

Convergence and Acceleration -

The forces shaping energy transition infrastructure in developed Asia Pacific

September 2026

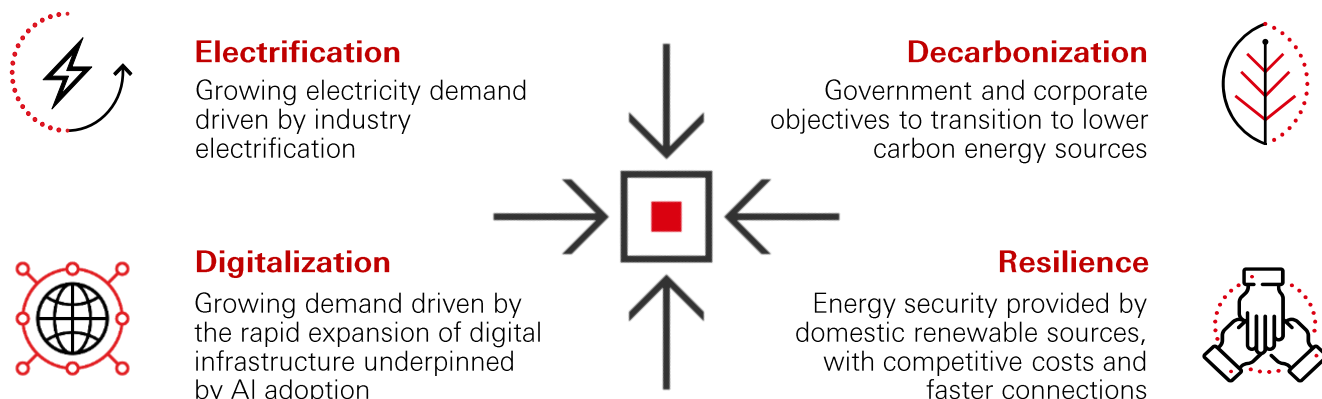
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Executive summary

Four themes are driving the multi-trillion dollar investment opportunity in energy transition infrastructure in developed Asia Pacific: Decarbonization, electrification, digitalization, and resilience.

These trends are converging and accelerating, underpinned by the continuously improving economics of renewable and low carbon technologies when compared to conventional generation. An estimated USD 80tn in Asia-Pacific investment to 2050 is needed to meet these growing needs, affording a potentially attractive opportunity for investors as part of this new supercycle.¹

Four core themes are underpinning the multi-trillion-dollar investment opportunity in renewable power generation and related energy infrastructure across developed Asia-Pacific markets:



These are not new themes – variously they have independently driven enormous change over the last 15 years. For example, from 2010-2025, global renewable electricity generation capacity increased 340%, while over the course of the 2010s the electrification of transport turned from a niche interest to a quarter of global car sales.² In Developed Asia Pacific, non-nuclear renewable electricity generation now sits at 23.4%.³

These themes are now converging and accelerating. Each has passed a threshold beyond which they mutually reinforce the demand for energy transition infrastructure: geopolitical volatility is increasing, grid demand and consequential investment needed for grid capex is increasingly urgent, renewables enter the market to a settled regulatory landscape, and with the backdrop of the continued electrification. All of this is underpinned by the rapidly falling cost and commercial maturity of the technologies underpinning these trends. Altogether, we are entering what some have described a new global energy infrastructure 'supercycle' – and this is no less true for developed Asia Pacific.

Any forecast, projection or target where provided is indicative only and is not guaranteed in any way. The views expressed were held at the time of preparation and are subject to change without notice.

1) BloombergNEF New Energy Outlook, May 2026

2) IEA, May 2026

3) EMBER, August 2026

Cost and speed – the enablers

Renewable energy generation technology rapidly become the most cost competitive option, with natural gas – the cheapest fossil fuel alternative - now a third more expensive than solar PV or onshore wind (see figure 1). The cost advantage is compounded by the speed to market that renewables bring. The typical lead time from commissioning to commercial delivery (i.e.. completion) is less than 24 months - significantly quicker than natural gas plants (60 months), or nuclear (120 months). This also helps minimize cost overruns; while half of nuclear power plants overrun their budgets by more than 50%, against just 2% of solar plants.⁴

Levelised Cost of Energy (LCOE) Comparison: Significant historical cost declines for utility-scale renewable energy generation technologies

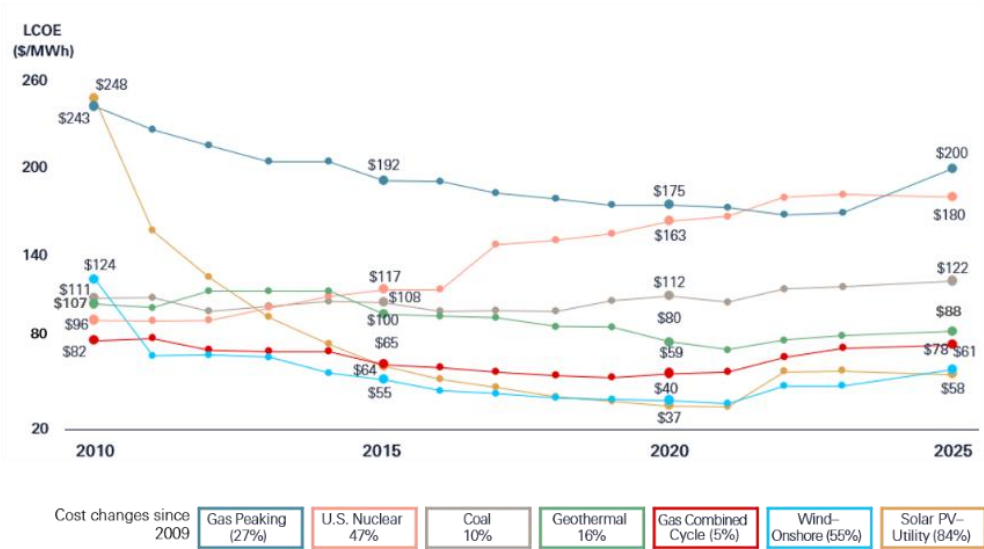
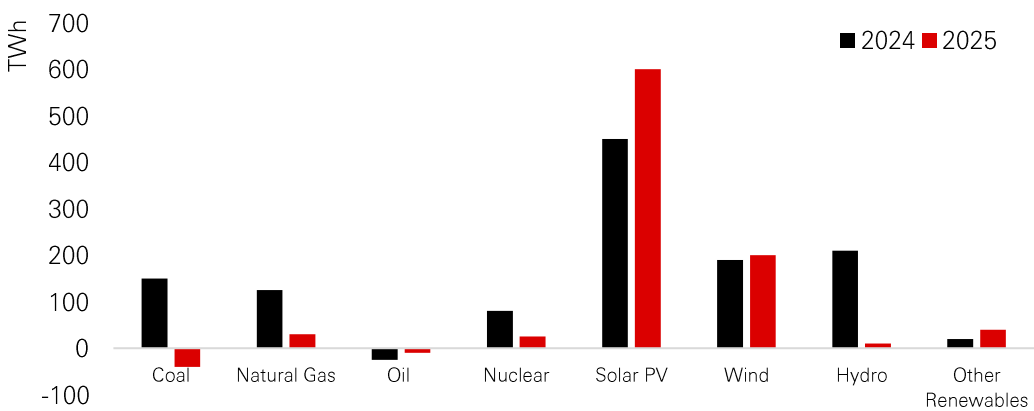


Figure 4 Source: Lazard, June 2025

Until recently, this cost advantage has not been fully reflected in the generation capacity being added. However, last two years offer an illustrative example of how this trend has changed. Solar PV generation, which already made up the bulk of global additions, surged by 35% from 2024-25, while fossil fuel generation declined overall. 91% of renewables projects commissioned globally in 2024 were estimated to be cheaper than any fossil fuel alternative.⁵ Looking forward, this dominance is expected to continue, with renewables expected to cover 90% of electricity supply growth from 2025-2030.⁶

Annual Change in Global Electricity Generation by Source, 2024 - 2025



Note: 'Other Renewables' includes geothermal, bioenergy and waste, concentrating solar power (CSP), and mari

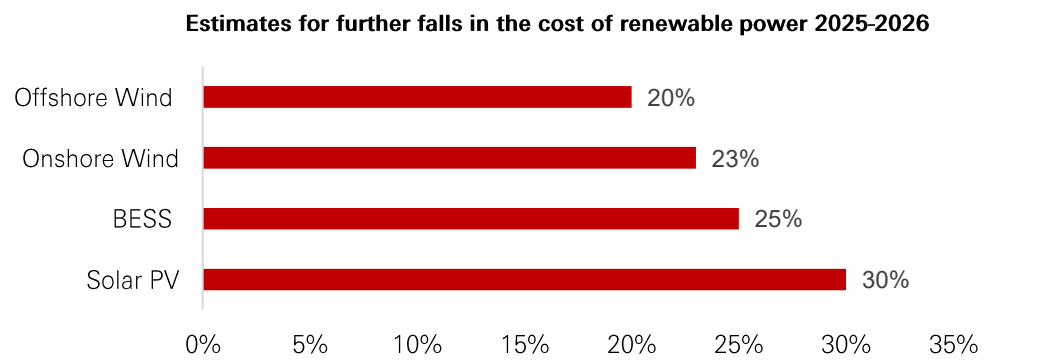
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4) How Big Things Get Done, Prof. Bent Flyvbjerg & Dan Gardner, February 2023

5) IEA, March 2025

6) IEA, March 2025

What has enabled this are the sophisticated supply chains that have driven down unit costs for renewables technologies. This is coupled with increasingly sophisticated grid management technologies, including commercial scale battery energy storage systems (BESS) for increasing durations, meaning renewables are reliable enough to form the backbone of national power grids. While figures vary by project, the cost of the renewable generation technology (e.g. the solar panels or wind turbines) is typically the most expensive component, making the cost declines particularly impactful. Importantly for investors, this advantage is set to increase. As global petroleum markets appear to be set for higher prices on the back of geopolitical uncertainty, renewables' expected costs continue to fall. BNEF estimates further significant falls in cost of renewables over the next five years.⁷

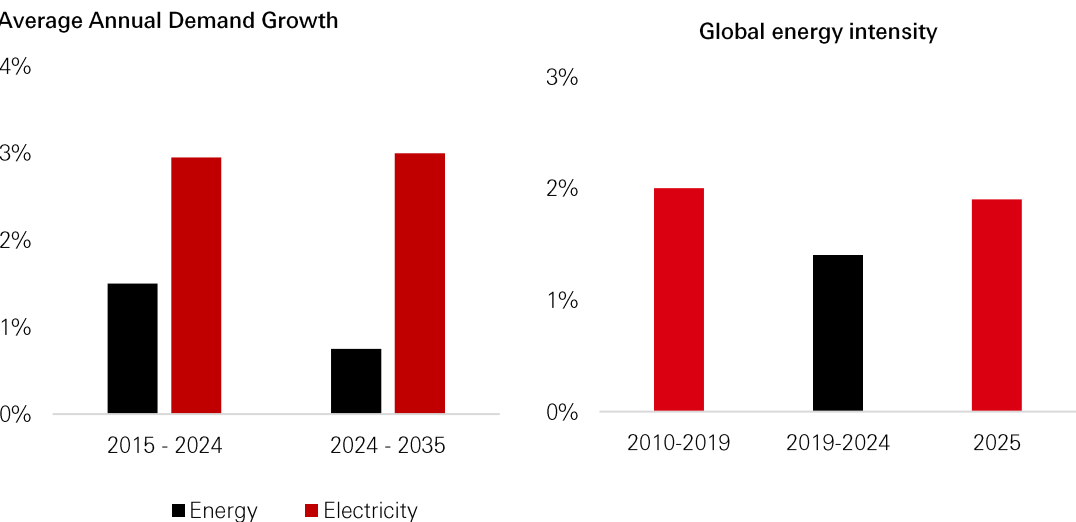


When costs are this competitive, it can alleviate investor concerns for over-reliance on government subsidies. For instance, an estimated 40% of Texas' electricity demand was met by solar and wind generation in 2025, despite a generally unsupportive regulatory and political environment.⁸

For investors, renewables allow for larger projects that generate cashflows sooner, with advantages that are set to compound over the next decade.

Electrification and digitalization

The IEA has dubbed this the 'Age of Electricity', driven by the continuing electrification of key consumer and industrial technologies, with demand centered on Asia Pacific.⁹ The trend is clear in the aggregated figures - electricity demand growth is currently double the total energy demand growth,¹⁰ and set to expand,¹¹ while the energy intensity of GPS growth has simultaneously increased.¹²

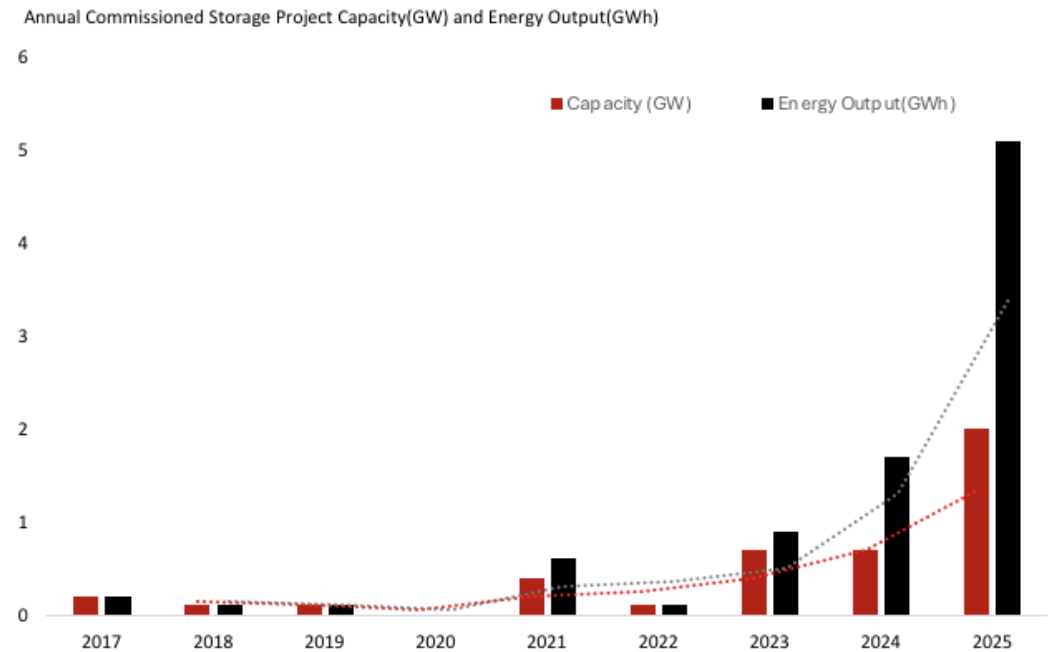


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7) BNEF, December 2025 ; 8) ERCOT, the operator for the Texan electrical grid, 2025 ; 9) IEA, April 2026 ; 10) IEA, Global Energy Review, April 2026 ; 11) IEA, Global Energy Review, April 2024 ; 12) IEA, Global Energy Review, April 2026

These trends can accelerate quickly as the commercial maturity of these technologies is reached. To take the example of one industry, transport has been revolutionized by the rise of the electric vehicle, where from 2020, electric vehicle sales share globally has risen from 4%, to 25% in just five years.¹³ Within developed Asia Pacific, these trends can be even more pronounced - In Hong Kong, 90% of vehicle sales are electric, a 30pp rise since 2025; in Singapore, the electric vehicle sales share has surged from 55% to 70% over the first six months of 2026 alone.¹⁴

This is compounded by growing demands for electricity from another source: data centres. The power supply for this infrastructure is set to quintuple in the Asia Pacific region over the next decade. For investors, this provides opportunities not just at the power supply level, offering PPAs or behind-the-grid power, but also providing the specialist infrastructure services to ensure data centre operations run as energy efficiently as possible, with thermal management being an important example.¹⁵

This increasingly electrified world doesn't just increase electricity demand, it also changes the nature of the grid – from a centralized, on-way flow grid based around large thermal plants to a distributed grid with multi-directional flows. This requires new systems and technologies to avoid calamities such as the 2025 Iberian Blackout. These bottlenecks offer potentially lucrative niches for specialist energy transition infrastructure investors beyond pure generation capacity, who understand the intricacies – and opportunities – in managing increasingly complex national grid systems. Flexible grid assets such as battery energy storage systems are being deployed across grids in Asia Pacific at astonishing scale and speed - for example, utility-scale battery capacity increased 233% in Australia in 2025, and total capacity is projected to quintuple over the next 10 years.¹⁶



Resilience

For developed Asia Pacific governments, energy resilience is increasingly important. As we wrote about in our previous article following the start of the Iran War, the conflict has highlighted the fragility of the seaborne energy trade through maritime chokepoints. These vulnerabilities will remain salient in infrastructure investment decisions, forcing policymakers to ask the question – can they rely on a consistent supply of oil and gas in times of crisis?¹⁷ Renewable energy generation is a way to hedge against geopolitical volatility, offering the promise of decoupling from volatility in the middle east or of energy supplies flowing through these maritime chokepoints.

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13) IEA, Electric Car Markets in a Time of Uncertainty, May 2026 ; 14) HKEV, HSBC Asset Management, June 2026 ; 15) Asian Power, June 2026 ; 16) Clean Energy Council, BNEF, May 2026 ; 17) HSBC Asset Management, May 2026

Certain developed Asia Pacific economies, such as Japan, South Korea and Singapore, are especially vulnerable here, with limited domestic energy supplies. The IEA estimates that almost 90% of total Hormuz export volumes in 2025 were destined for Asian buyers and many Asian refineries are configured for Gulf crude, limiting their ability to substitute. Meanwhile, at a country level for instance, Singapore generates 95% of its electricity from LNG, of which c. 45% comes from Qatar alone.

The world faces a deepening global 'polycrisis'. Since the publication of our article in May we have seen threats or disruption across several more maritime chokepoints, including the Straits of Malacca, the Bab El-Mandeb, the Panama Canal, and the continued conflict in the Strait of Hormuz. Policy makers are increasingly keen to strengthen national resilience, of which power supplies independent from imports forms a key pillar - further strengthening the sector's investment case.

The Middle Eastern conflict is "serving as a significant turning point ... [there is] a growing national consensus that we must undergo a fundamental energy transition."

Kim Sung-hwan, South Korean Minister of Climate, Energy and Environment ¹⁸

Conclusion

Just as electricity demand is rising, from electrification and increasing digitalization, supply from renewable generation is becoming cheaper, all under a supportive regulatory environment as governments across the region recognize the importance of these assets for decarbonization targets and national resilience. This is already being borne out by the data: investment in energy transition infrastructure has increased 27% in Australia and 44% in Japan just between 2024-25, as examples.¹⁹

For investors, we believe these conditions are particularly positive and offer the opportunity for elevated returns compared with historical averages in the infrastructure sector, without compromising on the long-term visibility of cash flows that forms the basis of the asset class. We consider a 'boots-on-the-ground' approach, with locally based expertise, to be best placed to address the specific market needs across the region and navigating local requirements.



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¹⁷) HSBC Asset Management, May 2026

¹⁸) CNBC, May 2026

¹⁹) BNEF, 2026

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