AUTHOR: No author available SECTION: BUSINESS AUDIENCE : 62,408 PAGE: A7
PRINTED SIZE: 676.00cm² REGION: KL MARKET: Malaysia PHOTO: Full Color ASR: MYR 10,848
WORDS: 1248 ITEM ID: DP0121877843

07 SEP, 2026

Getting nuclear power into M'sia's energy mix 'inevitable'

Borneo Post (KK), Malaysia

Getting nuclear power into M'sia's energy mix 'inevitable'

KUALA LUMPUR: Malaysia has been actively laying the groundwork to pave the way for a possible nuclear application in the country's energy mix, although it may not materialise in the foreseeable future.

The big question is, who will spur the civil nuclear project in the country -- private firms or government-related energy giants like Petroliam Nasional Bhd (Petronas) or Tenaga Nasional Bhd (TNB), which are said to be keen to undertake the massive development.

With the war between the United States and Iran continuing, disrupting the whole West Asia region and globally, Malaysia has seriously considered alternatives and examined many countries' energy initiatives, including the deployment of civil nuclear applications for industrial and general use.

Just last week, the International Atomic Energy Agency (IAEA) shared at a national workshop organised here that focused on human resource development modelling, a strategy that supports workforce planning by projecting future staffing needs, as the country looks to build capacity to support current and future nuclear applications.

In March this year, Deputy Prime Minister Datuk Seri Fadillah Yusof was quoted as saying that Malaysia has undertaken a comprehensive assessment of its potential nuclear energy programme, covering policy development, regulatory frameworks, project feasibility, industry participation, stakeholder engagement and human capital development.

Fadillah, who is also the Minister of Energy Transition and Water Transformation (PETRA), said the move to explore nuclear energy for electricity generation is a strategic effort to strengthen long-term energy security while supporting the country's clean energy transition.

Previously, Science, Technology and Innovation (MOSTI) Minister Datuk Chang Lih Kang stated that Malaysia is actively exploring nuclear energy for future electricity generation under a structured framework with PETRA, with key nuclear initiatives led by MOSTI.

Led by Chang, the ministry launched the National Nuclear Technology Policy (DTNN) 2030 to promote peaceful applications of nuclear technology. The minister said a government-commissioned pre-feasibility study on the use of nuclear energy has found promising potential for its adoption as a clean, stable and reliable energy source for Malaysia's long-term energy security.

Juwai IQI global chief economist Shan Saeed said Malaysia's evaluation of civil nuclear energy is strategically sound and economically timely. He said under the 13th Malaysia Plan (13MP), nuclear power is being assessed as a low-carbon component of the country's future electricity architecture, with MyPOWER Corporation coordinating a feasibility process aligned with the IAEA's Milestones Approach.

"The 13MP sets an initial operational ambition of 2031, although deployment must remain conditional on safety, regulatory readiness and commercial viability," he told Bernama here recently.

AI, data centre boom boost energy demand

The booming of data centres across the Asean region, which has seen Malaysia leading the growth, strengthens the economic case. Apart from that, Malaysia is also aggressive in driving its artificial intelligence (AI) initiatives toward becoming an AI Nation by 2030.

The Malaysian Investment Development Authority (MIDA) approved RM144.4 billion in data-centre and cloud-computing investments between 2021 and mid-2025. By mid-August 2025, TNB had secured electricity-supply agreements for 47 data-centre projects with maximum demand of 6.7 gigawatts (GW).

MIDA also projected data-centre power demand could exceed 5GW by 2035 - equivalent to about 18 per cent of Peninsular Malaysia's 2025 installed capacity.

Shan said reliable electricity is therefore moving from an infrastructure consideration to a national competitiveness imperative.

"The gains would extend beyond data centres to semiconductor fabrication, electrical and electronics manufacturing, chemicals, advanced materials and green hydrogen.

Nuclear could complement Malaysia's renewable-energy base with firm generation when solar output fluctuates, while diversifying the power mix and reducing exposure to imported-fuel volatility," said the economist.

McKinsey estimated that the US data-centre demand could rise from 25GW in 2024 to more than 80GW by 2030. ExxonMobil projects global electricity demand will expand by approximately 70 per cent by 2050.

"The competitive frontier is shifting from land, tax incentives and connectivity towards dependable, scalable power. Technological prudence remains

AUTHOR: No author available SECTION: BUSINESS AUDIENCE : 62,408 PAGE: A7
PRINTED SIZE: 676.00cm² REGION: KL MARKET: Malaysia PHOTO: Full Color ASR: MYR 10,848
WORDS: 1248 ITEM ID: DP0121877843

07 SEP, 2026

Getting nuclear power into M'sia's energy mix 'inevitable'

Borneo Post (KK), Malaysia

essential," Shan said.

Tapping the Strength of Petronas, TNB

With the government laying the groundwork, Petronas and TNB will likely lead the commercial initiatives, based on their strength and capacity.

Shan said ideally the optimal model would be government-led but commercially disciplined. He advised that the Malaysia Programme Office for Power Electricity Reform Corporation (MyPOWER) should remain the programme coordinator, supported by the Energy Commission, Department of Atomic Energy Malaysia (Atom Malaysia) and the Malaysian Nuclear Agency.

"TNB is the natural domestic anchor for system planning and grid integration; Petronas could contribute expertise in complex-project delivery, safety management, international procurement and capital deployment.

Experienced international vendors would initially provide reactor technology and operating expertise, while hyperscalers could strengthen project bankability through long-term power-purchase agreements," he added.

Finding the perfect fit for Malaysia

Apart from capacity building, the most important task is finding a suitable nuclear application to fulfil the country's energy needs.

On July 10, 2025, Malaysia signed a memorandum of understanding (MoU) on Strategic Civil Nuclear Cooperation with the United States, which supports the former's broader clean energy exploration and long-term energy security.

It also engaged in partnership networks with China and Russia to enhance its preparedness for a future nuclear energy programme that is safe, well-regulated and strategically planned.

Petronas and TNB are believed to be looking at some civil nuclear options, including third-generation nuclear fission.

"Insofar as the kind of technologies that we (Malaysia) are considering, whether it is from Korean or Russian or American or British or French, we kind of have to be a little bit more agnostic because we need to find the one that is fit for purpose in this region.

"Now, people have been saying the Americans and the Russians have got a bit of a lead because, think about it, aircraft carriers carry nuclear reactors at risk. So it's already a floating solution.

"I think we need to consider all the attributes of what makes it secure. This is another one where you have to make sure you can take on the cost of delivering nuclear energy because it's super expensive to build. Once built, the ongoing operating expenditure (opex) is very low," said a source close to the deal.

Among other options, Malaysia is also looking at Canada, which is currently implementing small modular reactors (SMRs), which, among others, are said to be suitable for deployment to data centres.

Through its SMR Action Plan, Canada is advancing its nuclear application and benefiting Canadians in many ways.

Apart from that, there is also the possibility of looking at floating power units (FPUs), which are said to be well-suited for coastal nations, the source said, citing Rosatom, the Russian state corporation leading in nuclear energy, nuclear non-energy goods and high-tech products.

Whatever the options - from SMRs or FPUs to third-generation nuclear fission - many factors need to be considered as Malaysia aims to make nuclear energy part of the generation mix by 2031.

What is the ideal timeline?

Shan said ideally, if the first power could come around between 2038 and 2042, it would be credible. "The strategy is about turning ambition into architecture. Compute capacity ultimately depends upon energy capacity. Build institutions first, contracts second and concrete last," he added.

Shan cited Wood Mackenzie, which models Malaysian SMR deployment from 2035, reaching 1.2GW by 2050. "The 2026–2030 period should prioritise legislation, workforce development, site evaluation, independent regulation, financing, waste management and ring-fenced decommissioning provisions," he added. — Bernama

Malaysia is actively exploring nuclear energy for future electricity generation under a structured framework with PETRA, with key nuclear initiatives led by MOSTI. — Bernama photo