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Development of Guideline for Reviewing Solar PV Rooftop Quota Proposal in Non-PLN Business Areas

Why This Matters?

Government of Indonesia launched **MEMR Reg No. 2 of 2024** concerning **Rooftop Solar Power Plants Connected to the Electricity Network of Holders of Electricity Supply Business License for Public Interest**. This regulation is a revision of MEMR Regulation No.26 of 2021, stipulating that Government need to determine solar rooftop quota for five years. The regulation applies to business areas across Indonesia both owned by PLN, and non-PLN business areas, ensuring the optimum installation of solar rooftop quota while also maintaining the grid stability. To implement **MEMR Reg No. 2 of 2024**, Government then issued solar rooftop quota for each power system in PLN business areas. While for non-PLN business areas, the maximum allowed installed rooftop is not explicitly regulated. **Non-PLN business areas are required to submit the quota proposal to Directorate General of Electricity (DG E)**. DG E then reviews and approves the quota.

Objective

Develop guideline tools to support DG Electricity in reviewing solar PV rooftop quota proposed by Non-PLN business areas

Overview of the tools

A simple tool is developed, that is able to tell whether the proposed quota can still be increased or if power system instability would arise should the quota be fulfilled. Nevertheless, to avoid the inaccurate analysis due to the simplicity of the tool, certain approaches and criteria are used as described in below:

Category of Non-PLN business area	Criteria
A. Non-PLN business area connected to PLN	Is the system non-synchronous penetration (SNSP) based on business area's generation > 50%? Does the business area rooftop PV quota exceed the proportional local quota? Does rooftop PV generation result in electricity export to PLN??
B. Isolated non-PLN business area	Is SNSP > 50%? Is the technical minimum loading of online generators > minimum net load? Is rooftop PV ramp rate > generators' maximum ramp rate?

Load profiles of the non-PLN Wilus for a minimum of 7 days (including holidays)

Rooftop PV energy production data (can be simulated based on weather data)

Annual peak load

BESS development plans, including annual energy capacity [MWh] and power capacity [MW] (if any, for isolated business areas)

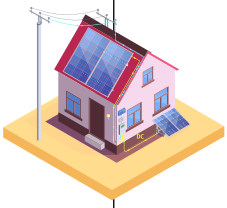
List of generators

BESS depth of discharge and charging efficiency (if any, for isolated business areas)

Technical minimum loading and maximum ramp rate data of generators

Proposed rooftop PV quota

Input



Output

Indicative results whether the proposed rooftop PV quota complies with or violates each of the criteria listed above and an estimate of the maximum allowable rooftop PV quota.

Potential Impact

While not a substitute for detailed power system studies, the tool can improve the governance, transparency, and pace of rooftop PV development in Indonesia, helping align near-term deployment with long-term power system reliability and decarbonisation objectives.

1. Faster and more consistent quota evaluation

The tool enables DG E to conduct preliminary technical screening in a standardised manner, reducing reliance on ad hoc assessments and lengthy back-and-forth with the business areas. This can reduce the man-hours required per review, shorten approval timelines and improve consistency across business areas.

2. Greater regulatory clarity and predictability

By translating technical system constraints into transparent, rule-based criteria, the tool can reduce uncertainty around rooftop PV quota approvals. Non-PLN business areas and regulators gain a clearer, more consistent understanding of what levels of rooftop PV can be accommodated without compromising system stability, improving investment confidence.

3. Incentivizing data transparency and system planning improvements

By standardising the proposal format and requiring non-PLN business areas to provide input data used for the quota calculation, they have to/are incentivized to improve load monitoring, generator data management, and PV production forecasting. Over time, this can strengthen distribution-level data availability and planning practices, which are critical enablers of higher renewable penetration.

4. Better alignment between system reliability and energy transition goals

By explicitly linking rooftop PV quotas to SNSP, load profiles, and generation constraints, the tool helps ensure that rooftop PV expansion proceeds in a way that is technically sustainable. This reduces the risk of system instability being used as a blanket justification to limit rooftop PV growth.

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