



# **INDONESIA ELECTRICITY POLICY**

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## **JICA TRAINING ENERGY POLICY**

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Participant from Indonesia

# OUTLINE

**1** ELECTRICITY DEVELOPMENT POLICY

**2** CURRENT STATE

**3** ELECTRICITY CHALLENGE

**4** DEVELOPMENT PLAN



# ELECTRICITY DEVELOPMENT POLICY (1)

## 1 The Objective

To ensure the availability of electricity in sufficient quantity, good quality and reasonable price in order to increase the welfare prosperity of the people.

## 2 Control and Business

- Electricity provision shall be under the control of the state, which is provided by the Government and the regional governments under the principle of regional autonomy.
- The conduct of electricity provision business by the Government and the regional governments shall be conducted by state-owned enterprise and region owned enterprise.
- Private business entity, cooperative and self-supporting community may participate in the business of electric power supply.
- The Government and/or regional governments authorized to allow opportunities to region owned enterprise, private entities, or cooperatives to conduct integrated electricity provision business in areas where power service is not yet provided.

# ELECTRICITY DEVELOPMENT POLICY (2)

## 3 Utilization Of Primary Energy Source

- Primary energy sources shall be used optimally in accordance with the National Energy Policy to ensure the sustainability of electricity supply.
- Shall be carried out by prioritizing the new and renewable energy sources.
- Domestic primary energy sources shall be prioritized for national electricity interest.

## 4 Funding

For the supply of electric power, the Government and regional government shall make available certain amount of fund for:

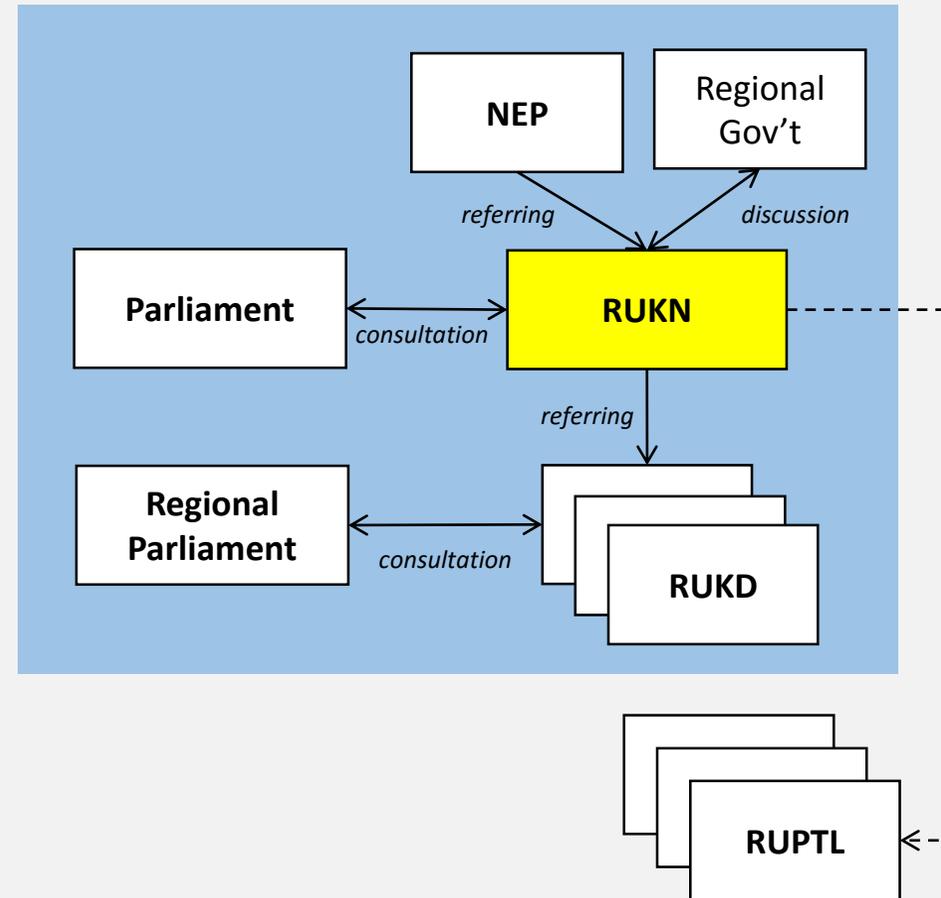
- low income group of community;
- electric power supply facility in undeveloped regions;
- electric power generation in isolated region and at border area; and
- rural electricity.

# ELECTRICITY DEVELOPMENT POLICY (3)

## 5

### General Plan for Electricity

- General Plan for National Electricity (RUKN) shall be prepared on the basis of National Energy Policy and established by the Government after consultation with the parliament.
- RUKN shall be prepared with the participation of regional government.
- General Plan for Regional Electricity (RUKD) shall be prepared on the basis of General Plan for National Electricity (RUKN) and established by the Government after consultation with Regional Parliament.



# ELECTRICITY DEVELOPMENT POLICY (4)

## 6 Power Generation Development

- To meet the realistic demand growth, address the lack of electricity supply in some areas, increase reserve capacity and to fulfill reserve margin.
- Reduce oil share from energy mix.
- More new and renewable energy sources (e.g. Hydro, geothermal, solar, Bio-fuel and wind power).
- utilization of clean power generation technology (e.g. Super Critical technology, Carbon Coal Storage technology).

## 7 Transmissiion and Distribution Development

- To meet the power system growth and increase system reliability.
- Can be developed by the private sector.
- The operation of the transmission network must be open access (opportunities for power wheeling).

# ELECTRICITY DEVELOPMENT POLICY (5)

## 8

### Tariff and Subsidy

- MEMR as the regulator to keep the supply of electricity is carried out efficiently and maintain the balance of interests of the electricity provider (PLN) and consumers.
- Evaluate the Cost of Power Supply, with the principle of Allowable Cost and maximize efficiency through diversification of primary energy and reduction of power losses.
- Electricity subsidy is prioritized for indigent community groups/consumers (the poor), tariff for other consumer is set to be economical.

# MANAGEMENT OF ELECTRICITY PROVISION

## CONTROL



STATE

GOVERNMENT  
REGIONAL GOVERNMENT

- Regulation, policy, standard
- Provides funding for:
  - ✓ Low income society
  - ✓ Development of electricity supply infrastructure in undeveloped regions
  - ✓ Development of electricity in remote and border areas
  - ✓ Development of rural electricity

## BUSINESS

ELECTRICITY BUSINESS LICENSE HOLDER

STATE-OWNED ENTERPRISE\*

REGION-OWNED ENTERPRISE\*\*

PRIVATE ENTITIES\*\*

COOPERATIVES\*\*

SELF-RELIANT COMMUNITIES\*\*



\* : First Priority

\*\* : Given the opportunity as integrated electricity business license organizer for not electrified areas

# MINISTRY / RELATED AGENCIES IN THE DEVELOPMENT OF NATIONAL ELECTRICITY



**MINISTRY OF FINANCE**  
Government guarantees



**INVESTMENT COORDINATING BOARD**  
Principle permits for foreign investment & One Stop Service Center (PTSP)



**MINISTRY OF ENERGY AND MINERAL RESOURCES**  
Technical Policy and Regulation



**LOCAL GOVERNMENT**  
The business license , construction license, Forest Land Borrow and Use Permit (IPPKH) Recommendations and support land acquisition



**MINISTRY OF ENVIRONMENT AND FORESTRY**  
Forest Land Borrow and Use Permit(IPPKH) & Environmental Impact Assessment (AMDAL)



**MINISTRY OF TRANSPORTATION**  
Permission of the jetty, coal shipping, and the use of railway lines



**NATIONAL DEVELOPMENT PLANNING AGENCY**  
Bluebook publishing



**MINISTRY OF AGRARIAN AND SPATIAL**  
Land acquisition and certification

# INDONESIA'S ELECTRICITY STATE IN 2015

## INSTALLED CAPACITY OF POWER GENERATION

# 55,528 MW

PLN: 38,310 MW IPP: 12,477 MW PPU: 2,349 MW IO non BBM: 2,392 MW

## ELECTRICITY PRODUCTION

# 283 TWh

## ELECTRICITY CONSUMPTION

# 228 TWh

## ELECTRIFICATION RATIO

# 88,30 %

## kWh PER CAPITA

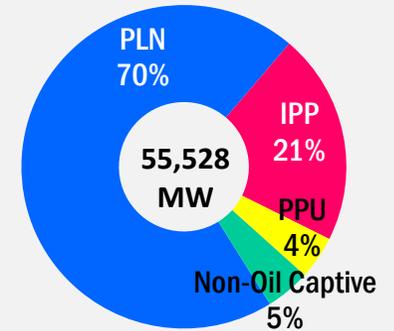
# 910 kWh

## LENGTH OF TRANSMISSION LINE

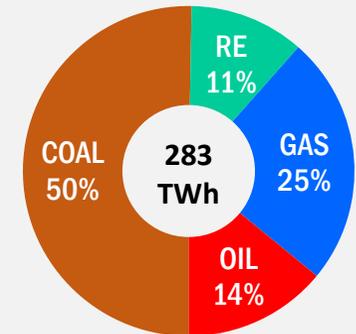
# 49.325 kms

## LENGTH OF DISTRIBUTION LINE

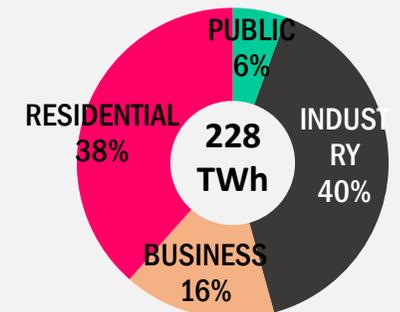
# 925.312 kms



INSTALLED CAPACITY



ENERGY MIX \*)



ELECTRICITY CONSUMPTION \*)

\*) Included Non-PLN

# ELECTRICITY SECTOR CHALLENGES

## 1. INCREASE kwh PER-CAPITA

- Thought electricity consumption (kWh) per-capita of Indonesia is always increased, however it is still low -only 910 kWh in 2015 ( Compared to other ASEAN countries, was lower than Brunei Darussalam, Singapura, Malaysia, Thailand, and Vietnam).
- kWh per-capita target needs to be achieved: 2,500 kWh by 2025 (NEP).

## 2. INCREASE ELECTRIFICATION RATIO

- National electrification ratio is still lower (88.30%) compared to other ASEAN countries.
- Electrification ratio target needs to be achieved: 97,35% by 2019.

## 3. INCREASE ELECTRICITY SUPPLY

- Due to electricity supply is not enough to meet demand in some region, has impacted to routine blackout and new customer restrictions are applied by PLN.
- Additional power plants are necessary to be developed.

## 4. INCREASE RURAL ELECTRIFICATION RATIO

- National rural electrification ratio was 96.94% in 2014.
- There are 12,659 villages without electricity access or having minimum of electricity supply.
- Rural electrification ratio target needs to be achieved: 100% by 2020.

# ELECTRICITY DEVELOPMENT PLAN

## ASSUMPTION AND PROJECTION (2015-2034)

DRAFT OF RUKN 2015-2034

DESCRIPTION	UNIT	YEAR										
		2015	2019	2020	2024	2025	2029	2030	2031	2034	AVERAGE	
											2015-2024	2015-2034
<b>ASSUMPTION &amp; TARGET</b>												
Economic Growth *)	%	5.7	8.0	8.0	8.0	8.0	7.6	7.5	7.4	7.3	7.7	7.6
Inflation**)	%	5.0	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.4	3.8	3.6
Population Growth ***)	%	1.3	1.2	1.1	1.0	0.9	0.8	0.7	0.7	0.6	1.1	0.9
Electrification Ratio	%	87.35	97.35	99.35	100	100	100	100	100	100		
<b>PROJECTION RESULT</b>												
Electricity Demand	TWh	239	347	381	558	616	776	819	865	1,017		
Electricity Consumption Per Capita	kWh	935	1,293	1,407	1,977	2,161	2,636	2,764	2,898	3,347		
Electricity Demand Growth	%	9.3	10.0	10.1	10.0	10.3	5.7	5.6	5.6	5.6	9.9	7.9
Elasticity		1.6	1.3	1.3	1.3	1.3	0.8	0.7	0.7	0.8	1.3	1.1
Additional Capacity (Cumulative)	GW	8	38	47	94	108	150	161	173	211	9.4 ****)	10.6 ****)
Power Generation Capacity (Nett Capacity)	GW	57	82	90	132	146	183	194	204	240		

Source:

\*) APBN-P 2015, RPJMN 2015-2019, National Energy Policy

\*\*) APBN-P 2015, RPJMN 2015-2019, regression with economic growth

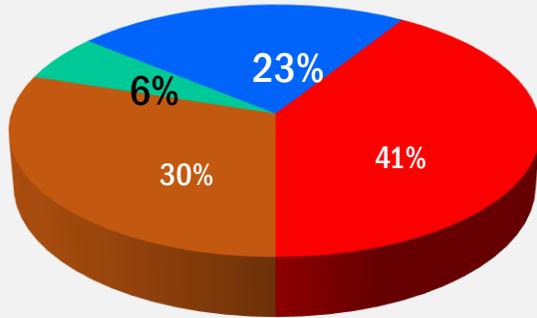
\*\*\*) Projection to Indonesia Population 2010-2035 (Bappenas-BPS-United Nation Population Fund), 2013

\*\*\*\*) not cumulative

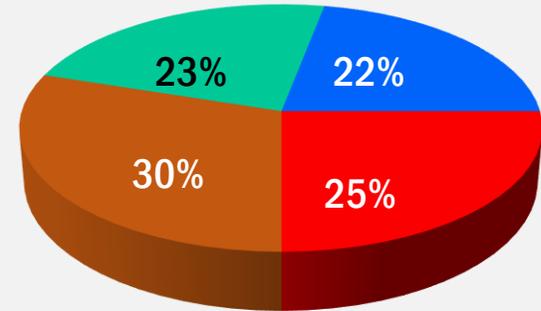
# COMPOSITION OF ENERGY SUPPLY

## FINAL ENERGY MIX

(National Energy Policy, GR No.79/2014)



REALIZATION 2013

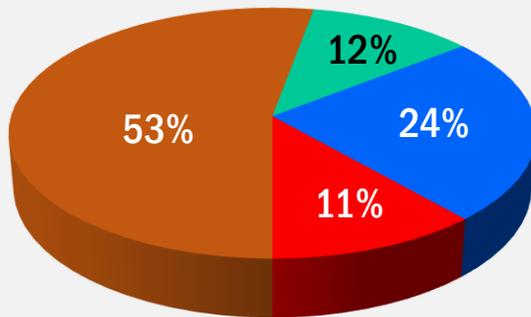


TARGET 2025

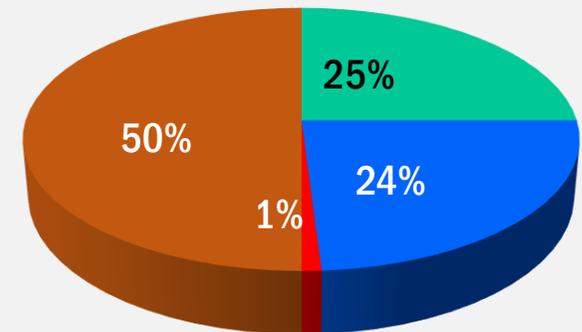
- New and RE
- Oil
- Gas
- Coal

## ENERGY MIX OF POWER GENERATION

(Draft of RUKN 2015-2034)



REALIZATION 2014



TARGET 2025

# 35.000 MW PROGRAM – NECESSARY TO ADDRESS CHALLENGES

- To meet the high growing demand of electricity (8.7% per year) in order to increase national economic growth that is targeted to reach about 7% in 2019.
- To meet kWh per-capita that is targeted to reach 1,293 kWh in 2019.
- To meet electrification ratio that is targeted to reach 97.35% in 2019.

	2015	2019
Installed capacity of generation (GW)	55.5	98.4
Economy growth (%)	4.7	7
kWh per-capita (kWh)	910	1.293
Electrification ratio (%)	88.30	97.35

## DISTRIBUTION OF 35,000 MW PROGRAM

SUMATERA		MILLION USD
11.326 MW	103 Gen	14.282
19.305 kmc	210 Trans	3.840
32.406 MVA	398 Subs	2.475

KALIMANTAN		MILLION USD
2.852 MW	42 Gen	4.000
7.883 kmc	68 Trans	1.122
3.910 MVA	115 Subs	324

SULAWESI & NUSA TENGGARA		MILLION USD
4.159 MW	112 Gen	5.434
7.207 kmc	90 Trans	1.169
5.620 MVA	165 Subs	412

TOTAL INDONESIA		MILLION USD
42.940 MW	402 Gen	53.663
46.597 kmc	732 Trans	10.893
108.789 MVA	1.375 Subs	8.386
<b>Total</b>		<b>72.942*</b>

JAWA-BALI		MILLION USD
23.864 MW	96 Gen	28.955
11.185 kmc	349 Trans	4.615
66.083 MVA	672 Subs	5.114

MALUKU & PAPUA		MILLION USD
739 MW	49 Gen	992
1.017 kmc	15 Trans	148
770 MVA	25 Subs	61

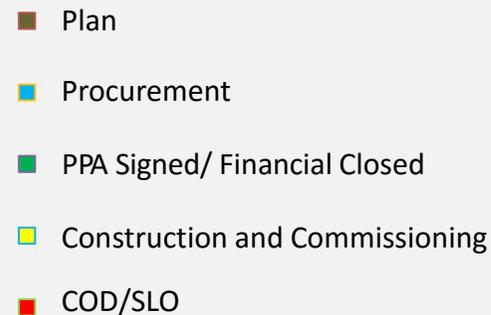
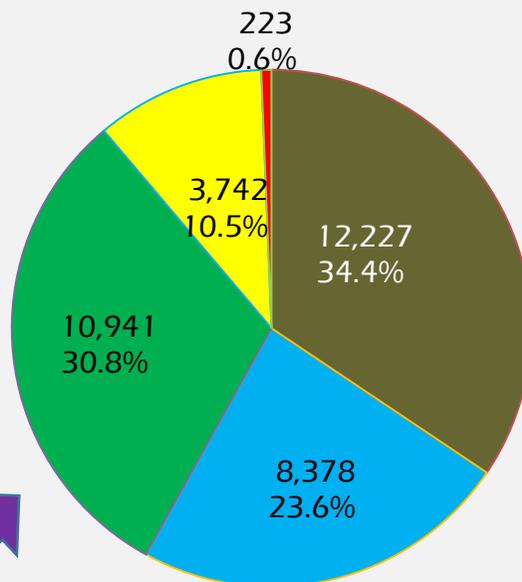
\*Exclude funding needs for land, Interest During Construction (IDC) and taxes

Legend: **MW:** Megawatt    **kmc:** Kilometer-circuit    **MVA:** Mega-volt ampere

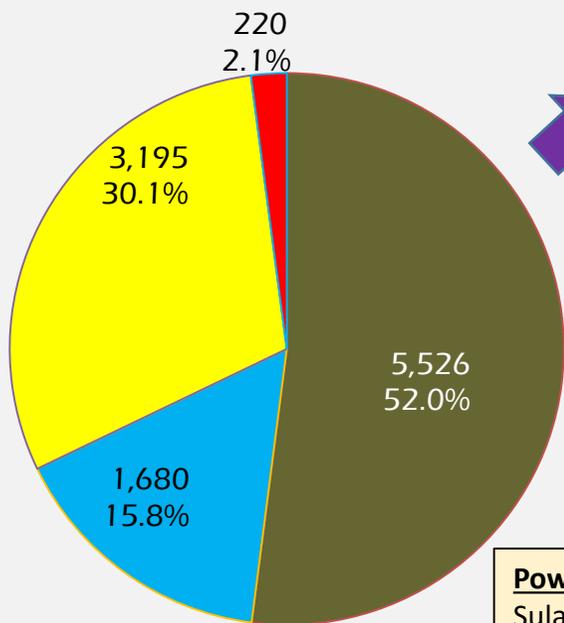
# PROGRESS 35.000 MW PROGRAM

(April 2016)

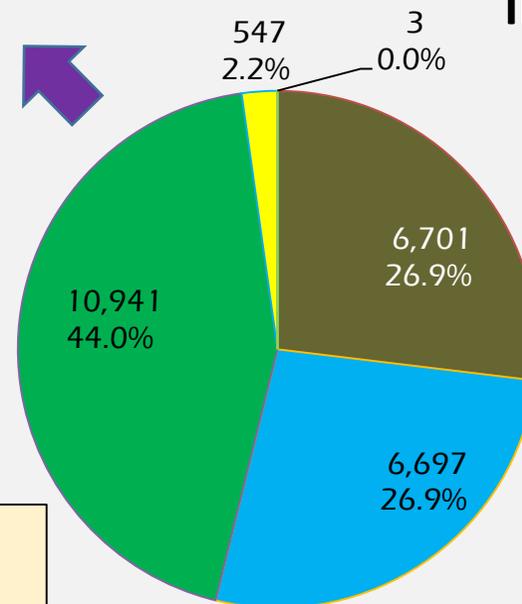
**TOTAL**



**PLN**



**IPP**



**Power-plants that have been COD/SLO:**

Sulawesi

1. MiniHPP Taludaa (IPP) 3 MW
2. GTPP Gorontalo Peaker (PLN) 4 x 25 MW
3. GTPP MPP Amurang (PLN) 120 MW

**Total : 223 MW**

# BREAKTHROUGH TO ACCELERATE 35,000 MW DEVELOPMENT PROGRAM

OBSTACLES	SOLUTION
 Land Acquisition	Implement Law No 2/2012 and Presidential Regulation No. 4/2016
 Price Negotiation	Establish the ceiling price for IPP and Excess Power (MEMR Regulation No.3/2015 )
 Procurement of power generation from IPP	Accelerate procurement process through “Direct Appointment & Direct Selection” for renewable energy, mine mouth, marginal gas, expansion, & excess power (MEMR Regulation No.3/2015)
 Permitting process	Establish “One stop service on permitting” at BKPM (Investment Coordinating Board) (MEMR No. 35/2014)
 Developer & Contractor Performance	Conduct “Due Dilligence” to developer and contactor, both of technical and financial aspects (MEMR Regulation No.3/2015)
 Project Management	Establish Independent Procurement Agent for Procurement, Project Management Office (PMO) in PLN & <i>UP3KN</i> in MEMR (MEMR Regulation No. 3/2015 and MEMR Decree No. 3066 K/73/MEM/2015)
 Coordination Across Sectors	Establish National Team Across Ministries (Coordinating Minister for Economic Affairs Decree No.129/2015)
 Legal Issues	Provide umbrella for decision maker to take decision in solving the issues and barriers (Presidential Regulation No.4/2016 on Acceleration of Electricity Infrastructure Development)



**THANK YOU**