



Member State Perspectives

ENERGY SITUATION IN ASIA AND THE PACIFIC – EMERGING AND PERSISTENT ISSUES

Bangladesh

Bangladesh Power Sector at a Glance

| | |
|-----------------------|--------------------------|
| Generation Capacity | : 10,341 MW |
| Power Import | : 500 MW |
| Highest Generation | : 7,356 MW (March, 2014) |
| Per Capita Generation | : 321 kWh |
| Transmission line | : 9,300 Ckt KM |
| Distribution Line | : 3,00,000 KM |
| Total Consumers | : 14.50 Million |
| Access to Electricity | : 68 % |
| Electricity Growth | : 12 % |

CURRENT ENERGY SITUATION

- Vision : Provide reliable and quality electricity to all by the year 2021 at an affordable price.
- Electricity demand is growing 12% annually and to meet this demand Govt. took huge programs in last 6 years- which increased the power generation capacity more than doubled in this period.
- Govt. directly supports the energy & power sector and controls the price. BPDB, the Government-owned agency is the single buyer of electricity.
- A very good Private sector power generation policy is in place and contribution of private sector is increasing rapidly
- Own Natural Gas is the basic energy source of Power Generation (78.12%- 2013). However, liquid fuel –based power generation has been increased (16.51%- 2013) in recent days to meet the growing demand.
- Country is now seriously focusing for the big coal-based power plants and regional cooperation.
- Bangladesh has been set up 3.5 million SHS in off-grid areas (about 15 mil people). RE policy has been enacted and SREDA has been established. According RE policy 5% of total generation will be from RE by 2015 and 10% by 2020.
- Last 5 years 5.2 bil dollar investment in power sector. Another 8.5 bil dollar project is under under construction. 24 bil dollar project is under process .

CURRENT ENERGY SITUATION

Natural Gas: 75 % of Commercial Energy

23 gas fields

Generation: 2.3 bcfd (1040 by IOCs)

Demand : 3.0 bcfd

Present left over proven gas reserve: 10-12 tcf

Power plants incl captive power consumes 58% of gas

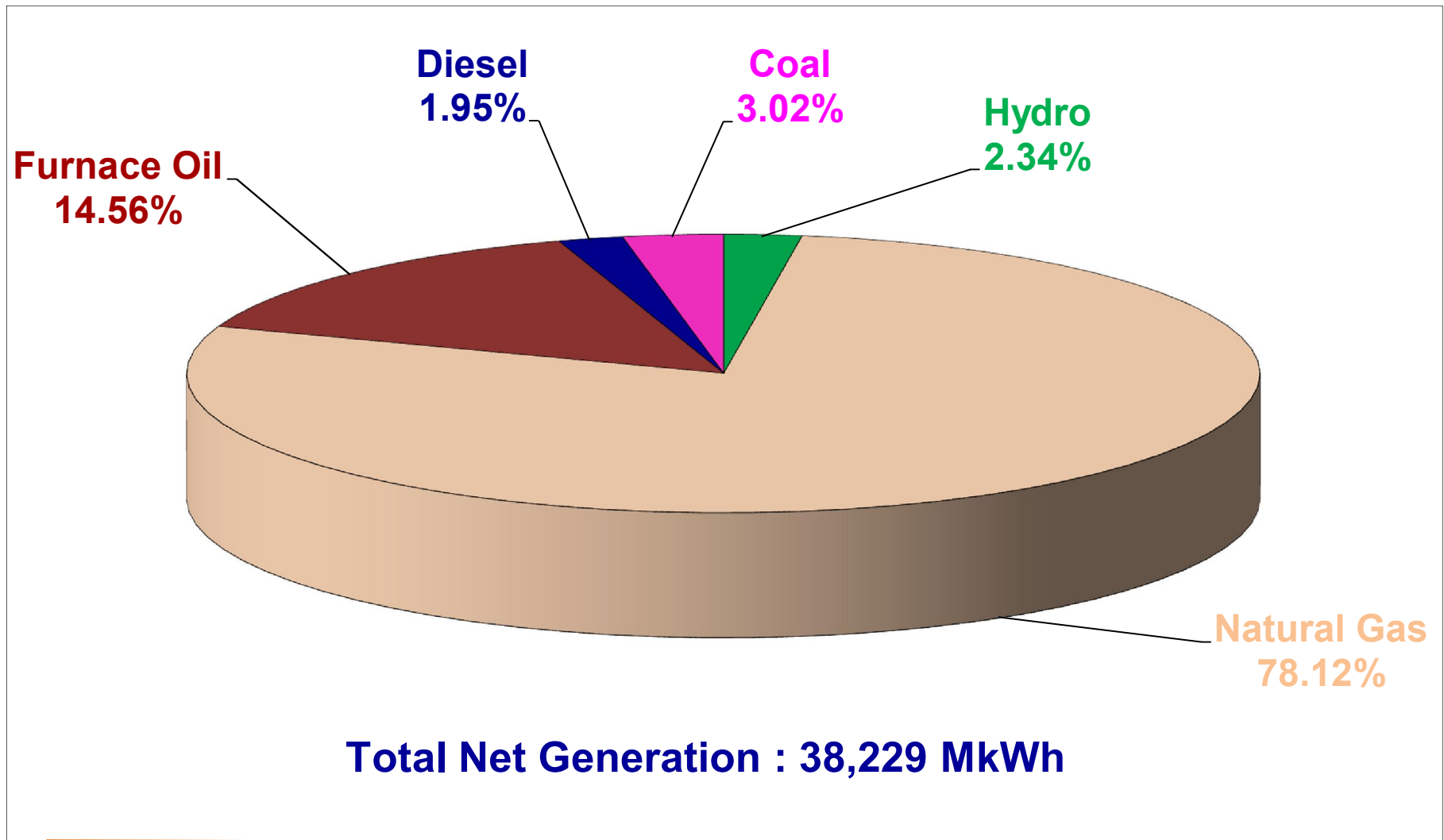
Petroleum : 1.3 mil m.t. c.oil annually

2.7 mil m.t. petroleum product

Coal reserve: 3.3 bilion tons (5 deposits)

Eqv to 65 Tcf

Power Generation by Fuel Mix: FY-2013



Sector Wise Power Generation Capacity

| | Generation Capacity (MW) | (%) |
|--------------|-------------------------------------|------------|
| Public | 5,962 | 58 |
| Private | 3,879 | 37 |
| Import | 500 | 5 |
| Total | 10,341 | 100 |

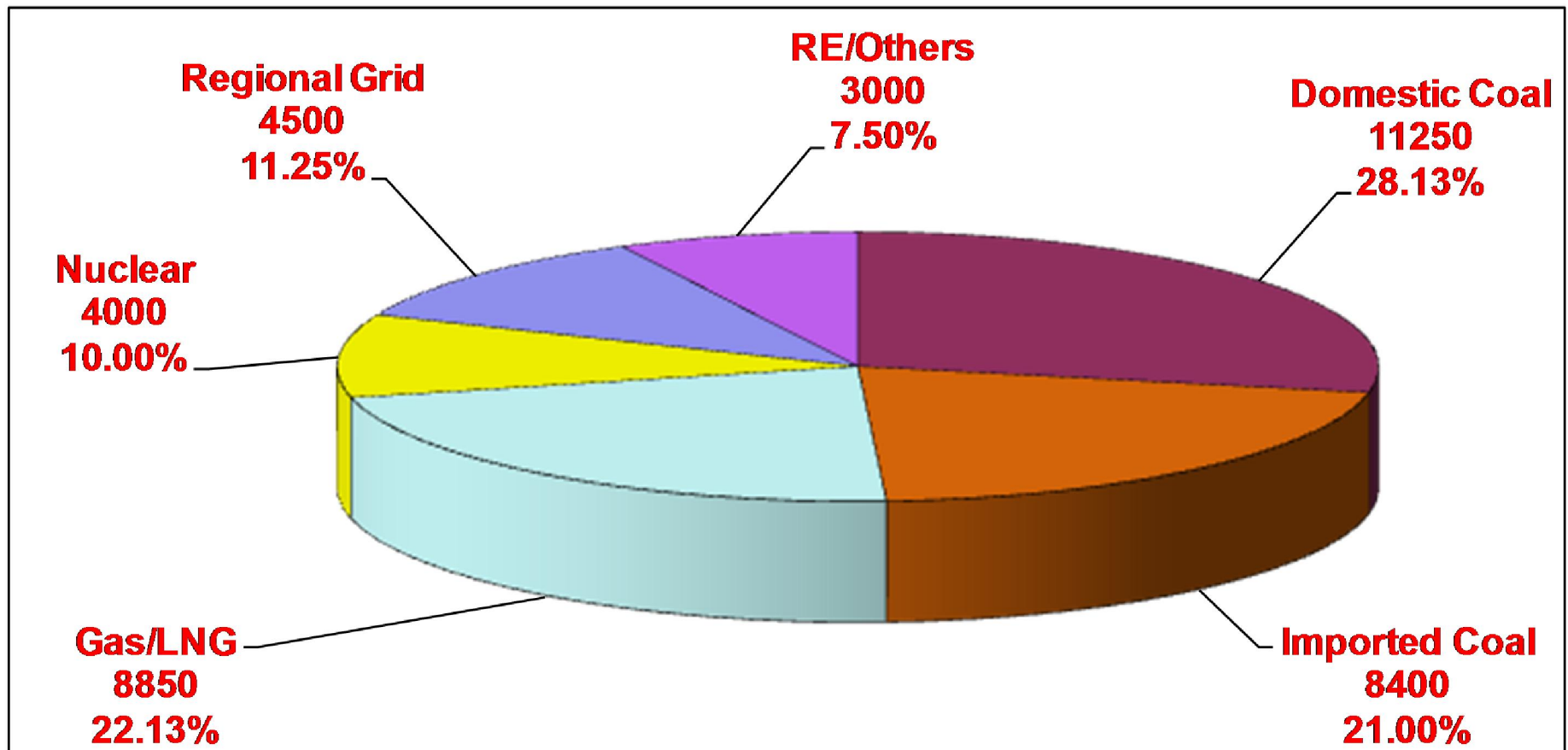
Power Generation Targets

Power generation targets up to 2030

(According to Power Sector Master Plan 2010)

| Year | Target (MW) |
|------|-------------|
| 2016 | 16,000 |
| 2021 | 24,000 |
| 2030 | 40,000 |

Primary Fuel Based Generation by 2030



Total Generation Capacity in 2030: 40,000 MW

Present Status of Renewable Energy

Renewable Energy Policy Approved

Sustainable and Renewable Energy Development Authority (SREDA) Act, 2012 Enacted

According to Renewable Energy Policy 5% (800 MW) of the total generation will be from Renewable Energy by 2015 and by 10% (2000 MW) by 2020.

500 MW Solar, 200 MW Wind & 100 MW Bio-mass/Bio Gas programs taken.

Present Status of Renewable Energy

| Description | Capacity MW) |
|---|--------------|
| Solar Home System (2.98 Million SHS) | 150.00 |
| Solar - Power Sector (own use) | 1.50 |
| Solar - Other Offices | 1.50 |
| Solar - Commercial building/Shopping Mall | 1.00 |
| Solar PV- New Electricity Connection | 11.00 |
| Wind Power Plant | 2.00 |
| Power Generation from Bio-mass | 1.00 |
| Power Generation from Bio-gas | 5.00 |
| Solar Irrigation (93 Nos) | 1 |
| Total (Except Hydro) | 140 |
| Hydro | 230 |
| Total | 404 |

Energy Efficiency and Energy Conservation Initiatives

Preparation EE & Conservation Rule (Draft final)

Development of Energy Efficiency Action Plan

Development of a Regulation on Energy Star Labeling.

Preparation of EE & Conservation Master Plan with the Assistance from JICA

Conversion of Single Cycle PP to Combined Cycle Power Plant

Use of energy efficient appliances, introduction of Energy Star Rating system in the electric appliances through BSTI. Introduction of pre-paid meters and smart meters

Nation wide energy saving campaign

Regional Cooperation

Regional Power Trade

- ❑ 500 MW electricity importing from India through 400 KV double circuit line & HVDC sub-station
- ❑ Additional 500 MW under negotiation, 100 MW from Tripura, India
- ❑ Discussion going on for import of 500 MW from Nepal
- ❑ Further dialogue ongoing for regional trade between Bangladesh-Nepal and Bangladesh – Bhutan

Regional Cooperation

Joint Investment in Regional Power projects:

Joint investment between Bangladesh–India started-Rampal
1320 MW coal base power plant

Discussion is going on for hydro power projects between
Bangladesh-India-Nepal and Bangladesh- India-Bhutan.



Cross Border Trade with Neighboring Countries

- ❖ Target : 6000 MW
- ❖ Cross Border Trade : 50%
- ❖ Join Investment : 50%
- ❖ Financing Requirement : 4000 Mill.USD

Future Focus: Coal based Power Plants

- Bangladesh–India JV “Rampal 1320 MW coal based power plant” is under construction.
- JICA supported 1320 MW Coal based power plant & Coal Terminal is under implementation.
- MoU has been signed with China and Malaysia to establish two 1320 MW coal power plants.
- Contract signed/LoI issued to few Private sector companies (7 projects) to implement 3510 MW coal based plants.
- Discussions is undergoing with different govt-owned/ private companies to establish some more coal power projects.
- BPDB, NWPGL, APSCL, EGCB (govt-owned companies) are also trying to develop/implement some more coal power projects.
- A contract has been signed with Russian Fed to establish a 1000 MW Nuclear Power Projects . Efforts to establish some LNG based plants is continuing.

Acts, Rules, Policies and Guidelines

Acts and Rules:

- Electricity Act 1910 (New Electricity Act, 2014-Draft final)
- Bangladesh Energy Regulatory Commission Act, 2003
- Emergency Energy & Power Supply Special Act, 2010
- Sustainable & Renewable Energy Development Authority (SREDA) Act, December, 2012.
- Bangladesh Rural Electrification Board (BREB) Act,2013.
- Energy Efficiency & Conservation Rules (Draft Final)
- Renewable Energy Development & Promotion Rules (Draft Final)
- BERC Regulations (E. Generation Tariff, License, Dispute settlement etc.)

Acts, Rules, Policies and Guidelines

Policy and Guidelines:

- National Energy Policy, 1996 (Revised-Draft Final).
- Private Sector Power Generation Policy of Bangladesh, 1996
- Policy Guidelines for Small Power Plant (SPP), 1998
- Remote Area Power Supply System (RAPSS) Guidelines, 2007
- Policy Guidelines for Power Purchase from Captive Power Plant, 2007
- Policy Guidelines for Enhancement of Private Participation in the Power Sector, 2008
- Renewable Energy Policy of Bangladesh, 2008 (Revised- Draft Final)
- Public Private Partnership (PPP) Policy, 2010
- 500 MW Solar Program Implementation Guidelines

Opportunity Created by Acts, Policies & Regulations

- Private sector participation is encouraged in Power Generation Sector
- Private sector will also be allowed in Transmission & Distribution.
- The new Electricity Act has been finalized incorporating cross border trade
- The new Electricity Act will allow Open Access Grid
- A policy has been adopted facilitating the 'Open Access Grid'

Challenges

- Power sector is now using 60% of gas. Gas Reserve is depleting and use/demand of gas for other sector is increasing. Due to gas shortage many gas-based plants remain closed (1000-1500 MW) in peak period. To overcome this we are trying to import LNG and to establish LNG based power Plants.
- Huge coal reserve, but domestic coal policy yet to be finalized.
- Coal Import (long term contract) and deep sea port for coal handling is a big concern.
- Ensuring financing for Public and Private sector projects is a major challenge (40 bil US dollar is required by 2030)
- Due to Inadequate draft of the river and costly dredging efforts , Road & Railway infrastructure is a big challenge to transport the fuel and equipment to the project sites.

AREAS FOR COOPERATION

- Financing for the coal & LNG projects along with cooperation in Coal Handling and coal sourcing .
- Establish Regional grid and make arrangement for regional power trade.
- Develop the hydro-projects in Himalayan region and share the power through regional grid.
- Exchange of data, information, technology and increase trust-building activities

Thank you.