EUROPEAN NUCLEAR SOCIETY

Contribution of Nuclear Societies to Climate and Energy Security

INSC Workshop 2026









EUROPEAN NUCLEAR SOCIETY

Supporting Scientific Excellence

- Austrian Nuclear Society
- Belgian Nuclear Society
- Bulgarian Nuclear Society
- Croatian Nuclear Society
- Czech Nuclear Society
- Finnish Nuclear Society
- French Nuclear Energy Society
- German Nuclear Society
- Hungarian Nuclear Society
- Israel Nuclear Society
- Italian Nuclear Association
- Lithuanian Nuclear Energy Society
- Netherlands Nuclear Society
- Slovak Nuclear Society
- The Nuclear Institute
- Serbian Nuclear Society
- Nuclear Society of Slovenia
- Polish Nuclear Society
- Swedish Nuclear Society
- Swiss Nuclear Society
- Spanish Nuclear Society
- Ukrainian Nuclear Society

Learned Society promoting the development and understanding of peaceful nuclear applications in every field:

- Energy
- Medicine
- Science
- Space exploration etc.

22 Member Societies

- **+12.000 Members, from**
  - Academia
  - Research centres
  - Industry
  - Authorities

Supporting Scientific Excellence



29 Corporate Members supporting the organisation

- Bringing **excellence in multiple nuclear fields**
- Shared in-depth expertise, **building the ground for new cooperation** among ENS members and international partners

Plans for 2027 – selected events





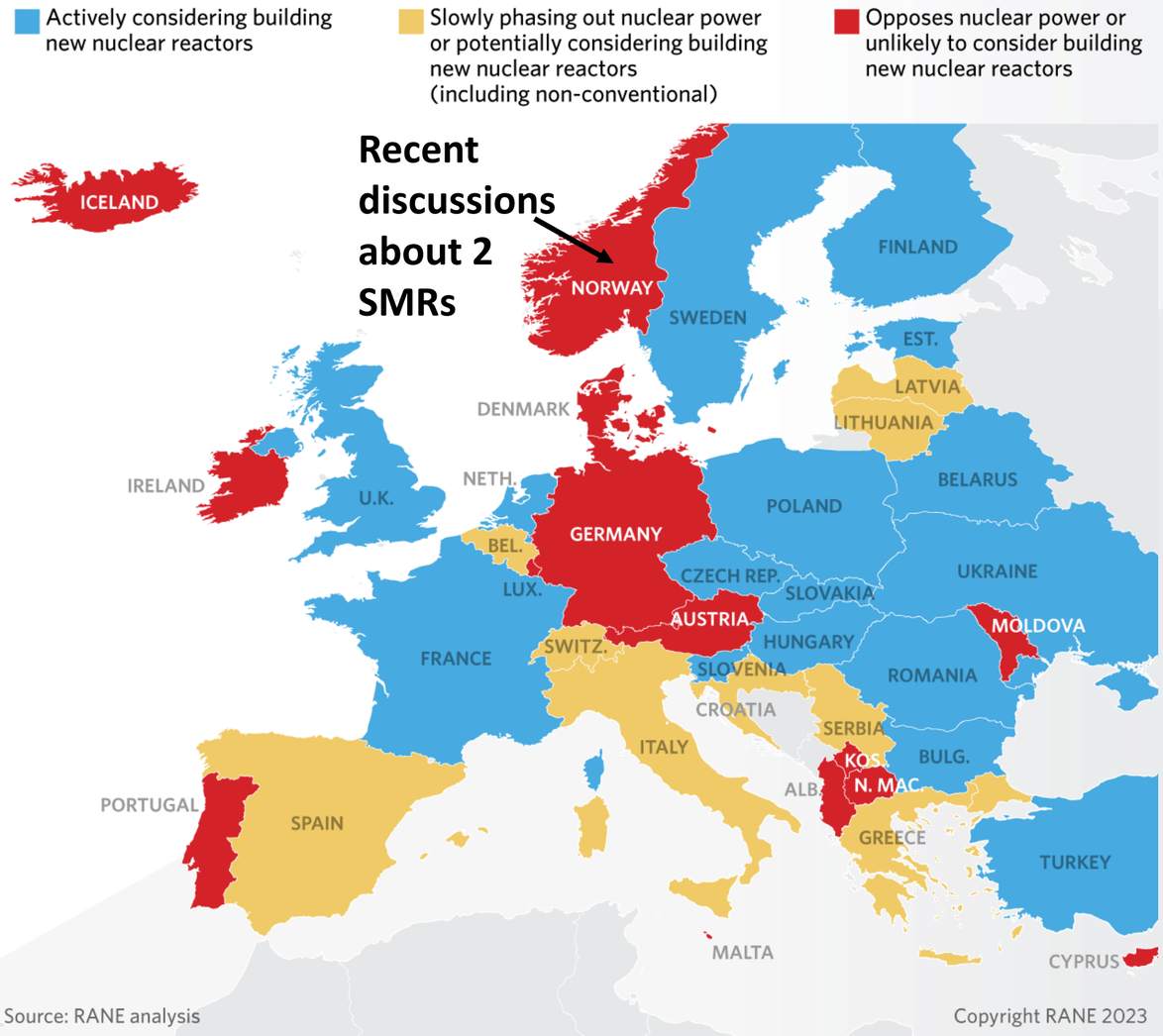


PiME 2024
COMMUNICATING NUCLEAR

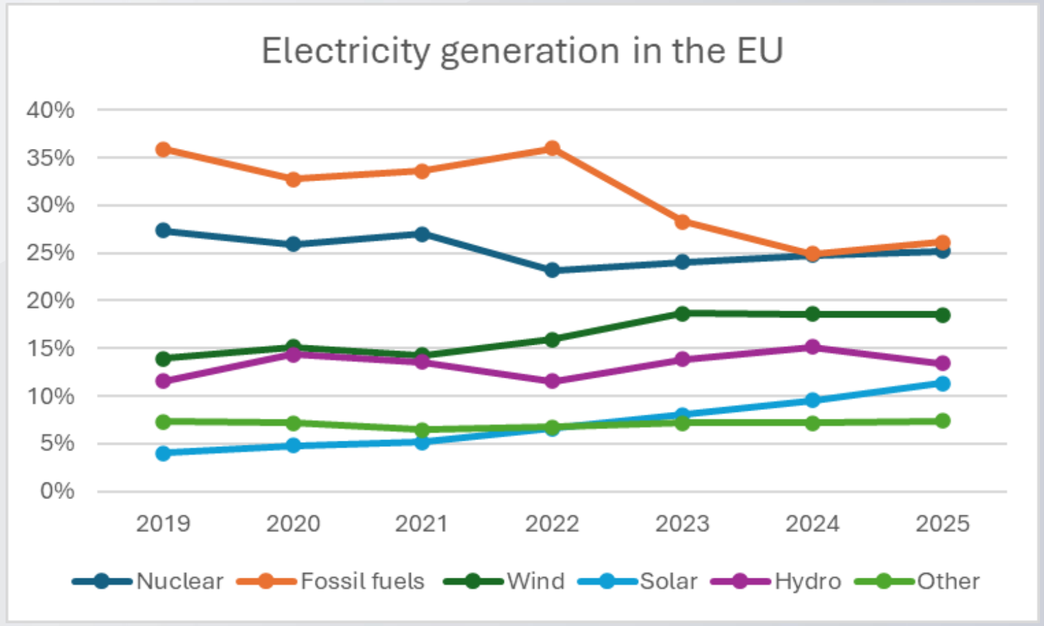
TBA, Manchester, UK

Nuclear in Europe

Support for Nuclear Power in Europe



Operating Reactors	Reactors in construction	Workforce
126 in Europe (**98** in the EU)	HPC-1&2 Mochovce-4 Paks-II Khmelnytskyi-3&4	**500k** skilled workers in the EU

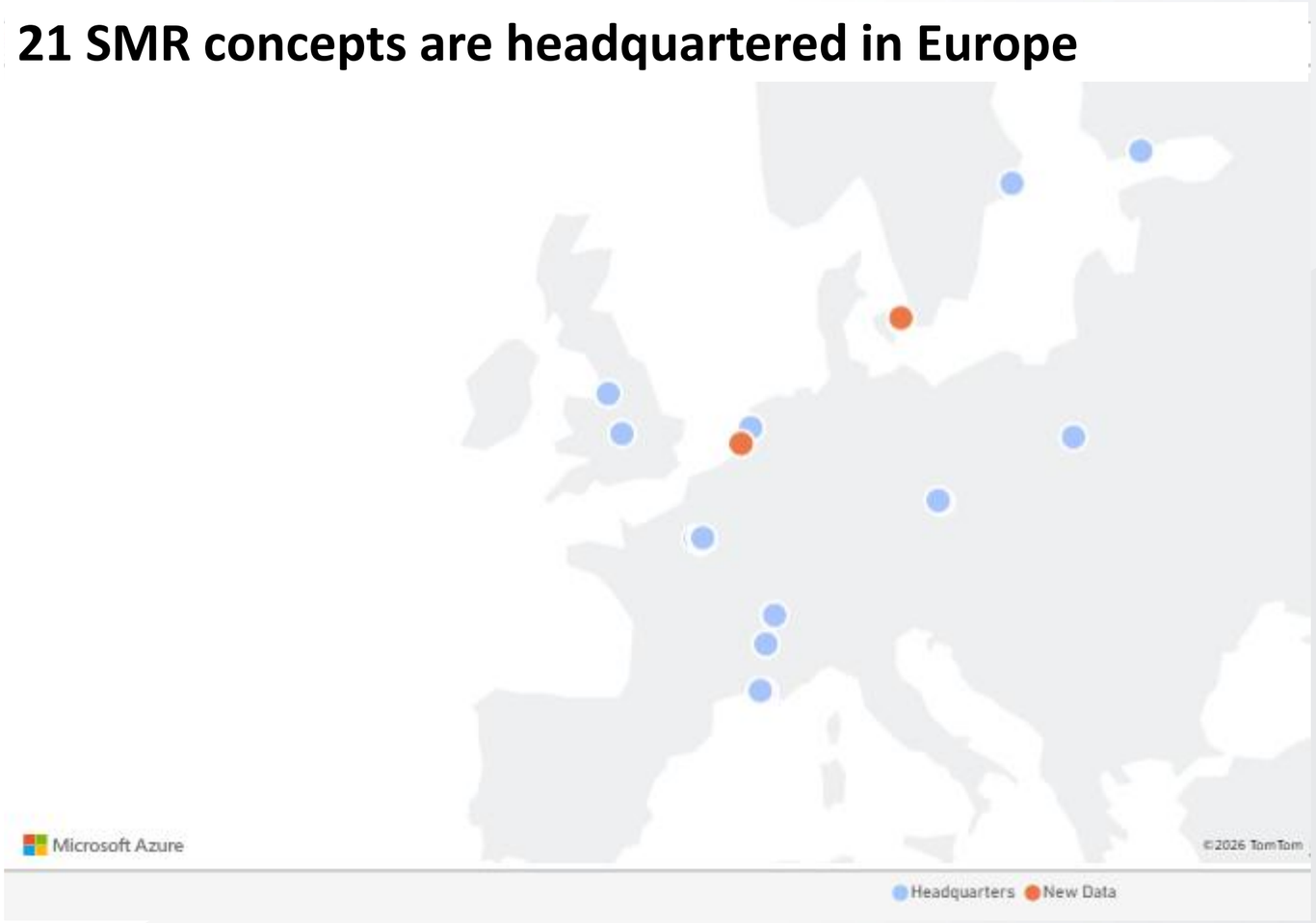


Source: ENTSO-E

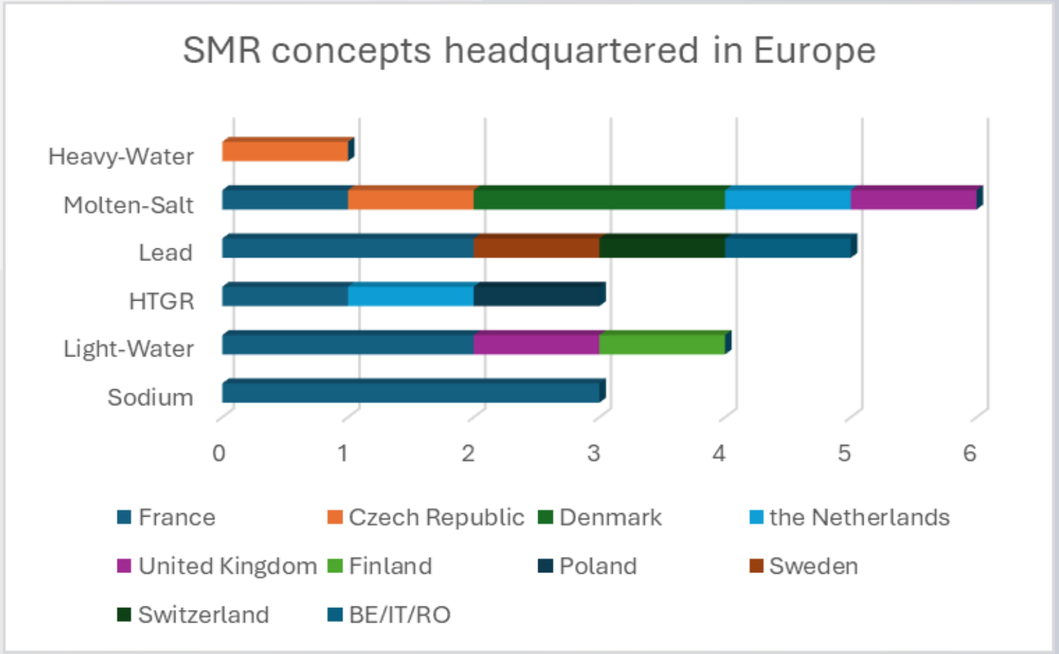
Reactors in LTO in Europe	Operating experience	Research reactors
87 (Beznau-I, longest operating in the world)	**8400+** years power reactor operation	**36**

SMRs in Europe

21 SMR concepts are headquartered in Europe



Source: NEA SMR Dashboard



Source: Based on NEA SMR Dashboard and ENS

European Industrial Alliance on SMALL MODULAR REACTORS

Climate policy & nuclear

EU Climate Law

- Net Zero target by 2050
- Climate Target: 90 % reduction in net GHG emissions by 2040, compared to 1990.
- The amended European Climate Law, including the 2040 target and related details, entered into effect on 7 April 2026

EU ETS (Emissions Trading System)

- ETS cap tightened and ETS2 extends carbon pricing to buildings and road transport

Electrification Action Plan

- 46% share of electricity in final energy consumption by 2040

Energy security & nuclear

Nuclear in the EU by 2050:

- 109-144 GW of nuclear (Nuclear Illustrative Programme, PINC)
- + 17 – 53 GW of additional power from SMR (SMR Strategy)

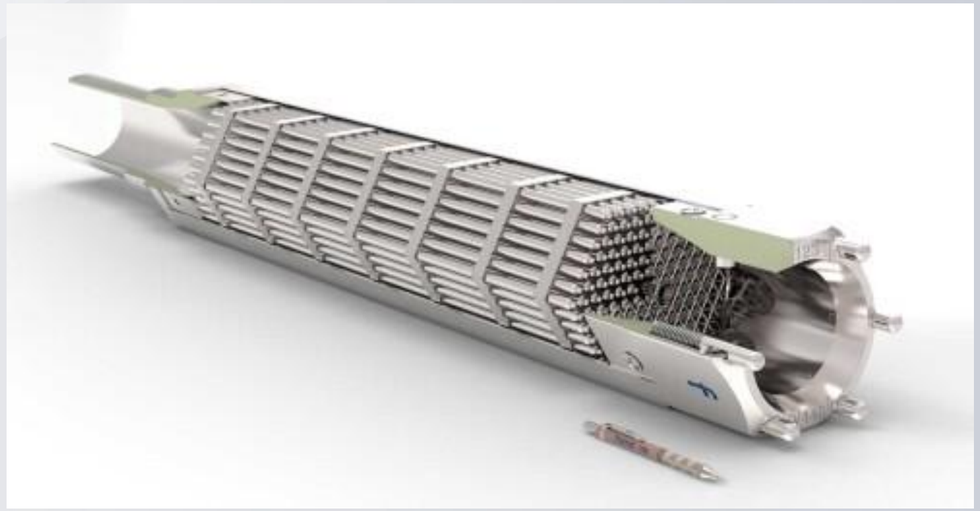
REPowerEU :

- EU's energy-security and clean-energy plan launched by the European Commission in response to Russia's invasion of Ukraine and Europe's dependence on Russian fossil fuels.
- **Objective:** rapidly reduce EU dependence on Russian fossil fuels while accelerating the clean-energy transition. Main axes:
  - save energy
  - diversify energy supplies (including Russian uranium, enriched uranium and other nuclear materials)
  - produce clean energy

Energy security: autonomy

- Framatome:
  - agreement with operators of VVER -type nuclear power plants: ČEZ (Czech Republic), Fortum (Finland), MVM Paks NPP (Hungary), and Slovenské elektrárne (Slovakia) to develop 100% European sovereign VVER fuel

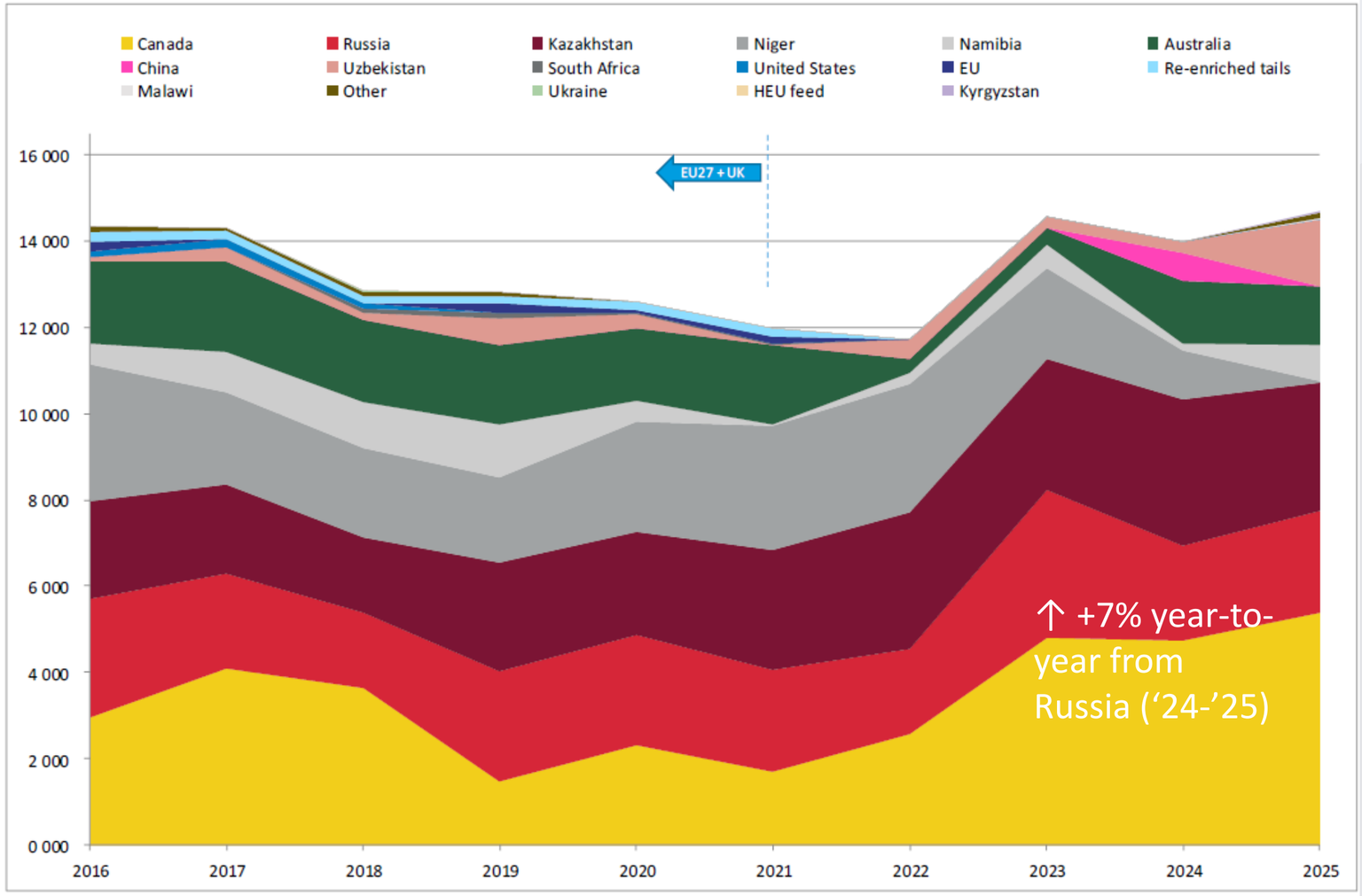
- Westinghouse:
  - Alternative VVER fuel supply
  - Fuel engineering services
  - Fuel technology & core
  - Core design & safety analysis



3D view of Framatome-designed VVER fuel
framatome.com

Source: Euratom Supply Agency Annual Report 2025

So far – work in progress



Conversion services:
+8,6% year-to-year from Russia

Converter	Quantity in 2025 (tU)	Share in 2025 (%)	Quantity in 2024 (tU)	Share in 2024 (%)	Change in quantity 2024/2025 (%)
Orano (EU)	3 292	24.85	2 840	21.34	15.91
Rosatom (Russia)	3 233	24.40	2 977	22.37	8.60
ConverDyn (US)	2 825	21.32	2 898	21.78	-2.51
Cameco (Canada)	2 791	21.07	2 643	19.86	5.61
Unspecified	1 107	8.36	1 949	14.65	-43.18
Total	**13 248**	**100**	**13 306**	**100**	**-0.44**

Enrichment services:
22,5% from Russia

Enrichment origin	EUP tU 2025	Uranium feed 2025 (tU)	Quantity in 2025 (tSW)	SW share in 2025 (%)
EU	1 434	10 587	8 844	72.91
Russia	336	2 891	2 735	22.55
Other *	93	661	551	4.54
TOTAL	**1 863**	**14 139**	**12 130**	**100**

Purchases of natural uranium by EU utilities, by origin, 2016-2025 (tU) (5% total change in quantity)

So far – work in progress

- Climate change-induced weather events impact functioning of NPPs

- **Example:** Paks, Hungary & Cernavoda, Romania, summer heatwave 2026
- **What:** low Danube level caused shutdown of Cernavoda and some units in Paks. Romania sinks rocks and barges to raise water level
- **Adaptation:**
  - MVM is lowering the cooling-water intake level for Paks I
  - For upcoming Paks II: new water-intake and hydraulic configuration designed to maintain adequate cooling even under very low-flow conditions



Paks NPP; sfen.org

Climate through nuclear advocacy in Climate space: Nuclear for Climate

- A **grassroots, youth-led initiative** gathering +150 international nuclear associations
- **The goal:** supporting the inclusion of nuclear energy among the carbon-free solutions to climate change
- Initiative is coordinated together by **ENS and ENS-YGN**



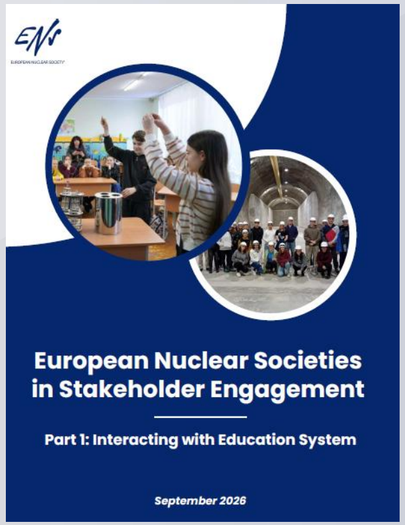
Energy Security through future workforce

Young Generation Network

- 4000+ Members
- Nuclear youth representation
- Attractiveness of the sector
- Youth Scientific Conference
- Competition: Innovation for Nuclear
- Attendance grants



Energy Security through future workforce



Focus Group on school and public engagement

- Report published in September 2026
- 29 education project formats for school-age audience
- **Reaching +2400 pupils in 2025 and up to 7200 in previous years**
- 2027: Report on projects targeting general public

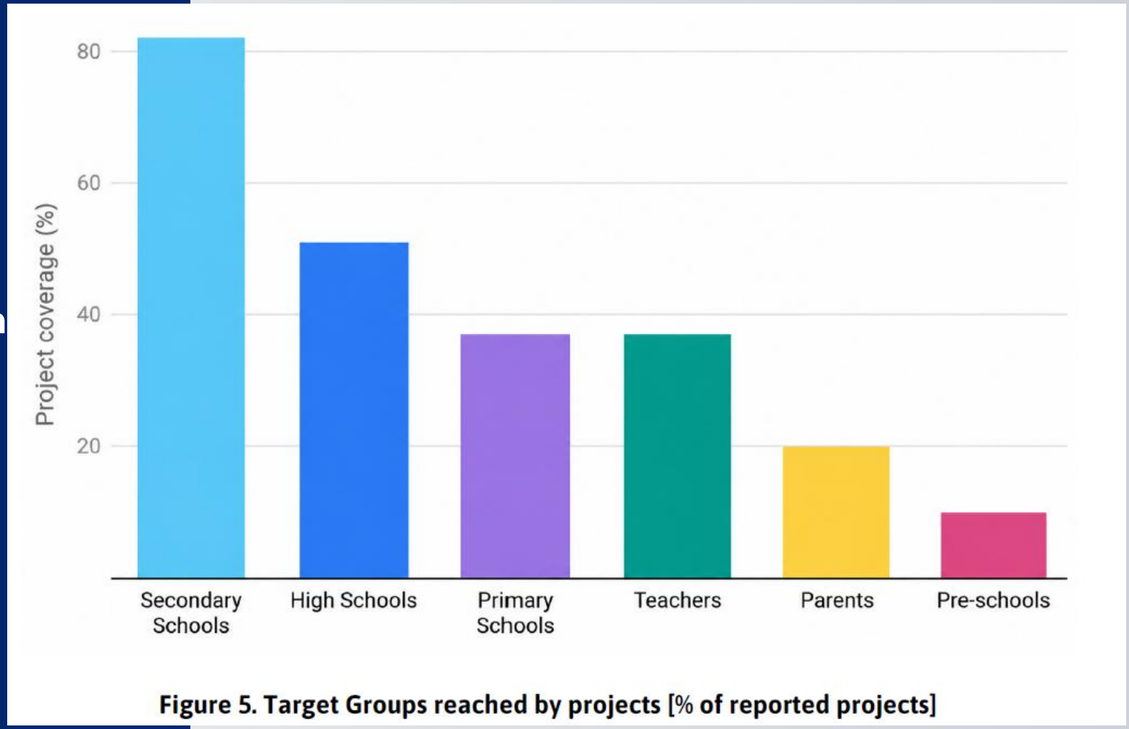


Figure 5. Target Groups reached by projects [% of reported projects]

Climate and Energy Security through advocacy

High Scientific Council Position Papers

- On the Importance of Extending the Operation of the Existing European Nuclear Fleet
- On the Urgent Need of a Nuclear Energy Strategy for Europe
- Hydrogen as a clean energy vector – the potential role of nuclear energy
- The important role of nuclear in a low-carbon world: the position of the European Nuclear Society's High Scientific Council





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THANK YOU

We look forward to working with you

OFFICE

Avenue des Arts 56, Brussels, Belgium

+32 2 505 30 50

www.euronuclear.org and Social Media