How Asian economies can achieve a fivefold growth in renewable power by 2030

Press release

A rapid expansion of wind and solar power is crucial to meet net-zero targets and to support economic growth in South, Southeast and East Asia. A new analysis by Agora Energiewende shows how governments can achieve this, for example by reorienting derisking mechanisms towards clean energy and through robust grid planning to ensure renewables integration.

Bangkok, 28 November 2024. Emerging from tumultuous COP29 negotiations, delegations return home to prepare the next generation of their nationally determined contributions ahead of next year's summit in Brazil. While commitments to achieve net-zero emissions by mid-century are in place, many government strategies still require detailed implementation plans to turn these ambitions into action.

A new analysis by Agora Energiewende finds that South, Southeast and East Asian economies need to increase solar and wind capacity by more than fivefold by 2030 to align with domestic climate and net-zero targets. The pace significantly exceeds the 2023 global pledge to triple renewable capacity, showing how much the region needs to catch up to align with renewables growth globally.

"Building new solar and wind farms is becoming more affordable than operating fossil fuel plants across Asia. Rapidly scaling cheap and abundant solar and wind energy is key to meeting net-zero targets and ensuring sustainable economic growth for the region," said Dimitri Pescia, Director Power System Transformation, Agora Energiewende.

Drawing on bottom-up research by local organisations, the think tank analysed more than 35 long-term scenarios for Japan, South Korea, Vietnam, Indonesia, the Philippines, Thailand, Pakistan, Bangladesh and Taiwan*. The interactive publication benchmarks wind and solar growth against domestic climate pledges and outlines practical recommendations to accelerate the shift to a renewables-based, flexible power system in the region.

Broken down for individual countries, the overall growth means, for example, that Japan needs to add an average of 5 gigawatts (GW) of wind power and 9 GW of solar annually by 2030, while Thailand should aim for 2 GW of wind and at least 6 GW of solar. Indonesia, which recently committed to phasing out coal by 2040, would also need to add 6 GW of wind and at least 9 GW of solar to meet its target to phase out coal.

"While all analysed countries need to increase the share of wind and solar, they have very different starting points. For Indonesia with its nascent renewables market, adding 9 GW of solar per year is a considerable undertaking, compared to regional solar development leaders like Japan. This highlights the urgent need for greater financial and technical support from advanced economies to the Global South," Pescia commented.

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Building a solid foundation to boost solar and wind

The transition to renewable energy hinges on policies that streamline regulations, attract investments, train new workforces and modernise power grids – key components for building a flexible, renewables-ready power system. Creating a supportive environment for solar and wind energy also means tackling key barriers to project development. Reducing financial and regulatory obstacles is important to attract private investment. Key measures include simplifying approval processes, offering government-backed guarantees and phasing out fossil fuel subsidies to level the playing field for renewables.

The region has historically attracted major investments in large fossil-fuelled power plants through specific derisking mechanisms. Reorienting those mechanisms to incentivise renewables can significantly reduce financing costs for developers and speed up project implementation. For example, Pakistan has introduced financial guarantees to support utility-scale renewable projects, while Vietnam has revamped its power purchase agreements to minimise risks for investors.

"Beyond setting robust targets, governments in the region can accelerate the transition by shifting from fossil fuel derisking mechanisms to renewables support schemes. Also ensuring transparent tenders, improving grid access and introducing corporate power purchase agreements would unlock critical investments in wind and solar projects," Pescia said.

The importance of net-zero infrastructure

The report underscores the essential role of grids in overcoming deployment bottlenecks and integrating high levels of wind and solar energy into power systems. It highlights the need to customise integration plans to national contexts using a phased approach, with grid development identified as a priority across all stages. This aligns with the grids pledge announced at COP29, where endorsers committed to adding or upgrading 90 million kilometres of grid infrastructure globally by 2040 – equivalent to stretching halfway to the sun.

While only a small fraction of this expansion is expected in the region, securing the necessary funding remains a significant challenge. According to Agora, addressing financial barriers to grid investments in Asia will require reforming utility payment structures and fostering private sector participation. Potential solutions include exploring innovative financing mechanisms, such as corporate bonds and public-private partnerships. For many regional economies, access to international climate finance will also be vital to building the infrastructure needed for a net-zero future, the report concludes.

The interactive publication "SCALE UP for net zero: benchmarking solar and wind growth in South, Southeast and East Asia" is available at www.agora-energiewende.org. The analyses by local organisations that it builds on consider geographic constraints, political and economic developments, technology costs, resource potentials and social development goals. This edition is an updated version of the 2023 analysis.

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About Agora Energiewende:

Agora Energiewende develops scientifically sound and politically feasible concepts for a successful pathway to climate neutrality – in Germany, Europe and internationally. The organisation which is part of the Agora Think Tanks works independently of economic and partisan interests. Its only commitment is to climate action.

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