



# World Nuclear Exhibition 2025

[www.nuclearelectrica.ro](http://www.nuclearelectrica.ro)







NUCLEARELECTRICA

**NUCLEARELECTRICA has nearly  
30 years of experience in  
operations, at the highest level of  
safety and productivity.**

Nuclearelectrica has made Romania a well-established operator in the global nuclear industry, while being a key contributor to the country's development of energy expertise, safe technologies and decarbonization efforts.





# SNN MISSION

We generate clean energy at standards of excellence

- **the high value of the utilization factor of the installed capacity**; at an equal installed power, a nuclear group produces twice the amount of energy compared to conventional ones;
- **lack of** greenhouse gas emissions;
- **the small dependence of the cost** of the energy produced on the variations in the price of uranium, due to its small weight compared to other types of energy;
- **the high technical level** of the operating staff, the reasonable level of generation costs;
- nuclear energy **meets the requirements of security** of supply, sustainable development and competitiveness.



The SNN logo is located at the top left of the right page, featuring a stylized red 'N' with a white swoosh. Below it, the text 'NUCLEARELECTRICA' is written in a small, white, sans-serif font. The background of the right page is a dark blue space with a large, stylized atomic symbol in the center. The atomic symbol has a bright yellow and orange nucleus with several blue and green electron orbits. The text 'SNN MISSION' is written in a large, white, sans-serif font, with 'SNN' in red. Below it, the text 'We generate clean energy at standards of excellence' is written in a large, white, sans-serif font.

**SNN MISSION**  
We generate  
clean energy  
at standards  
of excellence



# SNN VISION

**We build a sustainable future for tomorrow's generation.**

We are dedicated to **producing clean, safe and sustainable energy**. We continuously invest in innovation and technology to protect natural resources and ensure energy safety. Through **responsibility and efficiency**, we contribute to a healthier environment and a safer future for next generations.



VISION **SNN**  
**We build a  
sustainable  
future for  
tomorrow's  
generation.**

# Romania's journey in the nuclear industry – in a nutshell

## STAYING ON TOP



- Nearly 30 years of operations
- **Excellence:**
  - CNE Cernavodă operates 2 of the best-performing units among +440 nuclear power plants worldwide, considering on the capacity factor
  - Romania – the first place worldwide considering the **Station Lifetime Capability Factor – UCF: 92.2%**
- **Supply chain:** +50 years - experience in nuclear, evolving as a mature local nuclear industry
- **Regulatory Body** – National Commission for Controlling Nuclear Activities (**CNCAN**)
- **Education in engineering: Employer branding platform – Nucleus of Excellence:** network of universities where we operate: Politehnica University in Bucharest (the 1st SMR Simulator to train students), Ovidius University in Constanța (Dual education partnership), Pitești University Centre, Valahia University in Târgoviște
- **Corporate Social Responsibility (CSR) Platform – Nucleus of Care** – our commitment to supporting the development of the communities we operate in; projects in strategic areas: i.e. health, education, environment etc



## Nuclear energy in Romania at present



Avoiding CO2 emissions in Romania since the commissioning of Cernavodă NPP

**225 milion Tones**

Annual reduction of CO2 emissions due to the operation of the plant

**10 milion Tones**

Nuclear energy in Romania now – 1,400 MWe, production - 235,500,000 MWh, Average Capacity Factor: 92.00%

**18-20%**

Nuclear contribution to clean electricity

**33%**

Jobs in the industry

**11,000**

Investments estimated at the level 2030 decade

**EUR 20 bln**



# **SNN** NUCLEAR SAFETY

We constantly maintain a high level of nuclear safety in all phases of construction and operation of nuclear facilities and objectives is of vital importance and constitutes the first priority for Nuclearelectrica.





## NUCLEARELECTRICA (SNN) Bucharest Headquarters

## SNN STRUCTURE

### Cernavodă NPP – Units 1&2 Branch

- Safe & Efficient operation of Units 1 & 2
- Management of all Company assets in Cernavodă
- Town heating supplier



### Nuclear Fuel Plant Pitești (FCN Pitești) Branch

- Manufacturer of nuclear fuel bundles for Cernavodă NPP



100% owned by SNN

Energionuclear  
Subsidiary (PCO)  
Units 3&4 Project

Nuclearelectrica SERV  
Subsidiary

Uranium Concentrates  
Processing Factory  
Subsidiary

### Shareholders structure

- |                      |          |
|----------------------|----------|
| • Ministry of Energy | 82.4981% |
| • Others             | 17.5019% |





## **SNN** STRUCTURE

**CERNAVODA NUCLEAR POWER PLANT (CERNAVODA NPP BRANCH):** operates 2 of the best-performing units among +440 nuclear power plants worldwide, considering on the capacity factor; uses natural uranium as fuel and heavy water as moderator and cooling agent; the branch's management processes are developed based on international safety and security standards.



## SNN STRUCTURE

**PITESTI NUCLEAR FUEL PLANT (NFF PITESTI BRANCH):** the only nuclear fuel factory in South-East Europe and the only CANDU nuclear bundle factory in Europe, producing each year approximately 11,000 fuel bundles.



## SNN STRUCTURE

**FELDIOARA URANIUM CONCENTRATES PROCESSING PLANT (UCPP FELDIOARA SUBSIDIARY):** providing the infrastructure needed for optimal processing of raw materials, maintaining and strengthening the integrated fuel cycle and providing the final product, uranium dioxide powder ( $\text{UO}_2$ ), needed for the manufacture of nuclear fuel bundles by PITESTI NUCLEAR FUEL PLANT.

# SNN STRUCTURE

**NUCLEARELECTRICA SERV S.R.L. SUBSIDIARY:** support activities for the decontamination area and general services support, such as assembly/dismantling of scaffolding, decontamination of reusable equipment, decontamination of areas in the protected zone, processing and characterization of radioactive waste, support activities for engineering and work evaluation, preventive and corrective maintenance services for sanitary and air conditioning installation.

**ENERGONUCLEAR S.A. SUBSIDIARY:** responsible for the Construction, Commissioning and Commercial Operation of CANDU Units 3 & 4 at CERNAVODA NUCLEAR POWER PLANT, which involves managing the execution design, obtaining authorizations and licenses, equipment procurement, assembly, commissioning, and start of commercial operation



## SNN STRUCTURE

**ROPOWER NUCLEAR S.A.**  
**PROJECT COMPANY:** as a joint venture between Nuclearelectrica SA and Nova Power & Gas, it is responsible for the development of the Small Modular Reactors (SMR) Project, a state-of-the-art nuclear technology. RoPower's objective is to reoperate the former coal-fired power plant in Doicești, Dâmbovița County, by developing a robust, technologically advanced nuclear project, a NuScale VOYGR-6 power plant with an installed capacity of 462 MWe.







#### **SNN**MISSION

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of excellence

#### **SNN**VISION

We build a sustainable  
future for tomorrow's  
generation

# WE INVEST FOR THE FUTURE!





# Refurbishment of Unit 1

RTH

## SNN PROJECTS

**REFURBISHMENT OF UNIT 1 PROJECT AT CNE CERNAVODA** - CANDU reactors have an initial lifespan of 30 years. Following a refurbishment process, this lifespan can be extended by another 30 years, which Nuclearelectrica is currently doing with Unit 1. Unit 1 was put into commercial operation in 1996. Refurbishing it means another 30 years of operation after 2029, at less than half the cost of a new nuclear reactor. Concretely, it means another 30 years without CO2 emissions.

# Nuclearelectrica for a Sustainable Future

A photograph of a nuclear power plant featuring several large, cylindrical containment domes. A large, semi-transparent purple arrow points from the left towards the right, highlighting the 'Refurbishment of Unit 1' section. The sky is clear and blue.

**Refurbishment  
of Unit 1**

**RTH**



# The Units 3 & 4 project

**U 3&4**

## **SNN PROJECTS**

**CANDU UNITS 3 & 4 PROJECT AT CNE CERNAVODA** - consists in the completion of the construction and commissioning of 2 units of at least 724 MWe installed each, with annual electric energy output of more than 10.5 TWh, each.

# Nuclearelectrica for a Sustainable Future

Completing the construction and commissioning of Units 3 and 4 will mean an additional 10 TWh/year of clean energy.

The Units 3 & 4  
project

U3&4





# Small Modular Reactors project

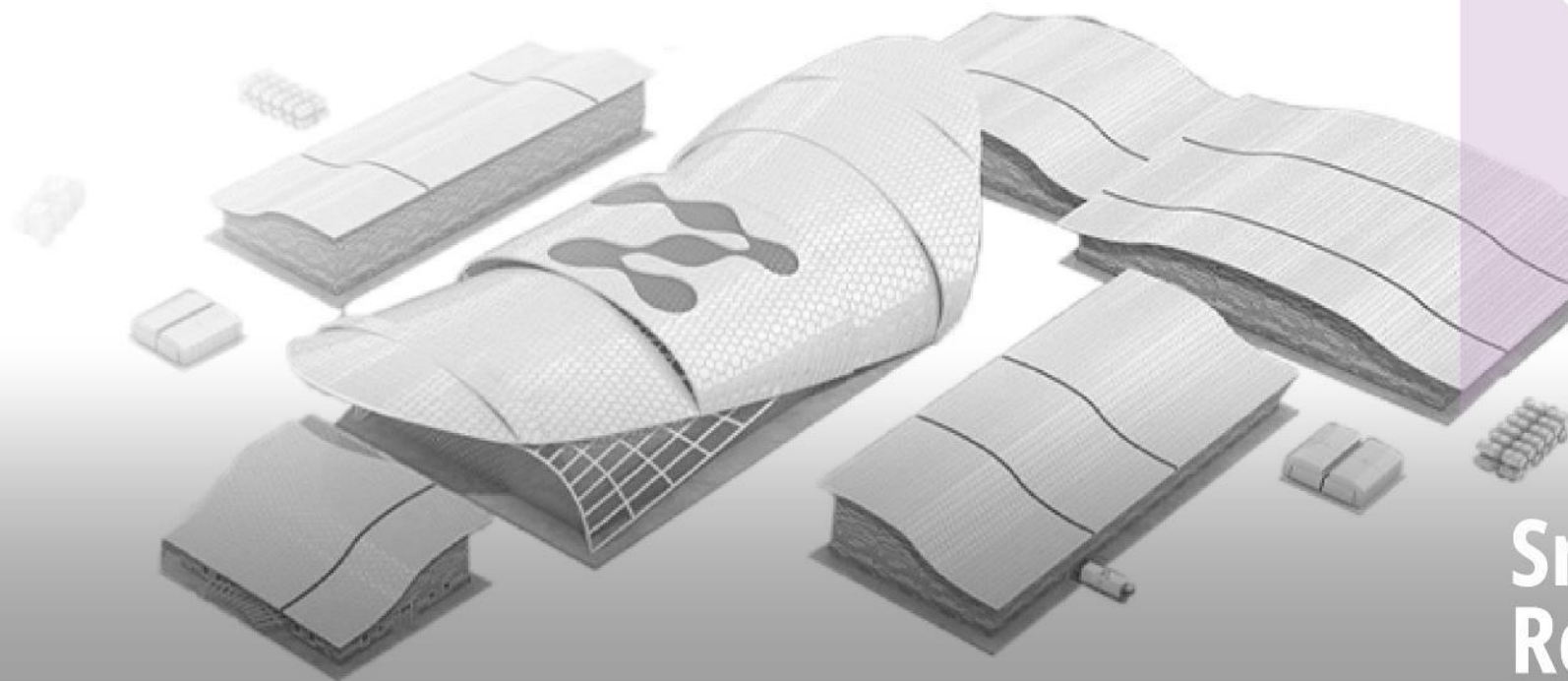
SMR



## SNN PROJECTS

**SMR PROJECT** - Romania has the potential to become the first country in Europe to implement small modular reactors (SMRs), a state-of-the-art nuclear technology, and a catalyst for the expansion of this technology in the region. ROPOWER NUCLEAR S.A. PROJECT COMPANY is a joint venture between Nuclearelectrica SA and Nova Power & Gas, being responsible for the development of SMR. Its objective is to reoperate the former coal-fired power plant in Doicești, Dâmbovița County, by developing a NuScale VOYGR-6 power plant with an installed capacity of 462 MWe.

# Nuclearelectrica for a Sustainable Future



Small Modular  
Reactors project

SMR



# Cernavoda Tritium Removal Facility

**CTRF**



## **SNN PROJECTS**

**CERNAVODA TRITIUM REMOVAL FACILITY (CTRF) PROJECT** - the Tritium Removal Facility will extract tritium from the heavy water used in the reactors' cooling and moderation systems, which will enable the indefinite reuse of heavy water without it becoming radioactive waste. Furthermore, the recovered tritium will be safely stored and can potentially be used as fuel in future fusion reactors, thus minimizing the environmental impact of tritium and enhancing the operational efficiency of Cernavoda Nuclear Power Plant.



# Nuclearelectrica for a Sustainable Future

Cernavoda Tritium  
Removal Facility

CTRF





# Medical Isotopes project

**IRIS**

## **SNN PROJECTS**

**MEDICAL ISOTOPES PROJECT** – strategic project for the development and production of medical isotopes at Cernavoda Nuclear Power Plant, such as Lutetium -177, used for oncological treatments. The radioisotopes produced will be used both in therapeutic treatments and in diagnostic medical imaging, therefore supporting the health industry and combating diseases such as cancer.

# Nuclearelectrica for a Sustainable Future

We support the implementation of innovative technologies for cancer treatments.

Medical Isotopes  
project

IRIS







## **SNN PROJECTS**

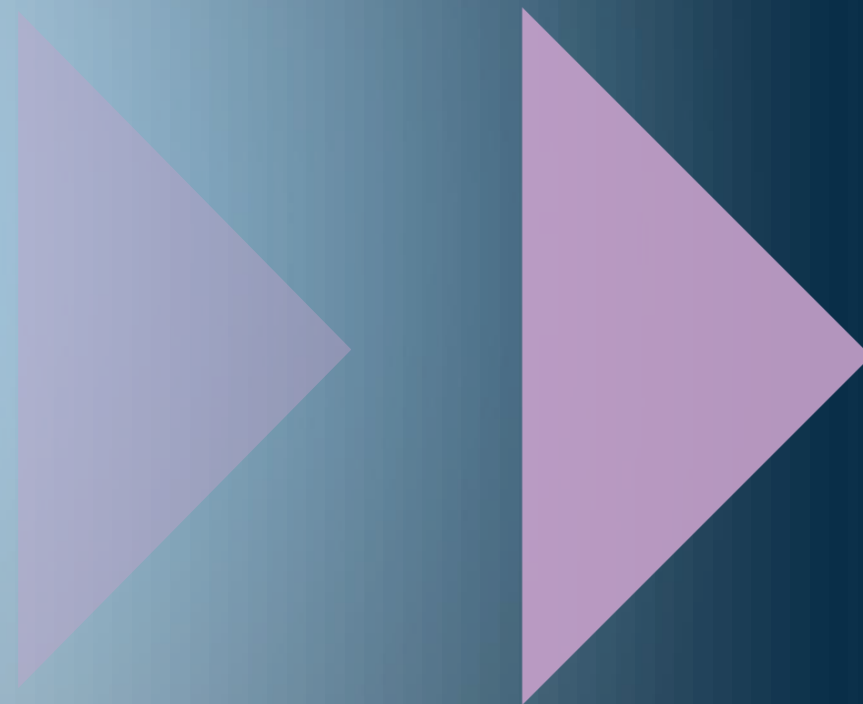
**INTERMEDIATE STORAGE  
FOR BURNT FUEL (DICA)  
PROJECT** – intended for the  
long-term management of spent  
nuclear fuel resulting from the  
operation of Units 1 and 2 of  
Cernavoda Nuclear Power  
Plant.



NUCLEARELECTRICA

# SNN PROJECTS

**INTEGRATED NUCLEAR FUEL CYCLE PROJECT** – at Pitesti Nuclear Fuel Plant, Nuclearelectrica produces nuclear fuel bundles used in the CANDU reactors at Cernavodă. By acquiring the uranium concentrate processing line at Feldioara Uranium Concentrates Processing Plant, Nuclearelectrica completed the entire production chain, from the processing of raw material (uranium concentrate) to the production of nuclear fuel used in reactors. Moreover, Nuclearelectrica secured direct access to uranium processing, thus reducing dependence on external suppliers and ensuring greater control over fuel costs and quality.







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**SAFETY AND SUSTAINABILITY**

**PROFESSIONAL EXCELLENCE**

**CARE FOR EMPLOYEES**

**EMPATHY AND RESPONSIBILITY**

**SUSTAINABLE DEVELOPMENT**