

How to unlock SMR fleet deployment in Baltic Sea Region

An overview of Clean Air Task Force (CATF)'s proposal for getting SMRs financed, built, and connected to Europe's grid

Orlen Baltic Energy Conference 2026



CLEAN AIR
TASK FORCE

Introduction to Clean Air Task Force

- Founded in 1996.
- CATF has offices in Boston, Washington D.C., and Brussels, with staff working virtually around the world.
- The Mission: Push the technology and policy changes needed to achieve a zero-emissions, high-energy planet at an affordable cost.
- **Change the Narrative:** to communicate the size of the problem and totality of solution requirements.
- **Change Technology:** to have the full suite of options, including affordable and safe nuclear energy and decarbonized fossil fuels.
- **Change Business Models:** to include modular, manufacturable energy systems that can be deployed anywhere quickly.
- **Change Policy:** to develop, demonstrate, and scale up all the technologies and systems needed to achieve zero emissions by midcentury.

CATF's Approach

CATF is technology agnostic and independently funded. We're working to build a new nuclear energy ecosystem that can quickly and economically scale to 50+ gigawatts of safe and secure nuclear energy globally per year by the 2030s.

Current state of affairs: Europe has unprecedented demand for 24/7, carbon-free clean power, and nuclear can play a pivotal role.

— Baltic region has a strong appetite for nuclear

- New Build Projects
- Established Fleet
- Nuclear Plans

Active Operational Fleet

- 6 operational reactors across three sites (Forsmark, Ringhals, and Oskarshamn) with expansion plans
- But new build of 6 SMR units plans of Rolls Royce technology

Sweden

Active Operational Fleet

- 5 operational reactors across two sites (Olkiluoto including OL3 EPR, and Loviisa)
- But new build of LDR-50 – SMR for heating

Finland

First SMR Deployment in the Baltics

- GE Hitachi BWRX-300 SMR technology
- Government spatial planning launched for a 600 MWe facility

Estonia

Early-Stage Planning & Cooperation

- Assessing SMR feasibility for grid stability and security of supply

Latvia

Lithuania

Strategy & Feasibility Evaluation

- Strategic orientation toward novel SMR technology options following the historic decommissioning of Ignalina

Poland

Large-Scale & SMR Buildout

- Large-scale: 6–9 GW using Westinghouse AP1000 reactors
- SMRs: 1.25 GW in 2036 and ca. 1.87 GW in 2040 (PSE).

— Europe's nuclear **ambition** has **outpaced** its **delivery** model of one-off builds

The constraint is no longer the technology — it is how projects are procured, financed, and built

AMBITION (PINC)

60+ GW

*In the EU by 2050 GW scale reactors as reported in PINC
SMR capacity could add further 17-53GW*

€241 bn investment need for EU nuclear infrastructure

14+ Member States with active nuclear programmes

EU SMR Strategy calls for a coalition of willing MSs

RECENT DELIVERY REALITY

10–17 yr

*Build times for recent Western large reactors, 2–3× over
budget*

Every project a **FOAK** in its host country

Supply chains scaled to **project**, not to programme

Financing assembled **deal-by-deal**, each project starts from scratch

The constraint is not the technology. It is the delivery model.

The problem? Europe's current delivery model is one-off, first of a kind (FOAK) projects, leading to:

- Higher costs
- No shared learnings across projects
- Lack of durable demand signals for the supply chain

— Europe doesn't deliver fleets today — why?

Each Member State acting alone cannot generate fleet-scale demand

1

Isolated procurement

Each MS procures 1–4 units in its own programme

2

Competing technologies

Multiple vendors chased per country; no convergence

3

Project-scale supply chains

Tooling, factories, workforce sized for one build

4

Deal-by-deal financing

State aid and lending negotiated case-by-case

5

SMRs amplify it

Smaller units → many more needed for any real scale

Today's outcome: a parade of national FOAKs.

How do we move beyond
fragmented nuclear builds in
Europe? A coordinated fleet of
nuclear reactors

— CATF's Theory of Change

By **deploying multiple units of the same proven reactor design across different sites and countries**, projects can benefit from standardisation, repetition, and share across projects: 1) engineering expertise 2) licensing experience 3) workforce skills, and 4) supply-chain investments.



With each repeat build, construction costs and timelines decrease, risks fall, and nuclear plants are connected to the grid more quickly, efficiently, and cost-effectively.



How can we achieve a fleet model? Via a proven approach to industrial manufacturing – **orderbooks**.

Where multiple buyers and utilities coordinate around a series of standardised nuclear reactor orders and deployments over an extended period of time – **thus creating durable demand signals**.

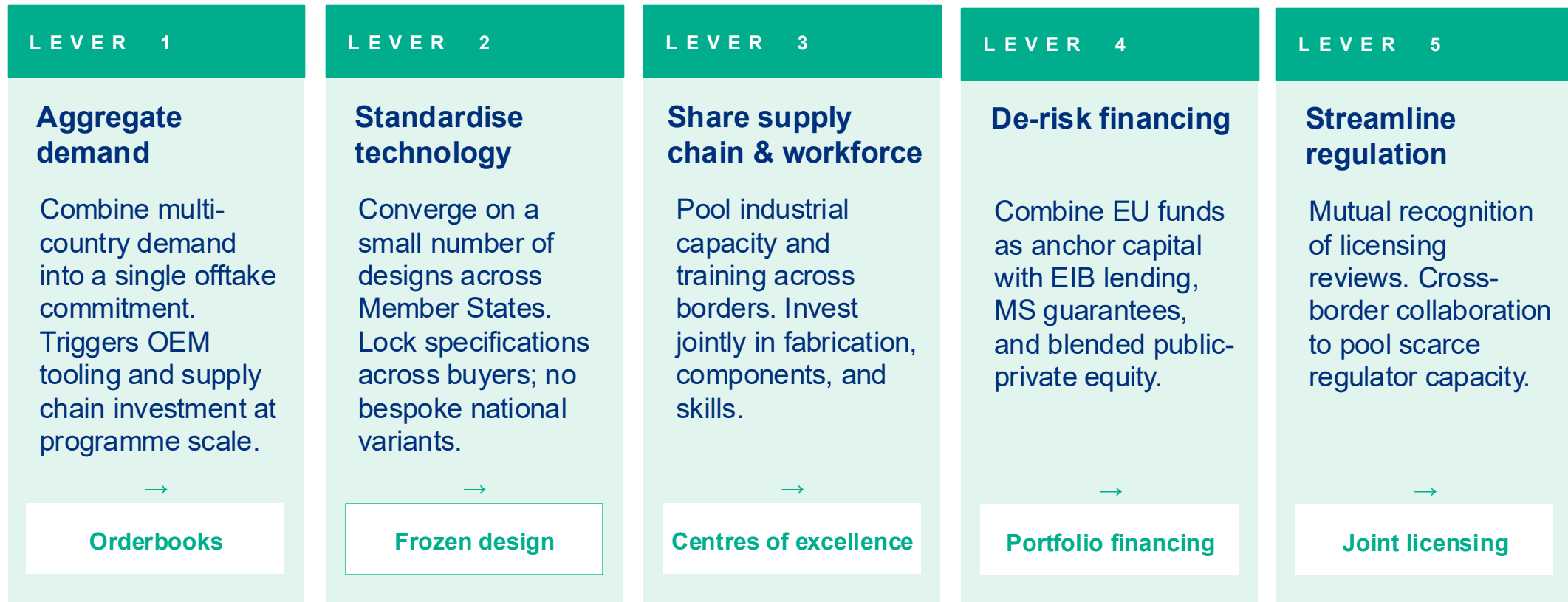
— First of its kind economic modeling of SMR fleet in Europe: study overview

- Politecnico di Milano was commissioned by CATF to conduct a first-of-its-kind independent modeling study on how a fleet of SMRs in Europe would lead to cost reductions
- Full report due in Fall 2026 – early preview of **results indicate that the levelized cost of electricity (LCOE) from SMRs in the EU is significantly influenced by whether a coordinated, multi-country fleet approach is implemented.**
- *Media should contact press@catf.us if they have any intention of using any of the information provided on this slide*

Driving nuclear orderbooks: Potential pathways forward for Baltic Sea Region

— Five levers to unlock nuclear orderbooks

No single tool delivers fleets — the levers work together as a coherent toolbox



— EU and Member States — neither layer works alone

The toolbox needs simultaneous action at two levels of governance

EU-LEVEL ENABLERS

Set the rails the toolbox runs on

- **Cross-border licensing frameworks**
Mutual recognition and joint review to cut duplication
- **Expand support policies and financing mechanisms to nuclear**
Under next MFF and EIB instruments fit for new build
- **State aid clarity & predictability**
Stable rules that hold across project lifecycles
- **Aggregate demand across borders**
Support Member States in demand aggregation

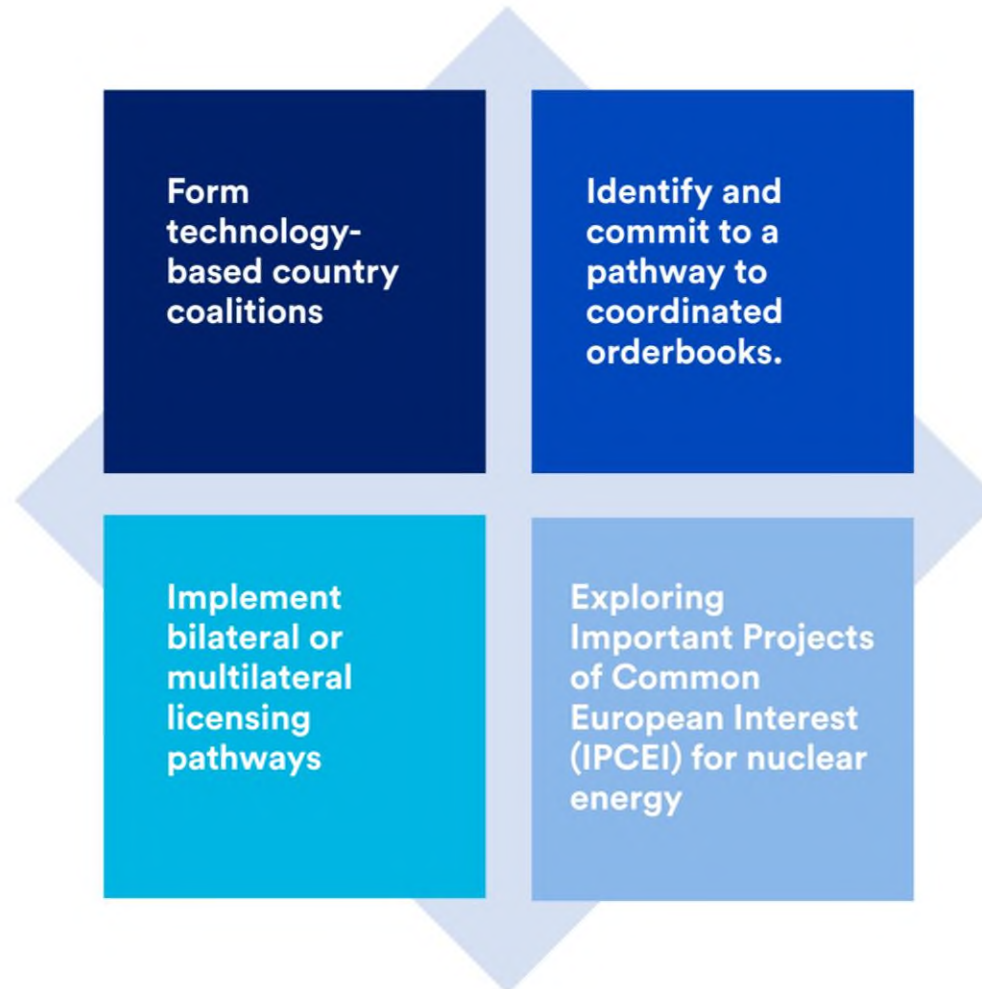
MEMBER STATE COMMITMENTS

Put the trains on the rails

- **Align around a small number of technologies**
Convergence rather than every-vendor-everywhere
- **Aggregate demand within and across borders**
Join a coalition of willing; commit to an orderbook
- **Coordinate regulators and supply chains**
Share review work; pool tooling and workforce capacity
- **Build blended financing & risk-sharing models**
Public guarantees, EIB lending, equity from MS treasuries

EU sets the rails; Member States put the trains on them.

— Potential Actionable Next Steps for a European or Baltic Nuclear Fleet



Thank you

Emilia Janisz, European Nuclear Policy Consultant, Clean Air Task Force
ejanisz@catf-partners.org

Learn more:

catf.us

Contact us:

info@catf.us

Connect with us:

[@cleanaircatf](https://twitter.com/cleanaircatf)

