

Horizon Europe

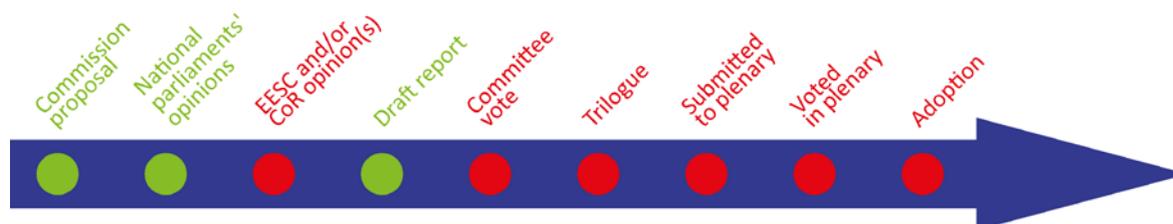
Framework programme for research and innovation 2021–2027

OVERVIEW

In June 2018, the European Commission proposed a total budget allocation of €100 billion to finance science, research and innovation projects during the 2021-2027 period, of which the vast majority, €94.1 billion in current prices, would be allocated to the Horizon Europe framework programme. The main aims are to strengthen science and technology, to foster industrial competitiveness, and to implement the sustainable development goals in the EU. Horizon Europe would introduce new features such as the European Innovation Council, missions to promote research results, and new forms of partnerships. Horizon Europe also aims at reducing administrative burdens and promoting the concept of open science. More operational synergies are expected through better linkage with other EU programmes, such as cohesion policy (e.g. the European Social Fund), the Digital Europe programme, and the new European Defence Fund.

Proposal for a regulation of the European Parliament and of the Council establishing Horizon Europe – the framework programme for research and innovation, laying down its rules for participation and dissemination

<i>Committee responsible:</i>	Industry, Research and Energy (ITRE)	COM(2018) 435 7.6.2018
<i>Rapporteur:</i>	Dan Nica (S&D, Romania)	2018/0224 (COD)
<i>Shadow rapporteurs:</i>	Christian Ehler (EPP, Germany) Evžen Tošenovský (ECR, Czech Republic) Lieve Wierinck (ALDE, Belgium) Neoklis Sylikiotis (GUE/NGL, Cyprus) Jakop Dalunde (Greens/EFA, Sweden) Rosa D'Amato (EFDD, Italy) Barbara Kappel (ENF, Austria)	Ordinary legislative procedure (COD) (Parliament and Council on equal footing – formerly 'co-decision')
<i>Next steps expected:</i>	Committee vote	



Introduction

On 7 June 2018, the Commission presented its proposed next long-term research and innovation programme. The Horizon Europe package consists of proposals for:

- the Horizon Europe [framework programme](#), including laying down its rules for participation and dissemination (COM(2018) 435),
- a specific programme to implement Horizon Europe (COM(2018) 436),
- a research and training programme under the Euratom Treaty complementing Horizon Europe (COM(2018) 437).

Horizon Europe will be the ninth framework programme (FP9). It builds on Horizon 2020, the eighth framework programme, which comes to an end on 31 December 2020. The Commission's new [proposal](#) for a regulation establishing Horizon Europe – the framework programme for research and innovation, laying down its rules for participation and dissemination, envisages a financial envelope for the implementation of the framework programme of €94.1 billion (in current prices¹) for the 2021-2027 period. In addition, the Commission proposes to contribute another €3.5 billion from the [InvestEU Fund](#) for Horizon Europe. Together with the €2.4 billion for the Euratom research and training programme, this makes a total budget allocation of €100 billion (€88.7 billion in constant or 2018 prices) for science, research and innovation related projects. This would represent an [increase of 29 %](#) in comparison with the current (2014-2020) multiannual financial framework (adjusted for the UK's departure).

This briefing focuses on the Horizon Europe framework programme proposal only.

Context

Every seven years, the European Union decides on its long-term budget. On 2 May 2018, the European Commission proposed the next [multiannual financial framework](#) (MFF) for the 2021-2027 period. Ahead of the adoption of the proposal for a long-term budget, the European Commission had presented [various options](#) (and their financial consequences) for a framework that delivers efficiently on EU policy priorities after 2020. The 2001-2027 MFF will be the first for the European Union of 27 Member States, taking account of the budgetary consequences of the expected [withdrawal](#) of the United Kingdom from the EU in March 2019.

Existing situation

The current framework programme for research and innovation, Horizon 2020, covers the period from 1 January 2014 until 31 December 2020. Horizon 2020 is based on two legal acts: [Regulation \(EU\) No 1291/2013](#) establishes Horizon 2020, and [Regulation \(EU\) No 1290/2013](#) defines the rules for participation and dissemination of Horizon 2020. As of May 2018, Horizon 2020 has supported over 18 000 projects, with over €31 billion awarded.

Parliament's starting position

On 13 June 2017, the European Parliament adopted a [resolution](#) on the assessment of the implementation of Horizon 2020, in view of its interim evaluation and the framework programme 9 proposal.

Overall, the Parliament is a supporter of the EU's research and innovation programme. It welcomed the success of Horizon 2020 and the 1:11 leverage factor and stated that the EU has 'the potential to become a world-leading global centre for research and science' and 'that in order to promote growth, jobs and innovation to this end, FP9 has to become a top priority for Europe'. Parliament called on the Commission to propose an increased overall budget of €120 billion for FP9 – €20 billion above the level the Commission has proposed for the Horizon Europe programme. In addition, the Parliament underlined the importance of keeping reporting obligations to a minimum – in order to

prevent 'red tape' from obstructing innovation – as well as the importance of greater involvement of small and medium-sized enterprises (SMEs) in collaborative projects and innovation.

The Parliament also urged the Commission to tackle the problem of oversubscription and low success rates. It suggested considering the reintroduction of a two-stage evaluation procedure with a unified first stage and a specified second stage dedicated to the selected applicants.

Furthermore, the Parliament called on the Commission to provide more support in FP9 'for young researchers, such as pan-European networking tools and to reinforce funding schemes for early-stage researchers with less than two years of experience after PhD completion'.

Preparation of the proposal

In the 2017 [interim evaluation](#) of Horizon 2020, stakeholders criticised, among other things, the uneven distribution of the framework programme funding across the EU. They also requested greater interlinkage of the shared, multi-level governance between the EU, Member States and regions. Finally, the complex funding landscape was criticised as requiring streamlining.

A European Parliamentary Research Service (EPRS) [publication](#) has analysed the complex architecture of Horizon 2020. The implementation of the Horizon 2020 budget, for instance, is the responsibility of nine different directorates-general (DGs) of the European Commission and implemented by 22 different bodies. Some of them channel resources from other funding bodies (other EU, national, regional, and/or private funds) and act as a secondary source of funds. Horizon 2020 had introduced three pillars – 'excellent science', 'industrial leadership', and 'societal challenges' – and two specific objectives – 'spreading excellence and widening participation' and 'science with and for society'. This intricate system of pillars, objectives and funding added an extra level of complexity: 'For example, the funding for a given societal challenge usually falls under the budget responsibility of two DGs and can be implemented in part by executive agencies and in part by public-public or public-private partnerships. Linear situations, where one DG is in charge of one part of the programme under the management of one implementing body, have become the exception'^{1,2}

Between January and March 2018, the European Commission ran a public consultation on future EU funds in investment, research and innovation, SMEs, and the single market. The Horizon Europe stakeholder consultation synopsis [report](#) summarises the more than 4 000 responses submitted. Almost half of respondents (46 %) replied as individuals, followed by business and industry representatives (17 %) and universities (14 %). Some 90 % of survey respondents reported having experience of the Horizon 2020 programme.

According to most stakeholders, the main obstacles to the current programme achieving its objectives are: very complex procedures; high administrative burden; lack of flexibility to react to unforeseen circumstances; insufficient synergies between the EU programmes/funds; and the difficulty of combining EU action with other public interventions and private finance.

On the other hand, most stakeholders expressed their satisfaction with the existing three-pillar structure of Horizon 2020 and asked for minor refinements, such as a better linkages between pillars for better coverage of the whole knowledge chain. Stakeholders also suggested boosting funding for the widely appreciated European Research Council (ERC) and Marie Skłodowska-Curie Actions (MSCA) and greater promotion of EU funded research results to the public (through, e.g. missions). There were also suggestions to reinforce the role of social sciences and humanities (SSH) as they offer strong value for tackling societal challenges and achieving missions.

According to some stakeholders, the reimbursement rates under Horizon 2020 work well, although indirect costs for non-profit organisations could be increased. Introducing lump-sum payments would simplify matters. Furthermore, a better model is required for reporting personnel costs, and guidance documents should be streamlined.

Some stakeholders proposed to reserve initial use of the outcome (e.g. products, innovation, patents) of EU-funded research and the innovation programme for European entities and, if necessary, to underline this aim through binding legislation.

Suggestions were also made regarding the definition of the word 'impact' in the context of research gaps and research results. Some stakeholders called for not only economic, but also social, scientific and cultural impacts to be taken into account.

In the June 2018 [impact assessment](#) accompanying the new Horizon Europe proposal, the Commission states that it has reacted to the criticism of Horizon 2020 and lists several areas for improvement, such as continued simplification; supporting breakthrough innovation; creating more impact through mission-orientation and citizen involvement; increasing synergies with other EU funding programmes and EU policies; strengthening international cooperation; and reinforcing openness. In this context, the Commission suggests improving the creation and diffusion of high-quality new knowledge and innovation in Europe; reinforcing the impact of research and innovation in policy-making; a rapid uptake of innovative solutions; and strengthening the European Research Area (ERA). EPRS is preparing an initial appraisal of the Commission's impact assessment.

The changes the proposal would bring

According to the Commission, investing in research and innovation is investing in Europe's future as it helps to compete globally and preserve the Union's social model. About two-thirds of Europe's economic growth over recent decades has been driven by innovation. The Commission therefore proposes €94.1 billion³ for the implementation of the framework programme 2021-2027 (and an additional €3.5 billion from the InvestEU Fund).

The main goals of Horizon Europe would be to:

- strengthen EU science and technology thanks to increased investment in highly skilled people and cutting-edge research;
- foster the EU's industrial competitiveness and its innovation performance, notably supporting market-creating innovation via the European Innovation Council and the European Institute of Innovation and Technology;
- deliver on the EU's strategic priorities, such as the Paris Agreement on climate change, and tackle global challenges that affect the quality of people's daily lives.

The evolution from Horizon 2020 would be, inter alia, reflected in the revamped structure. The three-pillar structure of Horizon 2020 would be continued, but redesigned to give greater coherence, both between and within pillars, in support of the programme objectives:

- The 'open science' pillar (€25.8 billion) would continue to focus on excellent science and high-quality knowledge. It would support frontier research projects defined and driven by researchers themselves through the European Research Council (ERC) (€16.6 billion), fund fellowships and exchanges for researchers through Marie Skłodowska-Curie Actions (€6.8 billion), and invest in excellent research infrastructure.
- The 'global challenges and industrial competitiveness' pillar (€52.7 billion) would directly support research relating to societal challenges, reinforce technological and industrial capacities by, inter alia, integrating the Horizon 2020 'societal challenges and leadership in enabling industrial technologies' into five clusters (i.e. health; resilience and security; digital and industry; climate, energy and mobility; and food and natural resources). In addition, it would set EU-wide missions. It would also include activities pursued by the Joint Research Centre (JRC) (€2.2 billion) that support EU and national policy-makers with independent scientific evidence and technical support.
- The 'open innovation' pillar (€13.5 billion) would aim at making Europe a frontrunner in market-creating innovation via the European Innovation Council (€10 billion), which would become a one-stop shop for innovators. A reorganisation of Horizon 2020 instruments (such as

the SME instrument) is suggested. In addition, this pillar would increase cooperation with innovation ecosystems and actors by further strengthening the European Institute of Innovation and Technology (EIT) to foster the integration of business, research, higher education and entrepreneurship (€3 billion).

Horizon Europe would also have some new features and enhancements to improve impact and openness, such as:

- European Innovation Council (EIC): this would become a one-stop shop to support high-risk, market-creating innovation projects by bringing promising ideas from the laboratory to real world application through, inter alia, direct financial support provided by two main funding instruments.
- EU-wide research and innovation missions: Examples could range from the fight against cancer, to clean transport or plastic-free oceans.
- Open science: This would become the modus operandi of Horizon Europe. It would require open access to publications, data, and to research data management plans.
- New European partnerships: Horizon Europe would streamline the number of partnerships and follow a more impact-focused approach. These partnerships would be open to all types of stakeholders (e.g. industry, Member States and philanthropic foundations) and would be limited in time, with clear conditions for the phasing out of the framework programme funding.
- Simpler rules: This would increase legal certainty and reduce administrative burden for beneficiaries in particular.

Horizon Europe is expected to generate new and more knowledge and technologies as well as to have positive effects on growth, trade and investment and social and environmental impact. According to the Commission, each euro invested by the programme can potentially generate a return of up to €11 of gross domestic product (GDP) over 25 years. Union investments in research and innovation are expected to directly generate an estimated gain of up to 100 000 jobs in the programme period (2021-2027).

Another innovation is that the Horizon Europe package replaces two current legal acts with a single legal act, by repealing [Regulation \(EU\) No 1291/2013](#) (which establishes the Horizon 2020 framework programme) and [Regulation \(EU\) No 1290/2013](#) (which defines the rules for participation in Horizon 2020 and dissemination of funding).

Advisory committees

The European Economic and Social Committee (EESC) appointed Gonçalo Lobo Xavier (Employers – Group I, Portugal) to draft an opinion. The [preliminary draft opinion](#) was published on 10 September 2018, and adoption in plenary is scheduled for 17 and 18 October 2018. The preliminary draft opinion welcomes the Commission proposal. It suggests, however, that the Commission should communicate not only the opportunities of the Horizon Europe programme, but also the effects of innovation and research activities on citizens' lives. The preliminary draft opinion also 'calls for urgency in defining strategic missions that can stimulate research and innovation ecosystems across Europe and that boost collaborative research as the main vehicle to deliver knowledge and create impact'.

The European Committee of the Regions appointed Christophe Clergeau (France, PES) to draft an opinion on the proposal. The opinion is scheduled for adoption in the plenary session of 9 October 2018. The [draft opinion](#) welcomes the Commission proposal, but suggests, inter alia, that 'missions should be developed through an open and participatory process, involving all stakeholders at local, regional, European and global level.' In addition, the draft opinion proposes to double the funding for European Innovation Ecosystems to €1 billion and to increase the support for the emergence, structuring and development of regional ecosystems and innovation hubs. The draft opinion also suggests that 'the award of the 'Seal of Excellence' shall be subject to the consent

of the applicant to provide access to relevant funding authorities, and to information on the application and assessment, subject to confidentiality agreements'.

National parliaments

The deadline for the submission of [reasoned opinions](#) on the grounds of subsidiarity was 24 September 2018. The national parliaments largely support the Commission proposal.

Stakeholders' views⁴

The European Association of Craft, Small and Medium-sized Enterprises, UEAPME, recommends the application of a less restrictive definition of innovation (to ensure access for innovative SMEs) and to include a 20 % target for [SME participation](#) (including start-ups) in the Horizon Europe programme. It also recommends increasing the share of the budget dedicated to the European Innovation Council (EIC) from 10 % to 15 %, and ensuring preferred access for SMEs and start-ups to these instruments.

TP Organics, the organic movement's European technology platform, welcomes the proposal but urges the European Parliament and Member States to ensure Horizon Europe makes a clear choice for [sustainable development](#). They consider it is unclear how the objectives on 'food and natural resources' (in respect of the sustainable development goals) will be achieved. They call for stronger organic and agro-ecological principles by, e.g. promoting circular systems, building on systemic interactions, using diverse crops and animals, relying on biological processes for soil fertility, and controlling pests.

The European Council of Doctoral Candidates and Junior Researchers, Eurodoc, welcomes calls for cross-cutting open science in the framework programme, but urges an increase in the funding targeted at basic science and [young researchers](#). The budget increases for the Marie Skłodowska-Curie Actions (MSCA) and for the European Research Council (ERC) are considered insufficient to adequately support early-career researchers.

The Guild, an association of 19 European research-intensive universities in 14 countries, urges that scientific excellence should be the sole evaluation criterion for the ERC and opposes [geographical criteria](#) in ERC grant evaluation. The association is also against limiting the ERC's focus to young researchers, 'as the programme should be open to the best scientific talent regardless of their age or the stage of their career'. The Guild welcomes the support for research in the social sciences and humanities (SSH) and the targeted budget for SSH, but opposes proposals related 'to the boosting of the cultural and creative industries. The focus of Horizon Europe should remain in fostering excellent research and innovation, and not in subsidising sectors'.

The Association of European Research Establishments in Aeronautics, EREA, calls for a significantly increased budget for Horizon Europe, to at least €120 billion. EREA criticises 'the vagueness on exactly which topics and technologies will be supported, and with how much of the budget', as this would make the present proposal difficult to assess. EREA welcomes the [concept of missions](#) in research and innovation, but after several years of discussion, it would be 'disappointing to note the absence of a stringent concept for missions in the Horizon Europe proposal'.

Legislative process

The European Parliament, assigned the file to the Industry, Research and Energy Committee (ITRE), which appointed Dan Nica (S&D, Romania) as rapporteur. The [draft report](#) was presented on 13 July, and the deadline for tabling amendments was 6 September 2018. The vote in the ITRE committee is scheduled for 21 November 2018. In advance of the vote, a [public hearing](#) on 'Horizon Europe – EU's research and innovation excellence', with the participation of the Commission and external experts, is scheduled in Parliament on 8 October 2018.

In his draft report, the rapporteur welcomes the Commission's proposal as a 'solid starting point'. Drawing on the lessons learnt from Horizon 2020, the rapporteur suggests making Horizon Europe 'simpler, clearer and more accessible' and that it should promote 'fair and transparent participation.' The rapporteur supports the Commission's efforts to simplify the framework programme through lump-sum payments, two-stage evaluation, internal invoicing, cross-reliance on audits, and acceptance of the beneficiaries' usual accounting principles. For further simplification, the report proposes the implementation of uniform funding rates throughout the programme.

The rapporteur welcomes the retention of the three-pillar structure. However, he is of the opinion that Pillars II and III are 'not always clearly described and not well substantiated'. He also criticises the concept of missions, as the Commission proposal remains 'rather vague' in this respect. The same applies to the new European Innovation Council, which lacks a proper description of its activities.

The rapporteur suggests a higher budget for Horizon Europe. As requested in the 13 June 2017 European Parliament [resolution](#) on Horizon 2020 and the framework programme 9 proposal, the budget should be raised to €120 billion in constant or 2018 prices. This is in line with the Parliament's [draft interim report](#) on the proposal for a Council regulation on the multiannual financial framework 2021-2027.⁵

The rapporteur also emphasises intellectual property issues and proposes a stronger intellectual property provision in the Horizon Europe basic act to protect smaller and new participants to the programme in particular.

As the EU lags behind its main international competitors when it comes to the commercial exploitation of the outcome of EU funded research and innovation, the rapporteur suggests the introduction of the concept of 'first EU commercial exploitation', in order to maximise the impact and added value of Union spending.

The rapporteur also suggests actively involving the Parliament in designing the missions, as it is the institution that directly represents the voice of the European citizens.

Requesting equal treatment and equal pay for equal work regardless of the researcher's country of origin or the location of the research organisation, the rapporteur notes that: 'Salaries paid from a European programme must be calculated on the basis of a common algorithm setting the salaries of European researcher at the level of the funding European programme'. This scale could be based on the researcher career levels as defined in the European Framework for Research Careers.

In the Council, its Competitiveness configuration (Internal Market, Industry, Research and Space) has dealt with the Commission proposal on several occasions.

On 24 September 2018, Council published a [progress report](#). Although most delegations have welcomed the Commission proposal in general, a number of issues have been raised.

Delegations, for instance, asked for a renaming of the pillar titles, especially of Pillars I 'open science' and Pillar III 'Open innovation', to avoid confusion with other open science concepts.

Although defence research is included in the Commission proposal (article 5), a majority of Member States insist on a clear separation between the two specific programmes within Horizon Europe, i.e. with a separate specific programme for defence research in the European Defence Fund, and stress the importance of maintaining the civil character of Horizon Europe. The Council Legal Service advises the Council to strengthen the references regarding the Defence Fund in the proposed regulation to make a clearer link between the programmes.

Furthermore, several Member States criticised the lack of a targeted instrument in Horizon Europe for small and medium-sized enterprises, of the type which has benefited thousands of SMEs across Europe in Horizon 2020.

Some delegations welcomed the establishment of the European Innovation Council. However, there have been a number of questions regarding governance and implementation and the coordination of activities with the European Institute for Innovation and Technology (EIT).

EP SUPPORTING ANALYSIS

[Assessment of Horizon 2020 Programme](#), Policy Department for Budgetary Affairs, European Parliament, January 2016.

Reillon V., [Preparing FP9: Designing the successor to the Horizon 2020 research and innovation framework programme](#), European Parliament, EPRS, April 2018.

Reillon V., [Horizon 2020 budget and implementation - A guide to the structure of the programme](#), European Parliament, EPRS, November 2015.

[Scrutiny in Horizon 2020 Focusing on the European Parliament's Priorities](#), Policy Department for Economic and Scientific Policy, European Parliament, February 2016.

OTHER SOURCES

[Horizon Europe: framework programme for research and innovation 2021–2027](#), European Parliament, Legislative Observatory (OEIL).

ENDNOTES

- ¹ Current prices make no adjustments for inflation, whereas constant prices adjust for the effects of inflation as they are expressed in the price terms of a base period (normally a year; in this briefing, it is 2018).
- ² Reillon V., [Horizon 2020 budget and implementation - A guide to the structure of the Programme](#), EPRS, European Parliament, November 2015, p. 1.
- ³ All amounts in this section are expressed in current prices.
- ⁴ This section aims to provide a flavour of the debate and is not intended to be an exhaustive account of all different views on the proposal. Additional information can be found in related publications listed under 'EP supporting analysis'.
- ⁵ Cf. Recital 14i (p. 6) and Annex II (p. 45) Parliament's [draft interim report](#) on the proposal for a Council regulation on the multiannual financial framework 2021–2027 – Parliament's position with a view to an agreement (2018/0166R(APP)).

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