RENEWABLE ENERGY DEVELOPMENT PROGRAM IN INDONESIA

Presented at:

GLOBAL WORKSHOP ON GRID – CONNECTED RENEWABLE ENERGY

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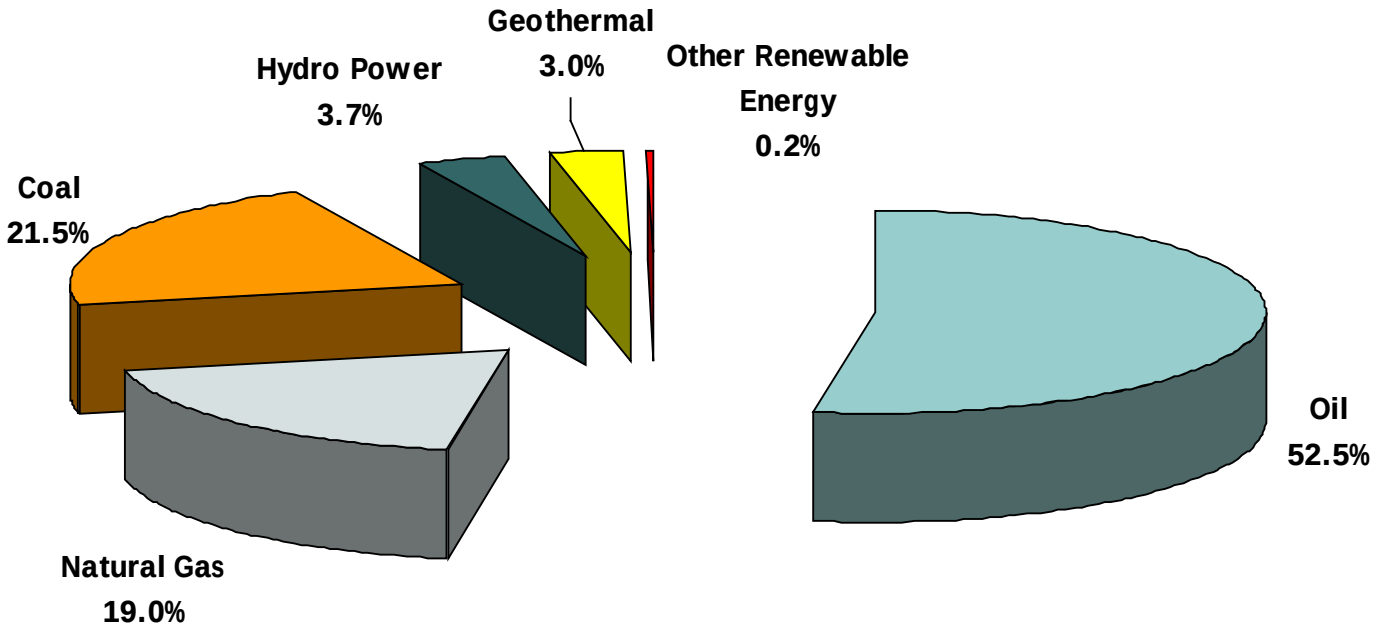
PUBLIC STATE ELECTRICITY CORPORATION

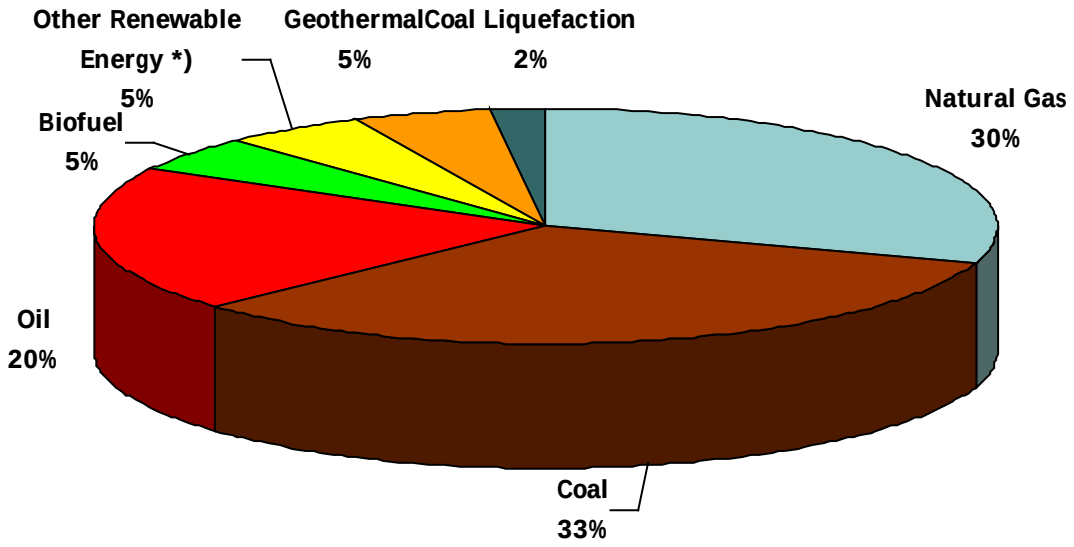
AESIEAP Association of the Electricity Supply Industry of East Asia and the Western Pacific

Energy Mix Situation:



TARGET ENERGY MIX 2025 :
(Presidential Decree 5 / 2006)

- Renewable Energy at least 15% of the Energy mix



*) Biomass, Nuclear, Hydro, Solar and Wind

THE ADVANTAGES OF RENEWABLE ENERGY DEVELOPMENT

1. Environment friendly.
2. Reserves efficiency.
3. Create job opportunity.
4. Abundant of potential resources.
5. Possibility to get CDM fund.

RENEWABLE ENERGY PROSPECT

1. Large of potential resources.
2. The price tend to competitive following the increase of fossil fuel price and production cost.
3. The limited of energy access (electricity or non electricity) especially in remote area/border area.
4. Many kind of renewable energy resources.

   Such As : - Hydro Power
   - Geothermal
   - Biomass
   - Solar
   - Wind
   - Sea Wave

BARRIER OF RENEWABLE ENERGY DEVELOPMENT

1. Government policy to fossil fuel subsidies.

2. Renewable Energy generally required high initial investment.

3. No long term soft loan from local financial institution/bank.

4. Lack of data and supporting infrastructure.

5. Renewable Energy Resource is generally intermittent.

RENEWABLE ENERGY PROGRAM (1)

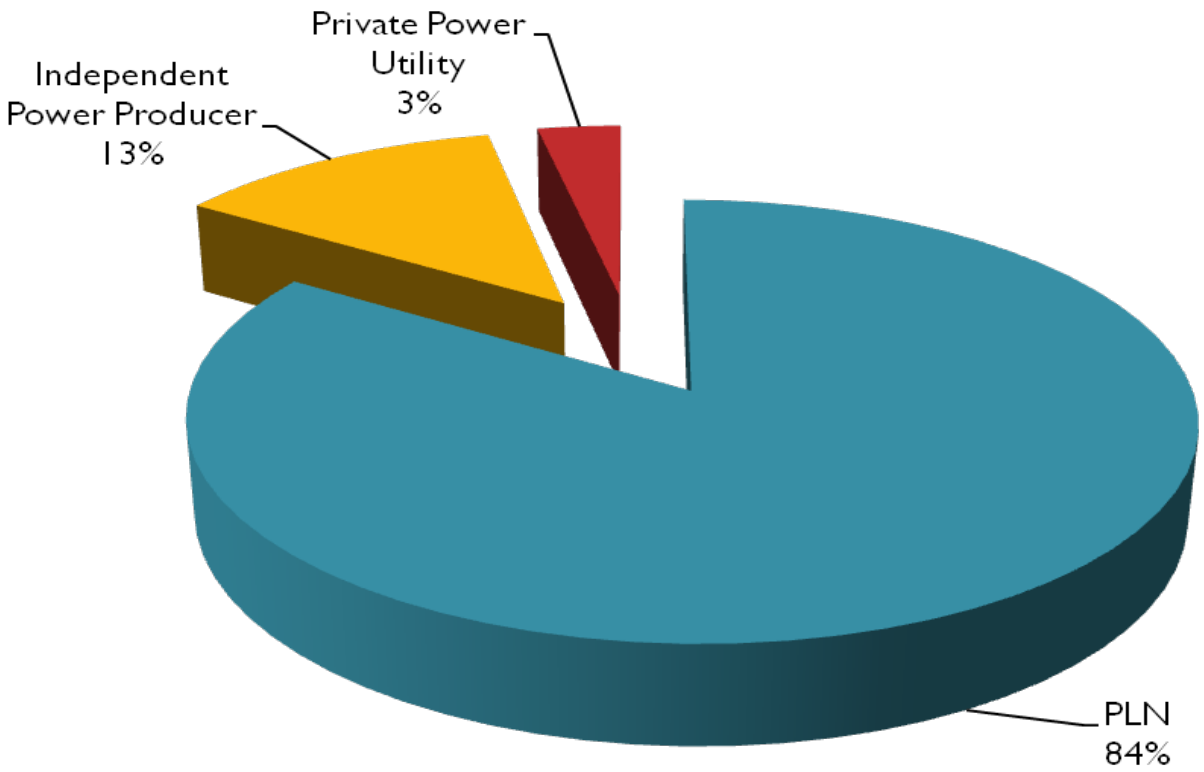
1. **Program on Rural Electrification** : to provide access on electrification for rural communities; since 2005 the government has been decided not to utilize diesel genset and only to implement locally available renewable energy (if the extension of grid is impossible).
2. **Program on Interconnention of Renewable Energy Power Generation**: as an innitiative for investor to develop small/medium scale power generation from renewable energy to sell of electricity to PLN (state electricity company).
3. ***Integrated Microhydro Development Program*** (IMIDAP) : a grant from GEF through UNDP for 2007-2012 to acclerate microhydro implementation by removing existing barriers.
4. ***Micro Hydro Power Program (MHPP)*** : technical cooperation with Germany through GTZ to develop capacities on technology and sustainability of microhydro implementation.

RENEWABLE ENERGY PROGRAM (2)

5. **Program on Urban Solar** : launched in 2003 to support solar photovoltaic implementation in urban society. The results are not significant yet
6. **Program on Biogas** : launched in January 2009 in cooperation with Dutch government; consists of technical assistance and financing mechanism development system.
7. **Program on Energy Self-Sufficient Village** : launched in 2007 to improve energy security on village level by diversifying rural energy mix; developing locally available renewable energy sources in the form of fuel (biofuel) and electricity for household and also productive end uses.
8. **Program on regulation preparation** : as mandated by Energy Law.

RENEWABLE ENERGY FOR ELECTRICITY

ELECTRICITY UTILIZATION SHARE:



RENEWABLE ENERGY POTENTIAL IN INDONESIA

NO	ENERGY RESOURCES	POTENTIAL	INSTALLED CAPACITY	%
1	Hydro	75.670 MW	4.264 MW	± 5,6 %
2	Geothermal	27.510 MW	1.052 MW	3,82 %
3	Mini / Micro Hydro	500 MW	86,1 MW	17,22 %
4	Biomass	49.810 MW	445 MW	0,89 %
5	Solar	4,8 kWh/m2/day	Equivalent 12,1 MW	-
6	Wind	Equivalent 9.290 MW	Equivalent 1,1 MW	0,012
7	Sea Wave	10 – 35 MW per Km coast length		

Policies and Regulation on Renewable Energy for Electricity Generation

1. **Regulation on Electricity Supply and Utilization (Government Regulation No. 26/2006)**

   - As a revision of Government Regulation No. 10 Year 1989 in order to secure national electricity.
   - Relation with new renewable energy development:
     - Putting priority to utilize locally available renewable energy resources for electricity generation;
     - Process of procurement is implemented through direct selection (without tender)

2. Small Distributed Power Generation Scheme for Renewable Energy (Ministerial Decree: No. 1122 K/30/MEM/2002)

- **Developer : Small Enterprises**
- **Capacity : ≤ 1 MW**

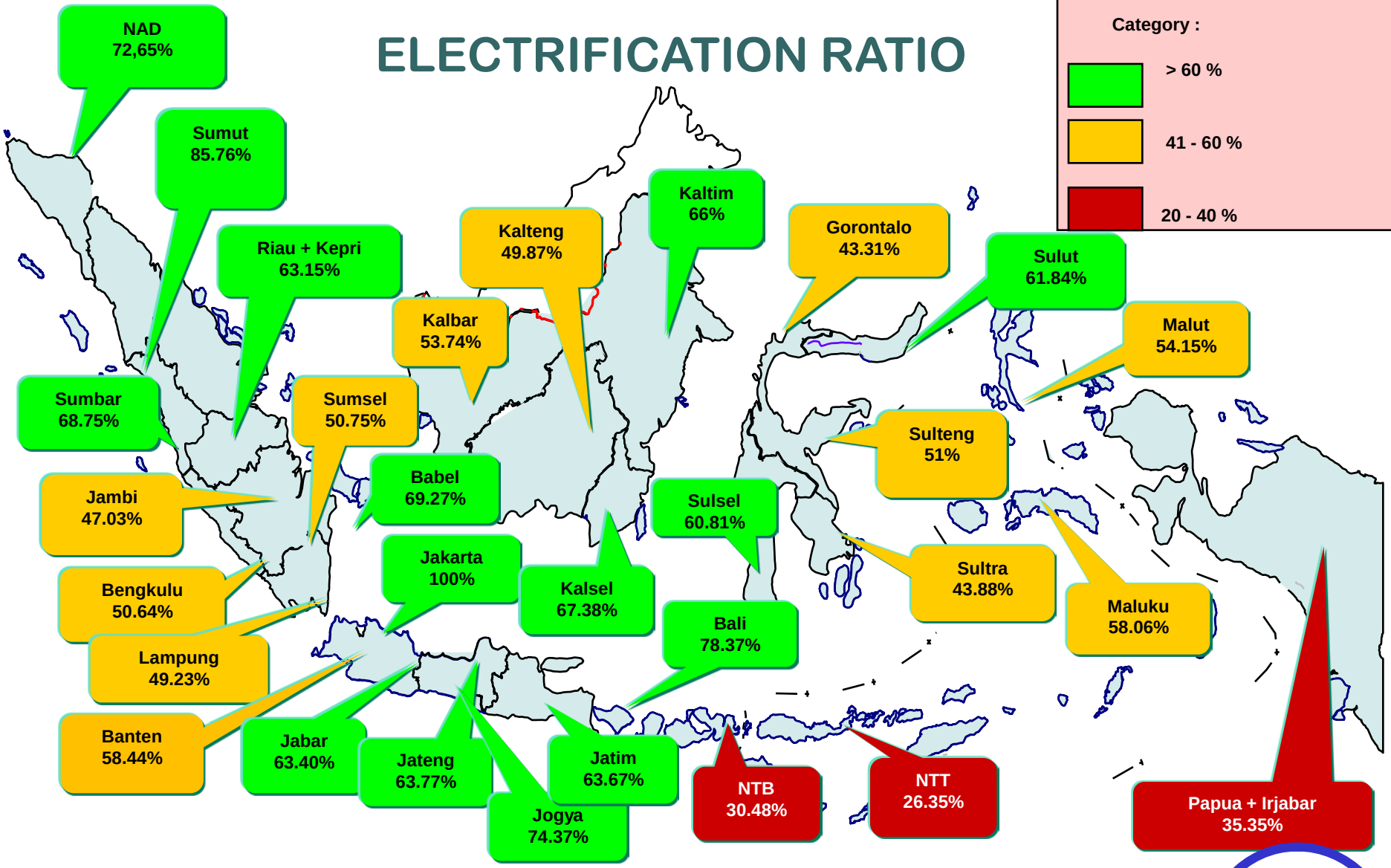
3. Medium Scale Power Generation Scheme for Renewable Energy (Ministerial Regulation : No. 002/2006)

- **Developer : Business Entity**
- **Capacity : 1 < Cap ≤ 10 MW**

PLN POWER PLANT DEVELOPMENT POLICY

- Non oil power plant development
- Non oil primary energy utilization (coal, natural gas etc) for PLN power plant
- Utilization of alternative-renewable energy sources (hydro power, geothermal, biomass, biofuel, solar, wind etc.) as long as in technically & financially feasible
- Reduce of oil consumption for power plant operation composition from 33 % (2007) to 0,6 % in 2018 (RUPTL- Electricity Supply General Plan 2009-2018)

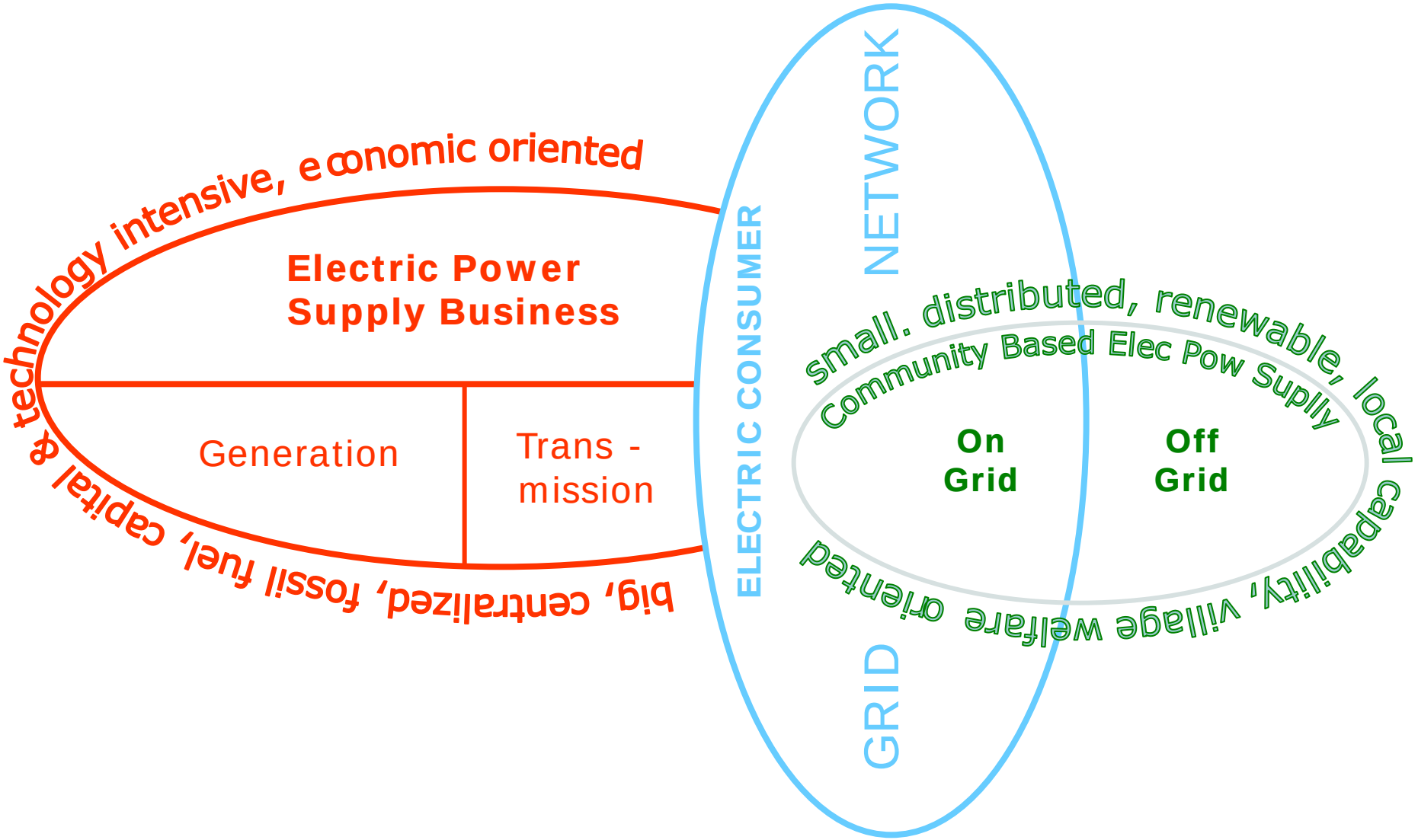
ELECTRIFICATION RATIO



	Year								
	1980	1985	1990	1995	2000	2005	2006	2007	2008
Electrification Ratio	8%	16%	28%	43%	53%	62%	63%	64 %	64.5

PLN INCENTIVE FOR RE DEVELOPMENT

1. DIRECT NOMINATION
2. STAGING PRICE
3. LONG TERM CONTRACT


big, centralized, fossil fuel, capital & technology intensive, economic oriented
Electric Power Supply Business
Generation
Trans - mission
ELECTRIC CONSUMER
NETWORK
GRID
small, distributed, renewable, local capability, village welfare oriented
Community Based Elec Pow Suply
On Grid
Off Grid


one kilowatt hour
every year
from a hydro power
equals to
one big tree
in catchment area

Micro and Mini Hydro

friends of the river, conserve the nature and empower the people

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THANK YOU