

Greening Belt and Road Development Report

- Study on the Immense Potential of Renewable Energy Development in ASEAN Countries

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From 2001 to 2016, energy demand in ASEAN countries grew by 60%. The ASEAN region's annual energy demand growth rate is forecast to remain above 2% in the next 25 years, higher than the global average of 1%. At present, fossil fuels account for 74% of total energy consumption. However, ASEAN countries have large renewable energy (RE) potential and are moving to develop this renewable energy to reduce fossil fuel use. Thus, ASEAN countries have set renewable development targets and launched a series of supporting policies, eager to rapidly increase their share of renewable energy. This study reviews the development of renewable energy in ASEAN countries, with a view to promoting greater renewable energy cooperation between China and ASEAN countries.

ASEAN Member Countries

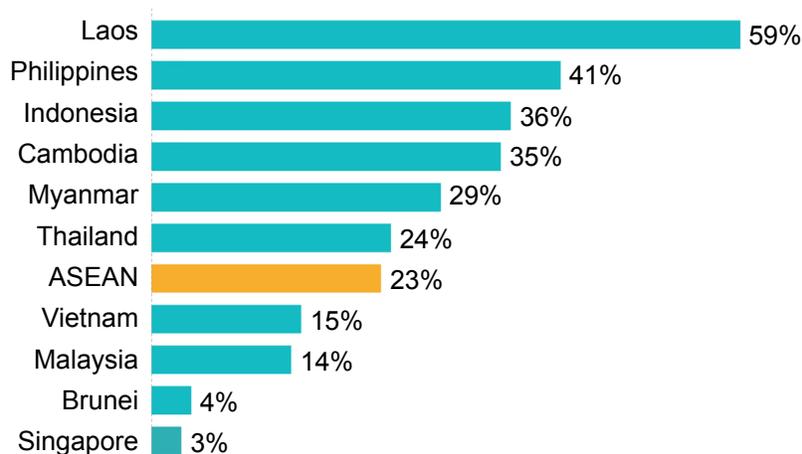


Key findings:

(1) ASEAN countries have natural advantages of abundant renewable energy resource.

Indonesia, for example, has a geothermal potential of 29GW, which accounts for 40% of the total geothermal resources in the world. Wind resources are concentrated in Vietnam, Laos, Thailand and coastal areas in other countries, among which Vietnam boast the richest wind resources. Solar energy has a great potential as well, with total solar radiation in most ASEAN countries and regions greater than 1,750 kWh/m². Up to now, wind and solar development is generally less than 5% of potential; and tidal energy and geothermal energy have not been developed at scale. With its superior resource endowment, ASEAN's countries have natural advantages for renewable development in the future.

ASEAN 2025 Renewable Targets by Country



(2) ASEAN countries have actively set RE targets in response to air pollution and climate change.

As the region is climate vulnerable, continuing to use fossil fuels will increase the air pollution trend. This situation has pressured ASEAN countries to push forward on energy transition. Ten member countries have submitted their Nationally Determined Contributions and developed their own emission reduction plans. Renewable energy development is key to achieve these emission reduction and energy transition targets. ASEAN countries have also formulated incentive policies for renewable energy, including feed-in tariffs, low interest loans, government subsidies, tax benefits, etc.

(3) Renewable energy tariffs are key for renewable energy development. Favorable and incentive policies, such as RE feed-in tariffs (FiTs), can attract more investment in RE, thus promoting RE development.

Strategic formulation and implementation of feed-in tariff policies can strongly promote RE development in ASEAN countries. For example, in Thailand, the current FiT of wind power and solar power is 19.29 cents/kWh and 18.02-21.81 cents/kWh respectively. By 2016, the wind power and solar power capacity of Thailand have reached 2.95 GW, accounting for 52% of the region's capacity. In 2011, Vietnam set the FiT for wind power at 7.8 cents/kWh, and increased this in September 2018 to 8.5 cents/kWh for on-shore wind and 9.8 cents/kWh for off-shore wind. Benefiting from rich wind energy resources and the stimulus of FiT, as of the end of 2016, the wind power capacity of Vietnam had reached 240 MW, accounting for 28% of the region's total capacity, ranking the first among ASEAN countries (Data from ASEAN Energy Center 2018). Although there are policies for electricity prices, taxes, subsidies, etc. to encourage renewables investment, most countries' incentive policies are not favorable enough for renewable energy and have not provided sufficient incentives for investors.

