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on the Research and Training Programme of the European Atomic Energy Community (2014-2018) complementing the Horizon 2020 – The Framework Programme for Research & Innovation

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Introduction

The Horizon 2020 programme provides the EU with a chance to build on all as aspects of the framework programmes, this includes continuing and building on it successes and addressing its shortcomings. This is as true for atomic research as it is with all other aspects of research in the EU and beyond.

The Commission's original intent was to use Horizon 2020 to bring together under a single programme for the first time, so it is only appropriate that it shall extends to atomic research as well, as the contribution made by atomic research to all aspects of EU research remains of vital importance. The three pillars of Horizon 2020 are to provide excellence in science, industrial leadership and tackle the grand societal challenges facing the union and its citizens, all of which are enhanced by the inclusion of atomic research and researchers and their exclusion from the Horizon 2020 would handicap the EU in its pursuit of these goals. Whether or not one Member State or another chooses to use nuclear energy or not all Member States can and should benefit from nuclear research and can benefit from the added value being offered by the Euratom framework. At all levels Euratom research and training programme must ensure the most efficient use of resources and avoid duplication of efforts in its pursuit of promoting excellence in the nuclear field.

The ambition of Horizon 2020 in ought to be transmitted across the board into dealing with all aspects of nuclear research. Owing to the nature of the Euratom framework the European Parliament has dealt with the current Euratom framework those for 2012-2013 within the last few months under several dossiers such as on nuclear research and training activities (2011/0046(NLE)), specific programme for indirect actions (2011/0043(NLE)), participation of undertakings, research centres and universities in indirect actions, dissemination of research results (2011/0045(NLE)) and specific programme for direct actions of the JRC (2011/0044(NLE)). The reduction in four reports being replaced by a single regulation represents a significant step in terms of simplification in itself which ought to be welcomed.

With regards to the anomalous situation of having the report apart from the legal framework of the Treaty of the functioning of the European Union this is a question which ought again to be revisited, though it ought not to be main thrust of the Parliament's energies. Certainly it is appropriate and consistent follow-on from the four recent reports in calling for the Euratom treaty to have its provisions on the information and codecision rights of the European Parliament on research and environmental protection issues in order to facilitate, inter alia, future budgetary procedures, which is in line with the Parliament's enhanced role since the passage of the Lisbon Treaty.

Following on from FP7 an expanded Euratom programme with additional funds is needed for a number of main reasons:

- to allow for expansion of the fission programme to accompany the on-coming next generation IV of reactors with all their accompanying technological complexity which will happen over the next 10-15 years. This is in-line with the agreed projects of the European Sustainable Nuclear Industrial Initiative (ESNII) along with the other agreed aspects of the SET-Plan in November 2010;
- to ensure that Europe retains a leading position in all newest forms of nuclear fission, needed to maintain and enhance all existing facilities;
- to respond to the increased popular interest in security of all planned and existing

nuclear fission facilities following the accident at Dai'ichi nuclear power plant in March 2011 and the ongoing threats on nuclear proliferation to further develop solutions for final waste.

With regards to the expansion of the fission programme, to correspond to renewed demands for new reactors as well as decommissioning the Rapporteur notes that within the proposed financial envelope the proposed budget for fission looks small by comparison and does not amount to the increase in funding that has been allocated to other aspects of Horizon 2020. When considering the amount of funding that has been made available for renewable energy sources under various programmes whereas as fission as an acknowledged low-carbon technology has not received similar levels of support.

It should also be recalled that the stress tests will likely issue their peer review results within the next months. While these will represent immediate security actions rather than long-term research actions it is important that the new challenges facing fission energy are kept in mind when considering the allocated budget. The projected 13.5% budget for administrative expenditure seems unjustifiably high and will need to be revised to somewhere in the region of 10%.

ITER, JET & the future of fusion

The Commission's proposal initial proposal to leave ITER's funding outside of the Horizon 2020 and the Multiannual Financial Framework the project, is not based on any logical or scientific or even sound budgetary concerns. It is important that Europe's leadership in the field of fusion research is not threatened and the long-term viability of the ITER project, in which so much has already been invested, ought not to be compromised by the Commission's lack of desire to include the extra funding in its overall budget.

The consequence of this would likely have the effect that extra costs could spiral further. The inclusion of ITER within the MFF and the Horizon 2020 framework of funding will better enable a complete picture to emerge of the resources dedicated to it and reconfirm its place within the future of EU research. It is not useful for the Commission to propose its figure of €709.713 million; million for fusion research while leaving-out ITER. The Commission should present a new figure which includes the ITER along with the rest of fusion research, guaranteeing the funding of the former without undermining the later.

The Joint European Torus (JET) has been operational since 1983 and provides the most accurate information on the work of fusion energy in Europe so far. It employs over 1,000 people and is working on making fusion energy more efficient and less expensive. 2015 will mark the end of its experimental phase, however if the Union is seriously committed to transforming all ITER research into useable energy it should support all efforts to provide for the longer term operationally of JET. As we may still be over a decade away from the full functioning of ITER it is essential for the European fusion research that there is no gap between the functioning of JET and the operation of ITER, it would not be logical to support or promote what would be an effective pause in fusion research should this occur. With the European Fusion Development Agreement (EFDA) the EU should strive to promote the work of JET and, in seeking international partners such as India and China, it should seek reciprocal agreements with relation to investments in other multinational research reactors and developments such as DEMO. This will likely include helping all efforts to find international

funding through the ITER Council as well as other measures to ensure that European leadership in this crucial field is not undermined.

Supporting the SET plan

Nuclear research has a significant role to play in the realisation of the Strategic Energy Technology Plan (SET-Plan) which has been agreed upon as a means to move the Union towards its aims of reduced carbon emissions, increased security of supply and decreased dependency on fossil fuels and strategically vulnerable sources of traditional energy.

In order to continue with the plan and to help fulfil tow of the key pillars of Horizon 2020 (industrial leadership and grand societal challenges) it is essential that the work of the SET plan be continued throughout the period 2013 - 2018 and beyond. The work of at least two of the main agencies set-up under FP7 - SNETUP and IGDTP - are important to the work and the long-term success of the SET-Plan.

Considering the importance of creating a low-carbon economy and fostering research into low-carbon energy it is important that nuclear energy, particularly nuclear fission, is considered among the array of measures needed to tackle climate change (one of our grand societal challenges) and boost industrial leadership, preventing any loss of European expertise. It must be remembered that the SET-Plan has not at any point provided the required funding for any of the measures it supported.

Cross-cutting measures

The Horizon 2020 framework will contain a number of important measures which must apply across the board. In general the Commission proposal on the “Rules for Participation and Dissemination of Results in Horizon 2020" and the European Parliament report will be of parallel importance here.

The societal aims of Horizon 2020, promoting a greater gender balance in researchers and enhancing mobility of researchers must be maintained throughout in this programme and should be matched by direct and indirect actions.

While the issue of simplification will be extensively discussed across the framework, in particular in the Rules of Participation, the Rapportuer would like to re-emphasize the need for simplification at all levels and welcomes the attempts included in the Commission proposal. The European Parliament has already attempted to introduce simplification from the previous framework reports on the FP7 Midterm-Review (2011/2043(INI)), on Simplifying the implementation of Research Framework Programmes (2010/2079(INI)) and on the Green Paper "From Challenges to Opportunities" (2011/2107(INI)), all of which were broadly supported within the Parliament and reflected feeling with businesses and academia. It is vital that the Commission take seriously the need for greater simplification and that the new approach reflect a change in Commission thinking in particular with regards to those without the resources to undertake the administrative burden, a more user-friendly approach so as to reward excellence wherever it is found, rather than jus those with the administrative capabilities.

In the interests of simplification consistency should be maintained across all different parts of the framework. The creation of central mediation service, open to beneficiaries and Commission officials, to provide clarity in cases of differing interpretation, should be considered. The proposed reduction in the audit threshold from €375,000 in FP7 to €325,000 in Horizon 2020 would be likely to further increase costs bureaucracy and should be reconsidered. The option for institutions to use full economic costing methodology to claim real costs should be retained. While many of the improved re-imbursement methods are to be welcomed it is important that further clarity is provided over differing forms of re-imbursement in order to prevent further confusion.

Widening participation and small & medium-sized enterprises (SMEs)

The Commission has sought to highlight the plight of SMEs throughout the Horzion 2020 framework, which considering their importance to the European economy and their vulnerability in the wake of the financial crisis is quite appropriate. The underrepresentation of SMEs in many areas of atomic research needs to be addressed. Appropriate measures should be taken at all levels to ensure an adequate balance between industry, including SMEs and academia when appointing groups of independent experts. In particular SMEs must not only have access not only to the targeted SME instruments but that simplification ought to increase the potential of SMEs.

Both the debt facility and the equity facility, foreseen to improve SME funding should be available for the Euratom programme to contribute. Further to the widening of participation existing facilities which fund SMEs such as the Eureka Stars programme, as well part of the Marie Curie Actions, which, as a previously highly successful programme ought to have its budget revised upwards.

Making use of innovative financial instruments will be of crucial importance throughout the Horizon 2020 framework and accessing them should not be made difficult for SMEs. In its communications role the JRC should consider it as a direct action to increase the uptake by SMEs of Euratom and other funds and develop communications strategies to do so.

Preventing a 'Skills gap' or 'Brain drain'

In terms of the second pillar of Horizon 2020, industrial leadership, it is crucial that a 'skills shortage' in terms of nuclear be avoided and that all necessary training and expertise for all aspects of fission and fusion are kept within the EU. Moreover in order to maintain excellent standards at all existing fission installations and power plants it is essential that the world's best nuclear scientists continued to be located within the EU in order to continue with the highest possible levels of expertise and safety in existing EU-based plants as well as those in neighbouring countries.

This is not only a question of industrial leadership but one of safety and security as well. It will also be the responsibility of the JRC to help promote the attractiveness of science and in particular nuclear and atomic research. It is important the visibility of nuclear research is also increased as a means to promote this form or research as well as others. In its direct actions the Commission proposal has called for increased numbers of PhD candidates and post-doctoral fellowships in nuclear, it is important that these figures display the appropriate level of ambition.

The role of the European Research Council (ERC) will be important in attracting and retaining excellent research in Europe and its role should be recognised. The budget for the ERC should not go below the proposed 77% increase.

International cooperation

The importance of international cooperation must be restated, not only for the agreeing and promotion of recognised improved safety measures but also to promote the access of the Union to nuclear industry to new emerging markets. In general the Horizon 2020 proposal contains a lack of clarity relating to international co-operation and it is important that its importance is underlined and set in clear terms. There is also a need for collaboration with non-EU partners to be filtered down into internationally targeted calls, there should be a transparent mechanism for this to happen.

Among many of the reactors being built and planned for the next three decades many of them are in non-EU and non-OECD countries, which represents a great opportunity for European safety standards to be exported along with presenting opportunities for EU-trained scientists and EU-based companies to take advantage and help bridge any expertise-gap for emerging nuclear states. However it also represents a great opportunity for many non-EU and non-OECD countries to become exposed to the safety standards and levels of excellence prevalent in the EU.

Despite the understandable anxieties that followed in the wake of the 2011 accident at the Fukushima Dai'ichi nuclear power plant there has been thus far no global rush to abandon nuclear energy and certainly no abandonment of nuclear research. Instead it seems that greater attention will be paid to the issues of safety and regulation and education throughout those countries which choose to continue to use it and for those seeking to phase-out nuclear energy decommissioning will assume more urgent importance.

At the recent World Energy Council summit on nuclear safety in South Korea most countries showed a willingness to support the development and adoption of minimum and harmonised international safety standards for the construction, operation and maintenance of nuclear energy. While many of these issues are not directly relevant it would be a positive step if the EU were to support the development and adoption of such minimum standards and support their adoption and work towards the adoption of what President Van Rompuy called a "global security culture".

This framework should not fail to reassert the EU and Euratom commitment to the highest levels of nuclear safety. In all aspects co-operation must be assured with all relevant actors in terms of the highest levels of nuclear security. To this it is important that the JRC continues to support the development of Chemical, Biological, Radiological and Nuclear (CBRN) Centres of excellence.

Finding a solution to final waste

In terms of indirect actions there should be a focus on the promotion of a Common Union view on the main issues related to waste management from discharge to final disposal. This must be the case for al forms of radioactive waste, including those for which industrially mature processes do not exist. This should include transport and export issues.

Further EU funds

Recognising the role that Structural Funds can play in helping to fund atomic research projects such as SUSEN in the Czech Republic it is important that the role between Horizon 2020 and Structural Funds is strengthened and further clarity on their different responsibilities is sought. This should build on the already good collaboration between previous FPs and Structural Funds. Regions should also be encouraged to use ERDF funding to develop smart specialisation strategies to help develop regional clusters.