P O L I C Y B R I E F

Nuclear Energy in Türkiye

Policy Priorities for Moving from Targets to Implementation

Convened on 21 April 2026 in Istanbul, this brief synthesises the outcomes of a high-level policy dialogue bringing together senior representatives from government, industry, and the international research community.

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KEY MESSAGES

- Türkiye's electricity demand is projected to grow from approximately **330 TWh to over 500 TWh by 2035**, making firm low-carbon baseload capacity an urgent strategic priority.
- Nuclear energy offers the most credible path to simultaneously addressing energy security, affordability, and decarbonisation — but realising this potential requires **immediate action on governance, financing, and supply chains**.
- The window for timely implementation is **narrowing**: decisions taken in the next 12–24 months will determine whether Türkiye can meet its 2053 net-zero commitment with nuclear as a cornerstone.

BACKGROUND

Türkiye currently imports approximately **72% of its primary energy**, exposing the economy to significant price volatility and supply-side risk. With a legally binding net-zero target set for **2053** and electricity demand forecast to grow by over 50% by 2035, the country faces a dual imperative: expanding generation capacity while accelerating decarbonisation. Nuclear energy — with three planned plants totalling approximately **15 GW** of capacity, anchored by the **Akkuyu Nuclear Power Plant** currently under construction — has been formally positioned as a cornerstone of this transition.

On 21 April 2026, a high-level dialogue on Türkiye's Nuclear Energy Plan was convened through a collaboration between the **World Energy Council Türkiye (WEC Türkiye)** and the **Electric Power Research Institute (EPRI)**, hosted by the IGU SESARC. The workshop brought together public authorities, industry representatives, and international stakeholders, underscoring a critical inflection point: moving from strategic ambition to **actionable policy frameworks**.

KEY FINDINGS

- Türkiye's electricity demand is projected to **grow from ~330 TWh to over 510 TWh by 2035**, reinforcing the urgent need for firm and reliable baseload capacity.
- Nuclear energy plays a **critical role** in reducing import dependency and shielding the economy from fossil fuel price volatility.
- The principal risks are not technical in nature, but relate to **governance architecture, financing structures, regulatory frameworks, and supply chain readiness**.
- Supply chain constraints represent a major emerging bottleneck, with **lead times for key nuclear components extending to 10–15 years** in some cases.
- Small Modular Reactors (SMRs) offer significant potential but are not a standalone solution; **technology optionality and portfolio diversification are essential**.
- Nuclear energy is evolving beyond electricity generation, enabling applications across **hydrogen production, industrial heat supply, and data center operations**.

POLICY GAPS

Türkiye's nuclear programme is entering a new phase where scaling up requires addressing five systemic gaps:

- **Cross-institutional coordination —** Energy, industry, and finance ministries currently operate without a unified nuclear implementation mandate, creating fragmentation across the project lifecycle.
- **Financing mechanisms —** Reliance on a single bilateral financing model increases exposure to geopolitical and contractual risk and limits the programme's financial resilience.
- **Industrial readiness —** Domestic suppliers lack the quality certifications required to participate in nuclear-grade procurement, limiting local content potential.
- **Regulatory predictability —** Licensing timelines remain undefined, creating investor uncertainty and potential for costly schedule delays.

- **Workforce and capability planning —** Türkiye will require several thousand skilled nuclear professionals by 2035; the current training pipeline falls significantly short of projected demand.

POLICY RECOMMENDATIONS

1. Establish an Integrated Governance Framework *[Short-term: 0–12 months]*

Move beyond project-based coordination toward a system-level governance model that aligns energy, industry, and climate policies under a single implementation mandate. A dedicated inter-ministerial nuclear coordination body with clear authority and accountability is recommended.

2. Adopt Objective-Driven Planning Before Technology Selection *[Short-term: 0–12 months]*

Technology selection should be the outcome — not the starting point — of clearly defined system needs and strategic objectives. Scenario-based planning aligned with demand forecasts and grid integration requirements must precede procurement decisions.

3. Develop a National Nuclear Supply Chain Strategy *[Medium-term: 1–3 years]*

Support domestic industry through internationally recognised certification pathways, long-term demand visibility, and targeted public incentives. Benchmarking against comparable programmes in Poland and the Czech Republic is advisable.

4. Diversify Financing Models *[Medium-term: 1–3 years]*

Complement existing bilateral financing structures with public-private partnerships, export credit facilities, and multilateral financing instruments to distribute risk, attract capital, and reduce strategic exposure to any single counterparty.

5. Enhance Regulatory Predictability *[Short-term: 0–12 months]*

Establish clear licensing milestones and ensure early, continuous engagement between project developers and the regulatory authority. Reducing approval uncertainty is essential to maintaining investor confidence and project schedules.

6. Prioritise System Integration of Nuclear Energy *[Long-term: 3–5 years]*

Expand nuclear energy's role beyond electricity generation to encompass hydrogen production, industrial heat supply, and digital infrastructure. Integration roadmaps should be developed in parallel with grid modernisation plans.

EXPECTED IMPACT — ENERGY TRILEMMA

Energy Security	Affordability	Sustainability
Reduced dependence on imported fuels; import ratio currently at ~72% of primary energy supply.	Predictable baseload generation stabilises long-run electricity prices against fuel market volatility.	Firm low-carbon capacity supports Türkiye's 2053 net-zero commitment without intermittency penalties.

INTERNATIONAL PRECEDENTS

Türkiye is not alone in this trajectory. Poland, Romania, and the Czech Republic — countries with broadly comparable energy profiles and climate alignment pressures — have each recently advanced their nuclear programmes by establishing **dedicated implementation agencies**, securing **multilateral financing frameworks**, and embedding nuclear energy within **national industrial strategies**. These precedents offer transferable institutional lessons and concrete frameworks for bilateral and multilateral cooperation that Türkiye's programme can draw upon.

CONCLUSION

The findings and recommendations set out in this brief draw directly from the deliberations of the high-level dialogue convened on **21 April 2026** at the IGU SESARC, Istanbul — a forum that brought together senior representatives from public authorities, the energy industry, and the international research community. The convergence of views expressed at that forum leads to one clear conclusion: nuclear energy is no longer merely an option but a **strategic imperative** for Türkiye's energy transition. The success of this transition depends not on technology choices alone, but on **governance capacity, institutional coordination, and implementation capability**. The policy gaps identified in this brief are addressable — what is required now is the political will and administrative resolve to act decisively. The window for timely action is open; it will not remain so indefinitely.