

## Green Bond: Challenges and Opportunities

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### Executive Summary

Global green bond issuance and other ESG-linked debt instruments have been on an upward trajectory because the urgency of meeting the global climate change goal is imminent. The Paris Agreement aims to keep a global temperature rise this century well below 2 degrees Celsius and to drive efforts to limit the temperature increase even further to 1.5 degrees Celsius above pre-industrial levels. This means carbon emissions need to be cut by roughly 50% by 2030. Ultimately, this urgency drives the need for green financing. However, in Indonesia, the growth and the scale of green bond has not been as rapid as global, as the green infrastructure, more in terms of a more complete regulatory framework and incentive scheme, needs to be further developed. Therefore, we would like to highlight the challenges faced by the efforts that have been made, mostly by the government in terms of regulatory framework, given the lack of meaningful incentives and established customer base. We also would like to discuss what sectors have the potentials to be the most viable in terms of opportunity and impact on the environment.

### Developed countries dominating green bond development

At the end of 2021, the size of the green bond issuance globally reached USD517.4 billion, a strong growth from the USD100.0 billion level achieved in November 2017. Together with social, sustainability, sustainability-linked bonds (SLBs), and transition labels, these labeled sustainable debt issuances have reached USD1.2 trillion by the end of 2021. Despite the strong growth, recent analysis from McKinsey suggests a total of USD9 trillion in green investment is needed each year to reach net zero (zero balance between the amount of greenhouse gas produced and the amount removed from the atmosphere) by 2050. Top developed countries such as the United States (US), Germany, China, France, and the United Kingdom (UK) remained the top 5 green issuers in 2021. UK government was the most prominent green issuer through its two series of UK Green Gilts, followed by KfW Bankengruppe from Germany and Fannie Mae from the US.

Renewable energy drew the largest share of green investment in 2021 at 35% of the total use of proceeds, followed by investments into low-carbon buildings at 30% and low-carbon transport at 18%. However, in terms of debt financing, of all CB (Climate Bonds) certified bonds, 39% went to low-carbon transportation, 20% to the mixed sector, 17% to energy, and 14% to low-carbon buildings. That means there should be an ample opportunity in financing renewable energy, as this sector should be pivotal to overall reduction in carbon emissions. Imagine that without renewable energy, low-carbon transportation has to be supported by electricity generated by coal power plant.

Domestically the total green bond issuance in Indonesia as of September 2022 has reached IDR 10.5 trillion, or equivalent to USD71.4 million. For comparison, the largest green bond issuer in ASEAN is Singapore (ranked 16th globally), and it has achieved nearly USD10.0 billion in green bond issuance. Indonesia has set the target to reduce greenhouse gas by 29% from business as usual and by 41% with international assistance by 2030.

### Challenges in domestic green bond market

Despite the regulation for green bond (POJK 60/POJK.04/2017) set in place since 2017, we have identified numerous factors contributed to the low issuance volume, and most of them were economic reasons.

1. Lack of specific domestic investor base  
From the demand point of view, there were no significant domestic investors specifically looking for green bonds. Commercial factor still drives the appetite and having said that, with no

specific pricing advantage, the coupon expense may not well compensate the issuer for the following constraining factor below.

2. Higher cost in issuing the green instrument

There are additional steps and costs in issuing a green bond:

- a. Establish a dedicated team to set up and maintain Green Bond Framework within the company.
- b. The company must have a green assessment by a third-party verifier.
- c. The company must adhere to the four pillars of the green bond. The most obvious is that proceeds must be distributed at least 70% to green projects or business activities (as per OJK regulation) or more, depending on the company's standards.

The use of standards, in turn, depends on the investor base on which the issuing company aims to sell the green bonds. Stricter standards may appeal to a broader range of green investors, and this requires higher use of proceeds for green projects as high as 100%. The cost of verifying this green bond plan varies from around USD10,000 to USD25,000 per assignment, while the annual monitoring will cost another USD5,000 to USD7,000 per occurrence. It requires about three weeks or more to conclude, which means that the issuing company has to set aside additional funds, time, and other resources to accommodate this verification process. However, the government and multilateral agencies have provided aid typically in terms of green bond verification fee and instrument registration fee to partially mitigate this issue.

3. Lack of incentives for issuing green bond

There are incentives as laid out in POJK No.60/POJK.04/2017 in the form of an award, human resource development, and discount from registration levies to IDX for first-time issuers who register the Green Bond transactions in the capital market. However, these incentives have not sparked the issuance of green bonds. This is because the stimulus has no significant appeal to the buy-side of the market. However, the incentive scheme must fit into the overall picture, since it is likely to trigger a chain effect upon implementation. The fact that organizing an effective tax incentive usually involves various ministries and government agencies, the finalization process tends to take some time to be concluded.

4. Green bond restriction

Under POJK 60/POJK.04/2017, green bond issuer has to meet the required conditions. If the green bond verifier deems that the issued green bond no longer meet any of those conditions, the issuer has to make amend to be reobtain the green status in the next 1 year at the latest. Failure to get back into green status will lead to coupon step-up or even an obligation to do early retirement of the bond. Those implications can significantly affect credit profile of the issuer and can put pressure on the credit rating being assigned.

5. Direct financing for green project

There is also a crowding-out effect in terms of demand for green projects. Some investors directly invest in the green projects, practically taking away a number of viable green projects funded by green bonds. This happened in the case of green bond issued by PT Sarana Multi Infrastruktur (Persero) (SMI), where a large part of the green bond issuance plan went unused because some of the green projects had been tagged by specific investors or funds.

### **Potential sectors to be financed**

The first green bond issued in 2018 by SMI was used to finance hydropower and light rail transits. This is in line with a general trend that green bonds are used to finance renewable energy and low-carbon transport.

Various bodies, including OJK, have issued green taxonomy to provide an overview of the classification of sectors/sub-sectors that have been scientifically categorized as green to avoid greenwashing practices, i.e. making a claim that the product is green, despite the opposite. OJK takes a Pareto approach where it considers two broad business activities with the most significant combined impact in environmental and financial terms: palm oil plantation and coal mining, whereas Climate Bonds Initiatives (CBI), an international organization with global expertise in promoting climate projects, has proved a Taxonomy which covers a lot more business activities namely energy, transportation, water, buildings, land use, and marine resources, industry or manufacturing, waste and pollution control, and information and communications technology.

This taxonomy covers almost all businesses, but in terms of bond issuance trend, it is usually dominated by issuances from financing, banking, property, construction, plantation, and communication sectors. This means that there is a potential for green building and green housing for property, while the infrastructure of low carbon transportation can be a good candidate. For plantation sector, there is an opportunity to finance ISPO/RSPO compliant palm oil plantations, although not all taxonomies may qualify palm oil plantations as green. For the financing and banking industry, a green bond may be utilized to finance or refinance sectors listed above.

The green bond structure may offer a greater flexibility in terms of tenor and various types of projects, given the investors' risk appetites and preferences. In contrast, banks are usually more rigid within their risk management framework, which may exclude long-term projects or projects that have lengthy break-even periods, though the process of obtaining a bank loan is much more simple and less time consuming.

The Ministry of Industry's report in October 2021 stated that 47% of carbon emissions came from the energy sector, 21% from automotive or transportation, and the rest came from other sources, including household waste. Therefore, in terms of effectiveness, the projects that will have the highest effect on carbon emission reduction should be in the energy sector, namely electrical power generation and transportation. In terms of transportation, non-fossil-fueled transportation and mass transportation also lead to sizeable electric consumption, putting pressure on existing electric generation infrastructure. Accordingly, the effort to curb carbon emissions would ultimately boil down to greener electrical power generation.

There are various taxonomy regarding power generation. OJK taxonomy has not detailed the power generation, but CBI taxonomy offers many certifiable power generation projects that may contribute to greenhouse gas reduction. Any non-fossil-fueled power generation can be classified as green, whether automatically or after consideration. This sector also has the most automatically compatible with 2-degree decarbonization trajectory compared to others such as transportation building, waste management, and water treatment.

However, the power generation facility also needs to consider its short to long-term feasibility, including efficiency, based on the resources being used to the actual power being generated. Here is the efficiency of power generation as per type:

- Hydropower: 80% to 100%
- Geothermal: 80%
- Biomass: 80%
- Solar: 20%
- Wind power: 30%
- Current/wave energy : 20% to 30%

There is a vast development of hydropower, geothermal, and biomass in Indonesia. Two projects being financed by the first green bond in Indonesia were hydropower plants. Nevertheless, the potential is still large with 75,000 megawatts (MW) projects are still available, as stated in Ministry of Energy and

Mineral Resources' study, with 8 in operation (Cikaso, Lawe Sikap, Cibanteng, Kumbi Sedau, Gunung Wugul, Parmonangan, Pelangai Hulu and Malea).

Geothermal also has a considerable potential at around 28.5 gigawatts (GW) in geothermal generation capability. Approximately 40% of the world's geothermal reserve lies in Indonesia, and currently, only 2.1 GW were installed as of 2019. There are 4 geothermal power plants in operation (Ulubelu 1&2, Mataloko, Lahendong, Ulumbu), 3 plants under construction (Dieng Binary, Ulubelu Binary, Lahendong Binary), and another 7 under planning to be constructed (Kepahiang, Tangkuban Perahu, Ungaran, Oka Ille Ange, Atadei, Tulehu, and Songa Wayaua)

### **Conclusion**

The global drive into fulfilling the Paris Agreement has been notable, where the number of green bond issuances has been consistently rising. Indonesia has a firm intention to follow suit, but the green bond issuance growth has been only gradual, despite the availability of green projects. Therefore, the need to strengthen green bond infrastructure goes beyond providing a regulatory framework, but also in terms of concrete incentives, investment environment, and better socialization in terms of cost and benefit to the demand and supply sides. Looking at the projects, we view that green power projects will make the most significant impact to greenhouse gas reduction, referring to the study that more than half of greenhouse gas or carbon emission comes from the energy and transportation sectors. The global trend also showed that many of the sectors being financed by climate bonds went to the energy sector. Other sectors, such as mass transportation, also correlate to the electrical supply so the sector will put added pressure on existing power infrastructure without increased power generation.

PEFINDO sees that the green factor would not affect directly to the rating of the issuer, considering the credit rating is a measure of the company's capability and willingness to meet the debt repayment obligation. The green labeling could have an effect if it is tied into the monetary consequences, such as step-up in coupon or requirement for the early retirement if the bond loses its green label. PEFINDO continuously seeks an approach to incorporate the environmental impact to the existing methodology, whether to supplement the current rating practices, or in time, could be more proactive in providing an end-to-end service in ESG-linked debt instruments.