Opinion of the European Economic and Social Committee on 'Proposal for a Council Regulation establishing the Research and Training Programme of the European Atomic Energy Community for the period 2021-2025 complementing Horizon Europe — the Framework Programme for Research and Innovation'

(COM(2018) 437 final — 2018/0226 (NLE))

(2019/C 110/24)

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Section responsible	Transport, Energy, Infrastructure and the Information Society
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Outcome of vote (for/against/abstentions)	208/3/4

1. Conclusions and Recommendations

1.1. The European Economic and Social Committee (EESC) welcomes the proposal for a regulation for the European Atomic Energy Community (Euratom) research and training programme 2021-2025, emphasising its continuity with previous programmes on fusion research and development, nuclear fission and safety, and with the Joint Research Centre (JRC), while also addressing new areas of activity such as radiation protection and the decommissioning of nuclear power plants.

1.2. The EESC considers the Euratom budget to be proportionate to the objectives set and considers it essential to maintain this financial allocation regardless of the outcome of the Brexit negotiations. The Committee also considers it crucial in this respect to manage the United Kingdom's exit from the Euratom programme with the utmost care, particularly with regard to research already in progress, shared infrastructure and the social impact on staff (e.g. working conditions) both on British soil and elsewhere.

1.3. The EESC considers the Joint European Taurus project (JET) to be a key factor for the development of the International Thermonuclear Experimental Reactor (ITER) project, ITER being, from a scientific point of view, the successor to JET. For this reason, the Committee considers it important that JET remain operational (as an EU project or as a joint EU-UK project) until the ITER project comes into operation.

1.4. The EESC believes that the innovative aspects introduced in the programme, such as its simplification, the broadening of objectives (ionising radiation and plant decommissioning), enhanced synergies with the Horizon Europe programme and the possibility of financing education and training actions for researchers (e.g. Marie Skłodowska-Curie) are in line with citizens' expectations and boost the efficiency and effectiveness of the programme.

1.5. The Committee emphasises that nuclear safety must be understood as a dynamic concept, which entails constant monitoring of and adjustments to existing legislation in accordance with recent developments and innovations, covering the whole life span of the plants. Plants located on borders between EU countries should be given particular attention, with increased coordination between national and local authorities and the effective involvement of citizens and workers.

1.6. The EESC considers education — beginning with compulsory education — and training to be an essential factor in attracting young people to scientific and technological subjects. This is critical in terms of increasing the number of European researchers in the sector in the future. Currently there are not sufficient numbers to meet demand from industry and research.

2. **Introduction**

2.1. The proposal for a regulation establishing the Research and Training Programme of the European Atomic Energy Community (Euratom) for the period 2021-2025 is part of the legislative package for the 'Horizon Europe' Framework Programme for Research and Innovation 2021-2027 ([1]). The proposed programme will be implemented for five years in accordance with Article 7 of the Euratom Treaty, with the possibility of a two-year extension to match the duration of Horizon Europe and the Multiannual Financial Framework (MFF).

2.2. The Horizon Europe programme will have a budget of EUR 100 billion for the period 2021-2027, of which EUR 2,4 billion will be allocated to the Euratom programme. The Horizon Europe framework programme also provides the frame of reference for the instruments and means of participation, as well as provisions for implementation, assessment and governance. Research areas supported by the Euratom programme are not included in Horizon Europe, for both legal reasons (separate treaties) and managerial ones (avoiding duplication), strengthening synergies between programmes.

2.3. The EESC has drafted an ad hoc opinion on the proposal for a Horizon Europe programme ([2]), and the present opinion is closely related to it in terms of its vision and recommendations. The EESC has also drafted two other opinions linked to this one: one on the ITER project ([3]) and the other on the decommissioning of nuclear power stations ([4]).

3. **Gist of the proposal**

3.1. The Euratom research and training programme deals with the different applications of nuclear energy in Europe, both for energy production and for other purposes in other sectors (e.g. ionising radiation in the medical sector). The European Union's efforts aim to promote innovation and develop secure technologies, reducing risks and ensuring optimum radiation protection. Euratom therefore makes it possible to complement the Member States' contributions by sharing innovation, research and training processes.

3.2. The proposal determines the budget and the common set of research objectives for both direct actions (carried out directly by the Commission via the joint research centre — JRC) and indirect actions (undertaken by public or private stakeholders financed by the programme), to be implemented in accordance with the work programmes agreed with Member States.

3.3. The Euratom programme 2021-2025 will be implemented under direct management. However, the Commission may decide, if deemed appropriate and effective, to use a shared and/or indirect management scheme, by contracting Member States, individuals, businesses, third countries, international organisations or citizens from third countries to carry out certain parts of the programme in accordance with Article 10 of the Euratom Treaty.

3.4. The proposed programme will continue with the key research activities of the ongoing Euratom programme (**radiation protection, nuclear safety of installations, security in the international policy framework, radioactive waste management and fusion energy**), but will place increased emphasis on decommissioning and on non-power applications such as **ionising radiation**. The proposed budget of EUR 1 675 000 000 for the period 2021-2025 is shared between research and development for nuclear fusion (EUR 724 563 000), nuclear fission, nuclear safety and radiation protection (EUR 330 930 000) and the JRC (EUR 619 507 000).

3.5. Broadening the range of objectives increases the cross-cutting nature of the instrument, enabling it to better serve citizens. In particular, the growing number of different applications for **ionising radiation** means that protection from excessive exposure to radiation is needed for people and the environment. Ionising radiation technologies are used every day in Europe in a number of fields, in particular the medical sector. As a result, research into **radiation protection** will also be developed using a cross-cutting approach, with regard both to the production of nuclear energy and to the medical sector, without excluding other forms of use in industry, agriculture, the environment and security.

3.6. Another innovative component is research aimed at developing and evaluating technologies for the **decommissioning** and environmental remediation of nuclear facilities, in response to increasing requests on their part. This component is essential to closing the loop with regard to the other safety aspects already dealt with by the ongoing

([1]) COM(2018) 435 final.
([2]) INT/858, Horizon Europe (OJ C 62, 15.2.2019, p. 33).
([3]) TEN/680, MFF and ITER (see page 136 of the current Official Journal).
([4]) TEN/681, Multiannual Financial Framework, nuclear decommissioning and radioactive waste (see page 141 of the current Official Journal).

programme: **nuclear safety** (i.e. the safety of reactors and fuel cycles), **spent fuel and radioactive waste management, radiation protection and emergency preparedness** (radioactive accidents and research into radioecology) and **measures to implement policies on nuclear security, safeguards and non-proliferation**.

3.7. These initiatives will be accompanied by a specific action to support the development of **fusion energy**, a potentially inexhaustible source of energy with a reduced environmental impact. In particular, the proposal focuses on ensuring continuity in the implementation of the fusion roadmap, which should lead to the first power plant being built in the second half of this century. That is why the EU will continue to support the **ITER** project, through a specific programme ([5]), and, looking ahead, the **DEMO** project.

3.8. Finally, in addition to research activities, the proposal provides the possibility for nuclear researchers to participate in education and training programmes (e.g. the Marie Skłodowska-Curie actions), in order to maintain a high level of expertise, as well as for specific financial support to allow access to European and international research infrastructure (including the JRC).

4. **General comments**

4.1. The EESC welcomes the proposal for a regulation for the Euratom programme 2021-2025. In particular, the Committee takes a positive view of the growing interconnections in the Horizon 2020 framework programme, with a view to ensuring common mechanisms for governance, access to and management of funds, as well as the integration of research and training activities, avoiding pointless duplication.

4.2. The EESC considers the Euratom budget to be proportionate to the objectives that the EU has set in the nuclear sector. For this reason, the Committee considers it essential that the financial allocation be maintained, regardless of the outcome of the Brexit negotiations. The Committee also considers it crucial in this respect to manage the United Kingdom's exit from the Euratom programme with the utmost care, particularly with regard to research already in progress, shared infrastructure and the social impact on staff (e.g. working conditions) both on British soil and elsewhere ([6]).

4.3. In particular, the EESC stresses that to implement the ITER project, support is needed from the JET project. The JET facility is located in the United Kingdom and is funded by Euratom. Parts of the ITER facility currently under construction are tested using the JET project, and, from a scientific point of view, ITER is the successor to the JET project. This facility is the only one of its kind worldwide and cannot be replaced. For this reason, the Committee considers it important that JET remain operational (as an EU project or as a joint EU-UK project) until the ITER project comes into operation.

4.4. The Committee supports the approach of the proposal for a regulation, which is mainly aimed at providing continuity to research and to projects already under way, such as the ITER project. The latter is an important objective in the process of decarbonisation ([7]), energy supply and industrial development ([8]). The new programme also includes interesting new features and broadens the range of research and innovation activities geared to development and growth that are eligible for funding.

4.5. The EESC warmly welcomes the proposal to include ionising radiation actions among those that are eligible for funding. This increases the cross-cutting nature of the programme in line with the *societal challenges* objective of Horizon Europe. In this regard it is important for the results of research and innovation, i.e. patents and new technologies, to be disseminated rapidly and systematically, given their wide scope of application ([9]).

4.6. It is important for the public to be informed of the results obtained through financing and joint efforts at European level. This will increase people's confidence in science and research, as well as raising awareness of the importance of the European Union and of a specific strategy designed to improve quality of life for all.

([5]) TEN/680, MFF and ITER (see footnote 3).
([6]) https://www.nature.com/articles/d41586-018-06826-y.
([7]) OJ C 107, 6.4.2011, p. 37.
([8]) OJ C 229, 31.7.2012, p. 60.
([9]) INT/858, Horizon Europe (see footnote 2).

4.7. The Committee also takes a favourable view of extending funding for research into and the sharing of knowledge on the decommissioning and environmental remediation of nuclear facilities, both to address the growing needs of Member States and to close the loop in terms of managing nuclear energy production processes. This must of necessity result in the safe environmental remediation of decommissioned plants.

4.8. The EESC believes that extending the programme to education and training activities, such as the Marie Skłodowska-Curie actions, is crucial to maintaining high standards of expertise in the EU. However, it is important to establish quantitative as well as qualitative objectives, since at present there are not enough European researchers in the sector to cover all the needs of the European production and research system ([10]).

5. **Specific comments**

5.1. The new nuclear safety framework put in place after the Fukushima disaster ([11]) addresses citizens' concerns. The European Union has established a system of systematic controls (peer reviews) and dynamic and multi-level safety mechanisms which have increased the safety standards of plants. The Committee recommends monitoring to ensure the correct implementation of this directive and that it be updated and adapted in response to new challenges, covering the whole life span of plants, from planning new reactors to the continual upgrading of existing ones until they are decommissioned ([12]). In this context we believe that monitoring activities carried out by external and independent bodies can guarantee higher safety standards.

5.2. Since many reactors are located on the boundary between two or more EU Member States, it is important to establish a reinforced framework for cooperation between Member States, with a view to setting up mechanisms to provide rapid responses to unforeseeable cross-border accidents ([13]), ensuring effective collaboration and coordination between the local and national authorities concerned. This process, based on Article 8 of Directive 2014/87/Euratom, should also provide effective, far-reaching information and training activities aimed at workers and citizens, which should be supported through specific funding lines. Similar initiatives should also be developed with neighbouring third countries which share the same risks ([14]).

5.3. The Committee takes the view that subcontracting could be a factor giving rise to uncertainty with regard to the maintenance of nuclear power plants and therefore recommends that it be limited and closely monitored ([15]).

5.4. The EESC considers it essential to encourage and support young people's interest in scientific and technological subjects, something that requires the active and informed involvement of school teachers. The latter, through continual training and updating, should be positive vehicles for knowledge and encourage open discussions with students on the topic, free from prejudices and stereotypes.

5.5. In particular, the EESC supports initiatives (including through the Erasmus+ programme) aimed at promoting STEAM subjects in schools, i.e. science, technology, engineering and maths together with art. Through this approach, students are encouraged to adopt a systematic and experimental attitude by being given the opportunity to resolve real world problems in a creative manner. Research and projects already financed by the EU in recent years have yielded very positive results, showing that this approach generates interest in technical, mathematical and scientific subjects, which subsequently become a first option for students when choosing their university studies ([16]).

Brussels, 12 December 2018.

The President
of the European Economic and Social Committee
Luca JAHIER

([10]) OJ C 237, 6.7.2018, p. 38.
([11]) Directive 2014/87/EURATOM of the Council (OJ L 219, 25.7.2014, p. 42) and linked directives.
([12]) OJ C 341, 21.11.2013, p. 92.
([13]) OJ C 318, 29.10.2011, p. 127.
([14]) OJ C 487, 28.12.2016, p. 104.
([15]) OJ C 237, 6.7.2018, p. 38.
([16]) OJ C 75, 10.3.2017, p. 6.