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Center for Parliamentary Analysis
Expertise Agency of DPR RI
Nusantara I Build., 2nd Floor
Jl. Jend. Gatot Subroto
Jakarta Pusat - 10270
☎ 5715409 🖷 5715245
✉ infosingkat@gmail.com

DEVELOPMENT OF QUOTA DETERMINATION POLICY FOR ROOFTOP SOLAR POWER PLANTS

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Hilma Meilani*

Abstract

Developing rooftop solar power plants (PLTS) is crucial in energy transition efforts. However, rooftop PLTS has an intermittent nature, so its development needs to pay attention to the reliability of the National Electricity Company (PLN) system. This causes the need to determine PLTS quotas every year. The Ministry of Energy and Mineral Resources (ESDM) has set the rooftop PLTS quota for 2024–2028. This article examines the policy for determining quotas for the development of rooftop PLTS and the implications of determining these quotas. The quota determination will likely encourage the development of rooftop PLTS in Indonesia, but implementing this policy needs to pay attention to the readiness of PLN's network infrastructure. Determination of quotas implies certainty for rooftop PLTS developers and related industries when planning their business strategies. From an oversight perspective, Commission VII of the DPR RI needs to encourage the government to carry out monitoring and evaluation so that the quota allocation for the development of rooftop PLTS is carried out transparently and effectively, as well as increasing the utilization of NRE and the reliability of the PLN network to achieve the target of 3.6 GW rooftop PLTS and 23 percent NRE mix in 2025.

Introduction

The government has set a quota for developing rooftop solar power plants (PLTS) from 2024 to 2028. This determination was made on May 27, 2024, through a Decree of the Director General of Electricity of the Ministry of Energy and Mineral Resources (Ministry of ESDM) Number 279.K/TL.03/DJL.2/2024 on Quota for Development of the Rooftop PLTS System of the National Electricity Company/PLN for 2024 to 2028 (Keputusan Direktur Jenderal Ketenagalistrikan Kementerian ESDM, 2024).

The government is trying to encourage the development of rooftop PLTS to achieve the national energy mix target, considering that

* Senior Legislative Analyst in the Field of Economy, Finance, Industry, and Development at the Center for Parliamentary Analysis, Expertise Agency of DPR RI, e-mail: hilma.meilani@dpr.go.id

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the national solar energy potential reaches 3.3 terawatt hours (TWh). The development of rooftop PLTS is very important in energy transition efforts. However, rooftop PLTS is also intermittent (not available continuously), so its development needs to be calculated carefully by paying attention to the reliability of the PLN system. This causes the need to determine PLTS quotas every year (PLN, 2024).

The government has targeted the new renewable energy (NRE) mix to reach 23 percent of the national energy mix by 2025. The Ministry of ESDM noted that the realization of the NRE mix in 2023 will only reach 13.1 percent, below the target of 17.9 percent (Hakim, 2024a). The actual utilization of rooftop PLTS until December 2023 has only reached 140 megawatts (MW), still far from the installed capacity target of 3.6 GW in 2025 (Setiawan, 2024). This article examines the policy for determining quotas for the development of rooftop PLTS and the implications of determining these quotas.

New Rules for Rooftop PLTS

The Ministry of ESDM on January 29, 2024, established new regulations regarding rooftop PLTS which are regulated in the Minister of ESDM Regulation Number 2 of 2024 (Permen ESDM No. 2 of 2024) on Rooftop Solar Power Plants Connected to the Electric Power Network Holders of Power Supply Business Licenses Electricity for Public Use (IUPTLU) (Peraturan Menteri ESDM Nomor 2 Tahun 2024). This new regulation replaces the Minister of ESDM Regulation Number 26 of 2021 on Rooftop Solar Power Plants Connected to the Electric Power Network Holders of Business Permits for Providing Electricity for Public Use. Several points of change in the Permen ESDM No. 2 of 2024 include eliminating provisions regarding the export and import of electrical energy, capacity limits, and adding quota provisions for developing rooftop PLTS.

Article 13 of the Permen ESDM No. 2 of 2024 regulates the elimination of the export-import or net-metering electricity scheme for rooftop PLTS users. Under this regulation, excess electricity generated by rooftop PLTS systems that are connected to the IUPTLU holder's network will no longer be considered when calculating the electricity bill. As compensation, some installation costs for rooftop PLTS systems will be waived as an incentive for PLN customers. Previously, users with rooftop PLTS systems could export the electricity they generated during the day to PLN and then use PLN electricity at night.

In the old regulations, the capacity of rooftop PLTS that prospective customers could install in the business areas of state-owned enterprises (BUMN) holding IUPTLU was limited to a maximum of 100 percent of the connected power. This provision has been removed in the new Permen ESDM No. 2 of 2024. However, there is now a quota for developing the rooftop PLTS system. This quota is prepared by IUPTLU holders and proposed to the Director General of Electricity of the Ministry of ESDM. According to Article 7, IUPTLU holders must prepare a five-year quota for the development of rooftop PLTS systems. This preparation must consider national energy policy directions, the plans and realization of the Electricity Supply Business Plan (RUPTL), and the reli-

ability of the electric power system in accordance with the provisions in the IUPTLU holder's electric power system network regulations.

Rooftop PLTS Development Quota

Determining the quota for the development of rooftop PLTS mandates that PLN immediately prepare a quota for the development of rooftop PLTS based on the clusters that have been determined. The regulation also stipulates that the Director General of Electricity at the Ministry of ESDM can order PLN to change the quota for developing the rooftop PLTS system. PLN is required to convey the changes to the Director General of Electricity. Determination of the rooftop PLTS quota is divided into 11 regional clusters (Keputusan Direktur Jenderal Ketenagalistrikan Kementerian ESDM, 2024). Details of PLN rooftop PLTS system development quotas for 2024 to 2028 by province can be seen in Table 1.

The government has set the installed capacity quota for rooftop PLTS in 2024 at 901 MW and will continue to increase until 2028. The installed capacity quota in 2025 is set at 1,004 MW (an increase of 11.4 percent from 2024), 1,065 MW in 2026 (an increase of 6.1 percent from 2025), 1,183 MW in 2027 (an increase of 11.1 percent from 2026), and 1,593 MW in 2028 (an increase of 34.7 percent from 2027). Determining quotas is a government step to encourage the development of rooftop PLTS in Indonesia. However, this policy needs to pay attention to the readiness of PLN's network infrastructure because an increase in electricity supply from intermittent sources can affect the reliability of PLN's network.

Implications of Determining Rooftop PLTS Quotas

Determination of quotas implies certainty for rooftop PLTS developers and related industries when planning their business strategies. According to the Chairperson of General Affairs of the Indonesian Solar Energy Association (AESI),

Table 1. Quota for Development of Rooftop PLTS System of PLN, 2024–2028 (Megawatt/MW)

Electric Power System/Provincial	Rooftop PLTS System Quota				
	2024	2025	2026	2027	2028
Sumatra	35.0	45.0	60.0	70.0	80.0
West Kalimantan	7.1	9.8	16.4	17.2	18.5
South, Central, and East Kalimantan	22.1	34.0	58.7	62.8	68.3
North Kalimantan	0.8	1.1	1.9	2.0	2,2
Jawa, Madura, and Bali	825.0	900.0	910.0	1,010.0	1,400.0
North Sulawesi and Gorontalo	0.20	0.4	0.6	0.8	1.0
Southern part of Sulawesi	8.0	10.0	12.0	14.0	16.0
Maluku and North Maluku	0.7	1.0	1,2	1.4	1.7
Papua and West Papua	0.8	1.1	1.3	1.6	1.9
West Nusa Tenggara	0.9	1,2	1.5	1.8	2,2
East Nusa Tenggara	0.6	0.7	0.9	1.1	1.3
Total	**901.0**	**1,004.0**	**1,065.0**	**1,183.0**	**1,593.0**

Source: Peraturan Menteri ESDM Nomor 2 Tahun 2024.

Mada Ayu Habsari, the size of the rooftop PLTS quota that the government has set is a positive sentiment for the solar energy industry because it provides certainty to domestic business actors, making it easier to formulate their business plans. The government's commitment is needed to implement the installed capacity quota and provide easy licensing for business actors so that the development of rooftop PLTS can continue to increase. The President Director of PT Sky Energy Indonesia Tbk, Dion Jefferson, stated that the quota for developing rooftop PLTS is expected to help increase investment in NRE-based power plants. The 5-year installed capacity quota period provided by the government will provide business certainty for rooftop PLTS developers and the PLTS industry in planning their business strategies (Hakim, 2024a).

Determining the installed capacity quota for rooftop PLTS for the 2024–2028 period is expected to help achieve the target of a 23 percent NRE portion in the national energy mix by 2025. According to the Executive Director of the Institute for Essential Services Reform (IESR), Fabby Tumiwa, additional electricity is needed from clean energy-based power plants of 8–10 GW to achieve this target. Rooftop PLTS is expected to contribute up to 3 GW in 2025, and the rest from other NRE. The installed capacity quota for rooftop PLTS set by the government needs to be followed up flexibly by referring to the community's interests in each cluster. It is hoped that regional clusters with high demand can obtain more quotas by utilizing regional quotas with less interest (Hakim, 2024b).

The government's quota allocation for developing rooftop PLTS in 2025 is still below the target of 3.6 GW. Therefore, the government needs to develop other clean energy-based power plants, such as utility-scale PLTS like the Cirata PLTA or from other NRE sources. The government sets the quota for rooftop PLTS to match the electricity capacity available to PLN, as the intermittent nature of rooftop PLTS requires careful management. Implementing the quota determination policy involves considering the readiness of PLN's network infrastructure and ensuring that the allocation is transparent and effective through monitoring and evaluation. To integrate renewable energy into PLN's electricity network, the government needs to encourage investment in developing and utilizing NRE and improving the network and transmission system.

Conclusion

The development of rooftop PLTS is very important in the energy transition, but the government sets quotas to adapt to PLN's electricity capacity conditions. Determining quotas implies certainty for rooftop PLTS developers and related industries when planning their business strategies. The 2025 rooftop PLTS quota allocation is still below the target, so the government needs to develop electricity generation from other NRE sources. The government's determination of quotas needs to pay attention to the readiness of PLN's network infrastructure, followed by monitoring and evaluation.

The determination of the rooftop PLTS quota needs attention from Commission VII DPR RI. From an

oversight perspective, Commission VII of the DPR RI must encourage the government (Ministry of ESDM) to monitor and evaluate so that the quota allocation for developing rooftop PLTS runs transparently and effectively. The government and related stakeholders need to accelerate the use of NRE and increase the reliability of the PLN network to absorb renewable electrical energy from intermittent energy sources to achieve the target of 3.6 GW of rooftop PLTS and 23 percent of the NRE mix by 2025.

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