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SYNOPSIS

The second Nuclear Energy Summit highlighted renewed global momentum to expand nuclear power as countries face volatile fossil-fuel supplies amid ongoing Middle East tensions. With governments pledging to triple nuclear capacity by 2050, nuclear energy is once again being positioned as a reliable low-carbon pillar of energy security. However, the speed and credibility of this expansion will ultimately depend not only on financing and technology, but also on regulatory institutions, industrial capacity, and a skilled workforce needed to govern it safely.

COMMENTARY

Nuclear-powered countries convened the second Nuclear Energy Summit in Paris on 10-11 March 2026 at a moment of mounting global energy uncertainty. As the world grapples with a worsening energy crisis, amid disruptions in oil supplies from the Middle East, the strategic importance of expanding nuclear power capacity is back at the forefront of international energy discussions.

The push to triple global nuclear capacity by 2050 is gaining renewed political and economic momentum. The recent endorsements by Belgium, Brazil, China, and Italy of the Declaration to Triple Nuclear Energy highlight increasing global support for nuclear expansion. With these additions, 38 countries have now committed to working towards tripling global nuclear energy capacity by 2050, emphasising the technology's renewed importance as a source of clean, reliable, and resilient energy.

Nuclear energy currently makes up around 10 per cent of global electricity production. It serves as a vital complement to renewable sources, providing stable, low-carbon electricity and enhancing energy system resilience. The World Nuclear

Outlook Report projects that global nuclear capacity could reach 1446 GW by 2050, surpassing the 1200 GW target set in the Declaration, if government targets are achieved.

Nuclear Power in an Era of Fossil Fuel Volatility

The closure of the Strait of Hormuz has once again exposed the vulnerability of energy systems that heavily depend on oil, gas, and coal. Supply disruptions, geopolitical tensions, and price shocks – especially in the Middle East – have intensified strategic worries over long-term energy security.

At the Nuclear Energy Summit, European Commission President Ursula von der Leyen acknowledged that Europe's earlier departure from nuclear power had been a "strategic mistake", as soaring oil prices revived concerns about the bloc's energy vulnerability.

During the same meeting, China's Vice Premier Zhang Guoqing called for stronger international cooperation and a broader global division of labour in nuclear projects, emphasising the need for collaborative efforts to accelerate nuclear expansion worldwide.

China is set to overtake France and the US as the world's largest producer of nuclear energy by 2030, targeting 110 GW of installed capacity, an increase of 76 per cent from the 2025 level. Japan is betting on nuclear energy 15 years after the Fukushima disaster, as Prime Minister Sanae Takaichi has pushed to accelerate reactor restarts and strengthen nuclear power as a stable energy source.

In Asia, including Southeast Asia, energy security is a significant driver of renewed interest in nuclear power. Many economies are still heavily dependent on imported fossil fuels, much of which transits strategic maritime chokepoints that are vulnerable to disruption during geopolitical crises or armed conflict. Nuclear energy can help reduce this vulnerability. Uranium fuel is relatively cheap per unit of energy, can be stored for extended periods, and is sourced from a more diversified global market.

Opportunities for Expansion

These dynamics are opening new opportunities for nuclear expansion, especially across Asia.

There are now additional financing opportunities, especially for developing countries considering nuclear power. The World Bank, in a major policy reversal, ended its decades-long ban on funding nuclear energy projects as of June 2025 to help developing nations meet rising electricity demand and climate goals. The bank is partnering with the International Atomic Energy Agency (IAEA) to support small modular reactors (SMRs), grid upgrades, and life extensions of existing reactors.

In Asia, additional financial support for nuclear projects, especially in developing economies, has been made available. The Asian Development Bank (ADB) updated its energy policy to support nuclear power. It formed a partnership with the IAEA to

strengthen cooperation with countries across Asia and the Pacific that are exploring nuclear energy as part of their long-term energy and development plans.

The rapid growth of artificial intelligence is further increasing the need for reliable, round-the-clock electricity capacity that is less dependent on fossil fuels. Technology companies are playing a bigger role in boosting both the demand for and the capacity of nuclear energy. Meanwhile, ongoing disruptions to oil and gas supplies could significantly affect the energy-intensive operations of critical data centres worldwide, including in Southeast Asia.

Technology giants such as Google, Amazon, Microsoft, and Meta are among the most prominent companies exploring or investing in nuclear power projects. They are creating new opportunities for expanding nuclear capacity by purchasing electricity from existing nuclear plants, advocating the reopening of shuttered reactors, and supporting the construction of new ones. The role of private enterprises in advancing nuclear power generation – beyond the traditional nuclear industry – should not be underestimated.

In Southeast Asia, the convergence of a rapidly expanding data centre sector and an emerging nuclear energy pipeline is reshaping regional investment dynamics. AI-driven data centres require enormous amounts of electricity – a demand that the region's energy systems could struggle to fulfil if nuclear power is not part of the energy mix.

Capacity Constraints to Nuclear Expansion Scenario

We should also scrutinise the 2050 scenario in light of the intractable challenges to nuclear power deployment. The challenge of training and developing the workforce needed for this scenario is particularly urgent and requires a long-term strategy to develop the necessary skills.

When China called for "stronger international cooperation" and a "broader global division of labour across nuclear projects", it suggests that no single country currently has sufficient industrial capacity, technical expertise, supply chains, and skilled workforce to support rapid nuclear expansion on its own. Large-scale nuclear deployment requires highly specialised engineers, reactor designers, safety, security and safeguards regulators, construction specialists, and nuclear fuel-cycle experts – many of whom are in short supply globally.

In Southeast Asia, regulatory capacity is a particularly acute human-resource bottleneck. Effective nuclear oversight depends on independent regulators who can rigorously review complex designs, license and inspect facilities, scrutinise vendor claims, and enforce compliance with international standards. The region currently lacks enough people with hands-on nuclear engineering and regulatory experience to perform these roles.

If regional countries proceed with multiple large-scale or advanced reactor projects, such as Small Modular Reactors, without first building strong regulatory institutions and staffing them with qualified experts, they risk creating "paper regulators" that

depend excessively on vendors or foreign governments. This, in turn, raises concerns about safety culture, non-proliferation assurance, and the credibility of national oversight in the eyes of both domestic publics and international partners.

On the industry side, expanding nuclear capacity requires a nuclear-qualified industrial base – companies that understand and can consistently meet stringent nuclear quality standards for components, construction, and maintenance. The supply chain “tailored to nuclear” is still underdeveloped in many Southeast Asian countries.

International capacity-building efforts are essential, but they also reveal that such capacity is currently limited to a few institutions and countries. Scaling up from training hundreds of people to training the many thousands needed to design, regulate, build, operate, and secure a growing fleet of reactors remains a significant challenge. Any shortfall in this pipeline will directly constrain how quickly and safely nuclear capacity can expand, and whether tripling global nuclear energy capacity by 2050 is feasible.

Conclusion

Human resource development is not a peripheral or “soft” issue – it is a crucial factor in enabling responsible expansion of nuclear power, both globally and within our region. A limited pool of experienced regulators, an underdeveloped nuclear-qualified industrial base, and a shortage of security and safeguards specialists pose a real risk that technology and financing will outpace the people and institutions needed to oversee them.

As disruptions in oil and gas supplies from the Middle East intensify and power-hungry AI infrastructure drives increasing electricity demand, the effort to triple global nuclear capacity is gaining momentum. Whether the 2050 scenario can be realised will ultimately depend not only on reactors and capital, but also on the human expertise needed to build, regulate, and secure them.

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