Country Report[1]

Philippines

Prepared by: **Mr. Arnel C. Antonio**
Senior Science Research Specialist
Policy Formulation and Research Division
Energy Policy and Planning Bureau
Department of Energy

I. Current Energy Policies and Measures

The general energy policies as provided in Chapter 1, Section 2 of Republic Act No. 7638, the law creating the Philippine's Department of Energy (DOE) are the following:

- To ensure the continuous, adequate and economic supply of energy with the end view of ultimately achieving self-reliance in the countries energy requirements through integrated and intensive exploration, production, management, and development of the country's indigenous energy resources, and through the judicious conservation, renewal and efficient utilization of energy to keep pace with the country's growth and economic development and taking into consideration the active participation of the private sector in the various areas of energy resource development.

- To rationalize, integrate and coordinate the various programs of the Government towards self-sufficiency and enhanced productivity in power and energy without sacrificing ecological concerns.

The said law also mandates the DOE to develop and annually update the Philippine energy program (Philippine Energy Plan or PEP) which include a policy direction towards the privatization of government agencies related to energy, deregulation of the power and energy industry, and reduction of dependency on oil-fired plants. The PEP update is required to be submitted to the Congress of the Philippines not later than the fifteenth day of September every year thereafter.

Hence, the said plan is updated annually. In the year 2007 Philippine Energy Plan (PEP) Update, the country's policy is to pursue the **Energy**

[1] Due to incomplete energy data for 2008, report was confined to 2007 and 2006

Independence Agenda (part of the 5-point reform package of the government). This energy independence agenda focuses on two major objectives, **(1)** a sustainable 60 percent energy self-sufficiency beyond 2010 and **(2)** promoting a globally competitive energy sector.

Under the 1st objective (**60% energy self-sufficiency by 2010**), the government is looking on the effective implementation of the following goals:

- **Aggressive exploration and development of indigenous energy resources**

More contracting rounds for oil, coal and geothermal areas will be pursued and site exploration for hydro potentials will be expanded.

- **Aggressively develop renewable energy potential such as biomass, solar, wind and ocean resources**

The enactment of R.A. 9367 (Biofuels Act), the law which direct the use of biofuels and establishment of a biofuels program for the full development and utilization of biofuels in the country. The major alternative fuels being promoted are biodiesel, bioethanol, autogas and compressed natural gas.

The enactment of Renewable Energy Act of 2008, the act promoting the development, utilization and commercialization of renewable energy resources. This law is made to accelerate the exploration and development of renewable energy resources and establish the necessary infrastructure and mechanism to carry out the mandate provided in the law.

- **Strengthen and enhance energy efficiency and conservation program**

The government will ensure the implementation of a meaningful energy efficiency and conservation program that seeks to achieve the following:

a) Increased participation of companies managing their energy consumption efficiently without affecting productivity;

b) Strengthened consumer understanding of energy use;

c) Encourage Energy Service Companies to accelerate energy efficiency programs in the commercial and industrial sectors; and,

d) Reduce greenhouse gas emissions as a result of improved energy consumption performance. The government's National Energy Efficiency and Conservation Program, through the "EC (energy conservation) Way of Life" carrier project has provided the framework and leverage to promote the judicious use of energy.

While in the 2nd objective (**to establish a globally competitive energy sector**), the goals are the following:

- **Established a transparent privatization process**
- **Create investment climate attractive to investors**

The DOE will continue the implementation of reforms in the power sector, as well as the downstream oil and gas industries enhance the global competitiveness of the energy sector. The main focus is to create a competitive environment that will encourage efficiency and reliability in the production and delivery of electricity to all end-users at reasonable price.

On the development of the country's natural gas industry, specific plan includes the development of infrastructure, facilities network, market development and manpower capability building.

The Downstream Oil Industry Deregulation Act of 1998 mandates the liberalization and deregulation of the downstream oil industry to ensure a truly competitive market under a regime of fair prices and level playing field.

II. 2007 & 2006 Overall Energy Balance (see attachment)

Fig. 1 **Primary Energy Supply Mix**

Indigenous energy sources grow by 2.3 percent due increase production of oil, natural gas and coal. Higher dispatch of the 2,700 MW natural gas-fired plants in Batangas accelerated gas production of the Malampaya field to 357.7 million standard cubic feet per day (MMSCFD) bringing total gas supply to 3.03 MTOE in 2007, 19.9 percent more than the 2006 level. Local and imported coal contributed 14.8 percent to the country's total primary energy supply.

The decrease in hydropower production is attributed to El Niño phenomenon in mid-2007. Some hydro plants also undergo maintenance during the period.

Coal importation slightly inched up by 0.1 percent with the bulk coming from Indonesia (72.0 percent) and China (13.5 percent). Indigenous production on the other hand recorded a significant increase of 44.4 percent.

Biomass remains an important source of energy especially in the rural areas with 14.1 share of the total primary energy supply in 2007. The share of renewable energy sources such as wind and solar energy to the primary energy mix is 0.01 percent and grew by 8.3 percent from 4.70 ktoe in 2006 to 5.09 ktoe in 2007.

Comparative Primary Energy Supply (Fig. 1)

	2007		2006		Percent Inc./Dec.	
	KTOE	% Share	KTOE	% Share	In KTOE	In % Share
Indigenous	**21,967.28**	**55.69**	**21,464.50**	**55.40**	**2.34**	**0.52**
Oil & Oil Products	625.38	1.59	559.25	1.44	11.82	9.83
Natural Gas	3,032.61	7.69	2,529.44	6.53	19.89	17.76
Coal	1,795.12	4.55	1,243.32	3.21	44.38	41.81
Geothermal	8,784.63	22.27	9,000.14	23.23	(2.39)	(4.13)
Hydro	2,132.18	5.41	2,474.78	6.39	(13.84)	(15.38)
Mhydro. Solar & Wind	5.09	0.01	4.70	0.01	8.30	6.37
Biomass	5,560.74	14.10	5,652.33	14.59	(1.62)	(3.37)
CME	31.53	0.08	0.54	0.00	-	-
Imported	**17,477.59**	**44.31**	**17,277.32**	**44.60**	**1.16**	**(0.64)**
Oil & Oil Products*	13,396.44	33.96	13,202.72	34.08	1.47	(0.34)
Coal	4,079.17	10.34	4,073.19	10.51	0.15	(1.64)
Ethanol	1.98	0.01	1.41	0.00	40.43	37.92
Total Primary Energy	**39,444.87**	**100.00**	**38,741.82**	**100.00**	**1.81**	**-**
Self-sufficiency	**55.69**		**55.40**			

* - Total = (+/-) Stock Change - Bunkering and Exports

In response to the government's program using alternative fuels, CME accelerate a big leap from the previous production of 0.54 ktoe to 31.53 ktoe in 2007. Similarly, ethanol register a 40.4 percent increase from 1.41 ktoe in 2006 to 1.98 ktoe in 2007.

Imported Energy

Imported fuels contributed 44.3 percent to the total primary energy supply and gained by 1.2 percent, from 17.27 mtoe in 2006 to 17.48 mtoe in 2007. Net oil importation increased by 1.5 percent from 13.2 mtoe in 2006 to 13.4 mtoe in 2007 level. Likewise, coal imports increased by 0.1 percent from the 4.07 mtoe in 2006.

Final energy Consumption

Total final energy consumption reached 24,335.6 KTOE in 2007, registering a 7.3 percent increase in its 2006 level of 22,687.42 KTOE. On the per sector basis in the year 2007, the transport sector remained the largest energy consuming sector of the economy with 42.8 percent share, followed by the residential sector at 25.9 percent. Energy consumption of the industry sector represented 21.5 percent share while commercial and agricultural sectors accounted for 8.2 percent and 0.6 percent, respectively.

III. Difficulties in Energy Policy Formulation

1. Conflicting laws and policies, e.g. renewable energy law promotes the exploration of geothermal and hydro resources, while indigenous people rights law protects the ancestral lands of these people. Unfortunately, potential geothermal and hydro sources are located in ancestral areas.
2. Investors lack of confidence to invest in energy business due to excessive regulatory requirements.
3. Lack of political will in policy implementation.
4. Basically lack of necessary expertise in the field of energy, e.g., very few nuclear engineers and energy engineers.
5. Manpower shortage in the field of energy. Most Filipino engineers were employed abroad in pursuit of better financial considerations.
6. Poor education in the area of energy conservation.
7. Shift in priority initiatives due to changes in political management
8. Conflicting demands/interests of energy stakeholders
9. Difficulties in energy data gathering (for policy studies) due to lack of manpower and budget (insufficient energy database)
10. Inadequate expertise on policy formulation (need to increase level of technical confidence in using energy modeling tools)

IV. Policy Study Preference[2]

1. Nuclear Energy Option – what are the indication that a country is ready or mature enough to go for a nuclear option. Going nuclear is not a mere executive decision, what legislative and regulatory policies are needed in introducing nuclear energy? What are the safeguard policies? What economic policies must be aligned or reviewed before a nuclear option is pursued?

2. Energy Efficiency and Conservation – in the Philippines, people generally conserve energy only because of financial considerations. Meaning, they conserve energy only because it is expensive. What public initiative or policy is needed to change this view? How can the government create a successful EEC program? What is the effective economic policy for EEC program?

3. In year 2007, Semirara Coal Corporation's production is 94 percent of the country's indigenous coal. This is equivalent to 48.3 percent of the

[2] Study preference is the personal choice of the nominee. Study preference may change based on the discussion/meeting with DOE management, regarding what policy study will be pursued during the training course.

country's coal supply (including importation). As of May 2008, Semirara's export has already reached the entire 2007 export level. Considering the export growth level, it is inevitable that Semirara is gearing towards exporting than using coal locally. In the meantime, the country is importing more than 50 percent of its total coal requirement. Based on experience, where is this trend going? Is this going to be beneficial or detrimental in the Philippine government? What government policy is needed here to protect the nation's interests?

4. The Philippines is having difficulty in building data on energy consumption. In the country's annual energy balance table (EBT), demand is tabulated by sector. Data usually came from voluntary submission and most of the time, they are incomplete. The only published, reliable and valid data on energy consumption by sector is the residential, which is a product of the 2004 Household Energy Consumption Survey. This survey was conducted by DOE and National Statistics Office and the budget came from the DOE.

   What initiative is needed to obtain this energy consumption data regularly, which include all sectors laid down in the EBT? How Japan collect its energy consumption data? What energy policy is needed to address this problem?

Attachment

Overall Energy Balance, in KTOE
Summary, FY 2007

	Oil and Oil Products	Natural Gas	Coal	Geothermal	Hydro	Microhydro, Solar & Wind	Biomass	CME	Ethanol	Electricity	Total Energy
Indigeneous	625.38	3,032.61	1,795.12	8,784.63	2,132.18	5.09	5,560.74	31.53			**21,967.27**
Imports (+)	15,651.17		4,079.17						1.98		**19,732.32**
Exports (-)	(2,285.48)		-								**(2,285.48)**
Bunkering (-)	(231.80)		-								**(231.80)**
Stock Change (+/-)	262.55		-								**262.55**
Primary Energy Supply	**14,021.82**	**3,032.61**	**5,874.29**	**8,784.63**	**2,132.18**	**5.09**	**5,560.74**	**31.53**	**1.98**	**-**	**39,444.87**
Percent Share	**35.5%**	**7.7%**	**14.9%**	**22.3%**	**5.4%**	**0.0%**	**14.1%**	**0.1%**	**0.0%**	**0.0%**	**100.0%**
Oil Refining	(258.07)										**(258.07)**
Power Generation	(1,054.14)	(2,743.37)	(3,971.97)	(8,784.63)	(2,132.18)	(5.09)				5,126.61	**(13,564.76)**
Transmission/Dist. Loss (-)										(654.33)	**(654.33)**
Energy Own Use and losse	(479.49)	(193.12)								(343.51)	**(1,016.12)**
Net Domestic Supply	**12,230.12**	**96.12**	**1,902.32**	**-**	**-**	**-**	**5,560.74**	**31.53**	**1.98**	**4,128.78**	**23,951.59**
Statistical Difference											**(1.60)**
Final Energy Demand	**13,115.82**	**77.37**	**1,419.43**	**-**	**-**	**-**	**5,560.74**	**31.53**	**1.98**	**4,128.78**	**24,335.64**
Industry	1,214.71	77.37	1,238.05		-	-	1,302.85	3.22		1,396.53	**5,232.73**
Transport	10,366.65		-		-	-	-	28.31	1.98	9.24	**10,406.17**
Residential	930.17		-		-	-	3,954.74			1,408.30	**6,293.21**
Commercial	416.41		-		-	-	303.14			1,272.35	**1,991.90**
Agriculture	91.82		-		-	-	-			42.36	**134.19**
Non-Energy Use	96.06		181.38							-	**277.44**
Self-sufficiency											**55.69**

Overall Energy Balance, in KTOE
Summary, FY 2006

	Oil and Oil Products	Natural Gas	Coal	Geothermal	Hydro	Microhydro, Solar & Wind	Biomass	CME	Ethanol	Electricity	Total Energy
Indigeneous	559.25	2,529.44	1,243.32	9,000.14	2,474.78	4.70	5,652.33	0.54			**21,464.50**
Imports (+)	15,672.39		4,073.19						1.41		**19,747.00**
Exports (-)	(2,245.95)										**(2,245.95)**
Bunkering (-)	(125.82)										**(125.82)**
Stock Change (+/-)	(97.90)										**(97.90)**
Primary Energy Supply	**13,761.97**	**2,529.44**	**5,316.51**	**9,000.14**	**2,474.78**	**4.70**	**5,652.33**	**0.54**	**1.41**	**-**	**38,741.83**
Percent Share	**35.25%**	**6.42%**	**13.49%**	**22.84%**	**6.28%**	**0.01%**	**15.70%**	**0.00%**		**0.00%**	**100.00%**
Oil Refining	(317.88)										**(317.88)**
Power Generation	(1,040.53)	(2,310.35)	(3,714.34)	(9,000.14)	(2,474.78)	(4.70)				4,883.44	**(13,661.40)**
Transmission/Dist. Loss (-)										(592.07)	**(592.07)**
Energy Own Use and losse	(329.13)	(193.15)								(363.56)	**(885.84)**
Net Domestic Supply	**12,074.43**	**26.0**	**1,602.18**	**-**	**-**	**0.00**	**5,652.33**	**0.54**	**1.41**	**3,927.81**	**23,284.65**
Statistical Difference											**2.56**
Final Energy Demand	**11,728.34**	**52.56**	**1,324.42**	**-**	**-**	**-**	**5,652.33**	**0.54**	**1.41**	**3,927.81**	**22,687.42**
Industry	1,566.65	52.56	1,175.08		-	-	1,256.42			1,343.66	**5,394.37**
Transport	8,358.37				-	-	-	0.54	1.41	8.30	**8,368.63**
Residential	915.95				-	-	4,095.35			1,361.40	**6,372.70**
Commercial	576.02				-	-	300.56			1,173.18	**2,049.76**
Agriculture	239.52				-	-	-			41.26	**280.78**
Non-Energy Use	71.83		149.34								**221.18**
Self-sufficiency											**55.40**

Contact: report@tky.ieej.or.jp