SMRs - From political momentum to industrial deployment

The role of the European Industrial Alliance on SMRs

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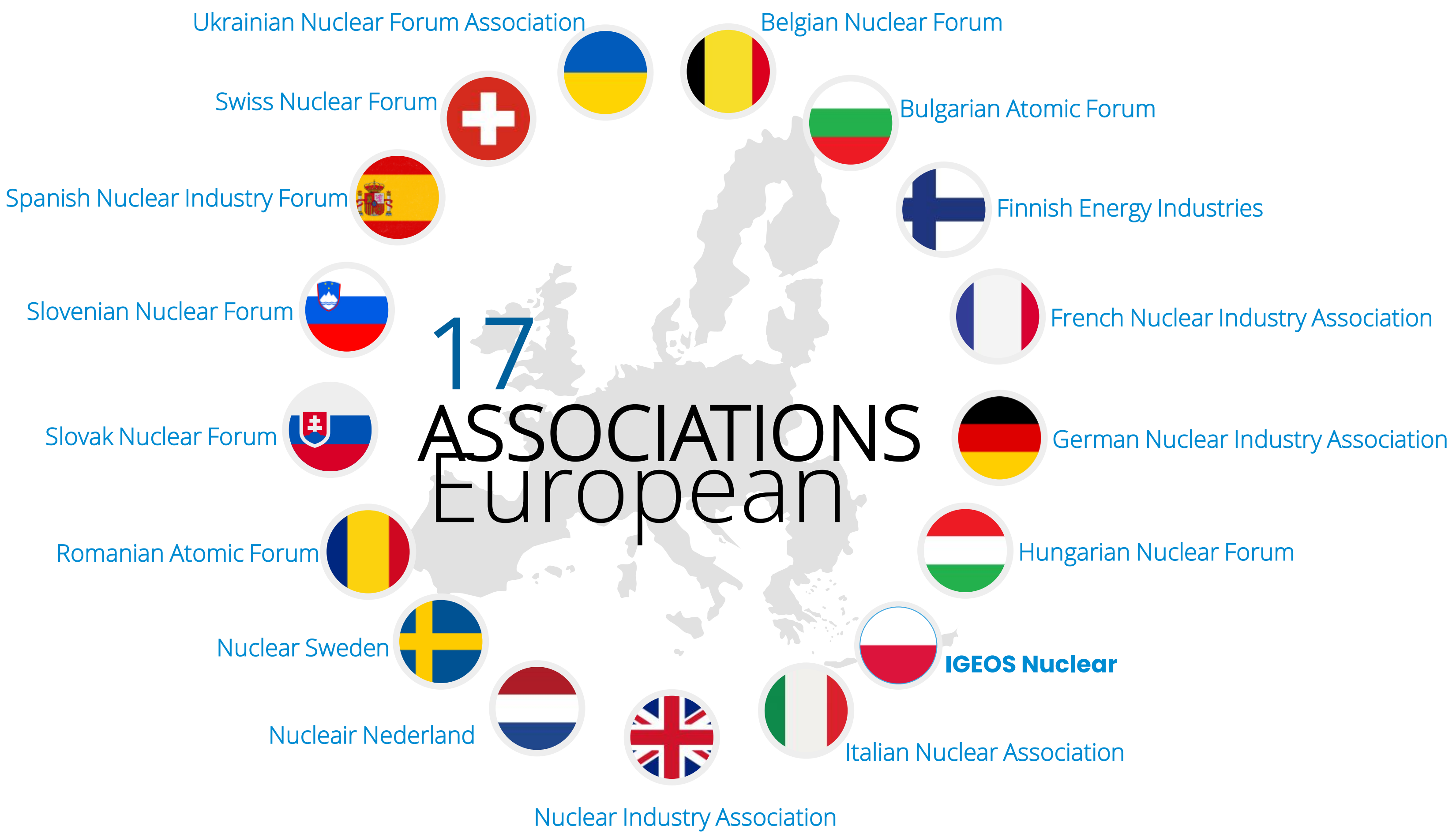
We act as the voice of the European nuclear industry in energy policy discussions with EU Institutions and other key stakeholders



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SMRs - From fragmented projects to a European fleet

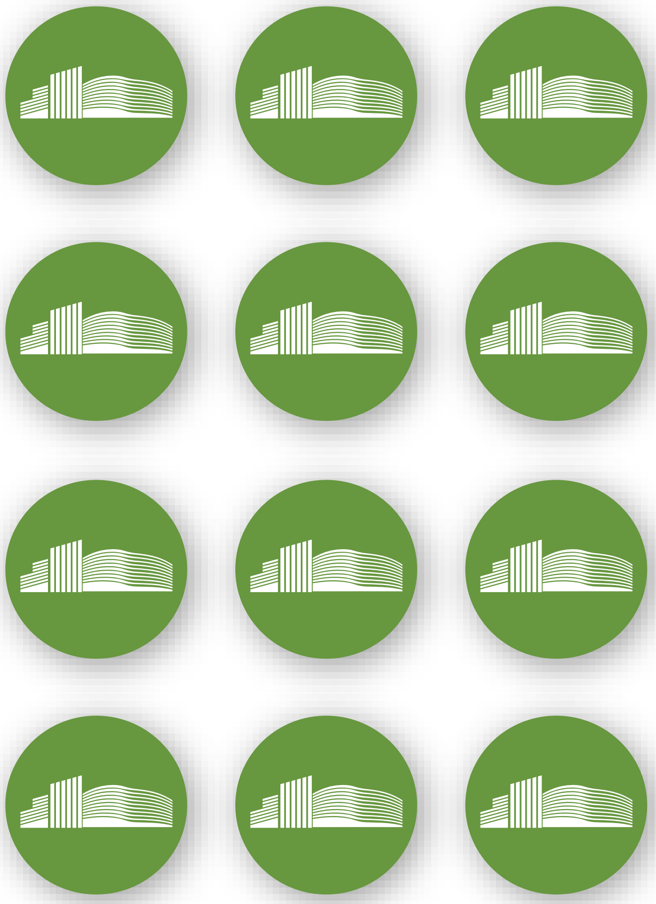
Projects

Customers

Suppliers

Finance

A Repeatable European Fleet



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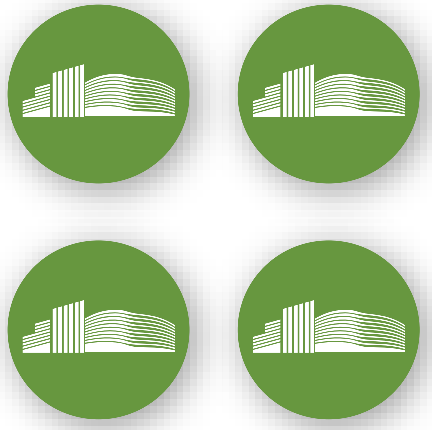
SMRs are smaller reactors designed for modular, repeatable deployment.



Large Reactors

- Usually around 1000+ MWe per unit
- Large investment step – economies of scale

Small Modular Reactors

- Typically up to about 300 MWe per module.
- One or several modules – economies of series

Same fission fundamentals and nuclear responsibilities, different project architecture!

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The SMR business case depends on repetition - not simply size.

While large reactors rely on size to capitalise on economies of scale, SMRs rely on repetition and learning.

Stable Design → Multi-unit Orders → Supplier/factory investments → Learning → Greater predictability

Smaller unit does not automatically mean cheaper electricity.

Industrial energy needs and EU policy are beginning to align.

Customer Requirements

- 24/7 electricity
- Industrial and district heat
- Cost and schedule visibility

→

Deployable Projects

←

Policy Push

- EU SMR Strategy
- European Industrial Alliance
- Proposed SMR Valleys

PINC projection: 17–53 GW of EU SMR capacity by 2050 — a range, not an EU target.

Industrial interest is real—but bankable demand is still being built.

Interest: Alliance workshops convened approximately 90 stakeholders on energy-intensive industries and more than 100 on data centres.

Technical fit: Industrial heat demand mapped across three temperature ranges; 24/7 electricity requirements assessed.

Early agreements: Some data-centre operators and SMR developers have signed MoUs.

Bankable contracts: Long-term PPAs and heat-offtake arrangements remain to be structured.

Repeat orders: A visible European multi-project pipeline has not yet emerged.

The Alliance converts cross-border expertise into project support.

Project Needs → **8 Technical Working Groups** (Cross-border expertise) → Tailored Project Support

TWG1: Industrial Applications	TWG2: Technology and R&D&I	TWG3: Supply Chain	TWG4: Skills
TWG5: Public Engagement	TWG6: Nuclear Safety & Safeguards	TWG7: Fuel Cycle & Waste Management	TWG8: Financing

The Alliance coordinates expertise and supports projects; it does not issue licences, award funding, procure reactors or invest in projects.

The roadmap builds demand and industrial capacity

Market pull

Targeted SMR end-users

Turn potential uses into credible pilot projects

Stakeholder engagement toolkit

Create the conditions for projects at prospective sites

Industrial system

Partnership facilitation

Connect developers, suppliers and project partners

Supply-chain completeness & performance

Identify gaps and enable suppliers to scale

Net Zero Academy for SMRs/AMRs

Anticipate the skills needed for deployment

Four-track presentation grouping of the Alliance's ten roadmap actions.

Shared enablers and finance make projects deployable

Common enablers

Experimentation & testing facilities
Prioritise shared testing infrastructure

Standardisation & simplification
Align codes, standards and data exchange

Safety industry position papers
Support more consistent early assessments

Fuel design specifications
Converge on common fuel requirements

Investment

Funding opportunities
Match projects with EU instruments and de-risk first-of-a-kind (FOAK) deployment

Four-track presentation grouping of the Alliance’s ten roadmap actions.

Fragmentation can cancel the SMR business model.

One-off national project	Repeatable fleet
• Changes reset the learning curve • Bespoke qualification • FOAK costs and risks repeated	• Stable design and interfaces • Multi-unit order visibility • Factories, workers and suppliers learn across projects

Six mutually reinforcing bottlenecks prevent the fleet effect.

No shared project pipeline	FOAK financing and revenue risk	Supply chain and standards gaps
Customer and site-integration barriers	Skills, testing and fuel constraints	Regulatory and political fragmentation

Europe has the toolbox—but not yet the delivery system.

EU Toolbox

- SMR Strategy
- SMR Alliance
- Euratom R&T
- NZIA
- IPCEI

Missing Mechanisms

- Operational SMR coalition
- Shared pipeline
- Aligned financing and risk-sharing
- Aligned standards
- Bankable customer commitments

Fleet Outcomes

- Order visibility
- Supplier investment
- Cumulative learning
- Repeatable deployment

SMRs will become a European industry only when Europe stops treating every project as a new beginning.

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Thank you!

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