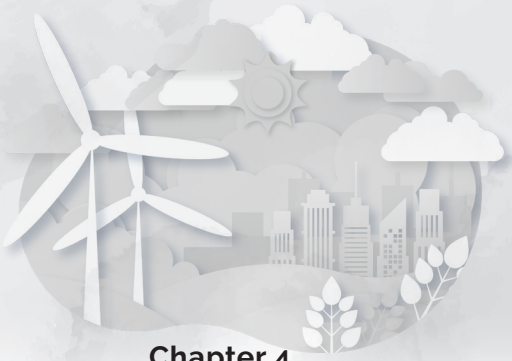

Chapter 4

Harmonious Blueprint for a Fair and Enduring Energy Evolution

Kirstie Imelda Majesty & Benita Dian Purnamasari

A. Collaborative Governance

Over the next decade, energy systems worldwide will be affected by changes in policies, technological advancements, and uncertain shifts in supply and demand. The focus would be the transition from fossil fuels to renewable energy. To achieve an equitable and sustainable energy transition, it requires a type of governance which invites collaboration from all elements of society: from civil service, state-owned enterprises (SEOs), private multinational and local companies, start-ups, academia, think-tanks, grassroots activism, non-governmental organizations (NGO), and media. This initiative to create collaborative governance is necessary to fully tap into the transformational opportunities that energy transition can create.

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Collaborative governance or joint public, private and community actions is a critical path forward to shape our better future collectively nowadays. The spirit of collaborative governance is aimed towards decision makers across all sectors, such as public, private and communities at different vertical and horizontal levels. In Indonesia, this concept is not novel as it is closely related to the traditional principle of *gotong royong*. The framework was implemented during the Covid-19 response measures, in which Indonesia managed to address the socio-economic crisis and distributed more than 439 million vaccine doses and contained economic stability in the country at the same time.

The process of collaborative governance is one that is human centered and thus begins with an understanding of a particular situation from different points of view. It comprises three stages: empathy and problem synthesizing; stakeholder and resource mapping; ideation to action. Through these different stages, the benefits of the collaborative governance framework are three-fold and can be used agnostically across different topics to:

1) create not only better solutions, but also a stronger, more resilient system that transforms challenges into opportunities;
2) provide all sectors and generations with proportional access to resources and responsibilities; and
3) optimize digital advancements to address economic, environmental, and social concerns comprehensively.

While there is no one-size-fit-all approach, this chapter presents findings on several potential collaboration areas to safeguard an equitable and sustainable energy transition in Indonesia that facilitate better regulatory efforts, structural processes, market practices, and financing schemes.

B. Challenges

The world is at a critical juncture. Even before Covid-19, the world had already experienced a myriad of structural shifts, from climate change

pressures, increasing geo-economic tensions, to supply chain shifts. Pursuing the energy transition is a critical reminder that governments alone cannot solve all the challenges society faces and that we cannot resort to governance as usual. As G20 President in 2022, Indonesia has selected energy transition as one of its three priorities. Combined with its inherent characteristics as the world's fourth largest population, Southeast Asia's largest economy, and the ASEAN Chair in 2023, Indonesia has the unique opportunity to amplify global momentum towards cleaner energy sources and lower emissions while fostering equitable socio-economic development.

ASEAN countries had faced its energy trilemma: the need for secure, affordable, and green energy. Recognizing the environmental and economic benefits of transitioning to clean energy sources, ASEAN countries have implemented various measures to promote renewable energy deployment and reduce carbon emissions through greater energy cooperation. Through collaborative initiatives such as the ASEAN Plan of Action for Energy Cooperation 2016–2025 (APAEC) and the ASEAN Renewable Energy Policy and Measures Database, member states are sharing knowledge, best practices, and policies to accelerate the adoption of renewable energy technologies, which is expected to stimulate the energy integration, security, and decarbonization in Indonesia (Diaz-Rainey et al., 2021).

APAEC 2016–2025 strongly emphasizes ASEAN energy market integration and connectivity to accelerate the realization of the ASEAN Economic Community, outlining seven priority programs with action plans, namely: 1) ASEAN Power Grid, 2) Trans-ASEAN Gas Pipeline, 3) Coal and Clean Coal Technology, 4) Energy Efficiency and Conservation, 5) Renewable Energy, 6) Regional Energy Policy and Planning, and 7) Civilian Nuclear Energy (Andrews-Speed, 2016).

Among ASEAN countries, Indonesia, Malaysia, Thailand, and Vietnam have the highest energy needs (Diaz-Rainey et al., 2021). Indonesia has issued bold energy transition commitments, including 23% renewable energy in the national energy mix by 2025, and 31% by 2050. This aligns with the country's goal of reaching net zero by 2060

and achieving the Sustainable Development Goals (SDGs) by 2030. These commitments are strengthened by Indonesia's newly issued policies on carbon economic value and, on a global level, Indonesia's decision to join the Accelerating Coal Transition program at the Conference of Parties (COP)-27. It is noted that Indonesia's energy transition should be based on two key principles: energy sovereignty and energy security.

Energy sovereignty is the ability of a nation to independently decide the structure and sources of its energy supply, as well as its energy policies. National interests should remain the foundation of energy transition measures. This definition acknowledges that energy sovereignty entails the empowerment of local communities (Schelly et al., 2020), while also enhancing the capability of nations to sustain external supply chain disruptions (Cherp et al., 2012) amid global political energy constellations.

Energy security on the other hand, is defined as optimizing a nation's energy potential and ensuring adequate energy supply for socio-economic growth, either through domestic generation or external sources, accompanied by affordability and ease in terms of access. Energy security is critical for Indonesia to achieve its development goals, such as Vision 2045 to become one of the five largest economies by its centenary. Geo-political tensions have increased in recent years, serving as a stark reminder that energy sovereignty and energy security are still essential principles to uphold in the energy transition process.

Indonesia's global agenda and commitments to energy transition must be embedded into its national agenda. A nation's energy needs naturally increase as it grows in terms of economy and population. The challenge now is how Indonesia can continue to have a sufficient energy supply while increasing renewable energy generation and transforming its economy, from reliance on fossil-based material to a more value-added economy.

It is no longer contested that the energy transition contributes to Indonesia's overall reduction of greenhouse gas (GHG) emissions,

helping avoid irreversible damage to our people and planet. The implementation of an equitable and sustainable energy transition requires actions on many fronts. This includes the formation of policy framework, diversification of alternative forms of renewable energy sources and infrastructures, financial support, technology and innovation, stakeholder engagement to promote cleaner manufacturing processes and business models, and decarbonization—both in the energy sector and of end-use products.

We use four frameworks when analyzing the case of Indonesia, all of which could safeguard the nation's energy transition process. This includes regulatory efforts; structural processes; market practices; and financing schemes, as illustrated in Figure 4.1.

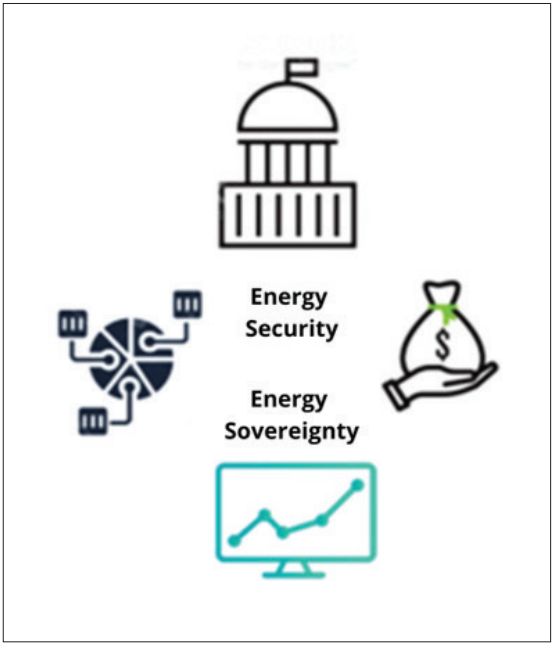

Figure 4.1 Principle of Energy Transition

1. Regulatory efforts

In short, regulatory challenges are related to governance processes that promote the creation of an enabling environment for Indonesia's energy transition. There has yet to be a comprehensive regulation that supports the development of renewable energy in Indonesia. They are often fragmented and made in silos, often resulting in inconsistencies with existing regulations. With the absence of an umbrella regulation covering the different aspects of incentives, permits, risks, subsidies, and tariffs, it is difficult for stakeholders involved to coordinate with one another. This condition has hampered effective implementation and has led to delayed deployment of renewable energy alternatives. The summary of key renewable energy policies and initiatives in Indonesia currently in force by year is shown in Table 4.1.

Table 4.1 Renewable Energy Policies in Indonesia

Year	Title	Policy Status
2014	Presidential Regulation No. 71/2014: Establishes a feed-in tariff scheme to support the development of renewable energy projects, including solar, wind, biomass, biogas, and hydropower.	In Force
2017	Presidential Regulation No. 22/2017: Sets a target of achieving a 23% share of renewable energy in the national energy mix by 2025.	In Force
2020	Presidential Regulation No. 55/2020: Sets targets for renewable energy utilization, aiming for a renewable energy mix of 23% by 2025 and 31% by 2050.	In Force
2020	Ministerial Regulation No. 13/2020: Introduces a competitive selection mechanism for renewable energy projects to ensure transparency and efficiency in project development	In Force

With the progress made so far by many researchers to establish biodiesel as a viable engine fuel, coupled with the ability to eradicate environmental issues, like global warming and sustainability, it is evident that biodiesel is designed to make a future energy investment

and significant addition to the domestic and industrial automobile economy (Ogunkunle at al., 2019). The Indonesian government initiated its biodiesel policy in 2015, and this policy has been periodically updated. In September 2018, Indonesia introduced the B20 rule, which was further upgraded to B30 in January 2020. The goal was to transition to B50 by the end of 2020. The concept of sustainability revolves around the integration of environmental and economic considerations. An essential aspect of sustainable development regarding biodiesel B30, B40, and B50 is the need to balance economic growth with environmental preservation. This involves ensuring the long-term sustainability of biological resources, enhancing agricultural system productivity, maintaining population stability, imposing limitations on economic growth, and enhancing the overall quality of the environment and ecosystem (Dimawarnita et al., 2021)

2. Structural processes

This refers to the non-economic barriers to the development of renewable energy. This includes hard infrastructure, from the availability of energy transition facilities to soft skills that enhance human resources. With more than 17,000 islands across the archipelago, one of the primary challenges Indonesia faces is how to fully integrate renewable energy infrastructure to distribute electricity. This has also been the reason for low electrification rates in parts of the country.

In 2021, Indonesia set the highest record for infrastructure spending. For the first time in 6 years, infrastructure spending exceeded IDR400 trillion (Asian Development Bank, 2022). Even with such remarkable spending growth, Indonesia is still facing infrastructure gaps, especially to support the delivery of the Enhanced Nationally Determined Contributions (e-NDCs) goal. Besides hard infrastructure, the energy transition process also requires quality human resources to promote innovation on clean energy, low emission, and carbon neutral technologies.

3. Market Practices

Following on from the previous frameworks, the biggest driver of change will be market forces. Market practices in this framework refer to two main elements: pricing and behavior. Pricing refers to the value of green solutions for investors and consumers, while behavior includes public acceptance, social commitment, trust, and buy-in from consumers, communities and organizations. When it started, energy transition-related technologies were not cost-competitive, making Indonesia need to implement strong policies to drive integration and renewables. However, the costs of renewables and associated storage and grid technologies, such as HVDC interconnectors, have significantly decreased in recent times. As a result, renewable energy sources have either reached or are nearing grid parity, even in the Asian and Pacific regions (IRENA, 2018). The economic factors and market dynamics will play a crucial role in propelling the energy transition forward, with households, companies, investors, and cities exerting pressure on national governments.

a. Pricing

The price of green solutions is impacted by the energy subsidies. Energy subsidies undoubtedly have played a role in driving Indonesia's economic growth. Low fuel prices maintain the price stability of products and services that protect purchasing power of low-income households. However, energy subsidies have become less effective because, along with Indonesia's economic growth and development, it is harder for the government to track down subsidy distributions. A World Bank report indicates that Indonesia's energy subsidies mainly benefitted the middle and upper-class households, as they make-up a large portion of fuel consumption, and use around 42%–73% of fuel subsidies (World Bank, 2022).

In the electricity sector, the over-optimistic demand growth forecast in the electricity sector has led to overinvestment in coal-powered generation capacity. The Java-Bali Grid is now structurally oversupplied, thus not only increasing the amount of electricity sub-

sidies but also hindering the deployment of renewable energy in the area, such as photovoltaic (PV) rooftops. State Electricity Company (PLN) is reluctant to connect PV rooftop projects in the Java Bali grid, making the permitting process time-consuming. In contrast to the conditions in Java-Bali, other locations in Indonesia still experience low electricity supplies. For example, small islands in East Indonesia only enjoy 12 hours of electricity supply per day. However, private sectors are hesitant to invest as the environment is still unattractive, with high-interest rates and low government incentives. The same challenge can also be seen in the case of EVs, where lack of government incentives and charging infrastructure, high prices, as well as the scarcity of spare parts and maintenance services have hindered the adoption of EVs.

b. Behavior

While the urgent need for a green transition has become more potent than ever, a greater understanding of the underlying societal changes should be addressed. Although global trends reflect a shift towards more sustainable options, it has yet to be the case in Indonesia. The government needs to engage citizens who may not understand the urgency of climate actions and garner support of those concerned. This is especially true in the case of electric stoves, an initiative that was met with hard rejection by citizens on social media, and thus aborted by the government. From our interview in August 2023 with one key person from ride-hailing services, it is found that there is a low awareness among citizens, which is shown in approximately less than 2% of active users (from a total of around 400,000) turning on the "go green" option. Also, the fact that less than 1% of the new vehicles sold are EVs shows how the market perceives green solutions. For large renewable energy projects, social opposition has highlighted the detrimental effects on human health, biodiversity loss, landscape degradation, and negative impacts on tourism and property prices. It has even reached the extreme opinion of asset destruction. Several other relational factors that contribute to shaping social acceptance are necessary to note, such as the low levels of trust in public authorities,

the distribution of quality information to the public, and the lack of public involvement in the green transition process. Indonesia should thus consider creating a framework that will increase local acceptance, public trust, and ultimately reduce the opposition that have in the past been a barrier of renewable energy deployment.

4. Financing schemes

As the world aims to limit the global temperature increase to 1.5–2°C under the Paris Agreement, countries face the challenge of taking concrete steps to achieve this goal. In order to make the necessary changes in all aspects of society, temperature increase must be limited. A global consensus is needed to support this initiative. According to CPI (2021), financing needs are estimated to be between USD 4.5 Trillion and USD 5 Trillion annually from 2021 until 2050 which is roughly 6% of global GDP in 2020.

It is estimated that Indonesia requires USD 322.8 billion worth of climate-compatible infrastructure and climate assets by 2030, with around 75% in the energy and transportation sector (Asian Development Bank, 2022). Despite the availability of financing support and incentives for green solutions, Indonesia is still behind on its green transition targets.

One of the main reasons is the unattractive investing environment for green projects. The government has capped the tariff for most renewable energies based on PLN's generation product cost. While this works for some renewables, it is not alluring enough for investments in smaller projects outside PLN's main grid, where renewables are actually more needed.

Renewable energy regulations require high local content, prior to the establishment of a market large enough to achieve domestic manufacturing economies of scale. The same case happens in EVs, where traditional vehicles are produced at a mass level and reach a better economical level than EVs. The regulations also limit foreign investments and prohibit PLN from purchasing renewable power at prices higher than conventional alternatives.

However, this is not to say that there are no interested investors in Indonesia's green transition. International organizations are open to distributing loans for Indonesia to advance its transition. The challenge is that not many project developers are aware of these funding support, especially at the local and small developer levels. No national green initiative assessment standard by the Indonesian Financial Services Authority (*Otoritas Jasa Keuangan* - OJK) can be followed by national and local banks. Banks are also still reluctant to invest because they lack data and expertise in small-scale green investments. Support from the state budget can help balance the risk for green investments in the form of incentives. Currently, only 4% of the total stimulus funding has been allocated towards the green sector (Asian Development Bank, 2022). The Government should thus focus on investment strategies that do not undermine achievements made in fossil fuel dependency reduction. Indonesia's efforts to promote the green financial ecosystem include the Energy Transition Mechanism Country Platform towards clean energy transition and emission reduction towards zero emissions, the SDG Indonesia One for financing SDGs projects, climate change expenditure mechanisms in the state and regional budgets, tax facilities to encourage investments in Renewable Energy (EBT) and clean technology, the Indonesian Green Taxonomy and ASEAN Green Taxonomy version 2, encompassing early cessation of coal-fired power plants, economic value carbon instruments, an ESG manual in the Public-Private Partnership scheme, innovative financing through sovereign green *sukuk*, blue bonds, and SDG bonds. Additionally, there is international support for Indonesia's energy transition efforts through a USD 500 million Climate Investment Fund and a USD 20 billion Just Energy Transition Partnership.

C. Collaboration Areas

There are several collaboration areas that have potential to be implemented. These areas are discussed below.

1. Experience sharing and showcasing of successful energy transition projects

Stakeholders assessed the issuance of regulations have been done prudently, which on one hand is done to avoid future problems (e.g. carbon trading brokers), but on the other hand, has slowed implementation of energy transition efforts. To this end, a collaboration area related to regulatory efforts should be in the form of experience sharing and showcasing of success stories on energy transition policies and projects. The goal is to accelerate experience sharing through forums to overcome two main issues: lack of knowledge and examples of success, and an absence of a common narrative on particular topics. These forums will invite strategic policy stakeholders to openly discuss topics that could enhance an enabling environment for the energy transition. Topics will vary, covering issues such as but not limited to: investment in clean energy & efficiency, retrofitting and decarbonization of buildings, direct subsidies, carbon market and carbon pricing, EV development, reutilization of old wells, domestic level components, waste management, decarbonization of steel, plastics and cement, aviation, shipping, halting deforestation, degraded lands restoration, public transport increase, biking and walking, more consumption of plants and less meats, as well as retiring coal plants. By promoting experience and knowledge sharing, more actors—from government institutions, non-governmental organizations to the media—can be exposed to the information needed to seize opportunities related to energy transition. In the transition to net-zero, experience sharing will also allow for companies to take actions to mitigate emissions beyond their value chains.

Through experience sharing, it is hoped that the following initiatives will be created as a result.

1) Creation of a hub to push regulations that create an enabling environment, with participation of the Coordinating Ministry of Maritime and Investment Affairs, the Ministry of Energy and Mineral Resources, and the Ministry of Environment and Forestry, as key stakeholders.

2) Exploration of other low-carbon alternatives, such as natural gas or nuclear power, which produce less greenhouse gas emissions than coal. Indonesia must also set targets for the deployment of renewable energy and implement policies to support the transition, such as feed-in tariffs, carbon pricing, and energy efficiency standards. The government must encourage investment in renewable energy by providing subsidies, tax incentives, and other forms of financial support.
3) Active participation from associations, government agencies, business chambers, local communities, businesses, NGOs, academia, international associations, property developers, etc. to implement regulations (e.g. on carbon trading and calculation of carbon pricing; waste management; integrated energy planning). Ensuring inclusivity and participation in decision-making processes helps address social, economic, and environmental concerns and ensures the equitable distribution of benefits.

We believe that the impetus for change can be accelerated through the integration of knowledge between actors (Geels, 2002). Hence, this collaboration area would facilitate the identification of policy gaps, which would ultimately create integrated energy plans, suggest reward and punishment mechanisms, and accelerate delayed energy transition policies.

2. Development of electric vehicle stakeholders to accelerate decarbonization for end users.

An identified cause of delay for the deployment of renewable energy in Indonesia is due to lack of hard infrastructure. Discussions revealed that the development of EV infrastructure should be a main collaboration area, given the immaturity of the market in Indonesia and the still relatively high cost compared to conventional cars. These shortcomings present an opportunity for collaboration that expands beyond the concentrated role of PLN, which will ultimately accelerate the government's political will. Collaboration on EV infrastructure development could take shape through the following initiatives.

1) Provision of financial assistance from the government, such as incentives for EV development and procurement; as well as incentives for individual EV users.
2) Encourage investment from the private sector to encourage market infrastructure with more producers of EVs or spare parts (beyond PLN, who is currently the main actor).
3) Technical assistance and policy support on EVs. Policy support must be more practical by opening up private sector investment opportunities on this topic.
4) Discussion on the possibility of a tax holiday for EVs raw materials for. This would help easing the high cost of EV raw material costs when transferred to Indonesia.
5) Electric mobility, when powered by renewable energy, could play an important role in reducing air pollution in cities and in reducing the reliance on liquid fuels in transport. Thus, policy support for EV should be one of the main focus areas in the country's structural processes, given the immaturity of the market in Indonesia and the relatively high cost compared to conventional cars.

3. Creation of a pool of experts on energy transition to avoid local and national brain drain

Technical assistance and the exchange of experience and knowledge fundamentally require quality human resources, who can promote regulatory efforts, enhance structural processes, and spur innovations. Encouraging research, development, and innovation in renewable energy technologies can drive cost reductions and improve the efficiency and effectiveness of renewable energy systems. Collaboration with local and international experts can facilitate technology transfer and knowledge exchange. We encourage the creation of a pool of local experts and talents on energy transition to avoid a "brain drain". Such a network would lead to the following:

1) Availability of integrated knowledge on energy transition, such as Carbon Capture Utilization Storage (CCUS), Low Carbon Hydrogen, and Solar Energy Storage.

2) Connection between scientific experts to collaborate on specific projects, for example Australian National University (ANU) Indonesia Project and UK Indonesia Consortium for Interdisciplinary Sciences (UKICIS).
3) Establishment of connectivity amongst diaspora through associations of Indonesian scientists—such as Ikatan Ilmuwan Indonesia Internasional (I4Indonesia), Indonesia Mengglobal, and Persatuan Pelajar Indonesia—as well as experts on energy.
4) Incentive for experts that study or work abroad to return and promote energy transition in their own communities.

The creation of this pool of experts is intended to build linkages with stakeholders, policy makers and politicians related to the energy transition. The goal is that the ideas resulting from the network can be implemented on a practical level and not only lead to the form of scientific work that are still under-utilized.

4. More collaborative media and public education campaigns between different sectors to foster capacity building and behavioral change

For Indonesia's energy transition to succeed, considerable changes in terms of the behavior of individuals, communities and public and private organizations are required. Consumers need to shift their view from energy being a constantly accessible resource to a resource that is subject to availability. Currently, the knowledge of climate change is only distributed among segments of populations with higher levels of education. Giving priority to a fair transition is of utmost importance to ensure that the transition to renewable energy does not leave marginalized communities or workers behind. This entails helping and creating opportunities for affected communities and facilitating the smooth shift of workers from fossil fuel industries to renewable energy sectors.

It is essential to invest in capacity building programs and educational initiatives to equip individuals, communities, and organiza-

tions with the necessary skills and knowledge to participate in the renewable energy sector. The proposed collaboration idea is to create a Collaborative Media and Public Education Campaign, promoting a narrative of energy transition conveyed to all levels of society. This includes providing training, vocational programs, and educational campaigns to promote renewable energy awareness and understanding. The media campaign will:

1) collaborate with national and local media, religious leaders, well-known public figures, and property developers to develop narratives on net-zero carbon, energy transition and its benefits;
2) research and experience have shown that community leaders can set priorities, influence ownership, and design and implement investment programs responsive to their community's needs;
3) allow companies to educate others on how to take actions to mitigate emissions beyond their value chains;
4) include a hub/app where people can access information on energy transition topics more easily;
5) include incentive schemes for consumers to increase the uptake of green solutions; and
6) distribute the narrative of energy transition across all communities through "the right information". The campaign should be tailored to each segment's characteristics to ensure that the information shared is well received and understood.

The increase in information can impact the evaluation of green solutions. However, knowledge of green solutions will have limited effects when people are not motivated to engage in sustainable energy behavior, or when they do not feel able to engage in such behaviors. An enabling environment such as policies, financial incentives, and infrastructure needs to be developed in parallel to this campaign.

5. Explore innovative financing schemes to accelerate alternative forms of funding.

Ensuring adequate green investment for a sustainable future is an economic imperative as much as it is an environmental one. Sufficient financial support mechanisms are required to attract investments in renewable energy projects. The deployment of renewable energy requires funding, and a potential collaboration area is to explore innovative financing schemes from the private and community sectors to accelerate alternative forms of funding. The main goal is to ensure stakeholders can access a pool of funds, as well as avoid a mismatch between funding instruments and projects implemented. This can be achieved through the following initiatives:

1) accelerate availability of loans for renewable energy users;
2) provide inducements like feed-in tariffs, grants, and affordable financing choices to mitigate the financial obstacles associated with the development of renewable energy;
3) encourage tax holiday ratification by the government on green projects;
4) a remove income tax through a global agreement for investment in qualified securities linked to green project investments in developing countries;
5) establish connectivity between the source of funds and project owners;
6) encourage cross border financial flows towards environmentally friendly investments in developing nations;
7) build connection between project owners and community-owned enterprises for local/small initiatives;
8) promote loan interest discounts for developers with green building certification; and
9) provide information on potential sources of funds to stakeholders regularly.

Various alternative financial instruments have been created to advance climate action, including green bonds, ESG bonds, sustainability bonds, and the most recent addition, Sustainability Linked Bonds (SLBs). Unlike green bond, which specifically funds environmentally friendly projects; sustainability bond, which is a mix of green and social initiatives; and ESG bond which is linked to environmental, social, and governance factors, SLBs are distinctive for their ability to finance projects that may not neatly fit into predefined categories but still align with the Paris Agreement goals. The purpose of SLBs is to complement green bonds, providing issuers with more effective access to the sustainable financial market.

Notably, SLBs differ from other instruments in that they are not use-of-proceeds designated; rather, they are performance-based. SLBs come with Key Performance Indicators (KPIs) that must be achieved, incorporating step-up and step-down mechanisms. A step-up results in an increased coupon value as a penalty for the issuer if the target is not met, while a step-down entails a decreased coupon value as an incentive for the issuer if the target is achieved earlier or more effectively. The extent of these adjustments varies by issuer, with common practices indicating step-ups around 25 basis points.

Compared to other instruments, SLBs are relatively recent in the financial market, with the first issuance occurring in 2019 by the Italian energy company ENEL. ENEL's SLB, worth $1.5 billion, aimed to increase the proportion of EBT from 45.9% in 2019 to 55% in 2021, with a 25-basis point coupon increase if the target was not met. In 2021, ENEL successfully achieved the Sustainability Performance Target set for its SLB.

Sovereign SLBs have also been issued by Chile and Uruguay in 2022, with specific emission reduction and environmental goals, subject to coupon adjustments if targets are not met. Several countries, including Rwanda, the Netherlands, and those surrounding the Amazon rainforest, are exploring sovereign SLBs. Additionally, beyond assisting issuers in securing funds, SLBs can aid investors in contributing to climate-aligned projects, and the Climate Bond

Initiative is actively developing an SLB database to help investors avoid projects engaged in greenwashing.

Indonesia's state budget alone will not be enough to close the funding gap needed for the deployment of renewable energy. To mobilize private capital and aid green energy initiatives, innovative blended finance schemes in the geothermal project can be employed, like the one proposed by PT Sarana Multi Infrastruktur (PT SMI), PT Penjaminan Infrastruktur Indonesia (Persero) Tbk and PT Indonesia Infrastructure Finance as a special mission vehicle (SMV). In addition, the Indonesia Green Taxonomy by the Financial Services Authority (OJK) launched in January 2022 should be followed by a more detailed regulation and standardization on the system and assessment of green initiatives. There is also a need for technical assistance for financial institutions that are willing to invest in green initiatives to help increase their awareness, provide information on risk management, and secure their initial engagement in green investments. However, given the limited funds and availability of experts, a gradual transition toward a fee-based system for technical assistance would improve its long-term sustainability.

On a different note, Bank Indonesia has instituted a macroprudential liquidity incentive policy, effective from October 1, 2023. This targeted policy is designed to promote intermediation in sectors that have a leverage effect on the national economy, notably in the inclusive finance and green financing sectors. Bank Indonesia is actively supporting the transition to a green economy, ensuring that this shift is not only environmentally responsible but also equitable, well-organized, and economically viable. The policy reflects the central bank's commitment to fostering sectors that contribute meaningfully to economic development while aligning with sustainable and inclusive principles. By encouraging liquidity in these strategic areas, Bank Indonesia aims to play a pivotal role in driving the nation towards a more just, well-structured, and economically feasible green economic landscape. The policy underscores the central bank's proactive stance in aligning financial incentives with national economic goals, particularly

in sectors that are crucial for inclusive growth and environmentally sustainable practices.

Figure 4.2 shows stakeholder mapping on Indonesia's energy transition with importance-accessibility matrix analysis. There are four categories, namely Category I, (low importance, easy accessibility), Category II (high importance, easy accessibility), Category III (low importance, hard accessibility), and Category IV (high importance, hard accessibility). Stakeholders that are both important and easily accessible, such as the Coordinating Ministry for Maritime Affairs and Investment Affairs, Chambers of Commerce, Ministry of National Development Planning should be given top priority during the implementation.

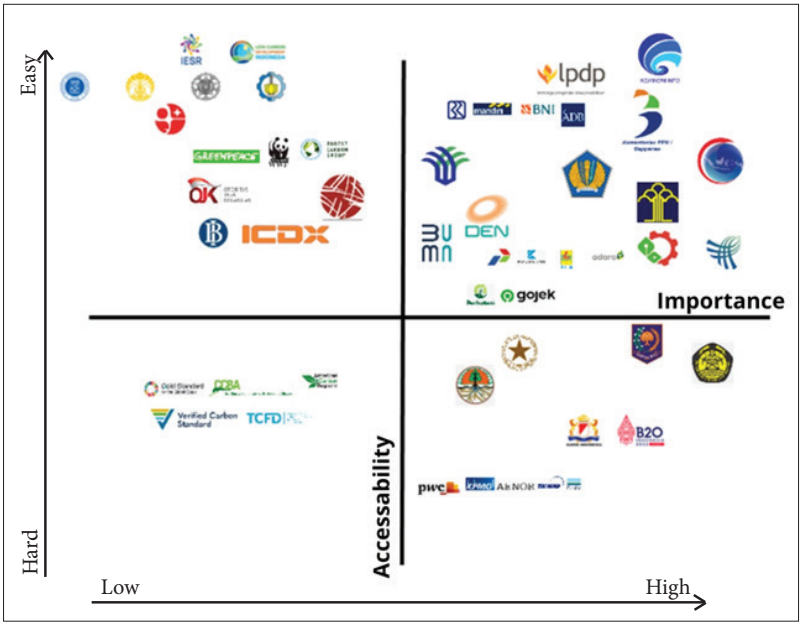

Figure 4.2 Stakeholder Mapping on Indonesia's Energy Transition

D. Closing

Indonesia has ambitious energy transition targets; however, the equability, speed and sustainability of the process will improve with greater collaborative governance between public, private and community sectors. The results of collaborative governance speak for themselves. The collaborative areas includes multinational experience sharing and showcasing of successful energy transition projects to promote sustained dialogues among all stakeholders including policymakers, international standard setting bodies and private sector, development of electric vehicle stakeholders to accelerate decarbonization for end users, creation of a pool of experts on energy transition to avoid local and national brain drain, education campaigns between different sectors to foster capacity building and behavioral change, and exploration of innovative financing schemes to accelerate alternative forms of funding. For example, the roll out of Covid-19 vaccines in record time in under three years exemplifies what we can achieve when the public, private and community sectors work in a harmony.

We have a clear momentum to extend this same principle to the energy transition, including the decarbonization of the power sector as a crucial element. As G20 2022 President and 2023 ASEAN chairman, Indonesia has a unique opportunity to promote economic pathways that speak to both growth and climate. With the complex and multi-faceted nature of the energy transition, this is an apt time to include a whole of society approach where public, private and community sectors all take proportionate responsibility, leveraging and contributing their unique modalities.

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