Call for evidence for upcoming PINC (nuclear illustrative programme) report

A Eurelectric response paper

May 2025

Eurelectric represents the interests of the electricity industry in Europe. Our work covers all major issues affecting our sector. Our members represent the electricity industry in over 30 European countries.

We cover the entire industry from electricity generation and markets to distribution networks and customer issues. We also have affiliates active on several other continents and business associates from a wide variety of sectors with a direct interest in the electricity industry.

We stand for

The vision of the European power sector is to enable and sustain:

- A vibrant competitive European economy, reliably powered by clean, carbon-neutral energy
- A smart, energy efficient and truly sustainable society for all citizens of Europe

We are committed to lead a cost-effective energy transition by:

investing in clean power generation and transition-enabling solutions, to reduce emissions and actively pursue efforts to become carbon-neutral well before mid-century, taking into account different starting points and commercial availability of key transition technologies;

transforming the energy system to make it more responsive, resilient and efficient. This includes increased use of renewable energy, digitalisation, demand side response and reinforcement of grids so they can function as platforms and enablers for customers, cities and communities;

accelerating the energy transition in other economic sectors by offering competitive electricity as a transformation tool for transport, heating and industry;

embedding sustainability in all parts of our value chain and take measures to support the transformation of existing assets towards a zero carbon society;

innovating to discover the cutting-edge business models and develop the breakthrough technologies that are indispensable to allow our industry to lead this transition.

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KEY MESSAGES/EXECUTIVE SUMMARY

- Build-out of new large and SMR reactors as well as long-term operations of existing reactors are part of net-zero electricity generation sources and will also benefit Europe from a system approach: Decarbonisation of the economy, security of supply, and reliability that is complimentary to renewables. The updated PINC report needs to show how to secure an EU strategic leadership in nuclear which should not be taken for granted. Mechanisms and funding for financing, risk-sharing and investor incentives should be encouraged

- A never wavering focus on nuclear safety and protection from radioactivity is the foundation of all nuclear activities and must continue to be part of Euratom R&D. Developing future nuclear will also require increasing financing for Euratom to enhance European supply chain capabilities. Euratom should be complemented by more cross-sectional synergies ith the Horizon Europe program

- The updated PINC must clarify how to implement technology-neutrality for nuclear as net-zero power generation in the regulatory framework and how a non-discriminatory approach may remove the exclusion of nuclear from EU funds (in their current and future forms)

- An updated PINC report should consider a trajectory for nuclear capacity developments in Europe based on most recent NECPs. It should determine investment needs and actions to implement new nuclear, sustain existing nuclear capacity with long-term operations, and develop the European supply chain and competencies needed

- The updated PINC should provide a perspective on how EU can arrive at world-class competence clusters enhancing higher education, spearhead academic research and exchange and be agile in implementing results

Eurelectric response to the call for evidence with regards to the upcoming PINC report

Eurelectric appreciates the opportunity to respond to the call for evidence of nuclear investments needs for an updated PINC report. New nuclear with large reactors as well as the potential with SMRs, long-term operations and refurbishments of existing nuclear stations will benefit the entire European energy system. This will be high on the agenda for reliable, affordable and sustainable net-zero low-carbon electricity generation. Industry competitiveness with data centers and energy-intensive users such as chemicals, aluminium, steel and other sectors depends on accelerated electrification and contributions from all net-zero sources including nuclear.

A no-fault focus on nuclear safety and protection from radioactivity is the foundation of all nuclear activities and must continue to be mirrored by relevant future Euratom R&D. Developing nuclear will also require increasing financing for Euratom complemented by more cross-sectional synergies from Horizon Europe program to significantly enhance European supply chain capabilities. This includes technical innovations, research reactors and demonstration facilities, material science and applications as well as skills that drive strategic nuclear leadership. Adequate funds will be required for nuclear activities to scale to market demand.

Assess investments needed in nuclear

All net-zero electricity generation sources will be required to meet 2050 climate neutrality goal and 2050 electricity demand. Eurelectric calls for an updated PINC report to mirror this and recommends:

An updated PINC report should present a scenario for installed nuclear capacity in 2050 and determine investment needs and trajectories to implement new nuclear and sustain existing nuclear generation capacity through long-term operations. The PINC report should encompass both SMR technologies and large reactors and the complete nuclear value chain; Analyses and recommendations with the coming SMR Industry Alliance strategic action plan should be accounted for.

According to Eurelectric's 2023 Decarbonisation Speedways report EU nuclear capacity may be at 103 GW by 2050. A declaration from the European Nuclear Alliance is envisioning up to 150GW of installed capacity by 2050 alongside renewables. Additional input should be considered to provide the most recent data such as the NECPs that project an installed capacity of almost 150 GW by 2050. Even a more modest relative growth of nuclear capacity compared with today would require very substantial investments.

EU strategic leadership

With the PINC report it will be important to secure EU strategic leadership in nuclear which should not be taken for granted. Mechanisms and funding for financing, risk-sharing and investor incentives should be reflected. How a robust, reliable and competitive supply chain can scale up and suppliers can foresee demand; how the necessary talent and skills can be boosted – this should be included as well as the required R&D and innovation focus. The updated PINC should provide a perspective on how the EU can arrive at world-class competence clusters and enhance higher education, spearhead academic research and exchange and implement results. A particular emphasis needs to be on technologies that may make a difference between now and 2050. Developments in fusion should be treated as strategically highly important but also viewed in the long term with a realistic view on time to commercialization.

Eurelectric further recommends

The updated PINC report must clarify how to implement technology-neutrality for nuclear as net-zero power generation in the regulatory framework; how a non-discriminatory approach may remove the exclusion of nuclear from EU funds (in their current and future forms); and how the EU can support new nuclear, securing long-term operation, R&D, innovations and first-of-a-kind (FOAK) reactors, competences and the development of the EU nuclear supply chain

Eurelectric pursues in all its activities the application of the following sustainable development values:

Economic Development

- Growth, added-value, efficiency

Environmental Leadership

- Commitment, innovation, pro-activeness

Social Responsibility

- Transparency, ethics, accountability

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