



## **How to Develop a PV Project in Indonesia: get a primer on development, regulations and financing**

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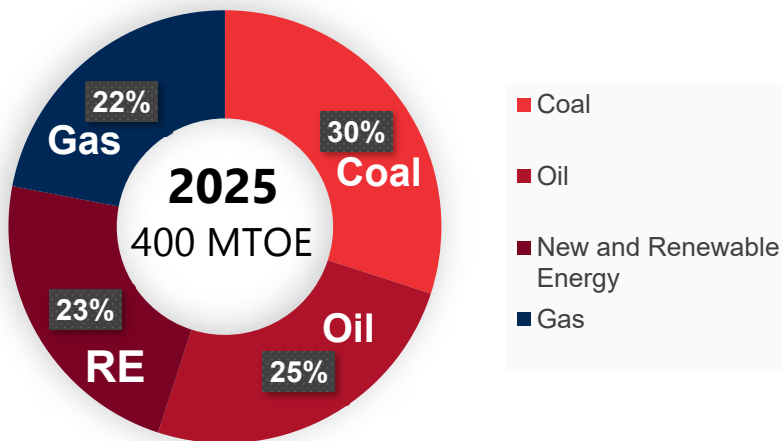
# Current Condition & Policy

## National Energy Policy

Government Regulation No. 79 of 2014

### Renewable Energy Target

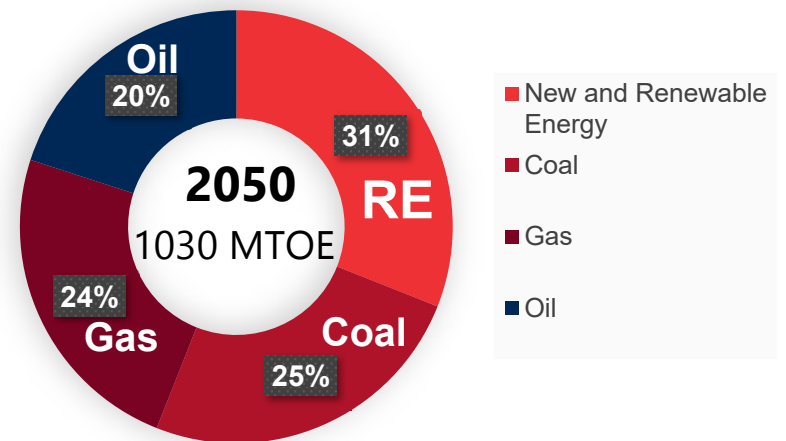
Installed Capacity: 115 GW



Presidential Regulation No. 22 of 2017

### Renewable Energy Target

Installed Capacity: 430 GW



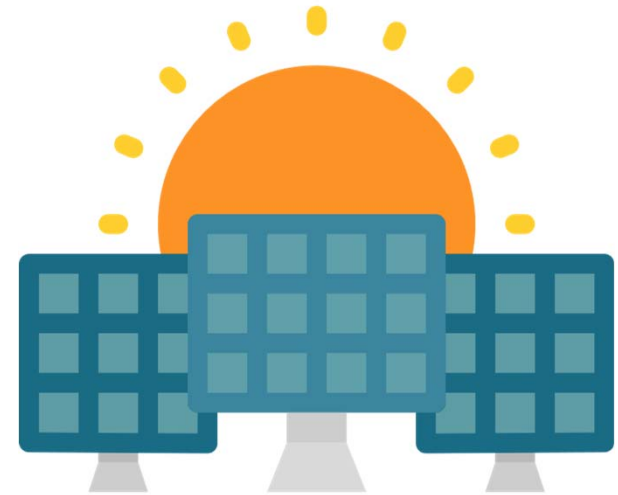
\***MTOE** = Million tons of energy

# General Plans of National Energy

## Based on Presidential Regulation No. 22 of 2017

To achieve the solar power target by 2025, the Government of Indonesia further implements the following policies:

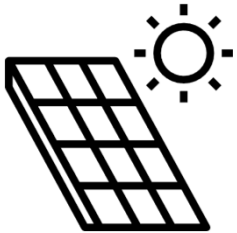
- Enforce the obligation to use solar cells at a minimum 30% of the roof area for all Government buildings;
- Enforce the obligation to use solar roofs at a minimum of 25% of the roof area of luxury building, residential, apartments, complexes through building permits (IMB);
- Facilitate the establishment of the Solar Power upstream and downstream industry.



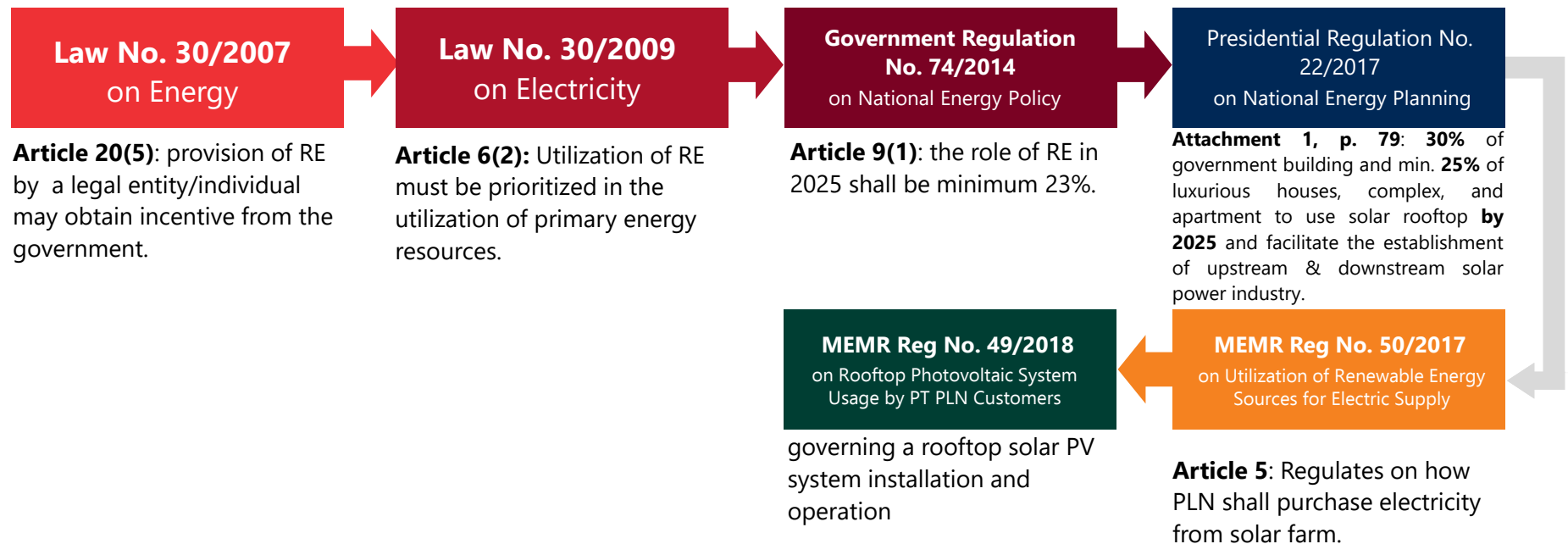
The Government set an outlook to generate **6,500 MW** from photovoltaic by 2025.

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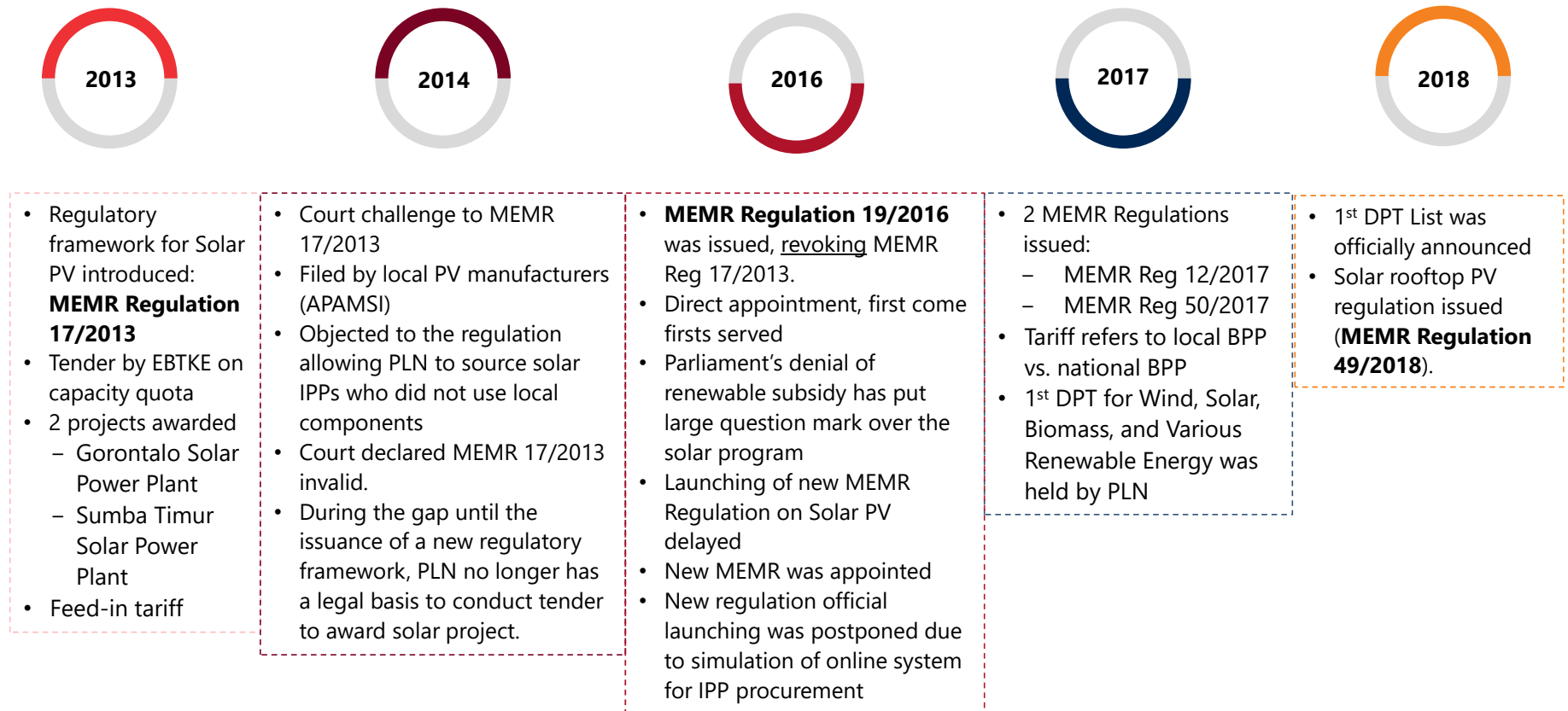
Regulations



## Regulations on Renewable Energy & Solar PV



## History: Indonesia IPP solar program





## Key elements of Solar IPP regulatory framework

	2013	2016	MEMR 12/ 2017	MEMR 50/2017
Capacity	Allocated via quota system	Same as old, with 5,000MW as initial quota	Offered at minimum total package of 15MW	Quota System based on RUPTL and quota capacity letter from PLN.
Project Award Authority	Once EBTKE designates developer, PLN must buy	Once EBTKE designates developer, PLN must buy	Award of the projects through PLN	Award of the projects through PLN
Procurement method	Tender process	Direct appointment – first in first served	Direct selection	Direct selection

## Key elements of Solar IPP regulatory framework

	2013	2016	MEMR 12/ 2017	MEMR 50/2017
Local content requirement	If no local content, maximum tariff that can be bid is US\$0.25. If local content reach minimum 40%, US\$0.30.	Goods 25.63%, services 100% with goods and services 43.85%  If local content requirement not met, tariff is reduced.	No specific stipulation, but arguably follows 2016 framework	<ul style="list-style-type: none"> <li>• Goods: 34.09%</li> <li>• Services: 100%</li> <li>• Combined: 40.68%</li> </ul>
Tariff	Cap at US\$0.25 USDc/kWh (without local content) or US\$0.30 USDc/KWh (with minimum 40% local content)	Fixed feed in tariff, varied from US\$14.5 USDc/KWh (Java) to US\$25 USDc/KWh (Papua)	<p>If Local BPP &gt; National BPP : <b>Max. 85% x local BPP</b></p> <p>If Local BPP ≤ National BPP : <b>100% x local BPP</b></p>	<p>If Local BPP &gt; National BPP : <b>Max. 85% x local BPP</b></p> <p>If Local BPP ≤ National BPP : <b>B2B Negotiation</b></p>



Regulations on Solar IPP structure

# Regulatory Requirements



## **Procurement done through Direct Selection**

- 2 or more potential bidders are invited to bid
- The bidders are selected from "List of Selected Bidders"
- To create "List of Selected Bidders" (DPT), PLN shall hold a PQ process
- The first PQ process for solar project was closed on 7 December 2017.
- The first DPT list was officially announced in November 2018.
- Next PQ? 2019, tentative.



**Tariffs exclude component E (transmission line) must be approved by MEMR.**



**Solar IPP projects must be on BOOT (Build, Own, Operate, Transfer) scheme.**



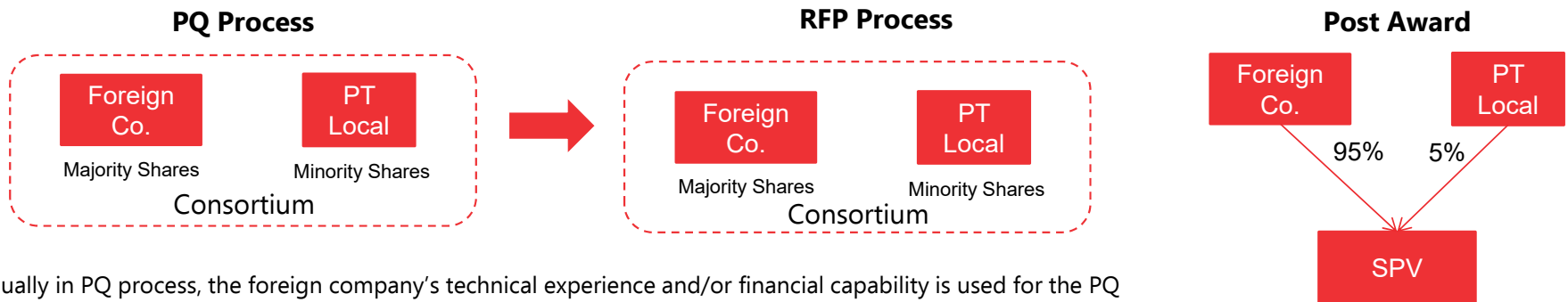
## How can foreign companies participate?

On paper, foreign companies will need an Indonesian-established company (*Perseroan Terbatas*/PT) to participate.

Based on Presidential Regulation No. 44 of 2016 ("**Negative List**"), foreign ownership for electricity generation is as follows:

- $\leq 10\text{MW}$  → max. 49% foreign ownership
- $> 10\text{MW}$  → max. 95% foreign ownership, except for PPP which is max. 100%

**Note:** there was a plan that the restriction for  $> 10\text{MW}$  was to be open 100% for foreign ownership but it was cancelled due to high pressure.

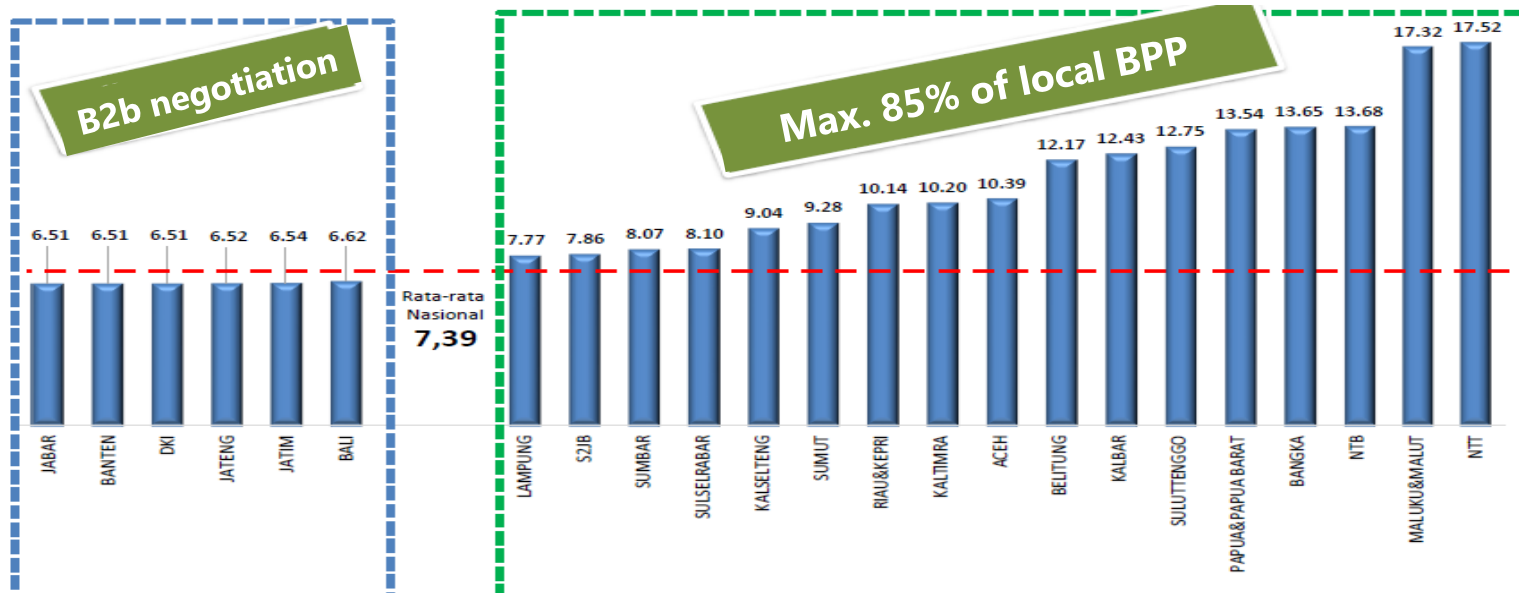


**Note:** Usually in PQ process, the foreign company's technical experience and/or financial capability is used for the PQ submission. Based on the latest Hydro PQ, PLN requires that the company whose experience and capability is submitted shall hold majority interest in the consortium. Based on the 1<sup>st</sup> Solar PQ, foreign companies may register as a single entity without forming a consortium.

For RFP process - it remains to be seen whether it will require a consortium with PT Local.

# Tariffs for Solar

Type	Local BPP > National BPP	Local BPP ≤ National BPP
Solar PV	Max. 85% of local BPP	Negotiation



Source: MEMR

# Tariffs

- PLN's Cost of Generation ("**BPP**") is the cost of electricity generation of PLN, excluding the cost of transmission
- BPP is stipulated in MEMR decree (reflecting BPP in the previous year) and valid for a period of one year
- BPP for year 2018 is stipulated in MEMR Decree No. 1772 K/20/MEM/2018, valid from 1 April 2018 until 31 March 2019. **Current national BPP**: cents USD 7.66/KWh. The National BPP for 2017 was set at USD 0.0739/kWh,
- Local BPP based on area/distribution/system/subsystem

## Determination of BPP

- BPP will be determined by the Minister every year.
- PLN proposes the determination of the amount of BPP must be submitted at the latest in the second week of March of the current year. The proposal is a realization of the amount of BPP from 1 year earlier.
- BPP is valid from April of the current year until the end of March next year.
- If until April there is no new BPP, the previous generation BPP Generation will be used until the new one is issued
- In certain cases PLN may propose again the determination of the amount of BPP from the previous year for the following year.
- In the event that there is a location that has not been electrified and there is no determination of BPP, the amount of BPP is set equal to the highest established BPP which has been determined by the Minister.



## PLN Direct Selection Process



## The “New” MEMR Regulation 50/2017

In January 2017, the Ministry of Energy and Mineral Resources (“**MEMR**”) issued MEMR Regulation No. 12/2017 on the Utilization of Renewable Energy Sources for Electric Supply. This was amended in August 2017 through MEMR Regulation No. 50/2017 (“**Regulation 50/2017**”). Regulation 50/2017 applies to solar PV, wind, hydro, biomass, biogas, municipal waste, geothermal and tidal power projects, and in summary provides the following:

**i. BOOT – All projects must be based on a build-own-operate-and-transfer (BOOT) scheme (except for municipal waste, which is not regulated in this respect).**

**ii. Tariff calculation**

- a) Where the average cost of energy production of the local grid (“**Local BPP**”) is higher than the average cost of energy production of the national grid (“**National BPP**”), a maximum tariff applies (for municipal waste, hydro and geothermal 100%, and for other sources (including Solar) 85% of the Local BPP);
- b) Where the Local BPP is lower than the National BPP or, for Sumatera, Jawa, and Bali (for Hydro, Geothermal and Municipal Waste), the tariff will be mutually agreed.

**iii. Procurement process**

- a) Waste-to-Energy (“**WtE**”) and geothermal projects must be procured through a direct appointment (*Presidential Decree No. 35/2018 for procurement of WtE projects in 12 cities*).
- b) Solar PV and wind projects must be procured through a direct selection based on capacity quota.**
- c) Hydro, biomass, biogas and tidal projects must be procured through a direct selection.





# Overview of PLN's Direct Selection Process

Before participating in a direct selection, an IPP must first be qualified and listed on the List of Selected Providers ("**DPT**"). The procedures of being listed in DPT is done by Pre-Qualification process ("**PQ process**") held by PLN. Depending on the type of power plants, DPT is carried by PLN as follows:

Local DPT by Regional PLN	Central DPT by Central PLN
<10MW hydro power plant	>10MW hydro power plant
<10MW biogas power plant	>10MW biogas power plant
<10MW biomass power plant	>10MW biomass power plant
<10MW tidal power plant	>10MW tidal power plant
<10MW hybrid power plant	>10MW hybrid power plant
	<b>All capacity of solar power plant</b>
	All capacity of wind power plant

## WHEN WILL THE PQ PROCESS BE HELD?

**No fixed schedule.**

In November 2017, PLN opened a DPT process for wind, solar PV, biomass/biogas, tidal, and hybrid project, whose list is has been announced as per November 2018.



## PLN PQ Document

To be listed on DPT, an IPP must pass the Pre-qualification process ("PQ") by participating as applicants and meeting the criteria specified on the Pre-qualification Questionnaire ("PQQ") Document ("PQ Documents").

4 main items of information that PLN requires from the applicants in the PQ Documents, namely: administrative information (A.), business and corporate organization (B.), technical experience and service support (C.) and lastly, Financial Capability (D.).



## Mandatory Requirement for Evaluation

DPT applicants who fail to meet the minimum eligibility and qualification criteria will be disqualified and excluded from any further evaluation process. Those minimum requirement, among others, include:

### Technical Criteria, among others:

has completed at least 1 (one) IPP Contract, EPC Contract and/or O&M Contract for the last 10 years which are already in COD

### Financial Criteria, among others

- a. Positive difference between total assets and total liabilities for last 3 years; and
- b. The current D&B (Dun & Bradstreet) rating of at least 3A3 or an investment grade credit rating by S&P or Moody's or Fitch or equal.

## Expected Project Timeline after the PQ Process



**Note:**

- Feasibility Study usually is not included as a required document in RFP process. Since usually, PLN will give 90 days for the Winning Bidder (other than the Project Initiator) to conduct Feasibility Study & Interconnection Study. However, a developer may initiate the preparation of FS to be confident in the RFP process.
- In contrast to solar power PQ document, we noted that the PQ document for hydro power requires Feasibility Study as one of the technical information.



## Solar Power Quota

- ✓ MEMR has approved and issued the 2018-2027 RUPTL based on MEMR Decree No. 1567K/21/MEM/2018 dated 13 March 2018 ("**RUPTL 2018**").
- ✓ Electricity Supply Business Plan (*Rencana Umum Penyediaan Tenaga Listrik*/**"RUPTL"**) basically represents the plan of the State Electricity company (PLN) to procure electricity from the power plant producers, including private IPPs.
- ✓ RUPTL is also used as a guideline as to which locations PLN may wish to see power plants are to be developed. **Unless a project is stipulated** in RUPTL, its direct selection process **will not begin**.
- ✓ RUPTL is not set in stone as it **can always be amended**, if needed, subject to MEMR's approval.
- ✓ In addition to RUPTL, PLN issues a **letter** to stipulate the maximum capacity quota slot for each system in Indonesia as an indicative basis of Local PLN's maximum capacity for electricity purchase in each system/province.



## Regulations on Solar Rooftop Structure

# PLN Regulations

## 2013 PLN Regulation on Solar PV Utilization

- 1 **Scope of the agreement:**
  - a. Installation of photovoltaic
  - b. Electricity transaction
- 2 **With regards to PV utilization:**
  - a. PLN customer may install PV on the roof of their building.
  - b. The PV may be operated in parallel with PLN's grid system
  - c. Excess kWh energy from the PV may be delivered to PLN's grid system.
- 3 **With regards to electricity transaction:**
  - a. Electricity received by PLN from the PV will be offset with the energy delivered by PLN to PLN customer (net metering).

## 2015 PLN Regulation on Technical Requirements of Photovoltaic Power System for Low Voltage Network

- 1 The 2015 PLN Regulation only provides rules on connection of a solar PV system to low voltage PLN's network with a capacity of up to 30 kWp.

There was no clear rule for the implementation of a Net Metering Concept for a solar PV system installation above 30 kWp.



## Parallel Operation under MEMR Reg 1/2017

Before the issuance of draft regulation on parallel operation is the imposition of the following costs to Plant Owner:

### 01 Connection Cost

Connection cost is based on relevant regulation regarding connection cost.

### 02 Capacity Charge

Capacity charge is calculated based on the following formula:

#### Capacity Charge =

Total net Power capacity (in MW) x 40 hours x electricity tariff

### 03 Energy Charge

#### Normal Energy Charge

Energy charge rate during normal condition is the power purchase cost during the operation of the power plant that is on Parallel Operation under a normal condition in accordance with the operation plan reported to PLN.

#### Emergency Energy Charge

Energy charge rate during emergency is the power purchase cost during emergency operation where Power Plant Owner whose plant is on Parallel Operation with PLN uses the power generated by PLN as a substitute for power that should be generated by the Power Plant Owner who is in parallel operation.

**Note:** We understand that capacity charge and emergency charge are no longer applicable for household utilization based on MEMR Regulation No. 49/2018.



## MEMR Regulation 49/2018 on Rooftop Photovoltaic System Usage by PT PLN Customers



### Allowed Capacity

Maximum 100% of total inverter capacity. Based on 2015 PLN Regulation, we understand that PLN can only accommodate possible connection of more than 30 kWp solar PV system to PLN's network. There is a need to amend the 2015 PLN Regulation or a new PLN Regulation to accommodate possible connection of more than 30 kWp solar PV system to PLN's network.

### Exemption from Parallel Operation Charge for Household PV:

- 1) Capacity charge
- 2) Emergency Charge

### Export of Power and Electricity Bill Cut Calculation

*kWh Import value – (recorded kWh export value x 65%)*

### Utilization of Export Deposit

If the exported electricity is greater than the imported electricity in the ongoing month, the excess will be accumulated and counted as deduction of electricity bill for max. of 3 months with quarterly divisions (April, July, October and January).

## MEMR Reg 49/2018: Application Procedure of Construction and Installation of Rooftop PV Power Plant



### Submission of an Application:

- Amount of installed power
- Technical specification of equipment
- One-line diagram



**Evaluation and verification of the Application within 15 working days**



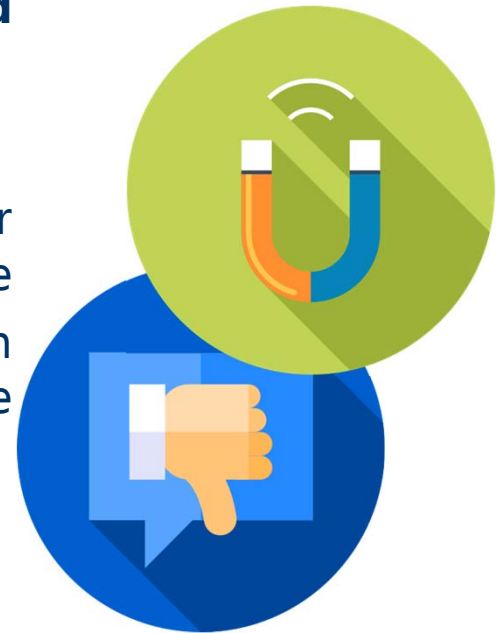
**Approval of constructing and installation of rooftop photovoltaic power plant system**

## MEMR 49/2018 for Industry



- Industry may also apply for installation and construction of rooftop photovoltaic power plant
- Such installation may be **on-grid** or **off-grid**

- **On-grid consumers** still have to **pay** for capacity charge and emergency charge
- **Off-grid consumers** are **exempted** from capacity charge and emergency charge





## Solar Rooftop (Off-Grid) Regulatory Challenges

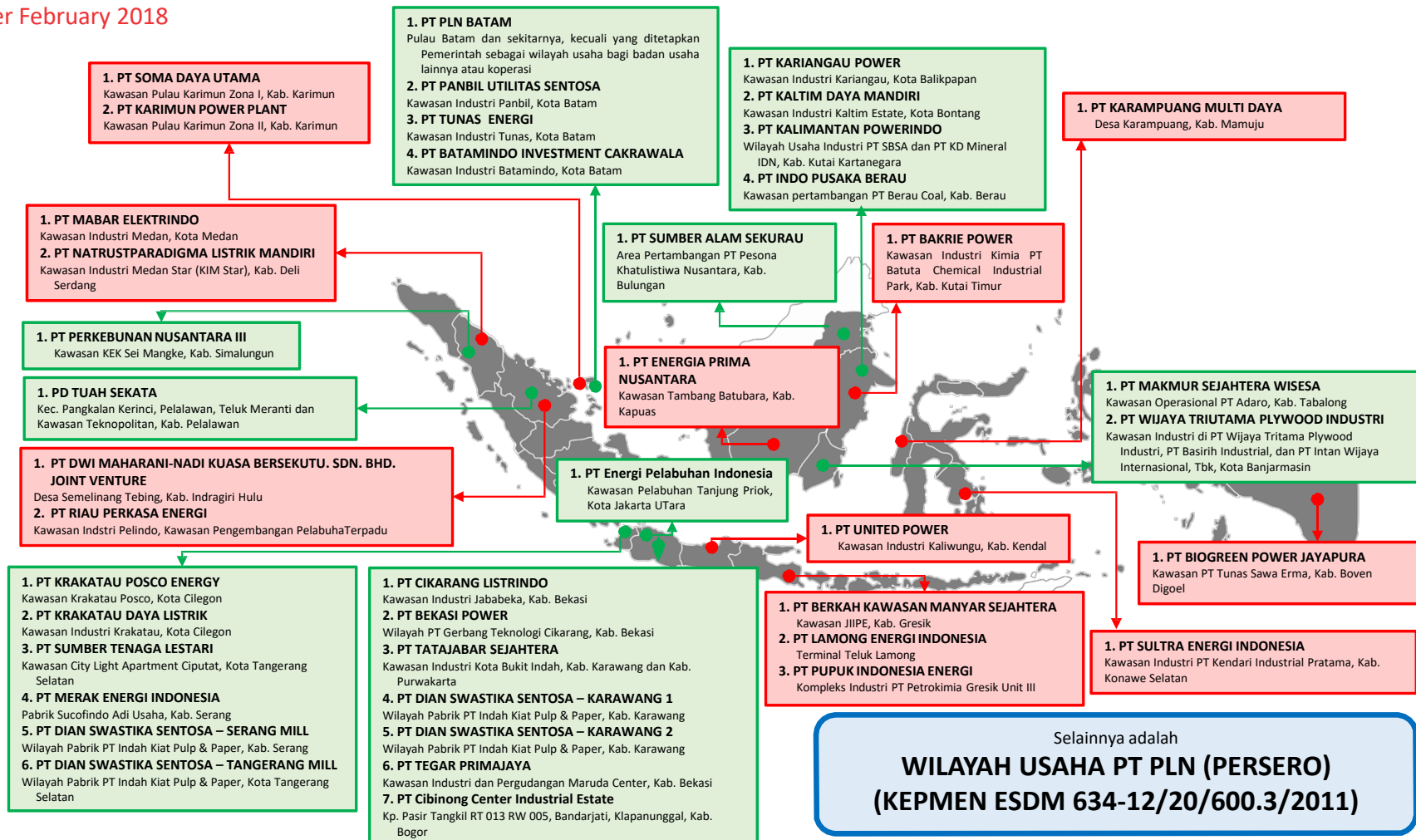


## Stipulation of Business Area Needed

- In order to supply directly power generated from the rooftop solar system to the clients, developers are required to obtain a stipulation of Business Area from the Indonesia Investment Coordinating Board ("**BKPM**").
- Obtaining the stipulation of business area could be challenging considering that the whole territory of the Republic of Indonesia - except for areas which have been stipulated as the business area of other business entities by the Government - is the business area of PLN.

## Business Area in Indonesia

Status as per February 2018



Source: ESDM

● : Belum Operasi  
● : Sudah Operasi

## Structuring the Investment



### No "sale of power" is allowed

Otherwise a stipulation of business area is needed



### Leasing Structure

- **Must be licensed as a rental equipment company**  
Rental business is only for a domestic company
- **Finance lease business is a highly regulated sector**
  - a. This will be subject to the Financial Service Authority ("OJK") monitoring and regulation
  - b. a minimum equity of IDR 100 billion (as oppose to IDR 2.5 billion for PMA companies under BKPM supervision)
- **Can be licensed as a finance company**
- **Foreign ownership is allowed up to 85%**
- **The equipment will need to be transferred to the customers (finance lease)**

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## Local Content Requirements



# Local Content Requirements of Solar PV

Article 11 of MOI Regulation 54/2012 categorizes local content level ("TKDN") for solar power plants **into three categories**:

## Behind the Meter Solar PV Power Plant/PLTS Tersebar Berdiri Sendiri

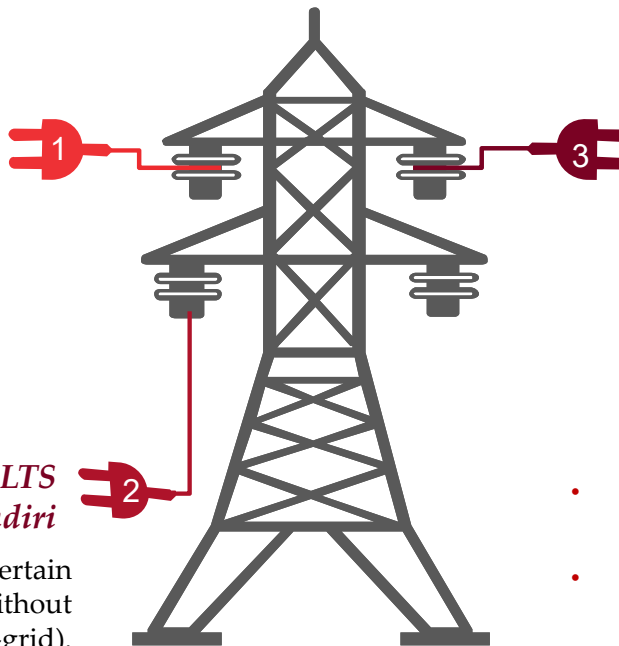
Solar PV units which are spread out and directly connected to units or users without access to distribution networks.

**GOODS: 39.87%**  
**SERVICE: 100%**  
**COMBINED: 45.90%**

## Off Grid Solar PV Power Plant/PLTS Terpusat Berdiri Sendiri

Solar PV units which are centralized in a certain location with energy distributed to users without connection to PLN grid (off-grid).

**GOODS: 34.09%**  
**SERVICE: 100%**  
**COMBINED: 40.68%**



## On Grid Solar PV Power plant/PLTS Terpusat Terhubung

Solar PV units which are centralized in a certain location with energy distributed through PLN grid (on-grid).

**GOODS: 37.47%**  
**SERVICE: 100%**  
**COMBINED: 43.72%**

- Letter from Ministry of Industry to Directorate General of EBTKE (Renewable Energy) dated 22 June 2017
- Suspension of the implementation of Ministry of Industry Regulation No. 04/M-Ind/Per/2/2017 and No. 5/M-Ind/Per/2/2017 on new local content regulation for solar projects?

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# Power Wheeling

# Power Wheeling

## Objectives:

- 1 Optimize transmission/distribution network
- 2 Promote national scale efficiency by improving the utilization of transmission/distribution network
- 3 Accelerate the addition of power plant capacity



## MEMR 1/2015 on Co-operation for Power Supply and Joint-use of Power Transmission

- ✓ Enables an existing power plant developer to cooperate directly with other power plant developers in providing electricity (power wheeling).
- ✓ No new power supply license is required for power wheeling. **However**, the price for power shall still need MEMR approval
- ✓ Provides the possibility for joint-use of power transmission infrastructure by other developers

In practice, many developers have experienced difficulties in procuring land for power transmission lines.

It is expected that by the scheme of power wheeling, this impediment will be minimized.

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# Updates

## Regulatory Updates

### Draft of Renewable Energy Law



- a. there can be additional incentives provided by the local government if needed to accelerate the increase of electrification ratio and the economic growth, subject to DPRD approval through a local regulation
- b. additional incentives can be funded from the Special Allocation Fund (*Dana Alokasi Khusus/DAK*) or New and Renewable Innovation and Acceleration Fund (*Dana Inovasi dan Percepatan EBT*)
- c. Tax exemptions e.g., import duty and VAT for spare parts of up to 10% of the initial total project cost
- d. first right of refusal is granted to IPPs using fossil fuel who wish to expand the capacity of their projects by using new and renewable energy
- e. Establishment of New and Renewable Innovation and Acceleration Fund (*Dana Inovasi dan Percepatan EBT*) and the New and Renewable Energy Development Authority (*Otoritas Pengembangan EBT*)

**Note.** In relation to this draft, BKF is drafting study to create the concept of Renewable Energy Fund/*Dana Energi Terbarukan (DET)*.

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