Small modular reactors

2023/2109(INI) - 12/12/2023 - Text adopted by Parliament, single reading

The European Parliament adopted by 409 votes to 173, with 31 abstentions, a resolution on small modular reactors (SMRs).

Nuclear energy is a zero emissions technology that does not lead to air pollution. Therefore, SMRs have the potential to contribute to meeting the EUs climate and environmental goals.

Members underlined the need to explore the potential of SMRs in providing the EU with a reliable, affordable and on-demand supply of electricity, with the potential capacity to provide a firm baseload of clean electricity, heat and steam for industry and households, including possibly retrofitting coal-fired power stations. It highlighted the need for continued research and development in SMRs to ensure the safety, efficiency and cost-effectiveness of these technologies.

The resolution called for the development of a comprehensive strategy for the deployment of SMRs in the EU, taking into account the specific needs and circumstances of different regions, including remote and sparsely populated areas and different economic sectors. Such a strategy should pave the way to establishing clear guidelines for planning, permitting and timelines, regulation and safety.

The EU as a significant potential market for SMRs

Parliament encouraged the exploration of the potential use of SMRs for low-carbon hydrogen production, both for its direct use in industry, as well as for the production of sustainable synthetic fuels. It recognised the potential role of SMRs for heat and steam production for industrial processes, in particular in hard-to-abate industries.

Members encouraged the exploration of the potential of SMRs for district heating and cooling where other clean energy sources are not available. Members recognised the potential value of SMRs for increasing electrical production and improving grid stability.

The resolution emphasised that, so far, SMRs are operational only in Russia and China, but that more than 80 SMR designs are currently at different stages of development and deployment in 18 countries. It insisted that the EU should maintain its technological leadership in the future SMR market.

Parliament recognised that a growing number of Member States are considering nuclear for their energy mix, hence the need to coordinate efforts, and noted the opportunity for these Member States to jointly develop a European SMR.

Adapted policy and regulatory framework: technology neutrality

Members recognise that the implementation of appropriate contractual and financial mechanisms, such as bilateral long-term contracts and contracts for difference, is needed to provide long-term predictability of energy markets and to foster future investments in SMRs. They stressed the need for a predictable legal framework that provides investor certainty throughout the lifetime of SMRs.

The Commission is called on to launch a specific EU industrial strategy for SMRs, which includes a focus on efficient permitting procedures and access to finance and stable supply chains.

Market integration and deployment

The resolution emphasised the importance of proactive anticipation, innovation and adaptation to effectively meet SMR designers expectations in terms of fuel cycle and waste management.

Public authorities should show determination to guarantee the competitiveness of the SMR supply chain in order to enable service providers to take a long-term view.

Harmonisation of SMR licensing regimes

Members called for the acceleration of the cooperation of national nuclear safety regulators in order to harmonise a pre-licensing process and standardisation of SMR designs based on commonly accepted safety assessments.

Financial support for the domestic production of SMRs

Members insisted on the need to:

- sufficiently explore and identify all possible options for financing European SMR production and scale-up and support the related supply chain;

- explore the possibility for Member States to use any eligible fund or the Just Transition Fund to finance the research and development of SMRs;

- include nuclear fission and fusion energy technologies, including nuclear fuel cycle technologies, in the list of net-zero technologies under the Net Zero Industry Act;

- establish a dedicated European structure for SMRs, such as a new joint undertaking or an industrial alliance for SMRs, or the creation of an Important Project of Common European Interest specifically for SMRs, which could aim to develop an advanced reactor demonstration programme.

Parliament noted that it is essential to define a comprehensive research and development roadmap that meets both market expectations and safety requirements, and that it is necessary to determine the experimental infrastructure requirements for implementing this roadmap, as well as the training and education programmes to be put in place.

As far as skills are concerned, Members recognised the need to refine existing training in key nuclear construction skills throughout the value

chain and to make it compatible with the specific requirements of SMRs.

Lastly, Parliament supported recent R&D efforts in the areas of nuclear waste management, recycling and reuse. It stressed the major importance of re-use for the stability of supply and calls for a specific strategy for the closure of the nuclear fuel cycle, focusing on support for developers of innovative technologies.