Renewable Energy Development In Indonesia

LIANA BRATASIDA
Assistant Minister for Global Environmental Affairs & International Cooperation
Ministry of Environment - Indonesia
POLICIES & REGULATIONS..(1)

1. Energy Law
   - Law No. 30/2007

2. Geothermal Law and Regulations
   - Law No. 27/2003
   - Government Regulation No. 59/2007
   - Ministerial Regulation No. 14/2008

3. Green Energy Policy
   - Ministerial Decree No. 0002/2004
POLICIES AND REGULATIONS..(2)

4. Supply and Utilization of Biofuel
   - Presidential Instruction No. 1/2006
   - Ministerial Regulation No. 32/2008

5. Renewable Energy Utilization for Electricity
   - Government Regulation No. 26/2006
   - Ministerial Decree No. 1122 K/30/MEM/2002
   - Ministerial Regulation No. 002/2006
   - Ministerial Regulation No. 269-12/26/600.3/2008 on Electricity Production Cost

6. Regulation on Energy and Water Efficiency
   - Presidential Instruction No. 002/2008
Law No. 30/2007 on Energy

- Issued in 2007
- Give more attention on new and renewable energy development
- For the time being, Government Regulation on New and Renewable Energy is being finalized (includes incentives for new and renewable energy developers for certain periods of time)
POLICY
INDONESIA ENERGY ACT NO. 30/2007

BASIC CONCEPT

Foundation for energy policy

Shifting Paradigm:
SSM → DSM

Security of Energy Supply

Energy Diversification

Energy Conservation

- To regulate the management and development of geothermal energy sources for direct and indirect utilization

- The price of electricity from geothermal PP by Public Utility (PLN):
  - Capacity 10-55 MW : 85% x Utility’s Production Cost if connected to high or medium voltage grid
  - Capacity > 55 MW : 80% x Utility’s Production Cost connected to high voltage grid
Ministerial Decree No. 0002/2004 on Green Energy Policy

Renewable Energy and Energy Conservation Development Policy → Green Energy Policy:
- Implementing the maximum utilization of renewable energy
- Efficient utilization of energy
- Public awareness in energy efficiency
Presidential Instruction No. 1/2006 on Biofuel Development

- Objective: Accelerating biofuel utilization for fossil (especially oil) substitution

- Instructions to 13 Ministers, Governors and Mayors to take necessary initiatives and actions for biofuel development from supply (feedstock) side until consumption/commercialization side

- Coordinated by Coordinator Minister of Economic
Ministerial Regulation No. 32/2008 on Biofuel Supply, Utilization and Trading

- Prioritize the supply and utilization of biofuel by national companies and Energy Self-Sufficient Village through mandatory actions
- Regulate the type, standard and quality of biofuel as fossil fuel substitute
- Regulate the biofuel business and trade activities
- Mandatory for minimum biofuel usage until 2025
**MANDATORY FOR MINIMUM BIODIESEL USAGE**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Transport</td>
<td>1 %</td>
<td>2.5 %</td>
<td>5 %</td>
<td>10 %</td>
<td>20 %</td>
</tr>
<tr>
<td>Industry Commerce</td>
<td>2.5 %</td>
<td>5 %</td>
<td>10 %</td>
<td>15 %</td>
<td>20 %</td>
</tr>
<tr>
<td>Electricity</td>
<td>0.25 %</td>
<td>1 %</td>
<td>10 %</td>
<td>15 %</td>
<td>20 %</td>
</tr>
<tr>
<td>--------------------------</td>
<td>--------------</td>
<td>--------------</td>
<td>--------------</td>
<td>--------------</td>
<td>--------------</td>
</tr>
<tr>
<td>Transport Subsidies</td>
<td>1 %</td>
<td>3 %</td>
<td>5 %</td>
<td>10 %</td>
<td>15 %</td>
</tr>
<tr>
<td>Transport Non Subsid</td>
<td>5 %</td>
<td>7 %</td>
<td>10 %</td>
<td>12 %</td>
<td>15 %</td>
</tr>
<tr>
<td>Industry Commercial</td>
<td>5 %</td>
<td>7 %</td>
<td>10 %</td>
<td>12 %</td>
<td>15 %</td>
</tr>
</tbody>
</table>

MANDATORY FOR MINIMUM BIOETANOL USAGE
POLICY

BIOFUEL DEVELOPMENT STRATEGY

- Fast Track
- Energy Self Sufficient Village
- Each Region Developing its Biofuel Potential
- SPECIAL BIOFUEL ZONE

SHORT RUN
- Create Job
- Poverty Alleviation

LONG RUN
- Energy

- Infrastructure
- Demplot
- On time schedule
- Explicit investment and employment ratio

Source: ESDM
Government Regulation No. 26/2006 on Electricity Supply and Utilization

- Regulating the supply and utilization of electricity
- Prioritizing utilizing renewable energy for power generation
- Renewable Energy for Power Generation without bidding process
Ministerial Decree No. 1122 K/30/MEM/2002 on Small Distributed Power Generation using Renewable Energy

- Developer: Small Enterprises
- Capacity: ≤ 1 MW
- Electricity Price by Utility:
  - 60% x Utility’s Production Cost, if connected to the low voltage grid
  - 80% x Utility’s Production Cost, if connected to the medium voltage grid

- Developer: Business Entity
- Capacity: $1 < \text{Cap} \leq 10 \text{ MW}$
- Electricity Price by Utility:
  - $60\% \times \text{Utility’s Production Cost}$, if connected to the low voltage grid
  - $80\% \times \text{Utility’s Production Cost}$, if connected to the medium voltage grid
- Purchase Contract: 10 years and could be extended
Ministerial Regulation
No. 269-12/26/600.3/2008 on PLN’s Electricity Production Cost year 2008

- PLN’s Electricity Production Cost (BPP) consist of high, medium and low voltage BPP in 13 electricity grid
- These BPPs are used as basis for electricity purchasing tariff from renewable energy power plant
Regulation on Energy and Water Efficiency
(Presidential Instruction No. 2/2008)

Instructions to Ministers, Governors and Mayors to implement energy and water efficiency in government office:

- **Energy efficiency**: lighting, AC, electricity equipment, official vehicle and other buildings
- **Water efficiency**: in all activities that use water
Renewable Energy Development Program

• **Non Commercial-based:**
  - Carried out by the Government through Rural Electrification Program and Energy Self-Sufficient Village Program (ESSV)

• **Commercial-based:**
  - Private entities are expected to play a major role in its development
  - Government will support the pilot projects, such as Solar Photovoltaic for Urban Area
1. **Rural Electrification Program.** Government has taken measures to replace diesel power with renewable power plant to fulfill the electricity demand in rural area.

2. **Renewable Energy Power Generation Interconnection Program.** Government will assist the interconnection of small and medium renewable energy power plant to PLN’s (state-owned utility company) electricity grid. The electricity purchasing tariff from RE power is 80% from PLN local production cost, if it is connected to medium voltage; and 60% for low voltage.
4. **Solar PV for Urban Area Program.** The Minister of Energy and Mineral Resources, the Minister of Research and Technology and the Minister of Environment has launched the solar energy for urban area program in 2003. This program is directed to promote electricity production from solar energy in urban area.

5. **Energy Self-Sufficient Village.** This program has launched in 2007 to improve the rural energy supply based on renewable energy, which locally available to fulfill basic energy needs as well as productive activities.

Non commercial-based ...(2)
ENERGY SELF-SUFFICIENT VILLAGE (ESSV)

Background

- There are approx 70,000 villages in Indonesia, where 45% of it are located in remote areas, and approx 6,200 villages have not been supplied by electricity.
- Indonesia has been facing many obstacles in fulfilling energy supply, including the increase of fuel demand.
- The ESSV program is an effort to develop villages through energy supply with intervention and investment of technology to produce energy from renewable energy sources.
ENERGY SELF-SUFFICIENT VILLAGE (ESSV)...

- ESSV is a village having capability to produce a part/whole their energy demand for consumptive and productive use from renewable energy sources through the utilization of local resources (biofuel, solar energy, wind energy, mycro hydro energy and biomass from animal and garbage)

- CRITERIA
  - Utilization of locally available energy (renewable energy)
  - Creation of productive activities
  - Job creation & income generation

- PROGRAM:
  - Utilization of locally available energy resources
  - Development of productive activities
  - Development of applicable technologies
  - Development of institution and people participatory

### TARGET ESSV (Cumulative)

<table>
<thead>
<tr>
<th>Year</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of formed ESSV</td>
<td>230 (\approx) Attained</td>
<td>270 (\approx) Attained</td>
<td>350</td>
</tr>
<tr>
<td>Cumulative the achievement</td>
<td>214</td>
<td>442</td>
<td>1000</td>
</tr>
</tbody>
</table>
ENERGY SELF-SUFFICIENT VILLAGE (ESSV)

- # of ESSV up to 2008 are 424 villages
- # of ESSV Stimulus on 2009 are 79 villages
1. Bioethanol Installed capacity 192,349 kL/th.

2. Biodiesel installed capacity 2,029,110 kL/th.

3. Electricity plant with biofuel based: 96 MW
BIOFUEL FEEDSTOCK

MAIN FEEDSTOCK
- Palm Oil
- Jatropha curcas
- Cassava
- Sugar cane

UNDER DEVELOPMENT
- Coconut
- Seed of Hevea brasilianicis
- Aleurites molucana
- Micro algae
- Waste
- Sweet sorghum
- Sugar palm
- Sago
- Corn
- Waste

BIOOIL
BIOETHANOL
BIOOIL
BIOETHANOL
BIOETHANOL INSTALLED CAPACITY
as of Juni 2008: 192.349 kl/th