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## Ex-ante evaluation of a new instrument combining the current European Instrument for International Nuclear Safety Cooperation with the JRC decommissioning activities

***Accompanying the document***

**Council Regulation (Euratom)**

**Establishing the Instrument for Nuclear Safety Cooperation and Decommissioning for the period 2028-2034**

{COM(2025) 598 final}

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## LIST OF ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| AAP | Annual Action Programme |
| AFCONE | African Commission on Nuclear Energy |
| ASEAN | Association of Southeast Asian Nations |
| BR | Better Regulations |
| BSS | Basic Safety Standards |
| CDA | Commission Delegated Act |
| CEZ | Chornobyl Exclusion Zone |
| CNS | Convention on Nuclear Safety |
| DG BUDG | Directorate-General for Budget |
| DG ENER | Directorate-General for Energy |
| DG INTPA | Directorate-General for International Partnerships |
| DOAG | Decision on the Overseas Association, including Greenland |
| D&WM | Decommissioning and radioactive waste management |
| EBRD | European Bank for Reconstruction and Development |
| EC | European Commission |
| EEAS | European External Action Service |
| EFI | External Financing Instrument |
| EIA | Environmental Impact Assessment |
| EIB | European Investment Bank |
| ENEN | European Nuclear Education Network |
| ENSREG | European Nuclear Safety Regulators Group |
| EP | European Parliament |
| EPC | Engineering, Procurement and Construction (contract) |
| EU | European Union |
| Euratom | European Atomic Energy Community |
| EVM | Earned Value Management |
| FARO | Fuel Assembly and Release Oven (Ispra) |
| FR | Financial Regulation |
| FPI | Foreign Policy Instrument |
| HFR | High Flux Reactor (Petten) |
| IAEA | International Atomic Energy Agency |
| INSC | Instrument for Nuclear Safety Cooperation or European Instrument for International Nuclear Safety Cooperation |
| IPA | Instrument for Pre-Accession Assistance |
| ISTC | International Science and Technology Centre |
| JCPoA | Joint Comprehensive Plan of Action (“the Iran nuclear deal”) |
| JRC | Joint Research Centre |
| KM | Knowledge Management |
| KPI | Key Performance Indicator |
| LCSR | Laboratory for Studies and Research (Ispra) |
| LLW | Low-level waste (radioactive) |

| | |
|---|---|
| MAP | Multiannual Action Plan |
| M&E | Monitoring and Evaluation |
| MFF | Multiannual Financial Framework |
| MIP | Multiannual Indicative Programme |
| MTR | Mid-Term Review |
| NDAP | Nuclear Decommissioning Assistance Programme |
| NDICI | Neighbourhood, Development and International Cooperation Instrument |
| NDWMP | Nuclear Decommissioning and Waste Management Programme |
| NPP | Nuclear Power Plant |
| NPT | Non-Proliferation Treaty |
| NSD | Nuclear Safety Directive |
| NSSG | Nuclear Safety and Security Group (of G7) |
| OECD | Organization for Economic Co-operation and Development |
| PPS | Program Performance Statement |
| R&T | Research and Training |
| RCF | Regulatory Cooperation Forum |
| ROM | Results-Oriented Monitoring |
| RWD | Radioactive Waste Directive |

## EXECUTIVE SUMMARY

This report contains the ex-ante evaluation of the Commission's proposal for a new Regulation establishing the Instrument for Nuclear Safety Cooperation and Decommissioning (INSC-D) for the period 2028-2034. The proposed new regulation puts forward the seamless continuation of two current instruments, namely the

- European Instrument for Nuclear Safety Cooperation (INSC) – Regulation (Euratom) No 2021/948, and the
- JRC Nuclear Decommissioning and Waste Management Programme (NDWMP) – Regulation (Euratom) No 2021/100.

Following the findings of the following comprehensive evaluations, the Commission's proposal seeks to build on the successful implementation of the previous instruments, to progress on EU policies in 2028-2034:

- ex-post evaluation of INSC for the 2014-2020 period
- ex-ante impact assessment of INSC for the 2021-2027 period
- mid-term evaluation of INSC for the 2021-2027 period (until 2024)
- mid-term evaluation of JRC NDWMP for the 2021-2027 period (until 2024)

### *Rationale for the merger*

The proposed new Regulation formally merges the above two regulations into a single Instrument.

The merger of the INSC and Decommissioning Programme (under Euratom) is justified by multiple strategic and regulatory factors. Driven by the EU's Multiannual Financial Framework (MFF) simplification goals and the "Better Regulation" agenda, the merger aims to reduce administrative complexity, eliminate redundancies, and streamline coordination among stakeholders. A shared legal basis under Euratom facilitates this consolidation. Post-pandemic fiscal pressures further motivate the rationalization of smaller programs to reduce administrative burden. The merger aligns with the New European Innovation Agenda's "joined-up governance" principle, promoting cross-agency collaboration over fragmented ("siloed") approaches. While requiring upfront coordination and stakeholder engagement, this move is expected to enhance the EU's efficiency in addressing interconnected challenges during the next MFF.
The Instrument will have two components: an external component complementing Global Europe and pursuing the objectives of the current INSC, and an internal component pursuing the objectives of the current JRC Decommissioning Programme.

### *Conclusions of the evaluation*

In the new MFF period, the main objectives and priorities of related activities remain largely the same. The external component of the INSC-D, pursuing the objectives and activities of the current European Instrument for International Nuclear Safety Cooperation (INSC) will continue the provision of support to third countries to be able to achieve and maintain a high level of nuclear safety and radiation protection; to implement a responsible and safe management of spent nuclear fuel and radioactive waste and to establish efficient and effective safeguards for nuclear material. Predicted and possible technical developments, such as an increased application of small modular reactors (SMRs) may

impact the implementation of the external cooperation, but do not affect the scope of the instrument.

The internal component of INSC-D, pursuing the objectives and activities of the current JRC NDWMP also continues carrying out the safe decommissioning of the Commission's nuclear installations at the following JRC sites: Geel (Belgium), Karlsruhe (Germany), Ispra (Italy) and Petten (Netherlands). Safe management of associated spent fuel, nuclear materials and radioactive waste is also an integral part of the programme, as well as dissemination of knowledge acquired during the process of decommissioning and radioactive waste handling to all EU Member States.

**The evaluation has found that the implementation of the proposed Instrument is feasible and based on the achievements of the previous and current Instruments allows achieving the envisaged impacts and outcomes.**

***Improvements and changes incorporated into the new Instrument***

- In line with the Commission's efforts to streamline and simplify the EU regulation system, two previously separate instruments were regrouped into a single one.
- Provisions of the new, unified Instrument ensure advanced flexibility in terms of programming approach, including the selection of aid modalities and eligibility criteria in alignment with Global Europe .
- In the case of the external component (INSC) with the aim
  - to follow recent developments in nuclear technology, it is ensured that supporting the safety aspects of the utilization of innovative nuclear reactors (such as SMRs) is included in the scope.
  - to be able to provide a fast and proper response in exceptional cases (including war situations), the scope of support to nuclear power plant (NPP) operators was extended, while keeping the general restrictions to avoid unfair competition

and as further contribution to the global efforts to protect the environment, an explicit reference to enhancing emergency preparedness and response capabilities, as well as for environmental remediation activities is included.
The internal component for JRC decommissioning introduces a concrete timeline for the negotiations with the involved Member States on the potential transfer of nuclear liability from the JRC to the host MS.

These changes were motivated by the feedback provided during the Mid-term review, recent technological developments in peaceful use of nuclear energy, recent and geopolitical changes in the past years and by efforts to improve the management and implementation of the Instrument by taking into account former recommendations and lessons learned.

***Recommendations***

The following recommendations were partly derived from the review of the proposal and partly from the synthesis of proposals formulated by the previous assessments. They aim to improve project implementation and monitoring activities.

*External component - INSC*

- Currently supporting NPP operators in third countries is allowed only in very special cases. A careful analysis of possible assistance options and potential benefits that may

result from a limited extension of the objectives, scope and technical support areas of INSC cooperation with nuclear power plant operators is advised.

*Internal component – JRC decommissioning*

- In the case of the internal component, Art. 2 3.2 of the proposal lists as one of the specific objectives "*the preparation of the optional transfer of the related nuclear liabilities from the JRC to the host Member States*". The realization of this objective depends on the willingness of the Member States hosting the JRC sites involved, i.e. Belgium, Germany, Italy and the Netherlands. In case of successful negotiation, the European Commission (EC) clearly expressed its financial commitment to fully cover the decommissioning costs occurring after the takeover by JRC.
- Art. 2 of the proposal states that "*negotiation between the Commission and the host Member State shall be concluded within the two first years*" of the next MFF. This means end of 2029 as deadline to reach an agreement with the involved Member States to consider the transfer of nuclear liability from the JRC.

***Intervention logic***

| | ***Instrument for International Nuclear Safety Cooperation and Decommissioning*** | |
|---|---|---|
| | ***External component (current INSC)*** | ***Internal component (current JRC Decommissioning Programme)*** |
| ***Current context Overall*** | 1. Overlapping funding instruments<br>2. Limited synergies<br>3. A rigid implementation framework with limited flexibility<br>4. Administrative burdens | |
| ***Specific*** | 1. Current unwarranted exposure of the general public and the environment to radiation<br>2. Need for higher and effective nuclear safety and radioactive waste management standards among countries all over the world, especially given the growing interest in nuclear energy<br>3. Continuous monitoring and reporting needs under international treaties | 1. Addressing the historical European Commission nuclear liabilities and implementing the decommissioning programme of obsolete facilities according to the best international practices and highest nuclear safety standards.<br>2. Initiating negotiations with host Member State on potential transfer of nuclear liabilities.<br>3. Producing, collecting and managing knowledge related to the European decommissioning programmes and disseminating to the EU stakeholders and beyond. |
| ***Objective of the proposal (overall)*** | 1. To optimise resources<br>2. To streamline management of complex cross-cutting objectives and challenges<br>3. To rationalise expenditures<br>4. To simplify and reduce administrative burdens<br>5. To increase flexibility | |
| ***Per component*** | To support the promotion of the highest level of nuclear safety, radiation protection, safe management of spent nuclear fuel and radioactive waste and the application of efficient and effective safeguards of nuclear materials in partner countries | 1. To protect the people and the environment against radioactive hazards.<br>2. To safely store radioactive wastes.<br>3. To produce and share knowledge management related to decommissioning of nuclear installations. |
| ***Specific objectives*** | 1. Effective nuclear safety culture and standards for radiation protection in non-EU countries and regions, comparable with those in the EU<br>2. Safe management of spent fuel and radioactive waste according to the best international standards<br>3. efficient and effective safeguards for nuclear material in partner countries. | 1. Safe dismantling of obsolete and disused nuclear facilities.<br>2. Proper management of spent nuclear fuels and radioactive wastes.<br>3. Knowledge product exchange platform with international stakeholders. |
| ***General Outputs*** | Thanks to the same legal basis and common objectives, the current instrument for international nuclear safety cooperation (INSC) managed by DG INTPA and the decommissioning programme managed by JRC are merged. | |
| ***Outputs*** | Nuclear safety infrastructure, spent fuel and radioactive waste management in partner countries are restored and strengthened. | Strengthened nuclear safety and protection of people and the environment. |
| ***Risks*** | 1. Inadequate upfront coordination<br>2. Lack of stakeholders buy-in<br>3. Confusion and difficulties in applying specificities of each component | |

| | | |
|---|---|---|
| | 1. Unforeseen changes in the geopolitical situation of partner countries<br>2. Political or economic tensions with the EU<br>3. Change in energy policy of partner countries with lost interest in nuclear<br>4. Lack of sufficient human and technical resources | 1. Delays in obtaining decommissioning license delivered by the host Member State nuclear regulatory authority.<br>2. Lack of experienced and knowledgeable human resources to implement the programme.<br>3. Lack of appropriate financial means.<br>4. No time flexibility for the commitment of the budget (annuality principle). |

# 1. INTRODUCTION: SCOPE, POLITICAL AND LEGAL CONTEXT

## 1.1. SCOPE OF THE REPORT

The current report contains the ex-ante evaluation of a Commission proposal for the following new regulation[1]:

*Proposal for a Regulation of the Council establishing the Instrument for Nuclear Safety Cooperation and Decommissioning for the period 2028-2034, DG INTPA and DG JRC, 3 September 2025.*

The new regulation is planned to enter into force in 2028 with the start of the next MFF, and it will be referred to as Regulation (Euratom) INSC-D in the current report.

The new regulation proposes the improved continuation of the current European Instrument for International Nuclear Safety Cooperation (INSC), in combination with the decommissioning activities of JRC.

The proposed Regulation (Euratom) INSC-D formally merges the EC activities carried out in the field of international nuclear safety cooperation with the JRC decommissioning work into a single Instrument. This merged proposal replaces Regulations (Euratom) Nº 2021/948 and 2021/100 by a single Regulation.

The European Commission in the framework of the next Multiannual Financial Framework and following the Better Regulation wishes to undertake an exercise of simplification which would eliminate overlapping processes and potential administrative burdens by bringing together Programmes which may require similar technical and/or logistical support. The merger is made possible thanks to the same legal basis shared by the INSC and the Decommissioning programme (Euratom), differently from other instruments for which a potential merger could have been instead envisaged. The current MFF simplification efforts would aim at achieving reduced complexity both within the Union (for better transparency and coordination) as well as for stakeholders (agencies, Member States, contractors) which would face a simpler regulatory and financial framework. In a post-pandemic context with competing priorities, the Commission also seeks to rationalize expenditures by consolidating smaller programs. Finally, merging should ensure resource optimisation against a "siloed" approach across agencies, aligning with the principle of joined-up governance advocated in the New European Innovation Agenda. Despite requiring significant upfront coordination and stakeholder buy-in, such a move should strengthen the EU's ability to manage complex, cross-cutting challenges efficiently during the next Multiannual Financial Framework.

The external activities constituting the external component of the Instrument will be complementary to the proposed Global Europe Instrument[2], referred to as Regulation (EU) GEI in the present report. The JRC decommissioning activities constituting the internal component of the Instrument are related to activities under direct responsibility of the Commission and inside the Euratom Community.

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[1] Proposal for a Council (Euratom) Regulation establishing the Instrument for Nuclear Safety Cooperation and Decommissioning for the period 2028-X, DG INTPA and DG JRC, 3.09.2025

[2] Proposal for a) Regulation establishing Global Europe 16.07.2025, COM(2025) 551 final

The present evaluation report is based on evidence on the performance of related previous and ongoing instruments / activities. In particular, the evaluation report compares the new instrument with the previous ones and addresses specific changes, their intended improvements and added value. Due to the different nature of the two components, the external and internal components are discussed separately, in dedicated subchapters.

## 1.2. POLITICAL CONTEXT

### *1.2.1. Political context of the new Regulation (Euratom) INSC-D*

On July 16, 2025, the European Commission adopted its proposal for the 2028-20348 Multiannual Financial Framework[3]. Ahead of the proposal, the Commission has consulted with the various EU stakeholders and EU Member States. The Communication outlines the basic principles of the next MFF and exposes currently discernible policy and budgetary challenges potentially influencing its contents. Some of these challenges result from global political or economic developments, but many of them originate from internal EU expectations and political debates.

Programme evaluations have shown that the complex EU funding architecture is a factor hindering the impact of the EU budget due to administrative burden. This initiated a simplification leading to a simplified INSC-D, where the activities related to international nuclear safety cooperation and JRC decommissioning are to be merged into a single Instrument.

The Better Regulation (BR) Toolbox[4] provides guidelines for burden reduction without jeopardizing benefits which translates in the next MFF exercise into the rationalisation of EU instruments, in order to reduce their number and to streamline their performance. Simplification of the two instruments, is aimed at reducing burden for EU administrations, enhancing synergy and communication of Euratom activities with EU member states. In addition to this rationalisation intention of the BR, the EC proposed a significant structural reform of the new MFF by merging funds to simplify their management and to better link the spending with the achievement of specific objectives.

The subject of the present report, the Regulation (Euratom) INSC-D has been formulated in line with the above considerations, as it merges two previously detached instruments into a single one.

### *1.2.2. Political context of the external component – INSC*

The international cooperation in the area of nuclear safety, radioactive waste management, radiation protection and nuclear safeguards is technical in nature but has several political implications. The prime benefit of international cooperation in nuclear safety is the increase in safety of the beneficiary partner country, for the workers, the environment and the population in general. Proper radioactive waste management ensures that radioactive material remains under (regulatory) control as long as it can harm the environment and the public. A benefit of international cooperation in the area of nuclear safeguards is the

[3] Proposal for a Council Regulation laying down the multiannual financial framework for the years 2028 to 2034, COM(2025) 571 final of 16.7.2025

[4] Better regulation toolbox – July 2023 Edition, European Commission, Tool 2 "REFIT: Reviews of existing legislation (meaning both the evaluation and any subsequent revisions) should seek opportunities to simplify and reduce administrative burden for people, businesses and administrations"

prevention of uncontrolled dissemination of sensitive technology which reduces the risk of malicious use of nuclear and radioactive material and technology. In addition, the general context of any external cooperation activity leads to easier connections and cooperation at all commercial and political levels. The export of European values and regulation systems as embedded in the Euratom Acquis helps to ensure a level playing field in commercial transactions that are impacted by those regulations.

The continued improvement of living standards in many partner countries will be accompanied with advanced technological expertise, including the peaceful use of nuclear energy for medical and industrial purposes.

Further considerations include:

- The basic objectives of the current European Instrument for International Nuclear Safety Cooperation (INSC) are supporting third countries to achieve and maintain a high level of nuclear safety, radiation protection, radioactive waste and spent fuel management and the application of efficient and effective safeguards. Those objectives remain valid, throughout the external component of the new INSC-D Instrument for the next MFF.
- The INSC formulation is based on more than 30 years' experience in providing nuclear safety assistance with sustainable results to many partner countries.
- The work by the Community through the INSC in the nuclear safety cooperation arena is acknowledged internationally.
- In 2017, the 7th IAEA Convention on Nuclear Safety Review Meeting officially acknowledged the added value of INSC by stating that "*the implementation of the Instrument for Nuclear Safety Cooperation Program for assisting non-EU countries was identified as a good practice*"[5].
- The continued Russian war of aggression against Ukraine creates situations rarely experienced before, such as military actions directed against civilian nuclear facilities. These situations threaten nuclear and radiation safety, and the mitigation of their consequences needs IAEA-coordinated international actions with the EU as potential main donor and service provider.
- A hypothetical discontinuation of the INSC would create a significant hiatus in the international arena of nuclear safety assistance to third countries, as the European Union via INSC significantly contributes to increasing nuclear safety in line with Community best practice.
- Citizen and the environment in present and potential future partner countries benefit from a continued instrument as for many of them INSC is an important channel to obtain professional assistance in nuclear and radiation safety, as well as safeguards issues in line with Euratom Acquis.

In conclusion, the continuation of the INSC is motivated by several important political factors, while tangible, justified contraindications do not seem to be available.

[5] Rapporteur's Report for Euratom of 29 March 2017 in the 7th Review Meeting under the Convention on Nuclear Safety

The Commission has concluded an Open Public Consultation on the EU funding for external action under next MFF[6]. As far as the INSC is concerned, the results of the Open Public Consultation[7] were the following:

*About **50%** of the respondents of the OPC were positive about the objectives of the INSC, i.e. agreed to a large extent or somewhat with the INSC objectives[8]. Only **13%** of the respondents were completely against it and **27%** did not have a definite (either positive or negative) opinion.*

The above results indicate that a majority of the respondents support the provision of EU assistance to third countries in the area of nuclear and radiation safety and safeguards.

### *1.2.3. Political context of the internal component – JRC decommissioning*

The Euratom Treaty[9], under its Article 8, establishes the Joint Nuclear Research Centre (now Joint Research Centre – JRC) responsible for implementing nuclear research programmes and other tasks assigned by the Commission.

The Joint Research Centre owns nuclear research facilities in four Member States in Geel (Belgium), Karlsruhe (Germany), Ispra (Italy) and Petten (The Netherlands). Some of the facilities are shut down while others still operate.

The JRC is responsible for the safe radioactive waste and spent fuel management aligning to the corresponding European Directive[10]. The European Commission is liable for the decommissioning of the disused nuclear installations according to decommissioning plans submitted to the nuclear safety authorities of the host Member States.

## 1.3. LEGAL CONTEXT

The legal basis of the external component of Regulation (Euratom) INSC-D stems from Article 203 of the Treaty establishing the European Atomic Energy Community[11]. Article 203 is a generic provision of the Treaty, specifying the course of required legal and administrative actions in those cases when the Euratom Treaty does not have all the necessary powers, but an appropriate Community action was deemed necessary.

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[6] Open Public Consultation, EU's next long-term budget (MFF) – EU funding for external action, 2025. https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/14522-EUs-next-long-term-budget-MFF-EU-funding-for-external-action_en

[7] Impact Assessment Report accompanying the document Proposal for a Regulation of the European Parliament and of the Council establishing Global Europe. 16.7.2025, SWD (2025) 552 final

[8] These objectives were: support the strengthening of nuclear safety, radiation protection, radioactive waste management and nuclear safeguards with beneficiary countries located across the EU neighbourhood region and beyond.

[9] Consolidated version of the treaty establishing the European Atomic Energy Community (2016/C 203/01), Official Journal of the European Union, 17.6.2016, C 203

[10] Council Directive 2011/70/Euratom of 19.7.2011 establishing a Community framework for the responsible and safe management of spent fuel and radioactive waste

[11] Consolidated version of the treaty establishing the European Atomic Energy Community (2016/C 203/01), Official Journal of the European Union, 17.6.2016, C 203

### *1.3.1. Legal context of the ex-ante evaluation*

By definition an ex-ante evaluation is a staff working document of the Commission services that is linked to a Commission proposal. The current report accompanies the proposal for the new Regulation (Euratom) INSC-D.

The basic aim of the present ex-ante evaluation is to present the different policy options and assess the new merger proposed through the Regulation (Euratom) INSC-D, combining the current European Instrument for Nuclear Safety Cooperation (INSC)[12] and the decommissioning activities[13] presently carried out at several nuclear installations of the European Commission. In the current MFF the INSC is managed by DG International Partnerships (INTPA), while decommissioning of EC nuclear facilities is performed under the management of Joint Research Centre (JRC).

The current assessment report was written with the aim to satisfy the requirements of the Financial Regulation and the BR Toolbox and to present the ex-ante evaluation for the Regulation (Euratom) INSC-D proposed by the EC for the MFF period 2028-2034.

### *1.3.2. Legal context of the external component – INSC*

In addition to IAEA Fundamental Safety Principles and the associated Safety Standards, the global legal framework for nuclear and radiation safety is provided by high level IAEA conventions (CNS[14], the Joint Convention[15] and the Vienna Declaration[16]), signed by all EU Member States, as well as Euratom. At the Community level the elements of the above framework are consistently enforced by legally binding Directives, in particular the Basic Safety Standards (BSS)[17], the Nuclear Safety Directive (NSD)[18], and the directive for the responsible and safe management of spent nuclear fuel and radioactive waste[19].

According to periodically renewed Commission decisions (cf. the Council Regulations establishing INSC for the preceding MFF periods), the Euratom Community systematically applies INSC as an efficient tool to support this global framework in achieving and maintaining a high level of nuclear safety, radiation protection and efficient safeguards worldwide. This role of INSC in transferring the Euratom regulation and best practices has also been confirmed by the European Nuclear Safety Regulators Group (ENSREG) in its Position Paper[20] on the INSC.

The continued operation of the INSC can be considered as a commitment undertaken by the Euratom Community. The commitment is deductible from the global and the

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[12] Council Regulation (Euratom) 2021/948 of 27 May 2021 – European Instrument for International Nuclear Safety Cooperation complementing the NDICI – GE on the basis of the Euratom Treaty

[13] Council Regulation (Euratom) 2021/100 of 25 January 2021 establishing a dedicated financial programme for the decommissioning of nuclear facilities and the management of radioactive waste

[14] Convention on Nuclear Safety, INFCIRC/449, IAEA, 5.7.1994

[15] Joint Convention on the safety of spent fuel management and on the safety of radioactive waste management, INFCIRC/546, IAEA, 24.12.1997

[16] Vienna Declaration on nuclear safety, INFCIRC/872, IAEA, 18.2.2015

[17] Council Directive 2013/59/Euratom of 5.12.2013 laying down basic safety standards for protection against the dangers arising from exposure to ionising radiation

[18] Council Directive 2009/71/Euratom of 25.6.2009 establishing a Community framework for the nuclear safety of nuclear installations and its amendment Council Directive 2014/87/Euratom of 8.7.2014

[19] Council Directive 2011/70/Euratom of 19.7.2011 establishing a Community framework for the responsible and safe management of spent fuel and radioactive waste

[20] ENSREG – INSC Position paper (2014-26)133, https://www.ensreg.eu/international-cooperation

Community's legal framework, and it plays an important role in spreading the high level nuclear and radiation safety culture prevalent in the EU worldwide. The continuation of INSC during the next MFF is therefore equivalent to continuing the fulfilment of EU commitments stemming from the above international legal framework.

*1.3.3. Legal context of the internal component – JRC decommissioning*

In January 2021, the European Commission tabled a follow-up Council Regulation to the Nuclear Decommissioning Assistance Programme (NDAP) supporting the decommissioning of Soviet-designed nuclear reactors in Bulgaria, Lithuania and Slovakia.

Two Council Regulations (Euratom) 2021/100[21] and 2021/101[22] established a dedicated financial programme for the decommissioning of nuclear facilities and the management of radioactive waste for the Kozloduy Programme, Ignalina Programme, Bohunice Programme and JRC Programme of decommissioning and radioactive waste management (D&WM), which, until 2021, was funded separately, according to sites. Both establish knowledge sharing as a core component of the NDAP-s. The aspect of the two NDAP Regulations (the Regulations) is their provision of financial support not only for the Kozloduy (BG), Bohunice (SK) and Ignalina (LT) programmes but also for the Joint Research Centre's (JRC).

## 2. SUMMARY OF THE CURRENT INSTRUMENT AND LESSONS LEARNT, INCLUDING EVIDENCE ON THE PERFORMANCE OF RELATED PROGRAMMES

### 2.1. EXTERNAL COMPONENT - INSC

*2.1.1. Rationale of the current instrument*

Maintaining a high-level nuclear safety, as well as ensuring adequate radiation protection of the environment, the public and the personnel exposed to occupational radiation has always been a priority for the Euratom Community.

History has shown that major nuclear accidents may have transboundary impacts and the radioactive contamination may disperse over several countries. Therefore, Euratom consistently pursued nuclear safety cooperation with third countries, especially with those located in the European Neighbourhood Area, but also without geographical limits.

The EU nuclear safety assistance to non-EU countries began in 1991, when the TACIS programme was established with the aim to help the Soviet successor states manage their nuclear legacy and improve the safety of their nuclear installations. Since 2007 the fundamental tool for this international assistance is the Instrument for Nuclear Safety Cooperation (INSC). After more than 30 years of successful operation, today the INSC can be considered as the primary EU instrument for nuclear safety cooperation with third countries. INSC activities and projects are well aligned with those managed by other important actors of the international nuclear safety assistance arena. INSC has close cooperation with the IAEA and harmonizes its work with several EU institutions, directorates and other organisations (e.g. EEAS, DG ENER, JRC, ENSREG and EBRD), as well as the EU Member States.

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[21] Council Regulation (Euratom) 2021/100 of 25 January 2021 establishing a dedicated financial programme for the decommissioning of nuclear facilities and the management of radioactive waste, and repealing Regulation (Euratom) No 1368/2013

[22] Council Regulation (EU) 2021/101 of 25 January 2021 establishing the nuclear decommissioning assistance programme of the Ignalina nuclear power plant in Lithuania and repealing Regulation (EU) No 1369/201

In 2017, the 7th IAEA Convention on Nuclear Safety Review Meeting officially acknowledged the added value of INSC by stating that "the implementation of the Instrument for Nuclear Safety Cooperation Program for assisting non-EU countries" was identified as a "good practice"[23].

### *2.1.2. Main elements of the current instrument*

A major element of INSC cooperation with non-EU countries is the development of effective regulatory frameworks via technical support to regulatory bodies and their technical safety organisations (TSOs), especially in countries embarking on new nuclear build. In addition to enhancing nuclear safety, the main technical areas comprise the safe management of spent nuclear fuel and radioactive waste, nuclear safeguards and radiation emergency preparedness. INSC cooperation projects aim to accomplish sustainable knowledge transfer to recipient countries by promoting EU safety standards, state-of-the-art procedures and methods, as well as EU good practice.

In addition to worldwide activities carried out partly in cooperation with the IAEA, current INSC projects mainly focus on the following regions and countries: candidate countries, Eastern- and Southern EU Neighbourhood, Africa, Middle East, Central Asia, the ASEAN, Western Balkan countries[24].

Countries currently involved in nuclear safety and radiation protection cooperation projects are: Armenia, the ASEAN countries[25], Egypt, Iran, Jordan, Morocco, Nigeria, Türkiye, South Africa and Ukraine.

Countries currently involved in radioactive waste management and remediation projects are: Armenia, Georgia, Iran, Iraq, Kyrgyz Republic, Tajikistan, Türkiye, Ukraine, Uzbekistan and Western Balkans[26].

Countries currently involved in safeguards assistance projects are: African countries through AFCONE, Iran and candidate countries.

In addition to implementing projects in the above three main technical areas, the INSC also supports related education with the European Nuclear Education Network (ENEN) and European universities (e.g. Milan Politecnico, Université Côte d'Azur)

The current INSC programme can be considered as a direct continuation of the previous one, although some new developments are observable.

The most important change is manifested in the scope of activities related to Ukraine, where INSC had to deal urgently with consequences of the Russian war of aggression. These consequences affected mainly the Zaporizhzhia NPP and the Chornobyl Exclusion Zone, where military actions caused considerable damages and losses in the facilities. The Community had to react rapidly and resiliently, to be able to provide help to the Ukrainian partner organizations to restore nuclear and radiation safety in the facilities affected. These actions were coordinated with the IAEA, the organisation continuously monitoring the nuclear safety status of the potentially affected Ukrainian nuclear installations.

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[23] Rapporteur's Report for Euratom of 29 March 2017 in the 7th Review Meeting under the Convention on Nuclear Safety

[24] Albania, Bosnia & Herzegovina, Croatia, Kosovo*, North Macedonia, Montenegro and Serbia

[25] Indonesia, Vietnam, Laos, Brunei, Thailand, Myanmar, the Philippines, Cambodia, Singapore, Malaysia and Timor-Leste

[26] Albania, Bosnia & Herzegovina, Croatia, Kosovo, North Macedonia, Montenegro and Serbia

Another feature of the INSC2021-2027 is the implementation of the Joint Comprehensive Plan of Action (JCPoA) which was signed in 2015 by China, France, Germany, Russia, the UK, the USA and the European Union. The basic aim of the JCPoA was to ensure the exclusively peaceful nature of Iran's nuclear programme by international monitoring and control. After the JCPoA took effect in 2016, the European Commission implement part of the Annex III, which covers civil nuclear cooperation through funding of the INSC.

Another development in the INSC programme is the moderate but steady inclusion of African countries into the INSC scope, with focus on nuclear safety and safeguards. It is likely that the number of INSC projects with African countries will further increase in the future, as nuclear energy with a key interest in cost-efficiency through modularisation/SMRs, is one of the candidates to solve the energy supply problems of the continent. The application of radiological technology for industrial and medical applications is expected to continue to rise with the related development in necessary competences.

It can be finally stated that the current INSC programme is an organic continuation of the previous activities, building on positive methodological and project implementation experience, as well as effectively tackling new challenges.

### *2.1.3. Ex-post evaluation of the 2014-2020 INSC period*

In December 2021 an independent evaluation report[27] was issued, containing a review of the status of cooperation carried out under the Instrument for Nuclear Safety Cooperation from the beginning of 2014 until the end of 2020. This report also used inputs from an external Mid-Term Review (MTR) of INSC2014-2020, performed as part of a common evaluation of nine EU External Financing Instruments over the period[28]. In the present report the details and conclusions of this MTR are not discussed, because they are mostly in line with those outlined in the ex-post evaluation.

According to the evaluation, the implementation of the Instrument was successfully carried out in the investigated period. The objectives of the Instrument were well aligned with EU policies and priorities and were relevant to the needs and priorities of the partners. It effectively contributed to enhancing nuclear safety and radiation protection and improved safeguards in the partner countries. The Instrument also helped the Beneficiaries to harmonize related national operations and practice with the state-of-the-art international standards and good European practice. INSC2014-2020 had established cooperation with a large number of partner countries in several world regions and the allocated budget had been fully committed.

The report also formulated recommendations for improving the implementation and outcomes of the nuclear safety cooperation with third countries. The most important ones were as follows:

- **Time between a cooperation request and the implementation / completion of the related project must be reduced significantly.** This time often exceeds 10 years, and such a long project implementation time is obviously not compatible with the intention of the INSC Regulation calling for "timely" interventions

[27] Evaluation of the INSC 2014-2020, Expert Facility for the INSC, Contract Nº 2020/419-010, LDK Consultants Global EEIG, December 2021

[28] External evaluation of the INSC (2014 - mid 2017), GDSI Consortium, June 2017

- **The implementation of INSC projects by the IAEA should be limited to those areas where the IAEA has unique expertise and competence.** Currently the cooperation with the IAEA is effective and institutionalized, but in the future outsourcing activities to the IAEA should focus on areas where the IAEA brings added value to the process or is able to implement the tasks in a more cost-effective manner.
- **Assessment of potentials of cooperation with NPP operators.** Legally the NPP operators have an overall and non-transferable responsibility for the nuclear safety of the plant they operate, therefore it would be sensible to increase the cooperation with these organizations in the future. The basic aim of cooperation should be enhancing nuclear safety culture.

The indicators show that by the end of the MFF period the objectives of the Instrument were achieved and in all areas the targets were overachieved.

*2.1.4. Ex-ante impact assessment for the 2021-2027 INSC period*

In 2018, during the preparations for the 2021-2027 MFF the Commission prepared the impact assessment for four Regulation proposals, including the proposal for the European Instrument for Nuclear Safety (INSC2021-2027)[29]. The four proposals were analyzed together, in order to provide a comprehensive picture of the planned EU external action. The 2021-2027 MFF merged several external instruments into a broad instrument (Neighbourhood, Development and International Cooperation Instrument, NDICI), but the INSC was kept as a separate, complementary instrument, because of its different legal basis under the Euratom Treaty. The INSC budget for the 2021-2027 MFF was set as EUR 300 million, compared to the EUR 325 million allocated to the previous 2014-2020 period.

With respect to the final placement of the INSC, the impact assessment explains that nuclear activities are the competence of the Euratom Treaty, and the INSC has its legal basis in Article 203 of the Euratom Treaty[30].

**Note**: One may ask whether the above legal situation influences the current Regulation (Euratom) INSC-D proposal merging INSC with JRC decommissioning activities. The JRC was created by the Euratom Treaty (see Art 8 of the Treaty on the establishment of the Joint Nuclear Research Centre), therefore the nuclear facilities of the JRC are under Euratom jurisdiction, including permanently shut down, but not yet decontaminated and decommissioned facilities. Relevant national nuclear safety regulations – corresponding to the Member State where the specific JRC site is located – are also of legal force, but these are harmonized with the Euratom regulations. Therefore, in this respect no legal conflict can be identified in the new proposal, merging the two activities into a single Instrument will not violate Euratom regulations, on the contrary, it will contribute to simplification and rationalization efforts by the European Commission exploiting the same legal basis of the two components.

A special value of INSC is that it allows the Community to constructively act at a global level in matters related to nuclear safety and radiation protection cooperation with third countries, after having consulted with G7 countries and EU Member States. This special position effectively helps keeping the EU as a world leader in nuclear safety and facilitates

[29] Impact assessment accompanying the "Proposal for a Regulation (EU) establishing a European Instrument for Nuclear Safety complementing the NDICI, SWD (2018) 337 final, Brussels, 14.6.2018

[30] Consolidated version of the treaty establishing the European Atomic Energy Community (2016/C 203/01), Official Journal of the European Union, 17.6.2016, C 203

the engagement in policy level dialogue with the potential beneficiaries. In specific cases it may even trigger a political dialogue in the wake of nuclear safety negotiations.

The final conclusion of the evaluation is that INSC activities should continue also in the 2021-2027 period, under the umbrella of a specific Instrument with a Euratom legal base.

*2.1.5. Mid-term review of the 2021-2027 INSC period*

In March 2024 (about mid-term of the 2021-2027 MFF), commissioned by the European Commission, a comprehensive evaluation of the EU external financing instruments (EFIs) was prepared by a consortium led by Particip Gmbh[31]. The associated reports comprise the results of two distinct exercises: 1) final evaluation of the EFIs under the MFF covering the period 2014-2020 and 2) the mid-term review (MTR) of the Instrument under the MFF 2021-2027.

The EU external action provides assistance to non-EU partner countries in many areas and it is predominantly funded by means of dedicated EU budget headings in the MFFs. These so-called External Financing Instruments (EFIs) represent the prime method for financing of the EU external action.

Under the MFF 2014-2020 period several independent EFIs functioned under the Global Europe heading. When designing the MFF covering 2021-2027, the EC decided that streamlining of the instruments was necessary in order to ensure better recognition of changed geopolitical realities and better management of related programmes (see Table 1 in Chapter 4.1.3).

When embarking on the MFF 2021-2027 period the EU EFI architecture underwent a significant simplification as seven previously separate instruments had been placed under the Neighbourhood, Development and International Cooperation Instrument – Global Europe (NDICI-GE)[32]. Beside NDICI-GE, only the Instrument for Pre-Accession Assistance III (IPA III) remained separate (covering the Western Balkans and Türkiye), together with two additional special-purpose instruments: the Decision on the Overseas Association, including Greenland (DOAG) and the European Instrument for International Nuclear Safety Cooperation (INSC).

The most important conclusions of the report on the INSC 2021-2027 (abbreviated as INSC-III) MTR are as follows (note that "critical" remarks are written in framed text):

- The new INSC Regulation[33] has slightly adjusted the scope and objectives of the Instrument to emphasise transparency and cooperation with partner countries.
- Considering its main objectives (e.g. promoting nuclear safety culture in third countries, etc.) INSC is fully aligned with EU political principles and priorities.
- The ability to define common objectives with the partner countries was identified as an area of weakness.

[31] Evaluation of the European Union's External Financing Instruments (2014-2020 and 2021-2027), Volume I: Synthesis Report and Volume II: Annexes, Particip GmbH Consortium, March 2024

[32] European Union's external financing instruments (2014-2020 and 2021-2027), EU External Financing Instruments Evaluation, Factsheets, Particip GmbH Consortium, March 2024

[33] Council Regulation (Euratom) 2021/948 of 27 May 2021 – European Instrument for International Nuclear Safety Cooperation complementing the NDICI-Global Europe on the basis of the Euratom Treaty

- The streamlining of instruments resulted in a simplified EFI structure and more unified programming processes, using e.g. unified MIP templates.
- The transition between the previous and new EFIs was not seamless, because due to time pressure in 2021 and capacity constraints, the EU prioritised progress in programming and delivery over the introduction of internal institutional changes. External circumstances (e.g. final phase of COVID-19) further compounded the situation already stressed by high staff turn-over and lack of sufficient resources.
- There is a detectable trend to plan and implement fewer, but larger actions and projects. It is also traceable for INSC, because since 2014 the number of contracts steadily decreases. Often a large, well-defined assistance project with appropriate budget can achieve more than several small, frittered actions, each with a much smaller financial allocation.
- The INSC results framework remained principally output-oriented, in spite of repeated efforts to introduce an outcome- and impact-oriented framework.
- The INSC has repeatedly proven its high flexibility through rapidly initiated, adjusted, stepped-up or suspended cooperation with Belarus, Iran, and especially Ukraine, thanks to fast budget allocations, and agile coordination.
- The report states that there could be possibilities for enhancing the coherence of INSC with IPA III, NDICI-GE and vice versa.

Summary statements of the evaluation:

- There is a strong continuity between the INSC-II and INSC-III Regulations: despite some new elements in INSC-III (e.g. striving for greater nuclear transparency in the partner countries), the basic logic of the Instrument and the modes of operation remained practically unchanged
- It was confirmed that keeping INSC-III as a separate instrument – due to its very specialised, technical nature and its different legal basis – was an adequate decision.
- As a worldwide instrument with a global outreach, INSC positions the EU as a leading actor in nuclear safety and safeguards cooperation, both through bilateral partnerships and as part of the international architecture.
- INSC allows the EU to engage in policy-level dialogue with partner countries, particularly in the Neighbourhood region, where nuclear safety issues may potentially have considerable implications for EU Member States and the security of European citizens.

Data between 2021 and 31 December 2024 show that pro-rata fulfilment of the indicators is "on track" and in some cases overachievement is observable.

### 2.2. INTERNAL COMPONENT – JRC DECOMMISSIONING

#### *2.2.1. Rationale of the current Nuclear Decommissioning and Waste Management Programme (NDWMP)*

The Commission is committed to implement the EU legislation related to decommissioning of nuclear facilities and nuclear waste management.[1]

The Nuclear Decommissioning and Waste Management Programme of the European Commission implemented by the Joint Research Center (JRC) addresses the nuclear legacy of Commission's past nuclear research to reduce radiological risk and protect people and the environment within the Union.

[1] Council Directive 2011/70/Euratom of 19.7.2011 establishing a Community framework for the responsible and safe management of spent fuel and radioactive waste

### *2.2.2. Main elements of the current NDWMP*

The NDWMP pursue the decommissioning of the Commission's nuclear installations at the JRC sites, namely JRC-Geel in Belgium, JRC-Karlsruhe in Germany, JRC-Ispra in Italy and JRC-Petten in the Netherlands, in line with the needs identified in the respective decommissioning plans and safely manages the associated spent fuel, nuclear material and radioactive waste. Activities are carried out in accordance with the national law of the host Member State.

The NDWMP has a provision to negotiate the transfer of the related nuclear liabilities from the JRC to the host Member State. This optional transfer shall not be imposed on any host Member State and shall be subject to a mutual bilateral agreement concluded between the Commission and the host Member State. That mutual bilateral agreement shall stipulate that all costs of the decommissioning of the Commission's nuclear installations at the JRC sites and storage of the associated radioactive waste are to be paid by the Union and shall fully comply with Directive 2011/70/Euratom

Finally, the JRC shall develop ties and exchanges among Union stakeholders on nuclear decommissioning, with a view to ensuring the dissemination of knowledge and the sharing of experience in all relevant areas, such as regulation and training, and developing potential Union synergies.

### *2.2.3. Mid-term Review of the 2021-2027 NDWMP*

The JRC Nuclear Decommissioning and Waste Management Programme (NDWMP) underwent a mid-term evaluation in 2024. The findings and recommendations of the study[34] are as follows:

***Findings***

a. Significant progress in stakeholder management has been seen at JRC sites;

b. Safe retrieval, treatment and storage of historical wastes has progressed at JRC Ispra and Petten;

c. Due to the time-dependent nature of many costs, project delays are synonymous with cost increase although the Earned Value Management (EVM) monitoring indicators show that the programme is overall financially efficient;

[34] Support to the interim evaluation of the programmes for the decommissioning of nuclear facilities and the management of radioactive waste, DG ENER, Revised Final Report and Annexes, April 2025

d. The governance framework is fit for purpose and adapted to the objectives of the NDWMP;

e. The implementation of the NDWMP is coherent with the EU acquis as well as EU and national legislation and policies;

f. Knowledge products have been produced in line with targets across all NPP sites;

The knowledge Management (KM) has encouraged collaboration and the sharing of information among the three NDAP programmes. Recommendations:

a. Anticipate and prepare the licensing demands through early engagement of the regulator to limit eventual impact of the programme's delivery;

b. Improve the procurement organisational capacities;

c. Develop and implement monitoring indicators to measure the impact of the use of the knowledge products developed within the NDWMP

*2.2.4. Internal Audit of the NDWMP*

The Internal Audit Service of the JRC performed an audit of the NDWMP also in 2024 and provided six recommendations to improve the implementation of the programme. The JRC submitted an Action Plan that was agreed and implemented to address all issues:

1. JRC oversight arrangements (important);
2. JRC internal organisation of NDWMP responsibilities (very important);
3. Decommissioning plans for the JRC sites (very important);
4. Cost estimates for decommissioning the JRC nuclear sites (very important);
5. NDWMP budget flexibility needs (very important);
6. Human resources planning and allocation (important).

Since the inception of the Programme in 2021, the JRC achieved the following main practical results (non-exhaustive list):

1. Clean-up of bituminised drums retrieval facility work yard (these are metallic drums containing radioactive wastes stored underground since more than 40 years in poor conditions that must be retrieved, treated and finally safely stored);
2. Completion of the clean-up operations in LCSR (Italian acronym for Hot Laboratory for Studies and Research including a hot cell suite). The decommissioning of the facility started in 2024 and is on-going;
3. Continuous production and sharing of decommissioning knowledge products from NDAP operators and JRC (a total of 43 produced by the end of 2024);
4. Completion of refurbishment of Interim Storage Facility and start of operation in 2022 (state-of-the-art building to safely store radioactive waste packages);
5. Signature of a contract for the alienation of a significant fraction of the inventory of Ispra fresh nuclear material to Czech Republic (70% of the Ispra inventory);
6. Production of the necessary licensing documentation;
7. Donation of a significant fraction of the components of the cyclotron;
8. Treatment of a first batch of super-compactable radioactive waste;

9. Completion of the refurbishment of the waste characterisation system for radioactive waste;
10. Amendment and restart of the contract for the recovery of the Roman Pits (these are 15 cylindrical underground concrete structures containing about 350 tons of radioactive waste. Some of them are partially submerged by groundwater and artificial radionuclides have been recently detected in the surrounding soil calling for the retrieval, treatment and safe storage of the Roman Pits);
11. Commissioning of the retrieval facility for bituminised drums;
12. Tender for the construction of the new grouting station that will be used for the reconditioning of radioactive wastes to be safely stored;
13. Framework contract for the supply of qualified final waste package for low level radioactive waste;
14. Refurbishment of the cold wing of the cyclotron to host site laboratories;
15. Recovery, treatment, conditioning, evacuation and storage of the historical radioactive wastes at the four JRC sites.

Before the completion of the current Multiannual Financial Framework in 2027, the JRC expects to finalise the following activities:

1. Delivery of Ispra non-irradiated nuclear materials to Czech Republic corresponding to the alienation of 70% (in mass) of the total Ispra nuclear material inventory;
2. Delivery and treatment of the first batches of bituminised drums and metallic wastes;
3. Start of the building of the grouting station;
4. Start of the Gioconda project;
5. Start of the recovery of the remaining Roman Pits;
6. Start of the decommissioning of Building 10 and its technical annex at JRC Geel;
7. Assessment and update of the decommissioning plan for the four JRC sites;
8. Start of the discussion with Italy and the Netherlands on the potential transfer of the JRC nuclear liabilities.
9. Refurbishment of the 41i storage building
10. Refurbishment of the FARO building
11. Delivery of the cutting machine
12. Start of the contract for the LLW liquid effluents treatment
13. Start of the decommissioning of the former liquid effluent facilities

## 3. ISSUES TO BE ADDRESSED AND THE ADDED VALUE OF EU INVOLVEMENT

### 3.1. ISSUES AND CHALLENGES TO BE ADDRESSED

In the current context, the European Commission has carefully analysed the economic and administrative burden of having many, disjoint and sometimes overlapping instruments. Programmes' evaluations of current MFF's instruments have highlighted inefficiencies, as well as limited synergies, limited flexibility and a rigid implementation framework for

many instruments, pushing the Commission to reflect on strategies for simplification and red tape reduction as outlined in Von der Leyen Political Guidelines. In the case of the JRC Decommissioning Programme and the INSC, there is no overlap in terms of content as the activities covered by these current Instruments are of different nature (addressing respectively internal and external), yet their common safety objectives, legal basis and technical work have motivated the merger.

***The main issue addressed by the INSC***

If compared to previous INSC periods, the motivation of the Euratom Community for the establishment and operation of such an Instrument remains essentially unchanged: by promoting a high level of nuclear safety and radiation protection in third countries – especially in the European Neighbourhood, but also globally – the Instrument ultimately contributes to ensuring the safety and security of EU citizens and helps to protect the environment from the detrimental effects of hypothetical nuclear accidents happening in non-Community countries. Naturally, this projected positive effect also comprises the citizens and environment in the partner countries and their neighbours.

***Means to achieve main objectives***

The Community is one of the global leading actors in the safe utilization of nuclear energy and it has ample experience in operating nuclear facilities for electricity production, research and medical isotope production purposes. In addition, the Union has a rigorous and technically well-founded legal system for regulating nuclear safety, radiation protection and safeguards in the Community Member States that may serve as an example to be followed for the rest of the world. With these circumstances in mind, the INSC has focused on transferring EU and Euratom know-how, experience and good practice to partner countries during its previous and current periods. Beyond safety impact, the transfer of Euratom standards ensures a level playing field in affected business and facilitates trade between the Community and the partner countries. The continuation of this practice in the proposed instrument can only be encouraged.

The main objectives[35] of the proposed instrument can be achieved by various means, e.g. by equipment supply, software licence donation, construction of new facilities, provision of training services, enhancing the capacities and capabilities of the national nuclear regulator and its TSO (technical support organisation), or simply by direct financing of targeted projects in partner countries. During its more than three decades of nuclear safety cooperation, the European Commission applied all the above-mentioned assistance forms with the help of the INSC and its predecessors. In the last decade, provision of support to the national nuclear regulators (and their TSOs) was dominant. In addition, several national organisations responsible for the management of spent nuclear fuel and radioactive waste were given assistance to develop local infrastructure and expertise.

Considering the positive results of the assessments dealing with the previous and current Instruments (see Chapter 2), the knowledge-transfer approach resulted successful and its continuation in the future can be recommended.

***Recent challenges and their handling***

*Challenges of political and geopolitical nature*

[35] i) promotion of nuclear safety and radiation protection; ii) promotion of the safe management of spent nuclear fuel and radioactive waste; iii) cooperation in nuclear safeguards to ensure non-proliferation

During the first four years of the current MFF period the geopolitical situation in the European Neighbourhood region and globally has deteriorated significantly, e.g. due to Russia's war of aggression against Ukraine, the Israel-Iran conflict, the war in Gaza and global trade disruptions caused by extra tariffs recently imposed by the USA government on imported goods. This adverse geopolitical situation poses serious challenges to the ongoing EU EFIs and makes continuous adaptation and flexibility necessary. As it is pointed out in *The Road to the next Multiannual Financial Framework*[36], it is certain that the global context for EU external action will not become less complicated in the foreseeable future, therefore the inclusion of appropriate flexibility and adaptability into these instruments is a condition necessary for long-term success. The situation is further complicated by the fact that the EU plays a triple role in international partnerships: it has to be a credible partner, an important global player and an influential geopolitical actor simultaneously. At the same times, these three roles can be conflicting and are highly influenced by the position and role played by counterparts.

Ukraine

Undoubtedly the most important challenge in the current period was the series of dangerous situations emerging around some Ukrainian nuclear facilities as a consequence of military operations taking place in the course of the Russia's war of aggression against Ukraine. Not without reason, the topic of radiation and nuclear safety is the first point in the Zelensky 10-Point Peace Plan.[37] The sternest situations evolved at the Zaporizhzhia NPP and the Chornobyl Exclusion Zone, where nuclear and radiation safety was threatened several times. INSC – in close cooperation with the IAEA – was able to act rapidly and provided help to the Ukrainian partner organizations to restore the safety of the facilities affected.

Iran

Another significant challenge in the current INSC period was to ensure the possibility to continue the nuclear safety cooperation with Iran. After the USA, one of the signatories of the JCPoA, unilaterally withdrew from the agreement in 2018, the EU decided to continue the cooperation with Iran in all three technical areas of INSC assistance (i.e. nuclear safety, management of radioactive waste and safeguards). The provision of nuclear safety and safeguards can be impacted by geopolitical dynamics, a risk factor for the implementation of the Instrument.

Africa

The increasing global influence of non-EU actors is more pronounced in Africa than elsewhere in the world including when it comes to civilian nuclear export and regulatory support as demonstrated by a considerable increase of African countries that have established cooperation agreements with Russia on the peaceful use of nuclear energy (currently around 15 countries are on the list[38]) in recent years.

Nevertheless, in line with EU political priorities in the region, cooperation with Africa should be pursued, for instance by reinforcing existing partnerships with Egypt, Ghana,

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[36] The road to next multiannual financial framework, Strasbourg, 11.2.2025, COM(2025) 46 final

[37] On October 11, 2022, President of Ukraine Volodymyr Zelenskyy announced to the leaders of the Group of Seven (G7) countries a "peace formula" to overcome the Russian threat known as the 10-point plan. https://war.ukraine.ua/faq/zelenskyys-10-point-peace-plan/ June 2, 2025.

[38] https://africa.businessinsider.com/local/lifestyle/list-of-african-countries-with-a-nuclear-cooperation-agreement-with-russia/rp0jsh5

Nigeria, Morocco and South Africa. The 2022 project with AFCONE could be an example to follow, where safeguards cooperation was established with a whole African region in a single action, namely with 41 countries of the Pelindaba Treaty. Given the increasing interests of African partners in new technologies including SMRs, cooperation can be extended via the INSC to support the safe and peaceful use of nuclear energy.

*Challenges related to recent developments in nuclear technology*

During the last decade the EU's energy landscape has undergone significant changes, driven by the EU's decarbonisation agenda and increased emphasis on competitiveness, affordability[39], security of supply, and innovation.

After years of preparatory work, in 2022 the EC submitted a Complementary Climate Delegated Act[40] (CDA) to the EU decision-makers. In line with the decarbonisation efforts of the Union, the CDA introduced nuclear energy into the so-called EU Green Taxonomy[41], as an electricity generation technology with low $CO_2$ emissions. The CDA went into effect on 1 January 2023 and the nuclear energy became part of the "supportable green investments" category in the EU, therefore accepted as a "proper" green investment option. This move has contributed to important energy policy changes in several Member States.

During the past 5 years, parallel to the above EU developments, the declared interest in the application of nuclear energy significantly increased globally. The increased interest is due to several factors, for example:

- The need for stable, base-load electricity production to be able to integrate intermittent (renewable) energy sources into the grid in a reliable manner;
- Ensuring the achievement of climate change mitigation goals by changing to electricity production technologies with low $CO_2$ emission;
- Ensuring security of electricity supply by using a technology which can store its fuel for years ahead;
- The predicted development of Small Modular Reactor (SMR) technologies with a promise of faster and cheaper access to nuclear power also for remote and off-grid locations

Consequently, the nuclear energy gained momentum in the world as demonstrated by the growing interest in building new nuclear power plants, possibly including various Small Modular Reactor (SMR) designs. Third countries will need international cooperation and assistance to cope in the areas of nuclear safety and regulatory capacity building.

*Internal (institutional) challenges*

Some of the challenges identified in Chapter 2 comprise institutional issues such as

- Occasionally lengthy project implementation time
- long time between the definition of a project and its actual start
- The successful use of quantitative and qualitative indicators and measurements of outcomes and impact (beyond outputs only)

[39] Action plan for affordable energy, Brussels, 26.2.2025, COM(2025) 79 final
[40] Commission Delegated Regulation (EU) 2022/1214 of 9 March 2022 amending Delegated Regulation (EU) 2021/2139 as regards economic activities in certain energy sectors
[41] The EU Green Taxonomy is a classification system aimed to facilitate investments into environmentally sustainable economic activities

Under the proposal for INSC-D, efforts have been made to address the remaining challenges. For instance, the horizontal performance framework for the post-2027 budget will guide the implementation phase of the programme with a focus on improving monitoring and reporting. At the same time, the merger of the two programmes should also play a role in streamlining the implementation of the Instrument with an increased focus on shortening the implementation time.

***The main issue addressed by the NDWMP***

The NDWMP aims at protecting the European citizens and the environment against the hazards coming from the use of nuclear materials and facilities.

The European Commission is liable for its past and on-going nuclear research at the four sites in the Member States. Shut down facilities must be decommissioned, historical radioactive wastes safely managed for recovery, treatment, characterisation, packaging and storage according to the best international nuclear safety standards.

The respective decommissioning plans are submitted to the nuclear regulatory authorities of the host Member States who deliver the necessary authorisation (licenses). The European Commission will continue voluntary discussion with the host Member States willing to consider the transfer of the facilities for the implementation of the programme; the financing of the programme will nevertheless remain fully with the European Commission.

***Means to achieve main objectives***

The decommissioning programme, implemented since 1999 by the Joint Research Center suffered from a clear separation from the Research and Training activities. In 2021, The European Commission proposed to include the JRC Decommissioning Programme into the overall Nuclear Decommissioning Assistance Programme supporting the dismantling of former Soviet nuclear reactors at Bohunice (Slovakia) and Kozloduy (Bulgaria). A clear and dedicated structure (creation of a specific Directorate at the JRC managing the decommissioning programme and its budget) is established, enhancing the implementation of the NDWMP.

The JRC is advised by an Expert Group of independent specialists that meets twice per year. The 47$^{th}$ Expert Group meeting held in Ispra on 8 & 9 October 2024 found the storage of historical wastes at the site in poor condition and issued a strong recommendation to address the issue as a priority.

***Recent challenges and their handling***

The main challenge faced by the decommissioning programme is twofold:

1. The planning of activities is strongly depending on the release of corresponding authorisation by the regulatory of the host Member State with a detrimental on the budget management due to the rigid financial rules of the Commission (annuality principle). The JRC has improved its cooperation with the regulatory authorities, in particular in Italy, to closely work on the licensing process. Although progress has been achieved and delays reduced, the need for more flexibility on budget programming remains valid.
2. Decommissioning is a complex process spanning over decades and entailing different fields of expertise (from project management to nuclear expertise).

Availability of a skilled and experienced workforce remains a challenge that the JRC tries to overcome by Human Resources management.

### 3.2. THE ADDED VALUE OF EU INVOLVEMENT

***External component***

Nuclear accidents and risks can have transboundary and international impact which is relevant for more than one country. This is the case also for the loss of control of radioactive material, radioactive waste management and the nuclear safeguards. As a multi-country issue, it is proportionate and effective to give it a multi-country solution. Thus, the pooling of Member State resources into a European Instrument permits greater outreach of EU member state funds with benefits to nuclear safety of shared benefit:

- The INSC-D is able to support interventions beyond the actions of individual Member States or other single donors. For large-scale, ambitious projects like remediation of uranium mining legacy sites in Central Asia, or actions in continued addressing of the effects of the 1986 Chornobyl accident, common EU action creates efficiencies in coordination of funds.
- The INSC-D allows the Community to be an important actor in international nuclear safety cooperation and engage in high level policy dialogues with partner countries.
- The Community systematically transfers elements of established Community nuclear safety and radiation protection culture to third countries and promotes best practices in the management of spent nuclear fuel and radioactive waste, and safeguards.
- Allows regular knowledge transfer and promotes EU expertise, through high-level training and tutoring, provided by experts of top-level European institutions (including nuclear regulators) and universities, as well as specialized companies.
- It is able to coordinate with Member States and international actors such as IAEA, EBRD and other donors to provide assistance to partner countries.
- It ensures professional project supervision and monitoring services through dedicated EC administrative and engineering units, benefitting from decades of experience.
- The INSC-D helps staff members working at the nuclear regulators of the partner countries, as well as the experts of their TSOs, to actively participate at EU and IAEA technical meetings and other international conferences (such as Eurosafe), thus connecting them to leading international fora of technical information exchange. The EU also contributes to making such links and networks sustainable; excellent examples are the Nuclear and Radiation Safety Centre (NRSC) in Armenia, the nuclear regulator of Türkiye (NDK) and State Scientific and Technical Center for Nuclear and Radiation Safety (SSTC NRS) in Ukraine.

In conclusion, INSC-D's key added value relies in the ability to create efficiencies and provide a substantiated platform for the EU to be an important actor in international nuclear safety cooperation.

***Internal component***

The decommissioning of shut down nuclear facilities and the safe management of radioactive waste and spent nuclear fuel is an EU liability deriving from the Euratom

Treaty that established the Joint Nuclear Research Centre under its Article 8. The European Commission is therefore committed to finance and implement the decommissioning programme at its four nuclear sites.

## 4. OBJECTIVES, SYNERGIES, CHANGES

*Proposal for a Regulation of the Council establishing the Instrument for Nuclear Safety Cooperation and Decommissioning for the period 2028-2034, DG INTPA and DG JRC.*

### 4.1. OBJECTIVES

#### *4.1.1. General objectives*

The merger between the current INSC and the NDWMP is carried out on the basis of the common safety objectives: promoting nuclear safety in cooperation with third countries as well as in the decommissioning activities of the European Commission nuclear facilities. Promotion of nuclear safety, safe management of radioactive waste and spent nuclear fuel and decommissioning of nuclear facilities according to the highest safety standards and good international practices are a common objective of the former instrument and programme merged under the current proposal.

The Instrument also aims to protect the environment in the territory of the EU, partner countries and their neighbours from the radiological effects of nuclear accidents potentially happening outside the EU.

Further discussion of the general objectives can be found in Chapter 3.1.1.

In particular, based on the experience with the ongoing activities, the general objective of the external component reflect the same general objectives of Regulation (Euratom) 2021/948: by promoting the highest level of nuclear safety and radiation protection, as well as safe management of spent nuclear fuel and radioactive waste and the application of efficient and effective safeguards in third countries, the main goal is to ensure the safety of EU citizens and citizens of the partner countries. This objective is meant to be achieved by transferring related Community expertise and best practices to the key stakeholders in the partner countries, in particular to the nuclear regulatory authorities and their technical support organisations.

Related activities are carried out in complementarity with Global Europe instrument proposal.

The general objective of the JRC decommissioning and waste management programme is to pursue the decommissioning of the Commission's nuclear installations at the JRC sites, namely JRC-Geel in Belgium, JRC-Karlsruhe in Germany, JRC-Ispra in Italy and JRC-Petten in the Netherlands, and to safely manage the spent fuel, nuclear material and radioactive waste. The general objective of the JRC decommissioning and waste management programme is complemented by the aim of enhancing the EU added value of that programme by contributing to the dissemination of knowledge on the decommissioning process (thereby generated) to all Member States. The proposal will provide funding for the decommissioning of nuclear facilities and the management of radioactive waste at the JRC sites, in line with the needs identified in the respective decommissioning plan.

The programme will in addition create knowledge deriving from the nuclear decommissioning process and the management of radioactive waste resulting that will be shared with relevant EU stakeholders.

*4.1.2. Specific objectives*

The proposal for the external component keeps the three specific objectives of the previous and current Instruments:

- Promotion of a high level of nuclear safety and radiation protection
- Promotion of the safe management of spent nuclear fuel and radioactive waste
- Promotion of applying efficient and effective safeguards of nuclear materials

The basic motivation of pursuing the above three objectives by means of international nuclear safety cooperation with third countries and justification of the methods and activities applied to achieve them is explained in detail in Chapter 3.1.1.

The new Instrument foresees to expand its activities to achieve the three specific objectives by allowing for the design of interventions in those fields that are expected to gain more traction during the period of the next MFF (e.g. safety of SMRs and new technologies). Note that the inclusion of SMRs into the INSC portfolio is fully in line with objectives of the European Industrial Alliance on SMRs, fully supported by Euratom (see Chapter 3.1.1 for details).

In line with the objectives of the Instrument for International Nuclear Safety and Decommissioning expressed in the Regulation, the external component intends to continue capacitating nuclear and radiation protection regulatory authorities in third countries to be able to provide appropriate guidance to nuclear industry actors in the application of EU-equivalent safety standards and requirements. This supports a level playing field between EU and non-EU companies investing in third countries and it is in line with the Competitiveness Compass for the EU[42].

Further discussion of the specific objectives can be found in Chapter 3.1.1.

In view of the assessment results for the previous and current Instruments, as well as the considerations outlined in Chapter 3.1.1, the specific objectives of the new INSC are adequate and will contribute to ensuring the proper protection of public health and the environment in the EU and its neighbourhood.

The detailed description of the objectives of the JRC decommissioning and waste management programme during the next MFF is the following:

In the financing period starting as of 2028, the JRC decommissioning and waste management programme has to deliver the following:

At all sites:

(a) Safely manage radioactive waste, nuclear material and spent fuel;

(b) Explore and develop options for the transfer of decommissioning and waste management liabilities to the host Member State, based on the mutual bilateral agreement concluded between the Commission and the host Member State;

(c) Develop ties and exchanges among Community stakeholders (e.g. Member States, safety authorities, and utilities and decommissioning operators);

(d) Document explicit knowledge and make it available through multilateral knowledge transfers on decommissioning and waste management governance issues, managerial best practices, and technological challenges and decommissioning

[42] A Competitiveness Compass for the EU, Brussels, 29.1.2025, COM(2025) 30 final

processes at both operational and organisational level, with a view to developing potential Community synergies.

## 4.2. SYNERGIES

### *4.2.1. Synergies with other programmes and organisations*

***Synergy with the 2026-2027 Euratom Research and Training Programme***

Early 2025 the Commission submitted its proposal for the 2026-2027 Euratom Research and Training (R&T) Programme[43]. The programme focuses on the following R&T areas:

- Improvement and support of nuclear safety, security, safeguards and radiation protection
- Safe management of spent nuclear fuel, radioactive waste and decommissioning;
- Safe and secure use of nuclear power
- Safe and secure use of non-power applications of ionizing radiation

The objectives of the new INSC-D are fully in line with the Euratom R&T programme proposed for the next two years and the technical areas where INSC assistance is offered to third countries cover those supported by the new programme.

***Synergy with the cooperation between the Euratom and the IAEA***

Globally, the International Atomic Energy Agency (IAEA) provides comprehensive assistance to UN Member States in the peaceful use of nuclear science and technology. The assistance is offered in various forms, e.g. by developing nuclear and radiation safety standards, providing safeguards inspection and other technical services and special expert missions. The European Atomic Energy Community and the IAEA have built extensive scientific, technical and safeguards cooperation for a long time[44] and they address selected issues in a coordinated manner, acting as partners[45]. Collaboration has touched upon many areas of work such as the Euratom stress-tests, environmental remediation activities in Central Asia, and provision of tools for emergency diagnosis, prediction and management to the interested partner countries. The INSC has contributed significantly to the above-mentioned joint projects and has regular meetings with the IAEA Regulatory Cooperation Forum (RCF) to discuss how to best share knowledge, experience and best practices of nuclear regulators through international cooperation. The INSC complements the cooperation between the Euratom and the IAEA and directly contributes to the implementation of important joint projects (see e.g. environmental remediation activities).

In the financing period starting as of 2028, in view of the contribution to the dissemination of knowledge on the decommissioning process (thereby generated) to all Member States, the JRC decommissioning and waste management programme will closely work with the IAEA in particular ensuring the interconnection and compatibility of the knowledge product interactive repositories.

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[43] Proposal for a Council Regulation establishing the Research and Training Programme of the Euratom for the period 2026-2027 complementing Horizon Europe, Brussels, 28.2.2025, COM(2025) 60 final

[44] Cooperation agreement between the Euratom and IAEA, 1 January 1976

[45] Memorandum of Understanding for a partnership between the Euratom and the IAEA on nuclear safety cooperation, September 2022

*4.2.2. Contribution to the Sustainable Development Goals*

The new INSC-D continues contributing to the achievement of the following Sustainable Development Goals (SDGs) as defined by the United Nations (UN):

- *SDG 3 – Ensure healthy lives and promote well-being for all at all ages*
  Contribution: By means of environmental remediation activities
- *SDG 4 – Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all*
  Contribution: By means of training and tutoring programmes, education projects
- *SDG 6 – Ensure availability and sustainable management of water and sanitation for all*
  Contribution: By means of environmental remediation programmes
- *SDG 11 – Make cities and human settlements inclusive, safe, resilient and sustainable*
  Contribution: by promoting high-level of nuclear safety and radiation protection INSC contributes to the *disaster risk reduction* sub-goal of SDG 11
- *SDG 15 – Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss*
  Contribution: By means of environmental remediation programmes
- *SDG 16 – Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels*
  Contribution: by means of establishing a competent and independent national nuclear regulatory authority and by strengthening the non-proliferation regime

**4.3. ANALYSIS OF CHANGES AND NEW ELEMENTS**

Most part of the Instrument remain unchanged compared to the current Regulations (Euratom) 2021/100 and 2021/948. However, the new Instrument especially intends to allow increased flexibility in emergency situations or when responding to unforeseen needs.

The conditions to participate in an INSC cooperation have been rephrased to allow for more clarity and flexibility depending on the objectives pursued. In the case of nuclear safeguards, for instance, the conditions remain that a potential partner country must be a signatory to the NPT and have a concluded a Comprehensive Safeguards Agreement with the IAEA or have the Additional Protocol in force. Maintaining the conditions outlined in article 12 (1-5) is strongly recommended, even if the proposal suggests overriding such criteria in specific exceptional cases such as a nuclear accident or radiological emergency event.In the new proposal, flexibility can also apply specifically when working with candidate and potential candidate countries to enable the cooperation with partners like Kosovo*[46].

In the current MFF the scope of INSC assistance has been broadened to align with Global Europe, allow for more flexibility and create an enabling regulation capable of intervening under unforeseen circumstances.

[46] Without prejudice to positions on status and in line with UNSCR 1244 and the ICJ opinion on Kosovo Declaration of Independence.

Another new element resides in the possibility for the external component to make use of the Ukraine Reserve established under Regulation 202X/XXXX [MFF Regulation] and outlined in article 6 of Global Europe for EU support to Ukraine.

For the internal component, one change is included, which is related the proposal for a timeline for the negotiations with Member States on a potential transfer of the nuclear liability.

## 5. EFFECTS OF DIFFERENT POLICY OPTIONS

There can be various policy options to implement a certain instrument and achieve the desired objectives. In the following section the feasibility and limits of the different, potentially applicable policy options are analysed for the new INSC-D proposal.

***Potential policy options***

*Baseline option*

The "baseline" option means that everything is continued as it was done so far in the present 2021-2027 period. In principle the application of this policy option could be feasible, because according to the evaluations (see Chapter 2) the implementation of the current INSC is going on successfully and in December 2024 the Instrument was reported "on track". In parallel this would mean a second standalone JRC decommissioning Programme. However, this option would result in two instead of one financial instruments/ programmes.

Therefore, in light of the simplification intentions of the Commission following the reasoning already outlined by this report (see chapter 1.1), the application of the "baseline" option is not preferred.

*Conclusion of the Instrument option*

The "conclusion of the Instrument" option means no INSC-D proposal is submitted for the 2028-2034 period and this type of international cooperation is fully stopped. Activities ongoing in the present INSC and decommissioning programme are allowed to "run out" according to the contracts in effect and the last contracts can be signed till the end of 2027.

As INSC had been operated successfully for more than three decades this option cannot be justified by negative evaluation results or by the lack of financial resources. Within the international arena of nuclear safety cooperation this EC decision would not be politically welcome at all, as present and potential partner countries rely on the long-term existence of this Instrument to a great extent and Member States have expressed their support on several occasions.

For the internal component, conclusion of the instrument would mean that the European Commission would not be able to fulfil its commitments.

The "conclusion of the Instrument" option therefore cannot be recommended.

*Full integration with another EC instrument option (e.g. Global Europe)*

The "full integration with another EC instrument" option was tried in 2018 between INSC and NDICI, but when scrutinizing related legal conditions, it turned out that INSC had to be kept as a separate instrument complementing NDICI-GE, due to its different legal basis (Euratom Treaty - see also Chapter 2.1.4).

Therefore, in light of the legal conditions imposed by the Euratom Treaty, the "full integration with another EC instrument" option is legally not feasible.

*Merging with another EC instrument option under the same legal basis*

The "complementing another EC instrument" option corresponds to the situation of the proposed INSC-D regulation and it ensures that a) special legal procedures of the Euratom Treaty can be followed and b) generic rules and procedures relevant for the EU external actions are also observed. It also fulfils the Commission's simplification agenda aiming at resource optimisation, rationalisation of expenditures by consolidation of smaller programmes into a single bigger instrument and streamlined management of complex cross-cutting objectives and challenges. Note that in this option the merger of the current INSC and JRC decommissioning programmes into a single Instrument is a logical step, because both components contain activities that are subjected to the Euratom Treaty as well as common nuclear safety objectives.

The new INSC-D proposal put forward a scheme where the current INSC and JRC decommissioning are parts of a joint Instrument complementing GE, but the two parts maintain their intrinsic characteristics under an external and an internal component of the Instrument:

- The external component (INSC) follows recent developments in nuclear technology, ensuring that supporting the safety aspects of the utilization of innovative nuclear reactors (such as SMRs) is included in the scope. It allows to provide a fast and proper response in exceptional cases (including war situations) and extends the scope of support to nuclear power plant (NPP) operators, while keeping the general restrictions to avoid unfair competition. As further contribution to the global efforts to protect the environment, an explicit reference to enhancing emergency preparedness and response capabilities, as well as for environmental remediation activities is included.
- The internal component introduces a concrete timeline for the negotiations with the involved Member States on the potential transfer of nuclear liability from the JRC to the host MS.

Therefore, in light of the intentions of the Commission and the legal conditions imposed by the Euratom Treaty, this option is feasible, and its implementation is recommended. The provision of the new, unified Instrument ensures advanced flexibility in terms of programming approach, including the selection of aid modalities and eligibility criteria, in alignment with Global Europe.

***Potential risks***

In light of the merger as the preferred policy option, a few risks can be identified. First, merging two separate programmes into a single Instrument requires enhanced upfront coordination. If such coordination is not carried out efficiently, implementation issues may arise.

Regarding the external component, experience shows that the most important risks potentially influencing current INSC projects are of geopolitical or political origin, such as

- Unforeseen changes in the geopolitical situation of the partner country resulting in adverse or potentially dangerous implementation conditions (e.g. Ukraine)

- Political, geopolitical or economic tensions hindering proper dialogue with partner countries' governments).
- Change in the energy policy of the partner country resulting in lost interest to cooperation on nuclear safety aspects (e.g. Vietnam in 2016).

Potentially occurring other risks are e.g. lack of sufficient human or technical resources at the End User, loss of professional or economic interest in the project, lack of financing from other potential donors, etc.

Regarding the internal component on the decommissioning programme, the main risks emerging from experience are:

- The timely release of the necessary authorisation by the regulatory authorities to perform the decommissioning activities;
- The availability of a national radioactive waste repository;
- The availability of knowledgeable and experienced workforce to implement the NDWMP.

## 6. IMPACT OF PAST PROGRAMMES

### 6.1. EXTERNAL COMPONENT – INSC

Based on the comprehensive ex-post evaluation of the 2014-2020 period[47] it can be stated that the planned results and impacts were fully achieved by INSC-II. This is also valid for the first 4 years of the 2021-2027 period of INSC-III, as the mid-term evaluation of the 2021-2027 period[48] established that all Key Monitoring Indicators were "on track". The main INSC impacts exerted on the partner countries are as follow (see Chapter 2 for further details):

- Enhanced regulatory capacities and capabilities in several Beneficiary countries,
- Creation or further development of a competent TSO assisting the regulator,
- Implementation of a national nuclear emergency response centre equipped with state-of-the-art accident diagnosis, prognosis and decision support tools,
- Creation or further development of a national radiation monitoring system with early warning capabilities,
- Provision of comprehensive training & tutoring to regulators & TSO experts,
- Participation in the EU stress-tests and the following ENSREG peer-review,

[47] Evaluation of the INSC 2014-2020, Expert Facility for the INSC, Contract Nº 2020/419-010, LDK Consultants Global EEIG, December 2021

[48] Evaluation of the European Union's External Financing Instruments (2014-2020 and 2021-2027), Volume I: Synthesis Report and Volume II: Annexes, Particip GmbH Consortium, March 2024

- Remediation of legacy sites with radioactive contamination.

### 6.2. INTERNAL COMPONENT – JRC DECOMMISSIONING

Since 2021, the Nuclear Decommissioning and Waste Management Programme of the Joint Research Centre is financed under a specific legal basis. The programme that started in 1999 under JRC budget has benefitted from the new approach and enhanced the efficiency for its implementation. The programme effectively improved the nuclear safety at the JRC sites for the benefit of the EU citizens and the environment. The continuation of the programme is needed to fulfil the European Commission's legal commitments, reduce the nuclear hazards towards a complete release of the facilities from the regulatory control and create and share knowledge with the EU stakeholders dealing with the decommissioning and waste management.

## 7. MONITORING AND EVALUATION

This initiative will be monitored through the performance framework for the post-2027 budget, which is examined in a dedicated impact assessment. The performance framework provides for an implementation report during the implementation phase of the programme, as well as a retrospective evaluation to be carried out in accordance with Article 34(3) of Regulation (EU, Euratom) 2024/2509. The evaluation shall be conducted in accordance with the Commission's Better Regulation Guidelines and will be based on indicators relevant to the objectives of the programme. The methodological assumption in concerned impact assessment is the aggregation of performance indicators across programmes to simplify reporting obligations for all future MFF programmes. This would enable a significant reduction of administrative burden by reducing the number of indicators five-fold and by attributing indicators to each intervention field. The horizontal monitoring and performance framework would be embedded through a single legal act.