Towards a Regional Energy Modernization Investment Agenda: Stranding Risks and Decarbonization Challenges in Southeast Asia

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Southeast Asia is among the fastest growing economic regions in the world, with a large population of young people that is driving increased demand for energy. The region's energy demand is estimated to grow 50 percent over the next decade.[1] These macroeconomic factors provide the region a tremendous opportunity to leapfrog and build economic growth powered by a modern, state-of-the-art energy system that is climate friendly, customer centric, and rapidly adds high-value jobs. However, this opportunity is undermined by regional geopolitics, poor environmental and social impact standards, as well as inexpensive finance for low-baseline fossil-fuel power.

Another factor that underscores the urgency of transition to clean energy is Southeast Asia's vulnerability to climate disasters, where warming above 1.5C will threaten food and water security, intensify the frequency and magnitude of natural disasters, and destroy natural habitats, among other harmful consequences. In addition to these warming impacts, pollution from coal burning is already estimated to burden the poor and vulnerable, as well as government, because of health impacts. In Indonesia alone, coal pollution is estimated to cause around 7,500 premature deaths per year,[2] and the health costs for chronic obstructive pulmonary disease is nearly half of one year's salary for low-income families.[3]

To accelerate the transition to clean energy in Southeast Asia, key regional policy and decision makers gathered with energy and finance experts in September 2018 in Bali, Indonesia, to discuss the issues with and advantages to a transition. This report provides an overview of these conversations, beginning with the energy trajectory of Southeast Asia and the specific market contexts in the region. The policy landscape is then examined, paying attention to the risks and opportunities of fossil fuel and renewable energy development. Finally, recommendations are made for taking energy policy and diplomacy forward in the region.

Southeast Asian Energy Trajectory

At the moment, the ten countries of the Association of Southeast Asian Nations (ASEAN) have a goal of 23 percent of primary energy coming from renewables by 2025—far short of what is needed to avoid surpassing the 1.5C threshold. Current policies place the region on a trajectory to hit only 17 percent energy penetration from renewables by 2025. Concerted effort is now needed to create and implement policies that meet these important clean energy targets. Policymakers must roll up their sleeves to provide a level playing field for modern energy systems, driven by exponential decreases in long-term electricity costs from solar and wind energy generation.

Hidden barriers to clean energy must be addressed. These barriers come in the form of sovereign guarantees for incumbent systems based on fossil fuel, market structures that are not transparent and do not incentivize least cost, and power purchase agreements (PPAs) that tend to protect more fossil fuel interests, regularly supported by foreign state capital subsidies from China, Japan, and South Korea. Existing market structures impede the growth in efficiencies and price reductions of renewables seen in most other regions around the world. Beyond creating an entry barrier for inexpensive and efficient clean energy, these policies burden the public treasury with impaired or stranded financial assets in fossil fuel infrastructure, burdens that are primarily designed to be borne by the public.

Finance ministries and the financial sector must begin incorporating stranded-asset risk assessment in project-finance underwriting. In the Philippines, the risk of stranded assets in coal energy generation alone is approximately $21 billion, while the country pays an additional $200 million per year in diesel subsidies. Falling utilization rates mean displacement of fossil fuels, which is equivalent to a reduction in economic asset value—a loss that is either passed on to the unlucky investor (both debt and equity) or, in the case of many countries with sovereign guarantees attached to fossil fuel power plants, paid for by the public. These policies also tend to be a major drag on economic growth, as they typically increase national debt, devalue currency, and grow inflation. With the energy transition to cheaper technologies gathering pace, the likelihood of exposure to risk of billions of dollars in additional stranded assets is impossible to ignore.

Globally, the clean energy transition picture is clearer by the day—more than 800 institutions with investments valued at $6 trillion are divesting from coal, for instance. However, the picture is more complex in Southeast Asia. The burgeoning economic growth that is needed to continue social and economic development in the region may, on the surface, appear at odds with reducing fossil fuel consumption. The region is expected to see a 50 percent rise in energy demand over the next decade.[4] With a population of 650 million people covering an area just larger than the European Union, roughly 10 percent, or 65 million people, lack access to electricity, and millions more have limited or subpar access.[5] The massive electrification and grid development required to extend electricity for the current population and maintain expected growth in demand is often further complicated by geography. Countries like the Philippines and Indonesia comprise thousands of islands where extending the grid systems can be complicated and expensive.

While older grid systems are ill suited to distribute power in these circumstances, the region is well situated for building microgrids with renewable technologies like wind and solar. Microgrids avoid the difficulty of moving energy from locations where resources are located to geographically disconnected and sparsely populated areas. Wind and solar

are available in remote and less densely populated areas, can be built to suit the capacity needed locally, and are flexible to provide energy when and where it is needed. Private investment in renewables can be stoked with adequate policy development around PPAs, as the substantial economic growth estimates for the highly populated region could provide significant return on investment.

The allure of building out energy generation from fossil fuels, funded in a large part by cheap loans from North and Northeast Asia, is shortsighted and misses the modern energy economic revolution taking root in the rest of the world. The marginal present-day higher cost in developing clean energy is an investment, one that will pay off quickly as renewable grid capacity scales up and leads to more robust growth and sustainable development. In contexts like Indonesia, where coal resources exist, pressures to continue with fossil fuel infrastructure increase as the global market for coal exports shrinks and the price of the commodity drops. Indonesia's investments prioritize short-term gain over medium-term costs as the fossil fuel infrastructure will soon be economically inefficient or undesirable to run.

Regional Policy Development

From an investor standpoint, there is a huge potential to traversing what can seem like difficult or opaque operating environments in these markets. As a regional block, ASEAN is the sixth-largest economy, with GDP growth above 5 percent annually. Electricity consumption in highly populated countries like Indonesia is estimated to triple by 2030.[6] But immature markets are difficult to gauge, and investors from outside the region lack the local network connections necessary to understand how they should navigate complex bureaucratic systems in order to establish renewable energy projects, and further, what the ultimate terms of those engagements might look like. As a result, from a foreign investor perspective, it is difficult to assess the payoff and risk of engaging in an unfamiliar market without some success stories. And even then, the region itself is very diverse, and a success in a country like Thailand may not be entirely applicable as a lesson for Vietnam or Indonesia. Policymakers must work and coordinate with one another as well as key stakeholders in central banks to send the proper signals and messages that attract renewables financing at levels that reflect the enormous potential return on investment.

Coupling the ambitious renewable energy targets in Southeast Asia with clear policies for renewables will help signal the opportunities available in this market and attract investment interest. A first step in sending this signal may be to develop policies on bankable PPAs for renewables. In many countries in the region, the landscape of PPA policy leaves investors concerned that the terms are either lacking for favorable renewables investment or do not provide the longer-term stability they seek. For instance, investors need the confidence that their projects will be able to continue to feed into grids in the long term, and PPAs that focus solely on the near term may be insufficient.

Feed-in tariffs for renewables are tremendously helpful in new markets, whereas auctions pave the way for competitive prices in mature markets. In the Philippines, and in many countries outside of Southeast Asia, feed-in tariffs helped to attract investment in renewable projects. Feed-in tariffs can help defray the costs or risks associated with early energy infrastructure development. As investment gains pace, renewables prices will drop and attract more investment in a growing market, helping to develop scale.

Sending policy signals that match ambition, streamlining processes for engaging the necessary local and national decision makers, expanding the ecosystem for innovation, and creating a transparent and stable policy environment are the first steps policy makers in Southeast Asia should take to attract renewable investment. Simultaneously, policies that pass the risk of fossil investment on to the public and investors should be altered to create a more level playing field.

Taking Action Forward

Origination support for active new renewable energy deals, access to capital for rapidly scaling up new innovations, availability of financial derisking products, early stage project-preparation finance, and innovations in business models have the potential to rapidly build a robust pipeline of clean energy projects. A full suite of financing models, from balance-sheet financing to partial recourse and nonrecourse financing, can be made available to developers to match the market and maturity profile of the developer. Development financial institutions, international and local, can also help mitigate some of the early risk during the exploration phase of projects. A few success stories from early investors and a stable policy environment will create a tipping point in investor interest in Southeast Asian markets. Support also exists from bilateral donors, with the United Kingdom's Prosperity Fund and Sustainable Infrastructure Programme providing green finance for low carbon energy development and Germany's International Climate Initiative providing support for cross sectoral and regional policy development. Philanthropies can play an equally important role, providing financing for higher risk, early stage projects and helping develop a project pipeline that can be tapped in the future.

Leadership from public banks is needed to align government policies for better development of large-scale renewable energy projects. For many investors, the larger scale is a must for investments to make sense. Financial institutions need the confidence that governments are serious about developing renewable capacity and a better understanding of what operating in Southeast

Asian markets looks like. Central banks must help develop capital markets to mobilize funds for clean energy as well as coordinate between federal, regional, and local levels to ensure that policy and practice are coordinated and investors receive clear fiscal signals. Financial regulators are in the position to recognize the great risk posed by stranded assets and to signal this risk to investors at a variety of levels. Bank officials are also key to coordinating the necessary connections between insurance (which are often making investments) and government. The ASEAN Capital Market Forum offers potential for coordinating these conversations regionally.

While there is concern that investment in fossil fuel energy continues from northern and northeastern Asia, and that most Southeast Asian countries are falling short of their renewable targets, observers and investors should be careful not to cast doubt on the development trajectory for renewables in the region. Setting ambitious targets and beginning the conversation on a clean energy transition is an important first step, and work is underway to translate those goals into policy. Moving to clean energy generation and shifting to modern grid systems requires careful management to mitigate the impact on national economies, transitioning workers, and communities dependent on coal jobs. But in addition to the clear long-term benefit of increased fiscal and energy security, the transition offers the region tremendous benefits in terms of health, water management, and environmental protection. As the needle moves on policy, investors should engage in the conversation on renewable energy investment. The region promises huge potential for growth.

There is a strong need for continued discussion and information sharing among regional leaders and their counterparts in corporate and financial sectors. Though the challenges to clean energy transition are complex, the opportunity to leapfrog to a modern energy system is real. Building a strong understanding of this opportunity, coupled with a few successful transformative renewable energy projects in the region, can turn the tide in favor of energy transition.

This report summarizes the primary findings of the conference as interpreted by the rapporteurs and organizers. Participants neither reviewed nor approved this report. Therefore, it should not be assumed that every participant subscribes to all of its recommendations, observations, and conclusions.

Endnotes

[1] *Renewable Energy Outlook for ASEAN: a REmap Analysis*, International Renewable Energy Agency (IRENA) and ASEAN Centre for Energy (ACE), 2016, accessed July 11, 2019, http://www.irena.org/publications/2016/Oct/Renewable-Energy-Outlook-for-ASEAN.

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[4] *Renewable Energy Outlook for ASEAN*.

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