

**Position Paper on *Euratom Research and
Training Programme 2021-2025***
Sustainable Nuclear Energy Technology Platform
February 2018

This document provides the position of SNETP, the European Sustainable Nuclear Energy Technology Platform, in answer of the public stakeholder consultation organised by the European Commission in relation to the preparation of the ex-ante impact assessment for a future Euratom Programme (2021-2025).

Background

For sustainable prosperity, an affordable and secure energy supply with minimized environmental impact is a primary need, for Europe and beyond. Currently the major share of energy needs is covered by fossil fuel resources. With a growing world population and energy consumption per capita, fossil resources are becoming scarce, while global ecological impact from greenhouse gas emissions is increasing day by day. Increased geopolitical tensions, negative economic impact due to energy price volatility, and maintained imbalance in world population prosperity can be connected to this. It will be hard to change both the luxury of access to cheap energy, and the convenient way fossil fuels have provided it. The right answer is to replace the large share of energy generation by fossil fuels by a balanced mix of different low-carbon energy sources, whilst reducing energy usage as much as is reasonably achievable. The COP21 Paris Agreement to contain temperature rising, and Europe's ambitious decarbonisation targets will lead to a considerable increase in low-carbon electricity consumption. Therefore looking to massive electricity production by non-emitting sources like nuclear energy is a must.

Nuclear energy is a reliable energy source for decades, and provides a very significant share of current green electricity supply in Europe. We believe this share should be maintained in Europe, as a responsible contribution to the EU's low-carbon energy mix. This is achieved by ensuring safe and reliable operation of the current (Generation II) fleet, supported by long term operation, maintenance programmes, and by pursuing nuclear energy through the development of new build projects of Generation III nuclear plants. Furthermore, significant improvements in terms of resources, efficiency and waste production will be reached with the future deployment of Generation IV nuclear systems, which relies on fast neutron technology with a closed fuel cycle. Nuclear fission technology can also deliver cogeneration of heat or hydrogen and power, in particular for industrial purposes where the heat market is dominated by fossil fuels with no alternative from renewables, thus appearing as a game-changer in reducing the carbon footprint of energy-intensive industries.

SNETP key priorities

- 1. Secure dedicated EU funding for the SET-Plan key action 10**
- 2. Align nuclear fission RD&D funding with SET-Plan objectives & vision**
- 3. Make available EU grants amounting to 2.75 b€ for the European Sustainable Nuclear Industrial Initiative (ESNII) [25% of total cost]**
- 4. Include the Nuclear Cogeneration Industrial Initiative (NC2I) as a SET-Plan EII with available EU grants amounting to 1 b€**
- 5. Ensure that financial instruments under the FP9 are open to nuclear fission research & innovation, in particular:**
 - a. FP9 (Euratom & non-Euratom)
 - b. Structural and Cohesion Funds
 - c. Relevant EIB instruments including the InnovFin
 - d. Euratom loans e. Other financial tools such as carbon credit instruments (NER type)
- 6. Maintain continued support for research in safety and competitiveness of generation II and III plants, radiation protection and waste management through geological disposal and P&T**
- 7. Facilitate European consortium building by ensuring that relevant legal structures (ERIC, Euratom JU...) are made available for nuclear prototypes or demonstrators consortia**

Rationale of the key proposals

QUESTIONS RAISED BY THE EC THROUGH CONSULTATIONS

Ordered progressively by importance :

- Launch European joint programmes coordinating member states' research actions
- Provide grants for collaborative research projects
- Support innovation (bringing new services and products to market)
- Support networking and preparatory actions
- Support access to research infrastructures
- Support frontier/basic research
- Support education and training actions
- Support mobility of researchers
- Support dissemination and exploitation of research results

Main reasons for our members for taking part in Euratom projects:

- Access to knowledge and/or nuclear facilities not available or difficult to acquire alone at national level, development of competences
- Establishment of research networks
- Enhancing critical mass of resources to address specific issues

What shall be the role of the indirect actions of the Euratom programme?

- Euratom funding should only focus on a limited number of research areas in order to maximise impacts
- The programme should shift more resources towards addressing specific needs in cutting edge innovative R&D programmes and associated prototyping and demonstration effort

What shall be the role of the programme in promoting the access to fission R&D infrastructures

- The Euratom Programme should support the realisation of new research infrastructures in Europe in the field of nuclear fission
- The Euratom Programme should support operation and access to the relevant research infrastructures in Europe
- The Euratom programme should support the networking and exchange of researchers between relevant research infrastructures in Europe
- The Euratom programme should better facilitate the access to the Commission's research infrastructures (see <https://ec.europa.eu/jrc/en/research-facilities>)

What shall be the role of the direct actions of the Euratom programme?

- To provide independent scientific advice in Europe
- To carry out research complementing national initiatives
- To provide scientific and knowledge support to EU policies
- To develop knowledge management centre for Euratom research

What shall be the role of JRC in the Euratom programme?

- The JRC should not take part on a competitive basis in Euratom calls for proposals but instead offer in-kind contributions to applicants
- The JRC should play a coordinating role in knowledge management

Role of the Euratom programme with regard to decommissioning of nuclear facilities?

- Euratom research on decommissioning should be limited to specific issues such as development of skills and exchange of best practices
- Euratom research should assist the industry efforts in decommissioning.

To what extent should the Euratom programme be involved in non-energy applications of nuclear science such as medical applications

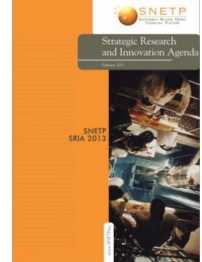
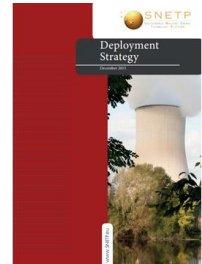
- Research on nuclear science issues for non-energy applications (medical or others) should be supported jointly by the Euratom programme and other R&D activities (e.g. health)

How should the Commission support education and training in fission in the future programme?

- Providing individual fellowships to post-doc researchers
- Providing individual fellowships to PhD researchers
- Supporting short term exchanges for staff/researchers
- Providing access to research infrastructures
- Supporting European training networks providing PhD education
- Launching specific E&T projects
- Keep existing Euratom fusion E&T programmes and enhance with Marie Skłodowska Curie fellowships

Reference documents

The vision and objectives of SNETP are detailed in a number of strategic documents, all publicly available online:

	<p>SNETP Strategic Research & Innovation Agenda 2013 (download here)</p> <p>Updated from SNETP's initial SRA 2009, the SRIA 2013 addresses the short-, mid- and long-term challenges with respect to fission technologies, in line with the SET-Plans' objectives and long-term vision. The R&I objectives are structured along SNETP's technology pillars (NUGENIA, ESNII, NC2I) as well as cross-cutting topics.</p> <p>The update of this main SNETP strategic document is under discussion by the SNETP governance and progress shall be achieved in 2018-2019.</p>
	<p>SNETP's Deployment Strategy 2015 (download here)</p> <p>The Deployment Strategy complements the SRIA, and aims to prioritise the SNETP programme over the coming decades to make it fully aligned with the general context of electricity generation in Europe, which includes different energy sources, different national energy policies and societal challenges. Planning assumptions for the nuclear energy systems define the technical milestones to be reached.</p>

The priorities set out in the above documents are also aligned with the EC's **Integrated Strategic Energy Technology (SET) Plan: Accelerating the European Energy System Transformation.**

Contact

SNETP is happy to provide any clarification or additional information on the above input paper.

Questions may be channelled to:

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