chronic conditions affecting European citizens. Among others, this evidence comes from the EUMUSC.NET project, an ongoing study co-funded by the European Commission, which proves that rheumatic and musculoskeletal diseases are one of the most prevalent, disabling and costly diseases. They represent an enormous burden on individuals and societies in the EU, particularly taking into account that they are one of the main diseases preventing older people to have a healthy, active and independent life. As the text of the Horizon 2020 Framework Programme may orient future developments when it comes to prioritising research areas for funding, it is crucial that the main diseases linked to major societal challenges are accurately and fairly mentioned.

Amendment 51

Proposal for a regulation
Annex I – Part III – point 6.2 – paragraph 3

_Fostering new modes of cooperation between countries within the Union and worldwide, as well as across relevant_
research and innovation communities, will therefore be a central task under this challenge. Engaging citizens and industry, supporting social and technological innovation processes, encouraging smart and participatory public administration, as well as promoting evidence-based policymaking will be systematically pursued in order to enhance the relevance of all these activities for policymakers, social and economic actors and citizens. In this regard, research and innovation will be a precondition for the competitiveness of European industries and services, in particular in the areas of security, digital development and privacy protection.

The success of the implementation of necessary changes really depends on the public engagement with science and innovation and its benefits. In order to achieve that it is essential to focus on the social aspects in the societal challenges involving not only industry players, but also researchers and universities, as well as civil society and its organisations and institutions.

**Amendment 52**

Proposal for a regulation  
Annex I – Part III – point 6.3.2 – paragraph 2 – point (c)

*Text proposed by the Commission*

(c) ensure societal engagement in research and innovation;

*Amendment*

(c) ensure societal engagement in research and innovation *in order to achieve science with and for society*;

**Amendment 53**

Proposal for a regulation  
Annex II – Table

*Text proposed by the Commission*

The indicative breakdown for Horizon

*Amendment*

The indicative breakdown for Horizon
<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
<th>Amount (EUR million)</th>
<th>2020 is as follows (in EUR million):</th>
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<tbody>
<tr>
<td>I Excellent science, of which:</td>
<td></td>
<td>27818</td>
<td>1. The European Research Council 15008</td>
</tr>
<tr>
<td></td>
<td>1. The European Research Council</td>
<td>27818</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Future and Emerging Technologies</td>
<td>3505</td>
<td>1. The European Research Council</td>
</tr>
<tr>
<td></td>
<td>3. Marie Curie actions on skills, training and career development</td>
<td>6503</td>
<td>1. The European Research Council</td>
</tr>
<tr>
<td></td>
<td>4. European research infrastructures (including infrastructures)</td>
<td>2802</td>
<td>1. The European Research Council</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>II Industrial leadership, of which:</td>
<td>20280</td>
<td>1. Leadership in enabling and industrial technologies* 15580</td>
</tr>
<tr>
<td></td>
<td>1. Leadership in enabling and industrial technologies*</td>
<td>20280</td>
<td>1. Leadership in enabling and industrial technologies*</td>
</tr>
<tr>
<td></td>
<td>3. Innovation in SMEs</td>
<td>700</td>
<td>2. Access to risk finance**</td>
</tr>
<tr>
<td></td>
<td>III Societal challenges, of which</td>
<td>35888</td>
<td>1. Health, demographic change and wellbeing; 9077</td>
</tr>
<tr>
<td></td>
<td>1. Health, demographic change and wellbeing;</td>
<td>35888</td>
<td>1. Health, demographic change and wellbeing;</td>
</tr>
<tr>
<td></td>
<td>2. Food security, sustainable agriculture, marine and maritime research and the bio-economy;</td>
<td>4694</td>
<td>2. Food security, sustainable agriculture, marine and maritime research and the bio-economy;</td>
</tr>
<tr>
<td></td>
<td>3. Secure, clean and efficient energy</td>
<td>6537</td>
<td>2. Food security, sustainable agriculture, marine and maritime research and the bio-economy;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>of which 210 for EIT</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Smart, green and integrated transport</td>
<td>7690</td>
<td>2. Food security, sustainable agriculture, marine and maritime research and the bio-economy;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>of which 247 for EIT</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5. Climate action, resource efficiency and raw materials</td>
<td>3573</td>
<td>2. Food security, sustainable agriculture, marine and maritime research and the bio-economy;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>of which 115 for EIT</td>
<td></td>
</tr>
<tr>
<td>6. Inclusive, innovative and secure societies</td>
<td>6. Inclusive, innovative and secure societies</td>
<td></td>
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<td>European Institute of Innovation and Technology (EIT)</td>
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<td></td>
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<td>Non-nuclear direct actions of the Joint Research Centre</td>
<td>Non-nuclear direct actions of the Joint Research Centre</td>
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<td>TOTAL</td>
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<td>2212</td>
<td>2212</td>
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<tr>
<td>4317 of which 138 for EIT</td>
<td>3,64 %</td>
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<td>TOTAL 87740</td>
<td>TOTAL 100 %</td>
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<td></td>
</tr>
</tbody>
</table>
### PROCEDURE

| Title | Establishment of Horizon 2020 - The Framework Programme for Research and Innovation (2014-2020) |
| Committee responsible | ITRE |
| Date announced in plenary | 13.12.2011 |
| Opinion by | BUDG |
| Date announced in plenary | 13.12.2011 |
| Rapporteur | Nils Torvalds |
| Date appointed | 2.7.2012 |
| Date adopted | 6.9.2012 |
| Result of final vote |  
| +: | 34 |
| −: | 2 |
| 0: | 0 |
| Members present for the final vote | Marta Andreasen, Richard Ashworth, Reimer Böge, Zuzana Brzobohatá, Jean Louis Cottigny, Jean-Luc Dehaene, James Elles, Göran Färm, José Manuel Fernandes, Eider Gardiazábal Rubial, Salvador Garriga Polledo, Jens Geier, Ingeborg Gräßle, Lucas Hartong, Jutta Haug, Monika Hohlmeier, Sidonia Elżbieta Jędrzejewska, Anne E. Jensen, Jan Kozłowski, Alain Lamassoure, Giovanni La Via, George Lyon, Claudio Morganti, Jan Mulder, Juan Andrés Naranjo Escobar, Dominique Riquet, Derek Vaughan, Angelika Werthmann |
| Substitute(s) present for the final vote | Burkhard Balz, Maria Da Graça Carvalho, Edit Herczog, Jürgen Klute, Constanze Angela Krehl, Paul Rübig, Peter Šťastný, Georgios Stavrakakis, Nils Torvalds |
| Substitute(s) under Rule 187(2) present for the final vote | Luigi Berlinguer |
25.9.2012

OPINION OF THE COMMITTEE ON THE ENVIRONMENT, PUBLIC HEALTH AND FOOD SAFETY

for the Committee on Industry, Research and Energy


Rapporteur: Cristian Silviu Buşoi

SHORT JUSTIFICATION

Horizon 2020, as mentioned in the Commission Communication accompanying the programme, aims at implementing the Innovation Union flagship objectives, focusing on current societal challenges and strengthening the link between bottom-up, top-down research and commercialisation. Further simplification and increasing SMEs’ participation are also targeted. Many societal challenges are ENVI committee related such as climate, resource efficiency, clean energy and transport, health and food safety. The rapporteur warmly welcomes the proposals of the Commission, but wishes to put more emphasis on some of the aspects addressed.

In the current opinion, the Rapporteur considered a holistic approach as the best way to further strengthen ENVI committee priorities. This first report should also be seen as opening the debate on this complex programme which is of key importance for increasing sustainable and green economic growth in the European Union while promoting a healthy society.

The opinion mainly focuses on societal challenges and proposes to strengthen some aspects related to health, food safety, climate and environment.

Health

Given its high added value for innovative treatments, for instance in regenerative medicine, stem cell research, through exploring existing alternatives to embryonic stem cells, should continue to be supported while acknowledging ethical concerns. A special focus should also be paid to research and innovation on disease treatment. Public support for R&D on infections and rare diseases should be increased and knowledge sharing should be promoted. Patients’ needs should be a driver for health innovation and R&D funding. Moreover, environmental health R&D and innovation should be properly financed.

Food safety
The Societal Challenges related to food security is proposed to be broadened by opening it to all aspects of food safety.

**Climate and Environment**

The balance between economic, social and environmental aspects of research and innovation should be regularly and effectively monitored. Support for renewable energy should be strengthened. Increasing the efficiency of renewable energy can make it more economically attractive, while fighting climate change, decreasing our dependency on fossil fuels and promoting a low carbon economy.

Horizon 2020 is a key programme which could help the EU in further decreasing harmful gas and particles emissions for the environment and health, without any burden on industries or Members States.

**Horizontal Aspects**

Further linking the objectives of Innovation Union and Research Efficiency flagship initiatives to Horizon 2020 is needed and therefore is incorporated in the opinion. In order to have a maximum benefit of R&D and Innovation projects across EU, complementarity of Horizon 2020 with other EU and National Funds should be strictly monitored. Moreover, it is also proposed to further increase the SMEs participation, which can be the driver for a green and sustainable economic growth. One important aspect of performance indications, which monitor the implementation of Horizon 2020 objectives, is also touched on in the report.

Further amendments between the split of research budgets and objectives in the innovation chain as well as simplification are left until after the future ENVI committee debate on Horizon 2020.
AMENDMENTS

The Committee on the Environment, Public Health and Food Safety calls on the Committee on Industry, Research and Energy, as the committee responsible, to incorporate the following amendments in its report:

Amendment 1

Proposal for a regulation
Recital 1

Text proposed by the Commission

(1) The Union has the objective of strengthening its scientific and technological bases by achieving a European Research Area (‘ERA’) in which researchers, scientific knowledge and technology circulate freely, and encouraging the Union to become more competitive, including in its industry. To pursue those objectives the Union should carry out activities to implement research, technological development and demonstration, promote international cooperation, disseminate and optimise results and stimulate training and mobility.

Amendment

(1) The Union has the objective of strengthening its scientific and technological bases by achieving a European Research Area (‘ERA’) in which researchers, scientific knowledge and technology circulate freely, and encouraging the Union to become more sustainable, competitive, and resilient, including in its industry. To pursue those objectives the Union should carry out activities to implement research, technological development and demonstration, promote international cooperation, disseminate and optimise results and stimulate training and mobility.

Amendment 2

Proposal for a regulation
Recital 11

Text proposed by the Commission

(11) Horizon 2020 - the Framework Programme for Research and Innovation in the European Union (hereinafter 'Horizon 2020'), focuses on three priorities, namely generating excellent science in order to strengthen the Union's world-class excellence in science, fostering industrial leadership to support business, including small and medium-sized enterprises (SME) and innovation and tackling societal challenges, in order to respond directly to

Amendment

(11) Horizon 2020 - the Framework Programme for Research and Innovation in the European Union (hereinafter 'Horizon 2020'), focuses on three priorities, namely increasing the level of scientific excellence in Europe in order to strengthen the Union's position as a world-class science base, fostering industrial leadership to support business, including small and medium-sized enterprises (SME) and innovation and tackling societal
the challenges identified in the Europe 2020 strategy by supporting activities covering the entire spectrum from research to market. Horizon 2020 should support all stages in the innovation chain, especially activities closer to the market including innovative financial instruments, as well as non-technological and social innovation, and aims to satisfy the research needs of a broad spectrum of Union policies by placing emphasis on the widest possible use and dissemination of knowledge generated by the supported activities up to its commercial exploitation. The priorities of Horizon 2020 should also be supported through a programme under the Euratom Treaty on nuclear research and training.

Amendment 3

Proposal for a regulation
Recital 20

Text proposed by the Commission

(20) With the aim of deepening the relationship between science and society and reinforcing public confidence in science, Horizon 2020 should favour an informed engagement of citizens and civil society on research and innovation matters by promoting science education, by making scientific knowledge more accessible, by developing responsible research and innovation agendas that meet citizens' and civil society's concerns and expectations and by facilitating their participation in Horizon 2020 activities.

Amendment

(20) With the aim of deepening the relationship between science and society, Horizon 2020 should favour responsible research and innovation through the active participation of the societal actors (researchers, citizens and civil society, policy makers and industry) in the research and innovation process, notably by ensuring the uptake of the gender dimension; by promoting science education, by guaranteeing the respect of ethical legislation and promoting the emergence of an adherence to the highest ethical standards worldwide; by increasing the accessibility and re-use of the results of publicly funded research, in particular scientific publications and data; by making scientific knowledge more accessible, by developing a governance framework that meet citizens' and civil society's concerns and expectations and
Amendment 4
Proposal for a regulation
Recital 20 a (new)

Text proposed by the Commission

(20a) Accessibility of information and communication actions concerning Horizon 2020, including communication concerning supported projects and results, requires the provision of accessible formats for all. Accessible formats include, but are not limited to, large print, Braille, easy-to-read text, audio, video, and electronic format.

Amendment 5
Proposal for a regulation
Recital 21

Text proposed by the Commission

(21) The implementation of Horizon 2020 should respond to the evolving opportunities and needs from science and technology, industry, policies and society. As such, the agendas should be set in close liaison with stakeholders from all sectors concerned, and sufficient flexibility should be allowed for new developments. External advice should be sought on a continuous basis during Horizon 2020, also making use of relevant structures such as European Technology Platforms, Joint Programming Initiatives and the European Innovation Partnerships.

Amendment

(21) The implementation of Horizon 2020 must recognise the need for leadership by European Institutions to ensure global competitiveness particularly in the area of biotechnology. External advice should be sought on a continuous basis during Horizon 2020, also making use of relevant structures such as European Technology Platforms, Joint Programming Initiatives and the European Innovation
Partnerships.

Amendment 6
Proposal for a regulation
Recital 22

Text proposed by the Commission

(22) Horizon 2020 should contribute to the attractiveness of the research profession in the Union. Adequate attention should be paid to the European Charter for Researchers and Code of Conduct for the Recruitment of Researchers, together with other relevant reference frameworks defined in the context of the European Research Area, while respecting their voluntary nature.

Amendment

(22) Horizon 2020 should contribute to the attractiveness of the research profession, particularly its industrial and biomedical branches, in the Union. Adequate attention should be paid to the European Charter for Researchers and Code of Conduct for the Recruitment of Researchers, together with other relevant reference frameworks defined in the context of the European Research Area, while respecting their voluntary nature.

Amendment 7
Proposal for a regulation
Recital 22 a (new)

Text proposed by the Commission

(22a) Horizon 2020 should also help persuade European researchers to remain in Europe, attract researchers from the whole world to Europe and make Europe a more attractive destination for the best researchers. Consideration should therefore be given at European level to establishing attractive, coordinated tax arrangements for researchers.

Amendment

(22a) Horizon 2020 should also help persuade European researchers to remain in Europe, attract researchers from the whole world to Europe and make Europe a more attractive destination for the best researchers. Consideration should therefore be given at European level to establishing attractive, coordinated tax arrangements for researchers.

Amendment 8
Proposal for a regulation
Recital 23
(23) **The activities developed under Horizon 2020 should aim at promoting equality between men and women in research and innovation, by addressing in particular the underlying causes of gender imbalance, by exploiting the full potential of both female and male researchers, and by integrating the gender dimension into the content of projects in order to improve the quality of research and stimulate innovation. Activities should also aim at the implementation of the principles relating to the equality between women and men as laid down in Articles 2 and 3 of the Treaty on European Union and Article 8 TFEU.**

**Amendment**

(23) **Horizon 2020 funded research activities should comply with the EU acquis communautaire with regard to equal opportunities between men and women. Horizon 2020 should pay attention to excellent science and to professional qualification of scientific and research personal of both sex involved in research and innovation. In order to assure the effective use of EU funding, the principal distinction for EU research funding should be the excellence of science project and the professional qualification of the research staff.**

**Proposal for a regulation Recital 24**

**Text proposed by the Commission**

(24) Research and innovation activities supported by Horizon 2020 should respect fundamental ethical principles. The opinions of the European Group on Ethics in Science and New Technologies should be taken into account. Research activities should also take into account Article 13 TFEU and reduce the use of animals in research and testing, with a view ultimately to replacing animal use. All activities should be carried out ensuring a high level of human health protection in accordance with Article 168 TFEU.

**Amendment**

(24) Research and innovation activities supported by Horizon 2020 should respect fundamental ethical principles. The reasoned, regularly updated opinions of the European Group on Ethics in Science and New Technologies should be taken into account, which entails, as a prerequisite, a transparent method of selection underpinned by the independence and scientific expertise of the members of the European Group on Ethics in Science and New Technologies (EGE). Research activities should also take into account Article 13 TFEU and reduce the use of animals in research and testing, with a view ultimately to replacing animal use, including through strategic development, integration and use of innovative, non-animal tools and technologies. All activities should be
carried out ensuring a high level of human health protection in accordance with Article 168 TFEU.

**Justification**

The political goal of reduction and ultimate replacement of animal use should be linked to the practical approach that will be needed to make this goal a reality.

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**Amendment 10**

**Proposal for a regulation**

**Recital 25**

**Text proposed by the Commission**

(25) The European Commission does not explicitly solicit the use of human embryonic stem cells. The use of human stem cells, be they adult or embryonic, if any, depends on the judgement of the scientists in view of the objectives they want to achieve and is subject to stringent Ethics Review. **No project involving the use of human embryonic stem cells should be funded that does not obtain the necessary approvals from** the Member States. **No activity should be funded that is forbidden in all Member States. No activity should be funded in a Member State where such activity is forbidden.**

**Amendment**

(25) **Stem cell therapies have shown their strong added value by leading to breakthroughs in disease treatment. Therefore, the Union should continue to support research in this area.** The European Commission does not explicitly solicit the use of human embryonic stem cells. The use of human stem cells, be they adult or embryonic if any, depends on the judgement of the scientists in view of the objectives they want to achieve and is subject to stringent Ethics Review. **Projects involving the use of human embryonic stem cells may be funded provided that they have been duly approved by** the Member States concerned. **Where allowed by national legislation, the creation and maintenance of public human embryonic stem cell banks should be considered.**

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**Amendment 11**

**Proposal for a regulation**

25 a (new)
Text proposed by the Commission

(25a) The Commission should actively support research aiming at developing alternatives to embryonic stem cells. The recent discovery of induced pluripotent stem cells (iPSCs) has opened up a new avenue for research, over and beyond the opportunities for research on adult and embryonic stem cells that have existed for several years, and has thus offered new hope to patients awaiting treatment. Nevertheless, the Commission should also take due account of the scientific community's interest in all types of stem cell research and, therefore, not favour any one over another, while considering the ethical problems raised by each category of stem cells.

Amendment

(26) To achieve maximum impact, Horizon 2020 should develop close synergies with other Union programmes in areas such as education, space, environment, competitiveness and SMEs, the internal security, culture and media and with the Cohesion Policy funds and Rural Development Policy, which can specifically help to strengthen national and regional research and innovation capabilities in the context of smart specialization strategies. In addition, complementarity between Horizon 2020 and programmes funded at national level should also be ensured. That complementarity should also be taken into account by the European Court of Auditors when assessing the
implementation of Horizon 2020.

Amendment 13
Proposal for a regulation
Recital 27

Text proposed by the Commission
(27) SMEs constitute a significant source of innovation and growth in Europe. Therefore a strong participation of SMEs, as defined in Commission Recommendation 2003/361/EC of 6 May 2003, is needed in Horizon 2020. This should support the aims of the Small Business Act.

Amendment
(27) SMEs constitute an essential source of innovation, growth and jobs in Europe. Therefore a strong participation of SMEs, as defined in Commission Recommendation 2003/361/EC of 6 May 2003, is needed in Horizon 2020. This should support the aims of the Small Business Act.

Amendment 14
Proposal for a regulation
Recital 27 a (new)

Text proposed by the Commission
(27a) In order to maximise the impact of Horizon 2020 special consideration should be given to multidisciplinary, interdisciplinary and transdisciplinary approaches as necessary elements for major scientific progress. Breakthroughs in science take often place at the boundaries or intersections of disciplines and knowledge. Furthermore, the complexity of the problems and challenges that Europe is facing requires solutions that can only be tackled from several disciplines and societal actors working together.

Justification
Multidisciplinary, interdisciplinary and transdisciplinary are crucial for advancing in science and innovation. The complexity of the present problems cannot be often tackled by a scientific
discipline or researchers alone. Consequently common objectives or common cognitive structures among disciplines and societal actors are regularly needed to find and develop the best solutions. For this reason, Horizon 2020 should not only foresee but also promote multidisciplinary and interdisciplinary.

Amendment 15
Proposal for a regulation
Recital 30

Text proposed by the Commission

(30) Horizon 2020 should promote cooperation with third countries based on common interest and mutual benefit. International cooperation in science, technology and innovation should be targeted to contribute to achieving the Europe 2020 objectives to strengthen competitiveness, contribute to tackling societal challenges and support Union external and development policies, including by developing synergies with external programmes and contributing to the Union's international commitments such as the achievement of Millennium Development Goals.

Amendment

(30) Horizon 2020 should promote cooperation with third countries based on common interest and mutual benefit. International cooperation in science, technology and innovation should be targeted to contribute to achieving the Europe 2020 objectives to strengthen competitiveness, contribute to tackling societal challenges and support Union external and development policies, including by developing synergies with external programmes and contributing to the Union's international commitments such as the achievement of Millennium Development Goals and the RIO+20 targets.

Amendment 16
Proposal for a regulation
Recital 30 a (new)

Text proposed by the Commission

(30a) The participation of research teams in different projects should be contemplated as the reinforcement of quality and the possibility of an international co-operation.

Amendment

(30a) The participation of research teams in different projects should be contemplated as the reinforcement of quality and the possibility of an international co-operation.
Amendment 17

Proposal for a regulation
Recital 32

*Text proposed by the Commission*

(32) The need for a new approach to control and risk management in Union research funding was recognised by the European Council of 4 February 2011, asking for a new balance between trust and control and between risk-taking and risk avoidance. The European Parliament, in its Resolution of 11 November 2010 on simplifying the implementation of the Research Framework Programmes, called for a pragmatic shift towards administrative and financial simplification and states that the management of European research funding should be more trust-based and risk-tolerant towards participants. The interim evaluation report of the Seventh Framework Programme for Research (2007-2013) concludes that a more radical approach is needed to attain a quantum leap in simplification, and that the risk-trust balance needs to be redressed.

*Amendment*

(32) The need for a new approach to develop an evidence-based risk management strategy as part of the Union’s research funding strategy was recognised by the European Council of 4 February 2011. *At this time the Council asked* for a new balance between trust and control and between risk-taking and risk avoidance. The European Parliament, in its Resolution of 11 November 2010 on simplifying the implementation of the Research Framework Programmes, called for a pragmatic shift towards administrative and financial simplification and states that the management of European research funding should be more trust-based and risk-tolerant towards researchers. The interim evaluation report of the Seventh Framework Programme for Research (2007-2013) concludes that a more radical approach is needed to attain a quantum leap toward simplified procedures that demonstrate the Union's trust in researchers and encourage them to take the risks needed for accelerated progress in science and technology.

Amendment 18

Proposal for a regulation
Recital 35

*Text proposed by the Commission*

(35) Effective performance management, including evaluation and monitoring, requires development of specific performance indicators which can be measured over time; are both realistic and

*Amendment*

(35) Effective performance management, including evaluation and monitoring, requires development of specific common European performance indicators which can be measured over time; are both
reflect the logic of the intervention; and realistic and reflect the logic of the relevant to the appropriate hierarchy of intervention; and relevant to the objectives and activities. Appropriate appropriate hierarchy of objectives and coordination mechanisms should be put in activities. Appropriate coordination place between the implementation and mechanisms should be put in place monitoring of Horizon 2020, and the between the implementation and monitoring of Horizon 2020, and the monitoring of progress, achievements and monitoring of progress, achievements and functioning of the ERA. functioning of the ERA.

**Amendment 19**

**Proposal for a regulation**

**Article 1 – paragraph 1**

*Text proposed by the Commission*

This Regulation establishes Horizon 2020 - the Framework Programme for Research and Innovation (2014-2020) ('Horizon 2020') and determines the framework governing Union support to research and innovation activities and fostering better exploitation of the industrial potential of policies of innovation, research and technological development.

*Amendment*

This Regulation establishes Horizon 2020 - the Framework Programme for Research and Innovation (2014-2020) ('Horizon 2020') and determines the framework governing Union support to research and innovation activities and fostering better exploitation of the societal, economic and industrial potential of policies of innovation, research and technological development.

**Amendment 20**

**Proposal for a regulation**

**Article 2 – paragraph 1 – point e a (new)**

*Text proposed by the Commission*

(ea) 'Research infrastructures' (RI) "are facilities, resources, organisational systems and services that are used by the research communities to conduct research and innovation in their fields. Where relevant, they may be used beyond research, e.g. for education or public services. This includes: major scientific equipment (or sets of instruments);"
knowledge-based resources such as collections, archives or scientific data; e-infrastructures, such as data, computing and software systems, communication networks and systems to promote openness and digital trust; any other infrastructure of a unique nature essential to achieve excellence in research and innovation."

Justification

In order to have common definition referring to the concept of infrastructure, is needed to include in a legislative document the concept already in use that enlarge the traditional interpretation, linked with buildings and physical investment.

Amendment 21

Proposal for a regulation
Article 2 – paragraph 1 – point e b (new)

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<th>Text proposed by the Commission</th>
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<td>(eb) 'Trans - European technology transfer' means the transfer of scientific outcomes and technology between public and private bodies located in different EU Member States.</td>
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Amendment 22

Proposal for a regulation
Article 2 – paragraph 1 – point e c (new)

<table>
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<th>Text proposed by the Commission</th>
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<td>(ec) 'Smart Specialization' means the concept for the development of the R&amp;D and innovation policy of the European Union. The objective of smart specialization is to promote efficient and effective use of public investment using synergies among countries and regions and strengthening their innovation</td>
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capacity. The smart specialization strategy is made of a multi-annual strategy program which goal is to develop a functional national or regional research innovation system.

Justification

The smart specialization is the exercise that needs to be done by the regions for the identification of their own capacities and the design of their future regional strategic program. It is a bottom up requirement that allows the transfer of funds from Structural Funds to Innovation and Horizon 2020 program.

Amendment 23

Proposal for a regulation
Article 4

Text proposed by the Commission

Horizon 2020 shall play a central role in the delivery of the Europe 2020 strategy for smart, sustainable and inclusive growth by providing a common strategic framework for the Union's research and innovation funding, thus acting as a vehicle for leveraging private investment, creating new job opportunities and ensuring Europe's long-term sustainable growth and competitiveness.

Amendment

Horizon 2020 shall play a central role in the delivery of the Europe 2020 strategy for smart, sustainable and inclusive growth and its Innovation Union and resource-efficient Europe flagship initiatives by providing a common strategic framework for the Union's research and innovation funding, thus acting as a vehicle for leveraging private investment, transferring research results to all the levels of education, supporting the growth of SMEs, creating new job opportunities, better health and health outcomes and generating more innovation out of research, and ensuring Europe's long-term sustainability, economic development and resilience, social inclusion and industrial competitiveness through a resource and energy efficient as well as low carbon leadership. Trans - European technology transfer should be the main tool in achieving these goals.

Justification

Education is a very important Europe 2020 flagship. It is an essential tool for European strength. Transfers from science to education programs should be included.
Amendment 24
Proposal for a regulation
Article 5 – paragraph 1

Text proposed by the Commission
1. Horizon 2020 shall contribute to building an economy based on knowledge and innovation across the whole Union by leveraging sufficient additional research, development and innovation funding. Thereby, it shall support the implementation of the Europe 2020 strategy and other Union policies, as well as the achievement and functioning of the European Research Area (ERA). The relevant performance indicators are set out in the introduction of Annex I.

Amendment
1. Horizon 2020 shall contribute to economic growth by building a resource efficient and low carbon economy based on knowledge, sustainability and innovation across the whole Union by leveraging sufficient additional research, development and innovation funding. Thereby, it shall support the implementation of the Europe 2020 strategy and its Innovation Union and resource-efficient Europe flagship initiatives and other Union policies, as well as the achievement and functioning of the European Research Area (ERA). The relevant performance indicators are set out in the introduction of Annex I.

Amendment 25
Proposal for a regulation
Article 5 – paragraph 1 a (new)

Text proposed by the Commission
1a. This Regulation shall not fund the development of genetically modified organisms for deliberate release into the environment, food or feed and related research activities and infrastructure.

Amendment
1a. This Regulation shall not fund the development of genetically modified organisms for deliberate release into the environment, food or feed and related research activities and infrastructure.
Text proposed by the Commission

(ia) Knowledge science and technology.
Life sciences, Health, earth, environment, natural resources and food security.

Justification

Difference between technologies, engineering sciences, research about human and social needs.

Amendment 27

Proposal for a regulation
Article 5 – paragraph 2 – subparagraph 1 – point c – point ii a (new)

Text proposed by the Commission

(iia) Social, Economic and Humanities.
Demographic challenges, education, territorial issues, governance, culture, digital contents, humanities, cultural heritage and intangible knowledge areas.

Justification

Importance of intangible areas of knowledge as adaptation to global changes is needed.

Amendment 28

Proposal for a regulation
Article 6

Text proposed by the Commission

1. The financial envelope for the implementation of Horizon 2020 shall be EUR 87740 million, of which a maximum of EUR 86198 million shall be allocated to activities under Title XIX of the Treaty on the Functioning of the European Union (TFEU).

Amendment

1. The financial envelope for the implementation of Horizon 2020 shall be XXX million, of which a maximum of 98,2% shall be allocated to activities under Title XIX of the Treaty on the Functioning of the European Union (TFEU).

2. The amount for activities under Title XIX TFEU shall be distributed among the
priorities set out in Article 5(2) as follows:

(a) Excellent science, EUR \textbf{27818} million;
(b) Industrial leadership, EUR \textbf{20280} million;
(c) Societal challenges, EUR \textbf{35888} million.

The maximum overall amount for the Union financial contribution from Horizon 2020 to the non-nuclear direct actions of the Joint Research Centre shall be \textbf{EUR 2212 million}.

(...)

The European Institute of Innovation and Technology shall be financed through a maximum contribution from Horizon 2020 of \textbf{EUR 3194 million} as set out in Annex II. A first allocation of EUR 1542 million shall be provided to the European Institute of Innovation and Technology for activities under Title XVII of the Treaty on the Functioning of the European Union. A second allocation of up to EUR 1652 million shall be provided, subject to the review set out in Article 26 (1). This additional amount shall be provided on a pro-rata basis, as indicated in Annex II, from the amount for the specific objective ‘Leadership in enabling and industrial technologies’ within the priority on industrial leadership set out in paragraph 2(b) and from the amount for the priority on societal challenges set out in 2(c).

This funding in two multiannual allocations shall cover:

(a) in the first allocation, the ongoing developments of the current Knowledge and Innovation Communities (hereinafter KICs) and seed money for the launch of the second wave of three new KICs;
(b) in the second allocation, the ongoing developments of the KICs already launched and the seed money for the launch of the third wave of three new KICs.

The maximum overall amount for the Union financial contribution from Horizon 2020 to the non-nuclear direct actions of the Joint Research Centre shall be \textbf{of 2,5\% of the total budget}.

(...)

The European Institute of Innovation and Technology shall be financed through a maximum contribution from Horizon 2020 of \textbf{3\% of the total budget} as set out in Annex II.
KICs

The second allocation shall be made available following the review set out in Article 26(1) taking into account in particular:

(a) the agreed timing of the creation of the third wave of KICs;

(b) the programmed financial needs of the existing ones according to their specific development;

(c) the contribution of the European Institute of Innovation and Technology and its KICs to the Horizon 2020 objectives.

Amendment 29

Proposal for a regulation
Article 7 – paragraph 1 – point b – point iii

Text proposed by the Commission

(iii) have close economic and geographical links to the Union;

Amendment

(ii) have close political, economic and geographical links to the Union;

Amendment 30

Proposal for a regulation
Article 7 – paragraph 1 – point b – point iii a (new)

Text proposed by the Commission

(iiiia) have a legal system based on democratic principles and an efficient civil service;

Amendment

(iiiia) have a legal system based on democratic principles and an efficient civil service;

Amendment 31

Proposal for a regulation
Article 12 – paragraph 1
Text proposed by the Commission

1. For the implementation of Horizon 2020, account shall be taken of advice and inputs provided by: advisory groups of independent, high level experts set up by the Commission; dialogue structures created under international science and technology agreements; forward looking activities; targeted public consultations; and transparent and interactive processes that ensure responsible research and innovation is supported.

Amendment

1. For the implementation of Horizon 2020, account shall be taken of advice and inputs provided by: advisory groups of independent, high level experts set up by the Commission; non-profit civil society platforms; dialogue structures created under international science and technology agreements; representatives from industry (especially in the case of EIs); forward looking activities; targeted public consultations (e.g. of patient organizations where health research is concerned); active consultation of organisations of persons with disabilities, and transparent and interactive processes that ensure responsible research and innovation is supported.

Justification

In order to produce research which is useful and meaningful to society, it is vital that persons with disabilities and their representative organisations are fully included in Horizon 2020 decision-making process. This is crucial if we want to ensure that European research delivers results in line with the needs of society and citizens, especially persons with disabilities. No mention is currently made of involving persons with disabilities and their representative organisations in Horizon 2020 research and the proposal should be amended as proposed.

Amendment 32

Proposal for a regulation

Article 12 – paragraph 1 a (new)

Text proposed by the Commission

1a. To ensure the societal relevance of research needs and priorities established under societal challenges, the Commission shall set up platforms for dialogue between civil society representatives and researchers.

Amendment

1a. To ensure the societal relevance of research needs and priorities established under societal challenges, the Commission shall set up platforms for dialogue between civil society representatives and researchers.
Amendment 33

Proposal for a regulation
Article 13 – paragraph 1

Text proposed by the Commission

1. Linkages and interfaces shall be implemented across and within the priorities of Horizon 2020. Particular attention shall be paid in this respect to the development and application of key enabling and industrial technologies, to bridging from discovery to market application, to cross-disciplinary research and innovation, to social and economic sciences and humanities, to fostering the functioning and achievement of the ERA, to cooperation with third countries, to responsible research and innovation including gender, and to enhancing the attractiveness of the research profession and to facilitating cross-border and cross-sector mobility of researchers.

Amendment

1. Linkages and interfaces shall be implemented across and within the priorities of Horizon 2020. Particular attention shall be paid in this respect to the development and application of key enabling and industrial technologies, to bridging from discovery to market application, to cross-disciplinary research and innovation, to social and economic sciences and humanities, to a systemic approach of the spatial, urban and territorial issues, to climate change, healthy seas and oceans and sustainable development, to fostering the functioning and achievement of the ERA, to the development of research into European legal systems, to cooperation with third countries, to ethical responsible research and innovation including the respect of equal opportunities between men and women in research, to more inclusive governance of research, to participatory research, to enhancing the attractiveness of the research profession for both sexes and to facilitating cross-border and cross-sector mobility of researchers.

Justification

Territory a spatial dimension, (land use, region and cities), is completely missing in the program. This is a key and central element of the societal challenges and must be integrated in all the actions.

Amendment 34

Proposal for a regulation
Article 13 – paragraph 1 a (new)
1a. To ensure that cross-cutting concerns are properly considered in the implementation of Horizon 2020, the Commission shall perform not only an economical but also societal, ethical and sustainability assessment and evaluation of the specific research programmes as part of regular monitoring and evaluation of Horizon 2020.

Amendment 35

Proposal for a regulation
Article 14 – paragraph 1

Text proposed by the Commission

Horizon 2020 shall be implemented in a manner ensuring that the priorities and actions supported are relevant to changing needs and take account of the evolving nature of science, technology, innovation, markets and society, where innovation includes business, organisational and social aspects.

Amendment

Horizon 2020 shall be implemented in a manner ensuring that the priorities and actions supported are relevant to changing needs and take account of the evolving nature of science, technology, innovation, markets and society, where innovation includes business, organisational and social aspects and transfer of science results to all the levels of education and training.

Justification

If Europe wants to have a competitive training and education we need to transfer the results of research to the programs.

Amendment 36

Proposal for a regulation
Article 14 a (new)

Text proposed by the Commission

Article 14 a

Responsible research and innovation
In order to guarantee a harmonious and efficient relation between science and society, Horizon 2020 shall actively promote responsible research and innovation. This means promoting a governance framework that encourages the societal actors to work together during the whole research and innovation process in order to better align it, as well as the results and impacts, with the expectations, needs and values of society. This governance framework encompasses in particular:

(a) ensuring an effective public engagement to enhance research and innovation, including participatory research where societal actors co-produce knowledge in order to respond to society needs;

(b) up-taking of gender dimension referred to in Article 15;

(c) providing free on-line access and re-use of scientific information as referred to in Article 15b;

(d) equipping through education future researchers and other societal actors with the necessary knowledge and tools to fully participate and take responsibility in the research and innovation process;

(e) ensuring the compliance with the ethical principles referred to in Article 16 (1).

Amendment 37

Proposal for a regulation
Article 15 – title

Text proposed by the Commission

Gender equality

Amendment

Equal opportunities between men and women in research
Amendment 38
Proposal for a regulation
Article 15 – paragraph 1

Text proposed by the Commission
Horizon 2020 shall ensure the effective promotion of gender equality and the gender dimension in research and innovation content.

Amendment
Horizon 2020 must respect scientific excellence and professional qualification of research professionals when promoting equal opportunities for men and women in research and innovation content.

Amendment 39
Proposal for a regulation
Article 15 a (new)

Text proposed by the Commission

Amendment

Article 15 a
Equality of Researchers
Horizon 2020 shall contribute to the attractiveness of researchers’ careers across Europe. As a result it shall be implemented in a manner to promote the creation of a single market for researchers in particular by providing for appropriate mechanisms to decrease the disparities in researcher's remuneration.

Amendment 40
Proposal for a regulation
Article 16 – paragraph 1 – subparagraph 1

Text proposed by the Commission
All the research and innovation activities carried out under Horizon 2020 shall comply with ethical principles and relevant

Amendment
All the research and innovation activities carried out under Horizon 2020 shall comply with ethical principles and relevant

Research activities shall also take into account Article 13 TFEU and reduce the use of animals in research and testing, with a view ultimately to replacing animal use, including through strategic development, integration and use of innovative, non-animal tools and technologies.

Justification

On 23rd December 2010, the EU concluded the United-Nations Convention on the Rights of Persons with Disabilities which entered into force on 22nd January 2011. It is the first Human Rights Treaty concluded by the EU and all EU policy and legislative acts should comply with this international Convention.

Amendment 41

Proposal for a regulation
Article 16 – paragraph 1 – subparagraph 2

Text proposed by the Commission

Particular attention shall be paid to the principle of proportionality, the right to privacy, the right to the protection of personal data, the right to the physical and mental integrity of a person, the right to non-discrimination and the need to ensure high levels of human health protection.

Amendment

Particular attention shall be paid to the principle of proportionality, the right to privacy, the right to the protection of personal data, the right to the physical and mental integrity of a person, the right to non-discrimination based on sex, racial or ethnic origin, religion or belief, disability, age and the need to ensure high levels of human health protection.

Amendment 42

Proposal for a regulation
Article 16 – paragraph 3 – point a
Text proposed by the Commission
(a) research activity aiming at human cloning for reproductive purposes;

Amendment
(a) research activity aiming at human cloning for reproductive, therapeutic or scientific purposes;

Amendment 43
Proposal for a regulation
Article 16 – paragraph 3 – point c a (new)

Text proposed by the Commission
(ca) research classified as causing severe suffering to vertebrate animals;

Amendment
Justification
The EU should not fund research that causes severe suffering to vertebrate animals.

Amendment 44
Proposal for a regulation
Article 16 – paragraph 3 – point c b (new)

Text proposed by the Commission
(cb) involving wild-caught or F1 non-human primates;

Amendment
Justification
The EU should not fund research involving wild-caught or F1 non-human primates.

Amendment 45
Proposal for a regulation
Article 16 – paragraph 4
4. Research on human stem cells, both adult and embryonic, may be financed, depending both on the contents of the scientific proposal and the legal framework of the Member States involved. No funding shall be granted for research activities that are prohibited in all the Member States. No activity shall be funded in a Member State where such activity is forbidden.

Amendment 46

Proposal for a regulation
Article 17 – title

Text proposed by the Commission

Complementarity with other programmes

Amendment

Complementarity with other Union and national programmes
Amendment 47

Proposal for a regulation
Article 17

Text proposed by the Commission

Horizon 2020 shall be implemented in a way which is complementary to other Union funding programmes, including the Structural Funds.

Amendment

Horizon 2020 shall be implemented in a way which is complementary to other Union and national funding programmes, including shared management funds such as cohesion and Structural Funds and the Programme for the Competitiveness of Enterprises and SMEs (COSME). To this end, the Commission shall develop appropriate tools to assess complementarity. The European Court of Auditors, when assessing the implementation of Horizon 2020 in its annual discharge report presented to the European Parliament, shall also take into account the complementarity principle.

Justification

In order to ensure efficiency in Union spending for research and innovation, even if synergies with other Union programmes are welcome and desirable, duplications should be avoided by ensuring better coordination between these programmes and Horizon 2020. The Commission should therefore ensure this coordination in the implementation process.

Amendment 48

Proposal for a regulation
Article 17 a (new)

Text proposed by the Commission

Amendment

Article 17 a

Strategic coordination

The Commission shall ensure strategic coordination of research and innovation activities under Horizon 2020, if necessary by setting up sectoral steering boards composed of leading researchers who will provide advice in the priority...
setting process.

Justification

There is a need to ensure strategic coordination, especially in areas such as healthcare where innovation cycles are very long, even longer than the duration of the current programme. The Commission can work with leading researchers in setting the priorities for funding under Horizon 2020.

Amendment 49

Proposal for a regulation
Article 18 – paragraph 3

Text proposed by the Commission

3. The integrated approach set out in paragraphs 1 and 2 is expected to lead to around 15% of the total combined budget for the specific objective on "Leadership in enabling and industrial technologies" and the priority "Societal challenges" going to SMEs

Amendment

3. The integrated approach set out in paragraphs 1 and 2 is expected to lead to around 20% of the total combined budget for the specific objective on "Leadership in enabling and industrial technologies" and the priority "Societal challenges" going to SMEs

Justification

SMEs are those with the greatest need for support in financing their innovation activities. A greater share of the budget should therefore go these.

Amendment 50

Proposal for a regulation
Article 19 – paragraph 3 – point a

Text proposed by the Commission

(a) the added value of action at Union level;

Amendment

(a) the added value of action at Union level, particularly the Trans - European nature;

Amendment 51
Proposal for a regulation
Article 19 – paragraph 3 a (new)

Text proposed by the Commission

Amendment

3a. Public private partnerships will be financed through open and competitive calls.

Amendment 52

Proposal for a regulation
Article 19 – paragraph 3 – point e a (new)

Text proposed by the Commission

Amendment

(ea) Helping the creation and strengthening of association networks of researchers, patients and stakeholders in order to improve the relations and exchanges among them, concerned sectors, institutions and civil society.

Amendment 53

Proposal for a regulation
Article 21 – paragraph 1 – point c

Text proposed by the Commission

Amendment

(c) supporting the Union's external and development policy objectives, complementing external and development programmes and contributing to international commitments such as the achievement of the Millennium Development Goals.

Amendment 54

Proposal for a regulation
Article 21 – paragraph 2 – subparagraph 1
Targeted actions with the objective of promoting cooperation with specific third countries or groups of third countries shall be implemented on the basis of common interest and mutual benefit, taking into account their scientific and technological capabilities and market opportunities, and the expected impact. **These actions shall include, in particular, research capacity building in developing countries and cooperation projects focusing on these countries’ specific needs in areas such as health – including research on neglected diseases – agriculture, fisheries and the environment, and implemented in financial conditions adapted to their capacities.**

Amendment 55

Proposal for a regulation
Article 22 – paragraph 3 – point a

**(a) initiatives aimed at widening awareness and facilitating access to funding under Horizon 2020, in particular for those regions or types of participant that are underrepresented;**

Amendment

**(a) initiatives aimed at widening awareness and facilitating access to funding under Horizon 2020, in particular for those regions or types of participant that are underrepresented, including researchers and participants with disabilities;**

Amendment 56

Proposal for a regulation
Article 22 – paragraph 3 – point a a (new)

**(aa) In order to simplify the access to information and to develop an instrument with all the information demanded by the research community and, having regard**
the need for a transparency, Cordis, as a digital instrument should be revised and reformed in a more clear and flexible way. The New Cordis should be finished before June 2013.

Justification

At the current time CORDIS is one of the most complex and difficult programs to deal with. If we want to make an easier access of society, researchers and companies to information, it is needed to review the program and to extend the information and make an easier access to all the proposals and grants.

Amendment 57

Proposal for a regulation
Article 22 – paragraph 3 – point e

Text proposed by the Commission

(e) initiatives to foster dialogue and debate on scientific, technological and innovation related issues with the public, and to take advantage of social media and other innovative technologies and methodologies.

Amendment

(e) initiatives to foster dialogue and debate on scientific, technological and innovation related issues with the public through involvement of the academic community, and to take advantage of social media and other innovative technologies and methodologies, especially in order to help raise public awareness of the benefits of research and innovation in meeting society’s challenges.

Amendment 58

Proposal for a regulation
Article 25 – paragraph 1

Text proposed by the Commission

1. The Commission shall annually monitor the implementation of Horizon 2020, its specific programme and the activities of the European Institute of Innovation and Technology. This shall include information on cross-cutting topics such as sustainability and climate change,

Amendment

1. The Commission shall annually monitor the implementation of Horizon 2020, its specific programme and the activities of the European Institute of Innovation and Technology. This shall include information on cross-cutting topics such as sustainability, resource efficiency and
including information on the amount of climate related expenditure.

climate change, including information on the amount of climate related expenditure.

Amendment 59

Proposal for a regulation
Article 25 – paragraph 1

Text proposed by the Commission

1. The Commission shall annually monitor the implementation of Horizon 2020, its specific programme and the activities of the European Institute of Innovation and Technology. This shall include information on cross-cutting topics such as sustainability and climate change, including information on the amount of climate related expenditure.

Amendment

1. The Commission shall annually monitor the implementation of Horizon 2020, its specific programme and the activities of the European Institute of Innovation and Technology. This shall include information on cross-cutting topics such as responsible research and innovation including sustainability and climate change, marine and maritime research, including information on the amount of climate related expenditure.

Amendment 60

Proposal for a regulation
Article 25 – paragraph 1 a (new)

Text proposed by the Commission

1a. In order to deliver a future Union environment that offers a real increase in prosperity and in quality of life, the balance between economic, social and environmental aspects will need to be regularly and effectively monitored during the implementation of Horizon 2020. To this end, the Commission shall set up in advance a clear and transparent mechanism for such monitoring.

Amendment

1a. In order to deliver a future Union environment that offers a real increase in prosperity and in quality of life, the balance between economic, social and environmental aspects will need to be regularly and effectively monitored during the implementation of Horizon 2020. To this end, the Commission shall set up in advance a clear and transparent mechanism for such monitoring.
Amendment 61
Proposal for a regulation
Article 25 – paragraph 2

Text proposed by the Commission
2. The Commission shall report and disseminate the results of that monitoring.

Amendment
2. The Commission shall annually report and disseminate the results of that monitoring, including to the Parliament and the Council.

Amendment 62
Proposal for a regulation
25 a (new)

Text proposed by the Commission
(25a) The Commission should actively support research aiming at developing alternatives to embryonic stem cells. The recent discovery of induced pluripotent stem cells (iPSCs) has opened up a new avenue for research, over and beyond the opportunities for research on adult and embryonic stem cells that have existed for several years, and has thus offered new hope to patients awaiting treatment. Nevertheless, the Commission should also take due account of the scientific community's interest in all types of stem cell research and, therefore, not favour any one over another, while considering the ethical problems raised by each category of stem cells.

Amendment 63
Proposal for a regulation
Article 26 – paragraph 1 – point a

Text proposed by the Commission
(a) Not later than end 2017, the

Amendment
deleted
Commission shall carry out, with the assistance of independent experts, a review of the European Institute of Innovation and Technology. The second allocation of funds to the European Institute of Innovation and Technology as set out in Article 6(3) shall be made available following this review. The review shall assess the progress of the European Institute of Innovation and Technology against all of the following:

(i) the level of consumption of the first allocation of funds set out in Article 6(3), differentiating between the amount of money used for the development of the first wave of KICs and the effect of the seed money for the second phase, and the ability of the European Institute of Innovation and Technology to attract funds from the partners in the Knowledge and Innovation Communities and from the private sector, as set out in Regulation XX/2012 [revised EIT Regulation];

(ii) the agreed timing for the creation of the third wave of Knowledge and Innovation Communities and the programmed financial needs of existing ones according to their specific development; and

(iii) the contribution of the European Institute of Innovation and Technologies and the Knowledge and Innovation Communities to the priority on societal challenges and the specific objective on ‘leadership in enabling and industrial technologies’ of the programme Horizon 2020.

Amendment 64

Proposal for a regulation
Annex I – paragraph 7 a (new)
New instrument: implementation of a clear program for the transfer of science, research and innovation to the education content at all levels, as well as for the adaptation of the technologies to the use.

Amendment 65
Proposal for a regulation
Annex I – part II Priority 'Industrial leadership' – point a

Text proposed by the Commission
(a) Leadership in enabling and industrial technologies shall provide dedicated support for research, development and demonstration on ICT, nanotechnology, advanced materials, biotechnology, advanced manufacturing and processing and space. Emphasis will be placed on interactions and convergence across and between the different technologies.

Amendment
(a) Leadership in enabling and industrial technologies shall provide dedicated support for research, development and demonstration on ICT, nanotechnology, advanced materials, eco-innovation, biotechnology, advanced manufacturing and processing and space. Emphasis will be placed on interactions and convergence across and between the different technologies.

Amendment 66
Proposal for a regulation
Annex I – part III Priority 'Societal Challenges' – paragraph 1 – point b

Text proposed by the Commission
(b) Food security, sustainable agriculture, marine and maritime research, and the bio-economy;

Amendment
(b) Food security, quality and safety, sustainable agriculture, marine and maritime research, and the bio-economy;

Amendment 67
Proposal for a regulation
Annex I - Part III Priority 'Societal Challenges' - paragraph 1 - point e
(e) Climate action, resource efficiency and raw materials;

Amendment

Text proposed by the Commission

Under each societal challenge, research priorities and objectives will be set out in a transparent and participatory way, through the balanced involvement of players including the scientific community, researchers (also from smaller research organisations), the public sector, the private sector and in particular SMEs, Civil Society Organisations and other stakeholders as relevant; in particular the Commission will establish specific platforms for dialogue between the citizens and Civil Society Organisations with research actors in the research priorities under the societal challenges.

Amendment 69

Proposal for a regulation
Annex I – part III Priority 'Societal Challenges' – paragraph 3

Text proposed by the Commission

Social sciences and humanities shall be an integral part of the activities to address all the challenges. In addition, the underpinning development of these disciplines shall be supported under the specific objective 'Inclusive, innovative

Amendment

Social sciences and humanities as well as the integration of civil society shall be an integral part of the activities to address all the challenges. In addition, the underpinning development of these disciplines shall be supported under the
and secure societies’. Support will also focus on providing a strong evidence base for policy making at international, Union, national and regional levels. Given the global nature of many of the challenges, strategic cooperation with third countries shall be an integral part of each challenge. In addition, cross-cutting support for international cooperation shall be provided under the specific objective ‘Inclusive, innovative and secure societies’.

Amendment 70

Proposal for a regulation
Annex I – part I – point 2.1 – introductory paragraph

Text proposed by the Commission

The specific objective is to foster radically new technologies by exploring novel and high-risk ideas building on scientific foundations. By providing flexible support to goal-oriented and interdisciplinary collaborative research on various scales and by adopting innovative research practices, the aim is to identify and seize opportunities of long-term benefit for citizens, the economy and society.

Amendment

The specific objective is to foster radically new technologies by exploring novel and high-risk ideas building on scientific foundations, including expanding the understanding of human disease and toxicity pathways and the application of human-relevant cellular, genomic and computational tools and technologies in EU health research and risk assessment strategies, by providing flexible support to goal-oriented and interdisciplinary collaborative research on various scales and by adopting innovative research practices, the aim is to identify and seize opportunities of long-term benefit for citizens, the economy and society.

Amendment 71

Proposal for a regulation
Annex I – part I – point 2.3 – paragraph 2 – point a
Text proposed by the Commission

(a) By fostering novel ideas (‘FET Open’), FET shall support embryonic science and technology research exploring new foundations for radically new future technologies by challenging current paradigms and venturing into unknown areas. A bottom-up selection process widely open to any research ideas shall build up a diverse portfolio of targeted projects. Early detection of promising new areas, developments and trends, along with attracting new and high-potential research and innovation players, will be key.

Amendment

(a) By fostering novel ideas (‘FET Open’), FET shall support emerging science and technology research exploring new foundations for radically new future technologies by challenging current paradigms, such as the use of animal models in biomedical research or for the testing of chemicals for adverse effects on human health, and venturing into unknown areas. A bottom-up selection process widely open to any research ideas shall build up a diverse portfolio of targeted projects. Early detection of promising new areas, developments and trends, along with attracting new and high-potential research and innovation players, will be key.

Justification

EU research should support the paradigm shift in biomedical research and toxicity testing away from animal tests to modern toxicity testing of the 21st century. Advances in molecular biology, biotechnology, and other fields are paving the way for major improvements in how scientists can evaluate the health risks posed by potentially toxic chemicals. These advances can make toxicity testing quicker, less expensive, and more directly relevant to human exposures.

Amendment 72

Proposal for a regulation
Annex I – part I – point 3.3 – point a – paragraph 2

Text proposed by the Commission

Key activities shall be to provide excellent and innovative training to early-stage researchers at post-graduate level via interdisciplinary projects or doctoral programmes involving universities, research institutions, businesses, SMEs and other socio-economic groups from different countries. This will improve career prospects for young post-graduate

Amendment

Key activities shall be to provide excellent and innovative training to early-stage researchers at post-graduate level via interdisciplinary projects or doctoral programmes involving universities, research institutions, businesses, SMEs and other socio-economic groups from different countries. Full flexibility in terms of duration, host institution, number of
trainees will be possible inside the overall agreed host network and financial volume for a project. This will improve career prospects for young post-graduate researchers in both the public and private sectors.

Amendment 73

Proposal for a regulation
Annex I – part I – point 4.3 a (new)

Text proposed by the Commission

4.3 a. Constitution of a data base concerning the results of the research and innovation
The aim shall be to create and to make available a data base of the results of research and innovation. This will be open to international collaboration. Both research groups and enterprises will add contents to this data base in order to help the launch of a market of innovation and cooperation and to stimulate the meeting of possible partners.

Amendment 74

Proposal for a regulation
Annex I – part II – point 1 – introductory paragraph

Text proposed by the Commission

The specific objective is to maintain and build global leadership in enabling technologies and space research and innovation, which underpin competitiveness across a range of existing and emerging industries and sectors.

Amendment

The specific objective is to maintain and build global leadership in enabling technologies and space research and innovation, which underpin competitiveness across a range of existing and emerging industries and sectors, including leadership through health research funding to advance human-relevant research such as – omics,
computational, and other innovative, non-animal tools and technologies to further define human disease pathways as a basis for drug development and safety testing.

Amendment 75
Proposal for a regulation
Annex I – part II – point 1 – paragraph 1

Text proposed by the Commission
The global business environment is changing rapidly and the Europe 2020 goals for smart, sustainable and inclusive growth present challenges and opportunities to European industry. Europe needs to accelerate innovation, transforming the knowledge generated to underpin and enhance existing products, services and markets; and to create new ones. Innovation should be exploited in the widest sense, going beyond technology to include business, organisational and social aspects.

Amendment
The activities under 'Leadership in Enabling and Industrial Technologies' will be primarily based on research and innovation agendas defined by industry and business, together with the research community and have a strong focus on leveraging private sector investment.

Amendment 76
Proposal for a regulation
Annex I – part II – point 1 – paragraph 5

Text proposed by the Commission
The activities under 'Leadership in Enabling and Industrial Technologies' will be primarily based on research and innovation agendas defined together with industry and business, research community and other stakeholders organisations such as civil society organisations; activities will aim not only at addressing common needs and concerns in the specific sector but also at supporting implementation of
Amendment 77

Proposal for a regulation
Annex I – part II – point 1 – paragraph 8 'An integrated approach to Key Enabling Technologies'

Text proposed by the Commission

A major component of ‘Leadership in Enabling and Industrial Technologies’ are Key Enabling Technologies (KETs), defined as micro- and nanoelectronics, photonics, nanotechnology, biotechnology, advanced materials and advanced manufacturing systems. These multi-disciplinary, knowledge and capital-intensive technologies cut across many diverse sectors providing the basis for significant competitive advantage for European industry. An integrated approach, promoting the combination, convergence and cross-fertilisation effect of KETs in different innovation cycles and value chains can deliver promising research results and open the way to new industrial technologies, products, services and novel applications (e.g. in space, transport, environment, health etc.). The numerous interactions of KETs and enabling technologies will therefore be exploited in a flexible manner, as an important source of innovation. This will complement support for research and innovation in KETs that may be provided by national or regional authorities under the Cohesion Policy Funds within the framework of smart specialisation strategies.

Amendment

A major component of ‘Leadership in Enabling and Industrial Technologies’ are Key Enabling Technologies (KETs), defined as micro- and nanoelectronics, photonics, nanotechnology, biotechnology, advanced materials, advanced manufacturing systems and eco-innovation. These multi-disciplinary, knowledge and capital-intensive technologies cut across many diverse sectors providing the basis for significant competitive advantage for European industry. An integrated approach, promoting the combination, convergence and cross-fertilisation effect of KETs in different innovation cycles and value chains can deliver promising research results and open the way to new industrial technologies, products, services and novel applications (e.g. in space, transport, environment, health, agriculture etc.). The numerous interactions of KETs and enabling technologies will therefore be exploited in a flexible manner, as an important source of innovation. This will complement support for research and innovation in KETs that may be provided by national or regional authorities under the Cohesion Policy Funds within the framework of smart specialisation strategies.
Justification

Industrial leadership in eco-innovation will lead to improved environmental performance and resilience across the economy being at the same time cost-effective and good for business and society, from rural to urban citizens, as a whole. The global market (2020) for eco-industries is rapidly expanding and this EU business sector is already growing rapidly: Horizon 2020 needs to build on this. Eco-innovation needs to permeate all sectors of the economy and society, providing the basis for a significant competitive advantage for Europe to face up to the challenge of sustainability. Therefore eco-innovation is a key enabling technology.

Amendment 78

Proposal for a regulation
Annex I – part II – point 1.1.3 – point e a (new)

Text proposed by the Commission

Amendment

(ea) advanced robots and technology applied to health and disabilities.

Justification

Advanced technology as robots are a key factor in health.

Amendment 79

Proposal for a regulation
Annex I – part II – point 1.1.3 – point f – point i (new)

Text proposed by the Commission

Amendment

i) Improving the energy efficiency of ICT.

Amendment 80

Proposal for a regulation
Annex I – part II – point 1.2.1. – introductory paragraph

Text proposed by the Commission

Amendment

The specific objective of nanotechnologies research and innovation is to secure Union leadership in this high growth global

The specific objective of nanotechnologies research and innovation is to prepare Union leadership in this high growth global
market, by stimulating investment in nanotechnologies and their uptake in high added-value, competitive products and services across a range of applications and sectors.

Justification

Reality is different: Europe is lagging behind its main competitors – the USA, Japan and South Korea – who account for over half of the investment and two-thirds of the patents filed worldwide.

There are many unresolved questions about the safety of nanomaterials, and certain applications clearly have an unacceptable risk for human health and/or the environment. The EU should only fund investment in safe and responsible nanotechnologies.

Amendment 81

Proposal for a regulation
Annex I – part II – point 1.2.1. – paragraph 1

Text proposed by the Commission

By 2020, nanotechnologies will be mainstreamed, that is seamlessly integrated with most technologies and applications, driven by consumer benefits, quality of life, sustainable development and the strong industrial potential for achieving previously unavailable solutions for productivity and resource efficiency.

Amendment

By 2015, the Commission will review all relevant legislation to ensure safety for all applications of nanomaterials in products with potential health, environmental or safety impacts over their life cycle. By 2020, nanotechnologies will be mainstreamed, that is seamlessly integrated with most technologies and applications, driven by consumer benefits, quality of life, sustainable development and the strong industrial potential for achieving previously unavailable solutions for productivity and resource efficiency.

Justification

In its resolution adopted in April 2009, the Parliament considered particularly important to address nanomaterials explicitly within the scope of at least legislation on chemicals, food, waste, air and water and worker protection.

Amendment 82
Proposal for a regulation
Annex I – part II – point 1.2.3. – point a – paragraph 1

Text proposed by the Commission
Aiming at fundamentally new products enabling sustainable solutions in a wide range of sectors.

Amendment
Aiming at fundamentally new products enabling sustainable solutions in a wide range of sectors, in particular electronics, medicine, new energy sources and materials.

Justification

There is more justification for strengthening the properties and resistance of products at the nanoscale in some industrial sectors or in medicine (the possibility, in the long term, of injecting a cancerous cell with a drug) than in other sectors. Exploiting this revolutionary technology, for example in the agri-food business, must remain questionable, given that it has not been proved that nanoparticles pose no danger to health (they can penetrate cells and accumulate) and the environment.

Amendment 83
Proposal for a regulation
Annex I – part II – point 1.2.3. – point b

Text proposed by the Commission
(b) Ensuring the safe development and application of nanotechnologies

Amendment
(b) Ensuring the safe development and application of nanotechnologies, and the development of appropriate test methods to assess the impact of nanotechnologies and engineered nanomaterials on human health and the environment.

Amendment 84
Proposal for a regulation
Annex I – part II – point 1.3.1. – paragraph 1

Text proposed by the Commission
Materials are at the core of industrial innovation and are key enablers. Advanced materials with higher knowledge content,

Amendment
Materials are at the core of industrial innovation and are key enablers. Advanced materials with higher knowledge content,
new functionalities and improved performance are indispensable for industrial competitiveness and sustainable development across a range of applications and sectors.

**Amendment 85**

**Proposal for a regulation**

Annex I – Part II – Point 1.3.3 d a (new)

*Text proposed by the Commission*

(da) Materials for increasing the efficiency of renewable energies.
Developing new products and applications that increase the efficiency of renewable energies such as photovoltaic, solar thermal, wind turbines.

**Amendment 86**

**Proposal for a regulation**

Annex I – part II – point 1.3.3. – point g – paragraph 1

*Text proposed by the Commission*

Research and development to investigate alternatives to the use of materials and innovative business model approaches.

*Amendment*

Research and development to investigate alternatives to the use of materials, substitution of critical raw material or hazardous substances. Development of innovative business model approaches.

**Amendment 87**

**Proposal for a regulation**

Annex I – part II – point 1.4.2. – paragraph 1
Powered by the expansion of the knowledge of living systems, biotechnology is set to deliver a stream of new applications and to strengthen the Union's industrial base and its innovation capacity. Examples of the rising importance of biotechnology are in industrial applications including biochemicals, of which the market share is estimated to increase by up to 12%-20% of chemical production by 2015. A number of the so-called twelve rules of Green Chemistry are also addressed by biotechnology, due to the selectivity and efficiency of bio-systems. The possible economic burdens for Union enterprises can be reduced by harnessing the potential of biotechnology processes and bio-based products to reduce CO2 emissions, estimated to range from between 1 to 2.5 billion tons CO2 equivalent per year by 2030. In Europe's biopharmaceutical sector, already some 20% of the current medicines are derived from biotechnology, with up to 50% of new medicines. Biotechnology also opens new avenues for exploiting the huge potential of marine resources for producing innovative industrial, health and environmental applications. The emerging sector of marine (blue) biotechnology has been predicted to grow by 10% a year.

**Justification**

*Biotechnology is also important in agricultural applications.*

**Amendment 88**

**Proposal for a regulation**  
**Annex I – part II – point 1.4.3. – point a – paragraph 1**
Development of emerging technology areas such as synthetic biology, bioinformatics and systems biology, which hold great promise for completely novel applications.

**Amendment**

Development of emerging technology areas such as biology systems, bioinformatics and synthetic biology and systems biology, which hold great promise for completely novel applications.

**Justification**

The potential of biotechnology do not have to be limited to industrial processes but should cover all relevant products and processes.

**Amendment 89**

**Proposal for a regulation**

**Annex I – part II – point 1.4.3. – point b – paragraph 1**

**Text proposed by the Commission**

Developing industrial biotechnology for competitive industrial products and processes (e.g. chemical, health, mining, energy, pulp and paper, textile, starch, food processing) and its environmental dimension.

**Amendment**

Developing industrial biotechnology for competitive industrial products and processes (e.g. chemical, construction, health, mining, energy, pulp and paper, textile, starch, food processing) and its environmental dimension.

**Amendment 90**

**Proposal for a regulation**

**Annex I – part II – point 1.4.3. – point c – paragraph 1**

**Text proposed by the Commission**

Development of platform technologies (e.g. genomics, meta-genomics, proteomics, molecular tools) to enhance leadership and competitive advantage in a wide number of economic sectors.

**Amendment**

Development of platform technologies (e.g. systems biology, computational chemistry and systems biology, genomics, meta-genomics, proteomics, high-throughput in-vitro platforms, human-on-a-chip, phenomics and molecular tools) to enhance leadership and competitive advantage in a wide number of economic sectors. *Diagnostic tools will be supported*
if there is a link to therapy.

Justification

Systems biology is the broadest term, which should be put first. The other terms are for more specific areas.

Amendment 91

Proposal for a regulation
Annex I – part II – point 1.5.1 – introductory paragraph

Text proposed by the Commission

The specific objective of advanced manufacturing and processing research and innovation is to transform today's industrial forms of production towards more knowledge intensive, sustainable, trans-sectoral manufacturing and processing technologies, resulting in more innovative products, processes and services.

Amendment

The specific objective of advanced manufacturing and processing research and innovation is to transform today's industrial forms of production towards more knowledge intensive, sustainable, resource and energy efficient trans-sectoral manufacturing and processing technologies, resulting in more innovative products, processes and services.

Amendment 92

Proposal for a regulation
Annex I – part II – point 1.5.2 – paragraph 2

Text proposed by the Commission

Europe needs to continue to invest at an Union level to maintain European leadership and competence in manufacturing technologies and make the transition to high-value, knowledge-intensive goods, creating the conditions and assets for sustainable, production and provision of lifetime service around a manufactured product. Resource intensive manufacturing and process industries need to further mobilise resources and knowledge at Union level and continue to invest in research, development and

Amendment

Europe needs to continue to invest at an Union level to maintain European leadership and competence in manufacturing technologies and make the transition to high-value, resource and energy efficient, knowledge-intensive goods, creating the conditions and assets for sustainable, production and provision of lifetime service around a manufactured product. Resource intensive manufacturing and process industries need to further mobilise resources and knowledge at Union level and continue to invest in
innovation to enable further progress towards a competitive low carbon economy and to comply with the agreed Union wide reductions in greenhouse gas emissions by 2050 for industrial sectors.

research, development and innovation to enable further progress towards a competitive low carbon and resource efficient economy and to comply with the agreed Union wide reductions in greenhouse gas emissions by 2050 for industrial sectors.

**Amendment 93**

**Proposal for a regulation**

Annex I – part II – point 1.5.3 – point a – paragraph 1

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
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</thead>
<tbody>
<tr>
<td>Promoting sustainable industrial growth by facilitating a strategic shift in Europe from cost-based manufacturing to an approach based on the creation of high added value.</td>
<td>Promoting sustainable industrial growth by facilitating a strategic shift in Europe from cost-based manufacturing to an approach based on the creation of high added value, <em>materials efficiency and closed-loop systems.</em></td>
</tr>
</tbody>
</table>

**Amendment 94**

**Proposal for a regulation**

Annex I – part II – point 1.5.3 – point c – paragraph 1

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increasing the competitiveness of process industries, by drastically improving resource and energy efficiencies and reducing the environmental impact of such industrial activities through the whole value chain, promoting the adoption of <em>low-carbon</em> technologies.</td>
<td>Increasing the competitiveness of process industries, by drastically improving resource and energy efficiencies and reducing the environmental impact of such industrial activities through the whole value chain, promoting the adoption of <em>resource and energy efficient</em> technologies, <em>processes and materials.</em></td>
</tr>
</tbody>
</table>

**Amendment 95**

**Proposal for a regulation**

Annex I – part II – point 1.6.2 – paragraph 2 a (new)
Support dedicated to research and development of space-related applications will in particular be devoted to supporting the meeting of the societal challenges such as climate change, environment, sustainable transport systems and agriculture. The objectives of knowledge sharing and interoperable development shall underpin support provided in these areas.

Amendment 96
Proposal for a regulation
Annex I – part II – point 1.6.3 – point c – paragraph 1

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
</tr>
</thead>
<tbody>
<tr>
<td>A considerably increased exploitation of data from European satellites can be achieved if a concerted effort is made to coordinate and organise the processing, validation and standardisation of space data. Innovations in data handling and <strong>dissemination</strong> can also ensure a higher return on investment of space infrastructure, and contribute to tackling societal challenges, in particular if coordinated in a global effort such as through Global Earth Observation System of Systems, the European satellite navigation programme Galileo or IPCC for climate change issues.</td>
<td>A considerably increased exploitation of data from European satellites can be achieved if a concerted effort is made to coordinate and organise the processing, validation and standardisation of space data. Innovations in data handling, <strong>dissemination</strong> and <strong>interoperability</strong>, in particular promotion of free access to and exchange of Earth science data and <strong>metadata</strong> can also ensure a higher return on investment of space infrastructure, and contribute to tackling societal challenges, in particular if coordinated in a global effort such as through Global Earth Observation System of Systems, the European satellite navigation programme Galileo or IPCC for climate change and <strong>ocean monitoring</strong> issues.</td>
</tr>
</tbody>
</table>

Amendment 97
Proposal for a regulation
Annex I – part II – point 1.6.3 – point c – paragraph 1 a (new)
Support will be provided for the development of a comprehensive and sustained global environmental observation and information system, including through fostering cooperation between climate modelling communities and environmental observation and data management communities. The inclusion of the Member States in such cooperation is essential since national authorities are often the owners of data records.

Amendment 98

Proposal for a regulation
Annex I – part II – point 1.6 a (new)

Text proposed by the Commission

1.6 a. Eco-innovation

Specific objective for eco-innovation

The specific objective of eco-innovation is to foster an innovative European industry and innovation community which targetly creates new products, processes and services that deliver green growth and environmental benefits and which is recognized to be a world-leader. The aim is to increase resource-efficiency, reduction of environmental impacts, preventing (water) pollution and / or achieving a more efficient, effective and responsible use of natural resources.

Rationale and Union added value

Industrial leadership in eco-innovation will lead to improved environmental performance and resilience across the economy being at the same time cost-effective and good for business and society, from rural to urban citizens, as a whole. The global market (2020) for eco-
industries is rapidly expanding and this EU business sector is already growing rapidly: EU eco-industries are often world leaders. Horizon 2020 needs to build on this. Eco-innovation needs to permeate all sectors of the economy and society, providing the basis for a significant competitive advantage for Europe to face up to the challenge of sustainability. Therefore eco-innovation is a key enabling technology.

Eco-industries are marked by the presence of large numbers of small and medium-sized enterprises (SMEs). These firms account for approximately half of the total employment. Hence, SMEs in partnership with larger industry-partners must play an increasing role in innovating new technologies and solutions and in implementing them.

Key sources of innovations are at the interface between eco-innovation and other enabling technologies, to start with ICT (monitoring and sensoring) and nanotechnologies.

Broad lines of the activities

Eco-innovation is any form of innovation resulting in or aiming at significant and demonstrable progress towards the goal of sustainable development, through reducing impacts on the environment, enhancing resilience to environmental pressures, or achieving a more efficient and responsible use of natural resources.

Eco-innovation activities focus on sustainable innovations in and across the following fields:

a) Green energy supply
b) Energy Efficiency
c) Material Efficiency
d) Green mobility
e) Water
f) Waste
Amendment 99

Proposal for a regulation
Annex I – Part II – Point 2.3 – point a – paragraph 3 – point 2

Text proposed by the Commission

(2) Targeted, focusing on policies and key sectors crucial for tackling societal challenges, enhancing competitiveness, supporting sustainable, low-carbon, inclusive growth, and providing environmental and other public goods. This component shall help the Union address research and innovation aspects of sectoral policy objectives.

Amendment

(2) Targeted, focusing on policies and key sectors crucial for tackling societal challenges, enhancing competitiveness, supporting sustainable, low-carbon, inclusive growth, promoting renewable energies and providing environmental and other public goods. This component shall help the Union address research and innovation aspects of sectoral policy objectives.

Amendment 100

Proposal for a regulation
Annex I – part II – point 3.1 – paragraph 2

Text proposed by the Commission

However, SMEs have – despite their important economic and employment share and significant innovation potential – size-related problems to become more innovative and more competitive. Although Europe produces a similar number of start-up companies than the United States of America, European SMEs are finding it much harder to grow into large companies than their US counterparts. The internationalised business environment with increasingly interlinked value chains puts further pressure on them. SMEs need to enhance their innovation capacity. They need to generate, take up and commercialise new knowledge and business ideas faster and to a greater extent to compete successfully on fast evolving

Amendment

However, SMEs have – despite their important economic and employment share and significant innovation potential – size-related problems to become more innovative and more competitive. Although Europe produces a similar number of start-up companies than the United States of America, European SMEs are finding it much harder to grow into large companies than their US counterparts. The internationalised business environment with increasingly interlinked value chains puts further pressure on them. SMEs need to enhance their innovation capacity and to have ready access to different forms of financial support (loans, guarantees, venture capital). They need to generate, take up and commercialise new knowledge
global markets. The challenge is to stimulate more innovation in SMEs, thereby enhancing their competitiveness and growth. and business ideas faster and to a greater extent to compete successfully on fast evolving global markets. The challenge is to stimulate more innovation in SMEs, thereby enhancing their competitiveness and growth.

Amendment 101
Proposal for a regulation
Annex I - Part III - point 1.1 - paragraph 1

Text proposed by the Commission
Lifelong health and wellbeing for all, high-quality and economically sustainable health and care systems, and opportunities for new jobs and growth are the aims of support to research and innovation in response to this challenge and will make a major contribution to Europe 2020.

Amendment
Lifelong health, mental and physical wellbeing for all, inclusive, high-quality and economically sustainable health and care systems, solutions to deal with the economy of an ageing population and opportunities for new jobs and growth are the aims of support to research and innovation in response to this challenge and will make a major contribution to Europe 2020.

Amendment 102
Proposal for a regulation
Annex I – part III – point 1.1 – paragraph 1 a (new)

Text proposed by the Commission
It should be needed to strengthen research on diseases that are derived from the increase of temperature and climate change which affect Mediterranean countries in particular but not only them.

Amendment
Research shall allow to improve advanced therapies and cellular therapies and would be focused on the treatment of chronic and degenerative diseases.

Amendment 104
Proposal for a regulation
Annex I – part III – point 1.1 – paragraph 2

Text proposed by the Commission

The cost of Union health and social care systems is rising with care and prevention measures in all ages increasingly expensive, the number of Europeans aged over 65 expected to nearly double from 85 million in 2008 to 151 million by 2060, and those over 80 to rise from 22 to 61 million in the same period. Reducing or containing these costs such that they do not become unsustainable depends in part on ensuring the lifelong health and wellbeing of all and therefore on the effective prevention, treatment and management of disease and disability.

Amendment

The cost of Union health and social care systems is rising with care and prevention measures in all ages increasingly expensive, the number of Europeans aged over 65 expected to nearly double from 85 million in 2008 to 151 million by 2060, and those over 80 to rise from 22 to 61 million in the same period. Preventing or containing these costs such that they do not become unsustainable depends in part on better informing and increasing the responsibility of citizens regarding health determinants in order to ensure the lifelong health and wellbeing of all and therefore on the effective prevention tools financed at an appropriate level, on the access to appropriate and specialised treatment and the management of disease and disability, while taking due account of the gender dimension.

Amendment 105
Proposal for a regulation
Annex I – part III – point 1.1 – paragraph 3

EN
Chronic conditions such as cardiovascular disease (CVD), cancer, diabetes, neurological and mental health disorders, overweight and obesity and various functional limitations are major causes of disability, ill-health and premature death, and present considerable social and economic costs. Chronic non-communicable diseases account for 86% of deaths in the WHO European Region.

Amendment

Proposal for a regulation
Annex I – part III – point 1.1 – paragraph 4

In the Union, CVD annually accounts for more than 2 million deaths and costs the economy more than EUR 192 billion while cancer accounts for a quarter of all deaths and is the number one cause of death in people aged 45-64. Over 27 million people in the Union suffer from diabetes and the total cost of brain disorders (including, but not limited to those affecting mental health) has been estimated at EUR 800 billion. Environmental, life-style and socio-economic factors are relevant in several of these conditions with up to one third of the global disease burden estimated to be related to these.

In the Union, CVD annually accounts for more than 2 million deaths and costs the economy more than EUR 192 billion. Cancer accounts for a quarter of all deaths and is the number one cause of death in people aged 45-64. Over 120 million citizens suffer from rheumatic and musculoskeletal diseases, while over 27 million people in the Union suffer from diabetes and the total cost of brain disorders (including, but not limited to those affecting mental health) has been estimated at EUR 800 billion. This figure will continue to rise dramatically, largely as a result of Europe's ageing population and the associated increase in the burden of neurodegenerative diseases, such as Parkinson's and Alzheimer's. Environmental, life-style and socio-economic factors are relevant in several of these conditions with up to one third of the
global disease burden estimated to be related to these. *Four risk factors together account for the majority of chronic non-communicable diseases: tobacco consumption, unbalanced diets, alcohol intake and lack of physical activity.* However, for other conditions, in particular neurodegenerative diseases, effective prevention strategies will require a considerable boost in research into their causes and the development of better early diagnosis and treatment options.

**Amendment 107**

Proposal for a regulation  
Annex I – part III – point 1.1 – paragraph 4 a (new)

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mental health problems account for almost 20% of the burden of disease in the WHO European Region, with one in four people being affected by mental health problems at some time in their life.</td>
<td></td>
</tr>
</tbody>
</table>

**Amendment 108**

Proposal for a regulation  
Annex I – part III – point 1.1 – paragraph 4 b (new)

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
</tr>
</thead>
</table>
| Diseases in children, including premature born children.  
*Health of children is a core priority for the European Union. Similar to rare diseases effective research and treatment can only be developed in a common European effort.* |
Infectious diseases (e.g. HIV/AIDS, tuberculosis and malaria), are a global concern, accounting for 41% of the 1.5 billion disability adjusted life years worldwide, with 8% of these in Europe. Emerging epidemics and the threat of increasing anti-microbial resistance must also be prepared for.

5a. Rare diseases remain a major challenge for the EU and the Member States. There are 6000 to 8000 rare diseases affecting approximately 30 million people across the EU. Relevant scientific knowledge and expertise which could serve as a basis for the development of innovative and more efficient therapies for patients with rare diseases is still lacking. Hence, there are currently few or no therapeutic options for the majority of these patients. European support for cooperation shall ensure that knowledge can be shared and resources combined as efficiently as possible, in order to tackle rare diseases effectively across the EU as a whole.
Justification

The Commission has set the target of developing 200 new therapies in the context of the International consortium on rare diseases. However, due to the limited number of patients per disease, the economic attractiveness of research and development of new orphan drugs is also lower. Therefore public funding would help mitigating this and act as a catalyst for private investment. Collaborative research is essential in ensuring that scarce knowledge can be shared and resources combined as efficiently as possible, in order to tackle rare diseases effectively across the EU.

Amendment 111

Proposal for a regulation
Annex I – part III – point 1.1 – paragraph 6

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meanwhile, drug and vaccine development processes are becoming more expensive and less effective. Persistent health inequalities must be addressed, and access to effective and competent health systems must be ensured for all Europeans.</td>
<td>Meanwhile, drug and vaccine development processes are becoming more expensive and less effective, while public health interventions, health promotion, risk factors reduction and prevention strategies proved to be cost-effective in the long term. The validity of the underlying animal tests for humans more and more challenged. Their regulatory science needs to be improved. Persistent health inequalities must be addressed, and access to effective, viable and competent health systems must be ensured for all Europeans.</td>
</tr>
</tbody>
</table>

Justification

EU research should support the paradigm shift in biomedical research away from animal tests to modern testing of the 21st century. Advances in molecular biology, biotechnology, and other fields are paving the way for major improvements in how scientists can evaluate drugs and vaccines. These advances can make testing quicker, less expensive, and more directly relevant to humans.

Amendment 112

Proposal for a regulation
Annex I – part III – point 1.1 – paragraph 6 a (new)
A growing number of studies also show that certain chemical substances have a worrying impact on our endocrine systems and general health. The effects of these endocrine disruptors, particularly when combined, are thought among many other things to include deformation of the sexual organs in male babies, early puberty in young girls, sterility, obesity and diabetes. Further research in this whole area is therefore needed.

Amendment 113

Proposal for a regulation
Annex I – Part III – point 1.2. – paragraph 1

Text proposed by the Commission

Disease and disability are not stopped by national borders. An appropriate European level research and innovation response can and should make a crucial contribution to addressing these challenges, deliver better health and wellbeing for all, and position Europe as a leader in the rapidly expanding global markets for health and wellbeing innovations.

Amendment

Disease and disability are not stopped by national borders. Individual Member States often lack the necessary resources in order to provide the most efficient responses. An appropriate European level research and innovation response supported by an appropriate financial commitment can and should make a crucial contribution to addressing these challenges, deliver better health and wellbeing for all, and position Europe as a leader in the rapidly expanding global markets for health and wellbeing innovations.

Amendment 114

Proposal for a regulation
Annex I – part III – point 1.2 – paragraph 2

Text proposed by the Commission

The response depends on excellence in research to improve our fundamental

Amendment

The response depends on excellence in research and on the efficient
understanding of health, disease, disability, development and ageing (including of life expectancy), and on the seamless and widespread translation of the resulting and existing knowledge into innovative, scalable and effective products, strategies, interventions and services. Furthermore, the pertinence of these challenges across Europe and in many cases, globally, demands a response characterised by long term and coordinated support for co-operation between excellent, multidisciplinary and multi-sector teams.

dissemination of research results to improve our fundamental understanding of health, disease, disability, development and ageing (including of life expectancy), and on the seamless and widespread translation of the resulting and existing knowledge into innovative, scalable and effective prevention, products, strategies, interventions and services. In particular, a large-scale human biology-based research effort is needed to discover the key events in the biological pathway between early disruptions in genetic and cellular processes and the manifestation of adverse human health outcomes. Furthermore, the pertinence of these challenges across Europe and in many cases, globally, demands a response characterised by long term and coordinated support for co-operation between excellent, multidisciplinary and multi-sector teams, not only at Union but also at global level, by supporting for instance research and development capacity in endemic areas and diseases, in particular malaria, dengue fever and tuberculosis.

Amendment 115
Proposal for a regulation
Annex I – part III – point 1.2 – paragraph 3

Text proposed by the Commission
Similarly, the complexity of the challenge and the interdependency of its components demand a European level response. Many approaches, tools and technologies have applicability across many of the research and innovation areas of this challenge and are best supported at Union level. These include the development of long term cohorts and the conduct of clinical trials, the clinical use of ‘-omics’ or the

Amendment
Similarly, the complexity of the challenge and the interdependency of its components demand a European level response. Many approaches, tools and technologies have applicability across many of the research and innovation areas of this challenge and are best supported at Union level. These include the support to health promotion and health literacy research, the development of long term cohorts and the
development of ICT and their applications in healthcare practice, notably e-health. The requirements of specific populations are also best addressed in an integrated manner, for example in the development of stratified and/or personalised medicine, in the treatment of rare diseases, and in providing assisted and independent living solutions.

conduct of clinical trials, the clinical use of ‘-omics’ or the development of ICT and their applications in healthcare practice, notably e-health. The requirements of specific populations are also best addressed in an integrated manner, for example in the development of stratified and/or personalised medicine, care provided in multi-disciplinary expert centres, in the treatment of rare diseases, and in providing assisted and independent living solutions.

Amendment 116

Proposal for a regulation
Annex I – Part III – point 1.2. – paragraph 4

Text proposed by the Commission

To maximise the impact of Union level actions, support will be provided to the full spectrum of research and innovation activities. From basic research through translation of knowledge to large trials and demonstration actions, mobilising private investment; to public and pre-commercial procurement for new products, services, scalable solutions, which are when necessary, interoperable and supported by defined standards and/or common guidelines. This co-ordinated, European effort will contribute to the ongoing development of the ERA. It will also interface, as and when appropriate, with activities developed in the context of the Health for Growth Programme and the European Innovation Partnership on Active and Healthy Ageing.

Amendment

To maximise the impact of Union level actions, support will be provided to the full spectrum of research and innovation activities. From basic research through translation of knowledge to large trials and demonstration actions, mobilising private investment; to public and pre-commercial procurement for new products, services, scalable solutions, which are when necessary, interoperable and supported by defined standards and/or common guidelines. This co-ordinated, European effort will contribute to the ongoing development of the ERA. It will also complement and create synergies, as and when appropriate, with activities developed in the context of the Health for Growth Programme and the European Innovation Partnership on Active and Healthy Ageing and future actions in relation to chronic conditions.

Amendment 117
## Proposal for a regulation
**Annex I – part III – point 1.3 – paragraph 1**

**Text proposed by the Commission**

Effective health promotion, supported by a robust evidence base, prevents disease, improves wellbeing and is cost effective. Health promotion and disease prevention also depend on an understanding of the determinants of health, on effective preventive tools, such as vaccines, on effective health and disease surveillance and preparedness, and on effective screening programmes.

**Amendment**

Effective health promotion, supported by a robust evidence base, prevents disease, improves mental and physical wellbeing and is cost effective. Health promotion and disease prevention also depend on an understanding of the determinants of, and links between, physical and mental health, on European data based on common indicators, on effective preventive tools, such as vaccines and behavioural interventions addressing risk factors, including obesity, on effective health and disease surveillance and preparedness, and on effective screening programmes and early diagnosis.

## Amendment 118

**Proposal for a regulation**
**Annex I – Part III – point 1.3. – paragraph 2**

**Text proposed by the Commission**

Successful efforts to prevent, manage, treat and cure disease, disability and reduced functionality are underpinned by the fundamental understanding of their determinants and causes, processes and impacts, as well as factors underlying good health and wellbeing. Effective sharing of data and the linkage of these data with large scale cohort studies is also essential, as is the translation of research findings into the clinic, in particular through the conduct of clinical trials.

**Amendment**

Successful efforts to prevent, manage, treat and cure disease, disability and reduced functionality are underpinned by improved molecular knowledge of diseases through biomedical research, the fundamental understanding of their determinants and causes, processes and impacts, as well as of factors underlying good health and wellbeing. Building on the results of biomedical research in developing treatment and, in particular stratified and personalised medicine, is a powerful tool for providing disease treatment that is tailored to the patient's genetic make-up and to the specific disease type, thus increasing the efficiency of care and patients' quality of life. Effective collection and sharing of data,
standardised data processing and the linkage of these data with large scale cohort studies is also essential, as is the timely translation of research findings into the clinic, in particular through the conduct of multicentre clinical trials.

Amendment 119

Proposal for a regulation
Annex I – part III – point 1.3 – paragraph 3

*Text proposed by the Commission*

An increasing disease and disability burden in the context of an aging population places further demands on health and care sectors. If effective health and care is to be maintained for all ages, efforts are required to improve decision making in prevention and treatment provision, to identify and support the dissemination of best practice in the health and care sectors, and to support integrated care and the wide uptake of technological, organisational and social innovations empowering in particular older persons as well as disabled persons to remain active and independent. Doing so will contribute to increasing, and lengthening the duration of their physical, social, and mental well-being.

*Amendment*

An increasing disease and disability burden in the context of an aging population places further demands on health and care sectors. If effective health and care is to be maintained for all individuals, irrespective of their age or gender and economic means, efforts are required to improve decision making in prevention and treatment provision, and diagnosis, to identify and support the dissemination of best practice in the health and care sectors, to empower citizens and patients through health literacy, and to support integrated care (provided in expert centres where appropriate), and the wide uptake of technological, organisational and social innovations empowering in particular older persons, persons with chronic diseases as well as disabled persons and patients to remain active and independent. Doing so will contribute to increasing, and lengthening the duration of their physical, social, and mental well-being and quality of life.

*Justification*

Chronic diseases are the greatest challenge to the EU’s goal of adding two healthy life years to Europe’s citizens by 2020. Specific reference should be made to ensuring that all people with chronic diseases benefit from improved decision making on prevention and treatment provision, dissemination of best practice and uptake of technological and social innovations.
Amendment 120
Proposal for a regulation
Annex I – Part III – point 1.3. – paragraph 4

**Text proposed by the Commission**
All of these activities shall be undertaken in such a way as to provide support throughout the research and innovation cycle, strengthening the competitiveness of the European based industries and **development of new market opportunities.**

**Amendment**
All of these activities shall be undertaken in such a way as to provide support throughout the research and innovation cycle, **while avoiding unnecessary research duplication**, strengthening the **development of new market opportunities** and the competitiveness of the European based industries and **supporting SMEs.**

**Emphasis will also be placed on engaging all health stakeholders – including patient and patient organisations – in order to develop a research and innovation agenda that actively involves citizens and reflects their needs and expectations. To this end, a broad basis of research is of utmost importance for a high level of competitiveness and future innovation in the European Union.**

**Justification**

**EU-funded health research should reflect the needs and expectations of the citizens it is there to assist – the patients themselves. With their expertise, insights and ideas, patient organisations are ideally placed to help set the research agenda, build meaningful relationships with all major stakeholders and express a unified patient voice.**

Amendment 121
Proposal for a regulation
Annex I – Part III – point 1.3. – paragraph 5

**Text proposed by the Commission**
Specific activities shall include:
understanding the determinants of health (including environmental **and** climate

**Amendment**
Specific activities shall include:
understanding the determinants of health (including **physosocial, behavioural,**
related factors), improving health promotion and disease prevention; understanding disease and improving diagnosis; developing effective screening programmes and improving the assessment of disease susceptibility; improving surveillance and preparedness; developing better preventive vaccines; using in-silico medicine for improving disease management and prediction; treating disease; transferring knowledge to clinical practice and scalable innovation actions; better use of health data; active ageing, independent and assisted living; individual empowerment for self-management of health; promotion of integrated care; improving scientific tools and methods to support policy making and regulatory needs; and optimising the efficiency and effectiveness of healthcare systems and reducing inequalities by evidence based decision making and dissemination of best practice, and innovative technologies and approaches.

environmental, climate, poverty and gender related factors), improving health promotion and disease prevention; understanding the pathways of human disease, of toxicity, of biomarkers and modes of action and improving diagnosis; developing effective screening programmes and improving the assessment of disease susceptibility; improving surveillance and preparedness; developing better preventive tools, including vaccines; using in-silico medicine for improving disease management and prediction; improving disease treatment with an emphasis on the development of stratified/personalised medicine and orphan medicinal products; transferring knowledge stemming from basic research to clinical practice and scalable innovation actions in a more timely and efficient manner, by fostering high-quality translational research; better use of health data; promoting active ageing, independent and assisted living; individual empowerment for self-management of health; promotion of integrated care; improving scientific tools and methods to support policy making and regulatory needs; and optimising the efficiency and effectiveness of healthcare systems, including by the development and wider implementation of e-Health solutions, and reducing inequalities by evidence based decision making and dissemination of best practice, and innovative technologies and approaches.

Amendment 122

Proposal for a regulation
Annex I – part III – point 1.3 – paragraph 5 a (new)
In order to meet the challenges for the future of the need for European water actions, appropriate Union funding should be allocated for research and innovation activities in the area of water innovation. To this end, part of the total budget of Horizon 2020 (during 2014-2020) should be allocated for this societal challenge.

Amendment 123

Proposal for a regulation
Annex I – part III – point 2 – title

Text proposed by the Commission
2. Food security, sustainable agriculture, marine and maritime research and the bio-economy

Amendment
2. Food safety and security, sustainable agriculture, marine and maritime research and the bio-economy

Justification
Correction of amendment 31 reflecting partly comments by the Commission on the scope of the research on marine and maritime research.

Amendment 124

Proposal for a regulation
Annex I – part III – point 2.1 – introductory paragraph

Text proposed by the Commission
The specific objective is to secure sufficient supplies of safe and high quality food and other bio-based products, by developing productive and resource-efficient primary production systems, fostering related ecosystem services, alongside competitive and low carbon supply chains. This will accelerate the transition

Amendment
The specific objective is to secure sufficient supplies of safe and high quality healthy food and other bio-based products, avoiding the current over-exploitation of ecosystems, by developing productive and resource-efficient primary production and food processing systems which respect biodiversity, bringing together
to a sustainable European bio-economy.

quantitative et qualitative approaches, alongside competitive and low carbon supply chains.

Amendment 125

Proposal for a regulation
Annex I – part III – point 2.1 – paragraph 1

Text proposed by the Commission

Over the coming decades, Europe will be challenged by increased competition for limited and finite natural resources, by the effects of climate change, in particular on primary production systems (agriculture, forestry, fisheries and aquaculture) and by the need to provide a sustainable, safe and secure food supply for the European and an increasing global population. A 70 % increase of the world food supply is estimated to be required to feed the 9 billion global population by 2050. Agriculture accounts for about 10 % of Union greenhouse gases emissions, and while declining in Europe, global emissions from agriculture are projected to increase up to 20 % by 2030. Furthermore, Europe will need to ensure sufficient supplies of raw materials, energy and industrial products, under conditions of decreasing fossil carbon resources (oil and liquid gas production expected to decrease by about 60 % by 2050), while maintaining its competitiveness. Bio-waste (estimated at up to 138 million tonnes per year in the Union, of which up to 40 % is land-filled) represents a huge problem and cost, despite its high potential added value. For example, an estimated 30 % of all food produced in developed countries is discarded. Major changes are needed to reduce this amount by 50 % in the Union by 2030. In addition, national borders are irrelevant in the spread of animal and plant pests and diseases, including zoonotic

Amendment

Over the coming decades, Europe will be challenged by increased competition for limited and finite natural resources, by the effects of climate change, in particular on primary production systems (agriculture, forestry, fisheries and aquaculture) and by the need to provide a sustainable, safe and secure food supply for the European and an increasing global population. A 70 % increase of the world food supply is estimated to be required to feed the 9 billion global population by 2050. This food emergency does not justify the current imbalance between often surplus national production levels and the steady rise in food imports, nor does it provide a reason for the increasing complexity of the global food network. Hence the importance of the European Union having better control of the supply circuits, taking into account, as a matter of priority, seasonal cycles, the origin of products and the ability to track food. Agriculture accounts for about 10 % of Union greenhouse gases emissions, and while declining in Europe, global emissions from agriculture are projected to increase up to 20 % by 2030. Furthermore, Europe will need to ensure sufficient supplies of raw materials, energy and industrial products, under conditions of decreasing fossil carbon resources (oil and liquid gas production expected to decrease by about 60 % by 2050), while maintaining its competitiveness. Bio-waste (estimated
diseases, and food borne pathogens. While effective national prevention measures are needed, action at Union level is essential for ultimate control and the effective running of the single market. The challenge is complex, affects a broad range of interconnected sectors and requires a plurality of approaches.

at up to 138 million tonnes per year in the Union, of which up to 40 % is land-filled) represents a huge problem and cost, despite its high potential added value. For example, an estimated 30 % of all food produced in developed countries is discarded. Major changes are needed to reduce this amount by 50 % in the Union by 2030. In addition, national borders are irrelevant in the spread of animal and plant pests and diseases, including zoonotic diseases, and food borne pathogens. While effective national land monitoring, territorial care and prevention measures are needed, action at Union level is essential for ultimate control and the effective running of the single market. The challenge is complex, affects a broad range of interconnected sectors and requires a plurality of approaches.

Justification

It is vital for the European Union to have better traceability of foodstuffs so that it can more easily identify the origins of food poisoning outbreaks and avoid delays in identifying the source of contamination. The example of the E.coli health crisis in Germany in June 2011 is particularly relevant.

Amendment 126

Proposal for a regulation
Annex I – part III – point 2.1 – paragraph 2

Text proposed by the Commission

More and more biological resources are needed to satisfy market demand for a secure and healthy food supply, bio-materials, biofuels and bio-based products, ranging from consumer products to bulk chemicals. However the capacities of the terrestrial and aquatic ecosystems required for their production are limited, while there are competing claims for their utilisation, and often not optimally managed, as shown for example by a severe decline in soil

Amendment

More and more biological resources are needed to satisfy market demand for a secure and healthy food supply, bio-materials, biofuels and bio-based products, ranging from consumer products to bulk chemicals. However the capacities of the terrestrial and aquatic ecosystems required for their production are limited, while there are competing claims for their utilisation, and often not optimally managed, as shown for example by a severe decline in soil
carbon content and fertility. There is under-utilised scope for fostering ecosystem services from farmland, forests, marine and fresh waters by integrating agronomic and environmental goals into sustainable production.

Amendment 127

Proposal for a regulation
Annex I – part III – point 2.1 – paragraph 2 a (new)

Text proposed by the Commission

The creation of a low-waste production chain, that is also able to secure food supply in the context of climate change and growing population can span from improved management systems that minimize inputs at the land/sea level and throughout the supply chain. Farmers’ collective knowledge of natural resources, ecological processes and product quality, can be used as a basis to minimise dependence on external inputs. Shorter agro-food chains based on consumers’ trust and greater proximity to producers is also a basis of a low-waste production chain, whilst addressing consumer demands for high quality food, taking into account animal welfare.

Amendment 128

Proposal for a regulation
Annex I – part III – point 2.1 – paragraph 3

Text proposed by the Commission

The potential of biological resources and ecosystems could be used in a much more sustainable, efficient and integrated manner. For examples, the potential of biomass from forests and waste streams from agricultural, aquatic, industrial, and
also municipal origins could be better harnessed

industrial, and also municipal origins could be better harnessed

**Justification**

*It should be made clear that agriculture in itself holds great potential for the sustainable production and use of biomass, through dedicated crops, the development of plants with in-built traits and the cascading use of crops.*

**Amendment 129**

**Proposal for a regulation**

**Annex I – part III – point 2.2 – paragraph 2**

*Text proposed by the Commission*

A fully functional European bio-economy – encompassing the sustainable production of renewable resources from land and aquatic environments and their conversion into food, bio-based products and bioenergy as well as the related public goods - will generate high European added value. Managed in a sustainable manner, it can reduce the environmental footprint of primary production and the supply chain as a whole. It can increase their competitiveness and provide jobs and business opportunities for rural and coastal development. The food security, sustainable agriculture, and overall bio-economy – related challenges are of a European and global nature. Actions at Union level are essential to bring together clusters to achieve the necessary breadth and critical mass to complement efforts made by a single or groups of Member States. A multi-actor approach will ensure the necessary cross-fertilising interactions between researcher, businesses, farmers/ producers, advisors and end-users. The Union level is also necessary to ensure coherence in addressing this challenge across sectors and with strong links to relevant Union policies. Coordination of research and innovation at Union level will

*Amendment*

A fully functional European bio-economy – encompassing the sustainable production of renewable resources from land and aquatic environments and their conversion into food, *feed*, bio-based products and bioenergy as well as the related public goods - will generate high European added value. Managed in a sustainable manner, it can reduce the environmental footprint of primary production and the supply chain as a whole. It can increase their competitiveness and provide jobs and business opportunities for rural and coastal development. *In parallel to the market oriented functions, the bio-economy sustains also a wide range of public goods function that should be preserved: agricultural and forested landscape, farmland and forest biodiversity, water quality and availability, soil functionality, climate stability, air quality, resilience to flooding and fire.* The food security, sustainable agriculture, and overall bio-economy – related challenges are of a European and global nature. Actions at Union level are essential to bring together clusters to achieve the necessary breadth and critical mass to complement efforts made by a single or groups of Member States. A *transparent* multi-actor approach
stimulate and help to accelerate the required changes across the Union. will ensure the necessary cross-fertilising interactions between researcher, businesses, farmers/producers, advisors, consumers and end-users. The Union level is also necessary to ensure coherence in addressing this challenge across sectors and with strong links to relevant Union policies. Coordination of research and innovation at Union level will stimulate and help to accelerate the required changes across the Union.

Amendment 130

Proposal for a regulation
Annex I – part III – point 2.2 – paragraph 3

Text proposed by the Commission

Research and innovation will interface with a wide spectrum of Union policies and related targets, including the Common Agriculture Policy (in particular the Rural Development Policy) and the European Innovation Partnership ‘Agricultural Productivity and Sustainability’, the Common Fisheries Policy, the Integrated Maritime Policy, the European Climate Change Programme, the Water Framework Directive, the Marine Strategy Framework Directive, the Forestry Action Plan, the Soil Thematic Strategy, the Union's 2020 Biodiversity Strategy, the Strategic Energy Technology Plan, the Union's innovation and industrial policies, external and development aid policies, plant health strategies, animal health and welfare strategies and regulatory frameworks to protect the environment, health and safety, to promote resource efficiency and climate action, and to reduce waste. A better integration of research and innovation into related Union policies will significantly improve their European added value, provide leverage effects, increase societal relevance and help to further develop

Amendment

Research and innovation will interface with a wide spectrum of Union policies and related targets, including the Common Agriculture Policy (in particular the Rural Development Policy) and the European Innovation Partnership ‘Agricultural Productivity and Sustainability’, the Common Fisheries Policy, the Integrated Maritime Policy, the European Climate Change Programme, the Water Framework Directive, the Marine Strategy Framework Directive, the Forestry Action Plan, the Soil Thematic Strategy, the Union's 2020 Biodiversity Strategy, the Strategic Energy Technology Plan, the Union's innovation and industrial policies, external and development aid policies, plant health strategies, animal health and welfare strategies and regulatory frameworks to protect the environment, health and safety, to promote resource efficiency and climate action, and to reduce waste. A better integration of research and innovation into related Union policies will significantly improve their European added value, provide leverage effects, increase societal
sustainable land, seas and oceans management and bio-economy markets.

relevance and help to further develop sustainable land, seas and oceans management and bio-economy markets.

Amendment 131

Proposal for a regulation
Annex I – part III – point 2.2 – paragraph 5

Text proposed by the Commission

Challenge-driven actions focusing on social and economic benefits and the modernisation of the bio-economy associated sectors and markets shall be supported through multi-disciplinary research, driving innovation and leading to the development of new practices, products and processes. It shall also pursue a broad approach to innovation ranging from technological, non-technological, organisational, economic and social innovation to for instance novel business models, branding and services.

Amendment

Challenge-driven actions focusing on social, environmental and economic benefits and the modernisation of the bio-economy associated sectors, participating actors and markets shall be supported through multi-disciplinary research, driving innovation and leading to the development of new practices, sustainable products and processes. It shall also pursue a broad approach to innovation ranging from technological, non-technological, organisational, economic and social innovation to for instance novel business models, branding and services. The potential of farmers and SMEs to contribute to innovation in the field must be fully recognised. The approach to the bio-based economy shall take account of the importance of local knowledge enhancing local capabilities, while also accommodating diversity and complexity.

Amendment 132

Proposal for a regulation
Annex I – part III – point 2.3 – point a – paragraph 1

Text proposed by the Commission

The aim is to supply sufficient food, feed, biomass and other raw-materials, while safeguarding natural resources and enhancing ecosystems services, including

Amendment

The aim is to supply sufficient food, feed, biomass and other raw-materials, while safeguarding natural resources at the global level and enhancing ecosystems
coping with and mitigating climate change. The activities shall focus on more sustainable and productive agriculture and forestry systems which are both resource-efficient (including low-carbon) and resilient, while at the same time developing services, including protecting biodiversity and natural habitats, and protecting soil and water resources, while tackling the challenges of mitigation and adaptation to climate change. The activities shall favour systemic approaches and focus on more sustainable and productive agriculture and forestry systems including organic farming, which are both resource-efficient (including low-carbon and low input) and resilient, while at the same time developing of services, concepts and policies aimed at ensuring a diversity of food production systems and for thriving rural livelihoods.

Amendment 133

Proposal for a regulation
Annex I – part III – point 2.3 – point b – paragraph 1

Text proposed by the Commission

The aim is to meet the requirements of citizens for safe, healthy and affordable food, and to make food and feed processing and distribution more sustainable and the food sector more competitive. The activities shall focus on healthy and safe foods for all, informed consumer choices, and competitive food processing methods that use less resources and produce less by-products, waste and green-house gases.

Amendment

The aim is to meet the requirements of citizens for good quality, safe, healthy and affordable food, and to make food and feed processing and distribution as well as food consumption more sustainable and the food sector more competitive while preserving European biodiversity. The activities shall focus on good quality, a broad diversity of healthy, authentic, high quality and safe foods for all, better food information to consumers, and competitive food processing methods that use less resources and additives and produce less by products, waste and green-house gases.

Amendment 134

Proposal for a regulation
Annex I – part III – point 2.3 – point c – paragraph 1
Text proposed by the Commission

The aim is to **sustainably exploit** aquatic living resources **to maximise** social and economic benefits/returns from Europe's oceans and seas. The activities shall focus on an optimal contribution to secure food supplies by developing sustainable and environmentally friendly fisheries and **competitive** European aquaculture in the context of the global economy **and on boosting** marine innovation through biotechnology to fuel smart ‘blue’ growth.

Amendment

The aim is to **maintain sustainable consumption levels of** aquatic living resources, **while maximising** social and economic benefits/returns from Europe's oceans and seas **while protecting biodiversity and ecosystem services**. The activities shall focus on an optimal contribution to secure food supplies by developing sustainable and environmentally friendly fisheries and European aquaculture in the context of the global economy. **Environmental concerns regarding the use of biotechnology in open marine ecosystems have to be carefully taken into account. The precautionary principle as well as civil society concerns on the use and dissemination of biotechnology in open marine ecosystems have to be taken into account.**

Amendment 135

**Proposal for a regulation**
**Annex I – part III – point 2.3 – point c a (new)**

Text proposed by the Commission

(c a) Another objective is to fight against the homogenisation of species present in inland seas and rivers, which has a significant impact on the functioning of ecosystems, particularly as a result of increased resistance to disturbances.

Amendment

Justification

It is important to tackle the phenomenon of waters and rivers becoming uniform. In the EU alone, more than 400 fish species have been introduced in recent decades into rivers where they have not historically been present.
Amendment 136
Proposal for a regulation
Annex I – part III – point 2.3 – point d – paragraph 1

Text proposed by the Commission

The aim is the promotion of low carbon, resource efficient, sustainable and competitive European bio-based industries. The activities shall focus on fostering the bio-economy by transforming conventional industrial processes and products into bio-based resource and energy efficient ones, the development of integrated biorefineries, utilising biomass from primary production, biowaste and bio-based industry by-products, and opening new markets through supporting standardisation, regulatory and demonstration/field trial activities and others, while taking into account the implication of the bio-economy on land use and land use changes.

Amendment

The aim is the promotion of renewable-based and energy efficient, resource efficient, sustainable and competitive European bio-based industries. The activities shall focus on fostering the bio-economy by transforming conventional industrial processes and products into bio-based resource and energy efficient ones, the development of integrated biorefineries, producing and utilising biomass from primary production, biowaste and bio-based industry by-products, and opening new markets through supporting where necessary standardisation, but also through regulatory and demonstration activities and others, while taking into account the environmental and socio-economic implication of the bio-economy on land use and land use changes as well as civil society views and concerns.

Justification

The development of integrated biorefineries must not be limited to the use.

Amendment 137
Proposal for a regulation
Annex I – part III – point 3.1 – paragraph 1

Text proposed by the Commission

The Union intends to reduce greenhouse gas emissions by 20 % below 1990 levels by 2020, with a further reduction to 80-95 % by 2050. In addition, renewables should cover 20 % of final energy consumption in 2020 coupled with a 20 % energy

Amendment

The Union intends to reduce greenhouse gas emissions by 20 % below 1990 levels by 2020, with a further reduction to 80-95 % by 2050. In addition, renewables should cover 20 % of final energy consumption in 2020 coupled with a 20 % energy
efficiency target. Achieving these objectives will require an overhaul of the energy system combining low carbon profile, energy security and affordability, while at the same time reinforcing Europe's economic competitiveness. Europe is currently far from this overall goal. 80% of the European energy system still relies on fossil fuels, and the sector produces 80% of all the Union's greenhouse gas emissions. Every year 2.5% of the Union's Gross Domestic Product (GDP) is spent on energy imports and this is likely to increase. This trend would lead to total dependence on oil and gas imports by 2050. Faced with volatile energy prices on the world market, coupled with concerns over security of supply, European industries and consumers are spending an increasing share of their income on energy.

**Amendment 138**

**Proposal for a regulation**

Annex I – part III – point 3.1 – paragraph 2

**Text proposed by the Commission**

The roadmap to a competitive low-carbon economy in 2050 *shows* that the targeted reductions in greenhouse gas emissions will have to be met largely within the territory of the Union. This would entail reducing CO₂ emissions by over 90% by

**Amendment**

The roadmap to a competitive low-carbon economy in 2050, *as drafted by the European Commission, assumes* that the targeted reductions in greenhouse gas emissions will have to be met largely within the territory of the Union *in light of*
2050 in the power sector, by over 80% in industry, by at least 60% in transport and by about 90% in the residential sector and services. The lack of worldwide agreement on the issue. This would entail reducing CO₂ emissions even by over 90% by 2050 in the power sector, by over 80% in industry, by 60% in transport and by 90% in the residential sector and services.

Justification

The final goal of GHG reduction by 2050 has not been decided yet. 80-95% targets are desired, but not necessarily feasible ones.

Amendment 139

Proposal for a regulation
Annex I – part III – point 3.3 – point b – paragraph 1

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activities shall focus on research, development and full scale demonstration - of innovative renewables and carbon capture and storage technologies offering larger scale, lower cost, environmentally safe technologies with higher conversion efficiency and higher availability for different market and operating environments.</td>
<td>Activities shall focus on research, development and full scale demonstration - of innovative renewables and carbon capture and storage technologies offering larger scale, lower cost, environmentally safe technologies with higher conversion efficiency and higher availability for different market and operating environments. Activities shall also focus on research and development of renewable energy storage technologies.</td>
</tr>
</tbody>
</table>

Amendment 140

Proposal for a regulation
Annex I – part III – point 3.3 – point d – introductory part

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
</tr>
</thead>
<tbody>
<tr>
<td>(d) A single, smart European electricity grid</td>
<td>(d) A single, smart European electricity grid which enables renewable energy sources to be fully integrated into the energy mix</td>
</tr>
</tbody>
</table>
Amendment 141
Proposal for a regulation
Annex I – part III – point 3.3 – point e – paragraph 1

_text proposed by the Commission_

Activities shall focus on multi-disciplinary research for energy technologies (including visionary actions) and joint implementation of pan-European research programmes and world-class facilities.

Amendment

Activities shall focus on multi-disciplinary research for energy technologies (including visionary actions) and the impact of devices, facilities and new technological developments on the marine environment and joint implementation of pan-European research programmes and world-class facilities.

Amendment 142
Proposal for a regulation
Annex I – part III – point 4.3 – point a – paragraph 2

_text proposed by the Commission_

The focus of activities shall be to reduce resource consumption and greenhouse gas emissions and improve vehicle efficiency, to accelerate the development and deployment of a new generation of electric and other low or zero emission vehicles, including through breakthroughs in engines, batteries and infrastructure; to explore and exploit the potential of alternative fuels and innovative and more efficient propulsion systems, including fuel infrastructure; to optimise the use of infrastructures, by means of intelligent transport systems and smart equipment; and to increase the use of demand management and public and non-motorised transport, particularly in urban areas.

Amendment

The focus of activities shall be to reduce resource consumption and greenhouse gas emissions and improve vehicle efficiency, to accelerate the development and deployment of a new generation of low emission vehicles at affordable market prices, including through breakthroughs in engines, batteries and infrastructure; to explore and exploit the potential of alternative fuels and innovative and more efficient propulsion systems, including fuel infrastructure; to optimise the use of infrastructures, by means of intelligent transport systems and smart equipment; and to increase the use of demand management and public and non-motorised transport, particularly in urban areas.

Amendment 143
Proposal for a regulation
Annex I – part III – point 4.3 – point c – paragraph 2
The focus of activities shall be to develop the next generation of innovative transport means and to prepare the ground for the following one, by working on novel concepts and designs, smart control systems and interoperable standards, efficient production processes, shorter development times and reduced lifecycle costs.

Amendment 144

Proposal for a regulation
Annex I – part III – point 5 – title

Text proposed by the Commission

5. Climate action, resource efficiency and raw materials

Amendment

5. Climate and water action, resource efficiency and sustainable use of raw materials;

Amendment 145

Proposal for a regulation
Annex I – part III – point 5.1 – introductory paragraph

Text proposed by the Commission

The specific objective is to achieve a resource efficient and climate change resilient economy and a sustainable supply of raw materials, in order to meet the needs of a growing global population within the sustainable limits of the planet's natural resources. Activities will contribute to increasing European competitiveness and improving well being, whilst assuring environmental integrity and sustainability, keeping average global warming below 2 °C and enabling ecosystems and society to adapt to climate change.

Amendment

The specific objective is to achieve a resource efficient and climate change resilient economy, the protection and sustainable management of natural resources and ecosystems, a sustainable use and supply of raw materials and water, in order to meet the needs of a growing global population within the sustainable limits of the planet's terrestrial and marine natural resources. Activities will contribute to increasing European competitiveness and improving well being, whilst assuring environmental integrity and sustainability, keeping average global warming below 2 °C.
°C, enabling ecosystems and society to adapt to climate change and protecting cultural heritage.

**Amendment 146**

**Proposal for a regulation**  
Annex I – part III – point 5.1 – paragraph 3 a (new)

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
</tr>
</thead>
<tbody>
<tr>
<td>3a. In view of serious and largely irreversible changes to large components of the Earth’s climate system, there is a need of considering all sources of global warming and all mitigation options. Besides considering CO2 emission reductions, fast-action strategies (e.g. cuts in hydrofluorocarbons, black carbon, tropospheric ozone; biosequestration) can produce the fastest climate response within decades or sooner.</td>
<td></td>
</tr>
</tbody>
</table>

**Justification**

Amendment replacing amendment 29 in the draft opinion.

**Amendment 147**

**Proposal for a regulation**  
Annex I – part III – point 5.1 – paragraph 4

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
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</thead>
<tbody>
<tr>
<td>The sustainable supply and resource efficient management of raw materials, including their exploration, extraction, processing, re-use, recycling and substitution, is essential for the functioning of modern societies and their economies. European sectors, such as construction, chemicals, automotive, aerospace, machinery and equipment, which provide a total added value of some EUR 1.3 trillion and employment for approximately 30 million people, heavily depend on access to</td>
<td></td>
</tr>
<tr>
<td>The sustainable supply and resource efficient management of raw materials, including their exploration, extraction, processing, re-use, recycling and substitution, is essential for the functioning of modern societies and their economies. European sectors, such as construction, chemicals, automotive, aerospace, machinery and equipment, which provide a total added value of some EUR 1.3 trillion and employment for approximately 30 million people, heavily depend on access to</td>
<td></td>
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</tbody>
</table>
raw materials. However, the supply of raw materials to the Union is coming under increasing pressure. Furthermore, the Union is highly dependent on imports of strategically important raw materials, which are being affected at an alarming rate by market distortions. Moreover, the Union still has valuable mineral deposits, whose exploration and extraction is limited by a lack of adequate technologies and hampered by increased global competition. Given the importance of raw materials for European competitiveness, the economy and for their application in innovative products, the sustainable supply and resource efficient management of raw materials is a vital priority for the Union.

**Amendment 148**

**Proposal for a regulation**
**Annex I – part III – point 5.1 – paragraph 4 a (new)**

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Climate change also poses a threat to European cultural heritage. Understanding the challenges and providing the adequate responses will be essential in order to maintain identity, social cohesion and to maximise the economic benefits associated with tourism.</td>
<td></td>
</tr>
</tbody>
</table>

**Amendment 149**

**Proposal for a regulation**
**Annex I – part III – point 5.2 – paragraph 1**

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meeting Union and international targets for greenhouse gas emissions and</td>
<td>Meeting Union and international targets for greenhouse gas emissions and coping with</td>
</tr>
</tbody>
</table>
concentrations and coping with climate change impacts requires the development and deployment of cost-effective technologies, and mitigation and adaptation measures. Union and global policy frameworks must ensure that ecosystems and biodiversity are protected, valued and appropriately restored in order to preserve their ability to provide resources and services in the future. Research and innovation can help secure reliable and sustainable access to raw materials and ensure a significant reduction in resource use and wastage.

Amendment 150

Proposal for a regulation
Annex I – part III – point 5.2 – paragraph 2

The focus of Union actions shall therefore be on supporting key Union objectives and policies including: the Europe 2020 strategy; the Innovation Union; Resource-Efficient Europe and the corresponding Roadmap; the Roadmap for moving to a competitive low carbon economy in 2050; Adapting to climate change: Towards a European framework for action; the Raw Materials Initiative; the Union's Sustainable Development Strategy; an Integrated Maritime Policy for the Union; the Marine Strategy Framework Directive; the Eco-innovation Action Plan and the Digital Agenda for Europe. These actions shall reinforce the ability of society to become more resilient to environmental and climate change and ensure the availability of raw materials.

Amendment

The focus of Union actions shall therefore be on supporting key Union objectives and policies including: the Europe 2020 strategy; the Innovation Union; Resource-Efficient Europe and the corresponding Roadmap; the Roadmap for moving to a competitive low carbon economy in 2050; Adapting to climate change: Towards a European framework for action; the Raw Materials Initiative; the Union's Sustainable Development Strategy; an Integrated Maritime Policy for the Union; the Marine Strategy Framework Directive; the Eco-innovation Action Plan and the 7th Environmental Action Programme. These actions shall reinforce the ability of society to become more resilient to environmental and climate change and ensure the availability of raw materials.

Amendment 151

Proposal for a regulation
Annex I – part III – point 5.2 – paragraph 3

EN
Given the transnational and global nature of the climate and the environment, their scale and complexity, and the international dimension of the raw materials supply chain, activities have to be carried out at the Union level and beyond. The multi-disciplinary character of the necessary research requires pooling complementary knowledge and resources in order to effectively tackle this challenge. Reducing resource use and environmental impacts, whilst increasing competitiveness, will require a decisive societal and technological transition to an economy based on a sustainable relationship between nature and human well-being.

Coordinated research and innovation activities will improve the understanding and forecasting of climate and environmental change in a systemic and cross-sectoral perspective, reduce uncertainties, identify and assess vulnerabilities, risks, costs and opportunities, as well as expand the range and improve the effectiveness of societal and policy responses and solutions. Actions will also seek to empower actors at all levels of society to actively participate in this process.

Amendment 152

Proposal for a regulation
Annex I – part III – point 5.2 – paragraph 4

Addressing the availability of raw materials calls for co-ordinated research and innovation efforts across many disciplines and sectors to help provide safe, economically feasible, environmentally sound and socially acceptable solutions along the entire value chain (exploration, exploitation, production, processing, distribution, use and recycling).

Amendment

Addressing the **sustainable use and availability** of raw materials calls for co-ordinated research and innovation efforts across many disciplines and sectors to help provide safe, economically feasible, environmentally sound and socially acceptable solutions along the entire value chain.
extraction, processing, re-use, recycling and substitution). Innovation in these fields will provide opportunities for growth and jobs, as well as innovative options involving science, technology, the economy, policy and governance. For this reason, a European Innovation Partnership on Raw Materials is being prepared.

Amendment 153
Proposal for a regulation
Annex I - Part III – point 5.3. – point a – paragraph 1

*Text proposed by the Commission*

(a) Fighting and adapting to climate change

The aim is to develop and assess innovative, cost-effective and sustainable adaptation and mitigation measures, targeting both CO2 and non-CO2 greenhouse gases, and underlining both technological and non-technological green solutions, through the generation of evidence for informed, early and effective action and the networking of the required competences. Activities shall focus on: improving the understanding of climate change and the provision of reliable climate projections; assessing impacts, vulnerabilities and developing innovative cost-effective adaptation and risk prevention measures; supporting mitigation policies.

*Amendment*

(a) Fighting and adapting to climate change

The aim is to develop and assess innovative, cost-effective and sustainable adaptation and mitigation measures *and strategies*, targeting both CO2 and non-CO2 greenhouse gases *and particles*, and underlining both technological and non-technological green solutions, through the generation of evidence for informed, early and effective action and the networking of the required competences. Activities shall focus on: improving the understanding of climate change and the *risks associated with extreme events and abrupt changes through* the provision of reliable climate projections; *understanding the ozone-climate interactions and the water cycle in the atmosphere*; assessing impacts *at global, regional and local level*, vulnerabilities and developing innovative cost-effective adaptation and risk prevention measures, *including threats to cultural heritage*; supporting mitigation policies and defining fast-action strategies *for climate responses within few decades.*
Amendment 154
Proposal for a regulation
Annex I – part III – point 5.3 – point b – paragraph 1

*Text proposed by the Commission*
The aim is to provide knowledge for the management of natural resources that achieves a sustainable balance between limited resources and the needs of society and the economy. Activities shall focus on: furthering our understanding of the functioning of ecosystems, their interactions with social systems and their role in sustaining the economy and human well-being; and providing knowledge and tools for effective decision making and public engagement.

*Amendment*
The aim is to provide knowledge for the management of natural resources that achieves a sustainable balance between limited resources and the needs of society and the economy. Activities shall focus on: ensuring action to safeguard the sustainable transition, management and use of water resources and water services, furthering our understanding of the functioning of ecosystems, including the regulatory role played by oceans and forests to prevent global warming, their interactions with social systems and their role in sustaining the economy and human well-being; and providing knowledge and tools for effective decision making and public engagement.

Amendment 155
Proposal for a regulation
Annex I – part III – point 5.3 – point c – introductory part

*Text proposed by the Commission*
(c) Ensuring the sustainable supply of non-energy and non-agricultural raw materials

*Amendment*
(c) Ensuring the sustainable use, management and supply of non-energy and non-agricultural raw materials

Amendment 156
Proposal for a regulation
Annex I – part III – point 5.3 – point c – paragraph 1

*Text proposed by the Commission*
The aim is to improve the knowledge base on raw materials and develop innovative

*Amendment*
The aim is to improve the knowledge base on raw materials and develop innovative
solutions for the cost-effective and environmentally friendly exploration, extraction, processing, recycling and recovery of raw materials and for their substitution by economically attractive alternatives with a lower environmental impact. Activities shall focus on: improving the knowledge base on the availability of raw materials; promoting the sustainable supply and use of raw materials; finding alternatives for critical raw materials; and improving societal awareness and skills on raw materials.

solutions for the cost-effective, resource efficient and environmentally friendly use, recycling and recovery of raw materials and for their substitution by economically attractive alternatives with a lower environmental impact. Activities shall focus on: improving the knowledge base on the availability of raw materials; promoting the sustainable supply and use of raw materials; promoting eco-design, finding alternatives for critical raw materials; developing closed-loop processes and systems, support recycling and reuse strategies and technology; demand-side measure empowering citizens and consumers for the reduction of raw materials consumption and wastage, improving societal awareness and skills on raw materials.

Amendment 157
Proposal for a regulation
Annex I – part III – point 5.3 – point d – paragraph 1

**Text proposed by the Commission**

The aim is to foster all forms of eco-innovation that enable the transition to a green economy. Activities shall focus on: strengthening eco-innovative technologies, processes, services and products and boosting their market uptake and replication, with special attention for SMEs; supporting innovative policies and societal changes; measuring and assessing progress towards a green economy; and fostering resource efficiency through digital systems.

**Amendment**

The aim is to foster all forms of eco-innovation that enable the transition to a green economy. Activities shall focus on: strengthening eco-innovative technologies (including technologies and new materials for cultural heritage preservation and restoration), processes, services and products and boosting their market uptake and replication, with special attention for SMEs; supporting innovative policies and societal changes; measuring and assessing progress towards a green economy; and fostering resource efficiency through digital systems.
Amendment 158

Proposal for a regulation
Annex I – Part III – point 5.3. – point e

Text proposed by the Commission

(e) Developing comprehensive and sustained global environmental observation and information systems

The aim is to ensure the delivery of the long-term data and information required to address this challenge. Activities shall focus on the capabilities, technologies and data infrastructures for earth observation and monitoring that can continuously provide timely and accurate information, forecasts and projections. Free, open and unrestricted access to interoperable data and information will be encouraged.

Amendment

The aim is to ensure the delivery of the long-term data and information required to address this challenge. Activities shall focus on the capabilities, technologies and data infrastructures for earth observation and monitoring from both remote sensing and in situ measurements that can continuously provide timely accurate information and permit forecasts and projections. Free, open and unrestricted access to interoperable data and information will be encouraged.

Amendment 159

Proposal for a regulation
Annex I – part III – point 6.3.2 – paragraph 1

Text proposed by the Commission

The aim is to foster the development of innovative societies and policies in Europe through the engagement of citizens, enterprises and users in research and innovation and the promotion of coordinated research and innovation policies in the context of globalisation. Particular support will be provided for the development of the ERA and the development of framework conditions for innovation.

Amendment

The aim is to foster the development of innovative societies and policies in Europe through the engagement of citizens, including persons with disabilities, enterprises and users in research and innovation and the promotion of coordinated research and innovation policies in the context of globalisation. Particular support will be provided for the development of the ERA and the development of framework conditions for innovation.
Amendment 160

Proposal for a regulation
Annex I – part III – point 6.3.1 – paragraph 2 – point c

Text proposed by the Commission
(c) ensure societal engagement in research and innovation;

Amendment
(c) ensure societal engagement, also by consulting civil society organisations, in particular organisations of persons with disabilities, in research and innovation;

Justification

In order to produce research which is useful and meaningful to society, it is vital that persons with disabilities and their representative organisations are fully included in research projects funded by Horizon 2020. This is key if we want to ensure that European research delivers results in line with the needs of society and citizens, especially persons with disabilities. At this stage, no mention is currently made of involving persons with disabilities in Horizon 2020 research and the proposal should be amended accordingly.

Amendment 161

Proposal for a regulation
Annex I – part III – point 6.3.1 – paragraph 2 – point c

Text proposed by the Commission
(c) ensure societal engagement in research and innovation;

Amendment
(c) ensure societal engagement in research and innovation; increase societal appreciation of science

Justification

The perception of the importance science is an important factor for the society.

Amendment 162

Proposal for a regulation
Annex I – part III – point 6.3.3 – paragraph 2 – point d

Text proposed by the Commission
(d) increase Europe's resilience to crises and disasters;

Amendment
(d) increase Europe's prevention, response and resilience to crises and disasters, including natural and man-made
Amendment 163

Proposal for a regulation
Annex I – part V – point 1 – paragraph 1

Text proposed by the Commission

Europe is facing a number of structural weaknesses when it comes to innovation capacity and the ability to deliver new services, products and processes. Among the main issues at hand are Europe's relatively poor record in talent attraction and retention; the underutilisation of existing research strengths in terms of creating economic or social value; low levels of entrepreneurial activity; a scale of resources in poles of excellence which is insufficient to compete globally; and an excessive number of barriers to collaboration within the knowledge triangle of higher education, research and business on a European level.

Amendment

Europe is facing a number of structural weaknesses when it comes to innovation capacity and the ability to deliver new services, products and processes. Among the main issues at hand are Europe's relatively poor record in talent attraction and retention; the underutilisation of existing research strengths in terms of creating economic or social value; low levels of entrepreneurial activity; a scale of resources in poles of excellence which is insufficient to compete globally; and an excessive number of barriers to collaboration within the knowledge triangle of higher education, research and business on a European level.

Amendment 164

Proposal for a regulation
Annex I – part V – point 2 – paragraph 2

Text proposed by the Commission

The EIT will address these issues by promoting structural changes in the European innovation landscape. It will do so by fostering the integration of higher education, research and innovation of the highest standards, thereby creating new environments conducive to innovation, and by promoting and supporting a new generation of entrepreneurial people. In doing so, the EIT will contribute fully to

Amendment

The EIT will address these issues by promoting structural changes in the European innovation landscape. It will do so by fostering the integration of higher education, research and innovation of the highest standards, thereby spreading the co-location centres of the KICs throughout European regions and so creating new environments conducive to innovation, as well as by promoting and
the objectives of Europe 2020 and notably the Innovation Union and Youth on the Move flagship initiatives. Supporting a new generation of entrepreneurial people. In doing so, the EIT will contribute fully to the objectives of Europe 2020 and notably the Innovation Union and Youth on the Move flagship initiatives.

Amendment 165

Proposal for a regulation
Annex I – part V – point 2 – paragraph 4

Text proposed by the Commission
The EIT, via its KICs, operates in line with business logic. Strong leadership is a prerequisite: each KIC is driven by a CEO. KIC partners are represented by single legal entities to allow more streamlined decision-making. KICs must produce annual business plans, including an ambitious portfolio of activities from education to business creation, with clear targets and deliverables, looking for both market and societal impact. The current rules concerning participation, evaluation and monitoring of KICs allow fast-track, business-like decisions.

Amendment
The EIT, via its KICs, operates in line with business logic. Strong leadership is a prerequisite: each KIC is driven by a CEO. KIC partners are represented by single legal entities to allow more streamlined decision-making. KICs must produce annual business plans, including an ambitious portfolio of activities from education to business creation, with clear targets and deliverables, looking for both market and societal impact, and clear added value determined by a results-oriented approach. The current rules concerning participation, evaluation and monitoring of KICs allow fast-track, business-like decisions.

Justification
Although the term ‘results-oriented approach’ is in the title, no reference is made to it in the paragraph itself; added value determined by such an approach should be explicitly included however.

Amendment 166

Proposal for a regulation
Annex I – part V – point 3 – point f – paragraph 2

Text proposed by the Commission
The EIT will make a strong contribution to the objectives set in Horizon 2020, in

Amendment
The EIT will make a strong contribution to the objectives set in Horizon 2020, in
particular by addressing societal challenges in a way complementing other initiatives in these areas. It will test out new and simplified approaches to funding and governance and thereby play a pioneering role within the European innovation landscape. Its approach to funding will be firmly based on a strong leverage effect, mobilising both public and private funds. Moreover, it will employ entirely new vehicles for targeted support to individual activities through the EIT Foundation.

Amendment 167

Proposal for a regulation
Annex I – part V – point 3 – point g – paragraph 2

Text proposed by the Commission

Via the KICs and their co-location centres – nodes of excellence, bringing together higher education, research and business partners in a given geographical location – the EIT will also be linked to regional policy. In particular, it shall ensure a better connection between higher education institutions and regional innovation and growth, in the context of regional and national smart specialisation strategies. In doing so, it will contribute to the objectives of the Union’s Cohesion Policy.

Amendment

Via the KICs and their co-location centres – nodes of excellence, bringing together higher education, research and business partners in a given geographical location – the EIT will also be linked to regional policy. In particular, it shall ensure a better connection between higher education institutions, the labour market and regional and local innovation and growth, in the context of local, regional and national smart specialisation strategies. In doing so, it will contribute to the objectives of the Union’s Cohesion Policy.

Justification

If higher education is not linked to the labour market too, and to the regional and local labour market in particular, Europe will not be able to plug one of the major gaps it is suffering in terms of economic growth.

Amendment 168

Proposal for a regulation
Annex II - Table

Text proposed by the Commission

RR\922943EN.doc 413/595  PE489.637v03-00
I **Excellent science, of which:**

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>27818</td>
</tr>
<tr>
<td>1.</td>
<td>The European Research Council</td>
<td>15008</td>
</tr>
<tr>
<td>2.</td>
<td>Future and Emerging Technologies</td>
<td>3505</td>
</tr>
<tr>
<td>3.</td>
<td>Marie Curie actions on skills, training and career development</td>
<td>6503</td>
</tr>
<tr>
<td>4.</td>
<td>European research infrastructures (including eInfrastructures)</td>
<td>2802</td>
</tr>
</tbody>
</table>

II **Industrial leadership, of which:**

<p>| | | |</p>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>20280</td>
</tr>
<tr>
<td>1.</td>
<td>Leadership in enabling and industrial technologies*</td>
<td>15580 of which 500 for EIT</td>
</tr>
<tr>
<td>2.</td>
<td>Access to risk finance**</td>
<td>4000</td>
</tr>
<tr>
<td>3.</td>
<td>Innovation in SMEs</td>
<td>700</td>
</tr>
</tbody>
</table>

III **Societal challenges, of which**

<p>| | | |</p>
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<thead>
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<tbody>
<tr>
<td></td>
<td></td>
<td>35888</td>
</tr>
<tr>
<td>1.</td>
<td>Health, demographic change and wellbeing;</td>
<td>9077 of which 292 for EIT</td>
</tr>
<tr>
<td>2.</td>
<td>Food security, sustainable agriculture, marine and maritime research and the bio-economy;</td>
<td>4694 of which 150 for EIT</td>
</tr>
<tr>
<td>3.</td>
<td>Secure, clean and efficient energy</td>
<td>6537 of which 210 for EIT</td>
</tr>
<tr>
<td>4.</td>
<td>Smart, green and integrated transport</td>
<td>7690 of which 247 for EIT</td>
</tr>
<tr>
<td>5.</td>
<td>Climate action, resource efficiency and raw materials</td>
<td>3573 of which 115 for EIT</td>
</tr>
<tr>
<td>6.</td>
<td>Inclusive, innovative and secure societies</td>
<td>4317 of which 138 for EIT</td>
</tr>
</tbody>
</table>

European Institute of Innovation and Technology (EIT) | 1542 + 1652***
Non-nuclear direct actions of the Joint Research Centre | 2212

**TOTAL** | **87740**

*Including **EUR 8975 million** for Information and Communication Technologies (ICT) of which **EUR 1795 million** for photonics and micro-and nanoelectronics, **EUR 4293 million** for nanotechnologies, advanced materials and advanced manufacturing and processing, **EUR 575 million** for biotechnology and **EUR 1737 million** for space. As a result, **EUR 6663 million** will be available to support Key Enabling Technologies.

** Around **EUR 1131 million** of this amount may go towards the implementation of Strategic Energy Technology Plan (SET Plan) projects. Around one third of this may go to SMEs.

*** The total amount will be made available through allocations as foreseen in Article 6(3). The second allocation of **EUR 1652 million** shall be made available pro-rata from the budgets of the societal challenges and Leadership in enabling and industrial technologies, on an indicative basis and subject to the review set out in Article 26(1)

**Amendment**

I **Excellent science, of which:**

<p>| | | |</p>
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<tbody>
<tr>
<td></td>
<td></td>
<td>29,00%</td>
</tr>
<tr>
<td>1.</td>
<td>The European Research Council</td>
<td>14,2%</td>
</tr>
<tr>
<td>2.</td>
<td>Future and Emerging Technologies</td>
<td>3.9%</td>
</tr>
<tr>
<td>3.</td>
<td>Marie Curie actions on skills, training and career</td>
<td>7.4%</td>
</tr>
<tr>
<td>4.</td>
<td>European research infrastructures (including eInfrastructures)</td>
<td>3.5%</td>
</tr>
</tbody>
</table>

| II | Industrial leadership, of which: | 25.2% |
| 1. | Leadership in enabling and industrial technologies* | 17.7% |
| 2. | Access to risk finance** | 4.5% |
| 3. | Innovation in SMEs | 3% |

| III | Societal challenges, of which | 40.3% |
| 1. | Health, demographic change and wellbeing; | 12% |
| 2. | Food security, sustainable agriculture, marine and maritime research and the bio- economy; | 5.3% |
| 3. | Secure, clean and efficient energy | 7.5% |
| 4. | Smart, green and integrated transport | 8.7% |
| 5. | Climate action, resource efficiency and raw materials | 4.3% |
| 6. | Inclusive, innovative and secure societies | 2.5% |

European Institute of Innovation and Technology (EIT) 3%
Non-nuclear direct actions of the Joint Research Centre 2.5%

TOTAL 100%

*Including 57.6% for Information and Communication Technologies (ICT) of which 11.5% for photonics and micro-and nanoelectronics, 27.6% for nanotechnologies, advanced materials and advanced manufacturing and processing, 3.7% for biotechnology and 11.1% for space. As a result, 42.9% will be available to support Key Enabling Technologies.
** Around 28.3% of this amount may go towards the implementation of Strategic Energy Technology Plan (SET Plan) projects. Around one third of this may go to SMEs

*Deleted*
**PROCEDURE**

| Title | Establishment of Horizon 2020 - The Framework Programme for Research and Innovation (2014-2020) |
| Committee responsible | ITRE |
| Date announced in plenary | 13.12.2011 |
| Opinion by | ENVI |
| Date announced in plenary | 13.12.2011 |
| Rapporteur | Cristian Silviu Bușoi |
| Date appointed | 20.1.2012 |
| Date adopted | 19.9.2012 |
| Result of final vote | +: 50  
 -: 1  
 0: 10 |
| Substitute(s) present for the final vote | Frieda Brepoels, Cristian Silviu Bușoi, Nikos Chrysogelos, Christofer Fjellner, Gaston Franco, Romana Jordan, Miroslav Mikolášik, James Nicholson, Justas Vincas Paleckis, Vittorio Prodi, Britta Reimers, Christel Schaldemose, Alda Sousa, Anna Záborská, Andrea Zanoni |
| Substitute(s) under Rule 187(2) present for the final vote | Agustin Díaz de Mera García Consuegra |
20.9.2012

OPINION OF THE COMMITTEE ON TRANSPORT AND TOURISM

for the Committee on Industry, Research and Energy


Rapporteur: Nathalie Griesbeck

exPA/905191+AM/910541

SHORT JUSTIFICATION

The set of proposals for ‘Horizon 2020’, drawn up fully in line with the Commission Communication ‘A Budget for Europe 2020’, wholly supports the Europe 2020 strategy, which identified research and innovation as central to achieving the objectives of smart, sustainable and inclusive growth. The set consists of the proposals for:

(1) a Framework Programme for Horizon 2020 (Treaty on the Functioning of the European Union – TFEU);
(2) a single set of Rules for Participation and Dissemination (TFEU);
(3) a single specific programme to implement Horizon 2020 (TFEU); as well as
(4) a single proposal for the parts of Horizon 2020 corresponding to the Euratom Treaty.

The overall political narrative and background to these legislative proposals is provided by a Commission communication adopted together with them, which addresses a number of major cross-cutting elements such as simplification and how the approach to innovation has been strengthened.

Horizon 2020 contributes directly to tackling the major societal challenges identified in Europe 2020 and its flagship initiatives. It will contribute equally to creating industrial leadership in Europe. It will also increase excellence in the science base, essential for the sustainability and long-term prosperity and well-being of Europe. To achieve these aims, the proposals include a full range of support that is integrated across the research and innovation cycle. Horizon 2020 therefore brings together and strengthens activities currently funded under the 7th Framework Programme for Research, the innovation parts of the Competitiveness and Innovation Framework Programme, and the European Institute of Innovation and Technology (EIT). In this way, the proposals are also designed to realise a substantial simplification for participants.
Framework Programme and specific programme

Two documents were referred to the Committee on Transport and Tourism (TRAN): draft regulation COM(2011)809, subject to the codecision procedure, and document COM(2011)811, subject to a consultation procedure. As the consultation procedure only offers the European Parliament a limited role – without any possibility of really negotiating the content with the Council – your rapporteur decided to concentrate the work of the TRAN Committee on the Framework Programme and possibly to introduce important elements of the specific programme into the Framework Programme. The Committee on Industry, Research and Energy (ITRE) indicated that it would take the same approach.

The rapporteur of this opinion wished to focus solely on the part concerning transport, given that this will be the opinion of the Committee on Transport and Tourism. In the Horizon 2020 programme, the transport dimension is dealt with from the point of view of smart, green and integrated transport. The rapporteur wanted to follow that approach, but also to align the opinion with the position expressed by the European Parliament’s Committee on Transport and Tourism in previously adopted reports.

The rapporteur wanted, too, to highlight key aspects of the transport policy, such as the EU’s energy supply, the diversification of energy sources for transport and the impact of the latter on the environment.

Moreover, in a context of strong economic competition at global level in the transport sector, the rapporteur hoped to underline the importance of maintaining and promoting EU development and innovation in this sector with a view to boosting growth and creating jobs.

In addition, at a time when Europe’s demographics and European lifestyles are changing and in the hope of achieving an effective and competitive internal market, the report emphasises the quality of transport systems, which must be multimodal, and notes that mobility in urban areas is a major challenge. To achieve this, the creation of a Knowledge and Innovation Community (KIC) for urban mobility should be encouraged.

Finally, the rapporteur wished to reaffirm the essential social role played by transport, particularly for the most vulnerable, and the fact that good transport planning helps to ensure territorial cohesion and combat inequalities.

Horizon 2020 and the Connecting Europe Facility

Horizon 2020 and the Connecting Europe Facility (CEF) – the other major initiative in the EU budget for the transport sector – must be coordinated to ensure that they complement one another and do not overlap. It is important, too, when coordinating the CEF and Horizon 2020 to ensure that the research and innovation chain leading to infrastructure deployment is not interrupted. This is particularly essential where significant technological progress in the fields of transport, energy and ICT will be needed to help the EU to achieve the ambitious targets laid down in the Europe 2020 strategy.
It is important to emphasise that all support for research and innovation activities through financial instruments will be implemented by financial instruments linked to Horizon 2020.

**AMENDMENTS**

The Committee on Transport and Tourism calls on the Committee on Industry, Research and Energy, as the committee responsible, to incorporate the following amendments in its report:

**Amendment 1**

**Proposal for a regulation**

**Recital 3**

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
</tr>
</thead>
<tbody>
<tr>
<td>(3) The Union is committed to achieving the Europe 2020 strategy, which has set the objectives of smart, sustainable and inclusive growth, highlighting the role of research and innovation as key drivers of social and economic prosperity and of environmental sustainability and setting itself the goal to increase spending on Research and Development to reach 3 % of gross domestic product (GDP) by 2020 while developing an innovation intensity indicator. In this context, the Innovation Union flagship initiative sets out a strategic and integrated approach to research and innovation, setting the framework and objectives to which future Union research and innovation funding should contribute. Research and innovation are also key factors for other Europe 2020 flagship initiatives, notably on resource efficient Europe, an industrial policy for the globalisation era, and a digital agenda for Europe. Moreover, for achieving the Europe 2020 objectives relating to research and innovation, Cohesion policy has a key role to play through building capacity and providing a stairway to excellence.</td>
<td>(3) The Union is committed to achieving the Europe 2020 strategy, which has set the objectives of smart, sustainable and inclusive growth, highlighting the role of research and innovation as key drivers of social and economic prosperity and of environmental sustainability and setting itself the goal to increase spending on Research and Development to reach 3 % of gross domestic product (GDP) by 2020 while developing an innovation intensity indicator. In this context, the Innovation Union flagship initiative sets out a strategic and integrated approach to research and innovation, setting the framework and objectives to which future Union research and innovation funding should contribute. Research and innovation are also key factors for other Europe 2020 flagship initiatives, notably on resource efficient Europe, an industrial policy for the globalisation era, and a digital agenda for Europe. Moreover, for achieving the Europe 2020 objectives relating to research and innovation, Cohesion policy has a key role to play through building capacity and providing a stairway to excellence. <strong>Account should be taken of the varying levels of development in the regions and</strong></td>
</tr>
</tbody>
</table>
the investment made in research and innovation, supporting the regions that are furthest away from the goals set by the EU 2020 strategy through specific actions and/or programmes;

Justification

The varying levels of development in European regions, particularly in terms of innovation and research, mean that some regions are still far from achieving the goals set by the EU 2020 strategy. Consequently, some regions should be supported with specific actions to bring them closer to the EU 2020 goals, in line with their levels of investment in research and innovation.

Amendment 2

Proposal for a regulation
Recital 10 a (new)

Text proposed by the Commission

(10a) In the White Paper entitled ‘Roadmap to a Single European Transport Area - Towards a competitive and resource-efficient transport system’, the Commission takes the view that research and innovation policy in the field of transport should provide growing and consistent support for the development of key technologies with a view to transforming the European transport system into a modern, efficient, sustainable and accessible service. The White Paper establishes the objective of achieving by 2050 a 60% reduction in the 1990 level of greenhouse gas emissions.

Amendment 3

Proposal for a regulation
Recital 26

1 COM(2011)0144
(26) To achieve maximum impact, Horizon 2020 should develop close synergies with other Union programmes in areas such as education, space, environment, competitiveness and SMEs, the internal security, culture and media and with the Cohesion Policy funds and Rural Development Policy, which can specifically help to strengthen national and regional research and innovation capabilities in the context of smart specialisation strategies.

(26) To achieve maximum impact, Horizon 2020 should develop close synergies with other Union programmes in areas such as education, space, transport, environment, competitiveness and SMEs, the internal security, culture and media and with the Cohesion Policy funds, Rural Development Policy and the Connecting Europe Facility, which can specifically help to strengthen national and regional research and innovation capabilities in the context of smart specialisation strategies.

Justification

A link needs to be established between the Horizon 2020 framework programme and the CEF given that, if the objectives of the Transport White Paper are to be achieved, it is essential to focus on smart ecological transport, something that will be possible only through funding on innovation and research in the field of transport.

Amendment 4

Proposal for a regulation

Recital 29

(29) A greater impact should also be achieved by combining Horizon 2020 and private sector funds within public-private partnerships in key areas where research and innovation could contribute to Europe's wider competitiveness goals and help tackle societal challenges. The public-private partnerships in the form of Joint Technology Initiatives launched under Decision No 1982/2006/EC of the European Parliament and of the Council of 18 December 2006 concerning the Seventh Framework programme of the European Community for research, technological development and demonstration activities (2007-13) may be continued using more fit-for-purpose structures.

(29) A greater impact should also be achieved by combining Horizon 2020 and private sector funds within public-private partnerships in key areas where research and innovation could contribute to Europe's wider competitiveness goals and help tackle societal challenges. The public-private partnerships in the form of Joint Technology Initiatives launched under Decision No 1982/2006/EC of the European Parliament and of the Council of 18 December 2006 concerning the Seventh Framework programme of the European Community for research, technological development and demonstration activities (2007-13) may be continued using more fit-for-purpose structures and new ones.
may be launched.

Amendment 5
Proposal for a regulation
Article 4 – paragraph 1

Text proposed by the Commission
Horizon 2020 shall play a central role in the delivery of the Europe 2020 strategy for smart, sustainable and inclusive growth by providing a common strategic framework for the Union's research and innovation funding, thus acting as a vehicle for leveraging private investment, creating new job opportunities and ensuring Europe's long-term sustainable growth and competitiveness.

Amendment
Horizon 2020 shall play a central role in the delivery of the Europe 2020 strategy for smart, sustainable and inclusive growth by providing a common strategic framework for the Union's research and innovation funding, thus acting as a vehicle for leveraging private investment, creating new job opportunities and ensuring Europe's long-term sustainable growth and competitiveness, by reducing the research and innovation gap in the EU's less developed regions through specific actions and programmes.

Justification
This reference is already included in the recitals but should be inserted in the actual regulation, in the article headed 'Union added value'. Particular attention should be paid to the varying levels of development in terms of investment in innovation and research.

Amendment 6
Proposal for a regulation
Article 7 – paragraph 1 – point b – point iii

Text proposed by the Commission
(iii) have close economic and geographical links to the Union;

Amendment
(iii) have close economic and geographical links to the Union or maintain special historical and cultural ties with Member States of the Union;

Amendment 7
Proposal for a regulation
Article 14 – paragraph 1
Text proposed by the Commission

Horizon 2020 shall be implemented in a manner ensuring that the priorities and actions supported are relevant to changing needs and take account of the evolving nature of science, technology, innovation, markets and society, where innovation includes business, organisational and social aspects.

Amendment

Horizon 2020 shall be implemented in a manner ensuring that the priorities and actions supported are relevant to changing needs and take account of the evolving nature of science, technology, innovation, markets and society, where innovation includes business, organisational and social aspects. **Technology neutrality is an absolutely essential precondition for an effective innovation policy.**

Amendment 8

Proposal for a regulation
Article 17 – paragraph 1

Text proposed by the Commission

Horizon 2020 shall be implemented in a way which is complementary to other Union funding programmes, including the Structural Funds.

Amendment

Horizon 2020 shall be implemented in a way which is complementary to other Union funding programmes, including the Structural Funds, the Connecting Europe Facility and the specific programmes and measures to provide support and compensation under the regional and cohesion policy.

Justification

With a view to consistency and efficiency, complementarity should be ensured between the Horizon 2020 programme and EU funding programmes, in particular the CEF and the Structural Funds, which should also take account of specific programmes and measures.

Amendment 9

Proposal for a regulation
Article 19 – paragraph 2 a (new)

Text proposed by the Commission

2a. Public-private partnerships shall follow transparent procedures for the deployment of funds and, to allow greater

Amendment

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PE489.637v03-00

EN
flexibility, funds may be either disbursed through competitive calls for proposals or directly allocated where justified.

Amendment 10
Proposal for a regulation
Article 19 – paragraph 3 – point a a (new)

Text proposed by the Commission

(aa) measures in line with EU political priorities;

Amendment 11
Proposal for a regulation
Annex I – paragraph 14 – point b

Text proposed by the Commission

(b) Food security, sustainable agriculture, marine and maritime research, and the bio-economy;

Amendment 12
Proposal for a regulation
Annex I – paragraph 17

Text proposed by the Commission

The specific objective ‘Inclusive, innovative and secure societies’ also includes an activity to close the research and innovation divide with specific measures to unlock excellence in less developed regions of the Union.

Amendment 13

The specific objective ‘Inclusive, innovative and secure societies’ also includes an activity to close the research and innovation divide with specific measures to unlock excellence in less developed regions of the Union, in particular the outermost regions, in line with their specific characteristics referred to in Articles 174, 349 and 355 TFEU.
Proposal for a regulation
Annex I – section 2 – point 1 – point 1.3 – point 1.3.3 – point e – paragraph 1

Text proposed by the Commission
Applying design and the development of converging technologies to create new business opportunities, including the preservation of materials with historical or cultural value.

Amendment
Applying design and the development of converging technologies to create new business opportunities, including the preservation of materials with historical or cultural value, as well as improving eco-tourism and sustainable tourism destination networks in the field of historical, cultural, industrial and natural heritage.

Amendment 14
Proposal for a regulation
Annex I – section 3 – point 2 – introductory part

Text proposed by the Commission
2. Food security, sustainable agriculture, marine and maritime research and the bio-economy

Amendment
2. Food security, sustainable agriculture, marine and maritime research, sustainable tourism and the bio-economy

Amendment 15
Proposal for a regulation
Annex I – section 3 – point 2 – point 2.3 – point c a (new)

Text proposed by the Commission
(c) The aim is to improve networking and information within European eco-and sustainable tourism potential, thereby better protecting cultural, historical, industrial and natural heritage.

Amendment
(c) The aim is to improve networking and information within European eco-and sustainable tourism potential, thereby better protecting cultural, historical, industrial and natural heritage.

Amendment 16
Proposal for a regulation
Annex I – section 3 – point 3 – point 3.2 – paragraph 2
Speeding up this development will require a strategic approach at Union level, spanning energy supply, demand and use in buildings, services, transport and industrial value chains. This will entail aligning resources across the Union, including cohesion policy funds, in particular through the national and regional strategies for smart specialisation, emission trading schemes (ETS), public procurement and other financing mechanisms. It will also require regulatory and deployment policies for renewables and energy efficiency, tailored technical assistance and capacity-building to remove non-technical barriers.

As regards the outermost regions, the possibility of incentives should be considered to enable them to develop renewable energy sources and hence tap their alternative energy potential while reducing their dependence on fossil fuels.

Amendment 17

Proposal for a regulation
Annex I – section 3 – point 4 – introductory part

4. Smart, green and integrated transport

Amendment

4. Smart, green and integrated transport and mobility

Amendment 18

Proposal for a regulation
Annex I – section 3 – point 4 – point 4.1 – paragraph 1

The specific objective is to achieve a European transport system that is resource-efficient, environmentally-friendly, safe and seamless for the benefit of citizens, the

The specific objective is to achieve a European transport system that is resource-efficient, climate- and environmentally-friendly, safe and interoperable for the
economy and society. benefit of citizens, users, workers and employees and the economy, as well as society.

Amendment 19

Proposal for a regulation
Annex I – section 3 – point 4 – point 4.1 – paragraph 2

Text proposed by the Commission

Europe must reconcile the growing mobility needs of its citizens with the imperatives of economic performance and the requirements of a low-carbon society and climate resilient economy. Despite its growth, the transport sector must achieve a substantial reduction in greenhouse gases and other adverse environmental impacts, and must break its dependency on oil, while maintaining high levels of efficiency and mobility.

Amendment

Europe must reconcile the changing needs in terms of the mobility of its citizens, shaped by new demographic and societal challenges, and territorial cohesion with the imperatives of economic performance and the requirements of a low-carbon society and climate resilient economy. Despite its growth, the transport sector must achieve a substantial reduction in greenhouse gases and other adverse environmental impacts, and must break its dependency on oil and other fossil fuels that are largely supplied by third countries and whose supplies are limited, while maintaining high levels of efficiency and mobility without increasing the remoteness of regions that are already isolated, in particular the outermost regions.

Amendment 20

Proposal for a regulation
Annex I – section 3 – point 4 – point 4.1 – paragraph 3

Text proposed by the Commission

Sustainable mobility can only be achieved through a radical change in the transport system, inspired by breakthroughs in transport research, far-reaching innovation, and a coherent, Europe-wide

Amendment

Sustainable mobility can only be achieved through a radical change in the transport system, inspired by breakthroughs in transport research, far-reaching innovation, and a coherent, Europe-wide
implementation of greener, safer and smarter transport solutions.

implementation of greener, safer and smarter transport solutions, including investments in innovative infrastructure for all modes of transport.

Amendment 21
Proposal for a regulation
Annex I – section 3 – point 4 – point 4.1 – paragraph 3 a (new)

Text proposed by the Commission

Amendment

Research and innovation in transport must contribute to establishing a single European transport area, through developing technologies and systems, such as ETCS and ERTMS, aimed at removing cross border obstacles. Technologies and systems facilitating the mobility of Union citizens, such as a European multimodal travel planner, must also be supported and implemented Europe-wide.

Amendment 22
Proposal for a regulation
Annex I – section 3 – point 4 – point 4.1 – paragraph 4

Text proposed by the Commission

Amendment

Research and innovation must bring about focussed and timely advances that will help achieve key Union policy objectives, while boosting economic competitiveness, supporting the transition to a climate-resilient and low-carbon economy, and maintaining global market leadership.

Research and innovation must bring about focussed and timely advances that will help achieve key Union policy objectives, while boosting economic competitiveness, supporting the transition to a climate-resilient, low-carbon economy, increasing mobility across Europe and maintaining global market leadership.

Amendment 23
Proposal for a regulation
Annex I – section 3 – point 4 – point 4.2 – paragraph 1
Text proposed by the Commission

Transport is a major driver of Europe’s economic competitiveness and growth. It ensures the mobility of people and goods necessary for an integrated European single market and an open and inclusive society. It represents one of Europe’s greatest assets in terms of industrial capability and quality of service, playing a leading role in many world markets.

Transport industry and transport equipment manufacturing together represent 6.3 % of the Union’s GDP. At the same time, the European transport industry faces increasingly fierce competition from other parts of the world. Breakthrough technologies will be required to secure Europe’s future competitive edge and to mitigate the drawbacks of our current transport system.

Amendment

The transport sector is a major contributor to greenhouse gases and generates up to a quarter of all emissions. Transport is 96 % dependent on fossil fuels. Meanwhile, congestion is an increasing problem; systems are not yet sufficiently smart; alternatives for shifting between different modes of transport are not always attractive; road fatalities remain dramatically high at 34 000 per year in the Union; citizens and businesses expect a transport system that is safe and secure.

Amendment 24

Proposal for a regulation
Annex I – section 3 – point 4 – point 4.2 – paragraph 2

Text proposed by the Commission

The transport sector is a major contributor to greenhouse gases and generates up to a quarter of all emissions. Transport is 96 % dependent on fossil fuels. Meanwhile, congestion is an increasing problem; systems are not yet sufficiently smart; alternatives for shifting between different modes of transport are not always attractive; road fatalities remain dramatically high at 34 000 per year in the Union; citizens and businesses expect a transport system that is accessible to all,

Amendment

The transport sector is a major contributor to greenhouse gases and generates up to a quarter of all emissions. Transport is 96 % dependent on fossil fuels. Meanwhile, congestion is an increasing problem; systems are not yet sufficiently smart; alternatives for shifting towards more sustainable modes of transport are not always attractive; road fatalities remain dramatically high at 34 000 per year in the Union; citizens and businesses expect a transport system that is accessible to all,
The urban context poses specific challenges to the sustainability of transport. safe and secure. The urban context poses specific challenges to a better balance of quality of life and the sustainability of transport and mobility.

Amendment 25

Proposal for a regulation
Annex I – section 3 – point 4 – point 4.2 – paragraph 3

Text proposed by the Commission

Within a few decades the expected growth rates of transport would drive European traffic into a gridlock and make its economic costs and societal impact unbearable. Passenger-kilometres are predicted to double over the next 40 years and grow twice as fast for air travel. Emissions would grow 35 % by 2050. Congestion costs would increase by about 50 %, to nearly EUR 200 billion annually. The external costs of accidents would increase by about EUR 60 billion compared to 2005.

Amendment

Within a few decades the expected growth rates of transport could drive European traffic into heavy congestion with disastrous economic and societal repercussions. Passenger-kilometres are predicted to double over the next 40 years and grow twice as fast for air travel. Emissions would grow 35 % by 2050. Congestion costs would increase by about 50 %, to nearly EUR 200 billion annually. The external costs of accidents would increase by about EUR 60 billion compared to 2005.

Amendment 26

Proposal for a regulation
Annex I – section 3 – point 4 – point 4.2 – paragraph 3 a (new)

Text proposed by the Commission

It will be crucial to support and develop innovative concepts in the delivery of transport and mobility services, through substantial improvements in green logistics and mobility management. New approaches in production, stockpiling and delivery of goods, as well as more efficient and rational responses to mobility needs and use of communication tools, should lead to a society with less waste in transport- and mobility-related services. A link shall be made between transport.
Business-as-usual is therefore not an option. Research and innovation, driven by policy objectives and focused on the key challenges, shall contribute substantially to achieve the Union's targets of limiting global temperature increase to 2°C, cutting 60% of CO2 emissions from transport, drastically reduce congestion and accident costs, and virtually eradicating road deaths by 2050.

In order to achieve these objectives by 2050, it is necessary to formulate more specific and concrete provisions for the period up to 2020. First and foremost this requires ambitious cuts in CO2 and other greenhouse gas emissions from transport (from 2009 levels). These emission cuts will be determined according to each transport mode with a view to achieving the 20-20-20 targets. Research and innovation must also help in the internalisation of external costs by 2020, drastically reduce congestion and accident costs, seek with determination to resolve road safety problems with a view to eradicating road deaths by 2050 and, in line with this goal, aim to halve road casualties by 2020. In its White Paper entitled ‘Roadmap to a Single European Transport Area – Towards a competitive and resource efficient transport system’ the Commission calls for these goals to be achieved by means of an innovative, sustainable and efficient transport policy.
The problems of pollution, congestion, safety and security are common throughout the Union and call for collaborative Europe-wide responses. Accelerating the development and deployment of new technologies and innovative solutions for vehicles, infrastructures and transport management will be key to achieve a cleaner and more efficient transport system in the Union; to deliver the results necessary to mitigate climate change and improve resource efficiency; to maintain European leadership on the world markets for transport related products and services. These objectives cannot be achieved through fragmented national efforts alone.

It is also essential to support existing solutions by creating effective, smart, interoperable and interconnected systems to support the SESAR, Galileo, EGNOS, GMES, ERTMS, RIS, SafeSeaNet, LRIT and ITS systems. Initiatives such as eSafety and eCall must also be continued.

Amendment

Proposal for a regulation
Annex I – part III – point 4 – point 4.2 – paragraph 6

Union level funding of transport research and innovation will complement Member States’ activities by focussing on activities with a clear European added-value. This means that emphasis will be placed on priority areas that match European policy objectives; where a critical mass of effort is necessary; where Europe-wide, interoperable transport solutions need to be pursued; or where pooling efforts trans-nationally can reduce research investment
risks, pioneer common standards and shorten time-to-market of research results. need to be pursued; or where pooling efforts trans-nationally can remove bottlenecks in the transport system (e.g. the low level of innovation as regards infrastructure in the EU-12) and reduce research investment risks, pioneer common standards and standardisation and shorten time-to-market of research results.

Amendment 30
Proposal for a regulation
Annex 1 – section 3 – point 4 – point 4.2 – paragraph 7

Text proposed by the Commission

Research and innovation activities shall include a wide range of initiatives that cover the full innovation chain. Several activities are specifically intended to help bring results to the market: a programmatic approach to research and innovation, demonstration projects, market take-up actions and support for standardisation, regulation and innovative procurement strategies all serve this goal. In addition, using stakeholders’ engagement and expertise will help bridge the gap between research results and their deployment in the transport sector.

Amendment

Research and innovation activities shall include a wide range of initiatives that cover the full innovation chain and follow an integrated approach to innovative transport solutions from innovation in relation to vehicles, to infrastructures as well as to transport systems. Several activities are specifically intended to help bring results to the market: the programmatic approach to research and innovation, the demonstration projects, the market take-up actions and the support for standardisation, regulation and innovative procurement strategies all serve this goal. In addition, using stakeholders’ engagement and expertise will help bridge the gap between research results and their deployment in the transport sector.

Amendment 31
Proposal for a regulation
Annex 1 – section 3 – point 4 – point 4.2 – paragraph 8

Text proposed by the Commission

Investing in research and innovation for a greener, smarter and more integrated transport system will make an important contribution to the Europe 2020 goals of smart, sustainable and inclusive growth

Amendment

Investing in research and innovation for a greener, smarter and more integrated reliable transport system will make an important contribution to the Europe 2020 goals of smart, sustainable and inclusive
and the objectives of the Innovation Union flagship initiative. The activities will support the implementation of the White Paper on Transport aiming at a Single European Transport Area. They will also contribute to the policy goals outlined in the flagship initiatives on 'Resource Efficient Europe', 'An Industrial Policy for the Globalisation Era' and 'A Digital Agenda for Europe'.

Amendment 32
Proposal for a regulation
Annex I – section 3 – point 4 – point 4.3 – point a – introduction

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Resource efficient transport that respects the environment</td>
<td>(a) Resource efficient transport that respects the environment and public health</td>
</tr>
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</table>

Amendment 33
Proposal for a regulation
Annex I – part III – point 4 – point 4.3 – point a – paragraph 1

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
</tr>
</thead>
<tbody>
<tr>
<td>The aim is to minimise transport's impact on climate and the environment by improving its efficiency in the use of natural resources, and by reducing its dependence on fossil fuels.</td>
<td>The aim is to minimise transport’s impact on climate and the environment, as well as on public health, by improving its quality, efficiency and effectiveness in the use of natural resources, and by reducing its dependence on fossil fuels, while diversifying fuel supply sources.</td>
</tr>
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</table>

Amendment 34
Proposal for a regulation
Annex I – section 3 – point 4 – point 4.3 – point a – paragraph 2
Text proposed by the Commission

The focus of activities shall be to reduce resource consumption and greenhouse gas emissions and improve vehicle efficiency, to accelerate the development and deployment of a new generation of electric and other low or zero emission vehicles, including through breakthroughs in engines, batteries and infrastructure; to explore and exploit the potential of alternative fuels and innovative and more efficient propulsion systems, including fuel infrastructure; to optimise the use of infrastructures, by means of intelligent transport systems and smart equipment; and to increase the use of demand management and public and non-motorised transport, particularly in urban areas.

Amendment

The focus of activities shall, as a first step, be to reduce resource consumption and greenhouse gas emissions and improve the energy efficiency of all kinds of vehicles, to accelerate the development and deployment of a new generation of low or zero emission vehicles (e.g. electric, hybrid and hydrogen vehicles, meaning not only cars, but also e-bicycles, tramways and trains) and the accompanying infrastructure, including through breakthroughs in engines, batteries and infrastructure and the use of renewables in rail, water and air transport. It is also essential to have a waste management policy linked to these innovations.

Moreover, all innovation aimed at achieving low or zero emissions in all modes of transport should be encouraged, including developing and harnessing the huge potential of alternative and sustainable fuels, as well as developing innovative and more efficient propulsion systems, work on optimising fuel systems, vehicle weights and aerodynamics, and development and infrastructure, and optimising the use of infrastructures by using intelligent transport systems and smart equipment. It is important to increase the use of public and non-motorised transport and intermodal mobility chains (walking-cycling, car sharing, carpooling, public and collective mobility), particularly in urban areas.

Amendment 35

Proposal for a regulation
Annex I – section 3 – point 4 – point 4.3 – point a – paragraph 2 a (new)
Finally, it has been proven over many years that motor vehicle emissions have an impact on public health. Consequently, reducing particulate emissions must continue to be one of the European Union’s priority objectives in the field of transport. To this end, it is essential to pursue this policy, focusing in particular on the development of alternative fuels. It is also essential to invest in innovative solutions to reduce noise pollution and vibrations. The development of alternative fuels and innovatory solutions to cut noise pollution and vibrations will help limit harmful emissions and improve the well-being of the community.

Amendment 36

Proposal for a regulation
Annex I – section 3 – point 4 – point 4.3 – point a – paragraph 2 a (new)

An approach and solutions need to be devised for the innovative, transparent and modern organisation of urban mobility, taking into account demographic social changes, along with proposals for the coexistence of the various transport modes in urban areas, including non-motorised transport, and links with the network.

Justification

This amendment should be included in the new paragraph proposed by the Rapporteur in her Amendment 18 introducing a new KIC for urban mobility and smart cities.

Amendment 37

Proposal for a regulation
Annex I – part III – point 4 – point 4.3 – point a – paragraph 2 a (new)
Consequently, reducing particulate and noise emissions must continue to be one of the European Union’s priority objectives in the field of transport. To this end, it is essential to pursue this policy, focusing in particular on the development of alternative fuels, infrastructure and Intelligent Transport Systems.

Amendment 38
Proposal for a regulation
Annex 1 – section 3 – point 4 – point 4.3 – point b – paragraph 1

Text proposed by the Commission
The aim is to reconcile the growing mobility needs with improved transport fluidity, through innovative solutions for seamless, inclusive, safe, secure and robust transport systems.

Amendment
The aim is to reconcile the growing mobility needs with improved transport fluidity, through innovative solutions for seamless, intermodal, inclusive, accessible, safe, secure and robust transport systems, not forgetting the importance of high-quality, innovative and intermodal infrastructure.

Amendment 39
Proposal for a regulation
Annex 1 – section 3 – point 4 – point 4.3 – point b – paragraph 2

Text proposed by the Commission
The focus of activities shall be to reduce congestion, improve accessibility and match user needs by promoting integrated door-to-door transport and logistics; to enhance inter-modality and the deployment of smart planning and management solutions; and to drastically reduce the occurrence of accidents and the impact of security threats.

Amendment
The focus of activities shall be to reduce congestion, improve accessibility and match user needs by promoting integrated and completely intermodal door-to-door transport, infrastructure and logistics; to enhance inter-modality and the deployment of smart planning and management solutions; and to drastically reduce the occurrence of accidents and the impact of security threats.
Amendment 40

Proposal for a regulation
Annex I – section 3 – point 4 – point 4.3 – point b – paragraph 2

Text proposed by the Commission

The focus of activities shall be to reduce congestion, improve accessibility and match user needs by promoting integrated door-to-door transport and logistics; to enhance inter-modality and the deployment of smart planning and management solutions; and to drastically reduce the occurrence of accidents and the impact of security threats.

Amendment

The focus of activities shall be to reduce congestion, improve accessibility and interoperability and match user needs chiefly by removing bottlenecks (i.e. the low level of innovation in infrastructure in large areas of Europe and the dearth of regional and small-scale aviation) and promoting users’ transport by promoting integrated door-to-door transport and logistics; to develop intelligent transport applications and systems for traffic management, integrated ticketing, travel information and payment and to accelerate the uptake of intermodal solutions for passengers; to adapt road infrastructure to unprotected road users and the needs of an ageing society; to identify benefits that ITS and cooperative systems can bring for infrastructure safety management; and to drastically reduce the occurrence of accidents (i.e. by improving communication between infrastructure, road managers and vehicles through smart systems as well as a better understanding of the behaviour of traffic participants in order to improve technological in-vehicle solutions and primary and secondary road safety prevention, developing ITS for road users, focusing on high risk groups such as two wheelers, cyclists, pedestrians) and the impact of security threats (i.e. developing reliable systems for threat detection in aviation as well as developing recording devices for maritime security).

Amendment 41

Proposal for a regulation
Annex I – section 3 – point 4 – point 4.3 – point b a (new)
(ba) Safety needs shall be addressed in order to maintain a balance between high-tech solutions and other solutions, including innovative road design and new techniques and technologies for enforcement.

Amendment 42

Proposal for a regulation
Annex I – section 3 – point 4 – point 4.3 – point b b (new)

(bb) The Commission should encourage the Member States to monitor normal traffic through a set of performance indicators.

Justification

The EU is already collecting data on accident outcomes and accident circumstances. However, monitoring countries' performance only on the basis of collision outcomes is not enough and has to be extended.

Amendment 43

Proposal for a regulation
Annex I – section 3 – point 4 – point 4.3 – point b c (new)

(bc) Safe walking and cycling should be one of the objectives of safety management, supported by research and development into new innovative approaches.

Amendment 44

Proposal for a regulation
Annex 1 – section 3 – point 4 – point 4.3 – point c – paragraph 1
The aim is to reinforce the competitiveness and performance of European transport manufacturing industries and related services.

The focus of activities shall be to develop the new generation of innovative transport means and to prepare the ground for the following one, by working on novel concepts and designs, smart control systems, interoperable standards, efficient production processes, shorter development times and reduced lifecycle costs.

The focus of activities shall be to develop the next generation of innovative transport means and transport systems and to prepare the ground for the following one, by working on novel concepts and designs, smart control systems, interoperable standards, smart transport services, smart intermodal infrastructures and efficient production and recycling processes and achieve shorter development times and reduced lifecycle costs.

Proposal for a regulation
Annex I – section 3 – point 4 – point 4.3 – point c a (new)

(ca) Smart logistics
The aim is to reconcile growing new consumer patterns with an efficient resource supply chain and optimal last-mile freight distribution.

The focus of activities shall be to better understand the impact of new and future consumer patterns and their impact on urban freight logistics, traffic and congestion; develop new IT and management tools for logistics, by improving real time information systems; manage, track and trace freight flows, integration and communication on vehicles and with infrastructure; develop unconventional systems for goods distribution; develop competitive intermodal solutions for the supply chain and logistics platforms that improve freight flows.

Amendment 47
Proposal for a regulation
Annex 1 – section 3 – point 4 – point 4.3 – point d – paragraph 2

Text proposed by the Commission

The focus of activities shall be to improve the understanding of transport related socio-economic trends and prospects, and provide policy makers with evidence-based data and analyses.

Amendment

The focus of activities shall be to improve the understanding of transport related socio-economic trends and prospects, and provide policy makers with evidence-based data and analyses. This also includes the impact of the liberalisation of the transport and mobility sector, such as the need to better understand the effect of rail liberalisation on the quality of services, the environment and the social interests of employees. There should be greater emphasis on reconciling the objectives of sustainability and social needs when planning transport policies in order to prevent, in particular, social inequalities in terms of mobility and to improve the situation of vulnerable users.
Amendment 48
Proposal for a regulation
Annex 1 – section 3 – point 4 – point 4.3 – point d a (new) – introduction

Text proposed by the Commission

Amendment

(d a) Knowledge and Innovation Community for urban mobility and smart cities

Amendment 49
Proposal for a regulation
Annex 1 – section 3 – point 4 – point 4.3 – point d a (new) – paragraph 1 (new)

Text proposed by the Commission

Amendment

In an increasingly urbanised European society, urban mobility will be a major challenge in the decades to come. It is a challenge in terms of the economy and jobs, but also in terms of the quality of life of the people living in urban settlements.

Amendment 50
Proposal for a regulation
Annex 1 – section 3 – point 4 – point 4.3 – point d a (new) – paragraph 2 (new)

Text proposed by the Commission

Amendment

In this context, the creation of a KIC for urban mobility is entirely relevant and should be encouraged. Teaching establishments, research centres and businesses brought together in this KIC will be able to work on developing sustainable mobility based on effective logistic chains for transporting passengers and goods in urban areas and suburbs. The aim will be to reduce traffic, accidents, air pollution and noise, but also to strengthen the internal market.
Amendment 51
Proposal for a regulation
Annex 1 – section 3 – point 4 – point 4.3 – point d a (new) – paragraph 3 (new)

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
</tr>
</thead>
<tbody>
<tr>
<td>The changes in urban mobility and the development of a smart transport network should encourage transport users to change their behaviour by promoting sustainable mobility and modes of transport. It is therefore important to develop safe infrastructures for pedestrians and cyclists, especially in cities and between cities, and to enhance the interoperability of transport services.</td>
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## PROCEEDURE

<table>
<thead>
<tr>
<th>Title</th>
<th>Establishment of Horizon 2020 - The Framework Programme for Research and Innovation (2014-2020)</th>
</tr>
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<tbody>
<tr>
<td>Committee responsible</td>
<td>ITRE</td>
</tr>
<tr>
<td>Date announced in plenary</td>
<td>13.12.2011</td>
</tr>
<tr>
<td>Opinion by</td>
<td>TRAN</td>
</tr>
<tr>
<td>Date announced in plenary</td>
<td>13.12.2011</td>
</tr>
<tr>
<td>Rapporteur</td>
<td>Nathalie Griesbeck</td>
</tr>
<tr>
<td>Date appointed</td>
<td>19.12.2011</td>
</tr>
<tr>
<td>Discussed in committee</td>
<td>10.7.2012</td>
</tr>
<tr>
<td>Date adopted</td>
<td>18.9.2012</td>
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<tr>
<td>Result of final vote</td>
<td>+: 39</td>
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<td>-: 4</td>
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<td>0: 1</td>
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<tr>
<td>Members present for the final vote</td>
<td>Magdi Cristiano Allam, Inés Ayala Sender, Georges Bach, Erik Bánki, Izaskun Bilbao Barandica, Philip Bradbourn, Antonio Cancian, Michael Cramer, Joseph Cuschieri, Philippe De Backer, Luis de Grandes Pascual, Christine De Veyrac, Said El Khadraoui, Ismail Ertug, Carlo Fidanza, Knut Fleckenstein, Jacqueline Foster, Mathieu Grosch, Jim Higgins, Juozas Imbrasas, Dieter-Lebrecht Koch, Georgios Koumoutsakos, Werner Kuhn, Jörg Leichtfried, Marian-Jean Marinescu, Mike Nattrass, Hubert Pirker, Dominique Riquet, Vilja Savisaar-Toomast, Olga Sehnalová, Brian Simpson, Keith Taylor, Silvia-Adriana Ticău, Giommaria Uggias, Dominique Vlasto, Artur Zasada, Roberts Zīle</td>
</tr>
<tr>
<td>Substitute(s) present for the final vote</td>
<td>Spyros Danellis, Nathalie Griesbeck, Zita Gurmai, Anna Rosbach, Sabine Wils, Janusz Władysław Żemke</td>
</tr>
<tr>
<td>Substitute(s) under Rule 187(2) present for the final vote</td>
<td>Isabella Lövin</td>
</tr>
</tbody>
</table>
4.10.2012

OPINION OF THE COMMITTEE ON REGIONAL DEVELOPMENT

for the Committee on Industry, Research and Energy


Rapporteur: Oldřich Vlasák

SHORT JUSTIFICATION

The proposal for a Regulation on Horizon 2020 is a good-quality basis taking into account the scientific and research needs of the European Union, which at the same time ensures a certain degree of synergy with cohesion policy.

The amendments concentrate mainly on activities aimed at boosting the development and involvement of the regions, cities and local communities, which are not sufficiently reflected in the proposal, even though the Commission has called on the Member States to include these activities in their operational programmes for research in the next programming period.

Horizon 2020 should also take greater account of the geographical diversity of the EU and support research initiatives in all Member States, which would reinforce the regional dimension of science and research policy. In this respect, the territorial and transnational dimension should be strengthened.

There is also a specific issue concerning the personal expenses of researchers and their involvement in international research teams; there is significant regional variation with regard to these aspects and this raises barriers for certain regions, particularly those that are less advanced.

AMENDMENTS

The Committee on Regional Development calls on the Committee on Industry, Research and Energy, as the committee responsible, to incorporate the following amendments in its report:
Amendment 1

Proposal for a regulation
Recital 1

Text proposed by the Commission

(1) The Union has the objective of strengthening its scientific and technological bases by achieving a European Research Area ("ERA") in which researchers, scientific knowledge and technology circulate freely, and encouraging the Union to become more competitive, including in its industry. To pursue those objectives the Union should carry out activities to implement research, technological development and demonstration, promote international cooperation, disseminate and optimise results and stimulate training and mobility.

Amendment

(1) The Union has the objective of strengthening its scientific and technological bases by achieving a European Research Area ("ERA") in which researchers, scientific knowledge and technology circulate freely, and encouraging the Union’s regions individually and the Union as a whole to become more competitive, including in its industry. To pursue those objectives the Union should carry out activities to implement research, technological development and demonstration, promote international cooperation, disseminate and optimise results and stimulate training and mobility.

Amendment 2

Proposal for a regulation
Recital 15

Text proposed by the Commission

(15) Simplification is a central aim of Horizon 2020 which should be fully reflected in its design, rules, financial management and implementation. Horizon 2020 should aim to attract the strong participation of universities, research centres, industry and specifically SMEs and be open to new participants, as it brings together the full range of research and innovation support in one common strategic framework, including a streamlined set of forms of support and uses rules for participation with principles applicable to all actions under the programme. Simpler funding rules should reduce the administrative costs for

Amendment

(15) Simplification is a central aim of Horizon 2020 which should be fully reflected in its design, rules, financial management and implementation. Horizon 2020 should aim to attract the strong participation of universities, research centres, industry, public sector research and innovation agencies, social economy organisations, and specifically SMEs and be open to new participants, as it brings together the full range of research and innovation support in one common strategic framework, including a streamlined set of forms of support and uses rules for participation with principles applicable to all actions under the
participation and will contribute to a reduction of financial errors. programme. Simpler funding rules should reduce the administrative costs for participation and will contribute to a reduction of financial errors.

Justification

In some member states research and innovation activities are carried out in partnership with public authorities, but without the involvement of a university or an academic institution. The amendment clarifies that the regulation also covers such research and innovation activities. Secondly, it is important to enable the involvement of social economy partners, especially in the field of social innovation.

Amendment 3

Proposal for a regulation
Recital 19 a (new)

Text proposed by the Commission

(19a) Europe’s regional and local authorities play an important role in developing the European Research Area and ensuring that the Union’s various financial instruments are coordinated effectively. In particular, they should encourage linkage between the Horizon 2020 programme and the Structural Funds in connection with regional innovation strategies based on smart specialisation. The regions also play a crucial role in the dissemination and application of the results of the Horizon 2020 programme by providing complementary funding possibilities, including public sector contracts.

Amendment 4

Proposal for a regulation
Recital 20

Text proposed by the Commission

(20) With the aim of deepening the relationship between science and society

(20) With the aim of deepening the relationship between science and society
and reinforcing public confidence in science, Horizon 2020 should favour an informed engagement of citizens and civil society on research and innovation matters by promoting science education, by making scientific knowledge more accessible, by developing responsible research and innovation agendas that meet citizens' and civil society's concerns and expectations and by facilitating their participation in Horizon 2020 activities.

**Justification**

*Through the use of smart specialisation many smaller European universities are today centres of excellence. These should not be disadvantaged in any way by Horizon 2020.*

**Amendment 5**

**Proposal for a regulation**  
**Recital 22**

*Text proposed by the Commission*  
(22) Horizon 2020 should contribute to the attractiveness of the research profession in the Union. Adequate attention should be paid to the European Charter for Researchers and Code of Conduct for the Recruitment of Researchers, together with other relevant reference frameworks defined in the context of the European Research Area, while respecting their voluntary nature.

*Amendment*  
(22) Horizon 2020 should contribute to the attractiveness of the research profession in the Union and lead to fresh job creation in this area. Adequate attention should be paid to the European Charter for Researchers and Code of Conduct for the Recruitment of Researchers, together with other relevant reference frameworks defined in the context of the European Research Area, while respecting their voluntary nature.

**Amendment 6**

**Proposal for a regulation**  
**Recital 24**

...
(24) Research and innovation activities supported by Horizon 2020 should respect fundamental ethical principles. The opinions of the European Group on Ethics in Science and New Technologies should be taken into account. Research activities should also take into account Article 13 TFEU and reduce the use of animals in research and testing, with a view ultimately to replacing animal use. All activities should be carried out ensuring a high level of human health protection in accordance with Article 168 TFEU.

Amendment 7

Proposal for a regulation
Recital 25

(24) Research and innovation activities supported by Horizon 2020 should respect human rights and fundamental ethical principles. The opinions of the European Group on Ethics in Science and New Technologies should be taken into account. Research activities should also take into account Article 13 TFEU and reduce the use of animals in research and testing, with a view ultimately to replacing animal use. 

Research activities funded by Horizon 2020 should respect the legal provisions and customs of the Member States. All activities should be carried out ensuring a high level of human health protection in accordance with Article 168 TFEU.

Text proposed by the Commission

(25) The European Commission does not explicitly solicit the use of human embryonic stem cells. The use of human stem cells, be they adult or embryonic, if any, depends on the judgement of the scientists in view of the objectives they want to achieve and is subject to stringent Ethics Review. No project involving the use of human embryonic stem cells should be funded that does not obtain the necessary approvals from the Member States. No activity should be funded that is forbidden in all Member States. No activity should be funded in a Member State where such activity is forbidden.

Amendment

(25) Attention should be paid to the considerable differences between national legislations of Member States with regard to research using human embryos and human embryonic stem cells. Union research policy should not lead to harmonisation of national legislation of Member States. The Commission should remind its declaration, with regard to the Seventh Framework Programme, to continue the current practice and not submit to the Regulatory Committee proposals for projects which destroy human embryos, including for the procurement of stem cells. This commitment should be included in this Regulation in order to ensure legal certainty and continuity.

____________________

Amendment 8
Proposal for a regulation
Recital 26

Text proposed by the Commission

(26) To achieve maximum impact, Horizon 2020 should develop close synergies with other Union programmes in areas such as education, space, environment, competitiveness and SMEs, the internal security, culture and media and with the Cohesion Policy funds and Rural Development Policy, which can specifically help to strengthen national and regional research and innovation capabilities in the context of smart specialisation strategies.

Amendment

(26) Horizon 2020 should develop close synergies with other Union programmes in areas such as education, space, environment, competitiveness and SMEs, the internal security, culture and media and with the Funds of Cohesion, Rural Development and Maritime and Fisheries policies, covered by the Common Provisions Regulation, through the regional partnerships, which can specifically help to strengthen national, regional and local research and innovation capabilities in the context of smart specialisation strategies. Synergy should not be limited to supplementary project funding alone, given that the cultivation of professional relations, the development of capacities and in particular the transfer of know-how could represent a significant form of synergy. Appropriate articulation with Cohesion Policy funds, and coordinated action, will help reduce the research and innovation gap in the European Union, by taking account of the specific characteristics of the regions referred to in Articles 174, 349 and 355(1) TFEU.
Amendment 9

Proposal for a regulation
Recital 28

Text proposed by the Commission

(28) With the aim to achieve the greatest possible impact of Union funding, Horizon 2020 is to develop closer synergies, which may also take the form of public-public partnerships, with national and regional programmes that support research and innovation.

Amendment

(28) With the aim to achieve the greatest possible impact of Union funding, Horizon 2020 is to develop closer synergies, which may also take the form of public-public partnerships, with national, regional and local programmes that support research and innovation.

Justification

In some member states research and innovation activities are carried out in partnership with public authorities, but without the involvement of a university or an academic institution. The amendment clarifies that the regulation also covers such research and innovation activities.

Amendment 10

Proposal for a regulation
Recital 28 a (new)

Text proposed by the Commission

(28a) The Commission should encourage regional stakeholders to formulate regional strategies reflecting the specific needs of the territories so as to combine existing forms of public or private funding at Union level. To these strategies the activities under Horizon 2020 should be adapted, since closer involvement of regional and local authorities in the design and implementation of the funds and research and innovation programmes is of crucial importance in view of the impossibility of applying the same development strategies in all regions.

Amendment

(28a) The Commission should encourage regional stakeholders to formulate regional strategies reflecting the specific needs of the territories so as to combine existing forms of public or private funding at Union level. To these strategies the activities under Horizon 2020 should be adapted, since closer involvement of regional and local authorities in the design and implementation of the funds and research and innovation programmes is of crucial importance in view of the impossibility of applying the same development strategies in all regions.
Amendment 11
Proposal for a regulation
Recital 28 b (new)

Text proposed by the Commission

(28b) Horizon 2020 should have a strong territorial and transnational dimension. The programme should ensure an exchange between European research and innovation policy and the regional and local actors implementing the policy on the ground.

Amendment 12
Proposal for a regulation
Article 4

Text proposed by the Commission

Horizon 2020 shall play a central role in the delivery of the Europe 2020 strategy for smart, sustainable and inclusive growth by providing a common strategic framework for the Union's research and innovation funding, thus acting as a vehicle for leveraging private investment, creating new job opportunities and ensuring Europe's long-term sustainable growth and competitiveness.

Amendment 13
Proposal for a regulation
Article 6 – paragraph 3 – subparagraph 1

Text proposed by the Commission

The European Institute of Innovation and Technology shall be financed through a maximum contribution from Horizon 2020 of EUR 3194 million as set out in Annex II. A first allocation of EUR 1542 million shall be provided to the European Institute of Innovation and Technology

Amendment

The European Institute of Innovation and Technology shall be financed through a minimum contribution from Horizon 2020 of 3.64 percent of the total budget as set out in Annex II.
for activities under Title XVII of the Treaty on the Functioning of the European Union. A second allocation of up to EUR 1652 million shall be provided, subject to the review set out in Article 26 (1). This additional amount shall be provided on a pro-rata basis, as indicated in Annex II, from the amount for the specific objective ‘Leadership in enabling and industrial technologies’ within the priority on industrial leadership set out in paragraph 2(b) and from the amount for the priority on societal challenges set out in 2(c).

Amendment 14

Proposal for a regulation
Article 12 – paragraph 2

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Full account shall also be taken of relevant aspects of the research and innovation agendas established by European Technology Platforms, Joint Programming Initiatives and European Innovation Partnerships.</td>
<td>2. Full account shall also be taken of relevant aspects of the research and innovation agendas established by European Technology Platforms, Joint Programming Initiatives and European Innovation Partnerships, provided that these agendas have been drafted in consultation with a wide range of experts and stakeholders.</td>
</tr>
</tbody>
</table>

Amendment 15

Proposal for a regulation
Article 13 – paragraph 1

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Linkages and interfaces shall be implemented across and within the priorities of Horizon 2020. Particular attention shall be paid in this respect to the development and application of key enabling and industrial technologies, to bridging from discovery to market</td>
<td>1. Linkages and interfaces shall be implemented across and within the priorities of Horizon 2020. Particular attention shall be paid in this respect to the development and application of key enabling and industrial technologies, to bridging from discovery to market</td>
</tr>
</tbody>
</table>
application, to cross-disciplinary research and innovation, to social and economic sciences and humanities, to fostering the functioning and achievement of the ERA, to cooperation with third countries, to responsible research and innovation including gender, and to enhancing the attractiveness of the research profession and to facilitating cross-border and cross-sector mobility of researchers.

application, to cross-disciplinary research and innovation, to social and economic sciences and humanities, to fostering the functioning and achievement of the ERA, to the development of the research into European legal systems, to cooperation with third countries, to ethically responsible research and innovation including gender, and to enhancing the attractiveness of the research profession, enabling research and innovation activities to be carried out also at smaller local and regional research centres, and to facilitate cross-border and cross-sector mobility of researchers, as well as to the reduction of technological dependence on third countries.

Justification

Through the use of smart specialisation many smaller European universities are today centres of excellence. These should not be disadvantaged in any way by Horizon 2020.

Amendment 16

Proposal for a regulation

Article 15 a (new)

Text proposed by the Commission

Amendment

Article 15a

Researchers' careers

Horizon 2020 shall be implemented in accordance with the Regulation (EU) No xx/2013 [Rules for Participation], which shall contribute to the reinforcement of a single market for researchers and attractiveness of researchers' careers across the Union in the context of the European Research Area, by taking into account the transnational character of the majority of the actions supported under it.

Amendment 17
Proposal for a regulation

Article 17

Text proposed by the Commission

Horizon 2020 shall be implemented in a way which is complementary to other Union funding programmes, including the Structural Funds.

Amendment

Horizon 2020 shall be implemented in a way which is complementary to other Union funding programmes, including the Structural Funds and the specific support and compensation programmes and measures under regional and cohesion policy. Synergies and complementarity between the Structural Funds and Horizon 2020 shall encourage regional stakeholders in the research and development sector to participate in Horizon 2020 programmes and to disseminate the results thereof across regional and supra-regional markets. An important element of these synergies is to strengthen the research and innovation capacities of national and regional actors in the context of smart specialisation strategies and the goal of building a 'Stairway to excellence', which should be its key element. The synergies in question shall take into consideration the specific circumstances of operations located outside the programme area, especially in what refers to the amount of support for this cooperation as defined in the Common Provisions Regulation.

Justification

In the interests of consistency and efficiency, there should be complementarity between the Horizon 2020 programme and Union funding programmes under the Structural Funds, including specific programmes and measures.
Amendment 18
Proposal for a regulation
Article 18 – paragraph 1

Text proposed by the Commission

1. Particular attention shall be paid to ensuring the *adequate* participation of, and innovation impact on, small and medium-sized enterprises (SME) in Horizon 2020. Quantitative and qualitative assessments of SME participation shall be undertaken as part of the evaluation and monitoring arrangements.

Amendment

1. Particular attention shall be paid to ensuring the *increased* participation of, and innovation impact on, the *private sector, particularly* small and medium-sized enterprises (SME) in Horizon 2020.

This covers:

a) *assistance at all stages of the research cycle, from prototype to full implementation, in order to enable them to fulfil their research potentials,*

b) *providing special support for intellectual property rights negotiations in open innovation projects,*

c) *providing support measures to help bridge delays in grants, as cash flow remains a key concern for SMEs,*

d) *providing support measures for awareness-raising activities among SMEs.*

Quantitative and qualitative assessments of *private sector, and particularly* SME participation shall be undertaken as part of the evaluation and monitoring arrangements.

Amendment 19
Proposal for a regulation
Article 18 – paragraph 2

Text proposed by the Commission

2. Specific actions shall be undertaken within the specific objective ‘Leadership in enabling and industrial technologies’ set out in Point 1 of Part II of Annex I and

Amendment

2. Specific actions for *SMEs* shall be undertaken within the specific objective ‘Leadership in enabling and industrial technologies’ set out in Point 1 of Part II of
each of the specific objectives under the priority ‘Societal challenges’ set out in Points 1 to 6 of Part III of Annex I. These specific actions shall take the form of a dedicated SME instrument that is targeted at all types of SMEs with an innovation potential and shall be implemented in a consistent manner and tailored to the needs of SMEs as set out under the specific objective ‘Innovation in SMEs’ in Point 3.3.(a) of Part II of Annex I.

Annex I and each of the specific objectives under the priority ‘Societal challenges’ set out in Points 1 to 6 of Part III of Annex I. These specific actions shall take the form of, inter alia, a dedicated SME instrument that is targeted at all types of SMEs with an innovation potential and shall be implemented in a consistent manner and tailored to the needs of SMEs as set out under the specific objective ‘Innovation in SMEs’ in Point 3.3.(a) of Part II of Annex I.

Amendment 20

Proposal for a regulation
Article 18 – paragraph 3

Text proposed by the Commission

3. The integrated approach set out in paragraphs 1 and 2 is expected to lead to around 15% of the total combined budget for the specific objective on ‘Leadership in enabling and industrial technologies’ and the priority ‘Societal challenges’ going to SMEs.

Amendment

3. The integrated approach set out in paragraphs 1 and 2 shall lead to a considerable allocation of the total combined budget for the specific objective on ‘Leadership in enabling and industrial technologies’ and the priority ‘Societal challenges’ going to SMEs. Private sector beneficiaries are expected to receive a substantial part of the total budget for Horizon 2020.

Amendment 21

Proposal for a regulation
Article 19 – paragraph 1

Text proposed by the Commission

1. Horizon 2020 may be implemented through public-private partnerships where all the partners concerned commit to support the development and implementation of research and innovation activities of strategic importance to the Union's competitiveness and industrial leadership or to address specific societal

Amendment

1. Horizon 2020 may be implemented through public-private partnerships where all the partners concerned commit to support the development and implementation of research and innovation activities of strategic importance to the Union's competitiveness and industrial leadership or to address specific societal
challenges. This should be achieved by supporting networks, cooperation and exchanges of experience between regions, towns and other stakeholders, including cultural, scientific and research institutions.

Amendment 22

Proposal for a regulation
Article 20 – paragraph 1 – subparagraph 2

Text proposed by the Commission
Particular attention shall be paid to joint programming initiatives between Member States.

Amendment
Particular attention shall be paid to joint programming initiatives between Member States, in which European Union regions and towns may participate, where appropriate.

Amendment 23

Proposal for a regulation
Article 20 – paragraph 2 – subparagraph 1 – point b

Text proposed by the Commission
(b) Union participation in programmes undertaken by several Member States in accordance with Article 185 TFEU.

Amendment
(b) Union participation in programmes undertaken by several Member States in accordance with Article 185 TFEU, with the involvement of local and regional authorities.

Amendment 24

Proposal for a regulation
Article 25 – paragraph 1

Text proposed by the Commission
1. The Commission shall annually monitor the implementation of Horizon 2020, its specific programme and the activities of the European Institute of Innovation and Technology. This shall include information...
on cross-cutting topics such as sustainability and climate change, including information on the amount of climate related expenditure.

Amendment 25

Proposal for a regulation
Annex 1 – section 1 – point 2 – point 2.1 – paragraph 1

Text proposed by the Commission

The specific objective is to foster radically new technologies by exploring novel and high-risk ideas building on scientific foundations. By providing flexible support to goal-oriented and interdisciplinary collaborative research on various scales and by adopting innovative research practices, the aim is to identify and seize opportunities of long-term benefit for citizens, the economy and society.

Amendment

The specific objective is to foster radically new technologies by exploring novel and high-risk ideas building on scientific foundations. By providing flexible support to goal-oriented and interdisciplinary collaborative research on various scales and by adopting innovative research practices, the aim is to identify and seize opportunities of long-term benefit for citizens, the economy and society. Smart specialisation platforms have a key role to play in this respect, particularly in terms of network creation and development, the exchange of information, twinning schemes and support for research and innovation policies.

Justification

Smart specialisation platforms play a crucial role in terms of the exchange of information, interdisciplinary collaboration and gearing research to multi-level targets using innovative practices.

Amendment 26

Proposal for a regulation
Annex 1 – section 2 – point 1 – point 1.3 – point 1.3.3 – point e – paragraph 1

Text proposed by the Commission

Applying design and the development of converging technologies to create new business opportunities, including the

Amendment

Applying design and the development of converging technologies to create new business opportunities. Assessing and

EN
preservation of materials with historical or cultural value. understanding the mechanisms whereby the cultural heritage is damaged.
Developing advanced methods and technologies for the purpose of protecting and preserving the cultural heritage.
Ensuring the inclusion and rational management of the cultural heritage at historical sites and in towns.

Amendment 27
Proposal for a regulation
Annex 1 – section 3 – point 2 – title

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Food security, sustainable agriculture, marine and maritime research and the bio-economy;</td>
<td>2. Food security, sustainable agriculture, water, marine and maritime research, aquaculture, the bio-economy and biodiversity protection;</td>
</tr>
</tbody>
</table>

Justification

Water, a natural resource, aquaculture, and biodiversity protection are related areas that should be added to the list of priorities.

Amendment 28
Proposal for a regulation
Annex 1 – section 3 – point 5 – point 5.1 – paragraph 5

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
</tr>
</thead>
<tbody>
<tr>
<td>The sustainable supply and resource efficient management of raw materials, including their exploration, extraction, processing, re-use, recycling and substitution, is essential for the functioning of modern societies and their economies. European sectors, such as construction, chemicals, automotive, aerospace, machinery and equipment, which provide a total added value of some EUR 1.3 trillion and employment for approximately 30 million people, heavily depend on access to raw materials. However, the supply of raw</td>
<td>The sustainable supply and resource efficient management of raw materials, including their exploration, extraction, processing, re-use, recycling and substitution, is essential for the functioning of modern societies and their economies. European sectors, such as construction, chemicals, automotive, aerospace, machinery and equipment, which provide a total added value of some EUR 1.3 trillion and employment for approximately 30 million people, heavily depend on access to raw</td>
</tr>
</tbody>
</table>
materials to the Union is coming under increasing pressure. Furthermore, the Union is highly dependent on imports of strategically important raw materials, which are being affected at an alarming rate by market distortions. Moreover, the Union still has valuable mineral deposits, whose exploration and extraction is limited by a lack of adequate technologies and hampered by increased global competition. Given the importance of raw materials for European competitiveness, the economy and for their application in innovative products, the sustainable supply and resource efficient management of raw materials is a vital priority for the Union. Access to European raw materials sources, often located in geographically remote areas, continues to be a challenge for industries dependent on a secure supply of such raw materials. Furthermore, the Union is highly dependent on imports of strategically important raw materials, which are being affected at an alarming rate by market distortions.

Amendment 29

Proposal for a regulation
Annex 1 – section 3 – point 5 – point 5.3 – point c – paragraph 1

Text proposed by the Commission

The aim is to improve the knowledge base on raw materials and develop innovative solutions for the cost-effective and environmentally friendly exploration, extraction, processing, recycling and recovery of raw materials and for their substitution by economically attractive alternatives with a lower environmental impact. Activities shall focus on: improving the knowledge base on the availability of raw materials; promoting the sustainable supply and use of raw materials; finding alternatives for critical raw materials; and improving societal awareness and skills on raw materials.

Amendment

The aim is to improve the knowledge base on raw materials and develop innovative solutions for the cost-effective and environmentally friendly exploration, extraction, processing, recycling and recovery of raw materials and for their substitution by economically attractive alternatives with a lower environmental impact. Activities shall focus on: improving the knowledge base on the availability of raw materials; promoting the sustainable supply and use of raw materials; finding alternatives for critical raw materials; improving societal awareness and skills on raw materials; establishing and stimulating regional and national raw material clusters; addressing logistical challenges in connecting
industries with raw materials sources.
## PROCEDURE

<table>
<thead>
<tr>
<th>Title</th>
<th>Establishment of Horizon 2020 - The Framework Programme for Research and Innovation (2014-2020)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Committee responsible</td>
<td>ITRE</td>
</tr>
<tr>
<td>Date announced in plenary</td>
<td>13.12.2011</td>
</tr>
<tr>
<td>Opinion by</td>
<td>REGI</td>
</tr>
<tr>
<td>Date announced in plenary</td>
<td>13.12.2011</td>
</tr>
<tr>
<td>Rapporteur</td>
<td>Oldřich Vlasák</td>
</tr>
<tr>
<td>Date appointed</td>
<td>26.1.2012</td>
</tr>
<tr>
<td>Date adopted</td>
<td>18.9.2012</td>
</tr>
<tr>
<td>Result of final vote</td>
<td>+: 35</td>
</tr>
<tr>
<td></td>
<td>−: 1</td>
</tr>
<tr>
<td></td>
<td>0: 2</td>
</tr>
<tr>
<td>Members present for the final vote</td>
<td>François Alfonsi, Luis Paulo Alves, Charalampos Angourakis, Victor Boştinaru, John Bufton, Alain Cadec, Ryszard Czarnecki, Francesco De Angelis, Rosa Estarás Ferragut, Brice Hortefeux, Danuta Maria Hübner, Filiz Hakaeva Hyusmenova, Maria Irigoyen Pérez, Seán Kelly, Mojca Kleva, Constanze Angela Krehl, Petru Constantin Luhan, Ramona Nicole Mănescu, Riikka Manner, Iosif Matula, Erminia Mazzoni, Ana Miranda, Jens Nilsson, Jan Olbrycht, Younous Omarjee, Markus Pieper, Tomasz Piotr Poręba, Ewald Stadler, Georgios Stavrakakis, Nuno Teixeira, Lambert van Nistelrooij, Oldřich Vlasák, Elżbieta Katarzyna Lukacijewska</td>
</tr>
<tr>
<td>Substitute(s) present for the final vote</td>
<td>Ivars Godmanis, Karin Kadenbach, Andrey Kovatchev, Marie-Thérèse Sanchez-Schmid, Derek Vaughan</td>
</tr>
</tbody>
</table>
12.7.2012

OPINION OF THE COMMITTEE ON AGRICULTURE AND RURAL DEVELOPMENT

for the Committee on Industry, Research and Energy


Rapporteur: Sandra Kalniete

SHORT JUSTIFICATION

The draftsperson welcomes the creation of the Horizon 2020 Programme by the Commission, since she believes that it will help the European Union (EU) to overcome the debt crisis and restore growth, by strengthening its competitiveness.

The Horizon 2020 Programme will for the first time bring together EU research and innovation funding in one programme. Horizon 2020 is directed towards using scientific breakthroughs in innovative products and services, which will create business opportunities and improve people's lives. It aims to reduce bureaucracy by simplifying the rules and application procedures, in order to attract more scientists and innovative businesses.

Horizon 2020 will enter into force in January 2014, with a budget for the period up to 2020 of 87.74 billion Euros. It is divided up into three broad parts: 1. excellent science, 2. industrial leadership, 3. societal challenges. The draftsperson thinks that the AGRI Committee should focus most of its efforts on the third part, which specifically addresses agriculture-related issues. The third part is divided into six areas:

(a) Health, demographic change and well-being (9.07 billion EUR);
(b) Food security, sustainable agriculture, marine and maritime research, and the bioeconomy (4.69 billion EUR);
(c) Secure, clean and efficient energy (6.53 billion EUR);
(d) Smart, green and integrated transport (7.69 billion EUR);
(e) Climate action, resource efficiency and raw materials (4.31 billion EUR);
(f) Inclusive, innovative and secure societies (4.31 billion EUR).

In the field of food security and sustainable agriculture, the draftsperson stresses the need for scientists to actively cooperate with farmers, notably in discussing research priorities, so that newly generated discoveries are used in real life. Including non-governmental organizations in such discussions is also important.

The draftsperson welcomes the fact that, compared to Seventh Framework Programme (FP7), the budget allocated to agriculture-related research has been substantially increased.

The draftsperson would like to draw particular attention to the need to stimulate research on reducing food waste, in a context of growing demand for food in Europe and globally. It is important to use natural resources with much greater efficiency.

During the AGRI Committee's exchange views on Horizon 2020, it was stated that there was a need to reduce the bureaucracy of its procedures. The draftsperson considers that, in this proposal, the Commission has considerably reduced 'red tape' and has made the application process easier.

Overall, the draftsperson considers the proposal to be balanced and very well designed. The draftsperson invites colleagues to approach the review of this proposal in an astute manner and hopes that the programme will enter into force on 1 January 2014, so that, come the New Year, it will help scientists make new discoveries which will increase Europe's overall competitiveness.

**AMENDMENTS**

The Committee on Agriculture and Rural Development calls on the Committee on Industry, Research and Energy, as the committee responsible, to incorporate the following amendments in its report:

**Amendment 1**

**Proposal for a regulation**

**Recital 3**

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
</tr>
</thead>
<tbody>
<tr>
<td>(3) The Union is committed to achieving the Europe 2020 strategy, which has set the objectives of smart, sustainable and inclusive growth, highlighting the role of research and innovation as key drivers of social and economic prosperity and of environmental sustainability and setting itself the goal to increase spending on Research and Development to reach 3 % of</td>
<td>(3) The Union is committed to achieving the Europe 2020 strategy, which has set the objectives of smart, sustainable and inclusive growth, highlighting the role of research and innovation and application of the results thereof as key drivers of social and economic prosperity and of environmental sustainability and setting itself the goal to increase spending on</td>
</tr>
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</table>
gross domestic product (GDP) by 2020 while developing an innovation intensity indicator. In this context, the Innovation Union flagship initiative sets out a strategic and integrated approach to research and innovation, setting the framework and objectives to which future Union research and innovation funding should contribute. Research and innovation are also key factors for other Europe 2020 flagship initiatives, notably on resource efficient Europe, an industrial policy for the globalisation era, and a digital agenda for Europe. Moreover, for achieving the Europe 2020 objectives relating to research and innovation, Cohesion policy has a key role to play through building capacity and providing a stairway to excellence.

Amendment 2

Proposal for a regulation

Recital 11

Text proposed by the Commission

(11) Horizon 2020 - the Framework Programme for Research and Innovation in the European Union (hereinafter 'Horizon 2020'), focuses on three priorities, namely generating excellent science in order to strengthen the Union's world-class excellence in science, fostering industrial leadership to support business, including small and medium-sized enterprises (SME) and innovation and tackling societal challenges, in order to respond directly to the challenges identified in the Europe 2020 strategy by supporting activities covering the entire spectrum from research to market. Horizon 2020 should support all stages in the innovation chain, especially activities closer to the market including innovative financial instruments, as well as non-technological and social innovation, and aims to satisfy the research needs of a

Amendment

(11) Horizon 2020 - the Framework Programme for Research and Innovation in the European Union (hereinafter 'Horizon 2020'), focuses on three priorities, namely generating excellent science in order to strengthen the Union's world-class excellence in science and farming, fostering industrial leadership to support business, including small and medium-sized enterprises (SME) and innovation and tackling societal challenges, in order to respond directly to the challenges identified in the Europe 2020 strategy by supporting activities covering the entire spectrum from research to market. Horizon 2020 should support all stages in the innovation chain, especially activities closer to the market including innovative financial instruments, as well as non-technological and social innovation, and
broad spectrum of Union policies by placing emphasis on the widest possible use and dissemination of knowledge generated by the supported activities up to its commercial exploitation. The priorities of Horizon 2020 should also be supported through a programme under the Euratom Treaty on nuclear research and training.

Amendment 3
Proposal for a regulation
Recital 11 a (new)

Text proposed by the Commission

(11a) Most agricultural holdings in the Union are also SMEs and there is currently a lack of coherence between research and technological innovation and Union legislation covering agricultural products which makes it increasingly difficult for new technological developments to be actively applied by European SMEs. In order to fully capitalise on agricultural research in the Union, legislation should be adapted to allow a quicker uptake and more effective use of new technology by European farms.

Amendment 4
Proposal for a regulation
Recital 15

Text proposed by the Commission

(15) Simplification is a central aim of Horizon 2020 which should be fully reflected in its design, rules, financial management and implementation. Horizon 2020 should aim to attract the strong participation of universities, research centres, industry and specifically SMEs, as
and be open to new participants, as it brings together the full range of research and innovation support in one common strategic framework, including a streamlined set of forms of support and uses rules for participation with principles applicable to all actions under the programme. Simpler funding rules should reduce the administrative costs for participation and will contribute to a reduction of financial errors.

Justification

Research activities concern not only researchers, public authorities and businesses, but also civil society.

Amendment 5

Proposal for a regulation
Recital 19

Text proposed by the Commission

(19) The implementation of Horizon 2020 may give rise to supplementary programmes involving the participation of certain Member States only, the participation of the Union in programmes undertaken by several Member States, or the setting up of joint undertakings or other arrangements within the meaning of Articles 184, 185 and 187 TFEU.

Amendment

(19) The implementation of Horizon 2020 may give rise to supplementary programmes involving the participation of certain Member States only, the participation of the Union in programmes undertaken by several Member States, or the setting up of joint undertakings or other arrangements within the meaning of Articles 184, 185 and 187 TFEU, although these must be open to participation by other Member States and include procedures facilitating participation by new countries.

Amendment 6

Proposal for a regulation
Recital 20

Text proposed by the Commission

(20) With the aim of deepening the

Amendment

(20) With the aim of deepening the
relationship between science and society and reinforcing public confidence in science, Horizon 2020 should favour an informed engagement of citizens and civil society on research and innovation matters by promoting science education, by making scientific knowledge more accessible, by developing responsible research and innovation agendas that meet citizens' and civil society's concerns and expectations and by facilitating their participation in Horizon 2020 activities.

Amendment 7
Proposal for a regulation
Recital 26

Text proposed by the Commission

(26) To achieve maximum impact, Horizon 2020 should develop close synergies with other Union programmes in areas such as education, space, environment, competitiveness and SMEs, the internal security, culture and media and with the Cohesion Policy funds and Rural Development Policy, which can specifically help to strengthen national and regional research and innovation capabilities in the context of smart specialisation strategies.

Amendment

(26) To achieve maximum impact, Horizon 2020 should develop close synergies with other Union programmes in areas such as education, space, environment, competitiveness and SMEs, the internal security, culture and media and with the Cohesion Policy funds and Rural Development Policy and the Common Agricultural Policy (in particular Rural Development Policy), which can specifically help to strengthen national and regional research and innovation capabilities in the context of smart specialisation strategies.

Amendment 8
Proposal for a regulation
Recital 30
(30) Horizon 2020 should promote cooperation with third countries based on common interest and mutual benefit. International cooperation in science, technology and innovation should be targeted to contribute to achieving the Europe 2020 objectives to strengthen competitiveness, contribute to tackling societal challenges and support Union external and development policies, including by developing synergies with external programmes and contributing to the Union's international commitments such as the achievement of Millennium Development Goals.

Amendment

Proposal for a regulation
Recital 32

(32) The need for a new approach to control and risk management in Union research funding was recognised by the European Council of 4 February 2011, asking for a new balance between trust and control and between risk-taking and risk avoidance. The European Parliament, in its Resolution of 11 November 2010 on simplifying the implementation of the Research Framework Programmes, called for a pragmatic shift towards administrative and financial simplification and states that the management of European research funding should be more trust-based and risk-tolerant towards participants. The interim evaluation report of the Seventh Framework Programme for Research (2007-2013) concludes that a more radical approach is needed to attain a quantum leap in simplification, and that

(32) The need for a new approach to develop an evidence-based risk management strategy as part of the Union's research funding strategy was recognised by the European Council of 4 February 2011. At this time the Council asked for a new balance between trust and control and between risk-taking and risk avoidance. The European Parliament, in its Resolution of 11 November 2010 on simplifying the implementation of the Research Framework Programmes, called for a pragmatic shift towards administrative and financial simplification and states that the management of European research funding should be more trust-based and risk-tolerant towards researchers. The interim evaluation report of the Seventh Framework Programme for Research (2007-2013) concludes that a
the risk-trust balance needs to be redressed. A more radical approach is needed to attain a quantum leap toward simplified procedures that demonstrate the Union's trust in researchers and encourage them to take the risks needed for accelerated progress in science and technology.

Amendment 10
Proposal for a regulation
Article 1

Text proposed by the Commission
This Regulation establishes Horizon 2020 - the Framework Programme for Research and Innovation (2014-2020) ("Horizon 2020") and determines the framework governing Union support to research and innovation activities and fostering better exploitation of the industrial potential of policies of innovation, research and technological development.

Amendment
This Regulation establishes Horizon 2020 - the Framework Programme for Research and Innovation (2014-2020) ("Horizon 2020") and determines the framework governing Union support to research and innovation activities and application of the results thereof and fostering better exploitation of the industrial potential of policies of innovation, research and technological development.

Amendment 11
Proposal for a regulation
Article 5 – paragraph 2 – subparagraph 1 – point b

Text proposed by the Commission
(b) industrial leadership;

Amendment
(b) leadership in industry and farming;

Amendment 12
Proposal for a regulation
Article 12 – paragraph 1

Text proposed by the Commission
1. For the implementation of Horizon 2020, account shall be taken of advice and inputs provided by: advisory groups of independent, high level experts set up by

Amendment
1. For the implementation of Horizon 2020, account shall be taken of advice and inputs provided by: advisory groups of independent, high level experts set up by
the Commission; dialogue structures created under international science and technology agreements; forward looking activities; targeted public consultations; and transparent and interactive processes that ensure responsible research and innovation is supported.

Justification

Research activities concern not only researchers, public authorities and businesses, but also civil society.

Amendment 13

Proposal for a regulation
Annex I – paragraph 14 – point b

Text proposed by the Commission

(b) Food security, sustainable agriculture, marine and maritime research, and the bio-economy;

Amendment

(b) Food security, sustainable agriculture and forestry, marine and maritime research, and the bio-economy;

Amendment 14

Proposal for a regulation
Annex I – Part I – point 2 – point 2.2 – paragraph 3

Text proposed by the Commission

The FET programme shall address the entire spectrum of science-driven innovation: from bottom-up, small-scale early explorations of embryonic and fragile ideas to building new research and innovation communities around transformative emerging research areas and large and federated research initiatives built around a research agenda aiming to achieve ambitious and visionary goals. These three levels of engagement each have their own specific value, while being complementary and synergistic. For

Amendment

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example, small-scale explorations can reveal needs for developing new themes that can lead to large-scale action based on roadmaps. They involve a wide range of research players, including young researchers and research-intensive SMEs, and stakeholder communities (civil society, policymakers, industry and public researchers), clustered around research agendas as they take shape, mature and diversify.

Amendment 15

Proposal for a regulation
Annex I – Part I – point 3 – point 3.1 – paragraph 3

**Text proposed by the Commission**

Although Europe hosts a large and diversified pool of skilled human resources for research and innovation, this needs to be constantly replenished, improved and adapted to the rapidly evolving needs of the labour market. Today only 46 % of this pool works in the business sector, which is much lower than in Europe’s main economic competitors, e.g. 69 % in China, 73 % in Japan and 80 % in the United States. In addition, demographic factors mean that a disproportionate number of researchers will reach retirement age in the next few years. This, combined with the need for many more high-quality research jobs as the research intensity of the European economy increases, will be one of the main challenges facing European education, research and innovation systems in the years ahead.

**Amendment**

Although Europe hosts a large and diversified pool of skilled human resources for research and innovation, this needs to be constantly replenished, improved and adapted to the rapidly evolving needs of the labour market. Today only 46 % of this pool works in the business sector, which is much lower than in Europe’s main economic competitors, e.g. 69 % in China, 73 % in Japan and 80 % in the United States. In addition, demographic factors mean that a disproportionate number of researchers will reach retirement age in the next few years. This, combined with the need for many more high-quality research jobs as the research intensity of the European economy increases, will be one of the main challenges facing European education, research and innovation systems in the years ahead. **Furthermore, given that one of the objectives of the framework programme is to guarantee the effective promotion of gender equality and gender mainstreaming in the field of research and innovation, it is necessary to encourage more women to participate and realise their full potential in the research**
**Amendment 16**

**Proposal for a regulation**  
Annex I – Part II – point 1 – paragraph 9

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
</tr>
</thead>
<tbody>
<tr>
<td>A major component of ‘Leadership in Enabling and Industrial Technologies’ are Key Enabling Technologies (KETs), defined as micro- and nanoelectronics, photonics, nanotechnology, biotechnology, advanced materials and advanced manufacturing systems. These multi-disciplinary, knowledge and capital-intensive technologies cut across many diverse sectors providing the basis for significant competitive advantage for European industry. An integrated approach, promoting the combination, convergence and cross-fertilisation effect of KETs in different innovation cycles and value chains can deliver promising research results and open the way to new industrial technologies, products, services and novel applications (e.g. in space, transport, environment, health etc.). The numerous interactions of KETs and enabling technologies will therefore be exploited in a flexible manner, as an important source of innovation. This will complement support for research and innovation in KETs that may be provided by national or regional authorities under the Cohesion Policy Funds within the framework of smart specialisation strategies.</td>
<td>A major component of ‘Leadership in Enabling and Industrial Technologies’ are Key Enabling Technologies (KETs), defined as micro- and nanoelectronics, photonics, nanotechnology, biotechnology, advanced materials and advanced manufacturing systems. These multi-disciplinary, knowledge and capital-intensive technologies cut across many diverse sectors providing the basis for significant competitive advantage for European industry. An integrated approach, promoting the combination, convergence and cross-fertilisation effect of KETs in different innovation cycles and value chains can deliver promising research results and open the way to new industrial technologies, products, services and novel applications (e.g. in space, transport, environment, health, agriculture, etc.). The numerous interactions of KETs and enabling technologies will therefore be exploited in a flexible manner, as an important source of innovation. This will complement support for research and innovation in KETs that may be provided by national or regional authorities under the Cohesion Policy Funds within the framework of smart specialisation strategies.</td>
</tr>
</tbody>
</table>

**Amendment 17**

**Proposal for a regulation**  
Annex I – Part II – point 1 – point 1.2.3 – point c
Text proposed by the Commission

Focusing on governance of nanotechnology for societal benefit.

Amendment

Focusing on governance of nanotechnology for societal benefit taking into account the precautionary principle. Assessing the social acceptability of specific different applications of nanotechnology in addition to risk assessment.

Amendment 18

Proposal for a regulation
Annex I - Part II – point 1 – point 1.4.1 – paragraph 2

Text proposed by the Commission

A strong scientific, technological and innovation base in biotechnology, will support European industries securing leadership in this key enabling technology. This position will be further strengthened by integrating the safety assessment and management aspects of the overall risks in the deployment of biotechnology.

Amendment

A strong scientific, technological and innovation base in biotechnology, will support European industries securing leadership in this key enabling technology. This position will be further strengthened by integrating the safety assessment and management aspects of the overall risks in the deployment of biotechnology, thus ensuring a secure roadmap to application.

Amendment 19

Proposal for a regulation
Annex I – Part II – point 1 – point 1.4.2 – paragraph 1

Text proposed by the Commission

Powered by the expansion of the knowledge of living systems, biotechnology is set to deliver a stream of new applications and to strengthen the Union's industrial base and its innovation capacity. Examples of the rising importance of biotechnology are in industrial applications including bio-chemicals, of which the market share is estimated to increase by up to 12 %-20 % of chemical production by 2015. A number

Amendment

Powered by the expansion of the knowledge of living systems, biotechnology is set to deliver a stream of new applications and to strengthen the Union's industrial base and its innovation capacity. Examples of the rising importance of biotechnology are in industrial applications including bio-chemicals of which the market share is estimated to increase by up to 12 %-20 % of chemical production by 2015, as well as
of the so-called twelve rules of Green Chemistry are also addressed by biotechnology, due to the selectivity and efficiency of bio-systems. The possible economic burdens for Union enterprises can be reduced by harnessing the potential of biotechnology processes and bio-based products to reduce CO2 emissions, estimated to range from between 1 to 2.5 billion tons CO2 equivalent per year by 2030. In Europe’s biopharmaceutical sector, already some 20% of the current medicines are derived from biotechnology, with up to 50% of new medicines. Biotechnology also opens new avenues for exploiting the huge potential of marine resources for producing innovative industrial, health and environmental applications. The emerging sector of marine (blue) biotechnology has been predicted to grow by 10% a year.

**Amendment 20**

**Proposal for a regulation**  
Annex I – Part II – point 1 – point 1.4.3 – point b – introductory part

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
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<tr>
<td>(b) Biotechnology-based industrial processes</td>
<td>(b) Biotechnology-based products and processes</td>
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**Amendment 21**

**Proposal for a regulation**  
Annex I – Part II – point 1 – point 1.4.3 – point b

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
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</thead>
<tbody>
<tr>
<td>Developing industrial biotechnology for competitive industrial products and</td>
<td>Developing biotechnology for competitive products and processes (e.g. chemical,</td>
</tr>
</tbody>
</table>
processes (e.g. chemical, health, mining, energy, pulp and paper, textile, starch, food processing) and its environmental dimension.

**Amendment 22**

**Proposal for a regulation**
Annex I – Part II – point 3 – point 3.3 – point b – introductory part

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
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<tbody>
<tr>
<td>(b) Support for research intensive SMEs</td>
<td>(b) Support for research intensive SMEs in all fields, including agriculture.</td>
</tr>
</tbody>
</table>

**Amendment 23**

**Proposal for a regulation**
Annex I – Part II – point 3 – point 3.3 – point c – introductory part

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
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<tbody>
<tr>
<td>(c) Enhancing the innovation capacity of SMEs</td>
<td>(c) Enhancing the innovation capacity of SMEs in all fields, including agriculture.</td>
</tr>
</tbody>
</table>

**Amendment 24**

**Proposal for a regulation**
Annex I – Part II – point 3 – point 3.3 – point d

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
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<tr>
<td>Supporting market-driven innovation to improve the framework conditions for innovation and tackling the specific barriers preventing, in particular, the growth of innovative SMEs.</td>
<td>Supporting market-driven innovation to improve the framework conditions for innovation and tackling the specific barriers preventing, in particular, the growth of innovative SMEs, including the lack of coherence between technological innovation and Union legislation, particularly in the field of agriculture.</td>
</tr>
</tbody>
</table>

**Amendment 25**
Proposal for a regulation  
Annex I – Part III – point 1 – point 1.3 – paragraph 1

**Text proposed by the Commission**

Effective health promotion, supported by a robust evidence base, prevents disease, improves wellbeing and is cost effective. Health promotion and disease prevention also depend on an understanding of the determinants of health, on effective preventive tools, such as vaccines, on effective health and disease surveillance and preparedness, and on effective screening programmes.

**Amendment**

Effective health promotion, supported by a robust evidence base, prevents disease, improves wellbeing and is cost effective. Health promotion and disease prevention also depend on an understanding of the determinants of health, including the link between human and animal health, on effective preventive tools, such as vaccines, on effective health and disease surveillance and preparedness, and on effective screening programmes, also covering the use of antibiotics in animals.

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**Amendment 26**

Proposal for a regulation  
Annex I – Part III – point 2 – title

**Text proposed by the Commission**

2. Food security, sustainable agriculture, marine and maritime research and the bio-economy

**Amendment**

2. Food security, sustainable agriculture and forestry, marine and maritime research and bio-economy

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**Amendment 27**

Proposal for a regulation  
Annex I – Part III – point 2 – point 2.1 – paragraph 1

**Text proposed by the Commission**

The specific objective is to secure sufficient supplies of safe and high quality food and other bio-based products, by developing productive and resource-efficient primary production systems, fostering related ecosystem services, along side competitive and low carbon supply chains. This will accelerate the transition to a sustainable European bio-economy.

**Amendment**

The specific objective is to secure sufficient supplies of safe and high quality food and other bio-based products, by developing productive and resource-efficient primary production systems, fostering related ecosystem services, along side competitive and low carbon supply chains. This will accelerate the transition to a sustainable competitive European bio-
Amendment 28

Proposal for a regulation
Annex I – Part III – point 2 – point 2.1 – paragraph 2

Text proposed by the Commission

Over the coming decades, Europe will be challenged by increased competition for limited and finite natural resources, by the effects of climate change, in particular on primary production systems (agriculture, forestry, fisheries and aquaculture) and by the need to provide a sustainable, safe and secure food supply for the European and an increasing global population. A 70% increase of the world food supply is estimated to be required to feed the 9 billion global population by 2050. Agriculture accounts for about 10% of Union greenhouse gases emissions, and while declining in Europe, global emissions from agriculture are projected to increase up to 20% by 2030. Furthermore, Europe will need to ensure sufficient supplies of raw materials, energy and industrial products, under conditions of decreasing fossil carbon resources (oil and liquid gas production expected to decrease by about 60% by 2050), while maintaining its competitiveness. Bio-waste (estimated at up to 138 million tonnes per year in the Union, of which up to 40% is land-filled) represents a huge problem and cost, despite its high potential added value. For example, an estimated 30% of all food produced in developed countries is discarded. Major changes are needed to reduce this amount by 50% in the Union by 2030. In addition, national borders are irrelevant in the spread of animal and plant pests and diseases, including zoonotic diseases, and food borne pathogens. While effective national prevention measures are needed, action at Union level is essential for the economy.

Amendment

Over the coming decades, Europe will be challenged by increased competition for limited and finite natural resources (in particular water, land, and fossil carbon sources), by the effects of climate change, in particular on primary production systems (agriculture, forestry, fisheries and aquaculture) and by the need to provide a sustainable, safe and secure food and drinking-water supply for the European and an increasing global population. A 70% increase in the world food supply is estimated to be required to feed the 9 billion global population by 2050. Agriculture accounts for about 10% of Union greenhouse gas emissions, and while declining in Europe, mainly due to innovation in production efficiency techniques and reduced numbers in livestock in some areas, global emissions from agriculture are projected to increase up to 20% by 2030. Furthermore, Europe will need to ensure sufficient supplies of raw materials, energy and industrial products, under conditions of decreasing fossil carbon resources (oil and liquid gas production expected to decrease by about 60% by 2050), while maintaining its competitiveness. Bio-waste (estimated at up to 138 million tonnes per year in the Union, of which up to 40% is landfilled) represents a huge problem and cost, despite its high potential added value. According to Eurostat figures, the quantity of food discarded in the European Union alone amounts to 89 million tonnes a year, equivalent to 180 kg per person. Measures therefore need to be taken in order to...
reduce that amount (by at least 50% by 2030), avoid wasting food, and reuse food that would otherwise be thrown away, and further initiatives are needed to turn agricultural bio-waste into an asset. Research avenues should also be explored with a view to analysing and quantifying food waste, applying appropriate methodologies. In addition, national borders are irrelevant in the spread of animal and plant pests and diseases, including zoonotic diseases, and food-borne pathogens. While effective national prevention measures are needed, action at Union level is essential for ultimate control and the effective running of the single market. The challenge is complex, affects a broad range of interconnected sectors and requires further inter-sector synergies and a plurality of approaches.

Justification

Wasting food has serious environmental, socio-economic, nutritional, and ethical consequences; it occurs at every stage of the food chain in developed and developing countries alike. It is therefore essential to reduce waste, both by means of information campaigns and by developing new technologies, for example for packaging or for food preserving methods.

Amendment 29

Proposal for a regulation
Annex I – Part III – point 2 – point 2.1 – paragraph 4

Text proposed by the Commission

The potential of biological resources and ecosystems could be used in a much more sustainable, efficient and integrated manner. For example, the potential of biomass from forests and waste streams from agricultural, aquatic, industrial, and also municipal origins could be better harnessed

Amendment

The potential of biological resources and ecosystems could be used in a much more sustainable, efficient and integrated manner. For example, the potential of biomass from forests, farming, and waste streams from agricultural, aquatic, industrial, and also municipal origins could be better harnessed.
Amendment 30

Proposal for a regulation
Annex 1 – Part III – section 2.2 – paragraph 2

Text proposed by the Commission

A fully functional European bio-economy – encompassing the sustainable production of renewable resources from land and aquatic environments and their conversion into food, biobased products and bioenergy as well as the related public goods - will generate high European added value. Managed in a sustainable manner, it can reduce the environmental footprint of primary production and the supply chain as a whole. It can increase their competitiveness and provide jobs and business opportunities for rural and coastal development. The food security, sustainable agriculture, and overall bio-economy – related challenges are of a European and global nature. Actions at Union level are essential to bring together clusters to achieve the necessary breadth and critical mass to complement efforts made by a single or groups of Member States. A multi-actor approach will ensure the necessary cross-fertilising interactions between researcher, businesses, farmers/producers, advisors and end-users. The Union level is also necessary to ensure coherence in addressing this challenge across sectors and with strong links to relevant Union policies. Coordination of research and innovation at Union level will stimulate and help to accelerate the required changes across the Union.

Amendment

A fully functional European bio-economy – encompassing the sustainable production of renewable resources from land and aquatic environments and their conversion into food and fodder, biobased products and bioenergy as well as the related public goods - will generate high European added value. Managed in a sustainable manner, it can reduce the environmental footprint of primary production and the supply chain as a whole. It can increase their competitiveness and provide jobs and business opportunities for rural and coastal development. The food security, sustainable agriculture, and overall bio-economy – related challenges are of a European and global nature. Actions at Union level are essential to bring together clusters to achieve the necessary breadth and critical mass to complement efforts made by a single or groups of Member States. A multi-actor approach will ensure the necessary cross-fertilising interactions between researcher, businesses, farmers/producers, advisors and end-users.

Special efforts should be made to ensure that farmers and their representative organisations take part in knowledge exchange activities and play a role in setting research priorities. Researchers should receive incentives to participate in knowledge exchange activities, even if these concern already existing research. The Union level is also necessary to ensure coherence in addressing this challenge across sectors and with strong links to relevant Union policies. Coordination of research and innovation at Union level will stimulate and help to accelerate the required changes across the Union.
Justification

Knowledge exchange activities must be specifically tailored to farmers or their representative organisations, which are in a less favourable position than businesses to participate in such activities. Farmer’s opinions on research priorities should be heard. Scientists mainly receive incentives for carrying out new research but not for explaining and discussing existing research with non-specialists interested in applying it.

Amendment 31

Proposal for a regulation
Annex I – Part III – point 2 – point 2.3 – point a – introductory part

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
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</thead>
<tbody>
<tr>
<td>(a) Sustainable agriculture and forestry</td>
<td>(a) Sustainable and competitive agriculture and forestry</td>
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</tbody>
</table>

Amendment 32

Proposal for a regulation
Annex I – Part III – point 2 – point 2.3 – point a

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
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</thead>
<tbody>
<tr>
<td>The aim is to supply sufficient food, feed, biomass and other raw-materials, while safeguarding natural resources and enhancing ecosystems services, including coping with and mitigating climate change. The activities shall focus on more sustainable and productive agriculture and forestry systems which are both resource-efficient (including low-carbon) and resilient, while at the same time developing of services, concepts and policies for thriving rural livelihoods.</td>
<td>The aim is to supply sufficient food, feed, biomass and other raw-materials, while safeguarding natural resources and enhancing ecosystems services, including coping with and mitigating climate change. The activities shall focus on more sustainable and productive agriculture and forestry systems which are both more resource-efficient (including nutrient and energy efficiency and low-carbon targets) and resilient, enhancing the quality and value of agricultural products, while at the same time developing services, concepts and policies for thriving rural livelihoods and rural innovative SMEs. Knowledge development capacity and innovation transfers in agriculture shall aim at reversing the continuous decrease of the yield growth potential in Europe, and create a virtuous cycle towards achieving</td>
</tr>
</tbody>
</table>
a sustainable intensification of Union agriculture production. With a view to reducing agriculture’s carbon footprint, the importance of short supply chains should be underlined.

Amendment 33

Proposal for a regulation
Annex I – Part III – point 2 – point 2.3 – point b

Text proposed by the Commission

The aim is to meet the requirements of citizens for safe, healthy and affordable food, and to make food and feed processing and distribution more sustainable and the food sector more competitive. The activities shall focus on healthy and safe foods for all, informed consumer choices, and competitive food processing methods that use less resources and produce less by-products, waste and green-house gases.

Amendment

The aim is to meet the requirements of citizens for safe, healthy and affordable food, and to make food and feed processing and distribution as well as food consumption more sustainable and the food sector more competitive. The activities shall focus on a broad diversity of healthy, authentic, high quality and safe foods for all, informed consumer choices, and competitive food processing methods that use less resources and additives and produce less by-products, waste and green-house gases. Consumers have to make conscious choices and be not only informed about safe foods, but also made aware of the environmental, socio-economic, and nutritional consequences entailed in their choices and in the fact of wasting food. These innovations should also aim to reduce food waste in production, the distribution chain and by consumers.

Amendment 34

Proposal for a regulation
Annex I – Part III – point 2 – point 2.3 – point d

Text proposed by the Commission

The aim is the promotion of low carbon,

Amendment

The aim is the promotion of low carbon,
resource efficient, sustainable and competitive European bio-based industries. The activities shall focus on fostering the bio-economy by transforming conventional industrial processes and products into bio-based resource and energy efficient ones, the development of integrated biorefineries, utilising biomass from primary production, biowaste and bio-based industry by-products, and opening new markets through supporting standardisation, regulatory and demonstration/field trial activities and others, while taking into account the implication of the bio-economy on land use and land use changes.

more resource efficient (including nutrient, energy, carbon, water and soil use efficiency), sustainable and competitive European bio-based industries, while making bio-waste an asset used at its full potential. It is vital to create a closed circuit between urban and rural areas. The activities shall focus on fostering the bio-economy by transforming conventional industrial processes and products into bio-based resource and energy efficient ones, the development of integrated second and third generation biorefineries, producing and utilising biomass and other residues from primary agricultural and forestry production, biowaste and bio-based industry by-products, and through efficient transformation of bio-waste in urban areas into agricultural inputs. This will foster new markets and create potential new revenue streams for primary producers through supporting standardisation, certification schemes, regulatory and demonstration/field trial activities and others, while taking into account the implication of the bio-economy on land use and land use changes.

Amendment 35

Proposal for a regulation
Annex I – Part III – point 5 – point 5.2 – paragraph 4

Text proposed by the Commission

Addressing the availability of raw materials calls for co-ordinated research and innovation efforts across many disciplines and sectors to help provide safe, economically feasible, environmentally sound and socially acceptable solutions along the entire value chain (exploration, extraction, processing, re-use, recycling and substitution). Innovation in these fields will provide opportunities for growth and jobs, as well as innovative options

Amendment

Addressing the availability of raw materials calls for coordinated research and innovation efforts across many disciplines and sectors to help provide safe, economically feasible, environmentally sound and socially acceptable solutions along the entire value chain (exploration, extraction, processing, reuse, recycling and substitution). Particular innovation efforts should be focused on agricultural uses of water resources, bearing in mind the
sector’s growing water needs and the fact that periods of severe drought are occurring more frequently and spreading over increasingly vast parts of the world, including for example Mediterranean Europe. Innovation in these fields will provide opportunities for growth and jobs, as well as innovative options involving science, technology, the economy, policy and governance. For this reason, a European Innovation Partnership on Raw Materials is being prepared.

### Amendment 36

**Proposal for a regulation**  
**Annex I – Part IV – point 3 – point 3.3 – point b – introductory part**

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
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<tr>
<td>(b) Food security, sustainable agriculture, marine and maritime research and the bio-economy</td>
<td>(b) Food security, sustainable agriculture and <strong>forestry</strong>, marine and maritime research and the bio-economy</td>
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### Amendment 37

**Proposal for a regulation**  
**Annex I – Part IV – point 3 – point 3.3 – point e – introductory part**

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
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<tr>
<td>(c) Climate action, resource efficiency and raw materials</td>
<td>(c) Climate action, resource efficiency and <strong>conservation, and sustainable use of</strong> raw materials</td>
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<tr>
<td>Title</td>
<td>Establishment of Horizon 2020 - The Framework Programme for Research and Innovation (2014-2020)</td>
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<td>Committee responsible</td>
<td>ITRE</td>
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<tr>
<td>Date announced in plenary</td>
<td>13.12.2011</td>
</tr>
<tr>
<td>Opinion by</td>
<td>AGRI</td>
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<tr>
<td>Date announced in plenary</td>
<td>13.12.2011</td>
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<tr>
<td>Rapporteur</td>
<td>Sandra Kalniete</td>
</tr>
<tr>
<td>Date appointed</td>
<td>20.12.2011</td>
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<tr>
<td>Discussed in committee</td>
<td>24.4.2012</td>
</tr>
<tr>
<td>Date adopted</td>
<td>10.7.2012</td>
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<tr>
<td>Result of final vote</td>
<td>+: 31</td>
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<td>Members present for the final vote</td>
<td>John Stuart Agnew, Eric Andrieu, Liam Aylward, Luis Manuel Capoulas Santos, Vasilica Viorica Dăncilă, Michel Dantin, Paolo De Castro, Albert Deß, Diane Dodds, Herbert Dorfmann, Iratxe García Pérez, Béla Glattfelder, Martin Häusling, Esther Herranz García, Peter Jahr, Elisabeth Jeggle, Jaroslaw Kalinowski, Elisabeth Köstinger, Gabriel Mato Adrover, Mairéad McGuinness, Mariya Nedelcheva, James Nicholson, Georgios Papastamkos, Marit Paulsen, Britta Reimers, Ulrike Rodust, Alfreds Rubiks, Giancarlo Scottà, Czesław Adam Siekierski, Sergio Paolo Francesco Silvestris, Alyn Smith, Marc Tarabella</td>
</tr>
<tr>
<td>Substitute(s) present for the final vote</td>
<td>Salvatore Caronna, Marian Harkin, Sandra Kalniete, Giovanni La Via, Astrid Lulling, Maria do Céu Patrão Neves</td>
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</table>
20.9.2012

OPINION OF THE COMMITTEE ON FISHERIES

for the Committee on Industry, Research and Energy


Rapporteur: Ioannis A. Tsoukalas

SHORT JUSTIFICATION

With 68,000 km of coastline, 22 Member States with maritime borders, nearly 50% of EU residents living less than 50 km from the coast, 5 million Europeans working in sea-related jobs, and a contribution of more than 5% to EU GDP, it is clear that the marine environments and the related activities play a key role for the European social and economic development. The role of the marine environment becomes even more important, when we take into consideration its contribution to EU efforts to meet the multiple modern challenges it faces, such as energy efficiency, climate change, transport, tourism, health, population growth, which will lead to a corresponding increase in demand for food, etc.

In this context, fisheries constitute vital and, at the same, time extremely sensitive socio-economic resource for EU citizens. With a total consumption of about 12 million tons of fishery products annually (€55 billion), the EU is one of the most important global markets, yet it is not able to adequately meet internal consumption.

The interdependence between the EU and the marine environment requires high level marine and maritime research, as the latter contributes to a better understanding and a better protection of marine ecosystems and aims to develop sustainable fishery, which respects the environment while taking into account the socio-economical needs of coastal and island communities.

At present, over 90% of marine biodiversity remains unexamined. The lack of reliable scientific data makes the efforts to achieve sustainable management of fish stocks in European waters even more difficult. The need of sufficient, reliable data for marine environments is becoming urgent and the collection of such data should be enhanced to the largest extent possible through relevant research projects and collaborations.

In the last years, the EU has invested systematically in marine and maritime research, aiming
at developing innovative technological methods to unlock the vast potential of the marine environment and producing growth and jobs through sustainable exploitation of natural, food, energy and biological resources. In the current 7th Framework Programme a significant - yet insufficient - amount is allocated for fisheries, aquaculture and marine biotechnology. Given the increase of the research budget in Horizon 2020, the amount allocated to marine and maritime research should be increased as well.

Cross-cutting and interdisciplinary research is fundamental for better understanding marine ecosystems and the sustainable management of the fish stocks. Industrial, academic and public partnerships involving marine and maritime research should be strengthened, actively engaging the private sector, especially SMEs, in developing innovative technologies and methods and promoting applied research. The support of interdisciplinary, multidisciplinary and intersectoral partnerships in marine and maritime research programs will contribute to a better understanding of the aquatic environment, and inevitably, to sustainable fisheries and aquaculture. Within this framework, we could examine whether the creation, under the auspices of the European Institute of Innovation and Technology, of a relevant Knowledge and Innovation Community (KIC) would be beneficial in promoting marine research.

A closer cooperation of research programs with cohesion policy, regional policy and Structural Funds should be considered as there is a need for development of comprehensive, dynamic and territorial approaches to innovation, research and competitiveness in the fisheries sector. Such synergies would facilitate smart specialization strategies and the capacity of EU regions to cope with modern challenges. Effective coordination and complementarities of actions in Horizon 2020 with the actions financed by the European Maritime and Fisheries Fund are also necessary.

A climate of mutual confidence and trust between researchers and stakeholders should be created. Their involvement would improve the quality of scientific data and the knowledge required to manage marine resources sustainably. The fishing industry often considers research as an obstacle to fishing activity and this should change. Opportunities for mobility of researchers, international cooperation, high level training and education, advanced technologies and incentives to participate in fishing activities could make European fisheries very competitive at international level. Exchange of good practices and of the effective use of the results from existing research programs through the open access could also help to bridge the gap between research and stakeholders.

Finally, we consider as a positive step that marine and maritime research is included explicitly in Horizon 2020. The aim of this research should be productive seas and oceans, through sustainable fisheries and aquaculture. Without adequate funds, however, the great potential of marine science and technology sector will remain untapped and the marine wealth will be overexploited to extinction. The EU is called to establish a specific budget line for cross-cutting actions in order to develop possible synergies between marine and maritime cross-societal challenges.

**AMENDMENTS**
The Committee on Fisheries calls on the Committee on Industry, Research and Energy, as the committee responsible, to incorporate the following amendments in its report:

**Amendment 1**

**Proposal for a regulation**  
**Recital 1**

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) The Union has the objective of strengthening its scientific and technological bases by achieving a European Research Area (&quot;ERA&quot;) in which researchers, scientific knowledge and technology circulate freely, and encouraging the Union to become more competitive, including in its industry. To pursue those objectives the Union should carry out activities to implement research, technological development and demonstration, promote international cooperation, disseminate and optimise results and stimulate training and mobility.</td>
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</tr>
</tbody>
</table>

**Justification**

*The education and the training should be targeted, taken into account the real needs of the European citizens.*

**Amendment 2**

**Proposal for a regulation**  
**Article 2 – point (a)**

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) 'research and innovation activities' means the whole spectrum of activities of research, technological development, demonstration and innovation, including the promotion of cooperation with third countries and international organisations, dissemination and optimisation of results and stimulation of the training and mobility of researchers in the Union;</td>
<td>(a) 'research and innovation activities' means the whole spectrum of activities of research, technological development, demonstration and innovation, including the promotion of cooperation with third countries and international organisations, dissemination and optimisation of results and stimulation of the <strong>high quality targeted</strong> training and mobility of</td>
</tr>
</tbody>
</table>
researchers in the Union;

Justification

The education and the training should be targeted, taken into account the real needs of the European citizens.

Amendment 3

Proposal for a regulation
Article 13 – paragraph 1

Text proposed by the Commission

1. Linkages and interfaces shall be implemented across and within the priorities of Horizon 2020. Particular attention shall be paid in this respect to the development and application of key enabling and industrial technologies, to bridging from discovery to market application, to cross-disciplinary research and innovation, to social and economic sciences and humanities, to fostering the functioning and achievement of the ERA, to cooperation with third countries, to responsible research and innovation including gender, and to enhancing the attractiveness of the research profession and to facilitating cross-border and cross-sector mobility of researchers.

Amendment

1. Linkages and interfaces shall be implemented across and within the priorities of Horizon 2020. Particular attention shall be paid in this respect to the development and application of key enabling and industrial technologies, to bridging from discovery to market application, to cross-disciplinary research and innovation, to social and economic sciences and humanities, to climate change, productive seas and oceans and sustainable development, to fostering the functioning and achievement of the ERA, to cooperation with third countries, to responsible research and innovation including gender, and to enhancing the attractiveness of the research profession and to facilitating cross-border and cross-sector mobility of researchers.

Amendment 4

Proposal for a regulation
Article 21 – paragraph 2 – subparagraph 1

Text proposed by the Commission

Targeted actions with the objective of promoting cooperation with specific third countries or groups of third countries shall be implemented on the basis of common interest and mutual benefit, taking into

Amendment

Targeted actions with the objective of promoting cooperation with specific third countries or groups of third countries, in particular the EU’s strategic partners, shall be implemented on the basis of
account their scientific and technological capabilities and market opportunities, and the expected impact.

common interest and mutual benefit, taking into account their scientific and technological capabilities and market opportunities, and the expected impact.

Amendment 5

Proposal for a regulation
Annex 1 – paragraph 14 – point b

Text proposed by the Commission

(b) Food security, sustainable agriculture, marine and maritime research, and the bio-economy;

Amendment

(b) Food security, sustainable agriculture, sustainable and productive seas and oceans, and the bio-economy;

Amendment 6

Proposal for a regulation
Annex 1 – section 3 – point 2 – introductory part

Text proposed by the Commission

2. Food security, sustainable agriculture, marine and maritime research and the bio-economy

Amendment

2. Food security, sustainable agriculture, sustainable and productive seas and oceans, and the bio-economy

Amendment 7

Proposal for a regulation
Annex 1 – section 3 – point 2 – point 2.1 – paragraph 1

Text proposed by the Commission

The specific objective is to secure sufficient supplies of safe and high quality food and other bio-based products, by developing productive and resource-efficient primary production systems, fostering related ecosystem services, along side competitive and low carbon supply chains. This will accelerate the transition to a sustainable European bio-economy.

Amendment

The specific objective is to secure sufficient supplies of safe and high quality healthy food and other bio-based products, by developing productive and resource-efficient primary production and food processing systems, fostering related ecosystem services, along side competitive and low carbon supply chains. This will accelerate the transition to a sustainable
## Amendment 8

**Proposal for a regulation**  
**Annex 1 – Part III – point 2 – point 2.1 – paragraph 2**

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
</tr>
</thead>
<tbody>
<tr>
<td>More and more biological resources are needed to satisfy market demand for a secure and healthy food supply, bio-materials, biofuels and bio-based products, ranging from consumer products to bulk chemicals. However the capacities of the terrestrial and aquatic ecosystems required for their production are limited, while there are competing claims for their utilisation, and often not optimally managed, as shown for example by a severe decline in soil carbon content and fertility. There is under-utilised scope for fostering ecosystem services from farmland, forests, marine and fresh waters by integrating agronomic and environmental goals into sustainable production.</td>
<td>More and more biological resources are needed to satisfy market demand for a secure and healthy food supply, bio-materials, biofuels and bio-based products, ranging from consumer products to bulk chemicals. However the capacities of the terrestrial and aquatic ecosystems required for their production are limited, while there are competing claims for their utilisation, and often not optimally managed, as shown for example by a severe decline in soil carbon content and fertility. There is under-utilised scope for fostering ecosystem services from farmland, forests, marine and fresh waters and <strong>aquaculture farms</strong> by integrating agronomic and environmental goals into sustainable production.</td>
</tr>
</tbody>
</table>

### Justification

**Aquaculture farms should be included given their reaction with marine environment and their contribution to the sustainable production.**

## Amendment 9

**Proposal for a regulation**  
**Annex 1 – Part III – point 2 – point 2.2 – paragraph 1**

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture, forestry and fisheries together with the bio-based industries are the major sectors underpinning the bio-economy. This latter represents a large and growing market estimated to be worth over EUR 2 trillion, providing 20 million jobs and accounting for 9% of total employment in</td>
<td>Agriculture, forestry, <strong>sustainable fisheries and aquaculture</strong> together with the bio-based industries are the major sectors underpinning the bio-economy. This latter represents a large and growing market estimated to be worth over EUR 2 trillion, providing 20 million jobs and accounting</td>
</tr>
</tbody>
</table>
the Union in 2009. Investments in research and innovation under this societal challenge will enable Europe to take leadership in the concerned markets and will play a role in achieving the goals of the Europe 2020 strategy and its Innovation Union and Resource Efficient Europe flagship initiatives.

Justification

The contribution of sustainable fisheries and aquaculture to the bio-economy should not be underestimated.

Amendment 10

Proposal for a regulation
Annex 1 – Part III – point 2 – point 2.2 – paragraph 2

Text proposed by the Commission

A fully functional European bio-economy – encompassing the sustainable production of renewable resources from land and aquatic environments and their conversion into food, bio-based products and bioenergy as well as the related public goods - will generate high European added value. Managed in a sustainable manner, it can reduce the environmental footprint of primary production and the supply chain as a whole. It can increase their competitiveness and provide jobs and business opportunities for rural and coastal development. The food security, sustainable agriculture, and overall bio-economy – related challenges are of a European and global nature. Actions at Union level are essential to bring together clusters to achieve the necessary breadth and critical mass to complement efforts made by a single or groups of Member States. A multi-actor approach will ensure the necessary cross-fertilising interactions between researcher, businesses, farmers/producers, advisors and end-users.

Amendment

A fully functional European bio-economy – encompassing the sustainable production of renewable resources from land and aquatic environments and their conversion into food, bio-based products and bioenergy as well as the related public goods - will generate high European added value. Managed in a sustainable manner, it can reduce the environmental footprint of primary production and the supply chain as a whole. It can increase their competitiveness and provide jobs and business opportunities for rural, coastal and marine development. The food security, sustainable agriculture, sustainable fisheries and aquaculture, and overall bio-economy – related challenges are of a regional, national, European and global nature. Actions at Union level and their effective coordination are essential to bring together clusters to achieve the necessary breadth and critical mass to complement efforts made by a single or groups of Member States. A multi-actor approach will ensure the necessary cross-
The Union level is also necessary to ensure coherence in addressing this challenge across sectors and with strong links to relevant Union policies. Coordination of research and innovation at Union level will stimulate and help to accelerate the required changes across the Union.

**Justification**

*Policy makers can play an important role. They should examine and take into account the real needs both of marine ecosystems and the relevant stakeholders before taking a decision. The contribution of fisheries and aquaculture to the bio-economy should not be underestimated.*

**Amendment 11**

**Proposal for a regulation**

**Annex 1 – Part III – point 2 – point 2.2 – paragraph 3**

*Text proposed by the Commission*

Research and innovation will interface with a wide spectrum of Union policies and related targets, including the Common Agriculture Policy (in particular the Rural Development Policy) and the European Innovation Partnership 'Agricultural Productivity and Sustainability', the Common Fisheries Policy, the Integrated Maritime Policy, the European Climate Change Programme, the Water Framework Directive, the Marine Strategy Framework Directive, the Forestry Action Plan, the Soil Thematic Strategy, the Union's 2020 Biodiversity Strategy, the Strategic Energy Technology Plan, the Union's innovation and industrial policies, external and development aid policies, plant health strategies, animal health and welfare strategies and regulatory frameworks to protect the environment, health and safety, to promote resource efficiency and climate action, and to reduce waste. A better

*Amendment*

Research and innovation will interface with a wide spectrum of Union policies and related targets, including the Common Agriculture Policy (in particular the Rural Development Policy) and the European Innovation Partnership 'Agricultural Productivity and Sustainability', the Common Fisheries Policy, the Integrated Maritime Policy, the European Climate Change Programme, the Water Framework Directive, the Marine Strategy Framework Directive, the Forestry Action Plan, the Soil Thematic Strategy, the Union's 2020 Biodiversity Strategy, the Strategic Energy Technology Plan, the Union's innovation and industrial policies, external and development aid policies, plant health strategies, animal health and welfare strategies and regulatory frameworks to protect the environment, health and safety, to promote resource efficiency and climate action, and to reduce waste. A better
integration of research and innovation into related Union policies will significantly improve their European added value, provide leverage effects, increase societal relevance and help to further develop sustainable land, seas and oceans management and bio-economy markets.

integration of **the full cycle from fundamental research to** innovation into related Union policies will significantly improve their European added value, provide leverage effects, increase societal relevance, **provide healthy food products** and help to further develop sustainable land, seas, **inland waters** and oceans management and bio-economy markets.

Amendment 12

Proposal for a regulation
Annex 1 – Part III – point 2 – point 2.2 – paragraph 5

<table>
<thead>
<tr>
<th><strong>Text proposed by the Commission</strong></th>
<th><strong>Amendment</strong></th>
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<tbody>
<tr>
<td>Challenge-driven actions focusing on social and economic benefits and the modernisation of the bio-economy associated sectors and markets shall be supported through multi-disciplinary research, driving innovation and leading to the development of new practices, products and processes. It shall also pursue a broad approach to innovation ranging from technological, non-technological, organisational, economic and social innovation to for instance novel business models, branding and services.</td>
<td>Challenge-driven actions focusing on social and economic benefits and the modernisation of the bio-economy associated sectors and markets shall be supported through multi-disciplinary research <strong>and cross-sectoral approach between various themes, better cooperation between researchers and all relevant stakeholders</strong>, driving innovation and leading to the development of new practices, products and processes. It shall also pursue a broad approach to innovation ranging from technological, non-technological, organisational, economic and social innovation to for instance novel business models, branding and services.</td>
</tr>
</tbody>
</table>

**Justification**

*An effective and coordinated research, through cross-sectoral approach, is needed given the various challenges with which the EU has to cope. To this effort the knowledge and the expertise of all stakeholders are essential.*
Amendment 13

Proposal for a regulation
Annex 1 – Part III – point 2 – point 2.3 – point c – title

Text proposed by the Commission
(c) Unlocking the potential of aquatic living resources

Amendment
(c) Unlocking the potential of fisheries, aquaculture, marine biotechnologies and aquatic resources through sustainable fisheries management

Justification

The aquatic environment includes both living and non-living resources. Sustainable fisheries management, taking into account the needs of ecosystems as well as those of fishermen, is necessary.

Amendment 14

Proposal for a regulation
Annex 1 – Part III – point 2 – point 2.3 – point c – paragraph 1

Text proposed by the Commission
The aim is to sustainably exploit aquatic living resources to maximise social and economic benefits/returns from Europe's oceans and seas. The activities shall focus on an optimal contribution to secure food supplies by developing sustainable and environmentally friendly fisheries and competitive European aquaculture in the context of the global economy and on boosting marine innovation through biotechnology to fuel smart ‘blue’ growth.

Amendment
The aim is to sustainably exploit aquatic resources to maximise social, economic benefits/returns from Europe's oceans and seas and inland waters (fresh water, salt water and brackish water). Productive seas and oceans could guarantee the prosperity of the maritime sectors as well as the protection of the marine biodiversity and can be achieved through the development of sustainable fisheries and aquaculture. The activities shall focus on an optimal contribution to secure food supplies by developing sustainable and environmentally friendly fisheries and competitive European aquaculture which encompasses all relevant aquatic species and production systems in the context of the global economy and on boosting marine innovation through biotechnology to fuel smart "blue" growth, which will deliver sustainable and innovative solutions to unlock the great potential of the seas. Given the strong interaction
between exploited aquatic living resources and the environment, the objective is to develop cross-cutting marine and maritime scientific and technological knowledge with a view to making a better use of the marine potential across marine and maritime industries, while protecting the marine environment and adapting to climate change. This strategic coordinated approach for marine and maritime research across all challenges and pillars of Horizon 2020 will also support the implementation of relevant Union policies to help deliver key blue growth objectives and ensure the economic and social prosperity of the European seafood sector (encompassing the whole seafood chain from production to the consumer) as well. A specific budgetary line will be dedicated to cross-cutting actions.

Amendment 15

Proposal for a regulation
Annex 1 – Part III – point 2 – point 2.3 – point c – paragraph 1 a (new)

Text proposed by the Commission

It is important to have targeted research in order to meet the real needs both of ecosystems and of the fisheries and aquaculture field. To this end, cooperation between researchers and all levels of stakeholders (fishermen, enterprises, consumers, policy makers, etc) and an effective coordination of existing relevant research institutions is essential. This will help to build mutual trust and confidence between stakeholders and scientists, which will lead to a long-term sustainable management of the marine resources. In addition to this, the exchange of good practices as well as the effective use of the results taken from the existing research program through open access to research results can play a vital role. Given the significant lack of credible
scientific data, already existing relevant mechanisms (for example the EMODnet) should be reinforced. New European research projects on collecting data as well as on providing an easy and free access to these should be put forward.

Justification

A climate of mutual confidence and trust between researchers and representatives of the fisheries sector (industries, SMEs, consumers, policy makers, etc.) is needed to improve the scientific data and knowledge required for the effective implementation of the measures. Targeted research and reliable scientific data will contribute to meet the technical, social and economic needs of the sector and environmental requirements.

Amendment 16

Proposal for a regulation
Annex 1 – Part III – point 2 – point 2.3 – point c – paragraph 1 a (new)

Text proposed by the Commission

Amendment

Cooperation and stronger links between people working in marine and maritime research and researchers in other fields (environment, energy, transport, etc) should also be put forward. These fields are complementary, hence, stronger relations between them should be established.

Amendment 17

Proposal for a regulation
Annex 1 – Part III – point 2 – point 2.3 – point c – paragraph 1 b (new)

Text proposed by the Commission

Amendment

In this framework, it is necessary to try to close the gap between fundamental and applied research and to underline that excellence in research includes basic and applied research as well.
Justification

Stairway to excellence is in the core of Horizon 2020, but it should be taken into account the fact that excellence includes applied research as well. Horizon 2020 pays attention to the innovation and the practical application of knowledge and research.

Amendment 18

Proposal for a regulation
Annex 1 – Part III – point 2 – point 2.3 – point c – paragraph 1 c (new)

Text proposed by the Commission

Amendment

Synergies and closer cooperation with the structural funds will contribute to the boost of marine and maritime research and will have positive results in environmental, social and economic level. Funding a project from different sources will contribute, also, to boosting regions’ participation in the EU research efforts.

Justification

The marine environments and the related activities play a key role for the European social and economic development and more precisely for the development of European regions. Cooperation with Structural funds will have a positive impact on fisheries sector through targeted actions at national and regional level.

Amendment 19

Proposal for a regulation
Annex 1 – Part III – point 2 – point 2.3 – point c – paragraph 1 d (new)

Text proposed by the Commission

Amendment

Closer cooperation and good coordination with the European Maritime and Fisheries Fund is needed in order to avoid overlapping and to support the active participation of the fisheries sector in European projects.

Justification

Effective coordination and complementarities of actions in the "Horizon 2020" with the
actions financed by the European Maritime and Fisheries Fund are necessary in order to avoid overlapping and duplication between them.

Amendment 20

Proposal for a regulation
Annex 1 – Part III – point 2 – point 2.3 – point c – paragraph 1 e (new)

Text proposed by the Commission

To be in conformity with the Common Fisheries Policy, the activities shall also take into account a bottom-up approach and pay more attention to the cooperation at national and regional level.

Justification

EU’s top-down approach in the fisheries sector has failed and a general need for better communication with stakeholders is now clear. Regions have an important role to play in marine and maritime research. Coastal and island communities can put forward research and innovation through their expertise and practical knowledge.

Amendment 21

Proposal for a regulation
Annex 1 – Part III – point 2 – point 2.3 – point d – paragraph 1

Text proposed by the Commission

The aim is the promotion of low carbon, resource efficient, sustainable and competitive European bio-based industries. The activities shall focus on fostering the bio-economy by transforming conventional industrial processes and products into bio-based resource and energy efficient ones, the development of integrated biorefineries, utilising biomass from primary production, biowaste and bio-based industry by-products, and opening new markets through supporting standardisation, regulatory and demonstration/field trial activities and others, while taking into account the implication of the bio-economy on land use

Amendment

The aim is the promotion of low carbon, resource efficient, sustainable and competitive European bio-based industries. The activities shall focus on fostering the bio-economy by transforming conventional industrial processes and products into bio-based resource and energy efficient ones, the development of integrated biorefineries, utilising biomass from primary production, biowaste and bio-based industry by-products, and opening new markets through supporting standardisation, regulatory and demonstration/field trial activities and others, while taking into account the implication of the bio-economy on land use.
Amendment 22
Proposal for a regulation
Annex 1 – Part III – point 5 – point 5.1 – paragraph 4

Text proposed by the Commission

The growing impacts from climate change and environmental problems, such as ocean acidification, ice melting in the Arctic, land degradation and use, water shortages, chemical pollution and biodiversity loss, indicate that the planet is approaching its sustainability boundaries. For example, without improvements in efficiency, water demand is projected to overshoot supply by 40% in 20 years time. Forests are disappearing at an alarmingly high rate of 5 million hectares per year. Interactions between resources can cause systemic risks – with the depletion of one resource generating an irreversible tipping point for other resources and ecosystems. Based on current trends, the equivalent of more than two planet Earths will be needed by 2050 to support the growing global population.

Amendment

The growing impacts from climate change and environmental problems, such as ocean acidification, changes in ocean circulation, the increase in seawater temperature, ice melting in the Arctic, land degradation and use, water shortages, chemical pollution and biodiversity loss, indicate that the planet is approaching its sustainability boundaries. For example, without improvements in efficiency, water demand is projected to overshoot supply by 40% in 20 years time. Forests are disappearing at an alarmingly high rate of 5 million hectares per year. Interactions between resources can cause systemic risks – with the depletion of one resource generating an irreversible tipping point for other resources and ecosystems. Based on current trends, the equivalent of more than two planet Earths will be needed by 2050 to support the growing global population.

Amendment 23
Proposal for a regulation
Annex 1 – Part III – point 5 – point 5.2 – paragraph 4

Text proposed by the Commission

Addressing the availability of raw materials calls for co-ordinated research and innovation efforts across many disciplines and sectors to help provide safe, economically feasible, environmentally sound and socially acceptable solutions along the entire value chain (exploration, production, processing).

Amendment

Addressing the availability of raw materials calls for co-ordinated research and innovation efforts across many disciplines and sectors to help provide safe, economically feasible, environmentally sound and socially acceptable solutions along the entire value chain (exploration, production, processing).
extraction, processing, re-use, recycling and substitution). Innovation in these fields will provide opportunities for growth and jobs, as well as innovative options involving science, technology, the economy, policy and governance. For this reason, a European Innovation Partnership on Raw Materials is being prepared.

Water challenges include water use in rural, urban and industrial environments and the protection of aquatic ecosystems. Innovation in these fields will provide opportunities for growth and jobs, as well as innovative options involving science, technology, the economy, policy and governance. For this reason, European Innovation Partnerships on Water Efficiency and Raw Materials are being prepared.

Amendment 24

Proposal for a regulation
Annex 1 – Part III – point 6.3 – point 6.3.1 – paragraph 2 – point b a (new)

Text proposed by the Commission

(ba) strive to set European models for social cohesion and well-being as international benchmarks; and make efforts to comply with the ILO’s recommendations on fostering research and training pertaining to health, hygiene and safety in the workplace.

Amendment

Amendment 25

Proposal for a regulation
Annex 1 – Part IV – point 3 – point 3.3 – point b – introductory part

Text proposed by the Commission

(b) Food security, sustainable agriculture, marine and maritime research and the bio-economy.

Amendment

(b) Food security, sustainable agriculture, productive seas and oceans, and the bio-economy.
Amendment 26

Proposal for a regulation
Annex 1 – Part IV – point 3 – point 3.3 – point b

Support the development, implementation and monitoring of European agriculture and fisheries policies, including food safety and security and the development of a bio-economy through e.g. crop production forecasts, technical and socio-economic analyses and modelling.

Amendment

Support the development, implementation and monitoring of European agriculture, fisheries and aquaculture policies, including food safety and security and the development of a bio-economy through e.g. crop production forecasts, technical and socio-economic analyses, modelling and scientific and technical basis of fisheries management.

Justification

Scientific and technical basis will contribute to a sustainable fisheries management through, for example, the use of more selective gears and other instruments more environmental-friendly.

Amendment 27

Proposal for a regulation
Annex 1 – Part V – point 1 – paragraph 2

Europe is facing a number of structural weaknesses when it comes to innovation capacity and the ability to deliver new services, products and processes. Among the main issues at hand are Europe’s relatively poor record in talent attraction and retention; the underutilisation of existing research strengths in terms of creating economic or social value; low levels of entrepreneurial activity; a scale of resources in poles of excellence which is insufficient to compete globally; and an excessive number of barriers to collaboration within the knowledge triangle of higher education, research and business on a European level.

Amendment

Europe is facing a number of structural weaknesses when it comes to innovation capacity and the ability to deliver new services, products and processes. Among the main issues at hand are Europe’s relatively poor record in talent attraction and retention; the underutilisation of existing research strengths in terms of creating economic or social value; the lack of research results brought to the market; low levels of entrepreneurial activity and the lack of an entrepreneurial mindset; low levels of public investment in R&D, a scale of resources, including human resources, in poles of excellence which is insufficient to compete globally; and an excessive number of barriers to
collaboration within the knowledge triangle of higher education, research and business on a European level.

**Amendment 28**

**Proposal for a regulation**  
Annex 1 – Part V – point 3 – point c – title

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
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</thead>
<tbody>
<tr>
<td>(c) Development of talented, skilled and entrepreneurial people with the aid of education and training</td>
<td>(c) Development of talented, skilled and entrepreneurial people with the aid of <strong>high-level and targeted</strong> education and training</td>
</tr>
</tbody>
</table>

*Justification*

*The education and the training should be targeted, taken into account the real needs of the European citizens.*
**PROCEDURE**

<table>
<thead>
<tr>
<th>Title</th>
<th>Establishment of Horizon 2020 - The Framework Programme for Research and Innovation (2014-2020)</th>
</tr>
</thead>
</table>
| Committee responsible | ITRE  
Date announced in plenary |
| Opinion by | PECH  
Date announced in plenary |
| Rapporteur | Ioannis A. Tsoukalas  
Date appointed |
| Date adopted | 19.9.2012 |
| Result of final vote | +: 21  
-: 0  
0: 3 |
| Members present for the final vote | Antonello Antinoro, Kriton Arsenis, Alain Cadec, Chris Davies, João Ferreira, Carmen Fraga Estévez, Pat the Cope Gallagher, Dolores García-Hierro Caraballo, Marek Józef Gróbarczyk, Ian Hudghton, Iliana Malinova Iotova, Werner Kuhn, Isabella Lövin, Gabriel Mato Adrover, Guido Milana, Maria do Céu Patrão Neves, Crescenzio Rivellini, Ulrike Rodust, Raúl Romeva i Rueda, Isabelle Thomas, Nils Torvalds, Jarosław Leszek Wałęs |
| Substitute(s) present for the final vote | Jean-Paul Besset, Luis Manuel Capoulas Santos, Diane Dodds, Julie Girling, Ana Miranda, Jens Nilsson, Nikolaos Salavrakos, Antolin Sánchez Presedo, Ioannis A. Tsoukalas |
| Substitute(s) under Rule 187(2) present for the final vote | Nuno Teixeira |
26.7.2012

OPINION OF THE COMMITTEE ON CULTURE AND EDUCATION

for the Committee on Industry, Research and Energy


Rapporteur: Emma McClarkin

SHORT JUSTIFICATION

The proposal for a Regulation of the European Parliament and of the Council on Horizon 2020 aims to bring together all EU research and innovation funding under a single programme. It aims to establish and focus on three priority areas, Excellence in Science, Industrial Leadership and Societal Challenges.

The Rapporteur welcomes the proposal and very strongly supports the commitment to excellence in science as the key funding criteria. However, the Rapporteur believes that research into the Cultural Heritage of Europe, which was included in previous research funding programmes, does not specifically appear in Horizon 2020. The Rapporteur therefore wants to include specific mention of cultural heritage within this regulation.

In addition, as the Lisbon treaty gave the European union new competences in the field of sport, the Rapporteur wants to make use of the funding opportunities available within Horizon 2020 to specifically highlight the potential of research into sport as a means to improve the overall health of people in Europe and as a means to foster social cohesion and inclusiveness.

The Rapporteur also believes that the role of women in science and technology should be further reinforced and that the role of academic research and education in developing innovative products and new business models within SMEs, needs to be strengthened in order to meet the commitment of the Innovation Union flagship initiative and to make SMEs more dynamic and innovative.

Emphasis must be put on all Horizon 2020 activities to make them more accessible and easier to access and due attention should be paid to the development of sustainable pricing models for scientific publishing.
The Rapporteur believes that the European added value of the EIT needs to be further assessed as it is far from clear whether money spent on this initiative would provide more value than money focused on other priorities within Horizon 2020. The Rapporteur therefore proposes to reduce the budget for the EIT to EUR 1 billion, with the remaining EUR 2 billion returning to the Horizon 2020 budget to finance the increase in the scope of this priority as a result of the additional objectives and activities proposed in sport and cultural heritage.

AMENDMENTS

The Committee on Culture and Education calls on the Committee on Industry, Research and Energy, as the committee responsible, to incorporate the following amendments in its report:

Amendment 1

Proposal for a regulation
Recital 1

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) The Union has the objective of strengthening its scientific and technological bases by achieving a European Research Area (&quot;ERA&quot;) in which researchers, scientific knowledge and technology circulate freely, and encouraging the Union to become more competitive, including in its industry. To pursue those objectives the Union should carry out activities to implement research, technological development and demonstration, promote international cooperation, disseminate and optimise results and stimulate training and mobility.</td>
<td>(1) The Union has the objective of strengthening its scientific and technological bases by achieving a European Research Area (&quot;ERA&quot;) in which researchers, scientific knowledge and technology circulate freely, and encouraging the Union to become more competitive, including in its industry. To pursue those objectives the Union should carry out activities to implement research, technological development and demonstration, promote international cooperation, disseminate and optimise results, <em>strive for innovation</em> and stimulate training and mobility.</td>
</tr>
</tbody>
</table>

Amendment 2

Proposal for a regulation
Recital 3

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
</tr>
</thead>
<tbody>
<tr>
<td>(3) The Union is committed to achieving</td>
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</tr>
</tbody>
</table>

RR\922943EN.doc  507/595  PE489.637v03-00
the Europe 2020 strategy, which has set the objectives of smart, sustainable and inclusive growth, highlighting the role of research and innovation as key drivers of social and economic prosperity and of environmental sustainability and setting itself the goal to increase spending on Research and Development to reach 3% of gross domestic product (GDP) by 2020 while developing an innovation intensity indicator. In this context, the Innovation Union flagship initiative sets out a strategic and integrated approach to research and innovation, setting the framework and objectives to which future Union research and innovation funding should contribute.

Research and innovation are also key factors for other Europe 2020 flagship initiatives, notably on resource efficient Europe, an industrial policy for the globalisation era, and a digital agenda for Europe. Moreover, for achieving the Europe 2020 objectives relating to research and innovation, Cohesion policy has a key role to play through building capacity and providing a stairway to excellence.

Amendment 3

Proposal for a regulation
Recital 5

Text proposed by the Commission

(5) The European Parliament has called for a radical simplification of Union research and innovation funding in its Resolution of 11 November 2010, has highlighted the importance of the Innovation Union to transform Europe for post-crisis world, in its resolution of 12 May 2011, has drawn attention to important lessons to be learned following the interim evaluation of the Seventh Framework Programme in its resolution of 8 June 2011 and has supported the concept of a common

Amendment

(5) The European Parliament has called for a radical simplification of Union research and innovation funding in its Resolution of 11 November 2010, has highlighted the importance of the Innovation Union to transform Europe for post-crisis world, in its resolution of 12 May 2011, has drawn attention to important lessons to be learned following the interim evaluation of the Seventh Framework Programme in its resolution of 8 June 2011 and has supported the concept of a common
strategic framework for research and innovation funding in its resolution of 27 September 2011.

strategic framework for research and innovation funding, while calling for a doubling of the budget compared to the Seventh Framework Programme in its resolution of 27 September 2011.

Amendment 4

Proposal for a regulation
Recital 11

Text proposed by the Commission

(11) Horizon 2020 - the Framework Programme for Research and Innovation in the European Union (hereinafter ‘Horizon 2020’), focuses on three priorities, namely generating excellent science in order to strengthen the Union's world-class excellence in science, fostering industrial leadership to support business, including small and medium-sized enterprises (SME) and innovation and tackling societal challenges, in order to respond directly to the challenges identified in the Europe 2020 strategy by supporting activities covering the entire spectrum from research to market. Horizon 2020 should support all stages in the innovation chain, especially activities closer to the market including innovative financial instruments, as well as non-technological and social innovation, and aims to satisfy the research needs of a broad spectrum of Union policies by placing emphasis on the widest possible use and dissemination of knowledge generated by the supported activities up to its commercial exploitation. The priorities of Horizon 2020 should also be supported through a programme under the Euratom Treaty on nuclear research and training.

Amendment

(11) Horizon 2020 - the Framework Programme for Research and Innovation in the European Union (hereinafter ‘Horizon 2020’), focuses on three priorities, namely generating excellent science in order to strengthen the Union's world-class excellence in science, fostering industrial leadership to support business, including small and medium-sized enterprises (SME) and innovation and tackling societal challenges, in order to respond directly to the challenges identified in the Europe 2020 strategy by supporting activities covering the entire spectrum from basic and applied research to market and society. Horizon 2020 should support all stages in the research and innovation chain, especially activities closer to society and the market including innovative financial instruments, as well as non-technological and social innovation, and activities that can promote social inclusion across communities, and aims to satisfy the research needs of a broad spectrum of Union policies by placing emphasis on the widest possible use and dissemination of knowledge generated by the supported activities up to its social and/or commercial exploitation. The priorities of Horizon 2020 should also be supported through a programme under the Euratom Treaty on nuclear research and training.
Amendment 5

Proposal for a regulation
Recital 12 a (new)

*Text proposed by the Commission*

(12a) It is important to emphasise that all Horizon 2020 activities should be open to new participants with a view to ensuring there is extensive cooperation with partners throughout the EU and establishing an integrated European Research Area.

Amendment 6

Proposal for a regulation
Recital 15

*Text proposed by the Commission*

(15) Simplification *is a central aim of Horizon 2020* which should be fully reflected in its design, rules, financial management and implementation. Horizon 2020 should aim to attract the strong participation of universities, research centres, industry and specifically SMEs and be open to new participants, as it brings together the full range of research and innovation support in one common strategic framework, including a streamlined set of forms of support and uses rules for participation with principles applicable to all actions under the programme. Simpler funding rules should reduce the administrative costs for participation and will contribute to a reduction of financial errors.

*Amendment*

(15) Simplification and clarity *are a central aim of Horizon 2020* which should be fully reflected in its design, rules, financial management and implementation. Horizon 2020 should aim to attract the strong participation of universities, research centres, industry and specifically SMEs and be open to new participants, as it brings together the full range of research and innovation support in one common strategic framework, including a streamlined set of forms of support and uses rules for participation with principles applicable to all actions under the programme. Simpler funding rules should reduce the administrative costs for participation and will contribute to a reduction of financial errors and discrepancies.

Amendment 7
Proposal for a regulation
Recital 15 a (new)

Text proposed by the Commission

(15a) Universities play a fundamental role within the scientific and technological base of the Union as basic institutions of excellence, both in training and research.

Amendment

Amendment 8
Proposal for a regulation
Recital 15 b (new)

Text proposed by the Commission

(15b) Horizon 2020 should contribute to the recognition of the Cultural Heritage of Europe and focus should be given to its role in developing inclusive societies, through both the JRC and the societal challenges priority.

Amendment

Amendment 9
Proposal for a regulation
Recital 17 a (new)

Text proposed by the Commission

(17a) In order for the European Parliament to be able to exercise its function of political control and to ensure transparency and accountability, as stipulated in the TFEU, the Commission should duly and regularly inform the European Parliament of all relevant aspects of the implementation of the programme, including the preparation and drawing-up of the work programmes, the execution and possible need for adjustment of the budgetary breakdown, and the development of the performance indicators in terms of objectives pursued and expected results.
Amendment 10

Proposal for a regulation
Recital 19

Text proposed by the Commission
(19) The implementation of Horizon 2020 may give rise to supplementary programmes involving the participation of certain Member States only, the participation of the Union in programmes undertaken by several Member States, or the setting up of joint undertakings or other arrangements within the meaning of Articles 184, 185 and 187 TFEU.

Amendment
(19) The implementation of Horizon 2020 may give rise - under specific conditions - to supplementary programmes involving the participation of certain Member States only, the participation of the Union in programmes undertaken by several Member States, or the setting up of joint undertakings or other arrangements within the meaning of Articles 184, 185 and 187 TFEU. These supplementary programmes or arrangements should have a clear Union added value, be based on genuine partnerships, complement other activities under Horizon 2020, and be as inclusive as possible in terms of participation by Member States or Union industry.

Amendment 11

Proposal for a regulation
Recital 20

Text proposed by the Commission
(20) With the aim of deepening the relationship between science and society and reinforcing public confidence in science, Horizon 2020 should favour an informed engagement of citizens and civil society on research and innovation matters by promoting science education, by making scientific knowledge more accessible, by developing responsible research and innovation agendas that meet citizens' and civil society's concerns and expectations and by facilitating their participation in Horizon 2020 activities.

Amendment
(20) With the aim of deepening the relationship between science and society and reinforcing public confidence in science, Horizon 2020 should favour an informed engagement of citizens and civil society on research and innovation matters by promoting science education, education in general and communication, by making scientific knowledge and research data more accessible, by developing responsible research and innovation agendas that meet citizens' and civil society's concerns and expectations and by facilitating their participation in Horizon 2020 activities.
Amendment 12
Proposal for a regulation
Recital 20 a (new)

Text proposed by the Commission

(20a) Scientific publishing in itself adds value and it is vitally important in the dissemination of knowledge, therefore it is a priority that a balance is found between the need for the development of sustainable payment models which cover the cost of production and the need for researchers, research institutions, businesses and citizens to openly access, share and use scientific information. To increase the circulation and exploitation of knowledge and to provide the broadest possible access to such publications, free open online access to academic publications, already embraced in the Seventh Framework Programme, should become a general principle for publications which receive all or the vast majority of their funding from Horizon 2020. Furthermore, Horizon 2020 should experiment with open online access to data produced or collected by publicly funded research.

Amendment 13
Proposal for a regulation
Recital 20 b (new)

Text proposed by the Commission

(20b) Support should be provided under Horizon 2020 for high-level research into cultural diversity and the protection of traditional knowledge, including as part of cooperation with third countries, with full use being made of new digital technologies for the conservation and dissemination of such knowledge. It is
particularly important to look into possible synergies between modern science and local knowledge.

Amendment 14
Proposal for a regulation
Recital 20 c (new)

Text proposed by the Commission

Amendment

(20c) The Horizon 2020 framework programme should assist the Member States and the Union in their efforts to overcome the current economic crisis, ensure sustainable economic growth rates and become more competitive.

Amendment 15
Proposal for a regulation
Recital 20 d (new)

Text proposed by the Commission

Amendment

(20d) The Horizon 2020 programme should be used to promote, in addition to research diversity, linguistic diversity in academic and scientific publishing, including as part of cooperation with third countries, as well as to ensure that the principles of independent research and peer validation of publications are adhered to.

Amendment 16
Proposal for a regulation
Recital 21

Text proposed by the Commission

Amendment

(21) The implementation of Horizon 2020 should respond to the evolving opportunities and needs from science and
technology, industry, policies and society. As such, the agendas should be set in close liaison with stakeholders from all sectors concerned, and sufficient flexibility should be allowed for new developments. External advice should be sought on a continuous basis during Horizon 2020, also making use of relevant structures such as European Technology Platforms, Joint Programming Initiatives and the European Innovation Partnerships.

Amendment 17
Proposal for a regulation
Recital 21 a (new)

Text proposed by the Commission

(21a) In order to be able to compete globally, to effectively address the grand societal challenges, and to attain the goals of the Europe 2020 strategy, the Union should make full use of its human resources. Horizon 2020 should be a catalyser and a powerful stimulus for completing the European Research Area by supporting across the line activities that attract, retain, train and develop research and innovation talent. To reach this aim and to enhance the knowledge transfer and the quantity and quality of researchers human capital building activities, including those focused specifically at young people and women, should be a standard element in all research and innovation activities funded by the Union.

Amendment 18
Proposal for a regulation
Recital 22
(22) Horizon 2020 should contribute to the attractiveness of the research profession in the Union. Adequate attention should be paid to the European Charter for Researchers and Code of Conduct for the Recruitment of Researchers, together with other relevant reference frameworks defined in the context of the European Research Area, while respecting their voluntary nature.

Amendment 19
Proposal for a regulation
Recital 22 a (new)

(22a) Horizon 2020 should support research in the field of Humanities, – especially those which produce knowledge –, via basic and applied research, and contribute with new material evidence or new methods of approach, to the development of new fields of interdisciplinary research, the creation of new jobs, the preservation of cultural heritage and the sustainability of Europe as the cradle of humanistic tradition and leader in world tourism, as it is essential for due recognition to be given to the role which social sciences and humanities play in these areas, in keeping with the goal of creating ‘inclusive, innovative and secure societies’.

Amendment 20
Proposal for a regulation
Recital 24 a (new)
Text proposed by the Commission

Amendment

(24a) Horizon 2020 should make use of the competences given to the Union through the TFEU in the area of sport by facilitating access to research in this area, in particular with regard to the health and societal cohesion aspects of physical activity and its potential to help the Union meet the objectives of the Europe 2020 strategy.

Amendment 21
Proposal for a regulation
Recital 26 a (new)

Text proposed by the Commission

Amendment

(26a) Activities undertaken under Horizon 2020 should ensure full compatibility with the future Lifelong Learning programme and should encourage synergies, interconnectivity and integration with other European policies and programmes. It is important to emphasise that the mobility of PhD students has a key role to play in Horizon 2020, which, as a complement to the future Lifelong Learning programme and other sources of education funding, should support the Bologna Process and Neighbourhood policies with a view to improving the complementarity with any programmes the EU undertakes in the field of education.

Amendment 22
Proposal for a regulation
Recital 27 a (new)

Text proposed by the Commission

Amendment

(27a) In order to maximise the impact of Horizon 2020, special consideration should be given to multidisciplinary and
interdisciplinary approaches as necessary elements for major scientific progress. Breakthroughs in science take often place at the boundaries or intersections of disciplines. Furthermore, the complexity of the problems and challenges that Europe is facing requires solutions that can only be tackled from several disciplines working together.

Amendment 23
Proposal for a regulation
Recital 28

Text proposed by the Commission
(28) With the aim to achieve the greatest possible impact of Union funding, Horizon 2020 is to develop closer synergies, which may also take the form of public-public partnerships, with national and regional programmes that support research and innovation.

Amendment
(28) With the aim to achieve the greatest possible impact of Union funding, it is essential for Horizon 2020 to develop closer collaboration, which may take the form of public-public partnerships, but should however aim to prioritise the public interest, with regional, national and supra-national programmes that support research and innovation.

Amendment 24
Proposal for a regulation
Recital 30 a (new)

Text proposed by the Commission
(30a) There is a need to step up cooperation within Horizon 2020 under specific conditions with neighbouring countries, with specific regard to the countries of the Eastern Partnership.

Amendment
(30a) There is a need to step up cooperation within Horizon 2020 under specific conditions with neighbouring countries, with specific regard to the countries of the Eastern Partnership.
Text proposed by the Commission

Amendment

(32a) The rules of participation for any activity under Horizon 2020 should be simple, clear and easily accessible. Due account should be taken of the fact that different types of scientific research may have easier access to private funds.

Amendment 26

Proposal for a regulation
Article 1

Text proposed by the Commission

This Regulation establishes Horizon 2020 - the Framework Programme for Research and Innovation (2014-2020) (‘Horizon 2020’) and determines the framework governing Union support to research and innovation activities and fostering better exploitation of the industrial potential of policies of innovation, research and technological development.

Amendment

This Regulation establishes Horizon 2020 - the Framework Programme for Research and Innovation (2014-2020) (‘Horizon 2020’) and determines the framework governing Union support to research and innovation activities with the objective of strengthening the European scientific and technological base, ensuring the development of its intellectual capital and fostering benefits for society, including better exploitation of the social and industrial potential of policies of innovation, research and technological development.

Amendment 27

Proposal for a regulation
Article 4

Text proposed by the Commission

Horizon 2020 shall play a central role in the delivery of the Europe 2020 strategy for smart, sustainable and inclusive growth by providing a common strategic framework for the Union's research and innovation funding, thus acting as a vehicle for leveraging private investment, creating

Amendment

Horizon 2020 shall play a central role in the delivery of the Europe 2020 strategy for smart, sustainable and inclusive growth by providing a common strategic framework for the Union's research and innovation funding, thus acting as a vehicle for leveraging public and private
new job opportunities and ensuring Europe's long-term sustainable growth and competitiveness. Investment, creating new job opportunities, promoting economic, social and territorial cohesion and ensuring Europe's long-term sustainable growth and competitiveness.

Amendment 28

Proposal for a regulation
Article 5 – paragraph 1

Text proposed by the Commission

1. Horizon 2020 shall contribute to building an economy based on knowledge and innovation across the whole Union by leveraging sufficient additional research, development and innovation funding. Thereby, it shall support the implementation of the Europe 2020 strategy and other Union policies, as well as the achievement and functioning of the European Research Area (ERA). The relevant performance indicators are set out in the introduction of Annex I.

Amendment

1. Horizon 2020 shall contribute to building an economy based on knowledge and innovation across the whole Union by leveraging sufficient additional research, development and innovation funding. Thereby, it shall support the implementation of the Europe 2020 strategy and other Union policies, as well as the achievement and functioning of the European Research Area (ERA) through specific and exemplary actions fostering structural changes in European research and innovation systems. The relevant performance indicators are set out in the introduction of Annex I.

Amendment 29

Proposal for a regulation
Article 5 – paragraph 2 – subparagraph 1 – point a

Text proposed by the Commission

(a) excellent science;

Amendment

(a) excellent science including basic and applied research in the Humanities;

Amendment 30

Proposal for a regulation
Article 5 – paragraph 2 – subparagraph 1 – point c
(c) societal challenges. 

Amendment 31
Proposal for a regulation
Article 5 – paragraph 5 a (new)

Text proposed by the Commission
(c) societal challenges including basic and applied research in Social Sciences.

Amendment
5a. Horizon 2020 shall contribute to the attractiveness of researchers' career across Europe and mitigate the effects of brain-drain. As a result, it shall be implemented in a manner to promote the creation of a single market for researchers, in particular by enabling for appropriate mechanisms to decrease the disparities in researcher's remuneration under this programme.

Amendment 32
Proposal for a regulation
Article 14

Text proposed by the Commission
Horizon 2020 shall be implemented in a manner ensuring that the priorities and actions supported are relevant to changing needs and take account of the evolving nature of science, technology, innovation, markets and society, where innovation includes business, organisational and social aspects.

Amendment
Horizon 2020 shall be implemented in a manner ensuring that the priorities and actions supported are in keeping with the current teaching and research set-up and can also be adjusted in line with changing needs and take account of the evolving nature of science, technology, innovation, labour markets and society, where science includes any field of academic research and innovation includes socio-economic, cultural and organisational aspects.

Amendment 33
Proposal for a regulation
Article 15

Text proposed by the Commission

Horizon 2020 shall ensure the effective promotion of gender equality and the gender dimension in research and innovation content.

Amendment

Horizon 2020 shall ensure the effective promotion of gender balance in all programmes, in evaluation committees, in expert and advisory groups and in any decision-making body existing or created for its implementation. To this end, targets will be developed, and appropriate actions designed to reach those targets will be implemented.

Amendment 34

Proposal for a regulation
Article 16 – paragraph 3 – point b

Text proposed by the Commission

(b) research activity intended to modify the genetic heritage of human beings which could make such changes heritable;

Amendment

(b) research activity intended to modify the genetic heritage of human beings;

Amendment 35

Proposal for a regulation
Article 19 – paragraph 3 – point e a (new)

Text proposed by the Commission

(ea) partner-based research and the establishment of networks to ensure better-quality planning.

Amendment

(ea) partner-based research and the establishment of networks to ensure better-quality planning.

Amendment 36

Proposal for a regulation
Article 21 – paragraph 1 – point c

Text proposed by the Commission

(c) supporting the Union's external and

Amendment

(c) supporting the Union's external and
development policy objectives, complementing external and development programmes.

development policy objectives, complementing external and development programmes, \textit{in keeping with the interests of all stakeholders.}

Amendment 37

Proposal for a regulation
Article 22 – paragraph 3 – point e a (new)

\textit{Text proposed by the Commission} \quad \textit{Amendment}

(ea) initiatives to encourage an interest in the sciences from an early age, through the organisation of open days at research centres for example;

Amendment 38

Proposal for a regulation
Article 22 – paragraph 3 – point e b (new)

\textit{Text proposed by the Commission} \quad \textit{Amendment}

(eb) action to raise the profile of European awards in the fields of science and research.

Amendment 39

Proposal for a regulation
Article 24 – paragraph 1

\textit{Text proposed by the Commission} \quad \textit{Amendment}

1. The Commission shall take appropriate measures ensuring that, when actions financed under this Regulation are implemented, the financial interests of the Union are protected by the application of preventive measures against fraud, corruption and any other illegal activities, by effective checks and, if irregularities are

1. The Commission shall take appropriate measures ensuring that, when actions financed under this Regulation are implemented, the financial interests of the Union are protected by \textit{the efficient management of research centres}, the application of preventive measures against fraud, corruption and any other illegal
detected, by the recovery of the amounts wrongly paid and, where appropriate, by effective, proportionate and deterrent penalties.

activities, by effective checks and, if irregularities are detected, by the recovery of the amounts wrongly paid and, where appropriate, by effective, proportionate and deterrent penalties.

Amendment 40

Proposal for a regulation
Annex I – paragraph 7 – point a

Text proposed by the Commission

(a) The European Research Council (ERC) shall provide attractive and flexible funding to enable talented and creative individual researchers and their teams to pursue the most promising avenues at the frontier of science, on the basis of Union-wide competition.

Amendment

(a) The European Research Council (ERC) shall provide attractive and flexible funding to enable talented and creative individual researchers and their teams working in any field of knowledge to pursue the most promising avenues at the frontier of science, on the basis of Union-wide competition.

Amendment 41

Proposal for a regulation
Annex I – paragraph 7 – point b

Text proposed by the Commission

(b) Future and emerging technologies shall support collaborative research in order to extend Europe’s capacity for advanced and paradigm-changing innovation. It shall foster scientific collaboration across disciplines on radically new, high-risk ideas and accelerate development of the most promising emerging areas of science and technology as well as the Union wide structuring of the corresponding scientific communities.

Amendment

(b) Future and emerging technologies shall support collaborative or cross-disciplinary research in order to extend Europe’s capacity for advanced and paradigm-changing innovation. It shall foster scientific collaboration across disciplines on radically new, high-risk ideas and accelerate development of the most promising emerging areas of science and technology as well as the Union wide structuring of the corresponding scientific communities.
Amendment 42

Proposal for a regulation
Annex I – paragraph 7 – point d

_text proposed by the Commission_

(d) Research infrastructure shall develop European research infrastructure for 2020 and beyond, foster their innovation potential and human capital, and complement this with the related Union policy and international cooperation.

_text proposed by the Commission_

(d) Research infrastructure shall develop European research infrastructure for 2020 and beyond, foster their innovation potential and human capital, and complement this with the related Union policy and international cooperation _in order to retain and attract talented people to live and work in the Union._

Amendment 43

Proposal for a regulation
Annex I – paragraph 14 – point a

_text proposed by the Commission_

(a) Health, demographic change and well-being;

_text proposed by the Commission_

(a) Health, demographic change and well-being, _including through participation in sporting activities;_

Amendment 44

Proposal for a regulation
Annex I – paragraph 14 – point f

_text proposed by the Commission_

(f) Inclusive, innovative and secure societies.

_text proposed by the Commission_

(f) Inclusive, _educated_, innovative and secure societies.

Amendment 45

Proposal for a regulation
Annex I – paragraph 16

_text proposed by the Commission_

Social sciences and humanities shall be an integral part of the activities to address all

_text proposed by the Commission_

Social sciences and humanities shall be an integral part of the activities to address all
the challenges. In addition, the underpinning development of these
disciplines shall be supported under the specific objective ‘Inclusive, innovative
and secure societies’. Support will also focus on providing a strong evidence base
for policy making at international, Union, national and regional levels. Given the
global nature of many of the challenges, strategic cooperation with third countries
shall be an integral part of each challenge. In addition, cross-cutting support for
international cooperation shall be provided under the specific objective ‘Inclusive,
innovative and secure societies’.

Amendment 46
Proposal for a regulation
Annex I – paragraph 17

Text proposed by the Commission

The specific objective ‘Inclusive, innovative and secure societies’ also includes an activity to close the research and innovation divide with specific measures to unlock excellence in less developed regions of the Union.

Amendment

The specific objective ‘Inclusive, educated, innovative and secure societies’ also includes an activity to close the research and innovation divide with specific measures to unlock excellence in less developed regions of the Union. It also includes activities, strategies, methodologies and tools needed to enable a dynamic and sustainable cultural heritage for Europe.

Amendment 47
Proposal for a regulation
Annex I – part I – point 1 – point 1.1 – paragraph 6

Text proposed by the Commission

Furthermore, these factors compound Europe’s relative unattractiveness in the global competition for scientific talent. The ability of the US system to offer more resources per researcher and better career prospects explains how it continues to

Amendment

Furthermore, these factors compound Europe’s relative unattractiveness in the global competition for scientific talent. The ability of the US system to offer more resources per researcher, better research infrastructures and better career prospects
attract the best researchers from across the world, including tens of thousands from the Union.

Amendment 48

Proposal for a regulation
Annex I – part I – point 1 – point 1.3 – paragraph 1

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
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<tbody>
<tr>
<td>The fundamental activity of the ERC shall be to provide attractive long-term funding to support excellent investigators and their research teams to pursue ground-breaking, high-gain/high-risk research.</td>
<td>The fundamental activity of the ERC shall be to provide attractive long-term funding to support excellent investigators and their research teams to pursue ground-breaking, high-gain/high-risk research. From this point of view, research as a scientific procedure should be recognised without exception in all fields of human knowledge.</td>
</tr>
</tbody>
</table>

Amendment 49

Proposal for a regulation
Annex I – part I – point 1 – point 1.3 – paragraph 2

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
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<tbody>
<tr>
<td>ERC funding shall be awarded in accordance with the following well-established principles. Scientific excellence shall be the sole criterion on which ERC grants are awarded. The ERC shall operate on a ‘bottom-up’ basis without predetermined priorities. The ERC grants shall be open to individual teams of researchers of any age and from any country in the world, working in Europe. And the ERC shall aim to foster healthy competition across Europe.</td>
<td>ERC funding shall be awarded in accordance with the following well-established principles. Scientific excellence in any field of knowledge shall be the sole criterion on which ERC grants are awarded. The ERC shall operate on a ‘bottom-up’ basis without predetermined priorities. The ERC grants shall be open to individual teams of researchers of any age and from any country in the world, working in Europe. And the ERC shall aim to foster healthy competition across Europe.</td>
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Amendment 50
### Proposal for a regulation
Annex I – part I – point 3 – point 3.1 – paragraph 4

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
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<tr>
<td>The necessary reform must start at the first stages of the researchers’ careers, during their doctoral studies or comparable post-graduate training. Europe must develop state-of-the-art, innovative training schemes, consistent with the highly competitive and increasingly inter-disciplinary requirements of research and innovation. Strong involvement of businesses, including SMEs and other socio-economic actors, will be needed to equip researchers with the innovation skills demanded by the jobs of tomorrow. It will also be important to enhance the mobility of these researchers, as it currently remains at too modest a level: in 2008, only 7 % of European doctoral candidates were trained in another Member State, whereas the target is 20 % by 2030.</td>
<td>The necessary reform must start at the first stages of the researchers’ careers, during their doctoral studies or comparable post-graduate training. Europe must develop state-of-the-art, innovative training schemes, consistent with the highly competitive and increasingly inter-disciplinary requirements of research and innovation. Strong involvement of businesses, including SMEs and other socio-economic actors, will be needed to equip researchers with the innovation skills demanded by the jobs of tomorrow. It will also be important to enhance the mobility of these researchers, as it currently remains at too modest a level: in 2008, only 7 % of European doctoral candidates were trained in another Member State, whereas the target is 20 % by 2030. Accordingly, doctoral candidates in all fields must be clearly identified as one of the key target groups of the new programme for education, training, youth and sport, and care must be taken to ensure the necessary complementarity with Horizon 2020.</td>
</tr>
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</table>

### Amendment 51

### Proposal for a regulation
Annex I – part I – point 3 – point 3.3 – point a – paragraph 2

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
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<tbody>
<tr>
<td>Key activities shall be to provide excellent and innovative training to early-stage researchers at post-graduate level via interdisciplinary projects or doctoral programmes involving universities, research institutions, businesses, SMEs and other socio-economic groups from different countries. This will improve</td>
<td>Key activities shall be to provide excellent and innovative training to early-stage researchers at post-graduate level via interdisciplinary projects or doctoral programmes allowing researchers to develop their research curriculum and involving universities, research institutions, businesses, SMEs and other socio-</td>
</tr>
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</table>
career prospects for young post-graduate researchers in both the public and private sectors.

economic groups from different countries. This will develop and improve career prospects for young post-graduate researchers in both the public and private sectors.

**Amendment 52**

Proposal for a regulation
Annex I – part I – point 3 – point 3.3 – point b – paragraph 2

*Text proposed by the Commission*

Key activities shall be to encourage experienced researchers to broaden or deepen their skills by means of mobility by opening attractive career opportunities in universities, research institutions, businesses, SMEs and other socio-economic groups all over Europe and beyond. Opportunities to restart a research career after a break shall also be supported.

*Amendment*

Key activities shall be to encourage experienced researchers to broaden or deepen their skills by means of mobility by opening attractive career opportunities in universities, research institutions, businesses, SMEs and other socio-economic groups all over Europe and beyond, while taking account of the role of young people in the science sector, offering researchers the opportunity to be trained and to acquire new knowledge in a third-country high-level research organisation, and subsequently return. Key regard shall be taken of the role of women in science, and potential barriers to their entry into the field. Opportunities to restart a research career after a break and flexible working arrangements shall also be supported.

**Amendment 53**

Proposal for a regulation
Annex I – part I – point 3 – point 3.3 – point c – paragraph 2

*Text proposed by the Commission*

Key activities shall be to support short-term exchanges of research and innovation staff among a partnership of universities, research institutions, businesses, SMEs and other socio-economic groups, both within Europe and worldwide. This will include

*Amendment*

Key activities shall be to support short-term exchanges of research and innovation staff among a partnership of universities, research institutions, businesses, SMEs and other socio-economic groups, both within Europe and worldwide. This will include
fostering cooperation with third countries and, in particular, strengthening scientific partnerships between the two sides of the Mediterranean and making Euro-Mediterranean research, innovation and technological development programmes more effective.

Amendment 54
Proposal for a regulation
Annex I – part I – point 4 – point 4.1 – paragraph 2

Text proposed by the Commission

Research infrastructures are key determinants of Europe's competitiveness across the full breadth of scientific domains and essential to science-based innovation. In many fields research is impossible without access to supercomputers, radiation sources for new materials, clean rooms for nanotechnologies, databases for genomics and social sciences, observatories for Earth sciences, broadband networks for transferring data, etc. Research infrastructures are necessary to carry out the research needed to address grand societal challenges – energy, climate change, bio-economy and lifelong health and wellbeing for all. They propel collaboration across borders and disciplines and create a seamless and open European space for online research. They promote mobility of people and ideas, bring together the best scientists from across Europe and the world and enhance scientific education. They drive excellence within the European research and innovation communities and can be outstanding showcases of science for society at large.

Amendment

Research infrastructures are key determinants of Europe's competitiveness across the full breadth of scientific domains and essential to science-based innovation. In many fields research is impossible without access to supercomputers, radiation sources for new materials, clean rooms for nanotechnologies, databases for genomics and social sciences, observatories for Earth sciences, broadband networks for transferring data, etc. Research infrastructures are necessary to carry out the research needed to address grand societal challenges – energy, climate change, bio-economy and lifelong health and wellbeing for all. They propel collaboration across borders and disciplines and create a seamless and open European space for online research. They promote mobility of people and ideas, bring together the best scientists from across Europe and the world and enhance scientific education. They drive excellence within the European research and innovation communities and can be outstanding showcases of science for society at large. They can also drive innovation in the private sector and be a source of dynamic innovation for SMEs.
### Amendment 55
**Proposal for a regulation**  
Annex I – part I – point 4 – point 4.1 – paragraph 4 a (new)

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scientific publishing is a key element of research infrastructures and plays a key role in the generation of new knowledge and innovation. Sustainable payment and dissemination models which cover the cost of production are therefore of vital importance. Publications produced and validated as a result of work carried out by researchers who receive all or the vast majority of their funding from Horizon 2020 should make these findings available to the whole of the scientific community.</td>
<td></td>
</tr>
</tbody>
</table>

### Amendment 56
**Proposal for a regulation**  
Annex I – part I – point 4 – point 4.3 – point c a (new)

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
</tr>
</thead>
<tbody>
<tr>
<td>(ca) Reinforcing the role of academic research infrastructure and its links to innovation within SMEs The aim shall be to support partnerships between SMEs and academic institutions and their infrastructure in order to spur business innovation.</td>
<td></td>
</tr>
</tbody>
</table>

### Amendment 57
**Proposal for a regulation**  
Annex I – part II – point 1 – point 1.2 – point 1.2.3 – point b

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advancing scientific knowledge of the potential impact of nanotechnologies and nanosystems on health or on the environment, and providing tools for risk assessment and management along the</td>
<td></td>
</tr>
<tr>
<td>Advancing scientific knowledge of the potential impact of nanotechnologies and nanosystems on health or on the environment, and providing tools for risk assessment and management along the</td>
<td></td>
</tr>
</tbody>
</table>
entire life cycle, and enabling people with disabilities to be more fully integrated into society.

Amendment 58
Proposal for a regulation
Annex I – part II – point 3 – point 3.1 – paragraph 4

**Text proposed by the Commission**

The proposed actions aim to complement national and regional business innovation policies and programmes, to foster cooperation between SMEs and other innovation-relevant actors, to bridge the gap between research/development and successful market uptake, to provide a more business innovation friendly environment, including demand-side measures, and support taking into account the changing nature of innovation processes, new technologies, markets and business models.

**Amendment**

The proposed actions aim to complement national and regional business innovation policies and programmes, to foster cooperation between SMEs, academic institutions, including those in the creative industries, which are well placed to take advantage of the internationalised business environment and other innovation-relevant actors, to bridge the gap between research/development and successful market uptake, to provide a more business innovation friendly environment, including demand-side measures, and support taking into account the changing nature of innovation processes, new technologies, markets and business models.

Amendment 59
Proposal for a regulation
Annex I – part II – point 3 – point 3.2 – paragraph 2

**Text proposed by the Commission**

SMEs can be found in all sectors of the economy. They form a more important part of the European economy than of other regions such as the United States of America. All types of SMEs can innovate. They need to be encouraged and supported to invest in research and innovation. In doing so they should be able to draw on the full innovative potential of the internal market and the ERA so as to create new business opportunities in Europe and beyond and to contribute to find solutions

**Amendment**

SMEs can be found in all sectors of the economy. They form a more important part of the European economy than of other regions such as the United States of America. All types of SMEs can innovate. They need to be encouraged and supported to invest in research and innovation and to increase links and partnerships with universities and other research institutions. In doing so they should be able to draw on the full innovative potential of the internal market and the
to key societal challenges.

ERA so as to create new business opportunities in Europe and beyond and to contribute to find solutions to key societal challenges.

Amendment 60
Proposal for a regulation
Annex I – part II – point 3 – point 3.2 – paragraph 4

Text proposed by the Commission

Cross-border collaborations are an important element in the innovation strategy of SMEs to overcome some of their size-related problems, such as access to technological and scientific competences and new markets. They contribute to turn ideas into profit and company growth and in return to increase private investment in research and innovation.

Amendment

Cross-border collaborations are an important element in the innovation strategy of SMEs to overcome some of their size-related problems, such as access to technological and scientific competences and new markets. They contribute to turn ideas into profit and company growth and in return to increase private investment in research and innovation. Increased educational focus on innovation and research and development in business can also play a role in providing innovative and dynamic staff for Europe's SMEs.

Amendment 61
Proposal for a regulation
Annex I – part III – point 1 – point 1.1 – paragraph 4

Text proposed by the Commission

Chronic conditions such as cardiovascular disease (CVD), cancer, diabetes, neurological and mental health disorders, overweight and obesity and various functional limitations are major causes of disability, ill-health and premature death, and present considerable social and economic costs.

Amendment

Chronic conditions such as cardiovascular disease (CVD), cancer, diabetes, neurological and mental health disorders, overweight and obesity and various functional limitations are major causes of disability, ill-health and premature death, and present considerable social and economic costs. Physical education and participation in organised sport can play a major role in the prevention of such conditions.
Amendment 62
Proposal for a regulation
Annex I – part III – point 1 – point 1.3 – paragraph 1

Text proposed by the Commission

Effective health promotion, supported by a robust evidence base, prevents disease, improves wellbeing and is cost effective. Health promotion and disease prevention also depend on an understanding of the determinants of health, on effective preventive tools, such as vaccines, on effective health and disease surveillance and preparedness, and on effective screening programmes.

Amendment

Effective health promotion, supported by a robust evidence base, prevents disease, improves wellbeing and is cost effective. Health promotion and disease prevention also depend on an understanding of the determinants of health, such as physical exercise, on effective preventive tools, such as vaccines, on effective health and disease surveillance and preparedness, and on effective screening programmes.

Amendment 63
Proposal for a regulation
Annex I – part III – point 1 – point 1.3 – paragraph 2

Text proposed by the Commission

Successful efforts to prevent, manage, treat and cure disease, disability and reduced functionality are underpinned by the fundamental understanding of their determinants and causes, processes and impacts, as well as factors underlying good health and wellbeing. Effective sharing of data and the linkage of these data with large scale cohort studies is also essential, as is the translation of research findings into the clinic, in particular through the conduct of clinical trials.

Amendment

Successful efforts to prevent, manage, treat and cure disease, disability and reduced functionality are underpinned by the fundamental understanding of their determinants and causes, processes and impacts, as well as factors underlying good health and wellbeing, including the impact of social and cultural factors and creative activities on individuals’ daily lives. Effective sharing of data and the linkage of these data with large scale cohort studies is also essential, as is the translation of research findings into the clinic, in particular through the conduct of clinical trials.

Amendment 64
Proposal for a regulation
Annex I – part III – point 1 – point 1.3 – paragraph 3
An increasing disease and disability burden in the context of an aging population places further demands on health and care sectors. If effective health and care is to be maintained for all ages, efforts are required to improve decision making in prevention and treatment provision, to identify and support the dissemination of best practice in the health and care sectors, and to support integrated care and the wide uptake of technological, organisational and social innovations empowering in particular older persons as well as disabled persons to remain active and independent. Doing so will contribute to increasing, and lengthening the duration of their physical, social, and mental well-being.

Specific activities shall include:
understanding the determinants of health (including environmental and climate related factors), improving health promotion and disease prevention; understanding disease and improving diagnosis; developing effective screening programmes and improving the assessment of disease susceptibility; improving surveillance and preparedness; developing better preventive vaccines; using in-silico medicine for improving disease management and prediction; treating disease; transferring knowledge to clinical practice and scalable innovation actions; better use of health data; active ageing, independent and assisted living; individual

Specific activities shall include:
understanding the determinants of health (including lifestyle factors and environmental and climate related factors), improving health promotion and disease prevention; understanding disease and improving diagnosis; developing effective screening programmes and improving the assessment of disease susceptibility; improving surveillance and preparedness; developing better preventive vaccines; using in-silico medicine for improving disease management and prediction; treating disease; transferring knowledge to clinical practice and scalable innovation actions; better use of health data; active ageing, independent and assisted living;
empowerment for self-management of health; promotion of integrated care; improving scientific tools and methods to support policy making and regulatory needs; and optimising the efficiency and effectiveness of healthcare systems and reducing inequalities by evidence based decision making and dissemination of best practice, and innovative technologies and approaches.

Amendment 66

Proposal for a regulation
Annex I – part III – point 3 – point 3.1 – paragraph 4

Text proposed by the Commission

To achieve these reductions, significant investments need to be made in research, development, demonstration and market roll-out of efficient, safe and reliable low-carbon energy technologies and services. These must go hand in hand with non-technological solutions on both the supply and demand sides. All this must be part of an integrated low-carbon policy, including mastering key enabling technologies, in particular ICT solutions and advanced manufacturing, processing and materials. The goal is to produce efficient energy technologies and services that can be taken up widely on European and international markets and to establish intelligent demand-side management based on an open and transparent energy trade market and intelligent energy efficiency management systems.

Amendment

To achieve these reductions, significant investments need to be made in research, development, demonstration and market roll-out of efficient, safe and reliable low-carbon energy technologies and services. These must go hand in hand with non-technological solutions on both the supply and demand sides. Furthermore, these investments must be accompanied by a high-profile public-awareness campaign to ensure that European citizens lead the way in introducing the necessary environmental, social and cultural changes. All this must be part of an integrated low-carbon policy, including mastering key enabling technologies, in particular ICT solutions and advanced manufacturing, processing and materials. The goal is to produce efficient energy technologies and services that benefit society and can be taken up widely on European and international markets and to establish intelligent demand-side management based on an open and transparent energy trade market and intelligent energy efficiency management and monitoring systems.
Amendment 67  
Proposal for a regulation  
Annex I – part III – point 5 – point 5.3 – point e a (new)

**Text proposed by the Commission**

(ea) Enabling sustainable cultural heritage in response to climate change

The aim is to research into the strategies, methodologies and tools needed to enable a dynamic and sustainable cultural heritage for Europe in response to climate change. Activities shall also focus on providing a better understanding of how communities perceive, adapt and respond to changing environments and more frequent extreme events.

**Justification**

Historic buildings (and collections) are a key issue, within the contexts of both cultural heritage and climate change. European funded research programmes should be able to research how to adapt historical artefacts and buildings to make them more resistant to the effects of climate change. In addition, the restoration of previously abandoned buildings and how communities decide what to protect is important in this context.

Amendment 68  
Proposal for a regulation  
Annex I – part III – point 6 – point 6.1 – paragraph 2

**Text proposed by the Commission**

Europe is confronted with major socio-economic challenges which significantly affect its future - such as growing economic and cultural interdependencies, ageing, social exclusion and poverty, inequalities and migration flows, closing the digital divide, fostering a culture of innovation and creativity in society and enterprises, as well ensuring security and freedom, trust in democratic institutions and between citizens within and across borders. These challenges are enormous and they call for a common European

**Amendment**

Europe is confronted with major socio-economic challenges which significantly affect its future, such as growing economic and cultural interdependencies, ageing and demographic change, social exclusion and poverty, inequalities and migration flows, closing the digital divide, fostering a culture of innovation and creativity in society and enterprises, as well as ensuring culturally sustainable development, trust in democratic institutions and between citizens within and across borders.

Moreover the role of public social policies in Europe is increasingly perceived as a
An approach. critical element for the sustainability of the European social model itself. These challenges are enormous and they call for an increasingly complex mix of diverse as well as common European approaches, based upon shared scientific knowledge that only the social sciences and humanities can provide.

Amendment 69
Proposal for a regulation
Annex I – part III – point 6 – point 6.1 – paragraph 7

Text proposed by the Commission

The in-built complexity of these challenges and the evolutions of demands thus make it essential to develop innovative research and new smart technologies, processes and methods, social innovation mechanisms, coordinated actions and policies that will anticipate or influence major evolutions for Europe. It calls for understanding the underlying trends and impacts at play in these challenges and rediscovering or reinventing successful forms of solidarity, coordination and creativity that make Europe a distinctive model of inclusive, innovative and secure societies compared to other world regions. It requires a more strategic approach to cooperation with third countries. Finally, as security policies should interact with different social policies, enhancing the societal dimension of security research will be an important aspect of this challenge.

Amendment

The in-built complexity of these challenges and the evolutions of demands thus make it essential to develop innovative research and new smart technologies, processes and methods, social innovation mechanisms, coordinated actions and policies that will anticipate or influence major evolutions for Europe. It calls for understanding the underlying trends and impacts at play in these challenges and rediscovering or reinventing successful forms of solidarity, coordination and creativity that make Europe a distinctive model of inclusive, innovative and secure societies compared to other world regions. This requires a specific focus on the cultural heritage of Europe, and an approach which identifies activities which rejuvenate and bring people together across communities. It also requires a more strategic approach to cooperation with third countries. Finally, as security policies should interact with different social policies, enhancing the societal dimension of security research will be an important aspect of this challenge.

Amendment 70
Proposal for a regulation
Annex I – part III – point 6 – point 6.3 – point 6.3.1 – paragraph 1
The aim is to enhance **solidarity** as well as social, economic and political inclusion and positive inter-cultural dynamics in Europe and with international partners, through cutting-edge science and interdisciplinarity, technological advances and organisational innovations. Humanities research *can play an important* role here. Research shall support policymakers in designing policies that combat poverty and prevent the development of various forms of divisions, discriminations and inequalities in European societies, such as gender inequalities or digital or innovation divides, and with other world regions. It shall in particular feed into the implementation and the adaptation of the Europe 2020 strategy and the broad external action of the Union. Specific measures shall be taken to unlock excellence in less developed regions, thereby widening participation in Horizon 2020.

The aim is to enhance **intercommunication** as well as social, economic, political and cultural inclusion and positive inter-cultural dynamics in Europe *as well as to gain a greater understanding of societal changes in Europe* and with international partners, through cutting-edge science and interdisciplinarity, technological advances and organisational innovations. Humanities research *should play a crucial* role here, including through research into the consequences of societal change for the well-being and quality of the lives of individuals, families and societies, and must therefore be properly funded. Humanities research can also reveal, develop, preserve and designate the multidimensional European cultural heritage by creating new scientific disciplines, new innovation fields and jobs. There is a need for an increased knowledge base in the areas of social exclusion, health, demographic change and the ageing society, life course, family traditions, shared history and cultural heritage, physical exercise, migration and mobility, education and lifelong learning, multilingualism and governance dynamics. Research in the field of human and social sciences can play an important role here. Research shall support policymakers in designing policies and identifying activities that combat poverty and prevent the development of various forms of divisions, discriminations and inequalities in European societies, such as gender inequalities or digital or innovation divides, and with other world regions, *for example on the basis of comparative studies of cultural and linguistic diversity and intercultural interaction*. It shall in particular feed into the implementation and the adaptation of the Europe 2020 strategy and the broad external action of the Union. Specific measures shall be taken to unlock
excellence in less developed regions, thereby widening participation in Horizon 2020.

Amendment 71
Proposal for a regulation
Annex I – part III – point 6 – point 6.3 – point 6.3.1 – paragraph 2 – point b a (new)

Text proposed by the Commission

(ba) develop mutual knowledge and understanding through intercultural dialogue;

Amendment

Amendment 72
Proposal for a regulation
Annex I – part IV – point 3 – paragraph 2

Text proposed by the Commission

The JRC's key competence areas will be energy, transport, environment and climate change, agriculture and food security, health and consumer protection, information and communication technologies, reference materials, and safety and security (including nuclear in the Euratom programme).

Amendment

The JRC's key competence areas will be energy, transport, environment and climate change, agriculture and food security, health and consumer protection, the protection of the historical, artistic and cultural heritage, information and communication technologies, reference materials, and safety and security (including nuclear in the Euratom programme).

Amendment 73
Proposal for a regulation
Annex I – part V – point 2 – paragraph 2

Text proposed by the Commission

The EIT will address these issues by promoting structural changes in the European innovation landscape. It will do so by fostering the integration of higher education, research and innovation of the

Amendment

The EIT will address these issues by promoting structural changes in the European innovation landscape which encourages the Union to become more competitive. It will do so by fostering the
highest standards, thereby creating new environments conducive to innovation, and by promoting and supporting a new generation of entrepreneurial people. In doing so, the EIT will contribute fully to the objectives of Europe 2020 and notably the Innovation Union and Youth on the Move flagship initiatives.

integration of higher education, research and innovation of the highest standards, thereby creating new environments conducive to innovation, and by promoting and supporting a new generation of entrepreneurial people. In doing so, the EIT will contribute fully to the objectives of Europe 2020 and notably the Innovation Union and Youth on the Move flagship initiatives; therefore the financial contribution set out in Annex II is crucial.
## PROCEDURE

<table>
<thead>
<tr>
<th><strong>Title</strong></th>
<th>Establishment of Horizon 2020 - The Framework Programme for Research and Innovation (2014-2020)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Committee responsible</strong></td>
<td>ITRE</td>
</tr>
<tr>
<td><strong>Date announced in plenary</strong></td>
<td>13.12.2011</td>
</tr>
<tr>
<td><strong>Opinion by</strong></td>
<td>CULT</td>
</tr>
<tr>
<td><strong>Date announced in plenary</strong></td>
<td>13.12.2011</td>
</tr>
<tr>
<td><strong>Rapporteur</strong></td>
<td>Emma McClarkin</td>
</tr>
<tr>
<td><strong>Date appointed</strong></td>
<td>31.1.2012</td>
</tr>
<tr>
<td><strong>Discussed in committee</strong></td>
<td>27.3.2012 29.5.2012</td>
</tr>
<tr>
<td><strong>Date adopted</strong></td>
<td>10.7.2012</td>
</tr>
</tbody>
</table>
| **Result of final vote** | +: 26  
  --: 2  
  0: 0 |
| **Members present for the final vote** | Zoltán Bagó, Malika Benarab-Attou, Lothar Bisky, Piotr Borys, Jean-Marie Cavada, Silvia Costa, Santiago Fisas Ayxela, Lorenzo Fontana, Mary Honeyball, Petra Kammerevert, Morten Løkkegaard, Emma McClarkin, Emilio Menéndez del Valle, Doris Pack, Chrysoula Paliadeli, Marie-Thérèse Sanchez-Schmid, Marietje Schaake, Marco Scurria, Emil Stoyanov, Hannu Takkula, László Tókés, Helga Trüpel, Marie-Christine Vergiat, Milan Zver |
| **Substitute(s) present for the final vote** | Ivo Belet, Nessa Childers, Seán Kelly, Iosif Matula, Mitro Repo |
| **Substitute(s) under Rule 187(2) present for the final vote** | Evžen Tošenovský |
18.9.2012

OPINION OF THE COMMITTEE ON LEGAL AFFAIRS

for the Committee on Industry, Research and Energy

on the proposal for a regulation of the European Parliament and of the Council establishing

Rapporteur: Piotr Borys

SHORT JUSTIFICATION

This regulation is part of the Horizon 2020 package presented by the Commission in
November 2011. The aim of the package is to establish the Framework Programme for
Research and Innovation for the 2014-2020 period.

The European Union's research and innovation policy is of particular importance for the
Union's competitiveness. The aim is for the EU to adapt to the changing world by pursuing a
research policy which puts it at the forefront of technology, thus creating jobs and boosting
the economy.

This regulation is the main instrument in the Horizon 2020 package. It establishes the
Framework Programme for Research and Innovation itself. As the main regulation, this
instrument is subject to the codecision procedure.

The Committee on Legal Affairs' interest in this decision is largely restricted to ethical issues,
as its responsibility includes ethical questions related to new technologies. The committee has
therefore restricted its amendments to the ethical issues raised by the draft regulation.

The main ethical issue at stake is that of research using human embryonic stem cells. The
Seventh Framework Programme (2007-2013) was approved after a delicate compromise was
reached on that ethical issue. This draft opinion aims to address that problem whilst aiming
for greater legal certainty.

The committee therefore proposes that research which either involves the destruction of
human embryos or which uses human embryonic stem cells should be completely excluded
from EU funding. It would thus be up to individual Member States to decide, in line with their
ethical rules, whether to fund such research from their own budgets.
AMENDMENTS

The Committee on Legal Affairs calls on the Committee on Industry, Research and Energy, as the committee responsible, to incorporate the following amendments into its report:

Amendment 1
Proposal for a regulation
Recital 23 a (new)

Text proposed by the Commission

(23a) Research and innovation often builds on the capacity of scientists, research institutions, businesses and citizens to access, share and use scientific information. To increase the circulation and exploitation of knowledge, sustainable access to scientific publications, already embraced in the Seventh Framework Programme, should be a general principle for scientific publications which receive public funding from Horizon 2020. Furthermore, Horizon 2020 should experiment with online open access to scientific data produced or collected by publicly funded research aiming at open access to such data becoming the general rule by 2020. Where appropriate, the costs of publishing may be covered by the Horizon 2020 budget.

Amendment 2
Proposal for a regulation
Recital 24

Text proposed by the Commission

(24) Research and innovation activities supported by Horizon 2020 should respect fundamental ethical principles. The
opinions of the European Group on Ethics in Science and New Technologies should be taken into account. Research activities should also take into account Article 13 TFEU and reduce the use of animals in research and testing, with a view ultimately to replacing animal use. All activities should be carried out ensuring a high level of human health protection in accordance with Article 168 TFEU.

Justification

This amendment seeks to stress that research remains subject to national law.

Amendment 3

Proposal for a regulation

Recital 25

Text proposed by the Commission

(25) The European Commission does not explicitly solicit the use of human embryonic stem cells. The use of human stem cells, be they adult or embryonic, if any, depends on the judgement of the scientists in view of the objectives they want to achieve and is subject to stringent Ethics Review. No project involving the use of human embryonic stem cells should be funded that does not obtain the necessary approvals from the Member States. No activity should be funded that is forbidden in all Member States. No activity should be funded in a Member State where such activity is forbidden.

Amendment

(25) There are considerable differences between national laws on research using human embryos and human embryonic stem cells. Union policy should not seek to harmonise national legislation. In connection with the Seventh Framework Programme, the Commission declared that it would 'continue with the current practice and [would] not submit to the Regulatory Committee proposals for projects which include research activities which destroy human embryos, including for the procurement of stem cells'. This commitment should be inserted into this Regulation in order to ensure legal
certainty. The Commission should actively support research aimed at developing alternatives to embryonic stem cells.


Justification

The purpose of this amendment is to give legal force to the Commission's commitment on stem cell research.

Amendment 4

Proposal for a regulation

Article 13 – paragraph 1

Text proposed by the Commission

1. Linkages and interfaces shall be implemented across and within the priorities of Horizon 2020. Particular attention shall be paid in this respect to the development and application of key enabling and industrial technologies, to bridging from discovery to market application, to cross-disciplinary research and innovation, to social and economic sciences and humanities, to fostering the functioning and achievement of the ERA, to cooperation with third countries, to responsible research and innovation including gender, and to enhancing the attractiveness of the research profession and to facilitating cross-border and cross-sector mobility of researchers.

Amendment

1. Linkages and interfaces shall be implemented across and within the priorities of Horizon 2020. Particular attention shall be paid in this respect to the development and application of key enabling and industrial technologies, to bridging from discovery to market application, to cross-disciplinary research and innovation, to social and economic sciences and humanities, to fostering the functioning and achievement of the ERA, to the development of research into the legal systems of the Member States, to cooperation with third countries, to responsible research and innovation including gender, and to enhancing the attractiveness of the research profession and to facilitating cross-border and cross-sector mobility of researchers.
**Justification**

*In view of the legal and ethical problems of certain kinds of research, legal research should also be funded by the proposal.*

**Amendment 5**

*Proposal for a regulation*

**Article 15 – paragraph 1 a (new)**

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1a. In research projects where human beings are involved as subjects or end-users, Horizon 2020 shall ensure that all participants and societal groups are treated equally.</td>
<td></td>
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</tbody>
</table>

**Amendment 6**

*Proposal for a regulation*

**Article 15 a (new)**

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
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</thead>
<tbody>
<tr>
<td>Article 15 a</td>
<td></td>
</tr>
<tr>
<td>Open Access</td>
<td></td>
</tr>
<tr>
<td>With a view to enhancing the exploitation and dissemination of results and thereby boosting European innovation, sustainable open access to publications resulting from research funded by Horizon 2020 shall be encouraged, whilst taking care to ensure that European scientists are able to publish in the most highly regarded journals and other fora. Open access to scientific data produced or collected in research funded by Horizon 2020 may be promoted.</td>
<td></td>
</tr>
<tr>
<td>Where publications resulting from Horizon 2020 are to be published in an open access, free-to-read format, the cost of publication shall be covered by the Horizon 2020 budget.</td>
<td></td>
</tr>
</tbody>
</table>
Amendment 7

Proposal for a regulation
Article 16 – paragraph 1 – subparagraph 1

Text proposed by the Commission

1. All the research and innovation activities carried out under Horizon 2020 shall comply with ethical principles and relevant national, Union and international legislation, including the Charter of Fundamental Rights of the European Union and the European Convention on Human Rights and its Supplementary Protocols.

Amendment

1. All the research and innovation activities carried out under Horizon 2020 shall comply with ethical principles and relevant national, Union and international legislation, including the Charter of Fundamental Rights of the European Union, the European Convention on Human Rights and its Supplementary Protocols, the Declaration of Helsinki on Ethical Principles for Medical Research Involving Human Subjects of the World Medical Association, the Council of Europe Convention of 4 April 1997 for the Protection of Human Rights and Dignity of the Human Being with regard to the Application of Biology and Medicine, with its additional protocols, and Resolution No 59/280 of the General Assembly of the United Nations of 8 March 2005 on Human Cloning.

Amendment 8

Proposal for a regulation
Article 16 – paragraph 3 – point c

Text proposed by the Commission

(c) research activities intended to create human embryos solely for the purpose of research or for the purpose of stem cell procurement, including by means of somatic cell nuclear transfer.

Amendment

(c) activities intended to create human embryos solely for the purpose of research or for the purpose of stem cell procurement, including by means of somatic cell nuclear transfer.
Amendment 9

Proposal for a regulation
Article 16 – paragraph 3 – point c a (new)

Text proposed by the Commission

(ca) research which involves the destruction of human embryos;

Amendment

Justification

This amendment precludes funding for research which involves the destruction of human embryos.

Amendment 10

Proposal for a regulation
Article 16 – paragraph 3 – point c b (new)

Text proposed by the Commission

(cb) research using human embryonic stem cells.

Amendment

Justification

This amendment precludes the funding of research which uses human embryonic stem cells.

Amendment 11

Proposal for a regulation
Article 16 – paragraph 4

Text proposed by the Commission

4. Research on human stem cells, both adult and embryonic, may be financed, depending both on the contents of the scientific proposal and the legal framework of the Member States involved. No funding shall be granted for research activities that are prohibited in all the Member States. No activity shall be funded in a Member State where such activity is forbidden.

Amendment

4. Research on other types of human stem cells may be financed, depending both on the contents of the scientific proposal and the legal framework of the Member States involved. No funding shall be granted for research activities that are prohibited in all the Member States. No activity shall be funded in a Member State where such activity is forbidden.
**Justification**

*This is a consequential amendment following the ban on funding for research using human embryonic stem cells.*

**Amendment 12**

**Proposal for a regulation**  
**Article 22 – paragraph 3 – point c**

<table>
<thead>
<tr>
<th><strong>Text proposed by the Commission</strong></th>
<th><strong>Amendment</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>(c) actions which bring together results from a range of projects, including those that may be funded from other sources, to provide user-friendly databases and reports that summarise key findings;</td>
<td>(c) actions which bring together results from a range of projects, including those that may be funded from other sources, to provide user-friendly databases and reports that summarise key findings <em>and, where relevant, their communication and dissemination to the scientific community and the general public;</em></td>
</tr>
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</table>
## PROCEDURE

<table>
<thead>
<tr>
<th>Title</th>
<th>Establishment of Horizon 2020 - The Framework Programme for Research and Innovation (2014-2020)</th>
</tr>
</thead>
</table>
| Committee responsible | ITRE  
Date announced in plenary: 13.12.2011 |
| Opinion by | JURI  
Date announced in plenary: 13.12.2011 |
| Rapporteur | Piotr Borys  
Date appointed: 19.12.2011 |
| Discussed in committee | 26.4.2012  
19.6.2012 |
| Date adopted | 18.9.2012 |
| Result of final vote | +: 18  
–: 5  
0: 2 |
| Substitute(s) present for the final vote | Piotr Borys, Eva Lichtenberger, Angelika Niebler, Dagmar Roth-Behrendt, József Szájer |
| Substitute(s) under Rule 187(2) present for the final vote | Jacek Wlosowicz |
OPINION OF THE COMMITTEE ON WOMEN'S RIGHTS AND GENDER EQUALITY

for the Committee on Industry, Research and Energy


Rapporteur: Antigoni Papadopoulou

AMENDMENTS

The Committee on Women's Rights and Gender Equality calls on the Committee on Industry, Research and Energy, as the committee responsible, to incorporate the following amendments in its report:

Amendment 1

Proposal for a regulation

Recital 1

Text proposed by the Commission

(1) The Union has the objective of strengthening its scientific and technological bases by achieving a European Research Area ("ERA") in which researchers, scientific knowledge and technology circulate freely, and encouraging the Union to become more competitive, including in its industry. To pursue those objectives the Union should carry out activities to implement research, technological development and demonstration, promote international

Amendment

(1) The Union has the objective of strengthening its scientific and technological bases by achieving a European Research Area ("ERA") in which both female and male researchers, scientific knowledge and technology circulate freely, on the basis of equal treatment under the law and as a professional, and encouraging the Union to become more competitive, including in its industry. To pursue those objectives the Union should carry out activities to
cooperation, disseminate and optimise results and stimulate training and mobility. implement research, technological development and demonstration, promote international cooperation, disseminate and optimise results and stimulate the training and mobility essential to the development of the profession of European researcher and take measures to promote gender equality and the gender dimension in research and innovation.

Amendment 2
Proposal for a regulation
Recital 3

Text proposed by the Commission

(3) The Union is committed to achieving the Europe 2020 strategy, which has set the objectives of smart, sustainable and inclusive growth, highlighting the role of research and innovation as key drivers of social and economic prosperity and of environmental sustainability and setting itself the goal to increase spending on Research and Development to reach 3 % of gross domestic product (GDP) by 2020 while developing an innovation intensity indicator. In this context, the Innovation Union flagship initiative sets out a strategic and integrated approach to research and innovation, setting the framework and objectives to which future Union research and innovation funding should contribute. Research and innovation are also key factors for other Europe 2020 flagship initiatives, notably on resource efficient Europe, an industrial policy for the globalisation era, and a digital agenda for Europe. Moreover, for achieving the Europe 2020 objectives relating to research and innovation, Cohesion policy has a key role to play through building capacity and providing a stairway to excellence.

Amendment

(3) The Union is committed to achieving the Europe 2020 strategy, which has set the objectives of smart, sustainable and inclusive growth, highlighting the role of research and innovation as key drivers of social and economic prosperity and of environmental sustainability and setting itself the goal to increase spending on Research and Development to reach 3 % of gross domestic product (GDP) by 2020 while developing an innovation intensity indicator. In this context, the Innovation Union flagship initiative sets out a strategic and integrated approach to research and innovation, setting the framework and objectives to which future Union research and innovation funding should contribute. Research and innovation are also key factors for other Europe 2020 flagship initiatives, notably on resource efficient Europe, an industrial policy for the globalisation era, and a digital agenda for Europe. Moreover, for achieving the Europe 2020 objectives relating to research and innovation, Cohesion policy has a key role to play through building capacity and providing a stairway to excellence, to both men and women scientists, to carry out cutting edge research and innovation of
the highest quality. Horizon 2020 should promote regional training courses to facilitate women's access to highly specialised posts in the research and innovation sector.

Amendment 3

Proposal for a regulation
Recital 3 a (new)

Text proposed by the Commission

(3a) The Union adopted on 21 September 2010 the Strategy for equality between women and men 2010-2015, which states that "in order to achieve the objectives of Europe 2020, namely smart, sustainable and inclusive growth, the potential and the talent pool of women need to be used more extensively and more efficiently." In this context, the gender dimension should become a central priority in the overall design of eligible thematic areas, programmes, instruments and criteria for projects in each phase of their life: from the proposal stage to evaluation, implementation and monitoring.

Amendment 4

Proposal for a regulation
Recital 4

Text proposed by the Commission

(4) At its meeting of 4 February 2011, the European Council supported the concept of the Common Strategic Framework for Union Research and Innovation funding to improve the efficiency of research and innovation funding at national and Union levels and called on the Union to rapidly address remaining obstacles to attracting talent and investment in order to complete the ERA by 2014 and achieve a genuine
single market for knowledge, research and innovation.

Amendment 5
Proposal for a regulation
Recital 15

Text proposed by the Commission

(15) Simplification is a central aim of Horizon 2020 which should be fully reflected in its design, rules, financial management and implementation. Horizon 2020 should aim to attract the strong participation of universities, research centres, industry and specifically SMEs and be open to new participants, as it brings together the full range of research and innovation support in one common strategic framework, including a streamlined set of forms of support and uses rules for participation with principles applicable to all actions under the programme. Simpler funding rules should reduce the administrative costs for participation and will contribute to a reduction of financial errors.

Amendment

(15) Simplification is a central aim of Horizon 2020 which should be fully reflected in its design, rules, financial management and implementation. Horizon 2020 should aim to attract the strong participation of universities, research centres, industry and specifically SMEs and be open to the full potential and scientific excellence of new talented participants, both men and women, from across Europe, with a view to increasing the proportion of women taking part in EU-funded research and innovation programmes as it brings together the full range of research and innovation support in one common strategic framework, including a streamlined set of forms of support and uses rules for participation with principles applicable to all actions under the programme. Simpler funding rules should reduce the administrative costs for participation and will contribute to a reduction of financial errors.

Amendment 6
Proposal for a regulation
Recital 15 a (new)

Text proposed by the Commission

(15a) The gender issue should be present in three Horizon 2020 priorities: Excellent Science, Industrial Leadership and Societal Changes, as well as in all identified societal challenges as an axis

Amendment

(15a) The gender issue should be present in three Horizon 2020 priorities: Excellent Science, Industrial Leadership and Societal Changes, as well as in all identified societal challenges as an axis
integrated to fundamental and action research and to human resources. Gender should also be reflected in the allocation of funding, through the use of gender indicators for a more balanced participation of women in EU-funded research.

Amendment 7
Proposal for a regulation
Recital 20 a (new)

Text proposed by the Commission

(20a) Awareness-raising and information programmes should be organised in schools with a view to encouraging girls to become interested in scientific professions, which are still too often dominated by boys.

Amendment 8
Proposal for a regulation
Recital 21

Text proposed by the Commission

(21) The implementation of Horizon 2020 should respond to the evolving opportunities and needs from science and technology, industry, policies and society. As such, the agendas should be set in close liaison with stakeholders from all sectors concerned, and sufficient flexibility should be allowed for new developments. External advice should be sought on a continuous basis during Horizon 2020, also making use of relevant structures such as European Technology Platforms, Joint Programming Initiatives and the European Innovation Partnerships.

(21) The implementation of Horizon 2020 should respond to the evolving opportunities and needs from citizens, society, policy, science and technology, industry. The agendas should be set in close liaison with all relevant stakeholders from all sectors concerned, including representatives of the scientific community, male and female researchers, the public sector, civil society organisations working in the field of gender equality and women's rights and SMEs. Sufficient flexibility should be allowed for new developments. Balanced external advice should be sought on a continuous basis during Horizon 2020, also making use of relevant structures such as
European Technology Platforms, Joint Programming Initiatives and the European Innovation Partnerships, ensuring however, that conflicts of interests are avoided. The commitment to gender mainstreaming of all Union policies should be duly observed in policy, planning and evaluation of projects.

Amendment 9
Proposal for a regulation
Recital 22

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
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<tbody>
<tr>
<td>(22) Horizon 2020 should contribute to the attractiveness of the research profession in the Union. Adequate attention should be paid to the European Charter for Researchers and Code of Conduct for the Recruitment of Researchers, together with other relevant reference frameworks defined in the context of the European Research Area, while respecting their voluntary nature.</td>
<td>(22) Horizon 2020 should contribute to the attractiveness of the research profession in the Union. Adequate attention should be paid to the European Charter for Researchers and Code of Conduct for the Recruitment of male and female Researchers, together with other relevant reference frameworks defined in the context of the European Research Area, while respecting their voluntary nature.</td>
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Amendment 10
Proposal for a regulation
Recital 22 a (new)

<table>
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<td>(22a) A glass ceiling still exists for women who wish to pursue a career in science and research, women are significantly underrepresented in some disciplines, such as engineering and technologies, and there is no decreasing trend in the gender pay gap. Horizon 2020 should therefore correct the imbalances in the participation of female scientists at all stages of research careers and in various fields of research.</td>
<td></td>
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Amendment 11

Proposal for a regulation
Recital 23

Text proposed by the Commission

(23) The activities developed under Horizon 2020 should aim at promoting equality between men and women in research and innovation, by addressing in particular the underlying causes of gender imbalance, by exploiting the full potential of both female and male researchers, and by integrating the gender dimension into the content of projects in order to improve the quality of research and stimulate innovation. Activities should also aim at the implementation of the principles relating to the equality between women and men as laid down in Articles 2 and 3 of the Treaty on European Union and Article 8 TFEU.

Amendment

(23) The activities developed under Horizon 2020 should aim at promoting equality between men and women in research and innovation, by identifying and remedying the main underlying causes of gender imbalance, by exploiting the full potential of both female and male researchers, in terms of professionalism and skills, and by integrating the gender dimension into the content of projects, implementation and evaluation, the recruitment and composition of research groups and financing in order to improve the quality of research and stimulate innovation and thereby help to make European economies more competitive and dynamic. Activities should also aim at the implementation of the principles relating to the equality between women and men as laid down in Articles 2 and 3 of the Treaty on European Union and Article 8 TFEU.

Amendment 12

Proposal for a regulation
Recital 23 a (new)

Text proposed by the Commission

(23a) Horizon 2020 activities should overcome all obstacles deriving from the “glass ceiling” phenomenon, which cause under-representation of female researchers in leading positions in the research and innovation field.
Amendment 13
Proposal for a regulation
Recital 23 b (new)

Text proposed by the Commission
(23b) Horizon 2020 should seek to strike a fair funding balance between scientific projects conducted by female and male researchers.

Amendment 14
Proposal for a regulation
Recital 23 c (new)

Text proposed by the Commission
(23c) Horizon 2020 should encourage women’s participation in all European research, projects and scientific disciplines, not only for advisory groups and among evaluators but also for all structures related to Horizon 2020 (EIT, ERC, JRC, Steering Groups, High-Level Groups, Expert Groups, etc.) as well as in universities and research institutions.

Amendment 15
Proposal for a regulation
Recital 24

Text proposed by the Commission
(24) Research and innovation activities supported by Horizon 2020 should respect fundamental ethical principles. The opinions of the European Group on Ethics in Science and New Technologies should be taken into account. Research activities should also take into account Article 13 TFEU and reduce the use of animals in research and testing, with a view ultimately to replacing animal use. All activities

(24) Research and innovation activities supported by Horizon 2020 should respect fundamental ethical and fundamental human rights. The opinions of the European Group on Ethics in Science and New Technologies should be taken into account as well as the opinion of the European Union Agency for Fundamental Rights and the European Institute for Gender Equality. Research
should be carried out ensuring a high level of human health protection in accordance with Article 168 TFEU.

activities should also take into account Article 13 TFEU and reduce the use of animals in research and testing, with a view ultimately to replacing animal use. All activities should be carried out ensuring a high level of human health protection in accordance with Article 168 TFEU.

Amendment 16
Proposal for a regulation
Recital 30

Text proposed by the Commission

(30) Horizon 2020 should promote cooperation with third countries based on common interest and mutual benefit. International cooperation in science, technology and innovation should be targeted to contribute to achieving the Europe 2020 objectives to strengthen competitiveness, contribute to tackling societal challenges and support Union external and development policies, including by developing synergies with external programmes and contributing to the Union's international commitments such as the achievement of Millennium Development Goals.

Amendment

(30) Horizon 2020 should promote cooperation with third countries based on common interest and mutual benefit. International cooperation in science, technology and innovation should be targeted to contribute to achieving the Europe 2020 objectives to strengthen competitiveness, contribute to tackling societal challenges and support Union external and development policies, including by developing synergies with external programmes and contributing to the Union's international commitments such as the achievement of Millennium Development Goals, and the overarching priority of gender equality.

Amendment 17
Proposal for a regulation
Recital 34

Text proposed by the Commission

(34) It is important to ensure sound financial management of Horizon 2020 and its implementation in the most effective and user-friendly manner possible, while also ensuring legal certainty and the accessibility of the programme to all

Amendment

(34) It is important to ensure sound financial management of Horizon 2020 and its implementation in the most effective and user-friendly manner possible, while also ensuring legal certainty and the accessibility of the programme to all
participants. It is necessary to ensure compliance with Regulation (EU) No XXXX/2012 [new financial regulation] and with the requirements of simplification and better regulation.

Amendment 18
Proposal for a regulation
Article 3 – paragraph 1 a (new)

Text proposed by the Commission

Amendment

(1a) A gender perspective should be fully integrated in the rules for participation and dissemination of 'Horizon 2020 – the Framework Programme for Research and Innovation (2014-2020)'.

Amendment 19
Proposal for a regulation
Article 5 – paragraph 1

Text proposed by the Commission

Amendment

1. Horizon 2020 shall contribute to building an economy based on gender equality, knowledge and innovation across the whole Union by leveraging sufficient additional research, development and innovation funding and using the full potential and scientific excellence of all European scientists, including women scientists. Thereby, it shall support the implementation of the Europe 2020 strategy and other Union policies, as well as the achievement and functioning of the European Research Area (ERA). The relevant performance indicators are set out in the introduction of Annex I.
in the introduction of Annex I.

Amendment 20

Proposal for a regulation
Article 5 – paragraph 2 – subparagraph 2 a (new)

Text proposed by the Commission

(2a) Horizon 2020 shall have as one of its priority objectives increasing the proportion of women involved in the research and innovation sector through the implementation of information campaigns designed to encourage women to train as scientists and to illustrate the career opportunities available in the R&D sector.

Amendment 21

Proposal for a regulation
Article 5 – paragraph 2 a (new)

Text proposed by the Commission

(2b) Horizon 2020 shall promote gender equality by supporting changes in the organisation of research institutions and in the content and design of research activities. Gender shall be addressed as a cross-cutting issue in order to rectify imbalances between women and men, and to integrate a gender dimension in research and innovation programming and content. Economic and social differences between women and men should be sufficiently reflected in the design, content and execution of research programmes. Adequate attention should be paid to ensuring a better participation of women scientists in research and in the research policy process.
Amendment 22
Proposal for a regulation
Article 5 - paragraph 5 a (new)

Text proposed by the Commission

(5a) Horizon 2020 shall emphasise the importance of promoting non gender-segregated research areas. Horizon 2020 shall seek, through universities, Union institutions and Member States, to promote both, science as a field of interest for both sexes from the early stages of education and also the image of female researchers as role models. Through enlightenment campaigns it shall provide information on the requirements needed to become a researcher and the opportunities available in the research field.

Amendment 23
Proposal for a regulation
Article 7 – paragraph 1 – point b – point iii a (new)

Text proposed by the Commission

(iii a) respect the principles of non-discrimination, gender equality and equal opportunities;

Amendment 24
Proposal for a regulation
Article 12 – paragraph 1

Text proposed by the Commission

1. For the implementation of Horizon 2020, account shall be taken of advice and inputs provided by: advisory groups of independent, high level experts set up by the Commission; dialogue structures created under international science and

Amendment

1. For the implementation of Horizon 2020, account shall be taken of advice and inputs provided by: advisory groups of independent, high level experts from a wide variety of sectors and backgrounds (including civil society representatives),
technology agreements; forward looking activities; targeted public consultations; and transparent and interactive processes that ensure responsible research and innovation is supported.

set up by the Commission; dialogue structures created under international science and technology agreements; forward looking activities; targeted public consultations; and transparent and interactive processes that ensure responsible research and innovation is implemented. In particular, activities to promote the balanced representation of men and women in research teams and an adequate integration of sex and gender analysis in research content are included. The composition of the advisory boards shall seek gender balance.

Amendment 25

Proposal for a regulation
Article 12 – paragraph 1 a (new)

Text proposed by the Commission

(1a) The gender dimension in research and innovation is important to address as an integral part of proposals to ensure the highest level of scientific quality. Horizon 2020 shall ensure that the gender dimension is properly considered in research and innovation content at all stages of the process, from priority setting, to definition of calls and proposals, to evaluation and monitoring programs and projects, to negotiations and agreements.

Amendment

Amendment 26

Proposal for a regulation
Article 12 – paragraph 1 b (new)

Text proposed by the Commission

(1b) Due care shall be taken to guarantee the balanced representation of women and men on the groups of independent experts and high-level advisory groups set
Amendment 27
Proposal for a regulation
Article 13 – paragraph 1

Text proposed by the Commission

1. Linkages and interfaces shall be implemented across and within the priorities of Horizon 2020. Particular attention shall be paid in this respect to the development and application of key enabling and industrial technologies, to bridging from discovery to market application, to cross-disciplinary research and innovation, to social and economic sciences and humanities, to fostering the functioning and achievement of the ERA, to cooperation with third countries, to responsible research and innovation including gender, and to enhancing the attractiveness of the research profession and to facilitating cross-border and cross-sector mobility of researchers.

Amendment

1. Linkages and interfaces shall be implemented across and within the priorities of Horizon 2020. Particular attention shall be paid in this respect to the development and application of key enabling and industrial technologies, to bridging from discovery to market application, to cross-disciplinary research and innovation, broad collaboration between research, public authorities, civil society and business to social and economic sciences and humanities, to fostering the functioning and achievement of the ERA, to cooperation with third countries, to responsible research and innovation including gender, and to achieving gender balance, enhancing the attractiveness of the research profession, especially amongst young women and facilitating cross-border and cross-sector mobility of researchers, with particular attention to female researchers. Each work programme shall contain a dedicated section describing the action planned to address gender imbalances and to integrate a gender dimension. This shall be reflected also at a project level within the provisions of grant agreements.

Amendment 28
Proposal for a regulation
Article 13 - paragraph 1 a (new)

Text proposed by the Commission

(1a) Taking into consideration the low participation rate of women researchers

Amendment

(1a) Taking into consideration the low participation rate of women researchers
In FP7 and FP6, the Horizon 2020 shall resolve this issue through equal opportunities for professional advancement for both men and women researchers, focusing on their mobility and on ways to reconcile family and work life.

Amendment 29
Proposal for a regulation
Article 15 – paragraph 1

Text proposed by the Commission
1. Horizon 2020 shall ensure the effective promotion of gender equality and the gender dimension in research and innovation content;

Amendment
1. Horizon 2020 shall ensure gender equality and the effective promotion of the gender dimension in research and innovation content and in all phases of a project life-time: concept, proposal, evaluation, project management, monitoring, as well as gender balance in all programmes, evaluation committees, expert and advisory groups and decision-making bodies existing or created for its implementation, by facilitating women’s access to scientific education and professions, thereby creating better career prospects for them in all areas of research and innovation. To this end, targets will be set and efficient plans to reach those targets will be developed and implemented.

Amendment 30
Proposal for a regulation
Article 15 – paragraph 1 a (new)

Text proposed by the Commission
(1a) To achieve this, the following actions should be mandatory:

Amendment
1. Establishing gender balance as a criterion for project evaluation: which
should be sufficiently considered in the project design. To this end, a minimum threshold should be introduced in the structure in terms of research group composition, coordinators and team leaders.

2. Promotion and monitoring of the training of evaluators and experts: if gender balance is a mandatory criterion, the training on this specific issue for those who have to assess projects is particularly important and should be compulsory.

3. Promoting women leadership in science and research through:
   a) monitoring the female presence in key decision-making positions in research institutions and centres;
   b) setting-up of a database and systematic diffusion of information on high profile female researchers, to enhance their visibility and establish role models for younger generations;
   c) ensuring that promotion criteria in science and research institutions are transparent and fair and comply with gender mainstreaming requirements;
   d) promoting policies of reconciliation of work and family life for female scientists and supporting mobility schemes for female researchers; issues related to maternity and paternity leave conditions should be analyzed to allow a good work-life balance in research, maintaining the attractiveness of such jobs for female scientists;
   e) monitoring career progression and salaries in order to avoid gender-related difference in wages.

Amendment 31

Proposal for a regulation
Article 15 – paragraph 1 b (new)
(1b) Where relevant, Horizon 2020 shall ensure that the gender dimension is properly considered in research and innovation projects, especially regarding services and products to end-users, in content at all stages of the process, from priority setting to definition of calls and proposals, evaluation and monitoring of programs and projects, negotiations and agreements.

Amendment 32
Proposal for a regulation
Article 15 – paragraph 1 c (new)

(1c) In the context of Horizon 2020, particular attention shall be paid to compliance with the principles of professional equality, equal pay and equal career opportunities. With that aim in view, workers’ representatives in undertakings which are in receipt of EU funding shall be consulted each year about the situation with regard to gender equality and possible remedies in cases where imbalances have arisen. In addition, should instances of inequality persist, and after the undertaking has been reminded of its obligations, the financial assistance referred to above may be withdrawn.

Amendment 33
Proposal for a regulation
Article 15 – paragraph 1 d (new)

(1d) Horizon 2020 shall ensure the
effective promotion of gender balance in all programs, in evaluation committees, in expert and advisory groups and in any decision-making body existing or created for its implementation.

Amendment 34
Proposal for a regulation
Article 19 – paragraph 1

Text proposed by the Commission
1. Horizon 2020 may be implemented through public-private partnerships where all the partners concerned commit to support the development and implementation of research and innovation activities of strategic importance to the Union's competitiveness and industrial leadership or to address specific societal challenges.

Amendment
1. Horizon 2020 may be implemented through public-private partnerships where all the partners concerned commit to support the development and implementation of research and innovation activities of strategic importance to the Union's competitiveness and industrial leadership or to tackle effectively global societal challenges, with particular attention to existing gender inequalities.

Amendment 35
Proposal for a regulation
Article 20 – paragraph 1 – subparagraph 1

Text proposed by the Commission
1. Horizon 2020 shall contribute to the strengthening of public-public partnerships where actions at regional, national or international level are jointly implemented within the Union.

Amendment
1. Horizon 2020 shall contribute to the strengthening of public-public partnerships, including civil society, where actions at regional, national or international level are jointly implemented within the Union.

Amendment 36
Proposal for a regulation
Article 21 – paragraph 1 – point c
Text proposed by the Commission

(c) supporting the Union's external and development policy objectives, complementing external and development programmes.

Amendment

(c) supporting the Union's external and development policy objectives, complementing external and development programmes, and international commitments such as the achievement of the MDGs and the overarching priority of gender equality.

Amendment 37

Proposal for a regulation
Article 22 – paragraph 2

Text proposed by the Commission

2. Activities to disseminate information and carry out communication activities shall be an integral task under all of the actions supported by Horizon 2020.

Amendment

2. Activities to disseminate information and carry out communication activities shall be an integral task under all of the actions supported by Horizon 2020, and should incorporate a sufficient gender dimension emphasizing the positive role and contribution of women scientists to research and innovation. All disseminated information and communication activities shall include a gender dimension and be preceded by a gender analysis.

Amendment 38

Proposal for a regulation
Article 22 – paragraph 3 – point a

Text proposed by the Commission

(a) initiatives aimed at widening awareness and facilitating access to funding under Horizon 2020, in particular for those regions or types of participant that are underrepresented;

Amendment

(a) initiatives aimed at widening awareness and facilitating access to funding under Horizon 2020, in particular for those regions or types of participant that are underrepresented; the importance of an increased participation of women in science should be promoted and the objective of gender balance in science and research should be viewed as an assertion.
of the principle of social equity and an essential means for the full utilisation of the existing scientific potential in society;

Amendment 39

Proposal for a regulation
Article 22 – paragraph 3 – point a a (new)

Text proposed by the Commission

Amendment

(aa) communication and awareness-raising actions aimed at ensuring visibility to women active in the fields of scientific and technological research (for example adverts, newspapers, radio, web) and creating positive image of women scientists in society;

Amendment 40

Proposal for a regulation
Article 22 – paragraph 3 – point a b (new)

Text proposed by the Commission

Amendment

(ab) campaigns to overcome gender stereotypes in science in general and especially in innovation and research activities;

Amendment 41

Proposal for a regulation
Article 23 – paragraph 2

Text proposed by the Commission

Amendment

2. The control system shall ensure an appropriate balance between trust and control, taking into account administrative and other costs of controls at all levels, so that the objectives of Horizon 2020 can be achieved and the most excellent researchers and the most innovative researchers, irrespective of gender, and the
enterprises can be attracted to it. most innovative enterprises can be attracted to it.

Amendment 42
Proposal for a regulation
Article 25 – paragraph 1

Text proposed by the Commission
1. The Commission shall annually monitor the implementation of Horizon 2020, its specific programme and the activities of the European Institute of Innovation and Technology. This shall include information on cross-cutting topics such as sustainability and climate change, including information on the amount of climate related expenditure.

Amendment
1. The Commission shall annually monitor the implementation of Horizon 2020, its specific programme and the activities of the European Institute of Innovation and Technology. This shall include information and indicators on cross-cutting topics such as gender, sustainability and climate change, including information on the amount of climate related expenditure.

Amendment 43
Proposal for a regulation
Article 26 – paragraph 1 – point a – point iii

Text proposed by the Commission
(iii) the contribution of the European Institute of Innovation and Technologies and the Knowledge and Innovation Communities to the priority on societal challenges and the specific objective on ‘leadership in enabling and industrial technologies’ of the programme Horizon 2020.

Amendment
(iii) the contribution of the European Institute of Innovation and Technologies and the Knowledge and Innovation Communities to the gender targets and to the priority on societal challenges and the specific objective on ‘leadership in enabling and industrial technologies’ of the programme Horizon 2020.

Amendment 44
Proposal for a regulation
Article 26 – paragraph 1 – point b

Text proposed by the Commission
(b) Not later than end 2017, and taking into account the ex-post evaluation of the

Amendment
(b) Not later than end 2017, and taking into account the ex-post evaluation of the
Seventh Framework Programme to be completed by the end of 2015 and the review of the European Institute of Innovation and Technology, the Commission shall carry out, with the assistance of independent experts, an interim evaluation of Horizon 2020, its specific programme, including the European Research Council, and the activities of the European Institute of Innovation and Technology, on the achievements (at the level of results and progress towards impacts) of the objectives of Horizon 2020 and continued relevance of all the measures, the efficiency and use of resources, the scope for further simplification, and Union added value. That evaluation shall also take into consideration aspects relating to access to funding opportunities for participants in all regions, for SMEs and for promoting gender balance. That evaluation shall additionally take into account the contribution of the measures to the Union priorities of smart, sustainable and inclusive growth and results on the long-term impact of the predecessor measures.

Amendment 45

Proposal for a regulation
Article 26 – paragraph 2

*Text proposed by the Commission*

2. The performance indicators for the general objectives and for the European Institute of Innovation and Technology, as set out in the introduction of Annex I to this Regulation, and for the specific

*Amendment*

2. The performance indicators for the general objectives and for the European Institute of Innovation and Technology, as set out in the introduction of Annex I to this Regulation, and for the specific
objectives as established in the specific programme, including relevant baselines, shall provide the minimum basis for assessing the extent to which the objectives of Horizon 2020 have been achieved.

Gender indicators shall be added as performance indicators and make use of existing statistical tools and methodologies such as the She figures: Statistics and Indicators on Gender equality in Science published by DG Research every three years. She Figures has become a relevant and recognized source of indicators and should be published biannually.

Amendment 46

Proposal for a regulation
Annex I – paragraph 7 – point a

Text proposed by the Commission

(a) The European Research Council (ERC) shall provide attractive and flexible funding to enable talented and creative individual researchers and their teams to pursue the most promising avenues at the frontier of science, on the basis of Union-wide competition.

Amendment

(a) The European Research Council (ERC) shall provide attractive and flexible funding to enable talented and creative individual researchers and their teams, irrespective of their sex, to pursue the most promising avenues at the frontier of science, on the basis of Union-wide competition.

Amendment 47

Proposal for a regulation
Annex I – paragraph 7 – point b

Text proposed by the Commission

(b) Future and emerging technologies shall support collaborative research in order to extend Europe's capacity for advanced and paradigm-changing innovation. It shall foster scientific collaboration across disciplines on radically new, high-risk ideas and accelerate development of the

Amendment

(b) Future and emerging technologies shall support collaborative research and user-driven, gender-sensitive technology and innovation in order to extend Europe's capacity for advanced and paradigm-changing innovation. It shall foster scientific collaboration across disciplines
most promising emerging areas of science and technology as well as the Union wide structuring of the corresponding scientific communities.

Amendment 48
Proposal for a regulation
Annex I – paragraph 7 – point c

Text proposed by the Commission
(c) Marie Curie actions shall provide excellent and innovative research training as well as attractive career and knowledge-exchange opportunities through cross-border and cross-sector mobility of researchers to best prepare them to face current and future societal challenges.

Amendment
(c) Marie Curie actions shall provide excellent and innovative research training as well as attractive career and knowledge-exchange opportunities through cross-border and cross-sector mobility of researchers to best prepare them to face current and future societal challenges. Mobility programs shall ensure effective equal opportunities between women and men and include specific measures to remove obstacles to the mobility of female researchers.

Amendment 49
Proposal for a regulation
Annex I – paragraph 9

Text proposed by the Commission
The activities are inherently forward-looking, building skills in the long term, focusing on the next generation of science, technology, researchers and innovations and providing support for emerging talent from across the whole of the Union and associated countries, as well as worldwide. In view of their science-driven nature and largely ‘bottom-up’, investigator-driven funding arrangements, the European scientific community will play a strong

Amendment
The activities are inherently forward-looking, building skills in the long term, focusing on the next generation of science, technology, researchers and innovations and providing support for emerging talent from across the whole of the Union and associated countries, as well as worldwide, with view to increase the participation of female research talents and use the full potential and scientific excellence of women scientists for the benefit of
role in determining the avenues of research followed under the programme.  

**European economy and society.** In view of their science-driven nature and largely 'bottom-up', investigator-driven funding arrangements, the European scientific community will play a strong role in determining the avenues of research followed under the programme.

### Amendment 50

**Proposal for a regulation**  
**Annex I – paragraph 10 – point a**

**Text proposed by the Commission**

(a) Leadership in enabling and industrial technologies shall provide dedicated support for research, development and demonstration on ICT, nanotechnology, advanced materials, biotechnology, advanced manufacturing and processing and space. Emphasis will be placed on interactions and convergence across and between the different technologies.

**Amendment**

(a) Leadership in enabling and industrial technologies shall provide dedicated support for research, development and demonstration on ICT, nanotechnology, advanced materials, biotechnology, advanced manufacturing and processing and space. **Proper consideration of user needs and gender dimension shall be taken into account in all these fields.** Emphasis will be placed on interactions and convergence across and between the different technologies.

### Amendment 51

**Proposal for a regulation**  
**Annex I – paragraph 14 – point e**

**Text proposed by the Commission**

(e) Climate action, resource efficiency and raw materials;

**Amendment**

(e) Climate action including gender aspects of climate change, environment, resource efficiency and conservation, sustainable use of raw materials;

### Amendment 52

**Proposal for a regulation**  
**Annex I – paragraph 14 – point f**
(f) **Inclusive**, innovative and secure societies.

(f) **Equal, inclusive**, innovative and secure societies.

---

### Amendment 53

**Proposal for a regulation**

**Annex I – paragraph 16**

**Text proposed by the Commission**

Social sciences and humanities shall be an integral part of the activities to address all the challenges. In addition, the underpinning development of these disciplines shall be supported under the specific objective *‘Inclusive, innovative and secure societies’*. Support will also focus on providing a strong evidence base for policy making at international, Union, national and regional levels. Given the global nature of many of the challenges, strategic cooperation with third countries shall be an integral part of each challenge. In addition, cross-cutting support for international cooperation shall be provided under the specific objective *‘Inclusive, innovative and secure societies’*.

**Amendment**

Social sciences and humanities shall be an integral part of the activities to address all the challenges. In addition, the underpinning development of these disciplines shall be supported under the specific objective *‘Equal, inclusive, innovative and secure societies’*. Likewise, a focus on gender and gender equality will be integrated in all challenges. ‘Support will also focus on providing a strong evidence base for policy making at international, Union, national and regional levels. Given the global nature of many of the challenges, strategic cooperation with third countries shall be an integral part of each challenge. In addition, cross-cutting support for international cooperation shall be provided under the specific objective *‘Equal, inclusive, innovative and secure societies’*.'

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### Amendment 54

**Proposal for a regulation**

**Annex I – paragraph 17**

**Text proposed by the Commission**

The specific objective ‘Inclusive, innovative and secure societies’ also includes an activity to close the research and innovation divide with specific measures to unlock excellence in less

**Amendment**

The specific objective *‘Equal, inclusive, innovative and secure societies’* shall also include activities aiming at promoting gender balance in research and integration of gender dimension in
developed regions of the Union.

**research and innovation content, and at closing** the research and innovation divide with specific measures to unlock excellence in less developed regions of the Union.

### Amendment 55

**Proposal for a regulation**  
**Annex I – section 1 – point 1 – point 1.1 – paragraph 5**

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
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</thead>
<tbody>
<tr>
<td>Another major part of the challenge is that in many European countries the public sector still does not offer sufficiently attractive conditions for the best researchers. It can take many years before talented young researchers are able to become independent scientists in their own right. This leads to a dramatic waste of Europe's research potential by delaying the emergence of the next generation of researchers, who bring new ideas and energy, and by enticing excellent researchers starting their career to seek advancement elsewhere.</td>
<td>Another major part of the challenge is that in many European countries the public sector still does not offer sufficiently attractive conditions for the best researchers. It can take many years before talented young researchers are able to become independent scientists in their own right. This leads to a dramatic waste of Europe's research potential by delaying the emergence of the next generation of researchers, who bring new ideas and energy, and by enticing excellent researchers starting their career to seek advancement elsewhere. <strong>Particular attention should be paid to women scientists, who represent only 18 % of grade A researchers, as compared to 27 % in the USA, while 60 % of European university graduates are women. Attention should be paid to tackling the gender bias in recruitment for scientific jobs and supporting the career of female researchers.</strong></td>
</tr>
</tbody>
</table>

### Amendment 56

**Proposal for a regulation**  
**Annex I – section 1 – point 1 – point 1.1 – paragraph 6**

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
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</thead>
<tbody>
<tr>
<td>Furthermore, these factors compound Europe's relative unattractiveness in the</td>
<td>Furthermore, these factors compound Europe's relative unattractiveness in the</td>
</tr>
</tbody>
</table>
global competition for scientific talent. The ability of the US system to offer more resources per researcher and better career prospects explains how it continues to attract the best researchers from across the world, including tens of thousands from the Union.

Amendment 57
Proposal for a regulation
Annex I – section 1 – point 1 – point 1.2 – paragraph 1

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
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<tbody>
<tr>
<td>The ERC was created to provide Europe's best researchers, both women and men, with the resources they need to allow them to compete better at global level, by funding individual teams on the basis of pan-European competition. It operates autonomously: an independent Scientific Council made up of scientists, engineers and scholars of the highest repute and expertise establishes the overall scientific strategy and has full authority over decisions on the type of research to be funded. These are essential features of the ERC, guaranteeing the effectiveness of its scientific programme, the quality of its operations and peer-review process and its credibility in the scientific community.</td>
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</tr>
</tbody>
</table>

Amendment 58
Proposal for a regulation
Annex I – section 1 – point 1 – point 1.3 – paragraph 2

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
</tr>
</thead>
<tbody>
<tr>
<td>ERC funding shall be awarded in accordance with the following well-established principles. Scientific excellence</td>
<td>ERC funding shall be awarded in accordance with the following well-established principles. Scientific excellence</td>
</tr>
</tbody>
</table>
shall be the sole criterion on which ERC grants are awarded. The ERC shall operate on a ‘bottom-up’ basis without predetermined priorities. The ERC grants shall be open to individual teams of researchers of any age and from any country in the world, working in Europe. And the ERC shall aim to foster healthy competition across Europe.

Amendment 59

Proposal for a regulation
Annex I – section 1 – point 1 – point 1.3 – paragraph 6

Text proposed by the Commission

The ERC's Scientific Council shall continuously monitor the ERC's operations and consider how best to achieve its objectives by means of grant schemes that emphasise clarity, stability and simplicity, both for applicants and in their implementation and management, and, as necessary, to respond to emerging needs. It shall endeavour to sustain and further refine the ERC's world-class peer-review system which is based on transparent, fair and impartial treatment of proposals so that it can identify ground-breaking scientific excellence and talent regardless of a researcher's gender, nationality or age. Finally, the ERC shall continue conducting its own strategic studies to prepare for and support its activities, maintain close contacts with the scientific community and other stakeholders and look to make its activities complement research conducted at other levels.

Amendment

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Amendment 60

Proposal for a regulation
Annex I – section 1 – point 3 – point 3.1 – paragraph 6
If Europe is to match its competitors in research and innovation, it must entice more young women and men to embark on research careers and provide highly attractive opportunities and environments for research and innovation. The most talented individuals, from Europe and elsewhere, should see Europe as a pre-eminent place to work. Gender equality, high-quality and reliable employment and working conditions plus recognition are crucial aspects that must be secured in a consistent way across the whole of Europe. Mobility programs shall include specific measures targeted to remove barriers to women's mobility and ensure effective equal opportunities for men and women.

Amendment 61

Proposal for a regulation
Annex I – section 1 – point 3 – point 3.3 – point a – paragraph 2

Key activities shall be to provide excellent and innovative training to early-stage researchers at post-graduate level via interdisciplinary projects or doctoral programmes involving universities, research institutions, businesses, SMEs and other socio-economic groups from different countries. This will improve career prospects for young post-graduate researchers in both the public and private sectors. Special attention should be given to gender balance regarding participation.

Amendment 62

Proposal for a regulation
Annex I – section 1 – point 3 – point 3.3 – point d – paragraph 1

Key activities shall be to provide excellent and innovative training to early-stage researchers at post-graduate level via interdisciplinary projects or doctoral programmes involving universities, research institutions, businesses, SMEs and other socio-economic groups from different countries. This will improve career prospects for young post-graduate researchers in both the public and private sectors. Special attention should be given to gender balance regarding participation.
The goal is, by leveraging additional funds, to increase the numerical and structural impact of Marie Curie actions and to foster excellence at national level in researchers' training, mobility and career development. Special attention should be given to gender equality and structural change.

Amendment 63

Proposal for a regulation
Annex I – section 1 – point 3 – point 3.3 – point d – paragraph 2

Key activities shall be, with the aid of a co-funding mechanism, to encourage regional, national and international organisations to create new programmes and to open existing ones to international and intersectoral training, mobility and career development. This will increase the quality of research training in Europe at all career stages, including at doctoral level, will foster free circulation of researchers and scientific knowledge in Europe, will promote attractive research careers by offering open recruitment and attractive working conditions and will support research and innovation cooperation between universities, research institutions and enterprises and cooperation with third countries and international organisations. Special attention should be given to gender balance regarding participation.

Amendment 64

Proposal for a regulation
Annex I – section 1 – point 3 – point 3.3 – point e – paragraph 1
Text proposed by the Commission

The goals are to monitor progress, identify gaps in the Marie Curie Actions and to increase their impact. In this context, indicators shall be developed and data related to researchers’ mobility, skills and careers analysed, seeking synergies and close coordination with the policy support actions on researchers, their employers and funders carried out under the specific objective ‘Inclusive, innovative and secure societies’. The activity shall further aim at raising awareness of the importance and attractiveness of a research career and at disseminating research and innovation results emanating from work supported by Marie Curie actions.

Amendment

The goals are to monitor progress, identify gaps in the Marie Curie Actions and to increase their impact. In this context, indicators, broken down by gender, shall be developed and data related to researchers’ mobility, skills and careers, as well as gender equality, analysed, seeking synergies and close coordination with the policy support actions on researchers, their employers and funders carried out under the specific objective ‘Inclusive, innovative and secure societies’. The activity shall further aim at raising awareness of the importance and attractiveness of a research career and at disseminating research and innovation results emanating from work supported by Marie Curie actions.

Amendment 65

Proposal for a regulation
Annex I – section 2 – point 1 – paragraph 8

Text proposed by the Commission

The approach shall include both agenda-driven activities and more open areas to promote innovative projects and breakthrough solutions. Emphasis shall be on R&D, large-scale pilots and demonstration activities, test beds and living labs, prototyping and product validation in pilot lines. Activities shall be designed to boost industrial competitiveness by stimulating industry, and in particular SMEs, to make more research and innovation investment.

Amendment

The approach shall integrate sex and gender analysis into engineering innovation. Proper consideration of gender and sex analysis may lead to new products, processes, infrastructure, or services. It will lead to design that promotes human well-being, including gender equality, and to the identification of new markets and business opportunities by developing technologies that meet the needs of a complex and diverse user groups. Being blind to potential differences of sex and gender may result in missed business opportunities, with certain groups of people being left out or poorly accommodated; treating women and men as homogeneous groups ignores differences between women and men;
over-emphasizing differences between women and men can cause engineers to overlook significant common features between women and men; designing stereotypes may result in unpopular products.

Amendment 66

Proposal for a regulation
Annex I – section 2 – point 1 – point 1.1 – point 1.1.2 – paragraph 1

Text proposed by the Commission

ICT underpins innovation and competitiveness across a broad range of private and public markets and sectors, and enables scientific progress in all disciplines. Over the next decade, the transformative impact of digital technologies, ICT components, infrastructures and services will be increasingly visible in all areas of life. Unlimited computing, communication and data storage resources will be available to every citizen on the globe. Vast amounts of information and data will be generated by sensors, machines and information-enhanced products, making action at a distance a commonplace, enabling global deployment of business processes and sustainable production sites and bringing a wide range of services and applications. Many critical commercial and public services and all key processes of knowledge production in science, learning, business and the public sector will be provided through ICT. ICT will provide the critical infrastructure for production and business processes, communication and transactions. ICT will also be indispensable in contributing to key societal challenges, as well as societal processes such as community formation, consumer behaviour, and public governance, for example by means of social media.

Amendment

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social media.

Amendment 67
Proposal for a regulation
Annex I – section 2 – point 3 – point 3.3 – point d a (new)

Text proposed by the Commission

(da) There is a need for more women to enter the science sector, but if this research is conducted at institutions (such as universities) it must be open to the commercialisation of knowledge rather than for the direct advancement of knowledge. In other words, the idea is that of market opportunity and orientated driven projects which have the practical viability to be commercialised. This should be actively encouraged as and when possible as it will help provide a much needed boost to Europe's economic competitiveness.

Amendment 68
Proposal for a regulation
Annex I – section 3 – point 1 – point 1.1 – paragraph 7 a (new)

Text proposed by the Commission

(7a) Significant sex and gender differences exist in health and wellbeing which need to be properly addressed. Demographic processes have significant gender dimensions, particularly ageing, with women accounting for most of the elderly population and most of the caregivers. Other important aspects of the demographic change, such as changing lifestyles, new family structures and low birth-rates, need proper consideration of gender analysis.
Amendment 69

Proposal for a regulation
Annex I – section 3 – point 1 – point 1.3 – paragraph 4

Text proposed by the Commission

All of these activities shall be undertaken in such a way as to provide support throughout the research and innovation cycle, strengthening the competitiveness of the European based industries and development of new market opportunities.

Amendment

All of these activities shall be undertaken in such a way as to provide support throughout the research and innovation cycle, strengthening the competitiveness of the European based industries and development of new market opportunities. Special attention shall be given broad cooperation between public authorities, research, civil society and business.

Amendment 70

Proposal for a regulation
Annex I – section 3 – point 1 – point 1.3 – paragraph 5

Text proposed by the Commission

Specific activities shall include: understanding the determinants of health (including environmental and climate related factors), improving health promotion and disease prevention; understanding disease and improving diagnosis; developing effective screening programmes and improving the assessment of disease susceptibility; improving surveillance and preparedness; developing better preventive vaccines; using in-silico medicine for improving disease management and prediction; treating disease; transferring knowledge to clinical practice and scalable innovation actions; better use of health data; active ageing, independent and assisted living; individual empowerment for self-management of health; promotion of integrated care; improving scientific tools and methods to support policy making and regulatory needs; and optimising the efficiency and effectiveness of healthcare systems and

Amendment

Specific activities shall include: understanding the determinants of health (including environmental and climate related factors), improving health promotion and disease prevention; understanding disease and improving diagnosis; developing effective screening programmes and improving the assessment of disease susceptibility; improving surveillance and preparedness; developing better preventive vaccines; using in-silico medicine for improving disease management and prediction; treating disease; transferring knowledge to clinical practice and scalable innovation actions; better use of health data; active ageing, independent and assisted living; individual empowerment for self-management of health; promotion of integrated care; improving scientific tools and methods to support policy making and regulatory needs; and optimising the efficiency and effectiveness of healthcare systems and
reducing inequalities by evidence based decision making and dissemination of best practice, and innovative technologies and approaches.

reducing inequalities by evidence based decision making and dissemination of best practice, and innovative technologies and approaches. A gender dimension should be integrated in the activities described above and should be preceded by a gender analysis.

Amendment 71

Proposal for a regulation
Annex I – section 3 – point 4 – point 4.3 – point b – paragraph 2

Text proposed by the Commission

The focus of activities shall be to reduce congestion, improve accessibility and match user needs by promoting integrated door-to-door transport and logistics; to enhance inter-modality and the deployment of smart planning and management solutions; and to drastically reduce the occurrence of accidents and the impact of security threats.

Amendment

The focus of activities shall be to reduce congestion, improve accessibility and match user needs by promoting integrated door-to-door transport and logistics; to enhance inter-modality and the deployment of smart planning and management solutions; and to drastically reduce the occurrence of accidents and the impact of security threats. Research should take the socio-economic and gender differences in transport patterns into account. A gender dimension should be integrated in the activities described above and should be preceded by a gender analysis.

Amendment 72

Proposal for a regulation
Annex I – section 3 – point 5 – point 5.1 – paragraph 6 a (new)

Text proposed by the Commission

(6a) Climate change and its impacts are by no means gender neutral. Due to gendered roles, women's impact on the environment is not the same as men's, and their access to resources and ways to cope and adapt is severely affected by discrimination in terms of income, access to resources, political power, education and household responsibility. Women's
and men's lifestyles, behaviour and consumption are often different and they leave a different environmental footprint. Climate change affects women and men throughout the world. The IPCC, the UN climate panel, has concluded that "climate change impacts will be differently distributed among different regions, generations, age classes, income groups, occupations, and genders".

Amendment 73

Proposal for a regulation
Annex I – section 3 – point 5 – point 5.3 – point a – paragraph 1

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
<th>Amendment</th>
</tr>
</thead>
<tbody>
<tr>
<td>The aim is to develop and assess innovative, cost-effective and sustainable adaptation and mitigation measures, targeting both CO2 and non-CO2 greenhouse gases, and underlining both technological and non-technological green solutions, through the generation of evidence for informed, early and effective action and the networking of the required competences. Activities shall focus on: improving the understanding of climate change and the provision of reliable climate projections; assessing impacts, vulnerabilities and developing innovative cost-effective adaptation and risk prevention measures; supporting mitigation policies.</td>
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</tr>
</tbody>
</table>

Amendment 74

Proposal for a regulation
Annex I – section 3 – point 5 – point 5.3 – point a – paragraph 1

<table>
<thead>
<tr>
<th>Text proposed by the Commission</th>
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innovative, cost-effective and sustainable adaptation and mitigation measures, targeting both CO2 and non-CO2 greenhouse gases, and underlining both technological and non-technical green solutions, through the generation of evidence for informed, early and effective action and the networking of the required competences. Activities shall focus on: improving the understanding of climate change and the provision of reliable climate projections; assessing impacts, vulnerabilities and developing innovative cost-effective adaptation and risk prevention measures; supporting mitigation policies. A gender dimension should be integrated in the activities described above and should be preceded by a gender analysis.

Amendment 75
Proposal for a regulation
Annex I – section 3 – point 6 – title

Text proposed by the Commission

6. INCLUSIVE, INNOVATIVE AND SECURE SOCIETIES

Amendment

6. EQUAL, INCLUSIVE, INNOVATIVE AND SECURE SOCIETIES

Amendment 76
Proposal for a regulation
Annex I – section 3 – point 6.3 – point 6.3.1 – paragraph 2 – point d a (new)

Text proposed by the Commission

(da) promote gender equality across Europe.

Amendment 77
Proposal for a regulation
Annex I – section 3 – point 6.3 – point 6.3.2 – paragraph 1
The aim is to foster the development of innovative societies and policies in Europe through the engagement of citizens, enterprises and users in research and innovation and the promotion of coordinated research and innovation policies in the context of globalisation. Particular support will be provided for the development of the ERA and the development of framework conditions for innovation.

Amendment 78

Proposal for a regulation
Annex I – section 3 – point 6.3 – point 6.3.2 – paragraph 2 – point c

Text proposed by the Commission
(c) ensure societal engagement in research and innovation;

Amendment
(c) ensure societal engagement and participation in research and innovation;

Amendment 79

Proposal for a regulation
Annex I – section 3 – point 6.3 – point 6.3.2 – paragraph 2 – point d a (new)

Text proposed by the Commission
(da) promote gender equality across Europe and in all research and innovation activities funded under the Horizon 2020 framework.

Amendment
(da) promote gender equality across Europe and in all research and innovation activities funded under the Horizon 2020 framework.

Amendment 80

Proposal for a regulation
Annex I – section 5 – point 3 – point b – paragraph 1

Text proposed by the Commission
The EIT’s strategy and activities shall be

Amendment
The EIT’s strategy and activities shall be
driven by a focus on societal challenges that are of utmost relevance to the future, such as climate change or sustainable energy. By addressing key societal challenges in a comprehensive way, the EIT will promote inter- and multi-disciplinary approaches and help focus the research efforts of the partners in the KICs.

driven by a focus on societal challenges that are of utmost relevance to the future, such as climate change, considering their gender dimension, or sustainable energy. By addressing key societal challenges in a comprehensive way, the EIT will promote inter- and multi-disciplinary approaches and help focus the research efforts of the partners in the KICs.

Amendment 81

Proposal for a regulation
Annex I – section 5 – point 3 – point c – introductory part

Text proposed by the Commission
(c) Development of talented, skilled and entrepreneurial people with the aid of education and training

Amendment
(c) Development of talented, skilled and entrepreneurial people, both women and men, with the aid of education and training;

Amendment 82

Proposal for a regulation
Annex I – section 5 – point 3 – point c – paragraph 1

Text proposed by the Commission
The EIT shall fully integrate education and training at all stages of careers and develop new and innovative curricula to reflect the need for new profiles engendered by complex societal and economic challenges. To this end, the EIT will play a key role in encouraging recognition of new degrees and diplomas in Member States.

Amendment
The EIT shall fully integrate education and training at all stages of careers and develop new and innovative curricula to reflect the need for new profiles engendered by complex societal and economic challenges. A gender dimension shall be integrated in the analysis of needs for new profiles. This is why, more than any other instrument of Horizon 2020, the EIT will hold a major responsibility in systematically targeting young female talents to bring the waste of those talents to an end in the European Research Area. In the same way it shall envisage education and training in a gender-sensitive way as the renewal of tomorrow's scientific and entrepreneurial
landscape will start at the education stage and through training. Finally, it shall integrate the gender dimension in new curricula as way to ensure the efficiency and quality of training and education as well as its innovative dimension. To this end, the EIT will play a key role in encouraging recognition of new degrees and diplomas in Member States.
## PROCEDURE

<table>
<thead>
<tr>
<th>Item</th>
<th>Details</th>
</tr>
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<tbody>
<tr>
<td><strong>Title</strong></td>
<td>Establishment of Horizon 2020 - The Framework Programme for Research and Innovation (2014-2020)</td>
</tr>
<tr>
<td><strong>Committee responsible</strong></td>
<td>ITRE</td>
</tr>
<tr>
<td>Date announced in plenary</td>
<td>13.12.2011</td>
</tr>
<tr>
<td><strong>Opinion by</strong></td>
<td>FEMM</td>
</tr>
<tr>
<td>Date announced in plenary</td>
<td>13.12.2011</td>
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<tr>
<td><strong>Rapporteur</strong></td>
<td>Antigoni Papadopoulou</td>
</tr>
<tr>
<td>Date appointed</td>
<td>20.12.2011</td>
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<tr>
<td><strong>Discussed in committee</strong></td>
<td>20.6.2012</td>
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<tr>
<td><strong>Date adopted</strong></td>
<td>19.9.2012</td>
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<tr>
<td><strong>Result of final vote</strong></td>
<td>+: 23, --: 4, 0: 3</td>
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<tr>
<td><strong>Members present for the final vote</strong></td>
<td>Regina Bastos, Andrea Češková, Marije Cornelissen, Edite Estrela, Iratxe García Pérez, Zita Gurmai, Mikael Gustafsson, Mary Honeyball, Lívia Járóka, Teresa Jiménez-Becerril Barrio, Nicole Kiil-Nielsen, Silvana Koch-Mehrin, Rodi Kratsa-Tsagaropoulou, Astrid Lulling, Barbara Matera, Krisztina Morvai, Norica Nicolai, Joanna Senyszyn, Joanna Katarzyna Skrzydlewska, Britta Thomsen, Marina Yannakoudakis, Anna Záborská, Inês Cristina Zuber</td>
</tr>
<tr>
<td><strong>Substitute(s) present for the final vote</strong></td>
<td>Silvia Costa, Mariya Gabriel, Ana Miranda, Doris Pack, Antigoni Papadopoulou, Licia Ronzulli, Angelika Werthmann</td>
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<th>Title</th>
<th>Establishment of Horizon 2020 - The Framework Programme for Research and Innovation (2014-2020)</th>
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<tbody>
<tr>
<td>Date submitted to Parliament</td>
<td>30.11.2011</td>
</tr>
<tr>
<td>Committee responsible</td>
<td>ITRE 13.12.2011</td>
</tr>
<tr>
<td>Committee(s) asked for opinion(s)</td>
<td>AFET 15.3.2012, DEVE 10.5.2012, BUDG 13.12.2011, EMPL 13.12.2011</td>
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<tr>
<td>Not delivering opinions</td>
<td>EMPL 19.1.2012</td>
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<tr>
<td>Rapporteur(s)</td>
<td>Teresa Riera Madurell 17.1.2012</td>
</tr>
<tr>
<td>Date adopted</td>
<td>28.11.2012</td>
</tr>
<tr>
<td>Result of final vote</td>
<td>+: 55, -: 0, 0: 1</td>
</tr>
<tr>
<td>Substitute(s) present for the final vote</td>
<td>Yves Cochet, Satu Hassi, Jolanta Emilia Hübner, Seán Kelly, Zofija Mazej Kukovič, Vladimir Remek, Frédérique Ries, Peter Skinner, Silvia-Adriana Țicău</td>
</tr>
<tr>
<td>Substitute(s) under Rule 187(2) present for the final vote</td>
<td>Cristian Silviu Bușoi, Alexandra Thein</td>
</tr>
<tr>
<td>Date tabled</td>
<td>20.12.2012</td>
</tr>
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