

Developing nuclear energy capacity – a sustainable path forward for Romania

Keynote by H.E Brandusa Predescu, Ambassador of Romania to the Republic of Bulgaria

Ladies and Gentlemen,

As we navigate the complexities of the 21st century, the challenges of energy security and environmental sustainability are at the forefront of national and global agendas. Civil nuclear energy emerges as a powerful ally in addressing these challenges, offering a reliable, low-carbon, and sustainable energy solution.

Romania highly welcomes the recent positive developments regarding the recognition of the role of nuclear energy throughout EU and global policies - the joint declaration signed by more than 20 countries on 4 continents on the sidelines of the COP28 conference on the tripling of nuclear energy production capacity by 2050, the inclusion of nuclear energy in the Net Zero Emissions Industry Act (NZIA), in the Electricity Market Reform (EMD) as well as in the communication on the 2040 objectives.

RO has been an active part of the efforts made by the pro-nuclear EU member states in this endeavour as we firmly believe that it is important to strengthen our commitment to the expansion of nuclear power in the European Union and the global energy mix.

We also need to make sure that our nuclear energy ambitions benefit from suitable financial support, combining public and private funding in creating a business model for accelerated nuclear deployment, easily replicable. We need to expand our investments in research, demonstration projects, and development of new nuclear materials and technologies.

As the climate agenda needs to be correlated with the industrial agenda, it is essential that we ***ensure a solid, state of the art nuclear supply chain in the EU***. This is key to ensure competitiveness and the nuclear industry will require an enabling framework in order to cover our energy needs.

It is also important to build on the collaborative efforts of the European nuclear industry and scientific community to achieve the common goal of a modern, resource-efficient and competitive economy.

Romania welcomes the launching of the SMR Industrial Alliance, an initiative we have been actively involved since the pre-partnership phase and will continue to do so in the future. The European nuclear sector is a strong asset. The EU already has a high degree of expertise and experience in nuclear technologies that we can further build upon.

Ladies and Gentlemen,

I will now refer, briefly, to Romania's plans on nuclear energy:

Nuclear energy is a basic component of the Romanian national energy mix. It has a significant share in total electricity production (about 18%), being supported by an infrastructure that covers the entire nuclear fuel cycle.

Romania has *a long-standing tradition and rich expertise* in the nuclear sector, gained through the construction, commissioning and safe operation of Cernavodă Nuclear Power Plant (NPP) units 1 and 2 - built with CANDU reactors/technology - and also through other nuclear facilities, such as the heavy water plant, the nuclear fuel plant, research institutes, engineering and advanced physics centers, a dedicated system of education.

In order to ensure the access to energy supply and to meeting its decarbonizing commitments, RO intends to capitalize on the existing assets and operational experience in order to **enlarge its production capacity** in the following years and decades. Moreover, Romania aims to become a **regional leader** in the operation and deployment of nuclear energy, in the training of specialized workforce and a supply chain hub for nuclear energy production.

The *Agreement between the Government of Romania and the Government of the United States of America on cooperation in relation to the Cernavoda nuclear power projects and in the Romanian civil nuclear energy sector* signed in December 2020, covers **several areas of cooperation**, that are essential components of developing Romania's nuclear energy capacity, as well as reforming the national energy outlook by means of clean, safe energy.

With regard to concrete projects the outlook is the following:

1. Romania will build two additional nuclear units at Cernavoda NPP (Units 3 and 4) within the Euro-Atlantic cooperation framework, which will be completed by 2030-2031. Following the notification of the Units 3 and 4 Cernavoda NPP project to the European Commission in June 2023, according to the Article 41 of the Euratom Treaty, the Ministry of Energy and SN Nuclearelectrica S.A. are in contact with the evaluation teams within DG ENER and DG COMP in order to obtain a positive opinion from the Commission for the continuation of the project.

During the UN climate summit COP27 in Egypt, in November 2022, RO signed with US Export-Import Bank (EXIM) two letters of intent on providing loan agreement for **more than \$3 billion for the completion of units 3 and 4** of Cernavodă NPP, covering one-third of the necessary funds¹.

¹ Based on this agreement, US EXIM Bank will be able to consider financing pre-program technical services in the second stage of the project, in value of up to 50 mil. USD, as part of the Engineering Multiplier Program (EMP). Further on, in the third stage of the project, US EXIM bank could consider financing engineering and project-management services of up to 3 bill. USD, for completing works at units 3 & 4 of Cernavodă NPP.

Upon the completion of this nuclear energy development project, RO will *add, in 2031, 10 TWh of zero-CO2 emissions* to the National Energy System.

2. Nuclearelectrica SA has developed a *strategy for the nuclear fuel integrated cycle* and acquired the necessary assets (a *subsidiary in Feldioara*) for the processing of the raw material. The acquisition aims at ensuring integrated production capabilities within NNS and maintaining the nuclear fuel cycle at national level, at an advantageous transaction cost, as well as reducing the reliance on a single supplier.

3. Moreover, by 2028, *RO will extend the operating life of Unit 1 Cernavoda NPP* by another life cycle of 30 years, until 2060, considering that the costs of the refurbishment process are around 40% of the value of a new built of the same capacity. CANDU Energy Inc., member of SNC Lavalin Group², was selected to carry out the supplementary pre-project works for the refurbishment of CANDU® Unit 1 reactor of Cernavodă NPP.

4. In terms of *nuclear research and innovation*, Romania is engaged in being a part of the *SMR deployment in Europe*, building on the expertise already gained by the Romanian specialists and ensuring that the transition away from coal is coupled with the creation of new jobs, business opportunities and local development.

RO plans to build **6 NuScale modules** with an overall output of **462 MW**, by **2028**, using existing assets on *coal decommissioned sites* that can be repurposed, while reskilling workers to ensure that the energy transition is fair and affordable.

The *6-module NuScale* power plant will also generate *193 permanent jobs, 1,500 jobs in construction, and 2,300 jobs in production*. It will help avoiding the generation of 4 million tons of CO2 emissions, per year.

The **first SMR in Romania** is going to be built in Doicești, Dâmbovița County, on the site of a decommissioned coal power plant.

RO aims to be at the forefront of SMR's deployment in Europe. On 12 May 2023, the first *European Centre for the Exploration of Energy (E2 Centre)*³ has been inaugurated at Bucharest Technical University. The Centre hosts the **Simulator for the Command Room** of the NuScale Small Modular Reactor. The *E2 Centre* will enable both the students and experts of the Technical University to prepare for the construction and operation of the first SMR and will contribute to the development of a regional *training hub* for experts in SMR technology.

² SNC-Lavalin Group Inc. is a Canadian company based in Montreal that provides engineering, procurement, and construction services to various industries, including mining and metallurgy, oil and gas, environment and water, infrastructure, and clean energy.

³ E2 Centre is developed as part of the Foundational Infrastructure for Responsible Use of Small Modular Reactor Technology (FIRST) Program, a US Administration initiative that provides capacity-building support to partner countries and assist in implementing safely and responsibly the SMR technology.

On March 2024, U.S. EXIM Bank and U.S. International Development Finance Corporation have committed to providing \$4 billion (3.7 billion euro) for the construction of the Doicești small modular reactor (SMR).

In conclusion, for Romania, civil nuclear energy is indispensable in its efforts to secure a stable, sustainable, and prosperous future. Romania will continue to be an active part of the efforts made by the pro-nuclear member states in view of promoting the role of nuclear power, as it ensures our energy security by providing a reliable and independent power supply, helps us meet environmental objectives assumed at European and global levels by significantly reducing greenhouse gas emissions and drives economic growth, innovation and technological advancement.

Thank you for your attention!