

Where does Asia Pacific stand in the Energy Transition?

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In this briefing we look at the state of play of the energy transition in Asia Pacific, including mainstream renewables, offshore wind, battery energy storage systems (BESS), clean hydrogen and LNG, and consider the roles of government policy and investor strategies.

In an environment in which there is supply chain inflation and other constraints due to geopolitical events, global trade friction due to tariff increases and where support for ESG is wavering in some jurisdictions, has the energy transition lost momentum?

According to the International Energy Agency, over 80% of the energy used in Asia Pacific still comes from fossil fuels. The region is responsible for half of global energy consumption and some 60% of global greenhouse gas emissions from fuel combustion.

In 2024, the equivalent of over US\$1 trillion was invested in the energy transition in Asia Pacific, just over half of the global total and showing a 21% year-on-year increase. While this masks significant imbalances in investment across the region, with over US\$800 billion of the total being invested in China, the general trend is positive and projections for the scale of investment required in Asia Pacific going forward are enormous – an estimated US\$3.5 trillion per annum on average (Source: Bloomberg NEF). There is a significant investment gap which presents opportunities for investors.

Key issues

- 1 Asia Pacific is making progress in its energy transition, with growing investment and strong momentum across several clean energy sectors.
- 2 Renewable and offshore wind markets are advancing, with regulatory improvements expected to unlock faster growth in countries facing early-stage hurdles.

- 3 BESS is becoming central to the energy transition as regulatory frameworks mature and investor appetite strengthens.
- 4 Government policy and supportive frameworks remain essential for scaling low-carbon technologies, improving bankability and giving investors confidence across the region.

Scaling renewables

Renewable power generation capacity in Asia Pacific (excluding China) is predicted to double between now and 2030, adding around 670 gigawatts of new capacity (Source: IEA), with growth driven by India as well as Southeast Asia. There is strong momentum in Asia Pacific in the solar, onshore wind and hydroelectric power sectors in particular.

"We are seeing a lot of activity in traditional renewables projects in the Philippines and India," says Mel Chan, a Partner in Clifford Chance's Singapore office. "In the Philippines, growth is facilitated by very ambitious clean energy targets. The government has announced a target of 35% renewable generation by 2030 and 50% by 2040. This is backed by strong regulatory support, with improved conditions for foreign investment, including allowing 100% foreign ownership of renewables projects, and the implementation of the Green Energy Auction Program, which provides fixed rate tariffs for 20 years, boosting investor confidence and supporting bankability. India has added 35 gigawatts of renewable capacity over the past two years, principally solar and wind, underpinned by strong policy support for renewable energy and with a low cost of generation proving attractive for investors. In both markets, more international developers, financiers and private capital providers are now active."

Vietnam and Indonesia are places to watch in the medium-to-long term, with more uncertain regulatory environments restricting similar growth in the renewables market so far. "Historically, these are areas where investors have been quite wary," says Chan. "In Vietnam, there have been payment disputes with EVN, the State-owned power company, as a result of retroactive reduction of the feed-in-tariffs (FiTs) for some projects, while in Indonesia there are continuing hurdles when it comes to permitting as well as the procurement process."

Meanwhile Singapore is looking to ambitious cross-border clean energy import projects, with the intention to import around 6 gigawatts of renewable energy generated in neighbouring countries by 2035.

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Tom Capel
Counsel, Singapore

Offshore wind

"It is fair to say that the offshore wind sector has lost some momentum in APAC in the last couple of years," says Tom Capel, a Counsel in Clifford Chance's Singapore office. "Japan's offshore wind programme has not progressed as hoped, with round one ending in disappointment. Taiwan's third round has moved slower than it should have at this stage in the development cycle of Taiwan's offshore wind sector. International investor-backed projects in South Korea have also been slow-moving, with regulatory hurdles in particular requiring careful navigation, although a path through is starting to emerge. Australia is still really at square one."

Looking ahead to 2026 and beyond, we can expect to see more momentum.

"We anticipate more round three projects in Taiwan will come to market in 2026, with the rolling back of the prohibitive local content regime helping to bring inflated construction costs down and freeing up more headroom in corporate PPA tariffs for projects to start to make economic sense again. We are also seeing the first round of refinancings, or financing optimisations, in projects that have achieved COD or which have the finish line in sight. This will offer opportunities for recycling of capital and for new players to come in," says Capel. "Investment opportunity is not just about greenfield development. We may start to see more interest from private capital players in offshore wind in APAC, as we have seen in Europe, with the potential for long-term stabilised revenue on big projects."

In the Philippines, there is much anticipation for the offshore wind market. "The use of Chinese supply chain, particularly for turbines, will be interesting. In other APAC, and indeed global markets, Chinese turbines have generally not been under consideration, primarily due to political factors. However, the Philippines is taking a more pragmatic approach and sees the benefit of cost optimisation through Chinese suppliers. China's prowess in offshore wind cannot be doubted, and we are seeing increased confidence in their equipment amongst technical advisers. The potential entry of Chinese OEMs will be a challenge to European OEMs who have dominated the market and have benefitted accordingly in terms of contracting terms and pricing. Introducing more competition into the contracting market might allow developers to get capital expenditure under control and result in an uptick in greenfield development activity," says Capel.

Battery energy storage (BESS)

"BESS is becoming central to the energy transition and the outlook is positive," says James Thornton, a Senior Associate in Clifford Chance's Singapore office. "Bloomberg NEF has predicted that there will be 7.3 terawatt hours of installed energy storage capacity worldwide by 2035, an eightfold increase on 2025. New markets are emerging with auctions in the Philippines, Japan and Malaysia in 2025. Regulatory frameworks are finally catching up with the appetite that we are seeing from investors."

Challenges remain. As with other technologies, there are long grid connection queues and some markets still have immature regulatory regimes, but that is changing. "The data centre boom is important for this sector because BESS, paired with renewables, can provide the firm power supplies that data centres need," says Thornton. "BESS is an integral part of the data centre strategies recently announced in Singapore and the Philippines, and this is creating opportunities for developers because there are extremely creditworthy hyperscalers who are looking for long-term power supply and, in some cases, who are willing to pay premium prices."

Clean hydrogen

"It is too soon to talk about momentum for clean hydrogen and ammonia, as the sector is still very much in the starting blocks," says Hans Menski, a Partner in Clifford Chance's Tokyo office. "However, we do see a changing picture in APAC. On the production side, Australia was an early frontrunner but has struggled to bring projects to FID, while India is emerging as a production hub through a mix of federal and state level initiatives and competitive renewable energy costs. Demand remains the key issue for the buildout of the clean hydrogen sector and in the absence

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Partner, Tokyo

of subsidies and consistent carbon pricing there is not yet a market for large-scale offtake. South Korea and Japan, and to some degree Singapore, are positioning themselves as importers and underpinning demand through policy signals and government subsidies. However, South Korea recently cancelled the second round of its Clean Hydrogen Portfolio Standard support scheme and it remains to be seen if and to what extent it will be restarted. More positively, at the end of 2025 Japan awarded the first CfD subsidies for large-scale clean ammonia imports, with further awards expected by the end of March 2026. Overall the trajectory for the sector remains unclear, the only certainty being that the speed of adoption and growth of the market will be more measured than anticipated."

LNG

"It is now well-recognised that gas is a lower carbon transition fuel which can serve in the short to medium term as a bridge until zero or low carbon technologies are able to scale up to sufficient levels," says Melissa Ng, a Partner in Clifford Chance's Singapore office. APAC is the largest region for LNG import and export activity, with China and India driving demand growth. There has also been significant uptick in investment in LNG receiving terminals and regasification plants in the region, and it is predicted that Asia will account for just under 70% of new LNG regasification capacity additions globally between 2024 and 2028.

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Melissa Ng

Partner, Singapore

The investor perspective

Across sectors, there is a theme emerging whereby developers with in-house technical and commercial capability and a track record of delivering successful projects are differentiating themselves from the rest.

"Fundamentally, there is no substitute for skilled and experienced professionals," says Capel. "Energy transition projects in APAC are increasingly complex, involving large-scale deployment of capital, project-on-project risk, and interface risks, all of which need to be managed carefully. There is often no silver bullet for these risks, particularly in multi-contract procurement structures, so there is increasing focus by financiers on the robustness of technical and commercial mitigants. This includes assessing a project developer's project management capabilities and the track record of their personnel in developing projects in the relevant sector."

Developers with multiple projects in the pipeline have a key advantage both in terms of their working relationship with their supply chain and ability to leverage economies of scale. Similarly, developers which are not reliant on external funding to fund initial development expenditure or construction costs (whether through the ability on balance sheet or through the ability to deploy in-house funds) have a point of difference in their ability to identify opportunities and to move quickly in locking down procurement without being outpaced by financing processes.

The Singapore cross-border energy import projects are a prime example of this. These are large complex undertakings, combining a power generation asset in a host country such as Indonesia or Malaysia with a subsea transmission cable connecting to Singapore and potential corporate offtakers. These projects are still in early development, but successful developers will need to combine technical expertise and experience, a deep local connection and leverage established relationships with government authorities. Strategic partnerships are being formed between

local and international developers, bringing different expertise and capabilities to the table.

For other projects, such as BESS and onshore renewables, investors differentiate themselves through deep understanding of the local energy markets and creative mixes of offtake regimes and technologies. When it comes to building a BESS portfolio, those with diverse revenue streams have particular success. Offtake strategies range from physical or virtual tolling arrangements, which are the most stable, to revenue sharing or full market exposure. Combining a mixture of these strategies can unlock debt financing for the portfolio, while still retaining some of the merchant upside, which is a key benefit of BESS projects.

"BESS is very much an emerging market," says Thornton. "In Australia, for example, where electricity prices vary a lot throughout the day and throughout the year, BESS projects can benefit from the differential in prices by buying electricity when the price is low and selling it when it is high. Theoretically, as time goes by and the market develops, those price spikes and decompressions will flatten out, so there will be fewer or more limited arbitrage opportunities in the future. This is driving strong interest in new auction processes, with the key being to spot where the new opportunities are and getting into the market early."

Identifying early-stage opportunities is not limited to the battery storage space. "TotalEnergies' acquisition of two gas blocks in Malaysia from Sapura Upstream Assets and OMV in 2024, and the Southeast Asia upstream joint venture between ENI and Petronas announced in 2025, illustrate the return of certain international oil companies (IOCs) to the region," says Ng. "They are not only investing in upstream assets, but also in infrastructure in order to vertically integrate their value chain." Similarly there is increasing private capital investment, particularly from infrastructure funds, in transmission pipelines, distribution networks and storage assets. "This reflects a swing back to the sector that is driven by the prioritisation of energy security, the realisation that renewables are not delivering the return thresholds that investors were hoping for, the softening of energy transition politics and current geopolitics creating a safe haven for these investments. For these funds, the aim will be to look for long-term cash flows, so interest will continue in assets such as terminals, pipelines and regasification infrastructure which generate long-term steady cash flows through tolling and storage fees."

The role of government

"In the context of clean hydrogen and ammonia, government support is critically important," says Menski. "Without support, the private sector is showing reluctance to step up and take FID on these projects. India is now starting to emerge as a new production hub, partly because of cheap renewable energy, but also because the federal government has expressed policy support and there are federal and state level subsidies being offered for green hydrogen and ammonia production."

The regulatory framework with respect to standards on carbon intensity, certification and alignment with international practice is also critical, particularly for cross-border sales and purchases. Carbon pricing or a carbon tax may also be instrumental in boosting investment, but have been difficult for governments to implement, particularly in the current economic environment. "It is really important that Japan's CfD scheme comes to fruition, otherwise we may not see the emergence of any

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James Thornton
Senior Associate, Clifford Chance

significant clean hydrogen or clean ammonia sector in the region," says Menski.

While BESS is a more developed market, government support is still critical, particularly because non-recourse financing needs stable cash flows. In markets where the electricity price is heavily regulated, such as India and Malaysia, the need for government support is arguably greater as they lack clear price signals which encourage investment in BESS. Malaysia's MyBest Tender and India's Viability Gap Funding (VGF) scheme have been set up to help bridge the gap.

In more liberalised markets such as Australia, there is still a role for government. Australia's Capacity Investment Scheme (CIS), which provides CfD style caps and floors, can underpin the bankability of projects, while still allowing developers some flexibility to benefit from merchant upside.

"Government support opens markets which then ideally scale-up and transition into thriving self-sustaining markets for private investors," says Thornton, "Asia Pacific is now starting to reach that tipping point."



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