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CONFERENCE PROCEEDINGS

SOUTHEAST ASIA ENERGY TRANSITION DIALOGUE 2023

Governance of the Energy Transition and the Role of Markets

March 3rd, 2023

Virtual Webinar

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About Energy Transition Roundtables

Energy Transition Roundtables is a two-year capacity building and networking program that aims to provide an opportunity for the region's energy transition stakeholders - in particular, mid-career policy-makers from identified Southeast Asia countries (Vietnam, Indonesia and the Philippines) and regional level bodies - to engage in an intensive roundtable series on the energy transition.

The roundtables are delivered by a partnership of the Australian National University (ANU), Australia-Mekong Partnership for Environmental Resources & Energy Systems (AMPERES), Institute for Economic and Social Research, Faculty of Economics and Business, University of Indonesia (LPEM UI), the Indonesia Research Institute for Decarbonisation (IRID), the Ateneo School of Government (ASOG) and the University of San Carlos.

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Preface: The 63-megawatt Calatagan solar farm in Batangas, Philippines, in 2016. Source: Solar Philippines.

Page 5: Dong Hai I Wind Power Plant in Tra Vinh Province, Vietnam. Source: Trungnam Group.

Back cover: A solar photovoltaic farm with a capacity of 21 megawatts in Likupang, North Sulawesi, Indonesia. Source: Ministry of Energy and Mineral Resources.

Background of the event

Indonesia, Philippines, and Vietnam represent three of the largest power systems in ASEAN. Together they provide electricity services to 480 million people with 166 GW of installed capacity, constituting 58% of the total ASEAN installed capacity. Glaring in these three power systems is a significantly high combined coal capacity of 68 GW.

Collectively ASEAN, including Indonesia, Philippines, and Vietnam, have committed to a target of 23% of primary energy coming from renewable energy (RE) by 2025. All ASEAN countries, with the exception of the Philippines, have also announced net zero targets by 2050 or 2060. Achieving these targets will take an unprecedented scaling up of RE investment.

Attracting this scale of investment to RE is a major challenge for ASEAN power systems which have evolved to exploit historically abundant, but unsustainable, generation technologies like coal, gas and large hydropower.

In addition, governments alone cannot meet this scale of investment pointing to an urgent need to scale, direct and sustain private sector investment into RE.

This requires a transformation in governance of the power systems and the electricity markets these systems support.

About the Energy Transition Dialogue

The Energy Transition Dialogue (ETD) is an annual public forum that reflects on how to turn commitment into scaled, sustained action in the dynamic economies of Southeast Asia.

ETD is a collaborative initiative between the Southeast Asian Energy Transition Partnership (ETP) and the Clean Affordable and Secure Energy for Southeast Asia (CASE), and a part of an ETP Roundtables' program.

The Energy Transition Dialogue 2023

This years' dialogue took stock of market and regulatory conditions in Indonesia, the Philippines, and Vietnam, and explore how governance reform and markets can attract private finance and accelerate energy transition in these countries and ASEAN. The dialogue brought together high-level speakers from ASEAN, Australia, and Europe to share regulatory and market reform experiences and provide an open forum for discussion.

The objective of the event is to explore how governance reform and markets can attract private finance and accelerate energy transition in Indonesia, the Philippines and Vietnam.

Structure of the event

The Dialogue was structured as two plenary sessions. Each session started with keynote presentations that presented evidence to the plenary. A panel of regional experts then responded to the presentation before opening for a facilitated plenary discussion.

The first plenary focused on understanding the current status of energy sector governance in ASEAN and then, the types of reforms needed to evolve governance in support of energy transition.

The second plenary focused on the status of electricity markets in the region and the level of progress towards competitive markets and the challenges markets face in ASEAN.

Venue and participants

To enhance the accessibility for all participants regardless of location, the dialogue was entirely virtual. The event was open to all participants globally, but a focus was placed on participants from three focal countries: Indonesia, the Philippines, Vietnam and other ASEAN countries. Participants of the event include:

- Government officials from focal countries, especially senior officials involved in planning and managing energy issues in their countries. This includes the relevant ministries responsible for the power sector, environment, and national socio-economic development.
- Private sector representatives, who have practical experience and knowledge of developing energy infrastructure and supporting planning and analysis of energy decisions in the region.
- Academia and researchers with advanced understanding of energy issues.
- Civil society organisations and the public who share common concerns on energy transition in the region.

Agenda

Opening session	Welcome remarks
Session 1 – The Role of Governance in the SEA Energy Transition	▪ Keynote presentation 1: ASEAN's energy transition: How to attract more investment in renewable energy ▪ Panel discussion ▪ Q&A
Session 2 – The Role of Markets in the SEA Energy Transition	▪ Keynote presentation 2: Vehicles for change or barriers to transition? A word on markets for energy transitions in Southeast Asia ▪ Keynote presentation 3: Role of markets in the Australian energy transition and lessons for SEA ▪ Panel discussion ▪ Q&A
Closing remarks	Evaluation poll and post-event note Synthesis of discussion Closing remarks

PLENARY DISCUSSION 1
ROLES OF GOVERNANCE IN THE SOUTHEAST ASIA' S ENERGY TRANSITION

Keynote presentation 1

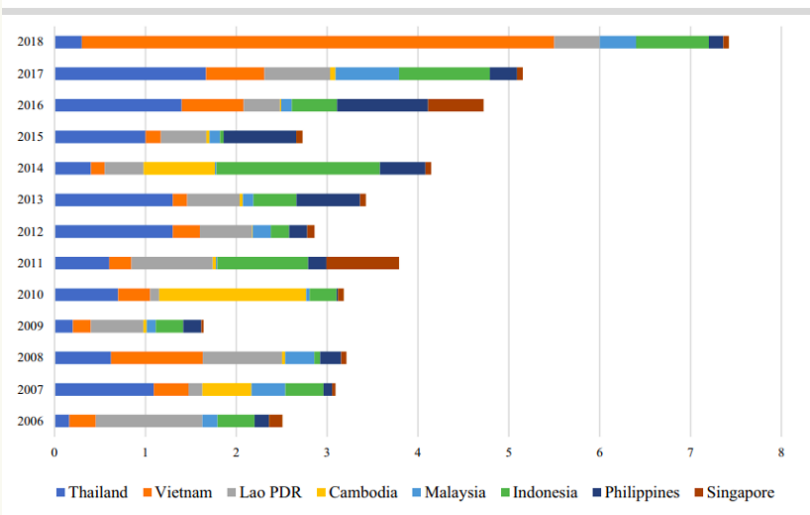
ASEAN' s energy transition: How to attract more investment in renewable energy[1]

Mr. Beni Suryadi

Manager of Power, Fossil Fuel, Alternative Energy, and Storage, ASEAN Centre for Energy

The energy transition is progressing slowly in ASEAN. To achieve ASEAN's target of 23% renewables in the primary energy supply by 2025, the region would need to invest 27 USD billion in renewable energy every year. However, the ASEAN countries attracted no more than USD 8 billion annually from 2016 to 2021 (**Figure 1**).

Figure 1 | ASEAN: Total investment in renewable energy, 2006 to 2018, by country (USD billion). Source: United Nations Environment Programme and New Energy Finance (2007, 2008, 2009, 2010), Frankfurt School-UNEP Centre/BNEF (2011), ACE (2020).



[1] Vakulchuk, R., Overland, I. & Suryadi, B. ASEAN's energy transition: how to attract more investment in renewable energy. Energ. Ecol. Environ. 8, 1–16 (2023). https://doi.org/10.1007/s40974-022-00261-6

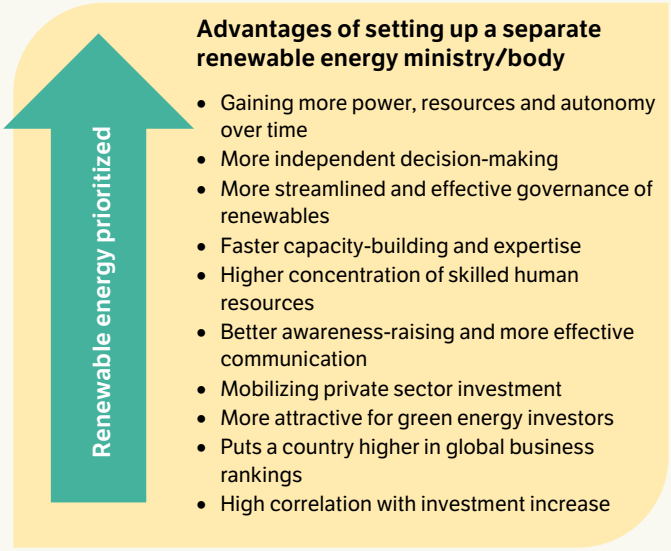
Despite the positive rhetoric, including the adoption of ASEAN Plan of Action for Energy Cooperation (APAEC) 2016-2025, ASEAN largely failed to attract significant investment in renewable energy.

- **Weak governance and institutions**
  By 2022, most of the ASEAN countries had adopted renewable energy regulations based on best practices in other parts of the world, and all ASEAN countries have official renewable energy targets. However, there is no regional- or district- level allocation of targets within each country. Due to weak implementation and enforcement of the regulatory policies and fiscal incentives, it is challenging to attract investors, even when costs fall to levels that should in principle be attractive.
- **Governance structure**
  Most ASEAN countries view renewables as only a complement to other energy sources. Typically, renewable energy policy is assigned to one or more smaller subunits that have limited autonomy and decision-making power, lack required personnel, and have limited resources at their disposal. In many cases, regulations governing renewables are copy-pasted from the fossil-fuel sector.

How can renewable energy governance and the business climate be improved?

- ASEAN member states could continue to adopt best-practice policies and incentives—and put them into practice. In particular, they need to strengthen their practical experience of managing tenders, feed-in tariffs, and auctions.
- Each ASEAN country could create a ministry or similarly high-level governing body responsible for renewable energy. This will help build a human and institutional resource pool for renewables and increase the share of renewables in the energy governance system. Such a body should be unbundled from existing energy ministries, to ensure greater autonomy, decision-making power, and expertise, and to obtain better service for investors. Governance reform lessons from Australia, India, Egypt, and Mauritius show that setting up a separate renewable energy ministry/body has accelerated the prioritization of the agenda (renewable energy) (**Figure 2**).
- ASEAN countries need to improve their position in rankings of the renewable energy investment climate. They should actively communicate their reform progress and share success stories with the other ASEAN member states and foreign investors.

Figure 2 | Major governance reform lessons from Australia, India, Egypt, and Mauritius



Panel discussion

"ETP was established to accelerate energy transition and we fully believe that governance is the first stop in that process."

Ms. Sirpa Jarvenpa

Director, Southeast Asia Energy Transition Partnership

The strategic objectives of ETP relate to policy alignment with climate commitments. As such, most of the programs (ETP) involve the improving in governance and creating coherence in governance. ETP is currently working towards de-risking finance for energy efficiency and renewable energy investments. There is a need to create a level-playing field where the various technologies and financing schemes can compete, as well as to foster the lowering of costs and risks for investments. Also, ETP is working towards extending the smart grids which create the frameworks for facilitating the integration of renewable energy, thereby, removing the physical, tangible impediments to the energy transition. Finally, ETP is working on the underpinnings of building knowledge and awareness so that it is obviously required that the stakeholders and governments can drive and champion energy transition.

How can governance help to facilitate energy transition in Indonesia, Philippines and Viet Nam?

"There should be more market-based incentives".

Mr. Pham Nguyen Hung

Deputy Director General
Electricity and Renewable Energy Authority, MOIT, Viet Nam

In Viet Nam, wind and solar (energy) have reached 21,000 MW, or 27% of installed capacity, making Viet Nam the country with highest installed capacity of renewable energy in Southeast Asia. These achievements are made possible thanks to consistent policies from central to local governments which notably includes Feed-in-Tariffs (FiT) scheme. **However, such incentives, including FiT should be applied in only a certain period of time.** In fact, in Viet Nam, FiT scheme expired in 2020 for solar and 2021 for wind energy. There is a need for moving from FiTs-based incentives to more competitive and market-based incentives.

With a long coastline of 3,260 km, Viet Nam has a huge potential for off-shore wind energy with an estimated capacity of 600 GW. That is why Viet Nam is working hard on the ocean spatial planning, which could provide a strong legal basis for developing offshore wind energy in the future.

"You can never look at actions in the transition toward low carbon energy without looking at a just transition."

Dr. Lloyd Bautista

Ateneo School of Government,
Ateneo de University of the Philippines

Like Viet Nam, the Philippines has insurmountable potential of solar energy. The government has set supportive policies for promoting renewable energy financing, including de-risking and subsidies. Also, the government is trying the address the externalities of the grid. Undoubtedly, there is a need for coordination amongst agencies because you cannot isolate energy transition from economic development.

Since the enactment of the renewable energy law in 2008, renewable energy in Philippines has declined from 31% to 21% (of total supply). As such, the shift towards low carbon energy is urgent and crucial for the Philippines' development. However, you can never look at actions in the transition towards

low carbon energy without looking at just transition because there is still a number of people from ASEAN that falls below the poverty line and we need to navigate this transition to create more economic opportunities for the people. The just transition accentuates the role of governance because if the energy transition is a private sector-driven effort, most of marginalized people will be affected.

"There is a need for a holistic approach to energy transition".

Mr. Harris Yahya

Director for Geothermal
Ministry of Energy and Mineral Resources Indonesia

There must be a holistic approach on governing renewable energy in terms of both electrical and non-electrical. Indonesia is looking for various energy sources, from biodiesel to nuclear power. In terms of governance, Indonesia is trying to finalise a new law which helps to synchronize all the relevant policies from different ministries for bolstering the acceleration of energy transition.

It is obvious that financing and budgeting renewable energy are encountering bottlenecks. During the last G20 Summit hosted in Jakarta, Indonesia had successfully utilized the moment of chairing the event to get the JETP deal which is worth 20 billion USD for the transition towards green energy. Despite the key aspect of energy transition is renewables, governing fossils is also critically important since Indonesia is still facing many challenges in terms of uneven supply and demand amongst regions and islands, as well as the current structure of energy systems in the country.

In terms of regional level, ASEAN must synchronize the targets from its member states to secure energy security and, at the same time, reduce GHG emissions. In addition, the physical grids of nations must be interconnected. Such policies should be endorsed and promoted by ASEAN Secretariat in order to achieve our common welfare.

PLENARY DISCUSSION 2
ROLES OF MARKETS IN THE SOUTHEAST ASIA'S ENERGY TRANSITION

Keynote presentation 2

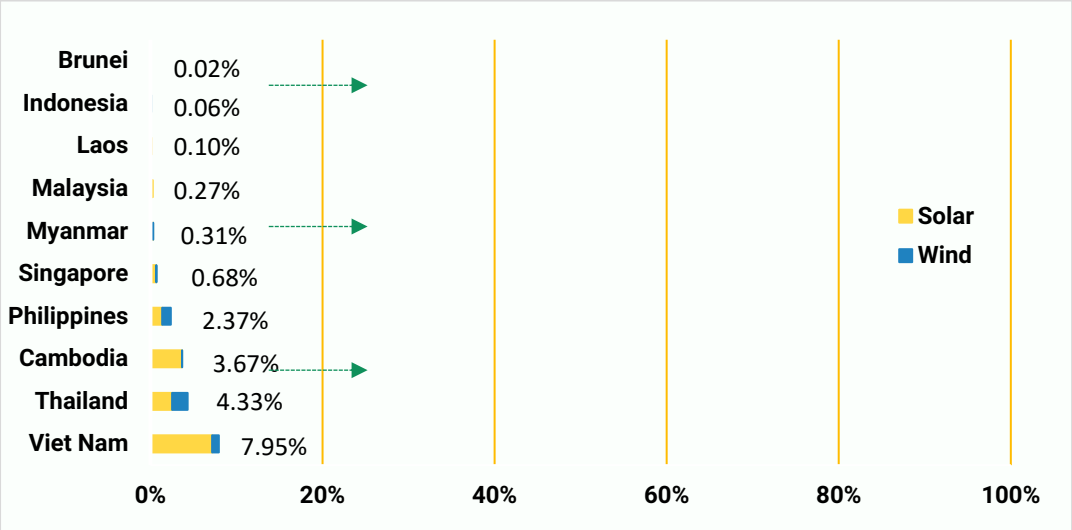
A word on markets for power sector transitions in Southeast Asia

Mr. Dimitri Pescia

Program Lead International, Agora Energiewende

By 2020, variable renewable energy (VRE) had made up just a minor share of power generation in ASEAN. All the member states of ASEAN, except for Vietnam, had yet to surpass 5% of variable renewable energy (VRE) generation in 2020 (**Figure 3**).

Figure 3 | Share of VRE generation in ASEAN countries in 2020



Southeast Asia states already use markets for electricity, albeit in different forms. Market models in these countries are diverse with single-buyer model prevailing in various forms (hybrid models), positioned between traditional monopoly to competitive markets (**Figure 4**). In Southeast Asia, price formation, entry, and the number of participants differ per market types which **are not limited to competitive variants prescribed by economics**

textbooks, reflecting national political priorities and interests (Figure 5). As of today, policy ambition and market implementation have not been aligned in nearly all Southeast Asia countries, and the ambition for further reform has always been stuck by political constraints in the region.

Figure 4 | Electricity market models in Southeast Asia

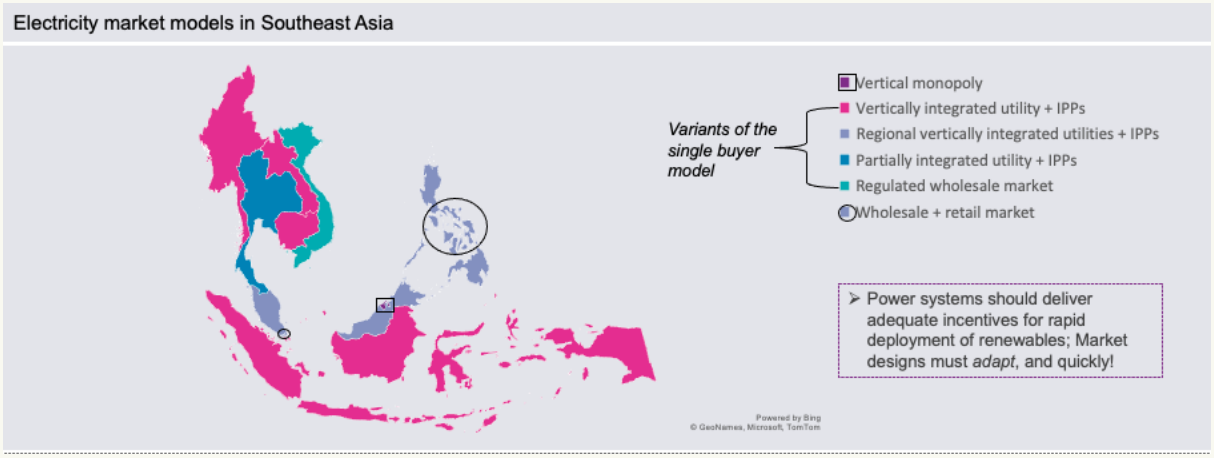
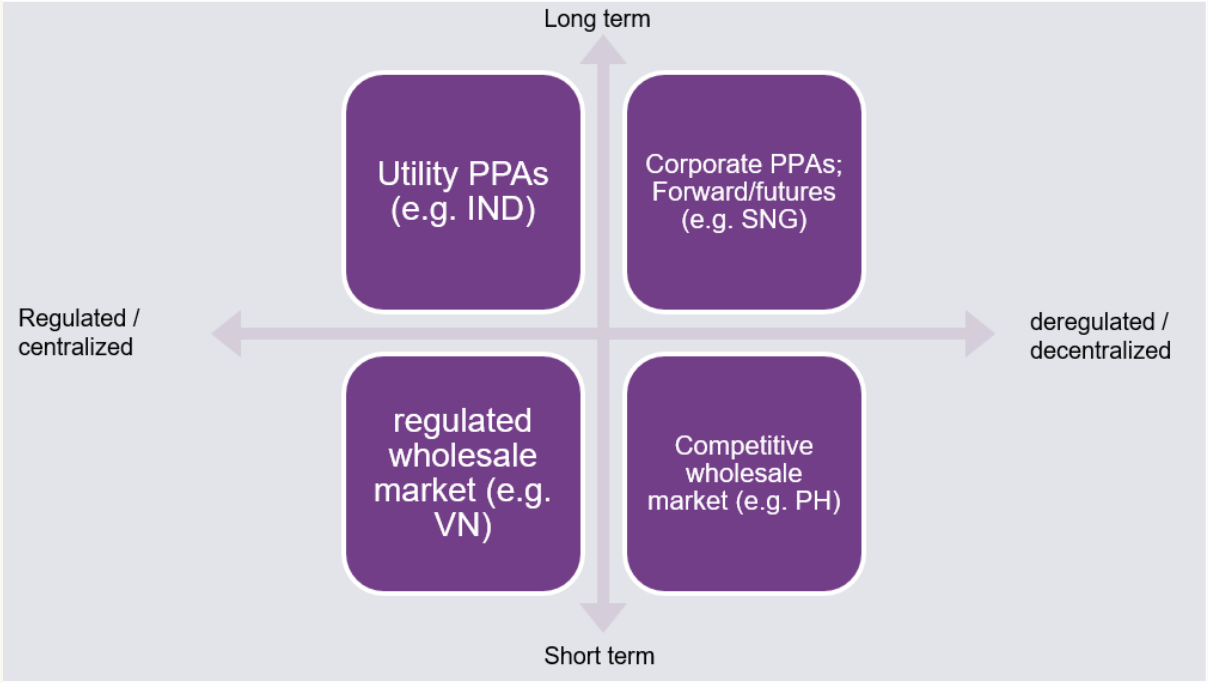


Figure 5 | Price formation, entry, and number of participants differ per market types



In terms of market mechanisms, there are some major barriers to renewable investment and systems integration in Southeast Asia countries:

- The current market design, in many cases, hampers renewable investment, such as regulatory discontinuity (e.g., Viet Nam's FiTs). There has been often a lack of planning & political commitment from the governments. Domestic content reqs (requirements, requisitions, and requests) also weaken the competitiveness of VREs in some countries. Due to subsidies and the absence of carbon pricing, true costs have not been exposed, thereby, no price signals exist to counter a continued reliance on fossil-based assets.
- The most prevailing barrier in terms of system integration is the contractual inflexibility & sub-optimal dispatch (e.g., Thailand, Indonesia). In addition, there is a lack of short-run price signals that encourage flexibility (with the exceptions of the Philippines and Singapore), as well as the absence of additional market arrangements that spur the uptake of flexibility sources alongside VREs.

Policy implications

- In order to align with net-zero commitments, ASEAN countries must speedily scale up **wind and solar PV to reach a share of at least 25% (of wind and solar) in the region by 2030 and more in some countries**.
- Deciders must focus on **short-term priorities**, including incentivizing investments in zero-emissions technologies, phasing-out coal, abating inflexible arrangements, and moving operation close to real-time.
- Market mechanism for investment can be introduced in a regulated system without really fundamental reform, of which, auctions and tenders help find the lowest cost capacity additions. **Investment markets** must be designed to spur renewable energy deployment and reduce investor risks.
- The **single-buyer model** can actually be the basis for incremental improvements. ASEAN countries need to find a new balance between state and markets to optimize dispatch, mobilize investment, and ensure affordability. This may require introduction for short-term system operations while maintaining a strong role of the state in planning and investment.

Keynote presentation 3

The role of markets in the Australian energy transition and lessons for Southeast Asia

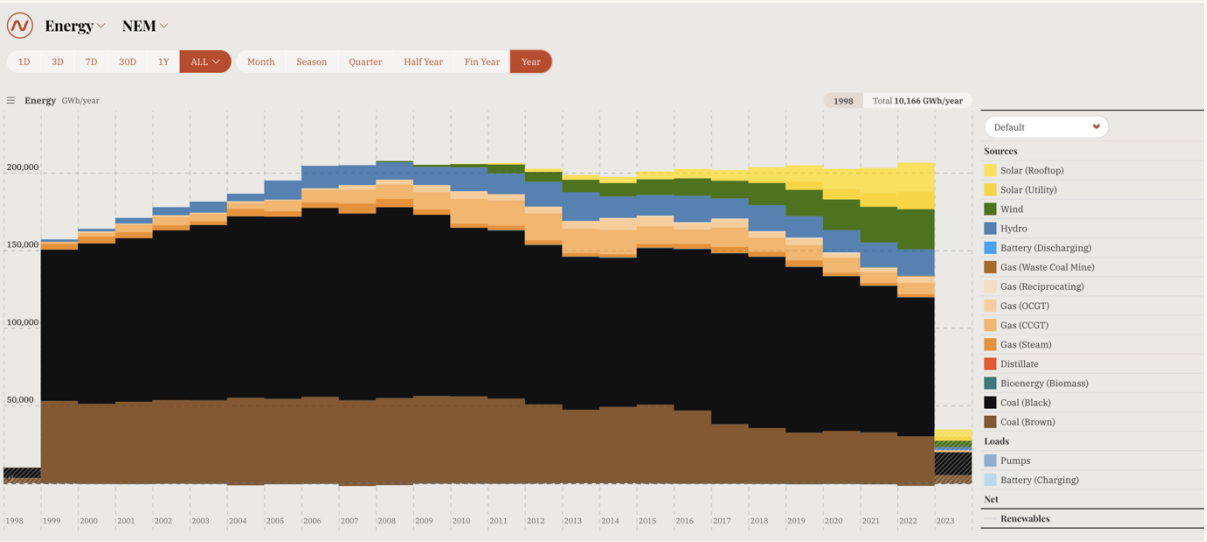
Prof. Frank Jotzo

Head of Energy, Institute for Climate, Energy and Disaster Solutions, ANU

Big shifts are underway in Australia from heavily coal and fossil fuel-dominated energy and electricity system to the one that will certainly be dominated almost to exclusion of most other things by wind and solar power (**Figure 6**). From the last 12 months, solar and wind have combined to 36% of grid supply, a huge boost from less than 10% during 2010s. It is projected that solar and wind will make up 80% of grid supply in Australia by 2030. In particular, South Australia will enjoy periods of 100% renewable energy with the existing of zero or negative spot market prices, as well as energy storage increasingly displacing gas for balancing and grid stabilization.

The breathtaking pace of energy transition has placed enormous challenges for market frameworks and policy frameworks for Australia. The key to managing this transition is to mobilize the investment to make the energy transition happen **predictably** and **speedily**.

Figure 6 | Rapid change in Australia's electricity supply mix in 20 years



The Australian experience and practice in the power sector

- Australia currently has no investment in fossil fuel because it is simply **no longer** competitive.
- Government-initiated contracts-for-difference (CfD)[2] scheme enables competitive tenders and the Australian Government takes the upside and downside risk of market prices, **lowering the financing costs for private investors. The risks on future electricity prices will be on the government balance sheet, which results in much lower power prices.**
- **Energy storage systems**, such as pumped hydro, grid batteries, are needed as a balancing act for wind and solar-dominated systems. There is a tendency to transform the ownership of energy storage systems into a mix of state ownership, subsidies and potentially capacity markets for the private provision of energy storage.

Implications for Southeast Asia

- Since the power sector in Southeast Asia is largely of fully state-owned, investments in renewables (as well as energy storage, and transmission) should be made timely and efficiently. It is worth noting that there are always risks of inefficiency in investment decision and operation.
- Market reforms should signal reliable returns to renewable energy. Southeast Asia countries should be clever in choosing policy instruments to mobilize investment into renewables.
- New energy systems may need new market frameworks, and dedicated policy frameworks which provide investment **predictability** and positive investment signals for the energy assets of the future. This requires the re-examination on operation of governement-dominated systems and markets.
- It is inarguably that the key role of government in the energy transition is de-risking private investment, which minimizes the uncertainty of future prices, revenue models and market models. There are very good experiences in the world that governments step in and provide some assurances to private investors, including the adoption of CfD scheme.

[2] A contract-for difference is entered by a private power generator and a government, providing the generator with price certainty over the lifetime of the contract. For example, a 500MW wind power plant contracted to deliver power at $50/MWh for 15 years. The government would pay a subsidy if market power prices <$50, on the other hand, the government makes money if market prices >$50. Financing costs for the project are low because of the 15-year price certainty.

Panel discussion

Different countries, same conundrum

> *"The keynote presentations underscore the need to find a new balance between states and markets for optimizing investments into renewable energy."*

Ms. Luningning Baltazar

Assistant Director, Electric Power Industry Management Bureau, Department of Energy

The Philippines is proudly ahead in terms of reforms in the electricity market towards liberalization of electric power industry. The government has lately adopted new, more aggressive targets on renewable energy. However, it remains crucial challenges for the Philippines to ensure affordable power is delivered to everyone. The Philippines has removed all subsidies and tried as much as possible to ensure that the costs are competitive. The current mechanism employed in the country allows preferential dispatch of renewable energy. Also, the government conducted the green energy auction program for the first-time last year and planned to do another round this year.

In energy transition process, transmisions play a key role as some of the renewable energy projects may not be strategically located. From the Philippine perspective, it is a must that the policy and planning of energy/power systems take into account the harmonious timing between the project and transmission construction. To solve the problem of inadequate transmission, batteries could be considered as a good option. Still, the extent of how batteries could support the new developments is being carefully examined.

"There is a lot of political interests in just setting the price (of electricity)"

Mr. Deon Arinaldo

Program Manager Energy Transformation
Institute for Essential Services Reform

It is clear now that in the long term, for energy transformation, Indonesia will rely on variable renewables. Traditionally, Indonesia adopted single-buyer system for its energy market. Under a law passed in 2009, the government has the rights to manage essential resources, including electricity. Indonesia's electricity price is heavily regulated. The price is set by the government with the approval of the parliament. As the result, there is a lot of political interests in just setting the price and, in fact, Indonesian goverment has not really updated the electricity sale price for the consumers in the past few years. Indonesia is still exploring options and components in terms of market mechanism which are considered the finest for its energy transition process.

"There is a policy gap for keeping the momentum of investment into renewable energy."

Ms. Vu Chi Mai

Project Manager
Clean, Affordable and Sustainable Energy for the Southeast Asia, GIZ Vietnam

For Viet Nam, it is timely opportune to discuss energy transmission and storage, as well as the investment risks in long-lived fossil-fuelled assets. In the last three years, Viet Nam has experienced a very dynamic development of renewable energy. Nevertheless, due to technical barriers, the system has been unable to absorb all supplies from VREs. There is a policy gap for keeping the momentum of investment into renewable energy. As such, we should now focus on short-term priorities and create a new mechanism that reflects a clear and transparent policy and vision for investors.

One of the key goals in energy transition is phasing-out of coal, which is problematic since Viet Nam still relies heavily on coal-fired projects for delivering electricity with cheap prices. That is why the process of coal phasing-out needs prudent assessment and thoughtful decisions.

De-risking private investment

"The principal mechanism for de-risking in Australia has been the Contract for Difference, which has the effect of providing a guaranteed price per megawatt hour of wind or solar power delivered by private investors. With high electricity prices, some governments have been earning money from this rather than subsidizing it, while the private investor are happy too because they have got their revenue stream locked-in.

Also, there is a green bank - the Clean Energy Finance Corporation, which enters collaborative financing arrangements with private finance providers. It often takes the riskier slice of finance onto its own book and leaves the less risk to deal with in a private financing sector."

- Prof. Frank Jotzo

"There are many dimensions in de-risking RE investment. You need to have a regulatory framework which provides investment certainty over the whole duration of projects. What is specific with RE, especially wind and power is that there is high capital upfront. However, when they are in the system, they are just running. It is all about minimizing capital costs. Also, political commitment should give long-term targets, thence, you know the market will scale up."

- Mr. Dimitri Pescia

Emerging opportunities from JETP

"What Indonesia needs to fix is the process of procuring renewables itself. According to the JETP deal, Indonesia needs to add more 26 GW of renewables by 2030 and market should play a role to deliver. The first step is obviously to create a mainstream process for the procurement. In addition, Indonesia needs to relax its local content requirements which is very high at the moment".

- Mr. Deon Arinaldo

"The biggest barrier (for energy transition in Viet Nam) is the inadequacy of grid integration. Viet Nam government should revise its policies to allow private investment into the transmission grid. As such, the responsibilities of the EVN should be further defined. Thanks to the JETP deal, Viet Nam will have more access to the finance as well as technical supports for the grid issues that Viet Nam is facing."

- Ms. Vu Chi Mai

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