



RENEWABLE ENERGY INVESTMENT POTENTIAL IN INDONESIA



Director of Various New and Renewable Energy
Jakarta, 12 September 2019

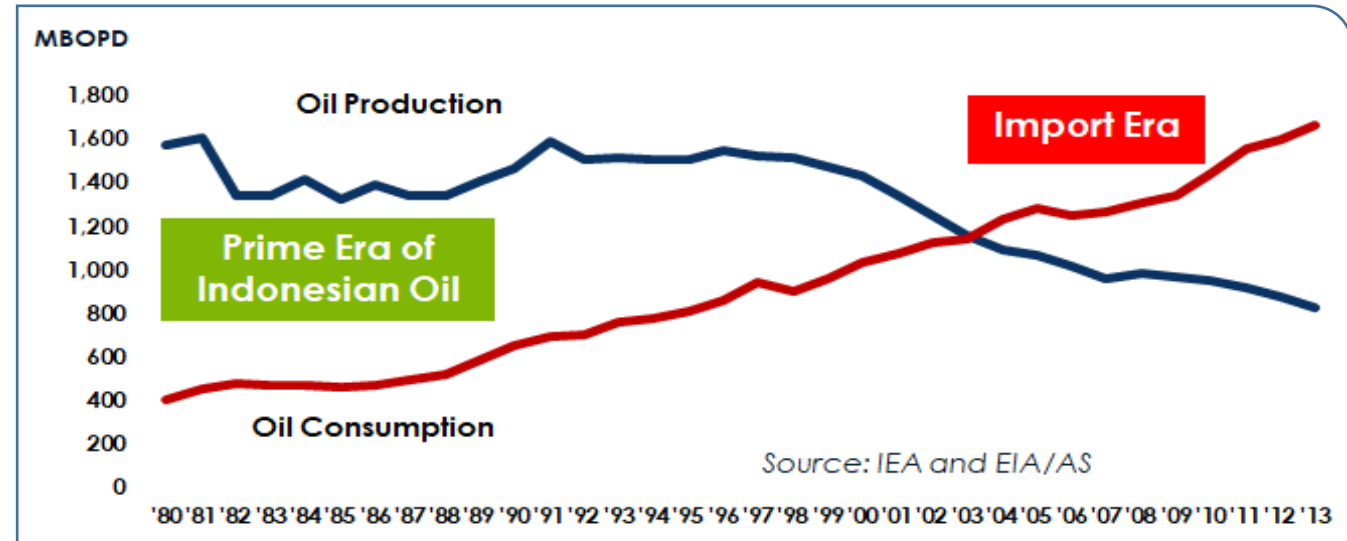


INDONESIA'S ENERGY SITUATION

Since 2008 Indonesia is no longer as oil exporting country



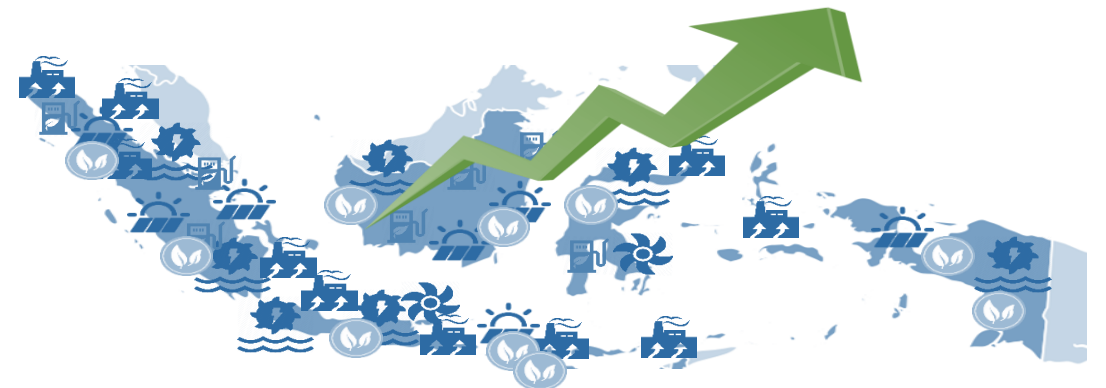
Changes in Indonesia's Energy History, from OPEC Members to Oil Importers



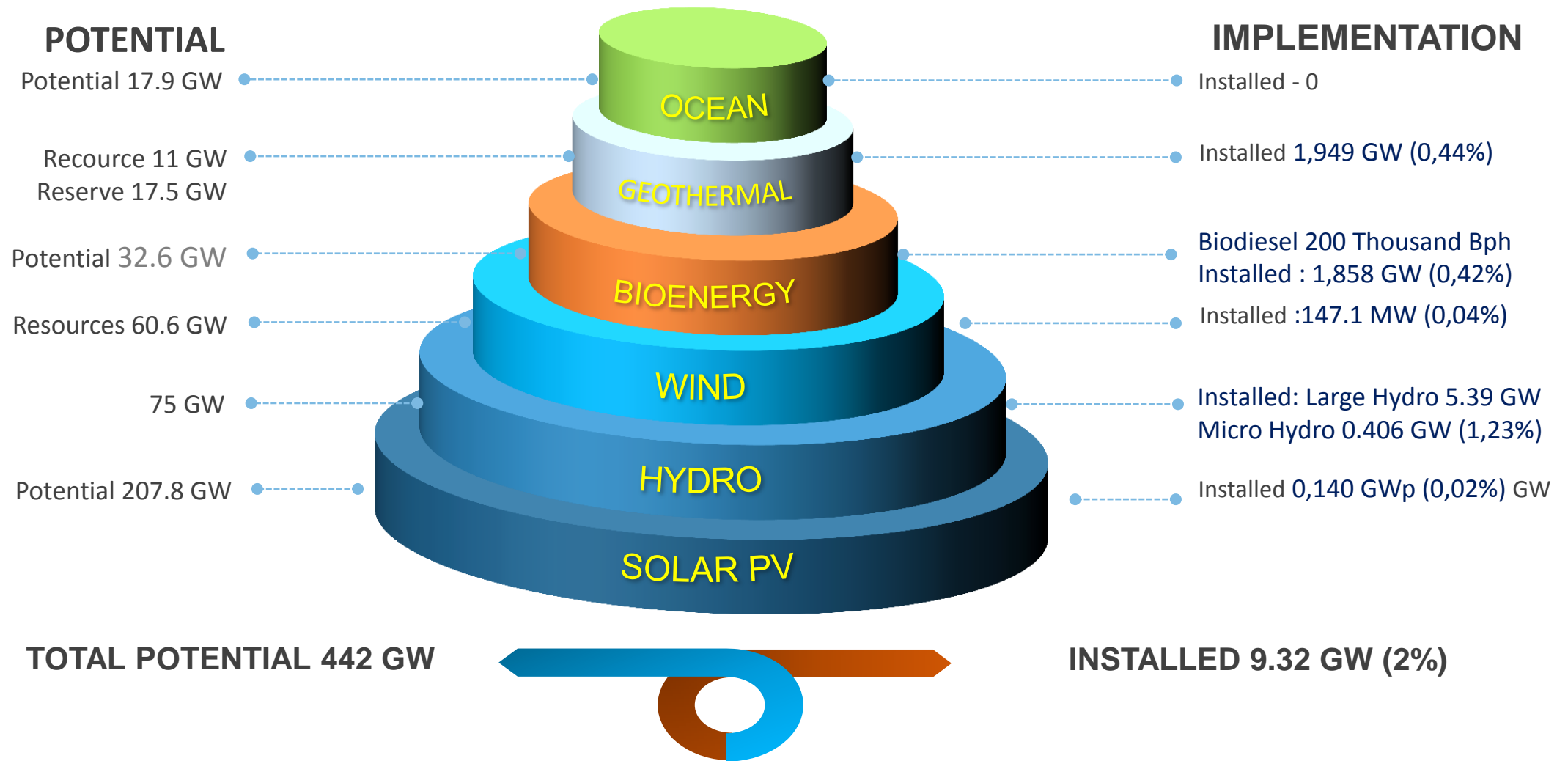
National reserves and production progressively decline



RE contribution should be increased to maintain sustainable development



RENEWABLE ENERGY POTENTIALS & IMPLEMENTATION



INDONESIA'S COMMITMENT



- ✓ The GOI committed to participate on global sustainable action as pledged by President Joko Widodo, at the 21st COP 2015 in Paris;
- ✓ The GOI ratified Paris Agreement, through the Law No.16 year 2016;
- ✓ 29% of greenhouse gas (GHG) emission reductions in 2030 to with own efforts and 41% GHG emissions reduction with International support

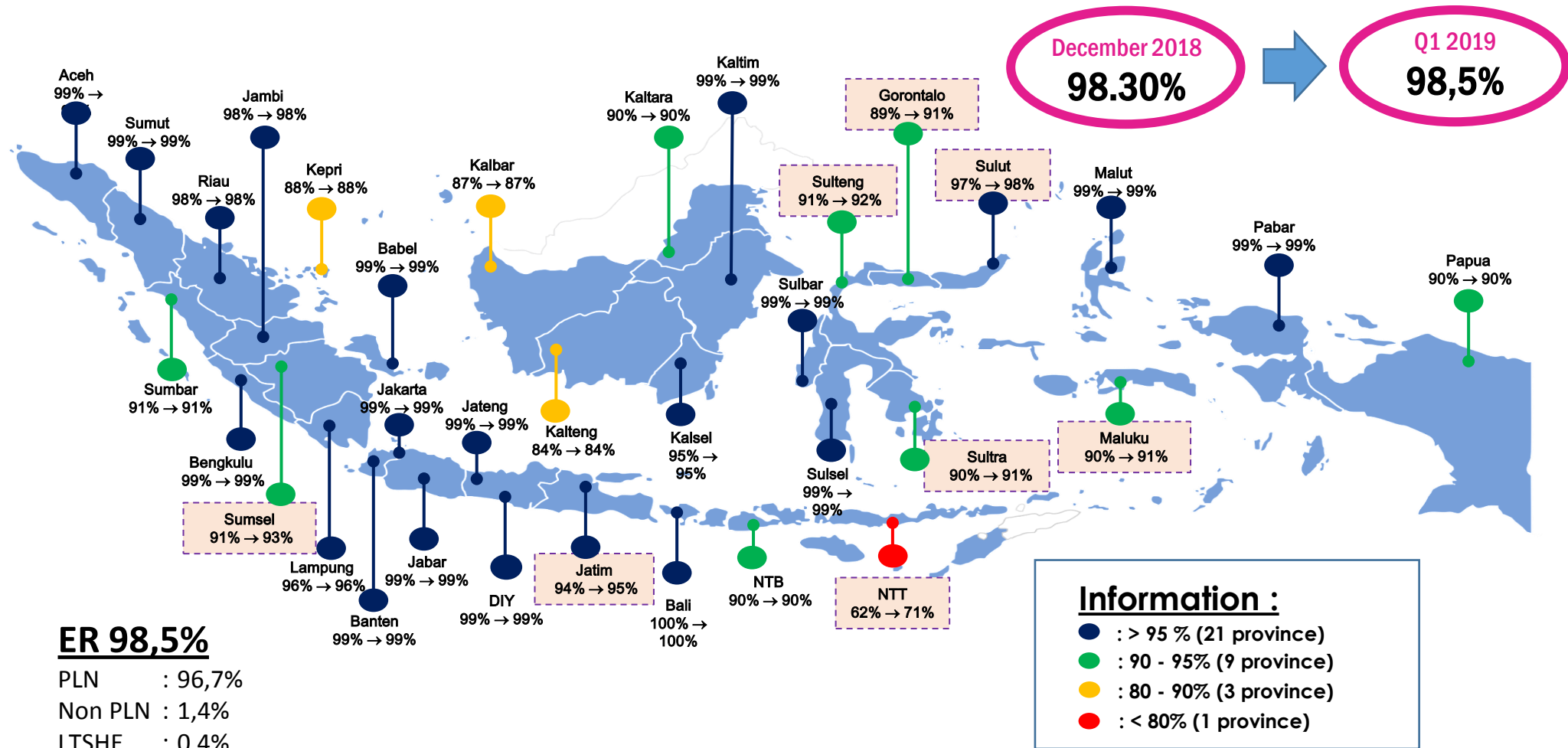
“Mitigation actions will be conducted through:

- ✓ Shift fuel subsidy budget to productive activities (infrastructure);
- ✓ **23% renewable energy of the total national primary energy mix by 2025;**
- ✓ Waste to Energy (WtE).

**GHG target for energy sector: 341 million ton CO₂ eq in 2030.
Realization in 2017 was 36 million ton, realization in Third Quarter of 2018 is 40 million ton**



ELECTRIFICATION RATIO



NATIONAL ENERGY POLICY (RE TARGET) TO ACCELERATE RENEWABLE ENERGY

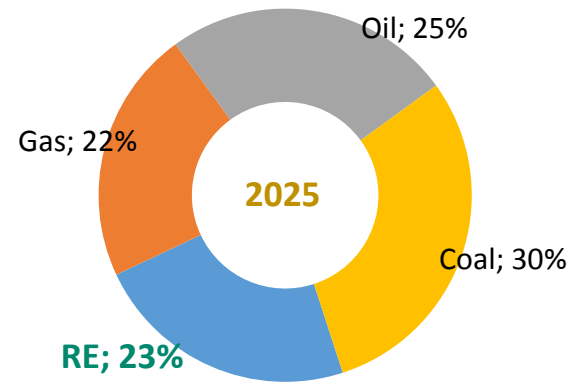
National Energy Policy (RE Target)

- Government Regulation 79/2014 on National Energy Policy
- President Regulation 22/2017 on General Planning of National Energy



Policy

- Maximize Renewable Energy utilization
- Minimize Oil utilization
- Optimize gas and new energy utilization
- Utilization of coal as the main national energy supply
- Utilization of Nuclear Power Plant as the last option



RE: 92.2 MTOE

Electricity:
69.2 MTOE (75%)

45.2 GW



GEOTHERMAL
TARGET: 7.2 GW
CAP : 1.95 GW



HYDRO
TARGET :17.9 GW
CAP : 5,89 GW



MINIHYDRO
TARGET : 3 GW
CAP : 0,31 GW



BIOENERGI
TARGET : 5.5 GW
CAP : 1.858 GW



SOLAR PV
TARGET : 6.5 GW
CAP : 0.15 GWp



WIND
TARGET : 1.8 GW
CAP : 0.147 GW



OTHER
TARGET : 3.1 GW

Non Electricity:
23.0 MTOE (25%)



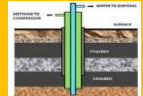
BIOFUEL
TARGET :13.8 M KI
CAP : 3.75 M KL



BIOMASSA
TARGET : 8.4 M TON
REALISATION : N/A



BIOGAS
TARGET :489.8 M M3
REALISATION : 25.67 M M3



CBM
TARGET : 46.0 MMSCFD
REALISATION : -



INCREASING RENEWABLE POWER PLANT CAPACITY



- **On-grid and off-grid communal systems:** Solar PV, Mini/ Microhydro, Wind, Marine, Bioenergy PP
- Source of Funds: **Private Sector** (Investor)



- Development of energy infrastructure for rural communities, outer islands and border areas
- **Off-grid system:** Solar PV, Mini/Microhydro, Wind, Marine, Bioenergy PP, Solar PV Street Lighting, LTSHE
- Source of Funds: **State Funded/** Special Allocation Fund (DAK)

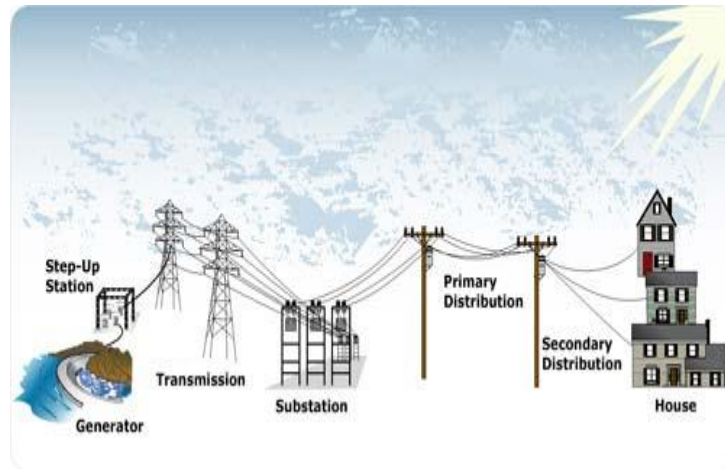
- **MEMR Reg 50 of 2017** on Utilization of Renewable Energy Sources for the Provision of Electric Power;
- **MEMR Reg 38 of 2016** on Acceleration of Electrification in Undeveloped Rural Area, Remote Areas, Border Areas, and Small Island with Population through the Implementation of Small Scale Power Supply
- **MEMR Reg 49 of 2018** on The Utilization of Rooftop Solar PV System By Consumers of PT PLN (Persero)

- **Presidential Reg. 47 of 2017** on Solar Lantern (LTSHE)
- **MEMR Reg. 3 of 2017** on Operational Guidance of DAK Physical Assignment of Small Scale Energy
- **MEMR Reg. 05 of 2018** on Procedures for the Provision of LTSHE for Communities Without Access to Electricity



MEMR REGULATION NO. 50/2017 j.o. MEMR REGULATION NO. 53/2018

Renewable Energy Utilization for affordable Electricity Provision for the people



Type of Power Plants

1. Solar
2. Wind
3. Hydro
4. Biomass
5. Biofuel
6. Biogas
7. Municipal Waste
9. Geothermal
10. Ocean Movement and OTEC

Electricity Purchase Implementation

1. Solar and Wind, Biofuel, Hydro, Biomass, Biogas and Ocean Movement and OTEC **➤➤** through direct selection
2. Geothermal and Municipal Waste **➤➤** based on Geothermal and Municipal Waste regulation

Electricity Purchase Price

Biofuel | Price based on agreement (business to business)

Solar
 Wind
 Biomass
 Biogas
 Ocean Movement and OTEC

If Generation BPP (Biaya Pokok Penyediaan/ Cost of Production) at region's electrification system :

> The national BPP on average maksimum purchasing price **85%** of region's Generation BPP

≤ The national BPP on average Price based on agreement (business to business)

Municipal Waste
 Geothermal
 Hydro

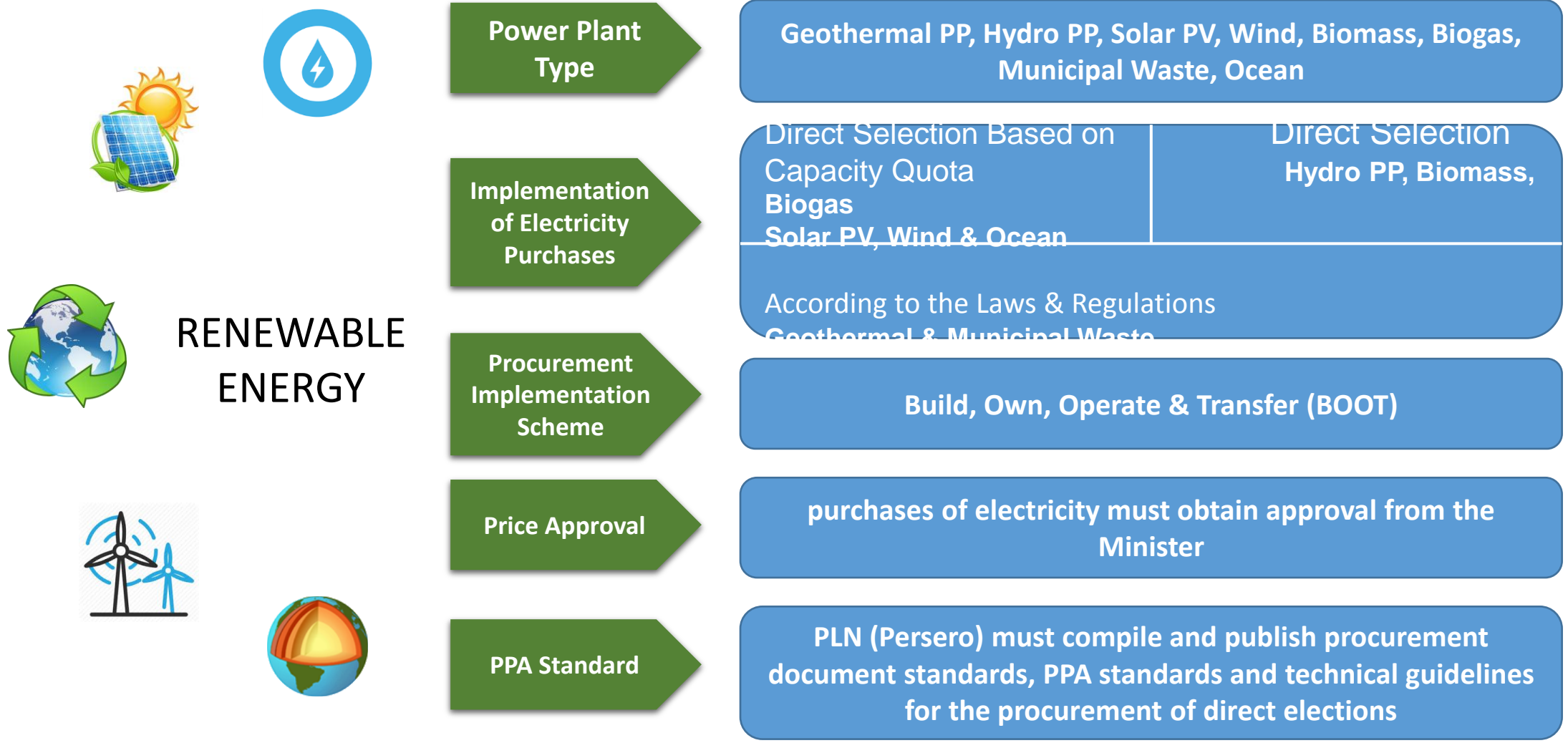
1. **If Generation BPP** at region's electrification system **>** the national BPP on average **▶** Maximum price **100%** of region's Generation BPP
2. **If Generation BPP** at region's electrification system **≤** the national BPP on average **▶** Price based on agreement (business to business)

Note:

- Construction of the transmission interconnection between the IPP and the PLN grid may be done through business-to-business basis.
- Based on Build, Own, Operate, and Transfer/BOOT scheme



UTILIZATION OF RENEWABLE ENERGY SOURCES FOR ELECTRICITY SUPPLY IN ACCORDANCE WITH MINISTER OF ENERGY AND MINERAL RESOURCES NO. 50 OF 2017

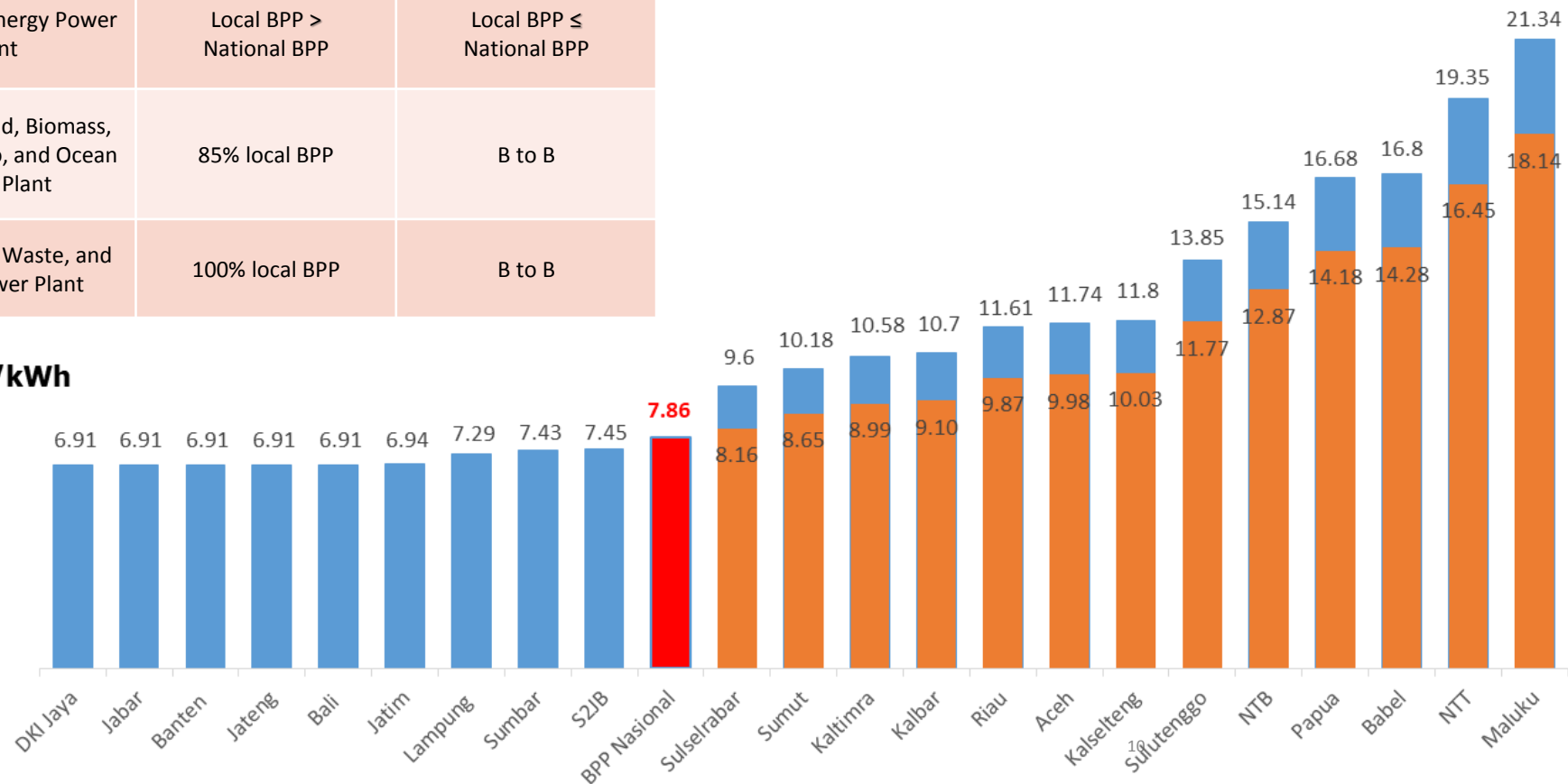


COST OF PRODUCTION (BPP) 2018 (cUSD/kWh)

MEMR Decree NO. 55 K/20/MEM/2019

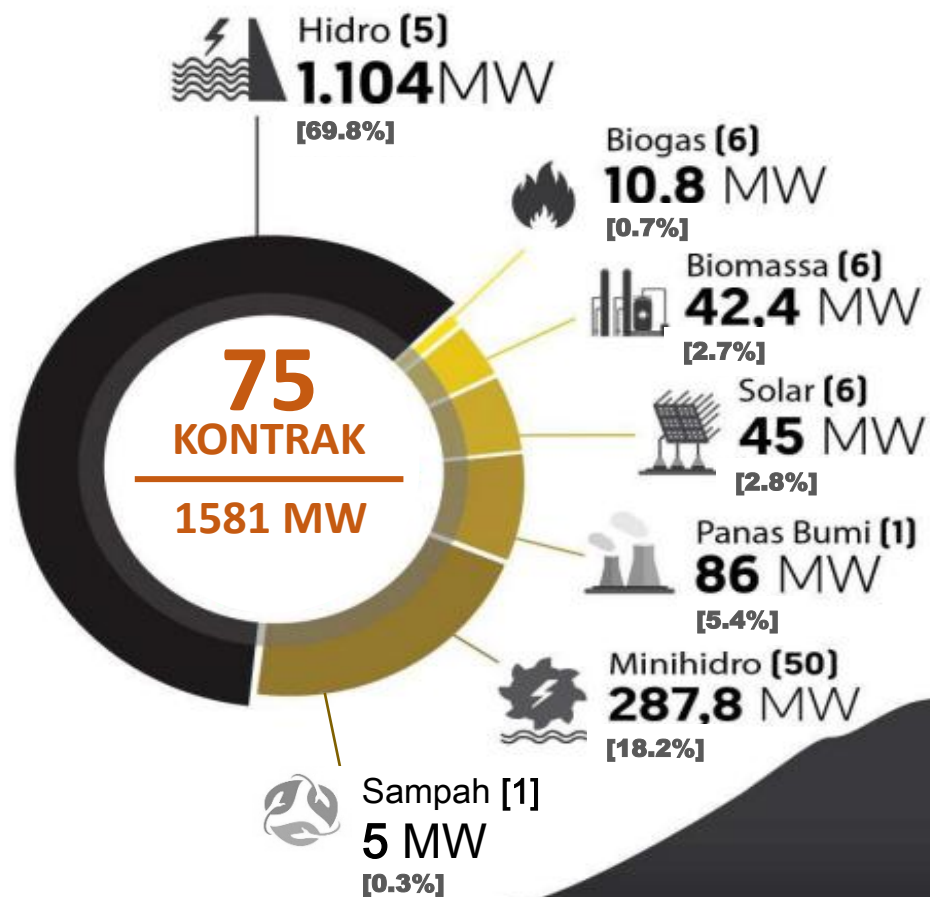
Electricity Tariff (Ministrial EMR Reg. No. 50/2017)		
Renewable energy Power Plant	Local BPP > National BPP	Local BPP ≤ National BPP
Solar PV, wind, Biomass, Biogas, Hydro, and Ocean Power Plant	85% local BPP	B to B
Geothermal, Waste, and Hydro Power Plant	100% local BPP	B to B

*USD/kWh

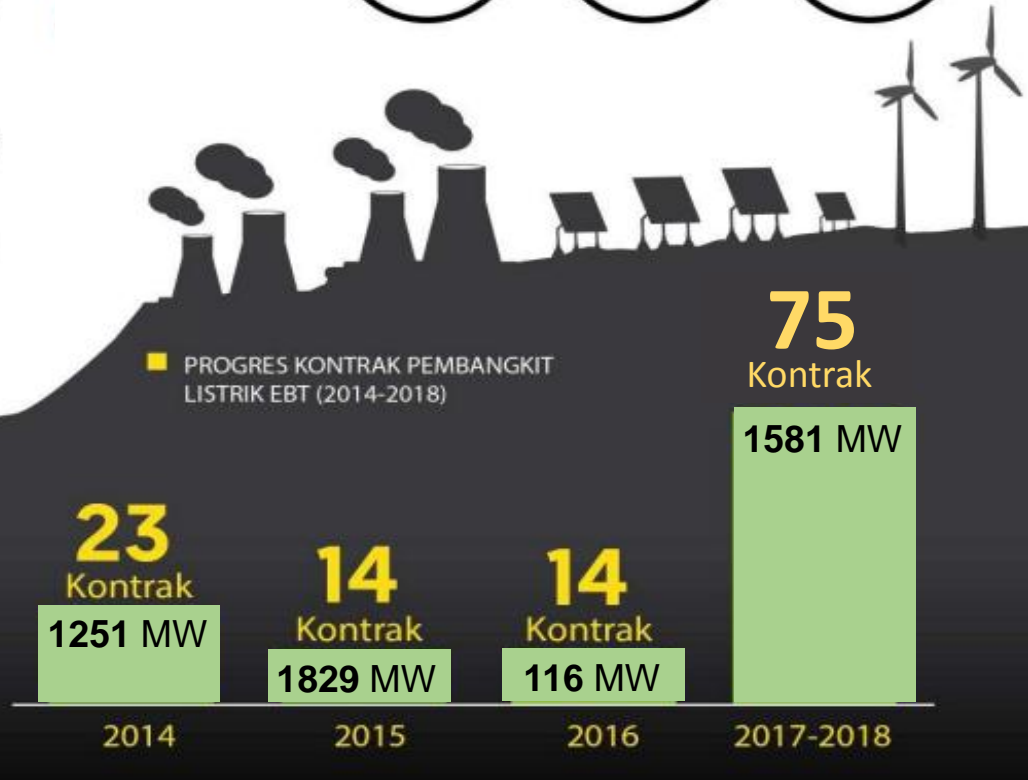


75 NEW RENEWABLE ENERGY CONTRACTS

Signed in 2017-2018



Realisasi 2017-2018



POWER SUPPLY BUSINESS PLAN BY PT PLN (PERSERO) (RUPTL 2019 – 2028)

No	RE Power Plant	Kap.	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Total
1	Geothermal	MW	190	151	147	455	245	415	2759	45	145	55	4,607
2	Large Hydro	MW	154	326	755	-	182	1484	3047	129	466	1467	8,009
3	Mini Hydro	MW	140	238	479	200	168	232	27	20	20	10	1,534
4	Solar PV	MWp	63	78	219	129	160	4	250	-	2	2	908
5	Wind	MW	-	-	30	360	260	50	150	-	-	5	855
6	Biomass/Municipal Waste	MW	12	139	60	357	50	103	19	5	15	35	794
7	Ocean	MW	-	-	7	-	-	-	-	-	-	-	7
8	BIOFUEL	Ribu KL	520	487	291	167	151	146	154	159	166	175	2,415
Total		MW	560	933	1,697	1,501	1,065	2,287	6,251	199	648	1,574	16,714

Ministerial Decree of MEMR No. 39K/20/MEM/2019 on Ratification Power Supply Business Plan of PT PLN (Persero) 2019-2028



POWER PURCHASE AGREEMENT PLAN 2019

No	Regional	Project	Capacity (MW)	Estimated Investment Needs
1	Sumatera (SUM)	30	1.181,02	USD 2.572.875.000
2	Jawa Bagian Barat (JBB)	6	200	USD 495.500.000
3	Jawa Bagian Tengah (JBT)	19	1.672,60	USD 3.704.700.000
4	Jawa Bagian Timur, Bali dan Nusa Tenggara (JTBN)	48	474,80	USD 811.800.000
5	Kalimantan (KAL)	14	137,70	USD 273.400.000
6	Sulawesi (SUL)	26	991,52	USD 2.493.220.000
7	Maluku Papua (MP)	12	60	USD 156.765.000
	TOTAL	155	4.718,14	USD 10.508.260.000
				IDR147.115.640.000.000

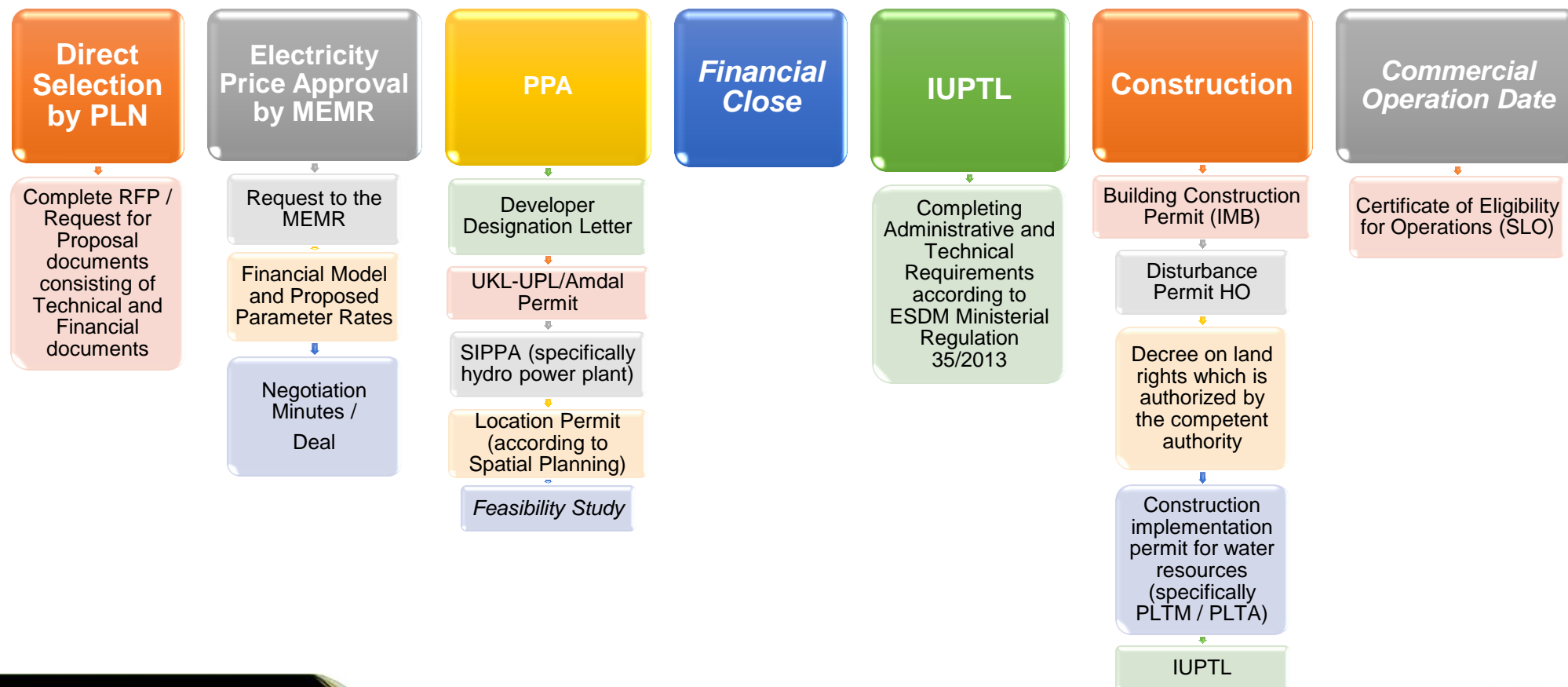


BUSINES PROCESS OF RE POWER PLANT

Renewable energy developer who is interested in participating in the procurement process by PT PLN must register as a list of selected providers of PT PLN, with the following conditions:

1. Having technical experience in developing renewable energy up to the last 10 years
2. Have financial ability

Business Process based on MEMR Regulation No. 50/2017:



ELECTRICITY PERMIT ISSUANCE THROUGH ONLINE SINGLE SUBMISSION

(PP Number 24 of 2018 concerning Electronic and Integrated Business Licensing Services and MEMR Regulation No. 39 of 2018 concerning Electronically Integrated Business Licensing Services Licensing)

The authority of the Minister of Energy and Mineral Resources related to Electricity Permits through ONLINE SINGLE SUBMISSION (OSS):

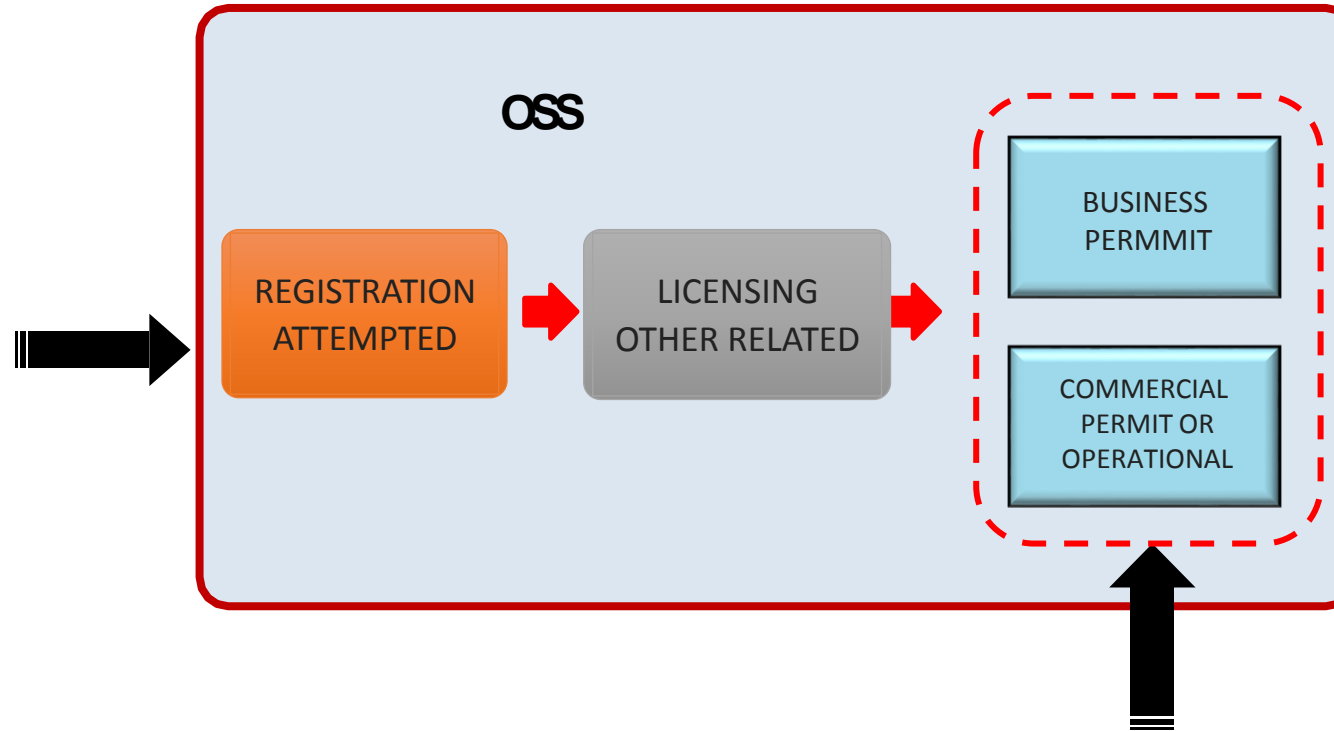
- a. Business Permit:
 1. Electricity Supply Business License;
 2. Operating Permit;
 3. Establishing Business Areas;
 4. Issuance of electricity supporting service business licenses conducted by SOEs or growers foreign capital / majority of shares owned by foreign investors;
 5. License to Buy and Sell Cross-Country Electricity;
 6. Electricity Network Utilization Permit for Telecommunications, Multimedia, and Information Purposes from license holders determined by the Central Government
- b. Commercial Permit:
 1. Certificate of Eligibility for Operation;
 2. Business Entity Certificate;
 3. Certificate of Competence in Electric Power Engineering.



BUSINESS PERMIT PROCEDURE

Businessmen:

- Individual
- Business Entity:
(PT, Perum.
Perumda, badan
hukum, BLU,
yayasan, koperasi,
CV, Firma,
persekutuan perdata)

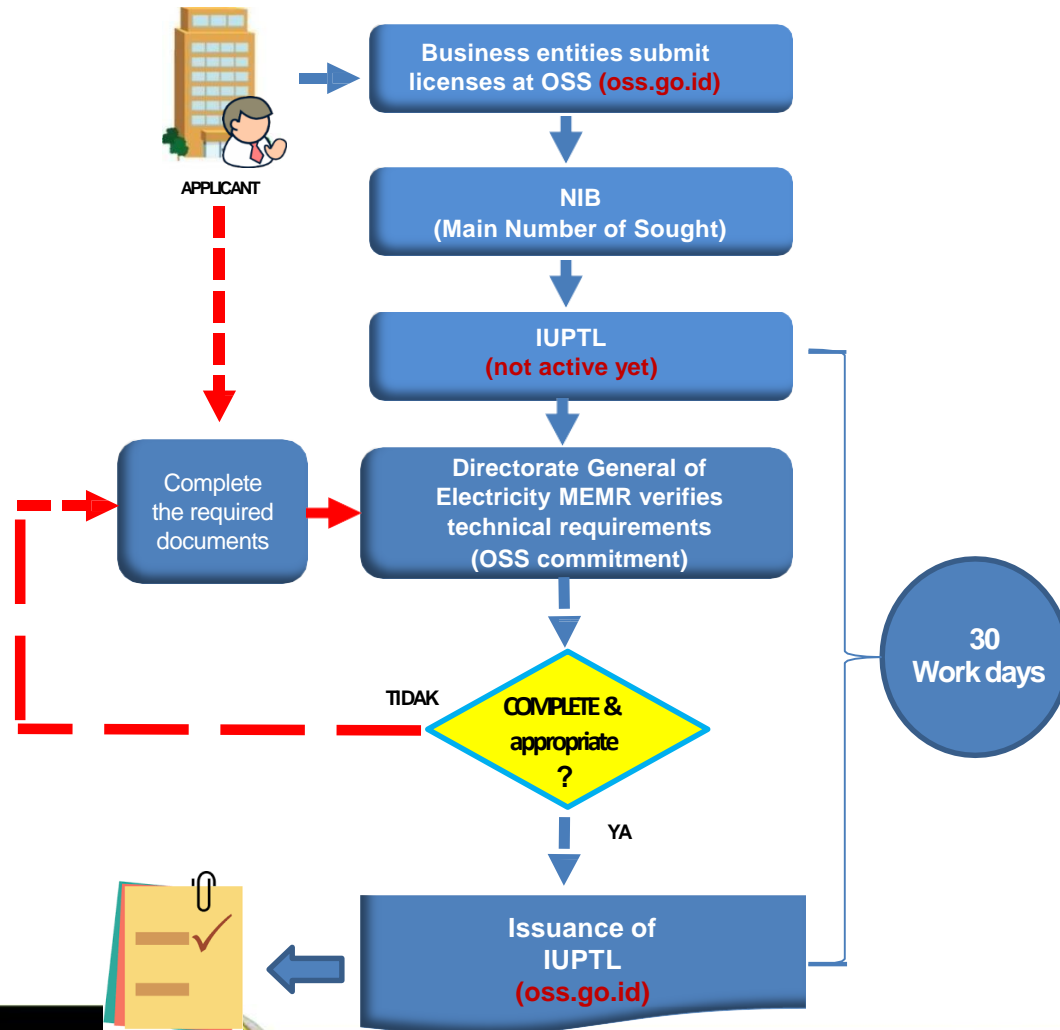


Administrative requirements are fulfilled based on the Main Business Number (NIB) in accordance with the electricity business field specified in the standard classification of Indonesian business fields

- Permits are issued with commitments that must be fulfilled within the stipulated time period
- If you cannot fulfill the commitment in the term the specified time, Permission can be canceled

PROCEDURE FOR APPLICATION OF ELECTRICITY SUPPLY BUSINESS LICENSE (IUPTL)

(MEMR Regulation No. 35 of 2013, MEMR Regulation No. 39 of 2018, and the Ministry of Economic Affairs Circular No. PENG-1 / SES.M.EKON / 08/2018)



IUPTL is Electricity Supply Business License for public use

Requirement of IUPTL

NIB (Nomor Induk Berusaha) Requirement:

1. Applicant identity;
2. Deed and Ratification as an Indonesian legal entity;
3. NPWP;
4. Location permit;
5. Environmental Permit. (In accordance with the laws and regulations in the field of environmental protection and management life);

Technical Requirement (OSS Commitment)

1. Applicant profile (Composition of Directors, Commissioners and Composition Stock);
2. Funding Capability;
3. IUPTL feasibility study;
4. Installation location except for Electricity Sales Business
5. Single line diagram;
6. Business type and capacity;
7. Development Schedule;
8. Operating Schedule
9. Approval of the selling price of electricity and
 - ✓ Electric power sell agreement → for power business
 - ✓ Network lease agreement → for transmission and distribution business
10. Determination of business area (according to ESDM Regulation No 28/2012) and RUPTL for Distribution, Sales, or Integrated Businesses.

INCENTIF FISCAL FACILITY FOR RE

TAX ALLOWANCE

1

- ✓ Government Regulation No. 18/2015 jo Government Regulation No. 9/2016
- ✓ BKPM Regulation No. 6/2018
- ✓ MEMR Regulation No. 16/2015

30% from total investment
Income tax reduction for 6 years, 5% every year..

145 Business Segment
Qualified for tax benefits, expanded from 129 segments in the previous regulation.

under **certain requirements:**
investment value or export orientation, employment, local content.



Implementation :
9 IPP (hydro & wind),
total capacity 148,19
MW

IMPORT FACILITY

2

- ✓ MoF No.176 / 2009 jo. MoF No. 188/2015
- ✓ MoF No. 66/2015
- ✓ BKPM Regulation No. 13/2017

Import duties on machinery and equipment, item, and raw materials for production
Exemption from import duty on machinery and equipment:

- 2 years exemption from import duty on raw materials
- Additional 2 years exemption from import duty for raw materials if the company uses local production machinery and equipment (min 30%)

MOF Regulation No. 66/PMK.010/2015

Capital Import Duty for the Development and Expansion of the Industrial Electricity Generation for General Purpose



TAX HOLIDAY

3

- ✓ MoF Regulation No. 35/2018
- ✓ BKPM Regulation No. 1/2019

5-20 years Free Tax

IDR **500** miliar Minimum investment
Max . 100%

income tax reduction

Implementation: 2 IPP hydro, total capacity 531MW

MINI TAX HOLIDAY

5 years Free tax

IDR **100** sd **500** miliar

Minimum investment

Max . 50%

income tax reduction



MEMR REGULATION 38/2016

Acceleration of Electrification in Undeveloped Rural Area, Remote Areas, Border Areas, and Small Island with Population through the Implementation of Small Scale Renewable Energy



Electrification program with total capacity up to 50 MW is intended for :

- Undeveloped Villages
- Remote Areas
- Villages in Border Areas
- Inhabited Small Islands

Renewable Energy To Provide Electricity

Electrification acceleration program in rural areas by prioritizing New and Renewable Energy based power plant

“There are > 2500 Villages without Electricity”

GOI target to electrify 2510 villages by 2019

Business Area Determination

- The Governor proposes business area.
- The Minister of EMR authorization to determine the business area that has been proposed by Governor.
- The Governor offers business area to business entities.
- The Governor issues IUPTL.
- The Minister of EMR appoints business entities that have already had IUPTL.

Procedure

Investment

Based on Governor's proposal, then Auction is held for Business Area Developer.

Assignment

Head of Local Government can assign BUMD if there is no interested investor

Tariff

Subsidies

The GoI calculates the amount of the subsidy to be proposed to the Parliament (DPR) to be validated

Non Subsidies with Agreement Tariff (refer to BPP PLN)

Tariff will be set by MEMR or Governor

Non Subsidies with National tariff

Electricity tariff will correspond with PLN tariff



MEMR REGULATION NO.49 YEAR 2018 CONSERNING SOLAR PV ROOFTOP

OBJECTIVES/ADVANTAGES

Community

- Reducing monthly electricity bills.
- Improving the role of the community regarding the use and management of renewable energy

Government and PLN

- Increasing the percentage of NRE in the national energy mix.
- Accelerating the solar energy utilization.
- Encouraging the local solar energy industry.
- Escalating the NRE investment.
- Increasing energy security and energy independency.
- Reducing green house gas emission.
- Increasing the rate of employment.

EXPORT AND IMPORT CALCULATION

Formula: Imported kWh – 65% of Exported kWh

Total energy imported from PLN grid to consumer per month

Total energy exported from consumer to PLN grid per

Imported kWh > 65% Exported kWh

The total energy deviation is paid to PLN as usual

Imported kWh < 65% Exported kWh

The excess energy exported from the consumer for a particular month will reduce electricity bill for the following month. However, accumulated excess energy will be reset every 3 months (January-March, April-June, July-September, and October-

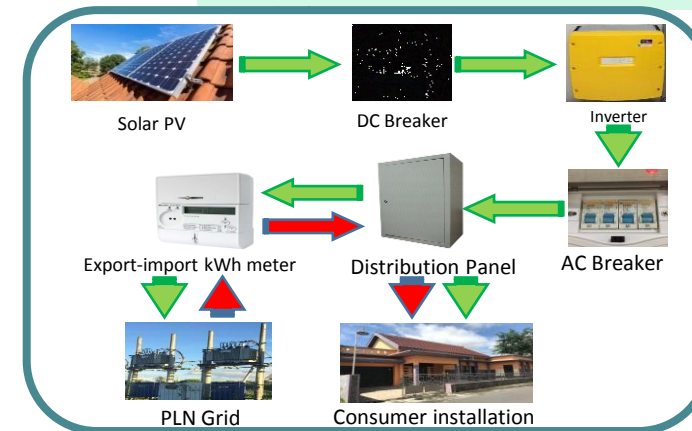
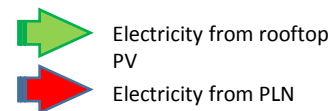
ROOFTOP SOLAR PV SYSTEM

INCLUDING: solar PV, inverter, consumer electricity connection, safety system, dan export-import kWh meter.

CONSUMER: PLN Consumer including industrial sector.

CAPACITY: 100% installed capacity of consumer electricity (Watt).

LOCATION: rooftop, wall, or other parts of building of PLN consumer.





KEMENTERIAN ESDM
REPUBLIK INDONESIA



Thank You

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