Clean Air Task Force Recommendations for the EU SMR Strategy

Introduction

As the European Union (EU) advances toward its 2050 climate neutrality goal, the timely deployment of Small Modular Reactors (SMRs) has emerged as a critical enabler of a secure, low-carbon, and competitive energy system. SMRs have the potential to complement renewable energy sources by providing firm, low-carbon power, while supporting industrial decarbonisation and regional energy resilience.

The EU is seeing a growing interest in SMRs, as also reflected in the creation of the European Industrial Alliance of SMRs and the recently updated Nuclear Illustrative Programme (PINC). As stated in PINC, nuclear energy, including SMRs, is 'a strategic element for energy security, industrial sovereignty and the achievement of the EU's climate objectives'.

However, despite growing recognition of the strategic importance of SMRs, the current EU policy and regulatory frameworks are not yet fully equipped to support their deployment. Regulatory, financial, human resource and infrastructure barriers hinder the rapid deployment of SMRs at scale. Key barriers include long and complex state aid approval processes; limited flexibility in existing support mechanisms; fragmented licensing regimes across Member States; and, a lack of a coordinated industrial strategy for SMR technology selection and deployment. These challenges create uncertainty for investors, delay final investment decisions (FID), and risk leaving the EU behind in the global race to commercialise advanced nuclear technologies.

To unlock the full potential of SMRs, the EU must adopt targeted and pragmatic measures that provide regulatory clarity, financial predictability, and coordination across Member States.

State of play and the potential of SMRs

SMRs are characterised by lower unit capacity (up to 300 MWe), modular design and the possibility of serial production. According to the International Atomic Energy Agency (IAEA), they enable 'scalable deployment of clean energy with lower financial and technological risks compared to large reactors[1]. Their compact form also allows them to be located closer to industrial consumers, which creates opportunities for decarbonisation in sectors difficult to electrify, such as chemical, steel and cement industries, and district heating.

SMRs offer new opportunities for integration complementary with renewables, acting as a stable source of power – so-called 'clean firm capacity'[2] – capable of stabilising the grid, industrial decarbonisation and supporting low-carbon hydrogen production. In this sense, SMRs can bridge the gap between conventional and renewable energy sources providing clean, accessible and controllable energy.

[1] https://www.iaea.org/newscenter/news/what-are-small-modular-reactors-smrs

[2] Clean firm power refers to power sources that generate electricity on-demand, regardless of the weather or the time of day, with minimal emissions. (CATF)

Nonetheless, these new technologies still need to demonstrate clear benefits in terms of cost-effectiveness and construction timelines before they become fully mature products in the market. According to the OECD Nuclear Energy Agency (NEA)[3], the global SMR market is entering a phase of commercialisation, with more than 74 reactor concepts under development worldwide. China, Japan and Russia have SMR designs already licensed to operate. Various SMR designs have been granted licences to construct or design approval in the United States, Russia, China, Argentina and Korea.

In the EU, several Member States are actively pursuing SMR feasibility studies, vendor partnerships, and adapting regulatory frameworks. Pilot projects are planned in Poland, France, the Czech Republic, Finland, Romania and Estonia, among others (outlined in the table below). According to the World Nuclear Association (WNA), 20–30 modular nuclear reactors could be operating in the EU by 2035 if a stable regulatory and financial environment is ensured[4].

Table 1: European SMR Deployment Overview (Based on official sources; not exhaustive)

Country	Project / Company	Status (per official source)	Expected Deployment (per official source)
France	NUWARD (EDF)	In design phase and programme development. 2nd phase of joint early review process	in 2030s[5]
Romania	NuScale Voygr (Nuclearelectrica / RoPower)	FEED Phase 2 contract signed (July 2024); Doicești site confirmed; IAEA SEED follow-up found site selection process compliant	2029[6]
Czechia	Rolls-Royce SMR + ČEZ	Early Works Agreement signed (July 2025) covering preparatory work (licensing, environmental assessments) for Temelín	No official deployment date announced
Sweden	Vattenfall + GE Hitachi or RollsRoyce	Feasibility studies launched – Vattenfall assessing SMR deployment options at Ringhals[7]	3-5 reactors. First in operation by mid 2030s at the earliest[8]
Estonia	Fermi Energia (BWRX-300)	BWRX-300 technology selected; pre-licensing work ongoing	the early 2030s[9]
Poland	OSGE (Orlen Synthos Green Energy – BWRX-300)	Advanced planning phase: 1st site selected – Włocławek	two SMR units totalling 0.6 GW by 2035[6]
Italy	newcleo + ENEA (R&D collaboration)	Ongoing cooperation in R&D and design – advanced reactor development projects in progress	No official deployment date announced

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[3] The NEA Small Modular Reactor Dashboard_ Third Edition, September 2025

[4] World Nuclear Association, *World Nuclear Performance Report 2024*, London, 2024.

[5] About NUWARD | Nuward

[6] RoPower and Fluor sign FEED 2 contract for SMR project - World Nuclear News

[7] Steady Energy | Steady Energy completes €32 million funding round

[8] Why modular nuclear reactors? - Vattenfall

[9] BWRX-300 – Fermi Energia

Finland	Steady Energy (LDR-50 – district heating SMR)	Pre-commercial stage; positive preliminary regulator (STUK) assessment; preparations for pilot plant underway	Steady Energy: pilot plant targeted for early 2030s[7]

With its vast experience in nuclear energy, robust financial markets and strong regulatory institutions, the EU has the potential to become a centre for SMR technology. However, as the NEA points out, 'market fragmentation and the lack of common standards increase costs and lengthen project timelines'.

EU SMR Deployment Roadmap proposal

This section outlines a roadmap built on three key pillars to support the deployment of Small Modular Reactors (SMRs) across the European Union. This structure provides a clear roadmap for EU and Members States policymakers, regulators, and industry stakeholders by aligning policy requirements, regulatory streamlining, and market development. By relying on these pillars, the EU can create the conditions for timely, safe, and economically viable SMR deployment in early 2030's, strengthening energy security while advancing its decarbonisation objectives.

The table below outlines how the proposed respective pillars of deployment could look.

Pillar	Description	Key objectives
Pillar I	Development of an EU SMR Strategy, including a recognition of the value of nuclear technologies across EU policies as a complementary low-carbon technology that can support decarbonisation of EU economies	Establish ambitious EU clean-firm energy strategy; ensure coordination and consistency across relevant EU policies.
Pillar II	Addressing barriers to SMR deployment	Address financial, regulatory, and administrative barriers hindering SMR investment and deployment.
Pillar III	EU and International Financial Coordination – moving from single project to fleet deployment	Coordination among the European Investment Bank (EIB), national funding mechanisms, and private investors. Launch coordinated deployment of standardised SMRs, supply chains scale up, and attraction of private investment across Member States.

Pillar I: EU SMR Strategy

The establishment of a dedicated EU SMR Strategy with highly ambitious milestones with an implementation timeline is essential to ensure coherent and predictable conditions for the development of SMR technologies across the EU. Despite growing recognition of nuclear energy as a key pillar of the energy transition, nuclear technologies have not been given equal footing with other clean energy sources in EU policy objectives, funding mechanisms, or regulatory frameworks. If the EU is to achieve its 2050 climate neutrality goal, it must have a **technology-neutral framework** that affords nuclear and other clean-firm technologies to be fully integrated and equally recognised within the EU's broader decarbonisation strategy.

This requires a shift in the policy and regulatory approach, moving from a technology-specific focus to a more inclusive concept of "low-carbon" energy. Such an approach would reflect technological neutrality, enabling the EU to harness the full spectrum of clean energy solutions while maintaining energy security and industrial competitiveness.

Achieving this vision requires clear political recognition at the EU level to acknowledge nuclear energy and SMRs in particularas an integral component of the EU's clean energy mix. It also calls for better alignment and coherence among various EU policy initiatives, including the Net-Zero Industry Act, the EU Taxonomy Regulation, the TEN-E Regulation, and State Aid framework. Establishing capacity or deployment ambition could serve as an effective mechanism at the EU level to further enhance the deployment of SMRs.

A coordinated and comprehensive EU SMR Strategy, supported by a harmonised institutional approach, would provide the strategic clarity needed to accelerate deployment, develop a robust supply chain, and strengthen Europe's technological leadership in the global low-carbon energy landscape.

Pillar II: Addressing financial and regulatory barriers

Optimising State Aid processes

The State Aid approval process represents a critical challenge for the timely deployment of SMRs in the EU. Current procedures often require prolonged engagement with the European Commission, with approval timelines exceeding two years, which significantly delays FIDs, introduces additional layer of uncertainty and undermines investor confidence. This is particularly problematic for SMR projects, which are expected to follow an incremental, multi-unit deployment model, a structure that could further congest the State Aid notification pipeline and exacerbate administrative delays. Ensuring greater predictability, procedural efficiency, and adaptability of State Aid frameworks is therefore essential to enable the effective financing and timely roll-out of SMR projects across the EU.

Introducing clearer timing and conditions for State Aid for SMRs, as with other low-carbon technologies, would streamline support by allowing national bodies to administer subsidies. One potential improvement would be to introduce a time limit of no more than six months for the Commission's decision on State Aid notifications for priority low-carbon projects, including SMRs. Such a streamlined process would significantly enhance investor confidence, reduce administrative burdens, and accelerate the deployment of strategic clean energy investments across the EU. The European Commission should also develop dedicated application guidance that would establish clear guardrails and procedural standards to help fast-track the State Aid approval process. This guidance should aim to simplify documentation requirements, clarify eligibility criteria, and promote early engagement with the Commission, ensuring greater predictability and transparency for project promoters.

Applying adequate support mechanisms

Moreover, the commonly used Contract for Difference (CfD) model does not adequately reflect the specific characteristics of SMR projects. While it mitigates market price risk, it does not address construction cost risks or support multi-sector applications such as heat supply and hydrogen production. Therefore, Member States should consider employing other support mechanisms like the Regulated Asset Base (RAB), Mankala and SaHo models[10] while ensuring access for SMR projects under all relevant energy and decarbonisation funding sources in the new Multiannual Financial Framework (MFF).

Mankala model – Example from Finland

The Mankala model is a Finnish cooperative ownership structure in which multiple companies jointly own a power-generation company and receive electricity at production cost proportional to their shareholding. This allows shareholders to secure stable, low-cost energy while sharing investment risks for large power-generation projects such as nuclear, hydro, and wind. In Finland, approximately 40% of electricity is produced by power plants operating under the Mankala model, including 66% of nuclear, 57% of wind, 51% of hydro, and 22% of coal-fired generation[11].

Regulated Asset Base (RAB) model - Example from the UK

The UK Government has employed the RAB model for the first time on the Sizewell C reactor. Unlike CfDs, the RAB model allows developers to recover part of construction costs earlier, lowering investor risk and interest accumulation but passing some costs to consumers before completion[12]. Starting 1 November 2025, a RAB levy now appears on electricity bills, adding around £1 per month to the average household bill during construction[13]. RAB model requires robust controls to ensure appropriate risk-sharing balance between the public and the investors.

For a comparative overview of financing instruments, see Annex 1.

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[10] Please refer to Annex for brief description of the models.

[11] Mankala Model

[12] https://www.gov.uk/government/publications/sizewell-c-regulated-asset-base-rab

[13] What You Need to Know About the £38 Billion Sizewell C Nuclear Project in the UK

Access to EU funding mechanisms

Despite the inclusion of nuclear energy in the EU Taxonomy for sustainable investments, access to key EU funding mechanisms remains limited and inconsistent. Many EU funding programmes and facilities operated by the EIB - continue to apply criteria or internal guidelines that effectively lack clarity on the eligibility for new nuclear projects, including SMRs. This hinders investment attractiveness, slows down deployment, and limits potential synergies with other strategic sectors such as hydrogen production, district heating, and energy-intensive industries.

SMR technology should be recognised on an equal footing with other low-carbon technologies in achieving Europe's climate and energy objectives. The EU should ensure harmonised eligibility rules, enabling SMRs to have access to relevant EU funding mechanisms. This should also be fully reflected in the upcoming MFF.

Licensing

Licensing processes across the EU remain highly fragmented and often incompatible, risking proliferation of significant design variations for the same SMR technology deployed in different Member States. Moreover, differing civil engineering requirements beyond nuclear regulation can further alter design specifications. This regulatory divergence can lead to inefficiencies across the value chain, prolonged licensing and design processes, and higher deployment costs, ultimately hindering the development of a competitive EU SMR market.

Introducing measures to streamline the licensing process for SMRs, while maintaining regulatory independence and safety standards, is a viable solution. This includes simplifying approval procedures for civil structures situated outside the nuclear island. Streamlining would reduce administrative complexity, shorten permitting timelines, and ensure a more efficient deployment process while maintaining high safety standards.

Furthermore, the European Nuclear Safety Regulators Group (ENSREG), a collaborative platform for regulators, could play an important role in promoting greater cooperation. It can help foster regulatory pathways that encourage national authorities to consider previous assessments conducted by recognised and established nuclear regulatory bodies, as well as joint assessments. This approach would facilitate expedited regulatory reviews, minimise redundant technical evaluations, and foster enhanced trust and collaboration among regulators. Additionally, it would optimise resource utilisation, particularly as regulatory capacity is expected to become a bottleneck in the coming years.

Finally, the development of EU-wide safety standards or harmonised guidelines and methodology providing an alternative regulatory pathway for SMR projects, could serve as additional solution to shorten the licensing burden in the longer term. This framework, comparable to the IAEA's SMR Platform and Nuclear Harmonisation and Standardisation Initiative (NHSI) would not replace existing national licensing procedures but instead offer a coordinated EU approach to sharing lessons learned, ensuring consistency, transparency, and mutual confidence in safety oversight across Member States.

Below are two sectoral examples that illustrate how streamlined regulatory frameworks, common standards, and harmonised processes can reduce duplication, accelerate deployment and lower costs offering lessons that could be applied to the licensing of SMRs:

Example 1: Aviation

Regulatory standardisation and harmonisation are long-established in the aviation sector. More specifically, EUROCONTROL publishes a comprehensive standards catalogue covering airport integration, communications, navigation and surveillance, and civil-military interoperability, developed via an inclusive, cooperative process covering all EU Member States[14]. The EU Aviation Safety Agency (EASA) monitors Member States' application of common EU rules on aviation safety, facilitating a level playing field, mutual recognition of certificates and uniform safety oversight across the EU.

Recently, the Commission adopted a regulation package to harmonise the Standardised European Rules of the Air (SERA) with the International Civil Aviation Organization global framework, thereby enhancing regulatory consistency across borders. These mechanisms reduce the number of duplicate assessments, avoid divergent national requirements and minimise design changes when systems are deployed in multiple countries.

[14] Standards as enablers of innovation in the aviation industry | EUROCONTROL

Example 2: Pharmaceuticals

The pharmaceutical industry similarly demonstrates a strong trend towards regulatory convergence and harmonisation. The International Council for Harmonisation of Technical Requirements for Pharmaceuticals for Human Use (ICH) brings together regulators and industry globally to develop common guidelines on safety, efficacy and quality. The EU has adopted a strategy to modernise its pharmaceutical legislation with the aim of creating a "future-proof regulatory framework" for safe, effective and high-quality medicines, supported by harmonised standards[15].

Standardisation bodies such as European Committee for Standardization (CEN)[16] and European Committee for Electrotechnical Standardization (CENELEC) also play a role in the development of harmonised standards for pharmaceuticals and medical devices, underpinning regulatory convergence. Through these frameworks, manufacturers and regulators avoid the need for wholly separate national approvals, reduce variation in design and production, and accelerate market access - all of which help lower overall costs and increase efficiency.

Technological and industrial coordination

The European Industrial Alliance on SMRs identified nine SMR projects for its initial Project Working Groups. The Alliance's Strategic Action Plan sets an aim for SMR deployment in the EU by the early 2030s, with concrete support measures to be implemented over the next five years.

Identifying "fast mover" technologies from among the many SMR designs is essential, so that manufacturing, licensing and deployment can converge and achieve economies of scale. By concentrating the initial effort on a few designs, the value chain can mature, tools can be shared, modularity can be exploited, and costs reduced, all of which can help achieve the objective of safe and rapid nuclear scaling. This down-selection should be executed through a competitive assessment of designs/projects across a number of transparent criteria. Technologies should be downselected based on careful and thoughtful consideration of key issues, including use case, non-proliferation, supply chain integration, and timeline for deployment. Fast movers will also clear the track for fast follower technologies that will be able to benefit from improved bankability, skills, regulatory frameworks and shared supply chains.

Alongside the SMR Alliance efforts, it is crucial to develop cluster-based deployment models focusing on a few SMR technologies and enable cross-border cooperation. Such clusters would:

- Align several countries around one SMR design for joint planning and investment
- Streamline licensing and safety standards to speed up deployment
- Achieve economies of scale through larger, coordinated orders
- Build shared expertise and regional skills
- Support EU goals under the Net-Zero Industry Act

The EU should also explore joint procurement or pooled demand models for SMRs, building on existing examples in gas and hydrogen, to better connect supply and demand:

- The AggregateEU mechanism under the EU Energy Platform illustrates demand-aggregation and joint purchasing of natural gas across Member States[17].

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[15] Modernising the EU pharmaceutical legislation - European Commission

[16] About CEN - CEN-CENELEC

[17] AggregateEU - European Commission

- The EU Hydrogen Mechanism shows how a platform for connecting hydrogen buyers and suppliers (and aggregating demand) is being created[18].

- The report on joint procurement of fuel cell buses by the Clean Hydrogen Partnership provides a case study of pooled procurement in a low-carbon technology sector, showing how standardised demand can accelerate market uptake[19].

These examples can serve as potential references when assessing a potential pooled-demand or joint procurement model in the context of SMRs. It is important to recognise that industrial energy users in the EU, currently facing significant commercial pressures, may not be able to pursue decarbonisation via SMR deployment unless mechanisms are established to aggregate demand and offer effective support for project implementation. Providing electricity and heat as a service would facilitate their transition.

Supply chain

Implementing the EU SMR strategy is critically important not only for energy security and decarbonisation goals but also for establishing a strong EU supply chain. As countries endeavour to deploy SMRs, demand for specialised components, such as nuclear-grade forgings, control systems, reactor vessels, as well as skilled labour, will far exceed current supply, creating intense pressure on global manufacturing and engineering capacity. According to PINC, “additional 180,000–250,000 new professionals will have to be engaged until 2050, in addition to replacing retiring employees. Approximately 100,000–150,000 professionals may be required to cover the construction phase of planned new nuclear power plants”. According to the IAEA, “For small units the specific staffing level tends to increase to about 1.5 person/MW(e), while stations with several large units reduce the specific staffing level to approximately 0.7 person/MW(e)” .

By acting proactively, the EU can secure strategic contracts, manufacturing capacity, and talent before global supply chain constraints intensify. Furthermore, early adoption increases the EU’s potential to become a global leader in SMR integration and service provision. Prioritising SMRs enables the EU not only to implement clean, dispatchable power but also to influence the development of the SMR ecosystem and reinforce its leadership in the global nuclear supply chain.

This approach promises long-term benefits and multifaceted economic growth through an investment multiplier effect, where investing in nuclear generation is projected to stimulate an additional investment throughout the value chain. This multiplier effect refers to the way spending on labour and components circulates through the economy via subsequent expenditure by workers and suppliers on consumption and productive inputs. This process repeats at multiple tiers of the supply chain, resulting in cumulative economic activity.

According to an International Monetary Fund study, every dollar invested in nuclear energy yields a near-term GDP impact of approximately $4.11[20]. For the countries analysed, the broader economic benefits associated with nuclear power production significantly exceeded those of renewable energy sources and were several times greater than those associated with fossil fuels.

To meet the projected skills needs in the advanced nuclear energy field, the EU could consider launching an EU Nuclear Skills and Training Programme, based on an analysis of the nuclear workforce requirements and then the development of a dedicated EU-level program for SMR labour force, building on the Euratom and Erasmus+ program. The Skils4Nuclear is a good start to build upon.

Furthermore, the European Commission should:

- Encourage the creation of the National Workforce Development and Industrial Partnerships.
- Coordinate funding with Member States to implement targeted national programs for SMR-related skills development, to be co-funded by industry and public institutions.

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[18] Mechanism to support the market development of hydrogen

[19] Clean Hydrogen Partnership

[20] N. Batini, Building Back Better: How Big Are Green Spending Multipliers?” International Monetary Fund, 2021)

These programmes should link universities, training centres, and SMR project developers to ensure practical, demand-driven education pathways. Partnerships with manufacturing and construction sectors would further strengthen local supply chains and create sustainable employment opportunities around SMR clusters.

Managing waste from SMRs

Ensuring safe, long-term management of radioactive waste generated from SMRs is essential. Larger number of SMRs units across multiple Member States could potentially lead to a dispersed and complex waste management landscape. Developing a Deep-Geological Waste Repository (DGWR) would provide a secure and scientifically sound solution for isolating spent nuclear fuel from the environment. Integrating consent-based repository development ensures that nuclear power can contribute to decarbonisation goals without creating unmanaged environmental risks, all the while adhering to IAEA and EURATOM requirements in nuclear safety and waste management. This will be critical for Member States to deploy advanced nuclear technologies while maintaining public trust and support for this technology.

The EU could consider different potential pathways to establishing adequate waste repository infrastructure:

- The European Commission, in cooperation with willing Member States, could establish a legal and financial framework enabling shared use of future repository infrastructure.
- Alternatively, the EU could support Member States in developing their own national DGWR through technical assistance and streamlined safety standards.

The goal would be to accelerate progress across the EU, ensuring that all Member States pursuing nuclear deployment have a credible long-term waste management plan aligned with EU nuclear safety directives.

Pillar III: EU and international financial coordination

As a public, policy-driven bank with a strong balance sheet and AAA credit rating, the European Investment Bank (EIB) is uniquely positioned to support the EU in the deployment of SMRs. The EIB's "TechEU" initiative acts as a one-stop shop offering financing and an Investment Readiness Checker for technological innovators . Building on this model, a dedicated financial platform for SMRs could be developed with the Commission providing the framework, the EIB managing the instruments, and an "SMR Readiness Checker" guiding projects through eligibility, risk-assessment and co-financing steps. Such a platform would enhance visibility, harmonise support across Member States, and accelerate financial maturity of SMR deployments. It will, most importantly, de-risk investments for private sector.

Integrating a "one-stop-shop" financing platform and an SMR Readiness Checker would allow early-stage projects to assess their investment maturity, regulatory readiness, and eligibility to public and private partnerships (PPP). This would streamline project preparation, reduce the need for complex coordination, and de-risk investments for both public and private stakeholders.

Such a model – combining the strategic scale and cooperativeness of PPP with the efficiency, transparency, and early-stage support tools of TechEU - could help lighten the financial burden on Member States, accelerate project pipelines, and enhance Europe's ability to deploy SMRs at scale under a unified, technology-neutral framework.

This approach contributes to the integration of the internal energy market, strengthens energy security, and fosters private-sector participation in achieving the EU's decarbonisation goals.

The Memorandum of Understanding between the IAEA and the World Bank Group signed in 2025 expressly includes the objective to advance SMRs as a flexible low-carbon technology. Accordingly, the European Commission should actively join the implementation of this partnership by aligning EU policy frameworks and funding instruments to the MoU's objectives, ensuring Europe benefits from shared expertise, global financing structures and cooperation.

Implementation and Scaling

Pillar III focuses on coordinated SMR deployment, promotion of standardisation, and scaling-up production and investment across EU Member States.

It is crucial to provide comprehensive support for "fast movers" - the first projects that will open regulatory and industrial pathways for subsequent deployments. These early implementations will establish the technical, financial, and operational foundations necessary for a sustainable SMR market in Europe. CATF, together with its partners, stated that building a coordinated European "orderbook" of SMR projects around a limited number of standardised designs will be key to achieving cost reductions and efficiency gains. Serial production and replication of proven reactor designs - shifting from first-of-a-kind (FOAK) to nth-of-a-kind (NOAK) builds can reduce overall costs significantly within the first three project cycles. Furthermore, modularisation and factory-based construction could lower total project costs by 20–25% and cut delivery times by as much as 50% .

Orderbooks enable a lower average cost per unit through spreading the FOAK development costs risks and learnings across several units and likely projects/sites. Nuclear deployment on time, and on budget isn't just a matter of science and engineering – it is fundamentally about robust project management, streamlined supply chains, and strong institutional capacity. Wright's Law, the "learning by doing" effect by which costs drop by a predictable percentage with each doubling of cumulative production, has driven down prices in aviation, solar panels, and batteries. Yet nuclear construction has largely resisted this learning curve. That resistance stems from (1) design evolution instead of design standardisation and serial replication; (2) fragmented and often adversarial project-management practices; and (3) an underinvestment in construction-process optimisation, from vendor qualification to on-site workflow.

Figure 1. Capital Cost Reductions at Barakah Units 1-4. Barakah (UAE) saw 50% capital cost reductions from Unit 1 to Unit 4 of APR1400s (Advanced Power Reactors). Source: ETI

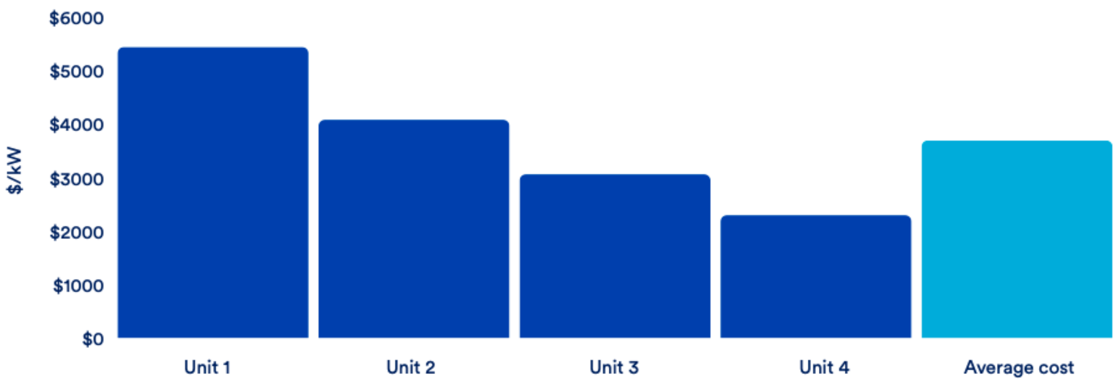
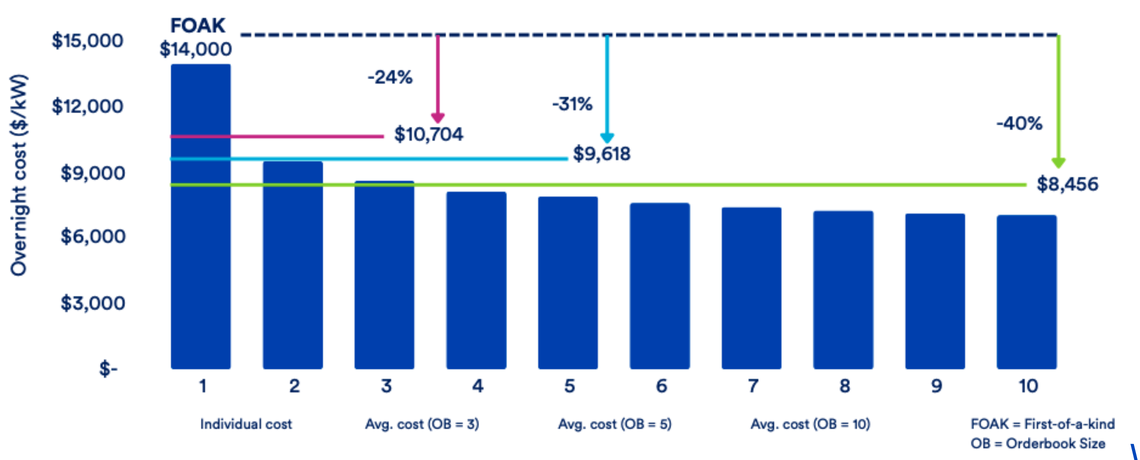


Figure 2. Larger orderbooks enable lower average unit cost; which helps to neutralise first-mover disadvantage. Source: EFI Foundation



By consolidating demand, streamlining regulatory frameworks, and supporting the early movers through financial coordination, Europe can transition from pilot projects to scalable, cost-competitive SMR deployment - turning nuclear energy into a central pillar of the continent's clean industrial future.

Annex 1: A comparative overview of financing instruments

Financing Tool	How It Works	Advantages	Disadvantages / Risks
RAB (Regulated Asset Base)	Investors recover costs through regulated tariffs during construction and operation.	• Support during construction as well as operation • Lowers cost of capital - Early revenue recovery • Attracts institutional investors • Transparent and accountable • Supports fleet deployment	• Tariff increases may affect consumers • Requires strong regulators • Limited flexibility for developers • Political risk if public opposes costs • Long-term commitment
CfD (Contract for Difference)	Government guarantees a fixed "strike price" for electricity produced; if market price < strike price, the difference is paid, and vice versa.	• Reduces market price risk • Encourages private investment • Flexible for single or multiple units • Clear revenue certainty for investors	• Requires government backing • Can be complex to design • Does not cover all operational risks • Doesn't cover construction risks
PPA (Power Purchase Agreement)	Long-term contract with industrial or commercial consumers for electricity/heat supply at an agreed price.	• Predictable cash flow • Anchors industrial demand • Can be private, no government risk	• Limited scalability if contracted with only a few buyers. • Negotiation complexity • Requires creditworthy counterparties