



Ministry of Energy and Mineral Resources  
Republic of Indonesia

# Regulation and Development of New and Renewable Energy in Indonesia

Japan-Indonesia Business Forum for Energy Efficiency,  
Conservation and Renewable Energy

**Harris**

**Director for Various of New and Renewable Energy**  
Directorate General of New, Renewable Energy and  
Energy Conservation  
Ministry of Energy and Mineral Resources

Jakarta, 14 November 2018



[www.esdm.go.id](http://www.esdm.go.id)



@KementerianESDM



Kementerian Energi  
dan Sumber Daya Mineral



Kementerian ESDM



@kesdm

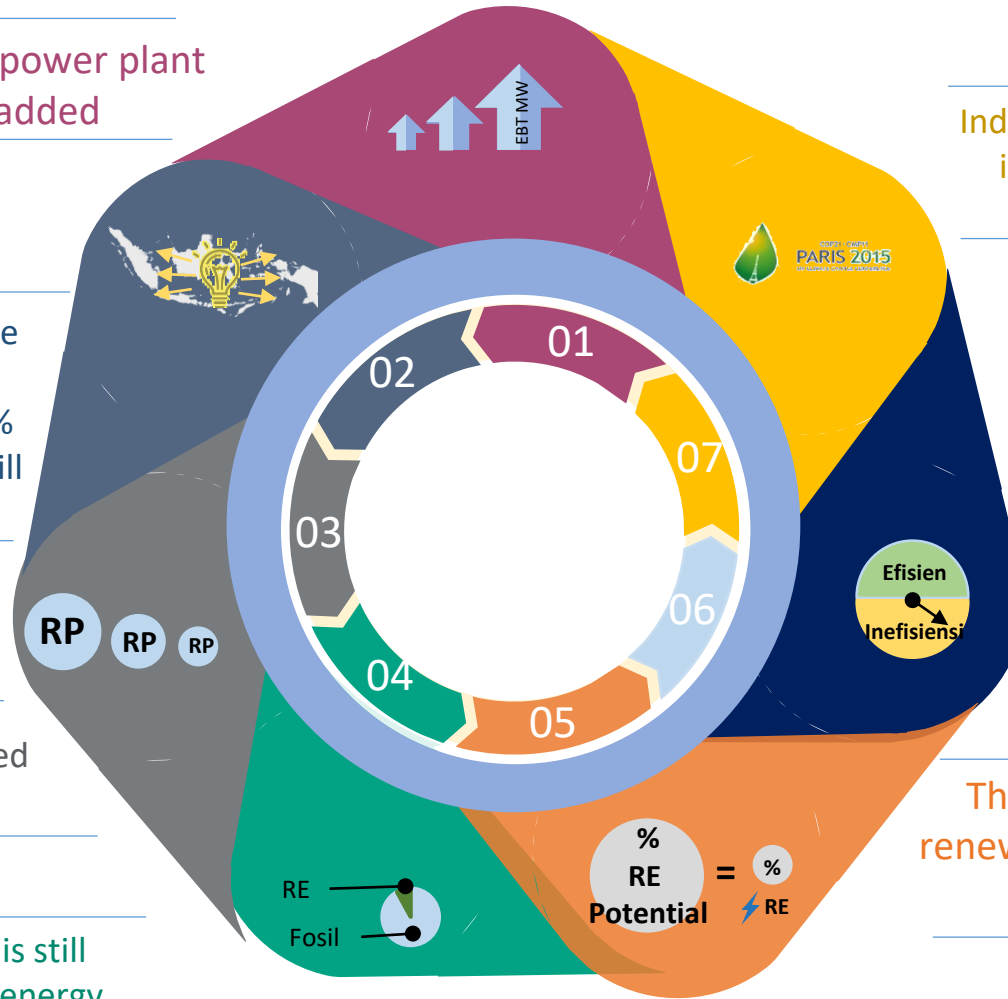
# CURRENT CONDITION

The capacity of RE power plant needs to be added

The energy distribution needs to be improved to increase the current electrification ratio 98.05%  
There are 2,519 villages that are still dark, or 256,114 homes

Energy prices must be suppressed to make more affordable

Indonesia's energy is still dominated by fossil energy



Indonesia has committed to implementing the Paris Agreement

Inefficient energy use

The abundant potential of renewable energy has not been optimally utilized

# NATIONAL COMMITMENT ON EMISSION REDUCTION

*Indonesia commits to reduce (its GHG emission) by 29% from BAU level by 2030 and 41% with international assistance*



The commitment of President Joko Widodo in COP 21 December 2015 in Paris, Indonesia will reduce GHG emissions by 29% with its own abilities and 41% with international support.

Government through the Ministry LHK signed the Paris Agreement on April 22, 2016.  
(Paris Agreement has been signed by 180 parties)



# ACCELERATING EFFICIENCY IN ELECTRICITY PROVISION

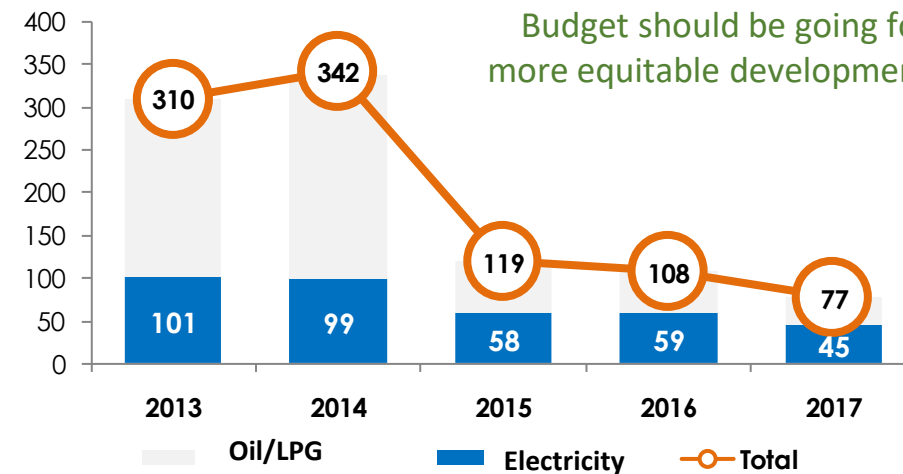


“Producing electricity, as much as it can be, shall the operational cost be relatively as much, it means the production is not efficient. Such condition makes our industry not competitive.”

- Ignasius Jonan

“ Electricity provision should be efficient so that electricity subsidy will not burden the State Budget, thus a better electricity price for the people.

Energy Subsidy | Trillion Rupiah



“Energy subsidy in the State Budget should be going for a more equitable development.”

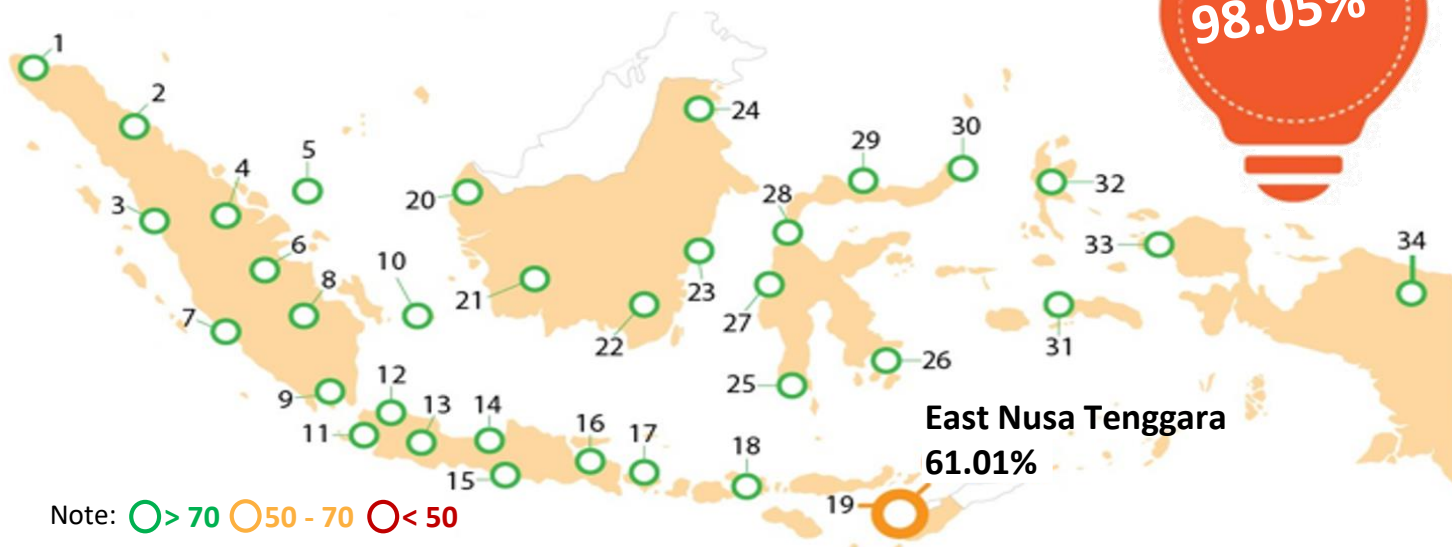
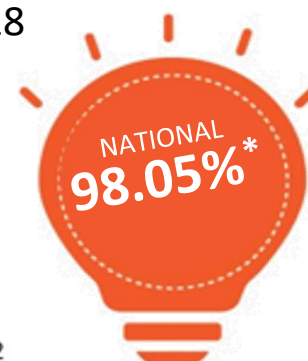
\* 2016 angka realisasi *unaudited* | 2017 angka APBN

Cheaper price leads to a better development economy, including the industrial sector.



# ELECTRIFICATION RATIO 2018

The Achievement for national electrification ratio until Q3 2018 has reach 98.05%\*, with the composition as follows: PLN 95.43%; Non-PLN 2.50%; and LTSHE 0.12%.



SUMATRA		
1	Aceh	98.59
2	North Sumatra	99.99
3	West Sumatra	91.72
4	Riau	98.44
5	Riau Islands	88.10
6	Jambi	96.54
7	Bengkulu	99.77
8	South Sumatra	90.79
9	Lampung	94.58
10	Babel	99.99

JAVA-BALI-NUSRA		
11	Banten	99.99
12	Jakarta	99.99
13	West Java	99.99
14	Central Java	98.15
15	Yogyakarta	99.99
16	East Java	93.87
17	Bali	99.99
18	West Nusa Tenggara	88.52
19	East Nusa Tenggara	61.01

KALIMANTAN		
20	West Kalimantan	86.66
21	Central Kalimantan	84.56
22	South Kalimantan	94.66
23	East Kalimantan	99.99
24	North Kalimantan	90.28

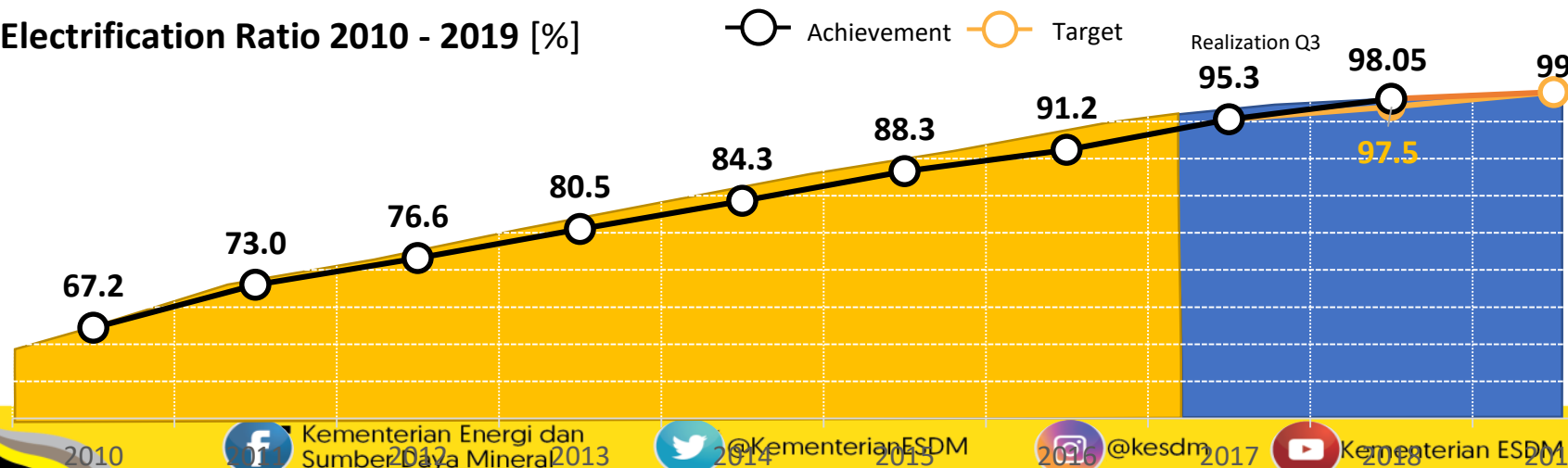
SULAWESI		
25	South Sulawesi	99.99
26	Southeast Sulawesi	86.68
27	West Sulawesi	99.73
28	Central Sulawesi	91.54
29	Gorontalo	88.41
30	North Sulawesi	97.11

MALUKU & PAPUA		
31	Maluku	89.18
32	North Maluku	99.45
33	West Papua	99.99
34	Papua	81.66

\*) unaudited

Electrification Ratio 2010 - 2019 [%]



# Renewable Energy Potentials

## Geothermal



- Resource: 11,0 GW
- Reserve: 17,5 GW
- Utilization for PLTP: 1,949 GW (0,44%)

## Hydro



- Resource: 75 GW (19,3 GW)
- Utilization for: PLTA: 5,124 GW
- PLTMH: 0,225 GW (1,21%)

## Bioenergy



- Resource: 32,6 GW
- Resource BBN: 200 Thou Bph
- Utilization for: PLTBio: 1,857 GW (0,42%)
- BBN: 3 million kL per year

## Wind



- Resource: 60,6 GW
- Utilization PLTB: 0,076 GW (0,02%)

## Solar

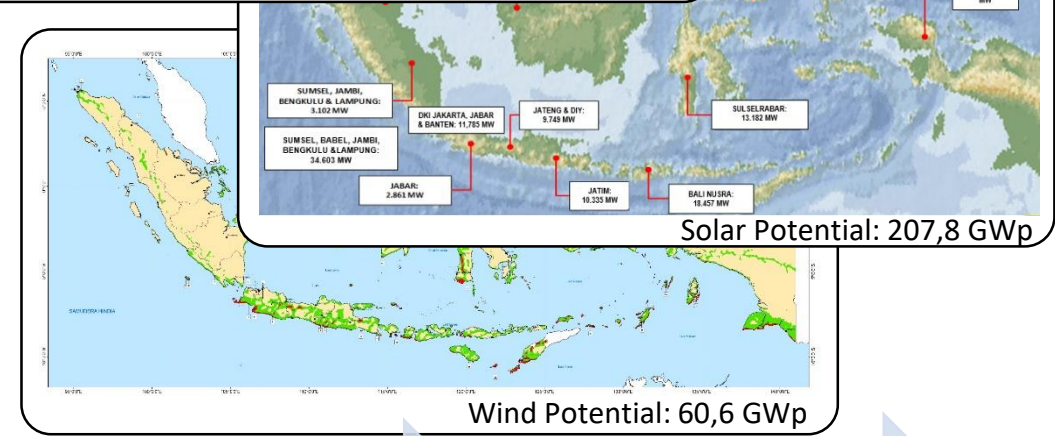
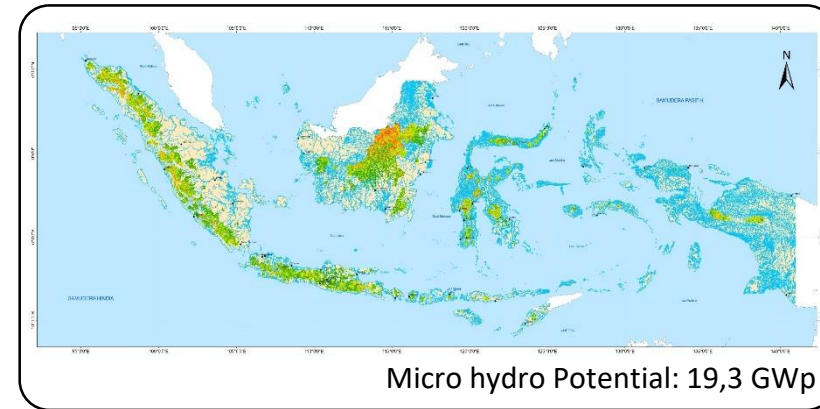


- Potential PLTS: 207,8 GWp
- Utilization for: PLTS: 0,090 GWp (0,02%)

## Ocean



- Potential: 17,9 GW
- Utilization: -



# National Energy Policies

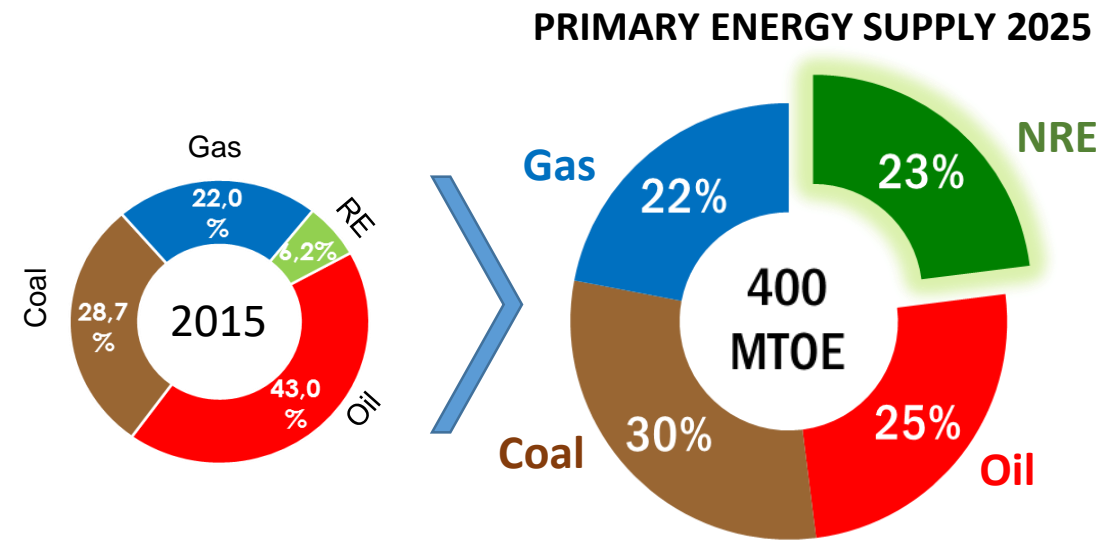
- 1 **Maximizing** renewable energy utilization;
- 2 **Minimizing** oil utilization;
- 3 **Optimizing** natural gas and new energy utilization;
- 4 **Utilizing** coal as a reliable national energy supply;
- 5 **Utilizing** nuclear as the last option.

Source: the article 11, Government Regulation No. 79 year 2014 concerning National Energy Policy.



# NATIONAL ENERGY POLICY TO ACCELERATE RENEWABLE ENERGY

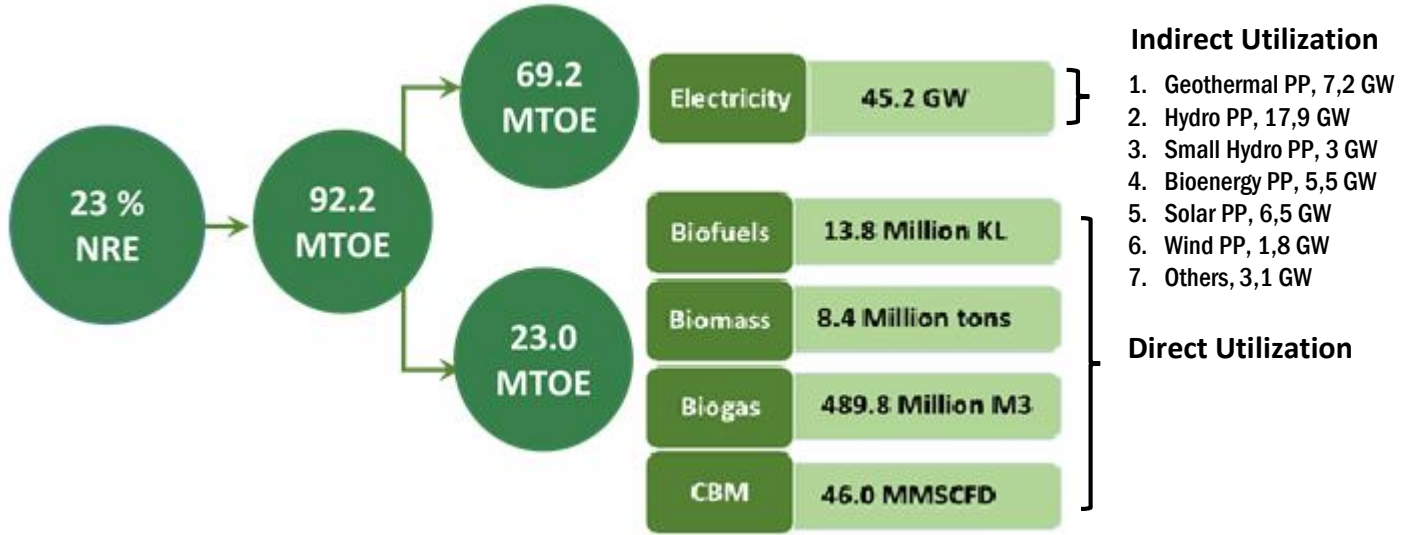
**Maximize** renewable energy utilization;  
**Reduce** fuel-oil consumption and refined oil import



**BASED ON:**

- Government Regulation No. 79/2014 on National Energy Policy
- Presidential Regulation No. 22/2017 on General Plans Of National Energy

- RE (Electricity) Price (Private) Based on Minister Reg 50/2017 and 38/2016;
- RE (Electricity) State Budget, Based on Minister Reg 39/2017;
- Biofuel Mandatory: PSO and Non PSO





# Increasing Renewable Power Plant Capacity

## Commercial



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

- **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

## Non-commercial



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

- **Presidential Reg. 47 of 2017** on 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 Reg. 12 of 2018** on the Implementation of Physical Activity of New Renewable Energy Utilization

# 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

# Renewable Energy for Affordable Electricity Price

## MEMR Regulation No. 50/2017

### Implementation of Power Purchase



General auction in accordance to the provisions of the legislation



Geothermal dan Municipal Waste Power Plant



Through direct selection mechanism



Hydro, Solar PV, Wind, Biomass, Ocean Currents, and Biogas Power Plant

### Power Purchase Price

- ✓ Solar
- ✓ Wind
- ✓ Biomass
- ✓ Biogas
- ✓ Ocean Current

If the local power production cost  $>$  National average power production cost

$>$  Maximum purchase price is **85%** of local power production cost

$\leq$  National average power production cost  
Power Production Cost based on the agreement (BtoB)

- ✓ Municipal Waste
- ✓ Geothermal
- ✓ Hydro

If the local power production cost  $>$  national average power production cost

$\triangle$  Maximum purchase price is **100%** of local power production cost

**Based on agreement**, if power production cost in Sumatera, Java, Bali or local electricity system  $\leq$  National Average power production cost.

Note:

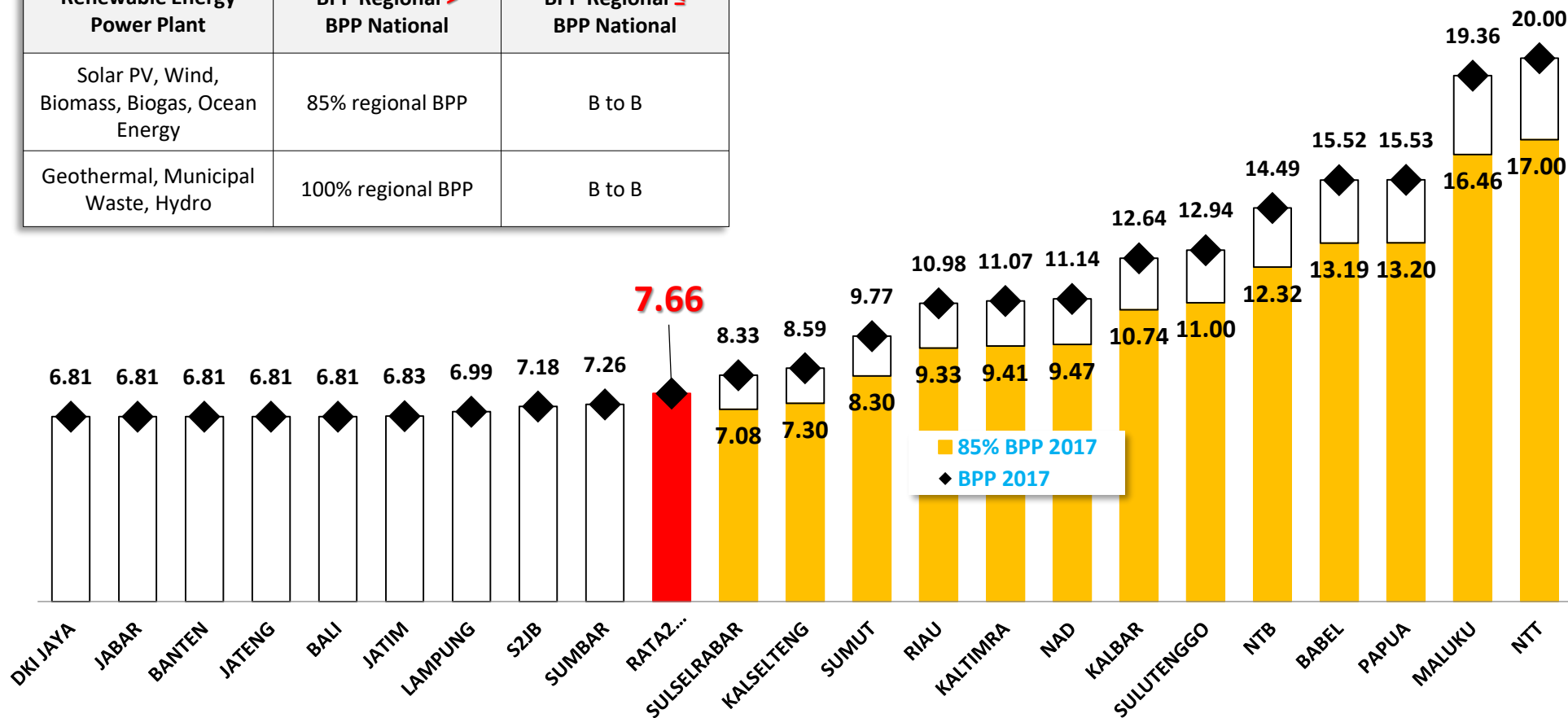
- Construction of the transmission interconnection between the IPP and the PLN grid may be done through business-to-business basis.
- Based on Build, Own, Operate, and Transfer/BOOT scheme



# Power Generation Cost (BPP) 2017 (cUSD/kWh)

MEMR Decree No. 1772 K/20/MEM/2018

Electricity Tariff (MEMR Regulation No. 50/2017)		
Renewable Energy Power Plant	BPP Regional > BPP National	BPP Regional ≤ BPP National
Solar PV, Wind, Biomass, Biogas, Ocean Energy	85% regional BPP	B to B
Geothermal, Municipal Waste, Hydro	100% regional BPP	B to B



# Wind Farm Energy Projects

**Wind Power Plant Sidrap  
(30x2.5 MW) COD April 2018**



Located at  
Sidereng Rappang (SIDRAP) Regency  
South Sulawesi

Existing Renewable Energy  
Projects



Electricity Production  
247 GWh/year



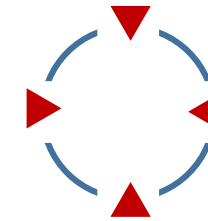
PPA Price :  
US\$ 11.41 cent/kWh



Investment  
US\$ 150 Million



Average Wind Speed  
(85 m) 7+ m/s (25+ KPH)

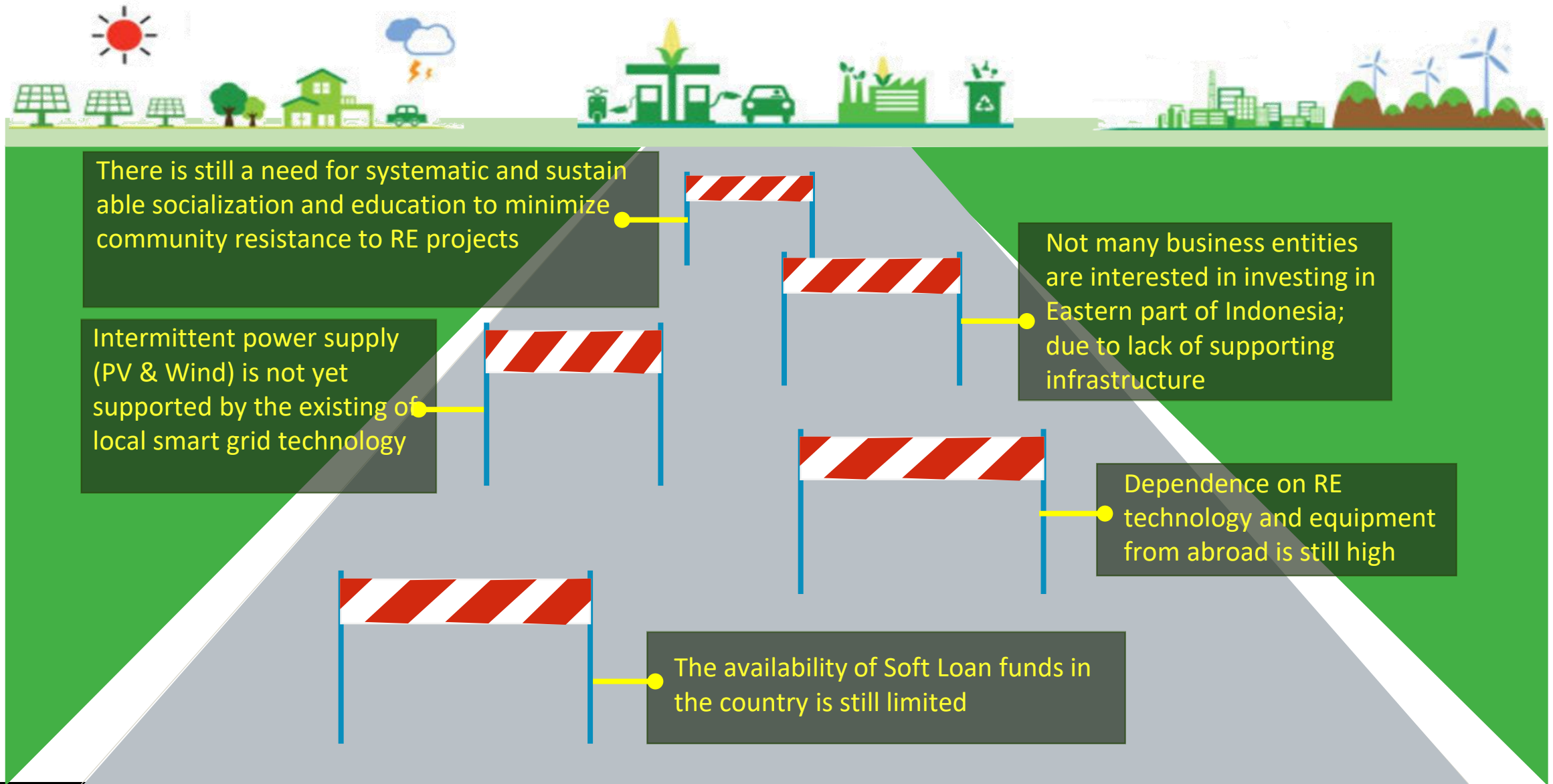


**PLTB Jeneponto  
Capacity 60 MW**

**PLTB Sidrap II  
Capacity 50 MW**

**PLTB Tanah Laut  
Capacity 70 MW**

# CHALLENGE OF RENEWABLE ENERGY INFRASTRUCTURE DEVELOPMENT



# CONCLUSION

1. Investment opportunities for Renewable Energy and Energy Conservation are still wide open for private sector due to:
  - Increased energy consumption;
  - Target of 100% electrification ratio by 2020;
  - Renewable Energy targets 23% by 2025;
  - Target per capita consumption of electricity is 2500 kWh / year in 2025;
2. A number of regulations have been prepared to encourage Renewable Energy investments;
3. Revocation / Simplification of regulations is also done to cut bureaucracy / facilitate investment;
4. Cooperation / partnership in Renewable Energy will increase for investment and capacity development;



# Thank You



## Go Green Indonesia ! GREEN ENERGY for a BETTER ENERGY

MINISTRY OF ENERGY AND MINERAL RESOURCES OF THE REPUBLIC OF INDONESIA  
DIRECTORATE GENERAL OF NEW, RENEWABLE ENERGY AND ENERGY CONSERVATION

Jalan Pegangsaan Timur No. 1 Menteng, Jakarta Pusat 10320; Telp/Faks : 021-31924540

