



# Singapore Cannot Import its Way to Energy Security

*Alvin Chew*



*RSIS Commentary is a platform to provide timely and, where appropriate, policy-relevant commentary and analysis of topical and contemporary issues. The authors' views are their own and do not represent the official position of the S. Rajaratnam School of International Studies (RSIS), NTU. These commentaries may be reproduced with prior permission from RSIS and due credit to the author(s) and RSIS. Please email to Editor RSIS Commentary at [RSISPublications@ntu.edu.sg](mailto:RSISPublications@ntu.edu.sg).*

## Singapore Cannot Import its Way to Energy Security

*By Alvin Chew*

### SYNOPSIS

*Singapore needs to address sustainability and energy security challenges through its energy transition pathway, achieving the visionary goal of net-zero carbon emissions by 2050 and ensuring a secure and stable supply of baseload electricity for essential services.*

### COMMENTARY

Energy transition is often framed as a sustainability issue. Security considerations have always been present – certainly for policymakers – but the public narrative tends to be about climate change and decarbonisation.

What has become explicit with increasing global conflict is the vulnerability that comes with reliance on fuel imports. From Russia's invasion of Ukraine in 2022 to the Iran war, the impetus for Singapore to wean off its dependence on [imported energy resources](#) has never been stronger.

The war in Iran sent [prices of oil and gas](#) skyrocketing. Even with a ceasefire or if the war ends, global supply has taken a hit and could take months or years to recover to pre-war levels. Middle Eastern oil producers cut production as exports via the Strait of Hormuz are blocked and they run out of storage capacity. "Extensive damage" by Iranian missiles to the Ras Laffan site [reduced Qatar's LNG capacity](#) by 17 per cent.

In Singapore, the government announced on Tuesday (Apr 7) that it would provide [nearly S\\$1 billion \(US\\$777 million\) in additional support measures](#), as businesses and households face rising costs of commodities and services from petrol and electricity to food.

About 95 per cent of Singapore's electricity is produced from imported natural gas. The heavy dependence on a single source type for electricity is never a good strategy to ensure energy security – and it's not just a matter of cost.

### **“Four Switches” Through an Energy Security Lens**

The Energy Market Authority (EMA) had laid out “four switches” in Singapore's energy transition story: natural gas, regional power grids, solar energy deployment, and low-carbon alternatives.

Singapore has put in measures around its natural gas dependence, but risks are still present, only buffered. It had relied solely on PNG from Indonesia and Malaysia until 2013, when Singapore's first LNG terminal was completed. This allowed the country to diversify suppliers and increase stockpiles as gas that has been liquefied is significantly reduced in volume.

Around 9 per cent of Singapore's natural gas would have been from Qatar this year, said Coordinating Minister for National Security and Minister for Home Affairs K. Shanmugam in parliament on Tuesday.

Singapore has also started to import low-carbon electricity from other countries, including Lao PDR and Malaysia, by connecting to regional power grids. It intends to tap the ASEAN power grid, an ongoing regional initiative, for about one-third of its energy needs in the future.

But importing electricity through a regional grid is structurally identical to importing LNG through a terminal: the commodity changes, the pipeline changes, the dependence does not.

A heavy reliance on imported electricity would still run counter to a vision of enhancing energy security. To minimise disruption, a diversified energy mix should also include indigenous sources.

### **Harnessing Solar as Indigenous Energy Source**

Solar power has lent itself well to the climate change narrative. It does not emit greenhouse gases; it is renewable and will never run out. However, the more seminal rationale for Singapore to consider solar is because it is an indigenous source of energy. It all depends on whether the country can harness it.

For example, Germany has almost entirely eliminated Russian imports from its energy mix, down from over a third of its crude oil and more than half of its natural gas before the start of the Ukraine war. It reported a record high in solar energy production in 2025, accounting for about 16 per cent of total domestic electricity production.

However, solar or other types of renewables cannot be a direct replacement for natural gas.

Though Singapore is located near the equator, solar power is still intermittent and cannot serve as a constant energy supply to meet baseload demands. This is crucial for critical infrastructures such as hospitals and data centres, which require power 24/7.

In addition, Singapore's small land area effectively limits the deployment of solar energy. A study by the Solar Energy Research Institute of Singapore (SERIS) estimated that there is technical potential to produce 8.6 gigawatt-peak of solar power by 2050. That will account for up to 10 per cent of the projected electricity demand then. At this capacity, solar cannot anchor energy security.

### **Nuclear Power Starts to Look More Interesting**

In Singapore, the potential use of nuclear energy is being assessed in the exploratory light of low-carbon alternatives. In that sense, it is still mainly seen as a decarbonisation tool, not for the imperative of shoring up its energy security.

The fact is that nuclear energy addresses the biggest shortcoming of solar energy: Nuclear plants can be a direct replacement for coal or gas-fired plants because they provide a stable source for baseload power demand.

Nuclear power can also contribute to energy security because of the inelasticity of uranium fuel price. Uranium is aplenty in the world, and one unit of uranium can produce more than a million times of energy compared to an equivalent unit of coal. That makes nuclear the densest form of energy available today.

Finally, a built nuclear power plant comes with a guaranteed fuel supply from the vendor, who will source for uranium to be mined, converted and enriched in order to fabricate and assemble the fuel specific to the reactor. Unlike LNG, its price is thus shielded from geopolitical volatility. Hence, if Singapore operates a nuclear power plant, it can be considered an indigenous source of energy.

Furthermore, a nuclear power plant needs to be refuelled, on average, once every two years. This means Singapore could rely on a dependable source even through a prolonged regional energy crisis.

### **Fresh Urgency for Energy Resilience**

The war in Iran has underscored how much of an existential issue energy is. And Singapore's vulnerability is not due to natural gas in itself, but from its dependence on imported energy – be it oil, natural gas or even electricity.

This is not unique to Singapore. China, India, Japan and South Korea import more oil and gas from the Middle East than most other countries within Asia. However, these countries operate nuclear power plants which offer them a level of resilience in their energy portfolios.

Singapore has not yet needed to implement drastic measures, like export restrictions or fuel rationing. This is in part due to its energy strategy, but also because in absolute terms, Singapore's energy demand is relatively small compared to larger economies.

But its thirst for electricity will only grow exponentially with digitalisation and artificial intelligence adoption – especially since these are areas central to Singapore's growth strategy. Any sustained energy shock in the future would be a profound threat to an economy built on digital infrastructure.

An indigenous source of energy supply will be the best way to avoid getting trapped in a vicious cycle of energy insecurity. The deepening global energy crisis gives Singapore fresh urgency to refine its energy transition priorities.

---

*Alvin Chew is Senior Fellow at the S. Rajaratnam School of International Studies (RSIS), Nanyang Technological University (NTU), Singapore. This commentary was first published on [CNA](#) on 9 April 2026. It is republished here with permission.*

---

**S. Rajaratnam School of International Studies, NTU Singapore**  
Block S4, Level B3, 50 Nanyang Avenue, Singapore 639798

*Please share this publication with your friends. They can subscribe to RSIS publications by scanning the QR Code below.*

