

NUCLEAR ENERGY, FIRST GATE REVIEW OF THE EAGLES CONSORTIUM: ADVANCING DESIGN AND SAFETY FOR EAGLES-300

Ansaldo Nucleare, ENEA, RATEN- and SCK CEN met in Mol, Belgium, from December 15 to 17 for the first Consortium gate review to consolidate requirements, integration and cost assessments, enforcing harmonization and synergy for the program.

Mol (Belgium), 22 December 2025 - Technical requirements and design, project cost assessment, safety approach and fuel qualification are the pillars for the harmonized and synergic advancement of EAGLES-300, the innovative fourth-generation lead-cooled reactor to be developed in Europe by 2039, and its demonstrators LEANDREA and ALFRED: those were the main topics consolidated during the first joint gate review of the EAGLES Consortium, held in Mol, Belgium, from December 15 to 17.

The meeting provided a valuable in-person opportunity for design teams from all four partner organizations- Ansaldo Nucleare, ENEA, RATEN, and SCK CEN-who effectively collaborate across borders on a daily basis, to consolidate the consortium's shared vision and development path. This gate review represented another step in a structured collaboration that builds upon more than two decades of joint European efforts in lead-cooled reactor design, research and development.

Over three days, participants reviewed the status of advancement of the manifold actions being performed under the partnership, focusing on requirements, integration, fuel qualification and safety approaches, and cost considerations, acknowledging the pace of progression of the activities, in line with the roadmap, and enabling the next phase to start. The outcomes of the gate review also consolidated the key elements of engagement with the safety authorities of Belgium, Italy and Romania through the IAEA's extra-budgetary project (EBP) launched in September, as a strategic asset towards the harmonization of the licensing approaches, ensuring a robust foundation for future deployment of EAGLES-300 in Europe.

About EAGLES

EAGLES (European Advanced Generation IV Lead-cooled Energy System) is a European programme to develop and prepare the market introduction of a lead-cooled fast Small Modular Reactor (EAGLES-300) by 2039. The programme unites Europe's leading nuclear research centres and industrial partners - Ansaldo Nucleare and ENEA from Italy, RATEN from Romania, and SCK CEN from Belgium - to deliver a flexible, efficient and commercially sustainable nuclear system.

About EAGLES-300

EAGLES-300 is the 300 MWe commercial lead-cooled fast SMR model developed under the EAGLES programme. It combines inherent safety, low-pressure operation and passive heat-removal capabilities with the efficiency advantages of a fast neutron spectrum, enabling improved fuel utilisation and compatibility with a closed fuel cycle. The reactor's high-temperature output will enable both electricity generation and a range of industrial applications, including hydrogen production and molecule synthesis for energy-intensive industries. Commercial deployment of EAGLES-300 is targeted for 2039, following the successful operation of the programme's two demonstrators (LEANDREA, in Belgium, and ALFRED, in Romania). Entirely designed within the European scientific and industrial ecosystem, EAGLES-300 will support the long-term objectives of energy sovereignty, safety, climate neutrality, responsible resource management and reduced high-level waste.

