

Singapore: Asia-Pacific's renewable energy hub?

The Republic can leverage its strategic location and advanced infrastructure to position itself as the distribution point to serve markets around South-east Asia and beyond. BY QUAH SAY JYE AND TAN KWAY GUAN

FOLLOWING the conclusion of the COP28 climate summit in December, each country has now to begin a process of taking stock and re-evaluating its national net-zero commitments, goals and overarching strategies in line with new developments.

It is no different for Singapore. The city-state – regarded as a trusted broker in the COP28 negotiations – lies “at the vanguard of climate research”, and is a major player in climate finance. Yet, a key issue that has preoccupied Singapore is energy transition. As a “renewable-energy disadvantaged” nation, it ultimately has to rely on imports to meet its decarbonisation goals.

On this score, the past year has been productive. Singapore has unveiled plans to import wind-powered renewable energy from Vietnam and also rapidly secured deals with Cambodia and Indonesia. These moves allow Singapore to hit, and potentially even surpass, its target of having 30 per cent of its electricity demand supplied by “low-carbon” imported sources by 2035.

Collaboration with fellow Asean member states is the more welcome given that every bilateral renewable energy trading link is a step towards the establishment of the elusive Asean Power Grid, a power-sharing arrangement in the region. It would build off the Lao PDR-Thailand-Malaysia-Singapore Power Integration Project, which proves the feasibility of bringing renewable energy across multiple borders.

Some challenges remain but, overall, the Singapore government’s mission and drive on this front are more than evident.

Water and oil analogies

The ability to hit its own domestic targets provides the platform for Singapore to look towards a bigger ambition: going beyond decarbonisation and energy security, and reconfiguring itself as a renewable energy hub.

The historical analogy often drawn by commentators and policymakers for Singapore’s efforts to decarbonise its energy mix has been its proud “water story”, which is perhaps a misleading comparison. The “water story”, in brief, is a narrative about how resource-poor Singapore managed to overcome its dependence on imported water by leveraging developing technologies and a collective determination to achieve water self-sufficiency.

It might be more appropriate to think of Singapore replicating its history as an oil-trading state. While it produces no oil, it has had an essential role in global oil trade, by leveraging its strategic location at the southern tip of the Strait of Malacca and providing high-quality services in bunkering, oil pricing and associated services.

Singapore’s “oil story” is no less important than its “water story”. Playing a middleman role in distributing and re-export-



Recasting Singapore as a renewable energy hub has many benefits, including increased relevance in the global political economy, a deeply entrenched foreign policy aim. PHOTO: YEN MENG JIN, BT

ing oil and petroleum-derived products has allowed Singapore to achieve several strategic objectives all at once. First, it has ensured a steady supply of oil for domestic use. Second, by playing a key role in the circulation of global commodities, it has established the Republic’s relevance in the global political economy, a deeply entrenched foreign policy aim. And third, it has laid the foundation for a significant maritime industry, which contributes to its economic growth.

Singapore is seeking to replicate the strategy and recast itself as a renewable energy hub.

By leveraging its strategic location and advanced infrastructure, Singapore can position itself as the distribution point to serve markets around South-east Asia and potentially beyond. This would yield major strategic benefits, as outlined above. But it would require overcoming several obstacles.

Challenges to aspirations

One of the more tricky challenges is having to navigate any links between renewable energy and energy nationalism. A big part of the draw of renewable energy is its ability to produce energy self-sufficiency. Global trends and events, especially the war in Ukraine, has alerted countries to the fragility of energy supply chains.

This has led to growing attention on and investments into renewable energy. As the International Renewable Energy Agency states, “Renewable energy resources are available in one form or another in most

countries, unlike fossil fuels which are concentrated in specific geographic locations. This reduces the importance of current energy choke points, such as the narrow channels on widely used sea routes that are critical to the global supply of oil.”

Unfortunately, Singapore is an exception though – unpropitious geographical circumstances mean that it cannot produce sufficient renewable energy to meet its own demand.

The proliferation of energy nationalism as a result of the global move towards renewable energy may therefore prove detrimental for Singapore and complicate its hub aspirations, given that it would stunt the global circulation of energy commodities. Singapore would have no global markets to serve, and no middleman role to play.

Hence Singapore’s strategic investment into low-carbon hydrogen. This is reflected in significant policy documents, including the Energy Market Authority’s (EMA) major report on Singapore’s possible pathways to net zero, as well as the National Hydrogen Strategy launched in 2022.

While hydrogen is not an energy source in and of itself but instead a carrier of energy, it can be produced by renewable energy sources, and is thereby labelled green hydrogen.

There are several reasons behind this push. First, hydrogen can mimic natural gas in that it can be liquified and therefore be shipped across longer distances – and thereby traded. This spells potential for a global trading market.

Second, there has also been some promise in the ability of hydrogen to be able to fuel both ships and aircraft. This means that there is potential for Singapore to simultaneously decarbonise its emissions-heavy industries.

Last, for Singapore, which currently has most of its electricity derived from liquefied natural gas (LNG), there are also infrastructural benefits. Singapore has made moves to be an LNG hub, and the infras-

tructure supporting the use of LNG can be adapted relatively seamlessly for hydrogen use.

As a clean “alternative fuel”, green hydrogen thereby can lubricate Singapore’s transition to a renewable energy hub. Singapore has made strategic moves towards this end, with GIC, its sovereign wealth fund, pumping capital into companies specialising in green hydrogen.

Eggs not all in one basket

While the government is watching developments in green hydrogen closely, this is not to say that Singapore is putting all its eggs in one basket, or that green hydrogen is without sceptics.

Scholars have, for example, scrutinised the buzz around green hydrogen and raised queries around technical and commercial ambiguities. There are also question marks surrounding the fact that oil majors are among the biggest cheerleaders of green hydrogen, raising issues of climate justice and inequality.

The government is hedging across several sectors, and is likely working along the lines of the EMA report which mapped out several paths to net zero, depending on the geopolitical context and technological developments.

The fulfilment of Singapore’s renewable energy hub aspirations certainly hinges on all such factors, and the final outcome will stem from a mixture of vision, flexibility and luck. This is a space that will need to be closely monitored.

The writers are researchers affiliated with the Asia Competitiveness Institute at the Lee Kuan Yew School of Public Policy, National University of Singapore.