



Myanmar

Philippines

Singapore

Thailand

Vietnam

Towards a greener ASEAN Economic Community

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Fueling accelerated regional growth through reliable sources of energy remains an overriding concern for ASEAN. Energy requirements will more than double by 2030, and energy security necessitates a diversification away from fossil fuel imports to maintain stable socioeconomic growth.¹ The ASEAN Plan of Action for Energy Cooperation (APAEC), adopted as the energy component of the ASEAN Economic Community Blueprint, outlines the fundamental role envisioned for renewable energy (RE). APAEC's renewable energy programme is designed to strengthen cooperation in RE development by facilitating infrastructure investment to improve rural electrical access, promoting open trade and the sustainable production of biomass, geothermal, hydro, solar, and wind energy, while mitigating greenhouse gas emissions by focusing on energy efficiency and conservation. Specifically, the following goals have been set:

- Increase the development and utilisation of RE sources to achieve the 15% target share of RE in the ASEAN power generation mix;
- Enhance awareness and information sharing and strengthen networks;
- Promote intra-ASEAN cooperation on ASEAN made products and services;
- Promote renewable energy financing schemes;
- · Promote the commercial development and utilisation of biofuels;
- Develop ASEAN as a hub for renewable energy.

Successful implementation of the APAEC goals anticipates the redesign of national energy laws and policies in a number of ways:

- Incentivise RE projects through subsidies (primarily feed-in tariffs);
- Facilitate financing RE projects through special government funds and incentives;
- Set aggressive RE growth targets;
- Streamline administrative and licencing procedures;
- Provide easy access to expertise (human resources) from ASEAN and beyond; and
- Liberalise restrictions on Foreign Direct Investment.

Significant progress has been made to date and additional steps will be taken by ASEAN members in future years.

Feed-in Tariffs (FIT) are the most essential component of any national programme to reach renewable energy goals. Thailand has had a robust FIT system in place for many years, so robust that a number of RE sectors have been oversubscribed, and at least one (solar) required a FIT reduction. Other countries have been slower to implement a FIT system. Vietnam only provides FITs for wind energy, while Myanmar has no published plans to implement a FIT system for RE. Given the large riparian resources in Myanmar, government strategy is focused on hydropower rather than other renewables, and FITs are not necessary to

render a hydropower project economically viable (except micro-hydro). Indonesia instituted a comprehensive FIT system in 2012 and the Philippines has approved a similar programme to be rolled out in 2014. Malaysia also has a comprehensive programme in place.

On the financing side, ASEAN members have established RE investment funds that offer incentivised loans at below market interest rates; most notably Indonesia, where multiple funds target specific types of RE. They, alongside nations such as Thailand, also provide government guarantees to purchase all electricity generated during the project lifecycle. Vietnam recently moved to incentivise RE development by providing grants and subsidies with a particular focus on offshore wind energy.

A key goal of ASEAN is to remove national restrictions on investment from other ASEAN members. While foreign ownership restrictions have been eased, caps in the energy sector remain a major constraint on greater FDI cash flows into and within ASEAN. Both the Philippines and Malaysia restrict foreign ownership in RE projects to a minority share. In Lao PDR, the Government is required to hold an equity stake in private power projects, which in practice is between 5%-20%. Brunei and Indonesia allow foreign majority ownership, but they, too, fall behind countries like Cambodia, Myanmar, and Thailand, where foreign investment law and regulations in Myanmar, RE projects are not listed as one of the sectors available for promotion or investment, nor is it a prohibited sector. This means that approval for foreigners to undertake RE projects is dependent on the discretion of the relevant authorities.

One of the main APAEC goals is for ASEAN to become a "hub" of renewable energy, which requires the free flow of industry experts (scientists, engineers, etc.) among ASEAN member countries to build research and development facilities and energy service centres. Of the seven professions whose qualifications have been standardised, engineers are the most vital to RE development. Under the Mutual Recognition Arrangement, engineers who are ASEAN nationals are



permitted to work throughout ASEAN in collaboration with designated engineers in the host country but not as independent practitioners. Although this is a step forward, other technical professions related to RE project construction such as environmental assessment specialists, legal, and risk analysts remain restricted for the time being. To achieve this goal, additional liberalisation will be needed.

Hydropower²

Hydropower dominates RE in ASEAN as capacities have doubled in the past decade to over 25,000MW or 85% of total RE output in 2012. This is most strikingly observed in Lao PDR, where hydropower has grown at an annual rate of 30% in recent years and generates up to 98% of the total energy supply. Lao PDR is recognising its newfound role as the (hydro) battery of Southeast Asia in large part due to investments by ASEAN's top energy importer, Thailand, to whom much of the electricity is being sold.

Hydropower also has enormous prospects in Myanmar, where nearly three quarters of the population lives without electrical access.³ Home to four major river basins with a potential of more than 40,000MW, Myanmar has identified over 200 sites where small and micro hydropower projects can meet the basic energy needs of rural communities for the first time. Plans to increase from 2,594MW of current capacity to 35,578MW in the coming decades signal that hydropower is the most fundamental component of Myanmar's energy infrastructure development.⁴

Geothermal^₅

ASEAN boasts two of the world's top three geothermal energy producers, though current capacities represent a small fraction of regional geothermal potential. The Philippines, at number two, plays host to countless untapped sites along the 'Ring of Fire,' and as 40% of its primary energy supply comes from a variety of RE sources, is considered one of the most developed RE nations in ASEAN. The National Renewable Energy Programme targets a 60% increase in geothermal capacity by 2030, while the Renewable Energy Act provides a number of financial and regulatory incentives.

Ranking third, Indonesia is home to the largest number of active volcanic sites in the world. Indonesia plans to triple current RE output by 2025, acquiring 15% of its total energy from non-fossil sources. Foreign ownership in RE projects has been increased to 95%, and a "fast track plan" has been implemented that includes projects totalling nearly 4,000MW of new geothermal capacity by 2014. Indonesia has

also begun issuing a FIT to further compensate companies contributing RE to the national grid.

Biomass⁶

Rural populations in ASEAN rely on biomass, the organic waste byproducts of agricultural production, more so than any other fuel source. In Vietnam, where nearly 70% of the population lives in rural areas, approximately one third of total energy consumption comes from traditional biomass, a large percentage of which is outside the national grid.⁷ Waste-to-energy projects are underway in major cities like Hanoi to simultaneously address electrical production and waste management. Taken together, the Government plans for a ten fold increase in biomass capacity by 2030, as a way to replace a percentage of fossil fuel consumption.

Thailand's recently revised 2030 targets include generating 25% of its total energy consumption through RE, in part by doubling biomass capacity to more than 3,000MW. To achieve this goal, the government has implemented several support schemes, including one of Asia's first FIT programmes, an eight year income tax holiday, and direct RE sector subsidies.

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Sources:

¹⁻² ASEAN Centre for Energy

- ⁴⁶ Respective National Energy Ministry websites
- 7 US EIA

³ Asian Development Bank http://www.adb.org/sites/default/files/pub/2013/new-energy-architecture-mya.pdf



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