



SMRs Overview

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What is an SMR?

- ▶ SMRs < 300 MWe << traditional reactors
- ▶ Centralised fabrication with delivery on-site
- ▶ Modular installed power
- ▶ Economies of scale past the first few tens of plants

SMRs - Target technology benefits

- ▶ **Safety:** Passive systems, smaller cores with reduced nuclear material and accident tolerant fuels
- ▶ **Flexible Usage:** electricity, heating, industrial applications, desalination, grid stability and security
- ▶ **Flexible deployment:** Multi module configurations
- ▶ **Economy:** Economies of multiples vs Economies of scale
- ▶ **Plant Life:** 60 years

Technologies & Markets

Design	Vendor	Type	Output	Development	Status	Interest
VOYGR	NuScale Power (USA)	Integral PWR	4/6/12 x 77 MWe	USA, Romania	FEED Stage	Poland, Bulgaria, Estonia, Czechia, South Korea, Indonesia
BWRX-300	GE-Hitachi (USA-Japan)	BWR	300 MWe	USA, Canada	FEED Stage	UK, UAE, Estonia, Czechia
SMR-160	Holtec International (USA)	PWR	160 Mwe	USA	N/A	US, UK
UK-SMR	Rolls-Royce SMR Ltd (UK)	PWR	470MWe	UK, Netherlands	MoU	Poland, Sweden, Ukraine, Czechia

Doicești SMR



► Characteristics

- Solar – Nuclear Hybrid Plant replacing a Coal Power Plant
- 462MWe installed capacity, consisting of 6 x 77MWe NuScale Power Modules (NPMs)
- Safety: Passive mechanisms & 3 envelopes
- **Integrated Design:** Reactor, Steam generator and Pressuriser
- **Safety:** Cooling system and three envelopes: Containment vessel, reactor pool and the reactor building
- **Plant Life:** 60 years
- **Operational flexibility:** 10% - 100% power
- Advanced, digitised and automatised control systems

Doicești SMR



▶ Romania could become

- ▶ A catalyst for SMRs in the region
- ▶ A base for production and assembly of components
- ▶ A hub for expert training
- ▶ A maintenance hub
- ▶ S. N. Nuclearelectrica, preferred operator

▶ Status

- ▶ Jan '24: LNTP Contract signed to enable project transition during FEED 2 negotiations, Kick-Off Meeting successfully completed, certain work-packages brought forward in LNTP.

Workforce training

Deschiderea oficială a primului Centru de Explorare a Energiei din Europa la Universitatea POLITEHNICA din București



FOUNDATIONAL INFRASTRUCTURE FOR
RESPONSIBLE USE OF SMRI TECHNOLOGY



Why Romania?

More than 26 years of safe nuclear plants operations for S.N. Nuclarelectrica

More than 50 years of experienced rigorous Nuclear Industry Regulator (CNCAN)

More than 50 years of experienced Nuclear Industry supply chain

Public opinion and political support

Highly appreciated engineering education system



Thank you!