



Council of the
European Union

Brussels, 10 December 2019
(OR. en)

**Interinstitutional File:
2018/0226(NLE)**

**14627/1/19
REV 1**

**RECH 509
COMPET 777
ATO 102
CADREFIN 393**

'I/A' ITEM NOTE

From:	General Secretariat of the Council
To:	Permanent Representatives Committee/Council
No. prev. doc.:	14301/19
No. Cion doc.:	9871/18 RECH 275 COMPET 425 ATO 33 CADREFIN 82 IA 191 + ADD 1
Subject:	Euratom programme complementing Horizon Europe: 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. <i>- Progress report</i>

I. INTRODUCTION

1. On 7 June 2018, the Commission submitted to the Council a 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 Innovation¹. The proposal is part of the 'Horizon Europe' legislative package.

¹ Doc. 9871/18 + ADD 1

2. The proposed Euratom Programme will pursue the current programme's key research activities (nuclear safety, security, radioactive waste and spent fuel management, radiation protection and fusion energy), expand research into non-power applications of ionising radiation, and make improvements in the areas of education, training and access to research infrastructures. Furthermore, the programme shall also support the mobility of researchers in the nuclear field in the framework of the Horizon Europe's 'Marie Skłodowska-Curie Actions' (MSCA).
3. The Euratom Programme will complement Horizon Europe using the same instruments and rules for participation. It will be implemented for five years in accordance with Article 7 of the Euratom Treaty, to be extended in 2025 by two years in order to be aligned with the Multiannual Financial Framework 2021-2027. The Programme foresees a financial envelope of EUR 1,6 billion in current prices for the period 2021-2025.
4. Following Article 7 of the Euratom Treaty, the Community research and training programme is to be adopted unanimously by the Council. The opinions of other institutions or bodies are not required. However, in keeping with past practice, the Permanent Representatives Committee decided on 13 July 2018 to consult the European Parliament and the European Economic and Social Committee on the proposal. The European Parliament adopted its opinion on 16 January 2019 and the European Economic and Social Committee on 12 December 2018.

II. WORK WITHIN THE COUNCIL

5. The Joint Research and Atomic Questions Working Party started examining the proposal under the Austrian Presidency in December 2018 with a presentation from the Commission and work has been pursued by the Romanian and Finnish Presidencies.
6. The impact assessment accompanying this proposal was examined in detail on 14 and 28 February and on 14 March 2019, on the basis of the indicative checklist developed to examine Commission impact assessments in the Council. Discussions focused on issues on which delegations requested further clarifications. Following the clarifications provided by the Commission, the Working Party proceeded with the examination of the proposal.
7. In the course of in-depth discussions at Working Party level, the Presidency has amended several provisions of the Commission's proposal to take account of delegations' requests. At the last Working Party meeting on 12 November 2019, a broad agreement was reached on the majority of the compromise text. However, there were a number of outstanding issues that remained to be solved.
8. The Presidency's compromise text was discussed at the Permanent Representatives Committee (COREPER) meeting on 20 November 2019. However, some outstanding issues remained. The Chair concluded that the compromise proposal would be submitted to the Council (Competitiveness) to resolve the remaining outstanding issues with a view to reaching a partial General Approach.
9. The Council at its meeting on 29 November 2019 discussed the Presidency's compromise text set out in document 14301/19 and aimed to resolve the remaining outstanding issues. However, due to the opposition of two delegations, the Council was unable to resolve the issues and the partial General Approach was not reached (unanimity is required).

The Presidency compromise text as it stands following the Council meeting on 29 November 2019 is set out in the Annex to this Note.

10. The proposed Regulation is part of the package of proposals linked to the Multiannual Financial Framework (MFF) 2021-2027 and therefore dependent on the outcome of the horizontal negotiations on the MFF.

Elements in brackets in the text require the completion of negotiations on the MFF and further work for the Council to be able to adopt the Regulation. In particular, all provisions with budgetary implications are in square brackets.

III. OUTSTANDING ISSUES

11. The Presidency considered the compromise text set out in Annex to this Note as a solid basis for reaching a partial General Approach at the Competitiveness Council held on 29 November 2019. Most Member States were able to accept the Presidency text as a compromise but AT and LU maintained their concerns on the Presidency's compromise proposal and their general reservation on the whole text as well as their other scrutiny reservations. Although DE also has reservations, they indicated at the Council that they were ready to abstain in the context of reaching a partial General Approach and in that instance, they would add a statement to the minutes. All reservations raised by delegations on the above-mentioned proposal appear in the footnotes of the Annex to this Note.

The main outstanding issues are as follows:

12. Programme objectives and climate neutrality (Article 3(1) and Recital 2)

The Presidency's compromise text on this Article and the corresponding Recital reflects the continuous efforts of the Presidency to strike a balance between the different positions of Member States as regards the potential contribution of nuclear research and training to the long-term transition towards a climate neutral energy system. The wording of Article 3(1) follows closely the wording of the current Euratom Regulation in force and that of the previous one. The modifications made to Recital 2 clarify that the potential contribution towards climate neutrality is without prejudice to the right of Member States to determine the choice between different energy sources. A majority of Member States can support the text as a compromise. AT and LU have requested the deletion of all linkages between nuclear research and training and climate neutrality and have a reservation both in Article 3(1) and Recital 2. DE has a reservation on Article 3(1) and Recital 2 and proposed at the Competitiveness Council on 29 November 2019 to amend Article 3(1) with the introduction of "for those Member States that decide to use nuclear power" (and aligning Recital 2 accordingly). However, DE also indicated that in the context of reaching a partial General Approach and in the spirit of compromise, they would be able to abstain if their proposal was not taken on board, while adding a statement to the minutes of the Council.

In addition:

13. AT and LU have a scrutiny reservation on Recital 14 as they have concerns with the use of InvestEU funds for Euratom projects. The compromise text on Recital 14 clarifies that financing Euratom projects from InvestEU should be in accordance with the provisions on Annex V.B of the InvestEU Regulation.

14. AT and LU have a scrutiny reservation on Recital 17 as regards the role of the Joint Research Centre as they would like to delete 'in particular' from the compromise text. The Presidency text, based on the comments received from Member States, provides that direct actions of the Joint Research Centre (JRC) should be implemented taking into account the needs of the users of the JRC and of Union policies, in particular in the field of nuclear safety, safeguards and security. Likewise, AT and LU also have a scrutiny reservation on the role of the JRC as the Euratom Implementing Agent in the Generation IV International Forum, as set out in the 3rd paragraph of Annex I. In the compromise text, the Presidency has aimed to clarify this role.
15. AT and LU maintain a scrutiny reservation on Article 7 on European Partnerships as they have concerns about partnerships in Euratom.
16. AT and LU have a scrutiny reservation on the 4th indent of paragraph (a)(5) of Annex I as they would like to delete 'support' from the text. The compromise text on this provision regarding the research and training fields which will be eligible for Euratom funding include the field of nuclear security, safeguards and non-proliferation, comprising research and support for enhancing safety and security in the context of the global Chemical, Biological, Radiological and Nuclear (CBRN) Framework. AT and LU have also requested the deletion of 'in particular' from paragraph (b)(2) of Annex I, on the promotion of innovation, knowledge management, dissemination and exploitation of nuclear science and technology. The Presidency text includes 'in particular for nuclear safety, security, safeguards, and radiation protection' to cater for Member States' concerns.
17. Despite the significant efforts deployed on reaching a compromise on this proposal, the Presidency is aware that further work is needed. It is the Presidency's intention to transmit the file to the next Presidency.

IV. CONCLUSION

18. The Permanent Representatives Committee and the Council are therefore invited to take note of the above report on the progress made in the examination of the 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.
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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 Innovation¹**

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 Parliament²,

Having regard to the opinion of the European Economic and Social Committee³,

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.

¹ General reservation: AT, LU.

² Opinion of Opinion delivered following non-compulsory consultation.

³ OJ C..... Opinion delivered following non-compulsory consultation.

- (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.

Without prejudice to the right of Member States to determine the choice between different energy sources, research results of the programme established by this Regulation could also contribute towards a climate neutral energy system in a safe, efficient and secure way.⁴

- (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 ‘Euratom Programme’). The Euratom 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) contains a set of guiding principles for the Programme. These include: to continue supporting nuclear research focused on nuclear safety, 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 programmes and the other thematic areas of the Union Framework Programme; and to further exploit synergies between direct and indirect actions of the Euratom programme.

⁴ Reservation: AT, DE, LU.

- (5) The conception and design of the Euratom 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 and its Member States on nuclear safety, safeguards and security.
- (5a) The Euratom Programme is a crucial part of the Union's efforts to further develop technological leadership and promote excellence in nuclear research and innovation, in particular ensuring the highest standards of safety, security, safeguards, radiation protection, safe spent fuel, radioactive waste management and decommissioning in the nuclear field, in accordance with the programme objectives set out in this Regulation.
- (6) Fusion energy research is, in the context of this Regulation, 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, and with the [ITER Council Decision]. In the short to medium term the key step is the completion of the construction and initial operation 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 the demonstration reactor DEMO.
- (7) By supporting nuclear research, the Euratom 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 Council⁵ and should facilitate implementation of the Europe 2030 strategy and strengthening of the European Research Area.

⁵ 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 [...]).

- (8) The Euratom 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.
- (9) The Euratom Programme's actions should be proportionate, without duplicating or crowding out private financing and have a clear European added value. This will ensure consistency between the actions of the Euratom programme and EU State aid rules, avoiding undue distortions of competition in the internal market.
- (9a) While it is for each Member State to choose whether or not to make use of nuclear power, it is also acknowledged that nuclear energy plays different roles in different Member States. The Euratom Programme will also contribute through its research activities to foster a broad discussion among all relevant stakeholders on the opportunities and risks of nuclear energy.
- (9b) To address the needs in education and training, the Euratom Programme should offer support through financial contributions so that researchers in the nuclear field become eligible to benefit from Marie Skłodowska-Curie Actions (MSCA) on an equal footing with researchers in other fields.
- (10) This Regulation lays down a financial envelope for the Euratom 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.

- (11) Regulation (EU, Euratom) No[...] of the European Parliament and of the Council⁶ (the ‘Financial Regulation’) applies to the Euratom 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 and provides 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.]
- (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.
- (12a) Particular attention shall be paid to ensuring adequate participation of small and medium-sized enterprises (SMEs) and the private sector in general. Quantitative and qualitative assessments of SME participation should be undertaken as part of the evaluation and monitoring arrangements.

- (12b) The activities developed under the Euratom Programme should aim at eliminating gender inequalities and promoting equality between women and men in research and innovation, in compliance with Articles 2 and 3 of the Treaty on European Union and Article 8 of the Treaty on the Functioning of the European Union. The gender dimension should be integrated in research and innovation content and followed through at all stages of the research cycle.
- (12ba) With the aim of deepening the relationship between science and society and reinforcing public confidence in science, the Euratom Programme should favour the informed engagement of citizens and civil society on research and innovation matters by promoting science education, making scientific knowledge more accessible, developing responsible research and innovation agendas that meet the concerns and expectations of citizens and civil society, and facilitating their participation in activities under the Euratom Programme.
- (12c) Actions which fall within the scope of the Euratom Programme should respect fundamental rights and observe the principles acknowledged in particular by the Charter of Fundamental Rights of the European Union.
- (12d) It is important to continue to facilitate the exploitation of intellectual property developed by participants, while protecting the legitimate interests of other participants and the Community in accordance with Title II, Chapter 2 of the Treaty establishing the European Atomic Energy Community ('the Euratom Treaty').
- (13) [...]

- (14) The objectives of the Euratom Programme may be also addressed through financial instruments under the InvestEU Programme, in accordance with Annex V.B of the InvestEU Regulation.⁷
- (15) In order to ensure the most efficient implementation possible and achieve a coherent, comprehensive and transparent framework for beneficiaries, participation in the Euratom Programme, and dissemination of research results should be subject to the relevant rules of Horizon Europe with certain adaptations or exceptions. Relevant definitions and main types of action set out in Horizon Europe should apply to the Euratom 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, this safeguard mechanism should be continued. The Mutual Insurance Mechanism ('the Mechanism') established pursuant to Horizon Europe should cover actions under this Regulation.
- (17) The Joint Research Centre (JRC) should continue to provide Union and Member States policies, as appropriate, 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, in particular⁸ in the field of nuclear safety, safeguards and security, and ensuring the protection of the financial interests of the Union. The JRC should continue to generate additional resources through competitive support activities for Union policies or on behalf of third parties⁹. The JRC can participate in indirect actions, where the relevant work programme so provides.

⁷ Scrutiny reservation: AT, LU.

⁸ Scrutiny reservation: AT, LU.

⁹ Council conclusions, 26 April 1994, 94/C126/01 on the role of the Joint Research Centre (JRC).

(18) [In accordance with Regulations (EU, Euratom) 2018/1046¹⁰ (the "Financial Regulation") and (EU, Euratom) No 883/2013 of the European Parliament and of the Council¹¹ and Council Regulations (Euratom, EC) No 2988/95¹², (Euratom, EC) No 2185/96¹³ and (EU) 2017/1939¹⁴, 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 penalties. In particular, in accordance with Regulations (Euratom, EC) No 2185/96 and (EU, Euratom) No 883/2013, 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.

¹⁰ Regulation (EU, Euratom) 2018/1046 of the European Parliament and of the Council of 18 July 2018 on the financial rules applicable to the general budget of the Union, amending Regulations (EU) No 1296/2013, (EU) No 1301/2013, (EU) No 1303/2013, (EU) No 1304/2013, (EU) No 1309/2013, (EU) No 1316/2013, (EU) No 223/2014, (EU) No 283/2014, and Decision No 541/2014/EU and repealing Regulation (EU, Euratom) No 966/2012 (OJ L 193, 30.7.2018, p. 1).

¹¹ 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).

¹² 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).

¹³ 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 L 292, 15.11.1996, p.2).

¹⁴ 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).

In accordance with Regulation (EU) 2017/1939, the European Public Prosecutor's Office (the "EPPO") may investigate and prosecute offences against the financial interests of the Union, as provided for in Directive (EU) 2017/1371 of the European Parliament and of the Council¹⁵. In accordance with the Financial Regulation, any person or entity receiving Union funds is to fully cooperate in the protection of the financial interests of the Union, grant the necessary rights and access to the Commission, OLAF, the EPPO in respect of those Member States participating in enhanced cooperation pursuant to Regulation (EU) 2017/1939, and the European Court of Auditors (ECA), and ensure that any third parties involved in the implementation of Union funds grant equivalent rights.

(18a) Third countries which are members of the European Economic Area (EEA) may participate in Union programmes in the framework of the cooperation established under the Agreement on the European Economic Area¹⁶, which provides for the implementation of the programmes by a decision under that Agreement. Third countries may also participate on the basis of other legal instruments. A specific provision should be introduced in this Regulation to grant the necessary rights for and access to the authorizing officer responsible, OLAF and the ECA to comprehensively exert their respective competences.]

¹⁵ 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).

¹⁶ OJ L 1, 3.1.1994, p. 3.

- (19) In order to ensure uniform conditions for the implementation of the actions under the Euratom 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 Council¹⁷.
- (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 the Euratom 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 Euratom Programme on the ground.
- (21) The Board of Governors of the Joint Research Centre (the ‘JRC’), set up by Commission Decision 96/282/Euratom¹⁸, 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.

¹⁷ 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).

¹⁸ 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).

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 ‘Euratom Programme’) and the rules for participation and dissemination in indirect actions under the Euratom Programme, complementing Horizon Europe.

It lays down the objectives of the Euratom 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 relevant definitions set out in Regulation (EU) No xxx of the European Parliament and of the Council (‘Horizon Europe’)¹⁹, apply. References in those definitions to the Union and the Programme shall be construed as references to the Community and the Euratom Programme. By derogation, ‘work programme’ means the document adopted by the Commission for the implementation of the Euratom Programme in accordance with Article 16 of this Regulation.

All references in this Regulation to Regulation (EU) No xxx of the European Parliament and of the Council (‘Horizon Europe’) are to the version in force on ... [OJ: insert date of entry into force of Horizon Europe].

¹⁹ Full title + OJ reference

Article 3

Programme objectives

1. The general objective of the Euratom Programme is to pursue nuclear research and training activities with an emphasis on the continuous improvement of nuclear safety, security and radiation protection, as well as to potentially contribute to the long-term transition towards a climate neutral energy system in a safe, efficient and secure way.²⁰
2. The Euratom Programme has the following specific objectives:
 - (a) improve and support nuclear safety, security, safeguards, radiation protection, safe spent fuel and radioactive waste management and decommissioning, including the safe and secure use of nuclear power and of non-power applications of ionizing radiation;
 - (b) maintain and further develop expertise and competence in the nuclear field within the Community;
 - (c) foster the development of fusion energy as a potential future energy source for electricity production and contribute to the implementation of the European fusion roadmap;
 - (d) support the policy of the Union and its Member States on continuous improvement of nuclear safety, safeguards and security.
3. The objectives listed in paragraphs 1 and 2 shall be implemented in accordance with Annex I. This may, if duly justified, include responses to emerging opportunities, crises and threats.

²⁰ Reservation: AT, DE, LU.

Article 4

Budget

1. The financial envelope for the implementation of the Euratom 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:
 - (e) EUR [724 563 000] for indirect actions in fusion research and development;
 - (f) EUR [330 930 000] for indirect actions in nuclear fission, safety and radiation protection;
 - (g) 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 Euratom Programme, including administrative expenditure, as well as evaluating the achievement of its objectives. The administrative expenses related to indirect actions shall not exceed 6% of the total amount under the Euratom Programme. 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 Euratom 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 Euratom Programme.

4. Where necessary and duly justified, appropriations may be entered in the budget beyond 2025 to cover the expenses provided for in paragraph 3, in order to enable the management of actions not completed by 31 December 2025.
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.]

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 Euratom Programme shall be implemented in direct management in accordance with the Financial Regulation or in indirect management with funding bodies referred to in Article 62 (1)(c) of the Financial Regulation.
2. The Euratom Programme may provide funding in any of the forms laid down in the Financial Regulation, in particular grants which shall be the main form of support for indirect actions in the programme. It may also provide financing through prizes, procurement and financial instruments within blending operations.
3. The main types of action to be used under the Euratom Programme are set out and defined in Article 2 of Horizon Europe, such as research and innovation actions, innovation actions, innovation and market deployment actions, training and mobility actions, programme co-fund actions, pre-commercial procurement actions, public procurement of innovative solutions actions, coordination and support actions, inducement prizes and recognition prizes.

The forms of funding, referred to in paragraph 2, shall be used in a flexible manner across all objectives of the Euratom Programme with their use being determined on the basis of the needs and the characteristics of the particular objectives.

4. The Euratom Programme shall also support direct actions undertaken by the JRC.

Article 7

European Partnerships²¹

1. Parts of the Euratom 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 and/or contractual arrangements between the Commission and public or private partners specifying the objectives of the partnership, related commitments from all involved sides for financial and/or in-kind contributions of the partners, key performance and impact indicators, outputs to be delivered and reporting modalities. They include the identification of complementary research and innovation activities that are implemented by the partners and by the Euratom Programme (co-programmed European Partnerships);
 - (b) participation in and financial contribution to a programme of research and innovation activities, specifying the objectives, key performance and impact indicators, and outputs to be delivered, based on the commitment of the partners for financial and/or in-kind contributions and integration of their relevant activities using a Euratom 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 Euratom Programme than the Community alone and when compared to other forms of support of the Euratom Programme. Those parts shall have an appropriate share of the budget of the Euratom Programme.

²¹ Scrutiny reservation: AT, LU.

- (b) Adhere to the principles of Union added value, transparency, openness, impact within and for Europe, strong leverage effect on sufficient scale, long-term financial commitment of all the involved parties, flexibility in implementation, coherence, coordination and complementarity with Union, local, regional, national and, where relevant, international initiatives or other partnerships.
 - (c) Have a clear life-cycle approach, be limited in time and include conditions for phasing-out the Euratom 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 Science

The provisions on open science set out in Horizon Europe shall apply to the Euratom 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 and dissemination of Horizon Europe shall apply to actions supported under the Euratom Programme. References therein to the Union and the Programme shall be construed as references to the Community and the Euratom 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 Euratom Programme shall be implemented in synergy with other Union funding programmes.
- 1a. In order to achieve the objectives of the Euratom Programme and to address challenges common to the Euratom Programme and to Horizon Europe, activities cutting across the objectives set out in the Euratom Programme or those implementing Horizon Europe, or both, may benefit from the Community financial contribution. In particular, the Euratom 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 Commission shall adopt, by means of implementing acts, in accordance with the examination procedure referred to in Article 16(4), work programmes referred to in Article 110 of the Financial Regulation, for the implementation of the indirect actions. 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, as appropriate, 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;
 - (d) a multiannual approach and strategic orientations for the following years of implementation.
3. The Commission shall draw up a multi-annual work programme on direct actions undertaken by the JRC in accordance with Decision 96/282/Euratom.

Monitoring and reporting

1. The Commission shall monitor continuously the management and implementation of the Euratom Programme. In order to enhance transparency, this data shall also be made publicly available in an accessible manner on the Commission's webpage according to the latest update.

This shall include time-bound indicators to report on an annual basis on the progress of the Euratom Programme towards the achievement of the objectives established in Article 3 and set out in Annex II along impact pathways.

2. To ensure effective assessment of progress of the Euratom 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 without increasing the administrative burden for beneficiaries. To that end, proportionate reporting requirements shall be imposed on recipients of Community funds and, where relevant, on Member States.

Information, communication, publicity and dissemination and exploitation

1. The recipients of the Euratom Programme funding shall acknowledge the origin and ensure the visibility of the Community funding (in particular when promoting the actions and their results, including for prizes) 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 Euratom Programme, and its actions, and results. In addition, it shall provide timely and thorough information to Member States and beneficiaries. Evidence-based matchmaking services informed by analytics and network affinities shall be provided to interested entities in order to form consortia for collaborative projects, with particular attention to identifying networking opportunities for legal entities from low R&I performing Member States. On the basis of such analysis, targeted match-making events may be organised in function of specific calls for proposals. Financial resources allocated to the Euratom 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 Euratom Programme's research and innovation results and knowledge to accelerate exploitation towards market uptake and boost the impact of the Euratom Programme. Financial resources allocated to the Euratom 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 Euratom Programme shall be, with the assistance of independent experts selected on the basis of a transparent process, carried out once there is sufficient information available about the implementation of the Euratom 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 Research and Training Programmes and shall form the basis to adjust programme implementation and/or review the programme, as appropriate. It shall assess the Euratom Programme's effectiveness, efficiency, relevance, coherence, and Community added value.
3. At the end of the implementation of the Euratom Programme, but no later than four years after the end of the period specified in Article 1, a final evaluation of the Euratom Programme shall be carried out by the Commission. It shall include an assessment of the long-term impact of previous Euratom Research and Training Programmes.
4. The Commission shall publish and 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 Euratom 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. Audit rules shall be clear, consistent and coherent throughout the Euratom Programme.
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 independent and competent 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.
- 5a. The Commission shall publish audit guidelines, aiming to ensure a reliable and uniform application and interpretation of the audit procedures and rules throughout the duration of the programme.

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 Euratom Programme.

With a view to facilitating the implementation of the programme, for each meeting of the Euratom Programme Committee as defined in the agenda, the Commission will reimburse, in accordance with its established guidelines, the expenses of one representative per Member State, as well as one expert/adviser per Member State for those agenda items where a Member State requires specific expertise.

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 Euratom Programme and shall provide it with timely information on all actions proposed or funded under the Euratom Programme.

[Article 17

Protection of financial interests of the Union

Where a third country participates in the Programme by a decision under an international agreement or by virtue of any other legal instrument, the third country shall grant the necessary rights and access required for the authorising officer responsible, OLAF and the ECA to comprehensively exert their respective competences. In the case of OLAF, such rights shall include the right to carry out investigations, including on-the-spot checks and inspections, as provided for in Regulation (EU, Euratom) No 883/2013.]

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 Euratom Programme may also cover technical and administrative assistance expenses necessary to ensure the transition between the Euratom 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 XX²²].

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

The specific objectives listed under Article 3(2) shall be pursued across the Euratom Programme, according to the broad lines of activity described in this annex. By implementing these specific objectives, the Euratom Programme supports Member States in the implementation of the Euratom legislation²⁴ and reinforces their research efforts and those of the private sector. These should contribute to maintain and further develop the technological leadership in the nuclear domain.

In order to achieve the specific objectives, the Euratom Programme will support cross-cutting activities that ensure synergy of research efforts in solving common challenges. Appropriate links and interfaces, such as joint calls, will be ensured with Horizon Europe. Related research and innovation activities may also benefit from financial support provided by the Funds under Regulation [Common Provisions Regulation] as far as in line with these Funds' objectives and regulations.

²⁴ In particular Council Directive 2009/71/Euratom of 25 June 2009 establishing a Community framework for the nuclear safety of nuclear installations as amended by Council Directive 2014/87/Euratom of 8 July 2014; Council Directive 2011/70/Euratom of 19 July 2011 establishing a Community framework for the responsible and safe management of spent fuel and radioactive waste; Council Directive 2006/117/Euratom of 20 November 2006 on the supervision and control of shipments of radioactive waste and spent fuel; Council Directive 2013/59/Euratom of 5 December 2013 laying down basic safety standards for protection against the dangers arising from exposure to ionising radiation, and repealing Directives 89/618/Euratom, 90/641/Euratom, 96/29/Euratom, 97/43/Euratom and 2003/122/Euratom, Council Directive 2013/51/Euratom of 22 October 2013 laying down requirements for the protection of the health of the general public with regard to radioactive substances in water intended for human consumption and Council Regulation (Euratom) 2016/52 of 15 January 2016 laying down maximum permitted levels of radioactive contamination of food and feed following a nuclear accident or any other case of radiological emergency.

Activities listed in this annex include international cooperation in nuclear research and innovation for peaceful uses, based on shared goals and mutual trust with the aim of providing clear and significant benefits for the Union, its citizens and environment. This includes International cooperation through multilateral frameworks. JRC as the Euratom Implementing Agent for Generation IV International Forum (GIF)²⁵ will continue facilitating and coordinating the contribution and participation of the Euratom Community to GIF's research and training activities. The contribution to GIF's activities under the scope of the Euratom Programme is focused on safety, radiation protection, safeguards and non-proliferation research and training activities specific to Generation IV systems.²⁶

Any new activity assigned to the Joint Research Centre (JRC) shall be analysed by the Board of Governors of the JRC to check its consistency with existing activities in the Member States and to avoid duplication of nuclear research and development in the Union.

The priorities of the work programmes are to be established by the Commission on the basis of inputs from national public authorities and nuclear research stakeholders grouped in bodies or frameworks such as European technology platforms, associations, initiatives and technical forums for nuclear systems and safety, management of radioactive waste, spent nuclear fuel and radiation protection/low-dose risk, nuclear safeguards and security, fusion research, or any relevant organisation or forum of nuclear stakeholders.

²⁵ In accordance with Article III.2 of the Framework Agreement for International Collaboration on Research and Development of Generation IV Nuclear Energy Systems.

²⁶ Scrutiny reservation: AT, LU.

Research and training in the following fields will be eligible for funding from the Euratom Programme:

(a) Improve and support nuclear safety, security, safeguards, radiation protection, safe spent fuel and radioactive waste management and decommissioning, including the safe and secure use of nuclear power and of non-power applications of ionizing radiation²⁷

- (1) **Nuclear safety:** safety of reactor systems and fuel cycles, in use in the Community or, to the extent necessary, in order to maintain broad nuclear safety expertise in the Community, those reactor types and their whole fuel cycles such as partitioning and transmutation, which may be used in the future.
- (2) **Safe spent fuel and radioactive waste management:** management and in particular pre-disposal activities and disposal of intermediate, high-level and long-lived radioactive waste and spent nuclear fuel, and of other radioactive waste streams and types for which industrially mature processes currently do not exist or could be improved; Radioactive waste minimisation and reducing the radiotoxicity of this waste; Management and transfer of knowledge and competences between generations and across Member States' programmes in radioactive waste and spent fuel management.
- (3) **Decommissioning:** research for the development and evaluation of technologies for decommissioning and environmental remediation of nuclear facilities; support for sharing best practices and knowledge on decommissioning.

²⁷ Apart from nuclear security, safeguards and non-proliferation, these activities may be implemented through direct and indirect actions.

(4) Nuclear science and ionizing radiation applications, radiation protection, emergency preparedness:

- Applications of nuclear science and ionizing radiation technologies in medical, industrial and other research fields.
- Effects and risks from low doses from industrial, medical or environmental exposure.
- Emergency preparedness for accidents involving radiation, and research on radioecology.
- Secure and safe supply and use of radioisotopes.
- Research on models for radiological dispersion in the environment, and support for data exchange, alert systems and cooperation on measurement techniques²⁸ (to be implemented by direct actions).

²⁸ Art. 35, 36, 38 Euratom; Council Decision 87/600/Euratom.

(5) **Nuclear security, safeguards and non-proliferation** (to be implemented by direct actions):

- Methods and technology to support and strengthen the Community's and international safeguards.
- Operational support and training to the Euratom safeguards system.
- Technical support to the implementation of the Non-Proliferation Treaty in the field of nuclear safeguards including support to strengthen EU export control regime.
- Research and support for enhancing safety and security in the context of the global CBRN (Chemical, Biological, Radiological, Nuclear) framework and related Union strategies.²⁹
- Methods and technology for detection of nuclear and radioactive materials outside regulatory control and prevention of and response to incidents involving such materials including nuclear forensics.
- Support for the capacity building on nuclear security using the European Nuclear Security Training Centre.

²⁹ Scrutiny reservation: AT, LU.

(b) Maintain and further develop expertise and competence in the nuclear field within the Community

- (1) Education, training and mobility, including education and training schemes such as Marie Skłodowska-Curie Actions (MSCA).
- (2) Promotion of innovation, knowledge management, dissemination and exploitation of nuclear science and technology, in particular for nuclear safety, security, safeguards and radiation protection.³⁰
- (3) Support for technology transfer from the research to industry.
- (4) Support for the preparation and development of a competitive European fusion industrial capacity.
- (5) Support for the provision, availability and appropriate access of European and international research infrastructures, including JRC's infrastructures³¹.
- (6) For fostering nuclear science as a base to support standardisation, direct actions will provide state-of-the-art reference data, materials and measurements related to nuclear safety, safeguards and security, as well as other applications as nuclear medicine.

³⁰ Scrutiny reservation: AT, LU.

³¹ On the basis of the rolling investment plan for the JRC's infrastructures.

(c) Foster the development of fusion energy and contribute to the implementation of the European fusion roadmap

A Co-funded European Partnership in fusion research will implement the roadmap towards the goal of fusion electricity production by the second half of this century. This may include inter alia:

- (1) Exploiting existing and future fusion facilities, including the allocation of operating grants to fusion research infrastructures when appropriate.
- (2) Preparation for future fusion power plants by developing all relevant aspects including materials, technologies and designs.
- (3) Implementing a focused education and training programme in addition to activities under (b)(1).
- (4) Coordination of common activities with the Joint Undertaking Fusion for Energy.
- (5) Collaboration with the ITER Organisation.
- (6) Scientific collaboration in the framework of the Euratom international agreements.

The Co-funded European Partnership in fusion will be implemented through a grant to be awarded to the legal entities established or designated by the Member States and any third country associated to the Euratom Programme. The grant may include resources in kind from the Community, or the secondment of Commission staff.

(d) Support the policy of the Union and its Member States on nuclear safety, safeguards and security

The direct actions will support the policy on nuclear safety, safeguards and security and implementation of the relevant legislation by providing independent scientific and technical evidence and expertise.

Key Impact Pathways Indicators

Impact pathways, and related key impact pathway indicators, shall structure the monitoring of the Euratom Programme performance towards its specific objectives. The impact pathways are time-sensitive: they distinguish between the short, medium and long term. Impact pathway indicators serve as proxies to report on the progress made towards achievement of specific objectives. The micro-data behind the key impact pathway indicators, which are shared with the Horizon Europe will be collected in a centrally managed and harmonised way, with minimal reporting burden on the beneficiaries. The key impact pathway indicators may be refined during the implementation of the Euratom Programme.

Scientific impact pathways indicators

The Euratom Programme is expected to make progress as regards knowledge for reinforcing nuclear safety and security; safe applications of ionising radiation; spent fuel and radioactive waste management; radiation protection; and the development of fusion energy. Progress in this area will be measured by indicators concerning scientific publications, progress in the implementation of the fusion roadmap, development of expertise and skills, access to research infrastructures.

Towards scientific impacts	Short-term	Medium-term	Longer-term
Improving 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.	<u>Publications</u> – number of Euratom peer-reviewed scientific publications	<u>Citations</u> - Field-Weighted Citation Index of Euratom peer-reviewed scientific publications	<u>World-class science</u> - Number and share of peer reviewed publications from Euratom programme that are core contribution to scientific fields
	<u>Shared knowledge</u> - Share of research outputs (open data/ publication/ software etc.) shared through open knowledge infrastructure	<u>Knowledge diffusion</u> - Share of open access research outputs actively used/cited	<u>New collaborations</u> - Share of Euratom beneficiaries having developed new transdisciplinary/ trans-sectoral collaborations with users of their open Euratom R&I outputs
Fostering the development of fusion energy	<u>Progress in the implementation of the fusion roadmap</u> – Percentage of the fusion roadmap’s milestones established for the period 2021-2025 reached by the Euratom programme		
Maintaining and further developing expertise and excellence in the Union	<u>Skills</u> - Number of researchers having benefitted from upskilling activities of the Euratom programme (through training, mobility and access to infrastructure)	<u>Careers</u> - Number and share of upskilled researchers with more influence in their R&I field	<u>Working conditions</u> - Number and share of upskilled researchers with improved working conditions
	The number of researchers having access to research infrastructure through the programme support		
	Reference materials delivered and reference measurements incorporated to a library		Number of international standards modified

Societal impacts pathways indicators

The Euratom Programme helps addressing EU policy priorities concerning nuclear safety and security, radiation protection and ionising radiation applications through research and innovation, as shown by the portfolios of projects generating outputs contributing to tackling challenges in these fields. Societal impact is also measured in terms of specific development in the field of nuclear security and safeguards.

Towards societal impacts	Short-term	Medium-term	Longer-term
Improving 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	<u>Outputs</u> - Number and share of outputs aimed at addressing specific EU policy priorities	<u>Solutions</u> - Number and share of innovations and scientific results addressing specific EU policy priorities	<u>Benefits</u> - Aggregated estimated effects from use of Euratom-funded results, on tackling specific EU policy priorities, including contribution to the policy and law-making cycle
	Number of services delivered in support of safeguards in EU		Number of technical systems provided and in use
	Number of training sessions delivered to front-line officers		
	<u>Co-creation</u> - Number and share of Euratom projects where EU citizens and end-users contribute to the co-creation of R&I content	<u>Engagement</u> - Number and share of Euratom beneficiary entities with citizen and end-users engagement mechanisms after Euratom project	<u>Societal R&I uptake</u> Uptake and outreach of Euratom co-created scientific results and innovative solutions

Innovation impact pathway indicators

The Euratom Programme is expected to deliver innovation impacts supporting progress towards its specific objectives. Progress in this area will be measured by indicators concerning intellectual property rights (IPR), innovative products, methods and processes and their use, along with job creation.

Towards economic / innovation impact	Short-term	Medium-term	Longer-term
Improving 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	<u>Innovative outputs -</u> Number of innovative products, processes or methods from Euratom programme (by type of innovation) and Intellectual Property Rights (IPR) applications	<u>Innovations -</u> Number of innovations from Euratom projects (by type of innovation) including from awarded IPRs	<u>Economic growth -</u> Creation, growth and market shares of companies having developed Euratom funded innovations
Fostering the development of fusion energy	<u>Supported employment -</u> Number of FTE jobs created and jobs maintained in beneficiary entities for the Euratom project (by type of job)	<u>Sustained employment -</u> Increase of FTE jobs in beneficiary entities following Euratom project (by type of job)	<u>Total employment -</u> Number of direct and indirect jobs created or maintained due to diffusion of Euratom results (by type of job)
Maintaining and further developing expertise and excellence in the Union	Amount of public and private investment mobilised with the initial Euratom investment	Amount of public and private investment mobilised to exploit or scale up Euratom results	EU progress towards 3 % GDP due to Euratom programme

Policy impact pathways indicators

The Euratom Programme provides scientific evidence for policy-making. This in particular concerns scientific support for other Commission services, such as the support to Euratom safeguards, or to the implementation by Member States of nuclear and ionising radiation-related directives³².

Towards policy impact	Short-term	Medium-term	Longer-term
Supporting Union policy on nuclear safety, safeguards and security	Number and share of Euratom projects producing policy-relevant findings	Number of outputs having a demonstrable impact on the EU policy	Number and share of Euratom projects findings cited in policy/programmatic documents

Targets will be defined for both indirect and direct actions to reflect the expected results for each part of the programme.

³² 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; Council Directive 2011/70/Euratom of 19 July 2011 establishing a Community framework for the responsible and safe management of spent fuel and radioactive waste; and Commission Regulation (Euratom) No 302/2005 of 8 February 2005 on the application of Euratom safeguards.