

Sustainable Energy Programs in Indonesia

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Background and Context for Electricity Regulation

Directorate General Electricity and Energy Utilization is the office under Ministry of Energy and Mineral Resources has the task, among others, of formulating policies and regulations, national electricity plans, supporting electricity businesses and providing guidance to be implemented by electricity state-owned company/PLN for developing electricity services. Up to now, based on Law No 15/1985, PLN is the single actor in electricity business. However, since 1998 when the economic crisis started, the government has initiated restructuring policies in the electricity sector with the objectives of achieving financial viability, transparency, and introducing market competition by involving private sectors in electricity business. In addition, the government role would be more focused on policy formulation, while regulation would be the responsibility of a new Independent Body which would be established by the government. All these initiatives actually had been included in Law No. 20/2002 concerning on Electricity, before it was annulled by the Constitutional Court of Indonesia in 2004.

Due to prolonged economic crisis, PLN has difficulties in financing to build new power generation. Therefore, the government issued Government Regulation No.10/1989 as revised by Government Regulation No. 3/2005 to allow private sector to involve in power generation but the electricity produced should be sold to PLN. In addition to the Minister of Energy and Mineral Resources, the Ministry of State for Agency of State Enterprises is also involved in the electricity sector, however its input is limited to corporate development aspects.

Overview of Experience with Sustainable Energy.

In Indonesia, fossil fuels, mainly oil, are still the primary sources of energy to fulfill the relatively high domestic demand of energy with average growth rates of 7% annually. In 2006, Indonesia's total energy demand was met by oil (49.2%), followed by coal (24.4%), natural gas (18.5%) and renewable energy particularly based on hydro and geothermal (7.9%). In the meantime, the proven reserve of oil is limited. The capacity of daily oil production is around 1050 BOE while oil demand is around 1400 BOE/day. With the gradually escalation of the oil price, it has therefore had negative impacts on the domestic supply of energy. Realizing this condition, the Government of Indonesia has taken some adaptive measures to decrease its dependence on oil by accelerating the implementation of energy diversification and energy conservation programs. To support the measures, the government issued Presidential Regulation No.5 /2006 concerning the National Energy Policy with the aim of creating a sustainable energy development. The National Energy Policy set targets to be achieved in 2025: for example energy elasticity should be less than 1 (one), and the share of oil in the national primary energy mix should be less than 20%, coal to be at least 33%, natural gas at least 30%, geothermal and biofuel to be at least 5% respectively, liquefied coal and other renewable energy to be at least 2% and 5% respectively. To achieve the targets, particularly renewable energy and energy efficiency, some programs are being implemented such as:

Rural electrification using renewable energy such as solar PV, microhydro, wind, biofuel to fulfill rural electricity demand. The government has gradually increased the budget for constructing off-grid renewable energy power plants. To encourage developers to increase their interest to develop on-grid renewable power plants, the government has issued some regulations on power purchasing tariff for small capacity (up to 1 MW) as well as medium capacity (more than 1 MW up to 10 MW). Based on these regulations, the utility is obliged to buy electricity from developers with the tariff 60 % of the utility's production cost if the electricity is connected to the lower voltage grid, and 80 % of the utility's production cost if connecting to the medium voltage grid. Although the regulations are already in place, only a few renewable power generation have connected to the grid because PLN as state electricity company is mostly buying the electricity on negotiation.

In addition, another renewable development program under development is the Energy Self Sufficient Village (ESSV). This program is aimed at encouraging rural economic activities by providing sufficient energy. Around 2000 ESSV will be established between 2007-2009, of which 1000 ESSV based on biofuel and 1000 ESSV based on renewable non-biofuel. At present, 200 ESSV has been established throughout Indonesia comprises of 115 ESSV based on biofuel and the rest based on renewable non-biofuel.

As previously mentioned, based on the National Energy Policy, biofuels are expected to contribute at least 5 % of National Energy Mix in year 2025. In order to reach the target of Biofuel utilization, a Road Map of Biofuel Utilization has been issued. The Biofuel Road Map creates a role for biofuels as a source of energy in the household and commercial sectors, as well as the transport and power sectors. Biofuels will substitute for oil. From 2005-2010, the use of Biofuels will contribute 2 % (5.29 million kl) of total energy mix and it will increase to 3 % (9.84 million kl) from 2011-2015, and 5 % (22.26 million kl) in 2016-2025 period. To encourage business activities in Biofuels, the government has issued Government Regulation No.1/2007 to reducing income taxes on investment activities in specific industries and particular regions, in the form of a 30 % reduction of net income from the total investment for 6 years, or 5 % every year, lower income tax (10%) (compared to 15% before) to royalties earned by foreign tax payers, and a longer period of compensation of loss-more of than 5 years but less than 10 years. At present, around 265 gasoline stations in big cities sell biodiesel and bioethanol.

In terms of energy efficiency, some programs the government is intensively implementing a Demand Side Management (DSM) and Partnership Program on Energy Efficiency. Through the DSM, some best practices have been implemented, particularly through the use of efficient lighting in households and streets. In 2008, the DSM program will continue by distributing around 51 million CFL to households, and each household will get donation of 3 CFL. Through this program, it is projected that the potential energy savings will be around 2.38 TWh/year or it will be equal to around 1 600 MW.

The Partnership Program on Energy Efficiency is basically a voluntary agreement between government and energy consumers, particularly in the building and industry sectors. Through the partnership program, the government provides free energy audits. The program was initiated in 2003. From 2003 -2004 the partnership program found potential energy savings of around 2.6 GWh per year from 9 buildings and 36.1 GWh per year from 7

industries. During 2006-2007, the program showed a potential for energy savings of around 17.8 GWh per year from 73 buildings and 333 GWh per year from 159 industries (textile, pulp and paper, metal, cement, fertilizer, chemical, food and glass). Although the government has provided free energy audit services, the buildings owners and industry still face some difficulties in implementing the recommendations of the audit due to lack of financial resources.

Regulatory Decision-Making and Analysis

In formulating energy policy process, all related institutions are involved. However, when the policies are issued, some concerns are raised such as when the government issued Presidential Instruction No. 1/2006 concerning on Biofuel development, many debates are occurred such as about the competition of land for jatropha oil or for food plantation, also competing uses of palm oil for food or for energy, since palm oil is the feedstock for biodiesel. Although the policies on energy such as National Energy Policy and Law on Energy include provisions on energy sustainable development, some people have thought that government is still half hearted in its commitment to implementing clean energy technology. Sometimes they do not consider the difficulties that government faces such as how to provide the electricity with affordable price, and the fact that the government has provided some budget to support clean energy technology pilot projects.

Reflections on the Case

As mentioned above, the Law No.30/2007 concerning energy clearly states that energy should be managed in sustainable way. The Law also prescribes increasing renewable energy and energy efficiency. Some other energy policies which push the clean energy utilization have also been issued. Renewable energy projects and energy efficiency have gradually increased. Therefore, there is a strong belief that the role and contribution of clean energy in the near future will be higher. This belief is also based on the existing condition that the world has committed to reduce emissions to eliminate greenhouse gas effects.