

How battery storage accelerates decarbonisation in Asia Pacific

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Energy is essential for all human activities. It is tightly linked to economic growth. For generations, we have developed fossil fuels to power this growth. Today, solar and wind are taking a larger share of the power supply as they are cleaner and cheaper. However, they are not always available when electricity demand is high, and they might not be fully used when the weather is very sunny or windy.

Battery Energy Storage Systems—or BESS for short—could accelerate the energy transition. They can balance out the intermittency of renewable energy, support the grid infrastructure and reduce curtailments by holding excess supply. These hybrid energy storage projects will speed up the adoption of renewable energy. Hybrid projects can dispatch energy in a flexible manner and increase operating profit margins for investors. We already see this happening in Australia and soon possibly across the whole APAC region.

Facing the catastrophic effects of global warming, many governments in Asia Pacific rolled out ambitious decarbonisation targets, in line with the 2016 Paris Agreement that aims to limit the global temperature increase to 1.5°C. While the region is making progress, it is still insufficient to achieve goals. [PwC's Net Zero Economy Index](#) showed that decarbonisation rates have actually dropped recently.

The rise of BESS

BESS is evolving every day, and some battery technologies can now store longer durations of between 8 and 12 hours. Most notably, the cost of lithium-ion batteries has declined by more than 80% in the past decade thanks to the industrialization of its production process. A similar price decline had propelled solar PV in the past decade to become [one of the cheapest sources of electricity](#). Globally, the BESS market is expected to reach a value of US\$19.15 billion by 2026, [according to Research and Markets](#), led by China's 2025 targets and the US's IRA scheme.

Mobilizing investment into supporting infrastructure is of paramount importance but challenging due to policy uncertainties in some markets. Targets and regulatory frameworks are crucial to achieve progress at pace and scale, but a lack of transparency and the clear pathway to achieving such targets were often slowing down development. Two of APAC's green energy leaders are about to change that.

In Japan, unlimited curtailment was imposed in the Hokkaido and Kyushu regions, areas with abundant solar and wind resources. Transmission lines leading to these areas are frequently reaching capacity limits, creating bottlenecks. This was ultimately slowing the adoption of renewables in the country. Batteries can harness the excess power generated from these solar

and wind farms, smoothen out supply, reduce curtailments and further support Japan's decarbonisation targets. Since February, the government provides subsidies to accelerate BESS adoption.

Developers in Australia, which has vast amounts of renewable energy sources, have long suffered from regulatory uncertainty. A [proposed rule change](#) intends to create clarity on the R1 registration processes, which needs to be provided by project developers and which allows generators to sell metered energy to retail customers. It is the first of several broader changes to the connection roadmap to be revealed by regulators.

Investments in Europe and UK

Beyond Asia Pacific, Europe and the UK have already set great examples. The UK has shown the way with regulations that have encouraged battery development so that the country now has an installed capacity of utility-scale batteries equal to that of the rest of Europe. According to the National Grid's [Future Energy Scenarios report](#), the UK is set to install more than 38 GW of energy storage by 2050, more than its goal of 30 GW.

Europe has set clear goals for the energy transition bolstered by its recent green plan. It continues to develop the sector at pace, and not least due to the increased focus on energy security, and forecasters continue to revise their numbers on utility-scale battery deployments to the upside. Some countries, such as Belgium, have taken big steps to follow the UK's example, changing regulations in order to encourage investment in BESS resulting in developments like Aquila's Project Kairos in Flanders.

Governments must either further roll out clear guidelines or incentives to invest in batteries, or reform their power markets channel capital into the sector. Harmonized policies will improve the efficiency of the regulatory framework, which is vital to attract broad investment in BESS. For BESS to grow at a large scale, it has to be deemed as essential to the grid. And a strong grid that can support variable sources of energy like solar and wind will be critical to replacing all of today's brown sources of energy with greener ones.

Getting more renewables to the market

The Japanese government has set a [target of generating 36-38% of its electricity from renewable sources](#) by 2030, which is expected to create significant opportunities for the industry. The government is also investing in research and development of new technologies and materials—like zinc and sodium—to improve the performance, safety, and cost-effectiveness of BESS.

Australia is the leader in APAC for per capita solar and wind generation, with 35.9% of the country's total electricity generation in 2022 coming from renewable sources, [according to the Clean Energy Council](#). This success is highly replicable across the region because it is based on reliable, cost efficient and mature technologies. Australia's renewables market is on the right path,

and—with the right policies and mechanisms—the country will reach new heights on the journey towards its goal of 82% renewable energy share by 2030.

While there are many efforts and investments today, much more can be done to expedite the energy transition going forward. The deployment of battery storage technology will play a critical role in increasing the share of renewables and vertically integrated players that can combine development, financing and asset management expertise with the necessary technical capabilities will be able to capture the early market opportunities and drive this part of the energy transition.

If the available renewable energy can be used at the time we need it, we'll all be in a better position to reach net zero targets.