OPINION

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Institutional Obstacles to Accelerating the Energy Transition

Natural potential makes it easier for Indonesia to make an energy transition. However, why is its implementation still often stalled? What does it have to do with institutions?

Writer: Y.B. Kadarusman,

Editor: Rikando Somba

Two PLN Indonesia Power UBP Bali officers inspected the solar panel point at the Solar Power Plant (PLTS) on Nusa Penida Island, Klungkung, Bali, Tuesday (22/10/2024). Between Photos/Nyoman Hendra Wibowo

It is common knowledge that Indonesia is blessed with abundant natural resources. Various works of art and scientific works show this. One of them, of course, is a song by Koes Plus entitled "Kolam Susu". The lyrics show the fertile soil and rich marine products in Indonesia so that food needs can be met with wooden sticks and hooks.

Even in the energy transition era, the lyrics of the Koes Plus song are still very relevant because Indonesia is again blessed with abundant renewable energy sources; solar, geothermal, wind, and water. Regarding solar power, the Ministry of Energy and Mineral Resources (EMR) estimates the potential in Indonesia at 4.8 KWh/m^2 or equivalent to 112,000 gigawatts *peak* (GWp). From this potential, the Ministry targets the installation of Small-Scale Rooftop Solar Power Plants (PLTS) of 3.61 GWp until 2025. Meanwhile, floating solar power plants and large-scale solar power plants are targeted to reach 16.65 GWp and 4.68 GWp respectively by 2030.

However, if you look at the realization of the installation of solar power plants in 2023, the energy transition in Indonesia is like 'far from the fire'. For example, as of December 2023, only 141 megawatt *peak* (MWp) or 0.141 GWp has been installed.

When compared to other countries, Indonesia is still far behind. If we compare it with solar power plants in Vietnam and Malaysia in the same year, it has reached 17,077 MWp and 1,933 MWp, respectively.

The positive impact of the use of renewable energy on the ecosystem will not only be enjoyed by the current generation. Future generations, children, grandchildren, great-grandchildren, great-grandchildren of the current generation, also enjoy it. The well-being of future generations will not be worse than the current generation. Thus, the energy transition is encouraged not solely for economic benefits but also for environmental and social benefits.

Thus, to realize the energy transition, the role of institutions is very important to be able to direct and encourage market players to adopt renewable energy, such as solar PV. Various factors that inhibit the energy transition, such as high costs, are also related to institutions; competition with the fossil fuel sector, collusion, and the provision of subsidies by the government.

In the context of solar power plants in Indonesia, the results of research from the *JUSTIN Project* team indicate that one of the sources of the slow market in adopting renewable energy is institutional problems.

The institutional aspects in question include government policies and regulations as well as the role of PLN as a state-owned enterprise in the Indonesian energy market. For the regulatory aspect, classic problems still continue to occur, namely regulations that are always changing and out of sync between ministries/institutions. In addition, there are often inconsistencies in the design and implementation of regulations in the field. For example, the change in regulations related to *the Feed in tariff* (FiT) adopted since 2013 to provide incentives to *Independent Power*

selling electricity from solar must be lower than coal, without taking into account the positive impact of solar power and the negative impact of coal power.

Untuk mewujudkan **net zero emission (NZE)** pada tahun 2060, Indonesia secara bertahap sedang melakukan transisi energi.

Mengingat sumber energi terbarukan yang melimpah di negara kita, semestinya transisi bisa berjalan lancar.

Tapi, kenapa sampai kini masih kerap tersendat, ya?

Hasil penelitian dari tim JUSTIN Project

dalam mengadopsi energi terbarukan adalah masalah kelembagaan.

Dilihat aspek regulasi misalnya, masalah klasik seperti regulasi yang selalu berubah dan tak sinkron antarkementerian/lembaga masih terus terjadi.

Salah satu contohnya adalah regulasi terkait ***Feed in tariff*** (FiT) yang diadopsi sejak 2013 untuk memberi insentif pada Independent Power Producer (IPP) yang membangun PLTS Skala Besar.

Tarif listrik yang dibeli dari PLTS dibatasi maksimal 85% dari Biaya Pokok Penyediaan (BPP) pembangkit listrik

yang berasal dari surya harus bisa lebih rendah daripada batu bara, tanpa memperhitungkan dampak positif dari tenaga surya dan dampak negatif dari tenaga batu bara.

Belum lagi hak monopoli dan monopsoni PLN yang tak bisa diganggu gugat dalam jual-beli listrik.

Kelebihan produksi listrik dari PLTS akhirnya kerap tak dapat digunakan oleh konsumen lain yang membutuhkan, sehingga mengurangi dampak positif penggunaan energi terbarukan terhadap ekosistem

The Dilemma of Monopoly Rights and PLN's

Monopoly Likewise, the *net metering* system for Rooftop Solar Power Plants which has also been introduced by PLN since 2013, in the course of time, has always changed. For example, related to the excess electricity production from solar power plants, which could originally be sold to PLN at a price of 100% of PLN's electricity selling price, it fell to 65%. In fact, the *net metering system* was finally abolished and replaced with *self-production and self-consumption* with the issuance of the Minister of Energy and Mineral Resources Regulation No. 2/2024.

At the same time, the installation of rooftop solar is also limited by the quota that will be set every year. In fact, this *net metering* system is important because of the *intermittent* characteristics of solar PV; The electricity produced is not available throughout the day, so solar power users still need electricity supply sourced from the PLN network, especially at night. Alternatively, users add batteries to store the electricity generated during the day. Thus, the investment incurred by solar power plants is getting bigger and the payback time is getting longer.

In addition, electricity purchase and sale transactions in Indonesia are also held by PLN. Thus, PLN holds not only the monopoly right to sell electricity to consumers but also the monoponic

still focused on achieving economic benefits rather than social and environmental benefits generated by solar PV.

Uncertainty due to ever-changing regulations, inconsistencies between regulations, and between design and implementation, make the solar PV market not grow rapidly. The demand for solar PV market remains small, so from the supply side, it is not developing, as shown by the low utilization of solar module production capacity and the failure to attract foreign investors and technology into the country.

To accelerate the realization of solar PV installation and achieve the set targets, the government must ensure stable policies and regulations and provide certainty to market participants in the long term. Likewise, coordination and synchronization between regulations and between design and implementation in the field, need to continue to be improved based on environmental and social benefits both now and in the future.

***) The writer is a Lecturer at Prasetiya Mulya University**

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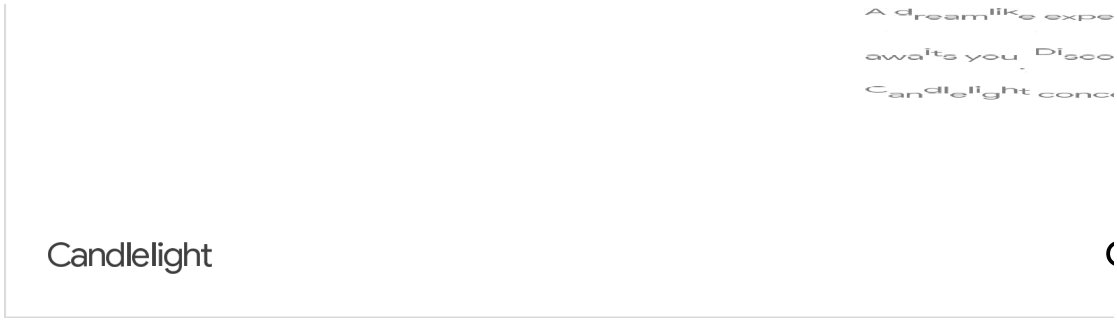

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