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THAILAND'S POWER DEVELOPMENT PLAN: 2018 UPDATE EXPECTED TO FOCUS ON RENEWABLE ENERGY

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Introduction

In 2015, the Ministry of Energy revised its Power Development Plan in order to provide a blueprint for Thailand's energy priorities over the coming two decades. The PDP2015, as the Power Development Plan was called, was itself an update on previous development plans created by the Ministry of Energy in conjunction with the Electricity Generating Authority of Thailand (EGAT), which had last been updated in 2012. Consistent with this pattern, the Power Development Plan will be updated again in 2018 to revise the Ministry's objectives in light of new facts on the ground. The PDP2015 was devised as a government master plan alongside the Energy Efficiency Development Plan, the Alternative Energy Development Plan (AEDP), the Natural Gas Supply Plan, and the Petroleum Management Plan. The overarching objectives of the Ministry of Energy's plans were set as: (1) energy security; (2) economy, and specifically maintaining appropriate costs of power generation and implementing energy efficiency; and (3) ecology, with a particular focus on reducing environmental and social impacts by lessening carbon dioxide intensity of power generation. In order to achieve these objectives, the Ministry of Energy realized that renewable energy sources would have to play a significant role.

AEDP2015

At the end of 2014, Thailand had installed capacity of 7,400.43 megawatts (MW) from renewable energy sources, including hydroelectricity. Of this, solar capacity amounted to 1,298.51 MW, whereas installed wind capacity only amounted to 224.47 MW. The Ministry of Energy set targets for renewable energy constituting approximately 20% of Thailand's installed capacity by 2036. Targets for 2036 installed capacity for wind and solar were set at 3,002 MW and 6,000 MW, respectively. Given the state of renewables in Thailand at the time, these goals seemed fairly ambitious and many questioned whether the targets were overly optimistic. By the end of 2017, it has become clear that the naysayers' pessimism was misplaced. At the end of 2017, installed capacity for wind power had nearly tripled from 2014 levels, to 627.82 MW. Capacity for solar power was 2,692.26 MW at the end of 2017, which amounts to a doubling of generating capacity from 2014. The three years from 2014 to 2017 also saw increased capacity for power plants fueled by biomass, biogas, and municipal solid waste. With Thailand already nearly halfway to its goal of 6,000 MW of installed solar capacity by 2036, and both demand and supply of solar power showing no signs of slowing down, the target appears to require upward revision. A revised target should be expected in the PDP2018. A report issued in November 2017 by the International Renewable Energy Agency (IRENA) puts 17,200 MW of installed solar photovoltaic (PV) capacity by 2036 as a realistic objective.

Policy Hurdles

Thailand is in the midst of a renewable energy revolution. Just three years ago it seemed fanciful to imagine renewable sources of energy accounting for approximately 20% of Thailand's installed capacity by 2036; now, it seems feasible to imagine nearly half of the country's installed capacity coming from renewables in 20 years. Given the abundance of solar energy potential, it is clear that solar PV will be the most significant driver of this revolution. Other renewable sources, such as wind and biomass, will also play significant roles in Thailand's diversified energy mix. This will present the Ministry of Energy with a number of challenges which will require apt policy-making.

First is the problem of intermittency. Some renewable sources, most notably solar and wind power, can only produce electricity when weather conditions permit. Without sufficient baseload sources of energy, an overreliance on intermittent electricity generating sources may result in rolling blackouts. Technological advances with respect to energy storage, such as through more efficient batteries or pumped storage hydroelectricity, have the potential to reduce the impact of intermittency. The Ministry of Energy has taken the initiative to address this concern by instituting new firm or semi-firm capacity requirements in power purchase agreements (PPAs) with small power producers or very small power producers. The commitments in these PPAs essentially require the power producer to commit to certain specific feed-in targets. This may spur innovation with respect to storage, or lead to further hybrid power producing facilities with multiple fuel sources.

Secondly, the Ministry of Energy must contend with the untapped potential of rooftop solar PV installments in Thailand. At the moment, the inability of most producers to sell electricity generated by rooftop solar PV cells to a power distributor makes it economically difficult to justify incurring the still significant expense of installing PV panels. For factories or large business centres, where electricity use is highest during daylight hours, the economic case is much clearer as most of the electricity which is generated will be consumed immediately. For most residential buildings, by contrast, electricity use is generally higher when the sun is not shining. Without the ability to sell the electricity back to a distributor, there is little incentive for households to install rooftop solar PV panels. The Ministry of Energy has indicated a willingness to introduce a net metering scheme; the challenge will be to ensure that the feed-in- tariff rate is neither too low so as to not properly incentivize households, nor too high so as to cause a strain on government resources.

Conclusion

In 2015, the Ministry of Energy set ambitious targets for renewable energy development in Thailand. It appears now that the 2015 targets were too conservative, and that they will be met ahead of schedule. Thailand's pivot toward renewables satisfies each of the stated objectives in the PDP2015, namely energy security, economy, and ecology. While a number of policy challenges remain, the potential for continued growth in Thailand's renewable energy sector is evident.

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