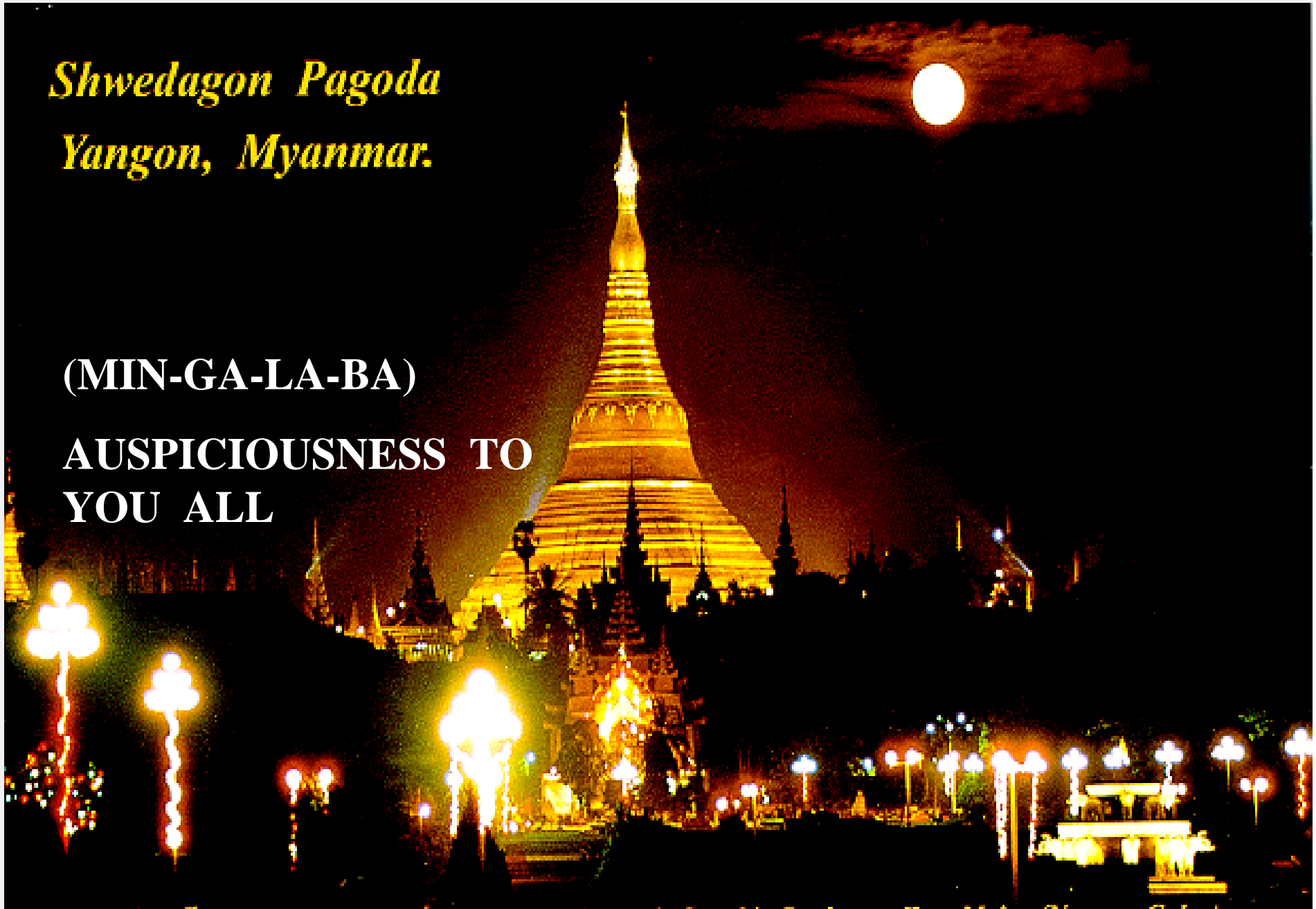


*Shwedagon Pagoda  
Yangon, Myanmar.*

**(MIN-GA-LA-BA)**

**AUSPICIOUSNESS TO  
YOU ALL**



# **MINISTRY OF ENERGY**

## ***ENERGY PLANNING DEPARTMENT***

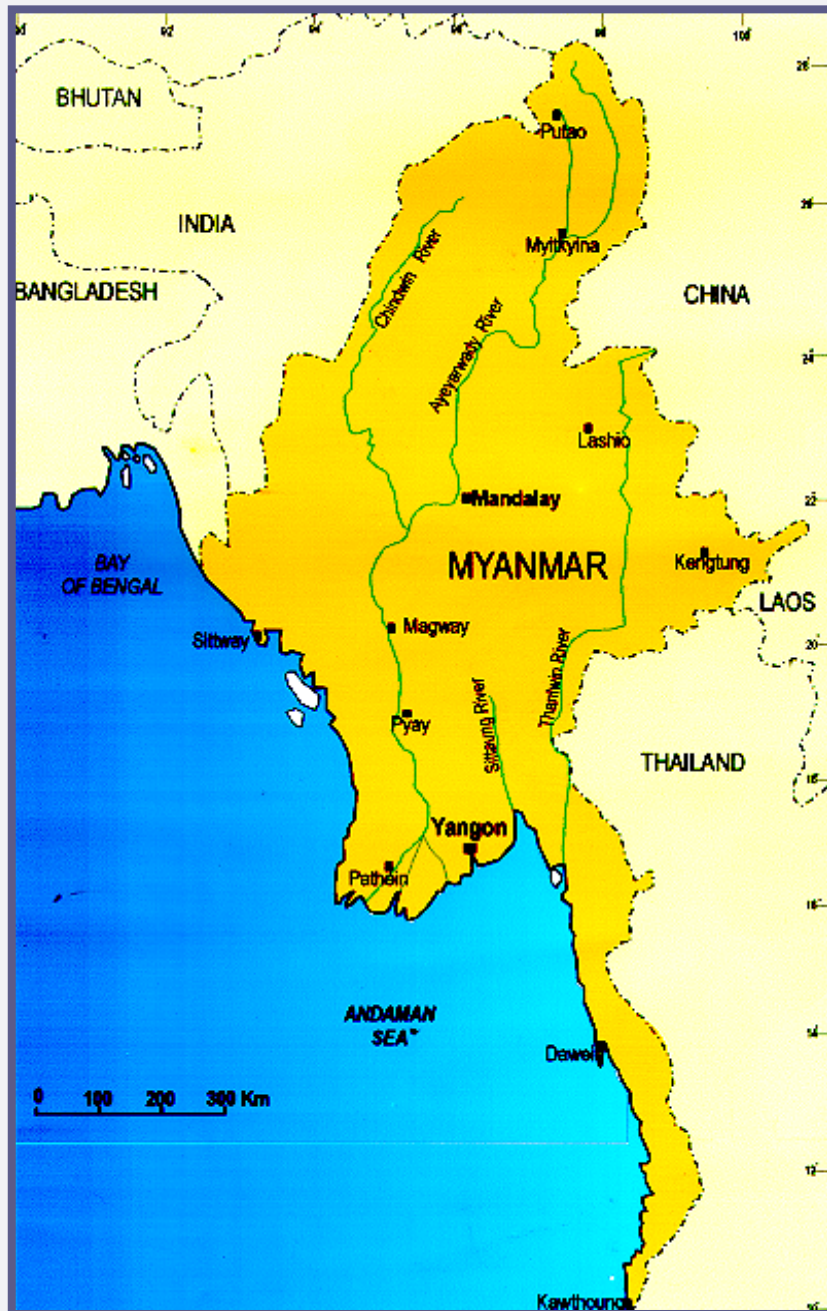
### **ENERGY POLICY(A) – LEADERS TRAINING TYPE**

**Khin May Myint**

**Deputy Director**

**April , 2009**

# UNION OF MYANMAR



## UNION OF MYANMAR

- TOTAL LAND AREA = 676,577 KM<sup>2</sup>

- SHARING BORDERS WITH ;

- BANGLADESH & INDIA = NORTH-WEST**
- CHINA = NORTH-EAST**
- LAOS = EAST**
- THAILAND = SOUTH-EAST**

- COASTAL STRIP = 2832 KM FACING TO THE BAY OF BENGAL AND ANDAMAN SEA.

- ABOUT 57 MILLION PEOPLE WITH AN AVERAGE GROWTH RATE OF 2.0 % PER ANNUM.

# Myanmar Energy Policy

- ❖ To maintain the Status of Energy Independence
- ❖ To promote wider use of New and Renewable Sources of Energy
- ❖ To promote Energy Efficiency and Conservation
- ❖ To promote use of Alternative Fuels in household

## To maintain the Status of Energy Independence

- The Oil & Gas Sector placed as high priority
- Present Production

### Onshore

Crude Oil	10,000 Bbl/day
Natural Gas	100 MMCF/day

### Offshore

Condensate	12,000 Bbl/day
Natural Gas	1.2 BCF/day

# TOTAL RESERVES

## ➤ **Yadana Gas Field**

Natural Gas 7.84 TCF

## ➤ **Yetagun Gas Field**

Natural Gas 4.345 TCF

Condensate 86.35 Million Bbls

- **Present Domestic Consumption far exceed this production level**
- **Shwe Project discovered by Daewoo (Sell to China)**
- **Zawtika Gas Project, discovered by PTTEPI (Sell to Thailand)**
- **Now working at exploration stages**

## **Energy Related Organizations in Myanmar**

- (1) Ministry of Energy = Oil & Gas**
- (2) Ministry of Electric Power = Electricity  
(Including Hydropower)**
- (3) Ministry of Mines = Coal**
- (4) Ministry of Forestry = Biomass & Fuel Wood**
- (5) Ministry of Science & Technology = Renewable Energy**



## Coal Sector

- The Ministry of Mines is responsible to carry out the exploration, production, marketing of Coal.
- The Myanmar Mines Law 1994, permits Private Sector participation in the Mining Industry
- The production of Coal has increased from 992.00 Tons in 2004-2005 to 1,118 Tons in 2007-2008
- Utilized for local industrial use / cross border Coal trade

## Regional cooperation

- Member of the ASEAN Forum on Coal (AFOC) participated in all activities

# To promote wider use of New and Renewable Sources of Energy

## Hydropower

- Myanmar has three different season
  - Summer
  - Rainy
  - Cold
- Four major river
  - Ayeyarwady
  - Chindwin
  - Thanlwin
  - Sittaung
- The geographic and tectonic settings of Myanmar favor to have creeks and many mountain abundant Hydro Power resources

## Geothermal

- Hot springs are found in-
  - Kachin, Shan, Kayah, Southern part of Rakhine States
- 93 geothermal sites have been identified
- 43 sites were investigated
- Myanmar Oil and Gas Enterprise(MOGE) and Myanmar Electric Power Enterprise (MEPE) conducted studies in cooperation with Electric Power Development Co. Ltd., (EPDC) of Japan
- Cooperation with UNOCAL of United States preliminary analysis of geothermal data

## Solar

- Solar for the development of rural area is one of the priority areas of energy research
- New Energy and Industrial Technology Development Organization (NEDO) of Japan performed in 1997 a study on renewable energy in Mekong Basin Countries
- NEDO installed Wind and Solar measuring instruments in collaboration with Department of Electric Power and Myanmar Electric Power Enterprise
- Feasibility study made on Solar-Wind Power Hybrid System in 1999

## Wind

- NEDO of Japan performed in 1997 a study on renewable energy in the Mekong Basin Countries
- Myanmar has potential available Wind Energy of 365.1 Terrawatt hour pre year
- Western part of the country is the potential area for development of Wind Energy
- Evaluation and study on wind resources using modern data acquisition systems are carried out since 1998
- NEDO also installed Wind and Solar measuring instruments in collaboration with DEP
- Research works are being carried out

## **Biofuels**

- To alleviate the dependence on import of liquid fuel
- Ministry of Energy issued specification for Biofuels and take responsibility of monitoring the distributed Biofuels specification is acceptable
- Plan is drawn for Biofuels distribution and preparing the Notification to be issued
- As per Government's guidance for development of the Biodiesel production, Jatropha Curcas plants are grown in homesteads and cultivable land to use its oil as alternative fuel

- The present status of Ethanol production from sugarcane in Myanmar is large scale conducted by private sector
- One of the private companies, has installed an alcohol distillation unit, capacity of 11 million gallons anhydrous ethanol per annum and already produced 860,000 gallons of anhydrous ethanol from sugarcane
- Private companies are planning cassava and sweet sorghum in large scale for ethanol production
- The Government is making arrangement to reduce the CO<sub>2</sub> emission by increasing natural gas utilization in industrial sector and power generation, by converting Gasoline, Diesel and LPG vehicles to CNG vehicles and also using Biofuels

## To promote Energy Efficiency and Conservation

- Myanmar has abundant indigenous energy resources and measure are yet to be taken to utilize systematically, in order to have a sustained development of country's economy.
- The demand for energy is rapidly increasing than can be supplied
- Initiatives are to be taken for promotion of energy conservation programme both at the supply/demand.
- The Promotion of Energy Efficiency and Conservation (PROMEEC) Project was started in 2000



- Government has initiated the two administrative actions
  - (1) All government buildings to use day light for illumination during office hours as much as possible
  - (2) All government vehicles are to observe two dry days a month

## To promote use of Alternative Fuels in Household

- Myanmar having a tropical climate with three general seasons
- 49% of the total land area is covered with different types of forest
- Woodfuel and charcoal are the main sources of the bio-energy
- 76% of population are residing in rural areas, mainly use the woodfuel for cooking
- The urban population is using charcoal 4%-6%
- In order to protect the environment and climatic conditions of country, deforestation measures are seriously being undertaken

- The Forest Department is encouraging use of energy in efficient way
- As a measure to use alternative fuel, emphasis has been made to use LPG in household

# ENERGY DEMAND AND SUPPLY

- Myanmar is a developing country and its economy is based mainly on agricultural products.
- Early 1990s , most of the GDP is coming from Agriculture Sector
- Myanmar launched Market Oriented Economy in 1989
- The state has made tremendous efforts to improve nation's basic infrastructure :

# Energy Demand and Supply

## Primary Energy Consumption of Myanmar

	1988-89	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08
									<b>KTOE</b>
<b>Primary Energy Consumption</b>	<b>9897</b>	<b>11824</b>	<b>11904</b>	<b>12257</b>	<b>12878</b>	<b>13113</b>	<b>12705</b>	<b>14238</b>	<b>14889</b>
<b>Crude Oil and Petroleum Products</b>	<b>589</b>	<b>1983</b>	<b>1991</b>	<b>1924</b>	<b>1924</b>	<b>1957</b>	<b>1756</b>	<b>1904</b>	<b>1789</b>
<b>Natural Gas</b>	<b>885</b>	<b>1205</b>	<b>1033</b>	<b>1264</b>	<b>1428</b>	<b>1508</b>	<b>1305</b>	<b>1511</b>	<b>1721</b>
<b>Coal and Lignite</b>	<b>17</b>	<b>83</b>	<b>71</b>	<b>76</b>	<b>123</b>	<b>196</b>	<b>85</b>	<b>501</b>	<b>558</b>
<b>Hydro</b>	<b>360</b>	<b>728</b>	<b>772</b>	<b>743</b>	<b>788</b>	<b>926</b>	<b>988</b>	<b>1277</b>	<b>1541</b>
<b>Biomass (Wood)</b>	<b>8046</b>	<b>7825</b>	<b>8036</b>	<b>8249</b>	<b>8615</b>	<b>8526</b>	<b>8561</b>	<b>9045</b>	<b>9280</b>

- Energy consumption in Myanmar is mainly upon Traditional Energy such as Woodfuel and Charcoal
- Commercial Energy ( Crude Oil , Natural Gas , Hydropower and Coal ) makes up only 40 % , Woodfuel 60 %
- The total supply and consumption amount in the last 4 years has significantly increased due to the infrastructure developments...
- Myanmar is richly endowed with both renewable and nonrenewable types of energy sources
- The need for increase production of commercial energy is emphasized to meet the industrials development program

- The import volume of crude oil /petroleum products has to be reduced and at the same time administrative / management measures are taken for efficient consumption of crude oil / petroleum products
- The government has been implementing awareness campaign for efficient and effective use of energy by publicizing the energy efficient slogans on the media
- The government is also implementing the substitution of natural gas for liquid fuel in the transport sector . So far a total of over 25,000 vehicles have been converted to Natural Gas Vehicle.

## **To meet the increasing demand, the following efforts have been made to boost the current production of energy:**

- On the other hand , the government is guiding development programs in research on biofuel such as Ethanol , Gasohol and Bio-diesel as an alternative energy to be used in Transport Sector
- In electric power generation , the government is converting liquid fuel based generation to natural gas based generation, where more than 60% of domestic natural gas production are supplied to power generation plants . Furthermore the government is putting a high priority to develop hydro power plant , so that hydel based generation will eventually become a based load generation



- The demand side measures are also taking into account in order to reduce the import quantity. The supply of products to the government sector was tightly controlled and allowed according to work loads and project priorities
- For private sector the quota system is applied on monthly basis. The government is subsidizing the price of Motor Gasoline and High Speed Diesel.
- For private Industries and Manufacturing Sectors , the government is selling in US \$ / FEC earned from their business without limiting the quantity

- For the time being, Myanmar Petroleum Products Enterprise, under the Ministry of Energy is practicing the daily floating price mechanism based on Singapore Platt's Oil price

# CONCLUSION

- In order to cope with the increasing demand, utmost efforts are being made
- Plans are in progress to construct Onshore Natural Gas Pipeline Network so as to transport Natural Gas from surplus region to deficient region
- On the other hand, execution of plan to discover new energy resources will be put at high priority
- Natural Gas reserves in Offshore area are being developed and produced
- Plans are being laid to construct a pipeline from Myanmar Offshore to onshore
- Also plans are under way to sell the Natural Gas from Shwe Project to China via pipeline

- To meet the increasing electricity demand of the country, more Hydroelectric Power Projects will be implemented
- Plans are in progress to perform more research and experiment works to utilize renewable energy sources such as Geothermal, Wind and Solar in place of nonrenewable energy sources
- Being a member of ASEAN, in order to strengthen the regional integration of economic cooperation, Myanmar is actively participating in the Energy Sector Cooperation Programs

**Thank you for your kind attention**