EVENT SUMMARY

The State of the Clean Energy Transition in the Indo-Pacific

OCTOBER 2018
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On September 26, 2018, CSIS held a public forum titled, The State of the Indo-Pacific Clean Energy Transition, under the CSIS-Pertamina Southeast Asia Energy Initiative. The event examined two critical elements related to the future of renewable energy in the Indo-Pacific: 1) the regional interconnectedness of the electric grid and 2) clean energy financing.

SESSION 1 Grid Interconnection in Southeast Asia: The ongoing effort to realize the ASEAN Power Grid (APG) illuminates how disparate the participating countries are with regards to the anticipated level of energy and economic savings/benefits from APG, as well as intuitional and technical capacity, let alone the levels of political interests. Moreover, as interconnection can affect many aspects of participating countries—including legal and regulatory systems, economic structures, and other political-economic features—balancing national sovereignty and system efficiency has been particularly challenging. However, regional governments are increasingly recognizing how a regionally interconnected electric grid in Southeast Asia can facilitate more efficient use of energy resources as well as enhanced integration of renewable energy in the regional energy supply mix. The APG stakeholders are closely examining lessons learned from grid interconnection efforts around the world in an effort to realize a regional grid and multilateral power trading.

Yanfei Li (Economic Research Institute for ASEAN and East Asia or ERIA) shared the key elements of the APG initiative that is currently underway in Southeast Asia. ERIA contributes by providing a cost-benefit analysis of the grid interconnections to industry, policymakers, and stakeholders, as well as feasibility studies of select cross-border transmission lines. Li noted that there has been an increasingly robust exchange of ideas and lessons learned from other grid regionalization experiences, including those from North America (e.g., PJM Interconnection). Yet, there remain technical, economic, political, and institutional barriers to turning a number of existing bilateral/bi-national grid systems in Southeast Asia into a regional, multilateral grid system that is accompanied by electricity trading among multiple participants (e.g., utilities) in the APG. Li emphasized the importance of setting up a suitable market design for multilateral electricity trading and corresponding institutions to support the trading.

The importance of market and institutional rules were also emphasized by Jaquelin Cochran (National Renewable Energy Laboratory or NREL), who used results from NREL studies in the United States and South Asia to discuss the engineering and economic benefits of integrating and interconnecting multiple power systems. Specifically, grid integration aggregates wind and solar resources that are spatially diverse and can reduce power supply variability and thus need for reserves. Moreover, interconnecting grid systems provide lower net

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ramping needs and thus cost savings when compared to separate management of each area without the interconnection. In addition to institutional elements, such as market regulations and rate regulations, Cochran also noted how planning and procurement elements, such as project siting, proper evaluation of project competitiveness, and allocation of cost and risk, warrant serious attention for successful grid interconnection.

Craig Glazer (PJM Interconnection) discussed key lessons PJM has to offer towards the successful regionalization of grid systems in Southeast Asia. In discussing how grid interconnection models evolved in the eastern and western regions under the PJM, Glazer summarized advantages and disadvantages of a vertically integrated utility model and a power pool model and illustrated how balancing “sovereignty” (among U.S. states) and system efficiency is a challenging and delicate exercise. Moreover, he emphasized the importance of trust for multilateral power trading to work.

Nawal Kamel (ASEAN Studies Center) described both the origin and the progress of the grid regionalization initiative since the idea first arose in 1997, and the strong energy security, accessibility, affordability, and environmental sustainability rationales behind it. In addition to providing additional information on the stream of work underway to realize the APG, Kamel identified the key barriers to regionalization (from bilateral grids to multilateral) to be the heterogeneity of energy management, legal and regulatory frameworks, and technical standards and codes; and the lack of institutional and contractual arrangements for cross-border trade. On the issues of sovereignty, her center proposes that a
A regional electricity trading platform be set up for trading of excess power supply or marginal power demand among participating countries/utilities to allow each national power system a fair degree of autonomy.

SESSION 2 Financing the Clean Energy Transition in the Indo-Pacific Region: The region will need trillions, not billions (in USD) of investments to meet its rising energy needs from low-carbon emitting sources of energy. Meanwhile, compared to many other developing regions, the Indo-Pacific does not suffer from a lack of financing; the challenge is how to unlock and incentivize financing to flow into the renewables energy sector in addition to the fossil fuel sector, which is projected to continue attracting investments. Renewable energy projects tend to carry lower risk than large infrastructure and hydro projects. As such, the biggest barrier to investments is regulatory risk and policy uncertainty.

Jayne Somers (U.S. Agency for International Development or USAID) described a host of U.S. government undertakings in the area of clean energy deployment, including the Asia EDGE (Enhancing Development and Growth through Energy) initiative, launched by the Trump administration, in July 2018, to promote Indo-Pacific countries’ energy security and access by boosting U.S. exports and encouraging market-based policies. Somers discussed the key risks associated with clean energy projects in the region and how USAID works to help address regulatory risk—considered to be most important—to create the foundation for investors. Additionally, she noted the strength of renewable energy projects from the financing perspective in that they tend to be smaller in both scale and capital.
While coal remains to be the dominant source of energy in Indo-Pacific today and for the foreseeable future, Benjamin Attia (Wood Mackenzie) noted that solar and wind are projected to account for 13 percent of the total generation in the Indo-Pacific by 2035. Wood Mackenzie expects up to $457 billion in capital expenditure (CAPEX) investment in new wind and solar projects in the region within the next five years. Attia warned that policy uncertainty presents a major barrier to solar/PV projects in the region and across the world and emphasized the importance of eliminating policy uncertainty. He also outlined ways in which different groups of stakeholders (including regulators and policymakers, investors and banks, and developers) can learn from past experiences in financing clean and renewable energy projects and increase their commerciality going forward. In particular, he stressed the strength of renewables projects being low risk although low return and noted the emerging interest by some large, international oil and gas companies—which generally have experience with operating in developing regions as well as strong balance sheets—in investing in renewable generation projects.