TCNL - BCT

OVERVIEW OF ELECTRICITY SECTOR IN VIET NAM

August/2015

ELECTRICITY SECTOR OVERVIEW

Overview of Power generation and load as of 2014

- Installed capacity: 33,071 MW
- Electricity consumption: 126.50 billion kWh
- Maximum load: 22,159 MW

Overview of Transmission Grid as of 2014

- 500kV Grid:

  Total length of transmission line: 6,474 km

  Total Substation capacity: 22,050 MVA

- 220kV Grid:

  Total length of transmission line: 4,445 km

  Total Substation capacity: 35,626 MVA

ELECTRICITY SECTOR DEVELOPMENT PLANNING

Development planning to 2020

- Installed capacity: 62,300 MW
- Pmax: 42,000 MW
- Total electricity consumption: 234.5 billion kWh
- Growth of electricity consumption by period 2016 - 2020: 10.6%/year

Development planning to 2030

- Installed capacity: 116,450 MW
- Pmax: 90,650 MW
- Total electricity consumption: 506.0 billion kWh
- Growth of electricity consumption by period 2021-2025: 8.5%/year
- Growth of electricity consumption by period 2026-2030: 7.5%/year

POWER GENERATION & GRID DEVELOPMENT PERIOD 2016-2025

PERIOD 2016-2020

- Power generation:

New installed capacity: 29,000 MW

Of which

- Thermal coal: 17,200 MW
- Hydro: 2,500 MW
- Thermal gas: 700 MW
- Small hydropower and renewable energy: 2,290 MW

- Grid:

500kV:

- Transmission line: 3,032 km
- Substation: 17,800 MVA

220kV:

- Transmission line: 6,140 km
- Substation: 35,400 MVA

PERIOD 2021-2025

- Power generation:

New installed capacity : 22,601 MW

Of which :

- Thermal coal: 13,096 MW
- Hydro: 370 MW
- Thermal gas: 6,030 MW
- Small hydropower and renewable energy: 3,105 MW

- Grid:

500kV:

- Transmission line: 2,097 km
- Substation: 21,750 MVA

220kV:

- Transmission line: 1,762 km
- Substation: 28,713 MVA

POWER GENERATION & GRID DEVELOPMENT PERIOD 2026-2030

PERIOD 2026-2030

- Power generation:

New installed capacity : 31,142 MW

Of which :

- Thermal coal: 15,200 MW
- Hydro: 2,732 MW
- Nuclear power: 3,500 MW
- Thermal gas: 4,920 MW
- Small hydropower and renewable energy: 4,790 MW

- Grid:

500kV:

- Transmission line: 4,560 km
- Substation: 26,100 MVA

220kV:

- Transmission line: 2,580 km
- Substation: 31,313 MVA

QUESTIONNAIRE

1. The major obstacles in the development, operation of the electric power generation sources and electric power network in Vietnam are:

- Capital;
- Technology;
- Quality of contractors/equipment.

QUESTIONNAIRE

On the Development of Electric Power Generation Sources and Network

The specific problems in the development of each type of generation sources are:

- **Thermal power:** Fuels (mostly coal) are imported in the coming years.
- **Nuclear power:** The nuclear power development policy has not been optimized; the operational expertise of nuclear power plants is not available.

QUESTIONNAIRE

- Hydro power: While the masterplan encompasses further 2,000MW to be developed, the potential sites for major hydropower installations are practically not available; there are only sites for small hydro of less than 25MW installed capacity and even most of the sites are of 10MW or less, let aside few 25MW potentials.

- Renewable energy: Viet Nam does promulgate the policy on renewable energy development, however, at pilot scale. Renewable energy projects are mostly really small in capacity (few MWs) and they are highly commercial given the higher level of equipment costs and technology which are not compatible with the income of the people; thus price subsidiary from the Government is a must requirement.

QUESTIONNAIRE

The specific problems in the development of power network are: Almost the distribution network in Viet Nam located in the rural areas and largely outdated, resulting the high distribution loss.

QUESTIONNAIRE

On the Operation of Electric Power Generation Sources and Network

- **Power generation:** Suffers from chronic outages for repair.

- **Power network:** suffers from frequent overload.

QUESTIONNAIRE

2. Counter measures to the problems

- To diversify the forms of investment in the development of the electric power generation sources and electric power network (albeit, the transmission is under the State monopoly).
- To well prepare various coal import plans.
- To have the plan on human resource development, training for nuclear power development.
- To increase the share of renewable energy in the power system.
- To enhance the public procurement of equipment supply and selection of sponsors in power projects (improving bidding process).
- To encourage the local manufacturing and technology for the electric power generation sources and electric power network.

QUESTIONNAIRE

3. The factors impacting the quality of power sector infrastructure

To my own view, there are no factors impacting the quality of the power sector infrastructure but HUMAN BEEINGS.

QUESTIONNAIRE

4. Necessary supports from APEC

- To have more seminars/symposiums in which the nations can have the platforms to exchanges experiences in the development of power sector infrastructure.

- To train the human resources for the countries who are in similar economic and technology status to Vietnam.

Thank you for your attention!