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PROPOSAL

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To:	Mr Jeppe TRANHOLM-MIKKELSEN, Secretary-General of the Council of the European Union
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Subject:	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

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2018/0226 (NLE)

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

{SEC(2018) 291 final} - {SWD(2018) 307 final} - {SWD(2018) 308 final} -
{SWD(2018) 309 final}

EXPLANATORY MEMORANDUM

1. CONTEXT OF THE PROPOSAL

1.1. Reasons for and objectives of the proposal

This proposal is part of the legislative package for the ‘Horizon Europe’ Framework Programme for Research and Innovation. It is designed to implement the EU’s next long-term financial framework for 2021-2027, the priorities set out in the Commission's Agenda for Jobs, Growth, Fairness and Democratic Change, and the Commission’s overall policy priorities (Horizon Europe).

The proposal for the Euratom research and training programme deals with the key issue of the various applications of nuclear energy in Europe. Using the power and non-power applications of nuclear energy to benefit the general public in Europe calls for long-term efforts to reduce safety and security risks and support the development of safe nuclear technologies and optimal radiation protection. Public and private research at national level has a significant role to play in this effort. Euratom’s task is to complement the Member States’ contributions by means of a Community-based research and training programme.

In this proposal for a Euratom Research and Training Programme for 2021-2025 (referred to below as ‘the Programme’), the Commission seeks the Council’s agreement to a five-year programme¹ which will pursue the current programme’s key research activities², expand research into non-power applications of ionising radiation, and make improvements in the areas of education, training and access to research infrastructure. The proposed programme will complement Horizon Europe using the same instruments and rules for participation. The proposal determines the budget and a common set of research objectives for both direct³ and indirect⁴ actions to be implemented in accordance with the work programmes agreed with Member States.

The Programme will support research into radiation protection in the context of both nuclear energy generation and non-power applications of ionising radiation. Research into the latter will be designed to reduce risks from low-dose exposure through the use of these technologies. Research into radiation protection has already benefited the medical sector. There is also significant potential for public benefit in sectors including industry, agriculture, environment and security. A provision allowing for cross-cutting activities and synergies with ‘Horizon Europe’ will also benefit further research into non-power applications of radiation. One of the Programme’s goals is to make nuclear technologies safer by developing a better understanding of the ageing of nuclear reactors and improving accident management strategies. The Programme will also support research into assessing and demonstrating the safety aspects of future fission technologies as far as is necessary to maintain safety expertise in the Community. The rapidly growing use of nuclear fission technologies worldwide makes this field of Euratom research all the more important. The Programme will include other

¹ The time limit of five years is established in Article 7 of the Euratom Treaty.

² These include nuclear safety, security, radioactive waste and spent fuel management, radiation protection and fusion energy.

³ Direct actions means research and innovation activities undertaken by the Commission through its Joint Research Centre (the 'JRC').

⁴ Indirect actions means research and innovation activities undertaken by participants receiving financial support from the European Atomic Energy Community .

equally important tasks: advancing possible ways of managing and disposing of spent fuel and radioactive waste, and supporting preparedness for emergencies involving radiation.

Given the substantial increase in the deployment of nuclear fission technologies worldwide, Euratom needs to pursue its research into developing techniques to support nuclear safeguards, security and non-proliferation efforts.

The Programme also focuses on developing fusion energy, one of the few possible future options for baseload, low-carbon electricity production. Research into the feasibility of this technology is needed for the sake of future generations' wellbeing. While the deployment of fusion power plants that can contribute to the decarbonisation of the EU's energy mix remains a distant prospect, the Programme has the aim of implementing the European fusion roadmap, with a view to meeting the goal of producing electricity through fusion. This includes demonstrating fusion's feasibility as an energy source by exploiting existing and future fusion facilities, including ITER⁵, and preparing for future fusion power plants by developing designs, materials and technologies.

In its efforts to develop fusion energy, the Programme will increase involvement and role of industry, with specific focus on facilitating know-how transfer from fusion laboratories to industry that should take over the responsibility for the design of DEMO⁶ at the appropriate time.

In addition to these research activities, the proposal provides for more specific research into decommissioning of nuclear installations. The programme will address issues, such as improving the necessary skills, sharing best practice, developing techniques and co-funding research into common issues in nuclear decommissioning.

As regards nuclear expertise and excellence in the Community, the proposed Euratom regulation and the proposal for Horizon Europe will now enable nuclear researchers to take part in education and training schemes, such as Marie Skłodowska-Curie Actions. This will help maintain the necessary skills within the Community.

As regards research infrastructure, the proposal offers financial support for providing, making available and giving appropriate access to European and international research infrastructures, including those of the JRC.

This proposal states that it is to apply from 1 January 2021. It covers a Union of 27 Member States, given the UK's notification of its intention to withdraw from the European Atomic Energy Community under Article 50 of the Treaty on European Union, as applied by Article 106a of the Treaty establishing the European Atomic Energy Community and received by the European Council on 29 March 2017.

⁵ Research facility with the aim to prove main principles of fusion power plant at industrial scale. ITER will not produce electricity.

⁶ Demonstration fusion power plant – facility foreseen after ITER to demonstrate all elements of fusion power plant including production of electricity with a closed fuel cycle.

1.2. Consistency with existing policy provisions in the policy area

The Programme carries over the main objectives of the research activities of the 2014-20 Euratom programmes⁷, while implementing the changes explained above.

The Programme is also consistent with the proposals for ‘Horizon Europe’, as they are the only EU and Euratom programmes that support R&I and complement national funding. Most of the provisions on implementation, evaluation and governance are the same for both. Research areas supported by the Euratom Programme are not included in ‘Horizon Europe’, for both legal reasons (separate treaties) and managerial ones (avoiding duplication). However, there will be more focus on developing synergies with Horizon Europe.

1.3. Consistency with other Union policies

The proposal is fully consistent and compatible with existing EU policies. This initiative was developed taking into account the current Commission's priorities⁸, the Budget for Results initiative (which means that EU spending programmes must provide even better value for money than in the past), the implementation of the EU Global Strategy⁹ and the Commission's proposal on the next long-term EU financial framework.

The Programme is also consistent with EU policies on nuclear and safety aspects. It thus supports the implementation of:

- Council Directive 2009/71/Euratom establishing a Community framework for the nuclear safety of nuclear installations¹⁰, as amended by Council Directive 2014/87/Euratom¹¹;
- Council Directive 2011/70/Euratom establishing a Community framework for the responsible and safe management of spent fuel and radioactive waste¹²;
- Council Directive 2013/59/Euratom laying down basic safety standards for protection against the dangers arising from exposure to ionising radiation¹³;
- Chapter 7 of the Euratom Treaty concerning the EU's nuclear safeguards system. The programme also contributes to the Community's security agendas and strategies¹⁴.

The Programme's actions should be used to address market failures or sub-optimal investment situations, in a proportionate manner, without duplicating or crowding out private financing and have a clear European added value. This will ensure consistency between the actions of the programme and EU State aid rules, avoiding undue distortions of competition in the internal market.

⁷ Including the proposal for the extension of the programme for 2019-2020 (COM (2017) 698).

⁸ This initiative contributes to the following Commission priorities: Jobs, Growth and Investment; Digital Single Market; A Resilient Energy Union with a Forward-Looking Climate Change Policy; Deeper and Fairer Internal Market with a Strengthened Industrial Base; EU as stronger global actor.

⁹ ['A Global Strategy for the EU's Foreign and Security Policy'](#), June 2016.

¹⁰ OJ L 172, 2.7.2009, p. 18.

¹¹ OJ L 219, 25.7.2014, p. 42.

¹² OJ L 199, 2.8.2011, p. 48.

¹³ OJ L 13, 17.1.2014, p. 1.

¹⁴ European Agenda on Security COM(2015) 185 final; CBRN Action Plan COM(2017) 610 final

2. LEGAL BASIS, SUBSIDIARITY AND PROPORTIONALITY

2.1. Legal basis

The Euratom Treaty states that the Commission is responsible for promoting and facilitating nuclear research in the Member States and for complementing it by conducting a Community research and training programme (Article 4 of the Treaty). This programme is to be adopted by the Council, acting unanimously on a proposal from the Commission (Article 7 of the Treaty).

2.2. Subsidiarity

The problem addressed by the Euratom programme applies to the EU as a whole because nuclear safety and security issues transcend borders, and because developing fusion energy calls for research efforts on a very large scale. Though only half of Member States operate nuclear power plants as part of the national energy mix, many more operate reactors for research purposes or for radioisotope production. Given that a nuclear accident could affect several Member States, irrespective of borders, all EU countries have an interest in nuclear safety, even if they do not themselves operate reactors.

All Member States use radiation for medical purposes and in industrial applications (agriculture, food irradiation, metrology, etc.). While the relative importance of the issue may vary across the EU, all of them therefore have an interest in nuclear and radiation safety, and all of them produce varying quantities of radioactive waste which require processing and eventual disposal. The harmonised standards laid down by the various directives and the related research implications clearly underline the need to address technical and training issues uniformly across the EU.

Although nuclear security is a national responsibility, the Programme's direct actions help respond to some of the security challenges facing the EU and to their global dimensions in the field of nuclear detection, nuclear forensics and related training.

2.3. Proportionality

Measures will be taken at EU level to strengthen the overall research and innovation framework and coordinate Member States' research efforts so as to avoid duplication, retaining critical mass in key areas and ensuring public funds are spent to best effect. Such measures may leverage additional public and private investments in research and innovation. They are also needed to support EU policy-making and to meet the objectives set out in EU policies. The proposed measures do not go beyond what is required to achieve the Community's objectives.

2.4. Choice of instrument

The legal act takes the form of a regulation, as it creates rights and obligations for beneficiaries that are binding in their entirety and directly applicable in all EU Member States and countries associated with the programme.

3. RESULTS OF EX-POST EVALUATIONS, STAKEHOLDER CONSULTATIONS AND IMPACT ASSESSMENTS

3.1. Ex-post evaluations/fitness checks of existing legislation

The interim evaluation of the 2014-2018 Euratom programme¹⁵ concluded that it is very relevant as regards all the activities covered, including nuclear safety, security and safeguards, radioactive waste management, radiation protection and fusion energy. As regards its efficiency and effectiveness, the evaluation identified a number of areas requiring action by the Commission and/or beneficiaries. It concluded that the following action should be taken:

- continue supporting nuclear research, focusing on nuclear safety, safeguards, security, waste management, radiation protection and developing fusion;
- further improve, together with beneficiaries, the organisation and management of the European Joint Programmes in the nuclear field;
- continue and step up Euratom’s education and training measures, to develop relevant knowledge and skills underpinning all aspects of nuclear safety, security and radiation protection;
- further exploit synergies between the Euratom programme and other thematic areas of the Union Framework Programme, addressing cross-cutting aspects such as the medical applications of radiation, climate change, security and emergency preparedness, and the contribution to nuclear science;
- further exploit synergies between direct and indirect actions under the Euratom programme.

The Impact Assessment contains a more detailed explanation on how this proposal addresses these issues.

3.2. Stakeholder consultations

The Commission’s services have conducted the following consultations: a general consultation on the Multiannual Financial Framework (MFF) and the 'Competitiveness' chapter including research (January - March 2018), a targeted consultation on some of the Programme's activities based on a web questionnaire (January - February 2018), and a workshop with research stakeholders held on 21 February 2018 in Brussels. The consultations covered the key areas relevant to the impact assessment, including relevance, effectiveness, efficiency, implementation and EU added value. Several research stakeholders also submitted position papers on different aspects of Euratom research to the Commission. The Impact Assessment summarizes the input received and how this was taken into account in the proposal.

3.3. Collection and use of expertise

In the course of drawing up its proposal, the Commission collected input and drew on expertise from a number of sources. In 2017, the Euratom Scientific and Technical Committee

¹⁵ COM (2017) 697 and SWD(2017) 426 and 427.

(STC) issued an opinion on the future Euratom programme, and two independent expert groups reported on the interim evaluation of direct and indirect actions implemented under the 2014-2018 Euratom programme¹⁶. In 2016, a separate panel of experts conducted a mid-term review of the European joint programme on fusion research, implemented by the EUROfusion consortium. The Impact Assessment contains details on the expertise received and how this was taken into account in the proposal.

3.4. Impact assessment

This proposal is supported by an impact assessment on which the Regulatory Scrutiny Board issued a positive opinion.

The impact assessment accompanying this proposal focuses on the outcome of the Euratom Programme's interim evaluation and stakeholder consultation. It identifies the changes needed in the Programme's scope, objectives and method of implementation and takes account of the new MFF's cross-cutting objectives (flexibility; focus on performance, coherence and synergies; and simplification). It satisfies the requirements of the Financial Regulation as regards conducting an ex-ante evaluation for the proposed Council Regulation establishing the Euratom Research and Training Programme for 2021-2025.

3.5. Simplification

The Programme will be implemented using the instruments and rules of participation applicable to the Horizon Europe Framework Programme. Simplification measures proposed in Horizon Europe will be applicable to applicants to and beneficiaries of the Euratom programme. While ensuring the need for continuity, where appropriate, the proposed rules are expected to further reduce the administrative burden, continuing the simplification process pursued by the current programmes. The programme will be further simplified in that it will propose a single list of objectives for direct and indirect actions. Likely impacts on simplification and the administrative burden are explored in more detail in the impact assessment.

3.6. Fundamental rights

This Regulation respects fundamental rights and observes the principles recognised in the Charter of Fundamental Rights of the European Union.

4. BUDGETARY IMPLICATIONS

The budget for this proposal uses current prices. The legislative financial statement attached to the proposal sets out the implications in terms of the budget and human and administrative resources.

¹⁶ https://ec.europa.eu/research/evaluations/index_en.cfm?pg=h2020evaluation

5. OTHER ASPECTS

5.1. Implementation plans and monitoring, evaluation and reporting arrangements

The Commission's services will implement the Programme. However, the Commission may decide, if this seems appropriate, to delegate implementation of certain parts of the Programme, as provided for by Article 10 of the Euratom Treaty, to Member States, persons or undertakings, or to third countries, international organisations or nationals of third countries.

Evaluations will be carried out in line with paragraphs 22 and 23 of the Interinstitutional Agreement of 13 April 2016¹⁷, where the three institutions confirmed that evaluations of existing legislation and policy should provide the basis for impact assessments of options for further action. The evaluations will assess the programme's effects on the ground based on the programme indicators/targets and a detailed analysis of the degree to which the Programme can be deemed relevant, effective, efficient, provides enough EU added value and is coherent with other EU policies. They will include lessons learnt to identify any lacks/problems or any potential to further improve the actions or their results and to help maximise their exploitation/impact.

The monitoring and evaluation system, shared with Horizon Europe, provides for key impact pathways, which will help reporting on progress towards achieving the Programme objectives. These fall into four complementary impact categories (scientific, social, innovation and policy impacts), reflecting the nature of R&I investments. For each impact category, indicators will be used to report on progress in the short, medium and longer term. Direct and indirect actions will be subject to a common interim evaluation.

5.2. Detailed explanation of the specific provisions of the proposal

The proposal will change the existing Euratom programme as follows:

- Structure of specific objectives (Article 3 and Annex I): the basic act introduces a single set of specific objectives for both direct and indirect actions. This will enable the Commission, when drawing up work programmes, to propose combining instruments and assets such as its own research infrastructure and JRC's knowledge base. This approach is designed to meet one of the MFF's cross-cutting objectives: simplification and achieving synergies.
- Revision of specific objectives (Article 3 and Annex I):
 - Reduction in the number of specific objectives from 13 in the 2014-18 programme to four, for both direct and indirect actions.
 - Introduction of a specific objective on supporting EU policy on nuclear safety, safeguards and security.
 - Definition of research support for decommissioning: eligible measures include research supporting the development and evaluation of technologies for

¹⁷ Interinstitutional Agreement between the European Parliament, the Council of the European Union and the European Commission on Better Law-Making of 13 April 2016; OJ L 123, 12.5.2016, p. 1–14

decommissioning and environmental remediation of nuclear installations, and sharing best practice and knowledge. The focus on decommissioning reflects the increasing demand for such services, the principle of environmental remediation, and the many nuclear reactors that will be permanently shut down.

- Revision of the scope of research into radiation protection, which is intended to contribute to the safe use of the nuclear science and technology applications of ionising radiation, including the secure and safe supply and use of radioisotopes. Medical, industrial, space and research applications are some of the options.
 - The single specific objective of fusion research reflects a shift towards the design of future fusion power plants. The new objective for fusion research combines three specific objectives from the current programme.
 - Single specific objective for all measures needed to maintain and further develop expertise and excellence in the EU. It includes education and training measures, support for mobility, access to research infrastructure, technology transfer and knowledge management and dissemination (the current programme has separate objectives for these measures).
- Opening of ‘Marie Skłodowska-Curie Actions (MSCA)’ to nuclear researchers: new provisions proposed for Horizon Europe and the Euratom Programme will make students and researchers in the nuclear field eligible for MSCA. In using a well-established instrument for supporting education and training in Europe, the new Programme is designed to meet one of the MFF’s cross-cutting objectives: achieving synergies between funding instruments.
- Legal provisions facilitating synergies between the Euratom Programme and Horizon Europe (Annex 1 to the basic act for Horizon Europe): both basic acts will provide for synergies, the details of which will be decided in the work programmes, in consultation with the Member States.

For the new Euratom Programme, as for previous ones, the award criteria will be excellence, impact and the quality and efficiency of implementation.

Horizon Europe’s rules on participation and dissemination will also apply to the Euratom Programme.

In implementing the Programme, the Commission will be assisted by a Committee (see Article 16) within the meaning of Regulation (EU) No 182/2011. It would meet in two configurations (fission and fusion), depending on the subject matter to be discussed.

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

THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Atomic Energy Community, and in particular the first paragraph of Article 7 thereof,

Having regard to the proposal from the European Commission,

Having regard to the opinion of the European Parliament¹,

Having regard to the opinion of the European Economic and Social Committee²,

Whereas:

- (1) One of the aims of the European Atomic Energy Community (the ‘Community’) is to contribute to the raising of the standard of living in the Member States including by promoting and facilitating nuclear research in the Member States and complementing it by carrying out a Community research and training programme.
- (2) Nuclear research can contribute to social well-being, economic prosperity and environmental sustainability by improving nuclear safety, security and radiation protection. Radiation protection research has led to improvements in medical technologies from which many citizens benefit and that research can now lead to improvements in other sectors such as industry, agriculture, environment and security. Equally important is the potential contribution of nuclear research to the long-term decarbonisation of the energy system in a safe, efficient and secure way.
- (3) In order to ensure continuity of nuclear research at Community level, it is necessary to establish the Research and Training Programme of the Community for the period from 1 January 2021 to 31 December 2025 (the ‘Programme’). The Programme should continue carrying out the key research activities of previous programmes, while introducing new specific objectives, and using the same mode of implementation.
- (4) The Commission's Report on the interim evaluation of the 2014-18 Euratom Research and Training Programme (COM(2017) 697 final) provides a set of guiding principles for the Programme. These include: to continue supporting nuclear research focused on nuclear safety,

¹ Opinion of Opinion delivered following non-compulsory consultation.

² OJ C..... Opinion delivered following non-compulsory consultation.

safeguards, security, waste management, radiation protection and development of fusion; to further improve, together with beneficiaries, the organisation and management of the European Joint Programmes in the nuclear field; to continue and reinforce the Euratom education and training actions for developing relevant competencies which underpin all aspects of nuclear safety, security and radiation protection; to further exploit synergies between Euratom programme and other thematic areas of the Union Framework Programme; and to further exploit synergies between direct and indirect actions of the Euratom programme.

- (5) The conception and design of the Programme is set against the need to establish a critical mass of supported activities. This is achieved by establishing a limited number of specific objectives focussed on safe use of nuclear fission for power and non-power applications, maintaining and developing necessary expertise, fostering fusion energy and supporting policy of the Union on nuclear safety, safeguards and security
- (6) Fusion energy research is being implemented in accordance with the European Fusion Roadmap, which outlines the research and developments required to provide the basis for an electricity-generating fusion power plant. In the short to medium term the key step is the construction and exploitation of ITER and a vigorous fusion research programme shall complement the European activities on ITER in order to support the future ITER operations and the preparation for DEMO.
- (7) By supporting nuclear research, the Programme should contribute to achieving the objectives of the Horizon Europe - Framework Programme for Research and Innovation ('Horizon Europe') established by Regulation (EU) No [...] of the European Parliament and of the Council³ and should facilitate implementation of the Europe 2030 strategy and strengthening of the European Research Area.
- (8) The Programme should seek synergies with Horizon Europe and other Union programmes, from their design and strategic planning, to project selection, management, communication, dissemination and exploitation of results, to monitoring, auditing and governance. With a view to avoiding overlaps and duplication and increasing the leverage of EU funding, transfers from other Union programmes to Horizon Europe activities can take place. In such cases they will follow Horizon Europe rules.
- (9) The Programme's actions should however be used to address market failures or sub-optimal investments situations, in a proportionate manner, without duplicating or crowding out private financing and have a clear European added value. This will ensure consistency between the actions of the programme and EU State aid rules, avoiding undue distortions of competition in the internal market.
- (10) This Regulation lays down a financial envelope for the Euratom Research and Training Programme which is to constitute the prime reference amount, within the meaning of [reference to be updated as appropriate according to the new inter-institutional agreement: point 17 of the Interinstitutional Agreement of 2 December 2013 between the European Parliament, the Council and the Commission on budgetary discipline, on cooperation in budgetary matters and on sound financial management], for the European Parliament and the Council during the annual budgetary procedure.

³ Regulation (EU) No [...] of the European Parliament and of the Council of [...] establishing EU FP9 - the Framework Programme for Research and Innovation (2021-2027) and repealing Regulation (EU) No 1291/2013 (OJ [...]).

- (11) Regulation (EU, Euratom) No[...] of the European Parliament and of the Council⁴ (the ‘Financial Regulation’) should apply to the Programme, unless otherwise specified in this Regulation. It lays down rules on the implementation of the Union budget, including the rules on grants, prizes, procurement, indirect implementation, financial assistance, financial instruments and budgetary guarantees.
- (12) The types of financing and the methods of implementation under this Regulation should be chosen on the basis of their ability to achieve the specific objectives of the actions and to deliver results, taking into account, in particular, the costs of controls, the administrative burden, and the expected risk of non-compliance. For grants, this should include consideration of the use of lump sums, flat rates and unit costs.
- (13) Horizontal financial rules adopted by the European Parliament and the Council on the basis of Article 322 of the Treaty on the Functioning of the European Union and Article 106a of the Euratom Treaty apply to this Regulation. These rules are laid down in the Financial Regulation and determine in particular the procedure for establishing and implementing the budget through grants, procurement, prizes, indirect implementation, and provide for checks on the responsibility of financial actors. Rules adopted on the basis of Article 322 TFEU and of Article 106a of the Euratom treaty also concern the protection of the Union's budget in case of generalised deficiencies as regards the rule of law in the Member States, as the respect for the rule of law is an essential precondition for sound financial management and effective Community funding.
- (14) The policy objectives of this Programme may be also addressed through financial instruments under the policy window research and innovation of the InvestEU Fund. Financial support should be used to address market failures or sub-optimal investment situations, in a proportionate manner and actions should not duplicate or crowd out private financing or distort competition in the Internal market. Actions should have a clear European added value.
- (15) In order to ensure the most efficient implementation possible and achieve a coherent, comprehensive and transparent framework for beneficiaries, participation in the Programme, and dissemination of research results should be subject to the relevant rules of Horizon Europe with certain adaptations or exceptions. Definitions and main types of action set out in Horizon Europe should apply to the Programme.
- (16) The participant guarantee fund set up under Horizon 2020 and managed by the Commission has proved to be an important safeguard mechanism which mitigates the risks associated with the amounts due and not reimbursed by defaulting participants. Therefore, it should be continued and the Mutual Insurance Mechanism (‘the Mechanism’) established pursuant to Horizon Europe should also cover actions under this Regulation.
- (17) The Joint Research Centre (JRC) should continue to provide Union policies with independent customer-driven scientific evidence and technical support throughout the whole policy cycle. The direct actions of the JRC should be implemented in a flexible, efficient and transparent manner, taking into account the relevant needs of the users of the JRC and the needs of Union policies, and ensuring the protection of the financial interests of the Union. The JRC should continue to generate additional resources.

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- (18) In accordance with the Financial Regulation, Regulation (EU, Euratom) No 883/2013 of the European Parliament and of the Council⁵, Council Regulation (Euratom, EC) No 2988/95⁶, Council Regulation (Euratom, EC) No 2185/96⁷ and Council Regulation (EU) 2017/193⁸, the financial interests of the Union are to be protected through proportionate measures, including the prevention, detection, correction and investigation of irregularities, including fraud, the recovery of funds lost, wrongly paid or incorrectly used and, where appropriate, the imposition of administrative sanctions. In particular, in accordance with Regulation (EU, Euratom) No 883/2013 and Regulation (Euratom, EC) No 2185/96 the European Anti-Fraud Office (OLAF) may carry out administrative investigations, including on-the-spot checks and inspections, with a view to establishing whether there has been fraud, corruption or any other illegal activity affecting the financial interests of the Union. In accordance with Regulation (EU) 2017/1939, the European Public Prosecutor's Office (EPPO) may investigate and prosecute fraud and other criminal offences affecting the financial interests of the Union as provided for in Directive (EU) 2017/1371 of the European Parliament and of the Council⁹. In accordance with the Financial Regulation, any person or entity receiving Union funds is to fully cooperate in the protection of the Union's financial interests, to grant the necessary rights and access to the Commission, OLAF, the EPPO and the European Court of Auditors (ECA) and to ensure that any third parties involved in the implementation of Union funds grant equivalent rights.
- (19) In order to ensure uniform conditions for the implementation of the actions under the Programme, implementing powers should be conferred on the Commission. Those powers should be exercised in accordance with Regulation (EU) No 182/2011 of the European Parliament and of the Council¹⁰.
- (20) Pursuant to paragraph 22 and 23 of the Inter-institutional agreement for Better Law-Making of 13 April 2016, there is a need to evaluate this Programme on the basis of information collected through specific monitoring requirements, while avoiding overregulation and administrative burdens, in particular on Member States. These requirements, where appropriate, can include measurable indicators, as a basis for evaluating the effects of the Programme on the ground.

⁵ Regulation (EU, Euratom) No 883/2013 of the European Parliament and of the Council of 11 September 2013 concerning investigations conducted by the European Anti-Fraud Office (OLAF) and repealing Regulation (EC) No 1073/1999 of the European Parliament and of the Council and Council Regulation (Euratom) No 1074/1999, (OJ L248, 18.9.2013, p. 1).

⁶ Council Regulation (EC, Euratom) No 2988/95 of 18 December 1995 on the protection of the European Communities financial interests (OJ L 312, 23.12.95, p.1).

⁷ Council Regulation (Euratom, EC) No 2185/96 of 11 November 1996 concerning on-the-spot checks and inspections carried out by the Commission in order to protect the European Communities' financial interests against fraud and other irregularities (OJ L292, 15.11.96, p.2).

⁸ Council Regulation (EU) 2017/1939 of 12 October 2017 implementing enhanced cooperation on the establishment of the European Public Prosecutor's Office ('the EPPO') (OJ L283, 31.10.2017, p.1).

⁹ Directive (EU) 2017/1371 of the European Parliament and of the Council of 5 July 2017 on the fight against fraud to the Union's financial interests by means of criminal law (OJ L 198, 28.7.2017, p. 29).

¹⁰ Regulation (EU) No 182/2011 of the European Parliament and of the Council of 16 February 2011 laying down the rules and general principles concerning mechanisms for control by the Member States of the Commission's exercise of implementing powers (OJ L 55, 28.2.2011, p. 13)

- (21) The Board of Governors of the Joint Research Centre (the ‘JRC’), set up by Commission Decision 96/282/Euratom¹¹, has been consulted on the scientific and technological content of the direct actions of the JRC.
- (22) The Commission has consulted the Euratom Scientific and Technical Committee.
- (23) For reasons of legal certainty, Regulation (Euratom) No [...] should be repealed,

HAS ADOPTED THIS REGULATION:

CHAPTER I

GENERAL PROVISIONS

Article 1

Subject matter

This Regulation establishes the Research and Training Programme of the European Atomic Energy Community for the period from 1 January 2021 to 31 December 2025 (the ‘Programme’) and the rules for participation and dissemination in indirect actions under this the Programme.

It lays down the objectives of the Programme, the budget for the period 2021-2025, the forms of the European Atomic Energy Community (the ‘Community’) funding and the rules for providing such funding.

Article 2

Definitions

For the purposes of this Regulation, the definitions set out in Regulation (EU) No xxx of the European Parliament and of the Council (‘Horizon Europe’)¹² apply. References in the definitions to the Union and the Programme shall be construed as references to the Community and this Programme. By derogation, ‘work programme’ means the document adopted by the Commission for the implementation of the Programme in accordance with Article 16 of this Regulation.

Article 3

Programme objectives

1. The Programme has the following general objectives:
 - (a) to pursue nuclear research and training activities to support continuous improvement of nuclear safety, security and radiation protection;

¹¹ Commission Decision 96/282/Euratom of 10 April 1996 on the reorganization of the Joint Research Centre (OJ L 107, 30.4.1996, p. 12).

¹² Full title + OJ reference

- (b) to potentially contribute to the long-term decarbonisation of the energy system in a safe, efficient and secure way.
2. The Programme has the following specific objectives:
- (a) improve the safe and secure use of nuclear energy and non-power applications of ionizing radiation, including nuclear safety, security, safeguards, radiation protection, safe spent fuel and radioactive waste management and decommissioning;
 - (b) maintain and further develop expertise and competence in the Community;
 - (c) foster the development of fusion energy and contribute to the implementation of the fusion roadmap;
 - (d) support the policy of the Community on nuclear safety, safeguards and security.
3. The objectives listed in paragraphs 1 and 2 shall be implemented in accordance with Annex I.

Article 4

Budget

1. The financial envelope for the implementation of the Programme shall be EUR 1 675 000 000 in current prices.
2. The indicative distribution of the amount referred to in paragraph 1 shall be:
- (a) EUR 724 563 000 for fusion research and development;
 - (b) EUR 330 930 000 for nuclear fission, safety and radiation protection;
 - (c) EUR 619 507 000 for direct actions undertaken by the Joint Research Centre.

The Commission may not deviate, within the annual budgetary procedure, from the amount referred to in paragraph 2 (c) of this Article.

3. The amount referred to in paragraph 1 may also cover expenses for preparation, monitoring, control, audit, evaluation and other activities and expenditures necessary for managing and implementing the Programme, including administrative expenditure, as well as evaluating the achievement of its objectives. It may moreover cover expenses relating to the studies, meetings of experts, information and communication actions, in so far as they are related to the objectives of the Programme, as well as expenses linked to information technology networks focusing on information processing and exchange, including corporate information technology tools and other technical and administrative assistance needed in connection with the management of the Programme.
4. If necessary, appropriations may be entered in the budget beyond 2025 to cover the expenses provided for in paragraph 3, to enable the management of actions not completed by 31 December 2027.
5. Budgetary commitments for actions extending over more than one financial year may be broken down over several years into annual instalments.

6. Without prejudice to the Financial Regulation, expenditure for actions resulting from projects included in the first work programme may be eligible as from 1 January 2021.
7. Resources allocated to Member States under shared management and transferrable in accordance with Article 21 of Regulation (EU) XX [...Common Provisions Regulation] may, at their request, be transferred to the Programme. The Commission shall implement those resources directly in accordance with point (a) of Article 62(1) of the Financial Regulation or indirectly in accordance with point (c) of that Article. Where possible, those resources shall be used for the benefit of the Member State concerned.

Article 5

Third countries associated to the Programme

1. The Programme shall be open to association of the following third countries:
 - (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 Community programmes established in the respective framework agreements and Association Council decisions, or similar agreements, and in accordance with the specific conditions laid down in agreements between the Community and those countries;
 - (b) countries covered by the European Neighbourhood Policy, in accordance with the general principles and general terms and conditions for the participation of those countries in Community programmes established in the respective framework agreements and Association Council decisions, or similar agreements, and in accordance with the specific conditions laid down in agreements between the Community and those countries;
 - (c) third countries and territories that fulfil all of the following criteria:
 - a good capacity in science, technology and innovation;
 - commitment to a rules-based open market economy, including fair and equitable dealing with intellectual property rights, backed by democratic institutions;
 - active promotion of policies to improve the economic and social well-being of citizens.

Association to the Programme of each of the third countries under point (c) shall be in accordance with the conditions laid down in a specific agreement covering the participation of the third country to any Community or Union Programme, provided that the agreement:

- ensures a fair balance as regards the contributions and benefits of the third country participating in the Programme;
- lays down the conditions of participation in the Programme, including the calculation of financial contributions to the Programme and its administrative costs. These

contributions shall constitute assigned revenues in accordance with Article 21(5) of the Financial Regulation;

- does not confer to the third country a decisional power on the Programme;
 - guarantees the rights of the Union to ensure sound financial management and to protect its financial interests.
2. The scope of association of each third country to the Programme shall take into account the objective of driving economic growth in the Union through innovation. Accordingly, with the exception of acceding countries, candidate countries and potential candidates, parts of the Programme may be excluded from an association agreement for a specific country.
 3. The association agreement shall, where appropriate, provide for the participation of legal entities established in the Union in equivalent programmes of associated countries in accordance with the conditions laid down therein.
 4. The conditions determining the level of financial contribution shall ensure an automatic correction of any significant imbalance compared to the amount that entities established in the associated country receive through participation in the Programme, taking into account the costs in the management, execution and operation of the Programme.

Article 6

Implementation and forms of funding

1. The Programme shall be implemented in direct management in accordance with the Financial Regulation or in indirect management with funding bodies referred to in Article 61(1)(c) of the Financial Regulation.
2. The Programme may provide funding in any of the forms laid down in the Financial Regulation, in particular grants, prizes and procurement. It may also provide financing in the form of financial instruments within blending operations.
3. The main types of action to be used under the Programme are set out and defined in Annex II to Horizon Europe.
4. The Programme shall also support direct actions undertaken by the JRC.

Article 7

European Partnerships

1. Parts of the Programme may be implemented through European Partnerships.
2. The involvement of the Community in European Partnerships may take any of the following forms:
 - (a) participation in partnerships set up on the basis of memoranda of understanding or contractual arrangements between the Commission and public or private partners specifying the objectives of the partnership, related commitments for financial and/or

in-kind contributions of the partners, key performance and impact indicators, and outputs to be delivered. They include the identification of complementary research and innovation activities that are implemented by the partners and by the Programme (co-programmed European Partnerships);

- (b) participation in and financial contribution to a programme of research and innovation activities, based on the commitment of the partners for financial and in-kind contributions and integration of their relevant activities using a Programme co-fund action (co-funded European Partnerships).

3. European Partnerships shall:

- (a) Be established in cases where they will more effectively achieve objectives of the Programme than the Community alone.
- (b) Adhere to the principles of Union added value, transparency, openness, impact, leverage effect, long-term financial commitment of all the involved parties, flexibility, coherence and complementarity with Union, local, regional national and international initiatives.
- (c) Be limited in time and shall include conditions for phasing-out the Programme funding.

4. Provisions and criteria for their selection, implementation, monitoring, evaluation and phasing-out are set out in Annex III to Horizon Europe.

Article 8

Open access and open science

The provisions on open access and open science set out in Horizon Europe shall apply to the Programme.

Article 9

Eligible actions and rules for participation and dissemination of research results

1. Only actions implementing the objectives referred to in Article 3 are eligible for funding.
2. Subject to the third and fourth paragraphs of this article, Title II on rules for participation of Horizon Europe shall apply to actions supported under the Programme. References therein to the Union and the Programme shall be construed as references to the Community and this Programme, where appropriate. References therein to 'security rules' shall include the defence interests of the Member States within the meaning of Article 24 of the Euratom Treaty.
3. By way of derogation from Article 36(4) of Horizon Europe, the right to object may extend to grants of non-exclusive licenses.
4. By way of derogation from Article 37(5) of Horizon Europe, a beneficiary that has received Community funding shall grant access to its results to the Community institutions, funding bodies or the Joint undertaking Fusion for Energy for the purpose of developing, implementing and monitoring Community policies and programmes or obligations under international cooperation with third countries and international organisations,. Such access rights shall include the right to authorise third parties to use the results in public procurement

and the right to sub-license and shall be limited to non-commercial and non-competitive use and shall be granted on a royalty-free basis.

5. The mutual insurance mechanism established pursuant to Horizon Europe shall cover the risk associated with non-recovery of sums due by beneficiaries to the Commission or funding bodies under this Regulation.

Article 10

Cumulative, complementary and combined funding

1. The Programme shall be implemented in synergy with other Union funding programmes. In order to achieve the objectives of the Programme and to address challenges common to the Programme and to Horizon Europe, activities cutting across the objectives set out in the Programme or those implementing Horizon Europe, or both, may benefit from the Community financial contribution. In particular, the Programme may provide a financial contribution to the Marie Skłodowska-Curie Actions (MSCA) in order to support activities relevant for nuclear research.
2. An action that has received a contribution from another Union programme may also receive a contribution under the Programme, provided that the contributions do not cover the same costs. The rules of each contributing Union programme shall apply to its respective contribution to the action. The cumulative funding shall not exceed the total eligible costs of the action and the support from the different Union programmes may be calculated on a pro-rata basis in accordance with the documents setting out the conditions for support.
3. Actions which comply with the following cumulative, comparative, conditions:
 - (a) they have been assessed in a call for proposals under the Programme;
 - (b) they comply with the minimum quality requirements of that call for proposals;
 - (c) they may not be financed under that call for proposals due to budgetary constraints,

may receive support from the European Regional Development Fund, the Cohesion Fund, the European Social Fund+ or the European Agricultural Fund for Rural Development, in accordance with paragraph 5 of Article [67] of Regulation (EU) XX [Common Provisions Regulation] and Article [8] or Regulation (EU) XX [Financing, management and monitoring of the Common Agricultural Policy], provided that such actions are consistent with the objectives of the programme concerned. The rules of the Fund providing support shall apply.

CHAPTER II

PROGRAMMING, MONITORING, EVALUATION AND CONTROL

Article 11

Work programmes

1. The Programme shall be implemented by work programmes referred to in Article 110 of Financial Regulation by means of implementing acts in accordance with the examination procedure pursuant to Article 16(4). Work programmes shall set out, where applicable, the overall amount reserved for blending operations.
2. In addition to the requirements of Article 110 of the Financial Regulation, the work programmes shall include the following:
 - (a) an indication of the amount allocated to each action and an indicative implementation timetable;
 - (b) for grants, the priorities, the selection and award criteria and the relative weight of the different award criteria and the maximum rate of funding of the total eligible costs;
 - (c) any additional obligations for beneficiaries, in accordance with Articles 35 and 37 of Horizon Europe.
3. For multi-annual work programme on direct actions undertaken by the JRC, the Commission shall seek the opinion of the Board of Governors of the JRC in accordance with Decision 96/282/Euratom.

Article 12

Monitoring and reporting

1. Indicators to report on the progress of the Programme towards the achievement of the objectives established in Article 3 are set out in Annex II along impact pathways.
2. To ensure effective assessment of progress of the Programme towards the achievement of its objectives, the Commission shall adopt implementing acts to develop the provisions for a monitoring and evaluation framework, including through amendments to Annex II to review and complement the impact pathway indicators where necessary and set baselines and targets. Those implementing acts shall be adopted in accordance with the advisory procedure pursuant to Article 16(3).
3. The performance reporting system shall ensure that data for monitoring programme implementation and results are collected efficiently, effectively and in a timely manner. To that end, proportionate reporting requirements shall be imposed on recipients of Community funds and, where relevant, on Member States.

Article 13

Information, communication, publicity and dissemination and exploitation

1. The recipients of the Programme funding shall acknowledge the origin and ensure the visibility of the Community funding (in particular when promoting the actions and their results) by providing coherent, effective and proportionate targeted information to multiple audiences, including the media and the public.
2. The Commission shall implement activities on information and communication relating to the Programme, and its actions, and results. Financial resources allocated to the Programme shall also contribute to the corporate communication of the political priorities of the Community, as far as they are related to the objectives referred to in Article 3.
3. The Commission shall also establish a dissemination and exploitation strategy for increasing the availability and diffusion of the Programme's research and innovation results and knowledge to accelerate exploitation towards market uptake and boost the impact of the Programme. Financial resources allocated to the Programme shall also contribute to the corporate communication of the political priorities of the Community as well as information, communication, publicity, dissemination and exploitation activities as far as they are related to the objectives referred to in Article 3.

Article 14

Evaluation

1. Evaluations shall be carried out in a timely manner to feed into the decision-making process on the programme, its successor and other initiatives relevant to research and innovation.
2. The interim evaluation of the Programme shall be carried out once there is sufficient information available about the implementation of the Programme, but no later than three years after the start of the programme implementation. It shall include an assessment of the long-term impact of previous Euratom Programmes and shall form the basis to adjust programme implementation, as appropriate.
3. At the end of the implementation of the Programme, but no later than four years after the end of the period specified in Article 1, a final evaluation of the Programme shall be carried out by the Commission. It shall include an assessment of the long-term impact of previous Programmes.
4. The Commission shall communicate the conclusions of the evaluations, accompanied by its observations, to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions.

Article 15

Audits

1. The control system for the Programme shall ensure an appropriate balance between trust and control, taking into account administrative and other costs of controls at all levels, especially for beneficiaries.
2. Actions that receive joint funding from different Union programmes shall be audited only once, covering all involved programmes and their respective applicable rules.
3. The Commission or funding body may rely on combined systems reviews at beneficiary level. Those combined reviews shall be optional for certain types of beneficiaries and shall consist in a systems and process audit, complemented by an audit of transactions, carried out by a competent independent auditor qualified to carry out statutory audits of accounting documents in accordance with Directive 2006/43/EC of the European Parliament and of the Council. They may be used by the Commission or funding body to determine overall assurance on the sound financial management of expenditure and for reconsideration of the level of ex-post audits and certificates on financial statements.
4. In accordance with Article 127 of the Financial Regulation, the Commission or funding body may rely on audits on the use of Community contributions carried out by other persons or entities, including by other than those mandated by the Union institutions or bodies.
5. Audits may be carried out up to two years after the payment of the balance.

Article 16

Committee procedure

1. The Commission shall be assisted by a Committee. That committee shall be a committee within the meaning of Regulation (EU) No 182/2011.
2. The Committee shall meet in two different configurations, dealing respectively with fission related aspects and fusion related aspects of the Programme.
3. Where reference is made to this paragraph, Article 4 of Regulation (EU) No 182/2011 shall apply.
4. Where reference is made to this paragraph, Article 5 of Regulation (EU) No 182/2011 shall apply.
5. Where the opinion of the Committee is to be obtained by written procedure, that procedure shall be terminated without result when, within the time-limit for delivery of the opinion, the chair of the Committee so decides or a simple majority of Committee members so requests.
6. The Commission shall regularly inform the Committee of the overall progress of the implementation of the Programme and shall provide it with timely information on all actions proposed or funded under the Programme.

Article 17

Protection of financial interests of the Union

1. The Commission or its representatives, and the Court of Auditors, shall have the power of audit or, in the case of international organisations, the power of verification in accordance with agreements reached with them, on the basis of documents and on-the-spot, over all grant beneficiaries, contractors and subcontractors who have received Union funds under this Regulation.
2. The European Anti-Fraud Office (OLAF) may carry out administrative investigations, including on-the-spot checks and inspections, in accordance with the provisions and procedures laid down in Regulation (EU, Euratom) No 883/2013 of the European Parliament and of the Council and Council Regulation (Euratom, EC) No 2185/96, with a view to establishing whether there has been fraud, corruption or any other illegal activity affecting the financial interests of the Union in connection with Union funding or budgetary guarantees under this Regulation.
3. Competent authorities of third countries and international organisations may also be required to cooperate with the European Public Prosecutor's Office (EPPO), in accordance with Mutual Legal Assistance Agreements, when it carries out investigations into criminal offences falling within its competence in accordance with Regulation (EU) 2017/1939.
4. Without prejudice to paragraphs 1 and 2, cooperation agreements with third countries and with international organisations, contracts, grant agreements and other legal commitments, as well as agreements establishing a budgetary guarantee, resulting from the implementation of this Regulation shall contain provisions expressly empowering the Commission, the Court of Auditors and OLAF to conduct such audits, on-the-spot checks and inspections, according to their respective competences. This shall include provisions to ensure that any third parties involved in the implementation of Union funds or of a financing operation supported, in whole or in part, by a budgetary guarantee grant equivalent rights.

CHAPTER III

TRANSITIONAL AND FINAL PROVISIONS

Article 18

Repeal

Regulation [No: ...*establishing the Euratom Programme 2019-2020*] is repealed with effect from 1 January 2021.

Article 19

Transitional provisions

1. This Regulation shall not affect the continuation or modification of the actions concerned, under Regulation [*the Euratom Programme 2019-2020*], which shall continue to apply to those actions until their closure.
2. Where necessary, any remaining tasks of the Committee established by Regulation [*the Euratom Programme 2019-2020*] shall be undertaken by the Committee referred to in Article 16.
3. The financial envelope for the Programme may also cover technical and administrative assistance expenses necessary to ensure the transition between the Programme and the measures adopted under its predecessor, [*the Euratom Programme 2019-2020*].
4. Reflows from financial instruments established by Regulation [*the Euratom Programme 2019-2020*] may be invested in the Invest EU programme established by Regulation XX¹³.

Article 20

Entry into force

This Regulation shall enter into force on the twentieth day following that of its publication in the *Official Journal of the European Union*.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at Brussels,

*For the Council
The President*

LEGISLATIVE FINANCIAL STATEMENT

1. FRAMEWORK OF THE PROPOSAL/INITIATIVE

- 1.1. Title of the proposal/initiative
- 1.2. Policy area(s) concerned (*programme cluster*)
- 1.3. Nature of the proposal/initiative
- 1.4. Grounds for the proposal/initiative
- 1.5. Duration and financial impact
- 1.6. Management mode(s) planned

2. MANAGEMENT MEASURES

- 2.1. Monitoring and reporting rules
- 2.2. Management and control system
- 2.3. Measures to prevent fraud and irregularities

3. ESTIMATED FINANCIAL IMPACT OF THE PROPOSAL/INITIATIVE

- 3.1. Heading(s) of the multiannual financial framework and expenditure budget line(s) affected
- 3.2. Estimated impact on expenditure
 - 3.2.1. *Summary of estimated impact on expenditure*
 - 3.2.2. *Estimated impact on appropriations of an administrative nature*
 - 3.2.3. *Third-party contributions*
- 3.3. Estimated impact on revenue

1. FRAMEWORK OF THE PROPOSAL/INITIATIVE

1.1. Title of the proposal/initiative

Council Regulation establishing the Research and Training Programme of the European Atomic Energy Community for the period 2021-2025 complementing the Horizon Europe - Framework Programme for Research and Innovation and repealing Council Regulation on the Research and Training Programme of the European Atomic Energy Community (2019-2020) complementing the Horizon 2020 Framework Programme for Research and Innovation.

1.2. Policy area(s) concerned (*Programme cluster*)

01.03 Euratom Research and Training Programme

1.3. The proposal/initiative relates to:

a new action

a new action **following a pilot project/preparatory action**¹

the extension of an existing action

a merger or redirection of one or more actions towards another/a new action

1.4. Grounds for the proposal/initiative

1.4.1. Requirement(s) to be met in the short or long term including a detailed timeline for roll-out of the implementation of the initiative

Use of power and non-power applications of nuclear energy requires a continuous effort in reducing safety and security risks and in supporting the development of safe and secure nuclear technologies and optimal radiation protection. A growing number of different application of ionising radiation requires protection of the people and the environment from unnecessary exposure to radiation. Ionising radiation technologies are used every day in Europe in a number of fields such as health, industry and research, providing large benefits to European citizens and European economy. Public and private research in Member States can significantly contribute to providing these benefits and the task of Euratom is to complement national efforts by carrying out a Community-based research and training programme.

Euratom-supported research should help Member States and industry in meeting the requirements of the Euratom Treaty and of a series of directives:

- Council Directive 2014/87/Euratom of 8 July 2014 amending Directive 2009/71/Euratom establishing a Community framework for the nuclear safety of nuclear installations, which introduces a high-level, EU-wide safety objective to prevent accidents and avoid radioactive releases outside a nuclear

¹ As referred to in Article 58(2)(a) or (b) of the Financial Regulation.

installation. This Directive highlights the need for Member States to use research results in its implementation and creates a system of peer reviews.

- Council Directive 2011/70/Euratom establishing a Community framework for the responsible and safe management of spent fuel and radioactive waste
- Council Directive 2013/59/Euratom laying down basic safety standards for protection against the dangers arising from exposure to ionising radiation.
- provisions of the Euratom safeguards requirements established in the chapter 7 of the Euratom Treaty and the regulations related to their application.

The proposed programme will be implemented from 2021 for 5 years in line with Article 7 of the Euratom Treaty, with a possibility of extension for 2 years until 2027 in line with the duration of the Horizon Europe and Multiannual Financial Framework.

The proposed programme will continue with the key research activities of the on-going Euratom programme (radiation protection, nuclear safety, security, waste management, radiation protection and fusion energy), while increasing emphasis on non-power applications of ionising radiation and decommissioning.

- 1.4.2. *Added value of Union involvement (it may result from different factors, e.g. coordination gains, legal certainty, greater effectiveness or complementarities). For the purposes of this point 'added value of Union involvement' is the value resulting from Union intervention which is additional to the value that would have been otherwise created by Member States alone.*

The key European added value of the Programme is the mobilisation of a wider pool of excellence, expertise and multi-disciplinarity in fission and fusion research than is possible at the level of individual Member States. Nuclear and ionising radiation technologies continue to play an important role in the lives of European citizens, whether this concerns energy and its security of supply or the use of radiation and radionuclides in medical and industrial applications. Safe and secure use of these technologies is of paramount importance and research programmes help maintaining the highest safety, security and safeguards standards in this field. The Programme focuses also on the development of fusion energy, a potentially inexhaustible and climate-friendly energy source.

An EU-wide approach to nuclear safety, radioactive waste management and radiation protection is important to ensure the highest standards for protection of citizens and environment across Europe and beyond. The programme also enables a broader coordination of education and training throughout Europe, the use of research infrastructures and international cooperation. This is of particular benefit to smaller Member States that can take advantage of economies of scale afforded by the Europe-wide pooling effect. The programme provides, through the Joint Research Centre (JRC), an important independent scientific advice in support of the implementation of European policies in the field of nuclear safety, radioactive waste management, radiation protection, nuclear security, safeguards and non-proliferation. With its unique infrastructure and laboratories, JRC plays a crucial role in nuclear research and trainings in Europe. The involvement of European industry in fusion

research activities foster innovation e.g. through the development of high-tech spin-off products in other sectors such as medical and aviation.

1.4.3. Lessons learned from similar experiences in the past

Pursuant to Article 22 of Regulation (Euratom) No 1314/2013 the Commission carried out in 2017 an interim evaluation of the 2014-2018 Euratom programme. Its report (COM(2017)697) sets out a strategic overview of the evaluation process and its responses to the recommendations of the independent expert groups. The accompanying Commission staff working documents (SWD(2017)426 and 427) provide more details on the evaluation with regard to relevance, efficiency, effectiveness and European added value. Key messages from evaluation are as follows:

- Continue supporting nuclear research focused on nuclear safety, safeguards, security, waste management, radiation protection and development of fusion
- Further improve, together with beneficiaries, the organisation and management of the European Joint Programmes in the nuclear field.
- Continue and reinforce the Euratom education and training actions for developing relevant competencies which underpin all aspects of nuclear safety, security and radiation protection.
- Further exploit synergies between Euratom programme and other thematic areas of EU Framework Programme in order to address cross-cutting aspects such as medical applications of radiation, climate change, security and emergency preparedness and the contribution of nuclear science
- Further exploit synergies between direct and indirect actions of the Euratom programme

1.4.4. Compatibility and possible synergy with other appropriate instruments

The Euratom programme complements and provides synergies with the Horizon Europe Research and Innovation Programme in areas such as health (medical applications of ionising radiation), security, energy and education and training. The Euratom fusion research programme will be carried out in full complementarity and coordination with ITER activities. The programme will continue the alignment of Member State's programmes in fusion, radiation protection and management of radioactive waste via the implementation of European Joint Programmes. Moreover, synergies with the Decommissioning of Nuclear facilities Programmes are expected in areas such as technology development and testing, training and exchange of best practices.

The programme is consistent with all relevant Union policies in fields relating to research and innovation in general, and nuclear and related safety aspects in particular. It thus supports the implementation of:

- Council Directive 2009/71/Euratom establishing a Community framework for the nuclear safety of nuclear installations, as amended by Council Directive 2014/87/Euratom;

- Council Directive 2011/70/Euratom establishing a Community framework for the responsible and safe management of spent fuel and radioactive waste;
- Council Directive 2013/59/Euratom laying down basic safety standards for protection against the dangers arising from exposure to ionising radiation.
- Chapter 7 of the Euratom Treaty related to the EU's nuclear safeguards system.

1.5. Duration and financial impact

limited duration

- in effect from 01/01/2021 to 31/12/2025.
- Financial impact from 2021 to 2025 for commitment appropriations and from 2021 to 2031 for payment appropriations.

unlimited duration

- Implementation with a start-up period from YYYY to YYYY,

followed by full-scale operation.

1.6. Management mode(s) planned²

Direct management by the Commission

- by its departments, including by its staff in the Union delegations;
- by the executive agencies

Shared management with the Member States

Indirect management by entrusting budget implementation tasks to:

- third countries or the bodies they have designated;
- international organisations and their agencies (to be specified);
- the EIB and the European Investment Fund;
- bodies referred to in Articles 70 and 71 of the Financial Regulation;
- public law bodies;
- bodies governed by private law with a public service mission to the extent that they provide adequate financial guarantees;
- bodies governed by the private law of a Member State that are entrusted with the implementation of a public-private partnership and that provide adequate financial guarantees;
- persons entrusted with the implementation of specific actions in the CFSP pursuant to Title V of the TEU, and identified in the relevant basic act.
- *If more than one management mode is indicated, please provide details in the 'Comments' section.*

² Details of management modes and references to the Financial Regulation may be found on the BudgWeb site:
<https://myintracomm.ec.europa.eu/budgweb/EN/man/budgmanag/Pages/budgmanag.aspx>

Comments

The programme will be implemented directly by Commission's departments. However, the Commission may decide, if deemed appropriate, to entrust the carrying out of certain parts of the programme to Member States, persons or undertakings, or to third countries, international organisations or nationals of third countries in accordance with Article 10 of the Euratom Treaty.

2. MANAGEMENT MEASURES

2.1. Monitoring and reporting rules

Specify frequency and conditions.

Short, medium and long term indicators have been set on the basis of a number of impact pathways. Reporting rules for participants have been designed with these indicators in mind, but also with a conscious intention to limit the administrative burden for participants. Wherever possible data will be collected from open sources.

All data on the management processes (applications, success rates, time to grant, type of beneficiaries, etc.) will be collected and stored, and made available in real time via a dedicated data storage. Today the reference system (CORDA) works well and is available for Member States and other interested bodies.

Report will be produced giving information on management processes (from year one) and, progressively, information on outputs and results. An interim evaluation and a final evaluation are planned.

In addition, the JRC's direct actions are assessed internally by means of an annual internal evaluation and externally through peer review by a number of top-level experts selected in consultation with the JRC's Board of Governors.

2.2. Management and control system(s)

2.2.1. Justification of the management mode(s), the funding implementation mechanism(s), the payment modalities and the control strategy proposed

The Euratom programme will be implemented in direct management mode. However, the Commission, may decide, if deemed appropriate and effective, the implementation of Euratom activities through shared and/or indirect management.

The control strategy will be based on:

- procedures for selecting the best projects and translating them into legal instruments;
- project and contract management throughout the lifetime of every project;
- ex-ante checks on 100% of claims,
- certificates on the financial statements above a certain threshold;
- ex-post audits on a sample of paid claims;
- and scientific evaluation of project results.

The first indications from Horizon 2020 (including Euratom programme) audits are that error rates have been maintained well within the expected range (see section

2.2.2). This demonstrates that, even if it can still be further developed, simplification measures already introduced have been effective.

2.2.2. *Information concerning the risks identified and the internal control system(s) set up to mitigate them*

The basic funding model to date has been the reimbursement of eligible costs. As the European Court of Auditors has consistently pointed out, most recently in its 2016 Annual Report, "the principal risk to the regularity of transactions is that beneficiaries declare ineligible costs which are neither detected nor corrected before [reimbursement]. This risk is particularly high for the Seventh Framework Programme [and by analogy Euratom programme], which has complex eligibility rules that are often misinterpreted by beneficiaries (especially those less familiar with the rules, such as SMEs, first-time participants and non-EU entities)".

The Court recognised the value of the simplifications introduced in Horizon 2020 [and thus also for the Euratom 2014-2018 programme]. It did however recommend, in its 2016 Annual Report, the wider use of Simplified Cost Options (SCOs). Such SCOs are already in use in parts of the programme, or for specific types of expenditure.

For grants, the estimated representative rate of error for Seventh Framework Programme [including Euratom] was 5%, with a "residual" error rate of around 3%, after taking account of all recoveries and corrections that have been or will be implemented. However, the error rates were lower in those parts of the programme where it was possible to use Simplified Cost Options (SCOs) more widely and/or where a small and stable group of beneficiaries were involved.

The first results of Horizon 2020 (including Euratom programme) suggest a representative error rate of around 3%, with a residual error rate less than 2.5%. Note, however, that this is an early estimate which should be used with care, it is likely to rise, perhaps to the 3-4% level (the level of error anticipated by the Commission for its Horizon 2020 and Euratom 2014-2018 proposal was 3.5%, although this did not take account of various additional complexities added during the legislative process). The residual error rate should remain some way below 3%; it is too early to say whether a rate of 2% will be attained.

Some errors arise because beneficiaries have not understood the rules. These errors can be addressed by simplification, although some complexity will always remain. Other errors arise because beneficiaries have not followed the rules. Although this is in a minority of cases, simplification of the current rules will not resolve them.

An analysis of error rates³³ has been carried out for the Horizon 2020 (including Euratom programme) and audits so far performed shows that:

- Around 63% of the error relates to errors in the charging of personnel costs. Regular problems identified are incorrect calculation of productive hours; incorrect rates or incorrect number of hours charged.

³³ % of the value in EUR vs all adjustments in direct costs in favour of the EU Budget

- Around 22% of the error relates to other direct costs (not personnel). The most regular error identified is the lack of direct measurement of costs.

- Around 6% of the error relates to sub-contracting costs, 4% to travel costs and 5% to other categories. Note that indirect costs, 28% of the error in Seventh Framework Programme (including Euratom), has been reduced to almost zero thanks to the introduction of the flat rate of indirect costs.

The errors identified during audits of Horizon 2020 and Euratom programme show that some could be avoided by simplifications and the avoidance of unnecessary formalism in rules. Some changes have already been made in Horizon 2020 and in Euratom (new rules for internal invoicing and additional remuneration for example), and others will be made where possible in Horizon Europe and Euratom programme 2021-2025. However, such changes will now be limited in their effect on the error rate, generally only avoiding small errors.

The wider use of SCOs such as flat rates and unit costs, as well as continuing simplification of the rules, will assist in lowering the future error rate, estimated at 3-4% on a representative basis. However, the underlying problem of errors in a funding method based on the reimbursement of eligible costs remains. In such a system the representative error rate might be reduced to 2.5-3.5%, with the residual error rate, after corrections, expected to be around (but not necessarily below) 2%.

Horizon 2020 saw the introduction of lump sum funding for the SME stage 1 scheme. This allows for a payment of EUR 50 000 on delivery of a satisfactory scientific deliverable. No additional justification for this payment, such as invoices, timesheets, proofs of payment, etc., are required. There are no financial errors.

Lump sum funding was proposed for Horizon 2020 but was considered to be unsuitable or premature. Nevertheless, the Commission is, in the Horizon 2020 Work Programme for 2018, implementing pilot schemes based on lump sum funding. At the same time it has undertaken a number of communication actions to allay the concerns of stakeholders about this form of funding.

The pilot scheme has to be evaluated, especially to see if it achieves all the objectives of the Programme (not just lowering the error rate). But, clearly, wider use of flat rate funding would reduce the error rate. However, it would move the risks to other stages of the internal control system – evaluation will become more important, as will the assessment of the deliverable.

The Euratom programme proposal allows the Commission to use the lump sum funding model and the Commission intends to use this funding model more widely. However, it is too early to say how widely it can be used. This will depend on the results of the pilots currently under way.

The number of transactions involved means that a high level of systematic ex-ante control would be very expensive. The current control strategy therefore relies on risk-based ex-ante controls and ex-post controls to assess the level of error and to detect and recover ineligible amounts. As the error rates have remained within the range established this control strategy is considered to be effective. Further

development of some aspects is included, for example the inclusion of systems and processes audit, but radical change is not proposed.

2.2.3. *Estimation and justification of the cost-effectiveness of the controls (ratio of "control costs ÷ value of the related funds managed"), and assessment of the expected levels of risk of error (at payment & at closure)*

The estimate of the costs of the control system (evaluation, selection, project management, ex-ante and ex-post control) are in the range of 3-4 % across the Commission services responsible for the implementation of the previous Framework Programmes for 2017 (including costs for the management of the Seventh Framework Programme and Horizon 2020). This is considered to be a reasonable cost in the light of the efforts needed to ensure that objectives are achieved and the number of transactions.

The expected risk of error at payment for grants with a funding model based on the reimbursement of eligible costs is 2.5-3.5%. The risk of error at closure (after the effect of controls and corrections) is around (but not necessarily below) 2%. The expected risk of error for grants with a funding model based on lump sum funding is close to 0% (at payment and at closure). The overall expectation for error rates will depend on the balance between the two methods of funding (reimbursement of eligible costs and lump sums). The Commission aims to apply the lump sum funding model where appropriate. However, the main driver to adopt lump sum funding will not be reduction of the error rate, but the achievement of all the objectives of the programme. This scenario is based on the assumption that the measures of simplification are not subject to substantial modifications in the decision making process.

Note: this section only concerns the process of grant management, for administrative and operational expenditure implemented through public procurement processes the risk of error at payment and closure should be below 2%.

2.3. Measures to prevent fraud and irregularities

Specify existing or envisaged prevention and protection measures, e.g. from the Anti-Fraud Strategy.

The Commission services charged with the implementation of the Euratom programme are determined to fight against fraud at all stages of the grant management process. They have developed, and are implementing, anti-fraud strategies, including an enhanced use of intelligence, especially using advanced IT tools, and training and information for staff. These efforts will continue. Overall the measures proposed should have a positive impact on the fight against fraud, especially the greater emphasis on risk based audit and reinforced scientific evaluation and control.

The current Anti-Fraud Strategy of the Commission services responsible for the implementation of the previous Euratom programmes, covering grants, as well as the anti-fraud strategies relating to other expenditure, will be updated after the revision of the Commission's Anti-Fraud Strategy in 2018. This will also cover risks related to lump sum funding, which has different risks that need to be taken into account.

It should be underlined that detected fraud has been very low in proportion to total expenditure, nevertheless the Directorates General charged with the implementation of the research budget remain committed to combat it.

The legislation will ensure that audits and on-the-spot checks can be carried out by the Commission services, including OLAF, using the standard provisions recommended by OLAF.

3. ESTIMATED FINANCIAL IMPACT OF THE PROPOSAL/INITIATIVE

3.1. Heading of the multiannual financial framework and new expenditure budget line(s) proposed

Heading of multiannual financial framework	Budget line	Type of expenditure	Contribution			
		Diff./Non-diff. ³⁴	from EFTA countries ³⁵	from candidate countries ³⁶	from third countries	within the meaning of Article [21(2)(b)] of the Financial Regulation
H1	1. Single market, Innovation and Digital					
	01.010301 Expenditure related to officials and temporary staff implementing research and innovation programmes - Euratom programme	Non-diff.	NO	YES	YES	NO
	01.010302 External personnel implementing research and innovation programmes - Euratom programme					
	01.010303 Other management expenditure for research and innovation programmes - Euratom programme					
	01.030100 Fusion research and development	Diff.				
01.030201 Nuclear fission, safety and radiation protection						
01.030202 Direct actions undertaken by the Joint Research Centre						

³⁴ Diff. = Differentiated appropriations / Non-diff. = Non-differentiated appropriations.

³⁵ EFTA: European Free Trade Association.

³⁶ Candidate countries and, where applicable, potential candidates from the Western Balkans.

3.2. Estimated impact on expenditure

3.2.1. Summary of estimated impact on expenditure

EUR million (to three decimal places)

Heading of multiannual financial framework		1	Single market, Innovation and Digital						
			2021	2022	2023	2024	2025	Post 2025	TOTAL
Operational appropriations (split according to the budget lines listed under 3.1)	Commitments	(1)	202.364	205.998	210.531	214.085	219.475		1 052.453
	Payments	(2)	4.171	174.120	180.924	196.838	202.306	294.094	1 052.453
01 03 01 fusion research and development	Commitments	(1a)	130.964	133.300	136.249	138.523	142.054		681.089
	Payments	(2a)		125.000	128.000	132.000	135.000	161.089	681.089
01 03 02 01 fission, safety and radiation protection	Commitments	(1b)	59.815	60.882	62.229	63.268	64.881		311.074
	Payments	(2b)		40.000	42.000	53.000	55.000	121.074	311.074
01 03 02 02 direct actions undertaken by the Joint Research Center (JRC)	Commitments	(1c)	11.585	11.817	12.053	12.294	12.541		60.290
	Payments	(2c)	4.171	9.120	10.924	11.838	12.306	11.931	60.290
Appropriations of an administrative nature financed from the envelope of the programme ³⁷	Commitments = Payments	(3)	119.636	122.002	124.469	126.915	129.525		622.547
TOTAL appropriations for the envelope of the programme	Commitments	=1+3	322.000	328.000	335.000	341.000	349.000		1 675.000
	Payments	=2+3	123.807	296.122	305.393	323.753	331.831	294.094	1 675.000

³⁷ Technical and/or administrative assistance and expenditure in support of the implementation of EU programmes and/or actions (former 'BA' lines), indirect research, direct research.

Heading of multiannual financial framework	7	‘Administrative expenditure’
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EUR million (to three decimal places)

		2021	2022	2023	2024	2025	<i>Post 2025</i>	TOTAL
Human resources								
Other administrative expenditure								
TOTAL appropriations under HEADING 7 of the multiannual financial framework	(Total commitments = Total payments)							

EUR million (to three decimal places)

		2021	2022	2023	2024	2025	<i>Post 2025</i>	TOTAL
TOTAL appropriations across HEADINGS of the multiannual financial framework	Commitments	322.000	328.000	335.000	341.000	349.000		1 675.000
	Payments	123.807	296.121	305.393	323.753	331.831	294.094	1 675.000

3.2.2. Summary of estimated impact on appropriations of an administrative nature

- The proposal/initiative does not require the use of appropriations of an administrative nature
- The proposal/initiative requires the use of appropriations of an administrative nature, as explained below:

EUR million (to three decimal places)

Years	2021	2022	2023	2024	2025	TOTAL
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HEADING 7 of the multiannual financial framework						
Human resources						
Other administrative expenditure						
Subtotal HEADING 7 of the multiannual financial framework						

Outside HEADING 7 ³⁸ of the multiannual financial framework						
Human resources ³⁹	79.863	81.550	83.274	85.034	86.833	416.554
Other expenditure of an administrative nature ⁴⁰	39.773	40.452	41.195	41.881	42.692	205.993
Subtotal outside HEADING 7 of the multiannual financial framework	119.636	122.002	124.469	126.915	129.525	622.547

TOTAL	119.636	122.002	124.469	126.915	129.525	622.547
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The administrative appropriations required will be met by the appropriations which are already assigned to management of the action and/or which have been redeployed, together if necessary with any additional

³⁸ Technical and/or administrative assistance and expenditure in support of the implementation of EU programmes and/or actions (former 'BA' lines), indirect research, direct research.

³⁹ These figures include only the authorised staff in place in 2020 in Directorates General and do not include the additional staff paid from the contributions of the future associated countries as well as the necessary staff in case the Commission decides, if deemed appropriate, to entrust the carrying out of certain parts of the programme in accordance with Article 10 of the Euratom Treaty.

⁴⁰ These figures represent the estimated maximum administrative expenditures needed for the implementation of the legal base.

allocation which may be granted to the managing DG under the annual allocation procedure and in the light of existing budgetary constraints.

3.2.2.1. Estimated requirements of human resources

- The proposal/initiative does not require the use of human resources.
- The proposal/initiative requires the use of human resources, as explained below:

Estimate to be expressed in full time equivalent units

Years	2021	2022	2023	2024	2025
Establishment plan posts (officials and temporary staff)					
Headquarters and Commission's Representation Offices					
Delegations					
Research	556	556	556	556	556
External staff (in Full Time Equivalent unit: FTE) - AC, AL, END, INT and JED					
Financed from HEADING 7 of the multiannual financial framework	- at Headquarters				
	- in Delegations				
Financed from the envelope of the programme ⁴¹	- at Headquarters				
	- in Delegations				
Research	185	185	185	185	185
Other (specify)					
TOTAL	741	741	741	741	741

These figures include only the authorised staff in place in 2020 in Directorates General and do not include the additional staff paid from the contributions of the future associated countries as well as the necessary staff in case the Commission decides, if deemed appropriate, to entrust the carrying out of certain parts of the programme in accordance with Article 10 of the Euratom Treaty.

The human resources required will be met by staff from the DG who are already assigned to management of the action and/or have been redeployed within the DG, together if necessary with any additional allocation which may be granted to the managing DG under the annual allocation procedure and in the light of budgetary constraints.

Description of tasks to be carried out:

Officials and temporary staff	Tasks derived from the management and implementation of the nuclear research and training programme, in particular related to nuclear waste management, nuclear safety and nuclear safeguards, security and to nuclear fusion.
External staff	

⁴¹ Sub-ceiling for external staff covered by operational appropriations (former 'BA' lines).

3.2.3. Third-party contributions

The proposal/initiative:

- does not provide for co-financing by third parties
- provides for the co-financing by third parties estimated below:

Appropriations in EUR million (to three decimal places)

Years	2021	2022	2023	2024	2025	TOTAL
Specify the co-financing body						
TOTAL appropriations co-financed ⁴²	p.m.	p.m.	p.m.	p.m.	p.m.	p.m.

3.3. Estimated impact on revenue

- The proposal/initiative has no financial impact on revenue.
- The proposal/initiative has the following financial impact:
 - on own resources
 - on other revenue

please indicate, if the revenue is assigned to expenditure lines X

EUR million (to three decimal places)

Budget revenue line:	Impact of the proposal/initiative				
	2021	2022	2023	2024	2025
Item 6011	p.m.	p.m.	p.m.	p.m.	p.m.
Item 6012					
Item 6013					
Item 6031					

For assigned revenue, specify the budget expenditure line(s) affected.

01.03XX Appropriations accruing from contributions from third parties

Other remarks (e.g. method/formula used for calculating the impact on revenue or any other information).

⁴² Bilateral Association Agreements are not fixed yet. Contributions from associated countries will come on top of the amounts presented in this Legislative Financial Statement.

Third countries may contribute to the programme through association agreements. The conditions determining the level of financial contribution will be laid down in association agreements with each country and shall ensure an automatic correction of any significant imbalance compared to the amount that entities established in the associated country receive through participation in the programme, taking into account the costs in managing the programme.