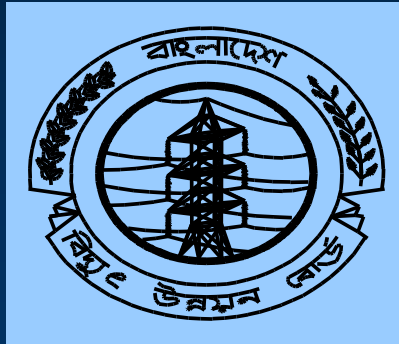


Bangladesh India Power Trade

Prospect and Challenges



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Agreement Signed

- Power Purchase Agreement with NVVN for 250 MW has been signed on 28 February, 2012.
- Bulk Power Transmission Agreement (BPTA) between BPDB and PGCIL has been signed on 26 July, 2010.

Development of Transmission System

Following transmission system has been established for interconnection of Electrical Grids of India and Bangladesh to export power from various Generating Stations in India to Bangladesh:

- 400 kV switching station at Bohrompur (by India)
- 500 MW HVDC back-to back station and 230 kV switching station at Bheramara (by Bangladesh).

- Bohrampur (India) – Bheramara (Bangladesh)
400 kV Double circuit line (70 km by India and 27.8 km by Bangladesh).
- Loop- in and Loop out of Farakka-Jeerat 400 kV
Single circuit line at Bohrampur (by India)
- Loop in and Loop out of Ishwardi-Khulna South
230 kV Double Circuit Line at Bheramara (by Bangladesh).

Transmission and Other Charges

- Transmission charges for the above said system to be implemented by Powergrid India shall be payable as per the CERC Regulations, 2009.
- The Transmission Tariff and terms and conditions for the power to be transmitted by Powergrid India through the said transmission system shall be as per Norms specified by CERC.
- Any other taxes and charges imposed by Government of Bangladesh shall also be paid by BPDB.

Payment under Bulk Power Transmission Agreement

- All payments under this agreement shall be paid and settled in Indian Currency or equivalent US\$. Payment of bills shall be made by BPDB through irrevocable revolving Letter of Credit (LC) opened in favour of Power Grid India at any scheduled Bank in Bangladesh. LC shall be established for amount equivalent to 105 percent of their estimated monthly billing.
- The bills so presented by Power Grid India to the bank shall be promptly paid on their presentation. The amount of LC shall be reviewed by Power Grid India once in six months in April and in October (in each financial year), based on the six monthly average and the amount of LC shall be enhanced/reduced, as necessary.

- In case payment of bills by BPDB is delayed beyond a period of sixty (60) days from the date of billing, a late payment interest shall be charged on the amount remained unpaid.
- Provision of late payment interest shall be as per Transmission Tariff Regulation issued by CERC.

Dispute Resolution Under BPTA

- At the first instance all differences or disputes between the parties shall be settled through mutual discussion amongst parties concerned.
- If the disputes are not settled within 3 months, it shall be referred to the respective government i.e. the Government of India and the Government of Bangladesh.

Salient Features of Power Purchase Agreement

- Contracted Capacity : 250 MW.
- Term of the Contract : 25 Years.
- Delivery Point :

The delivery point will be 400 KV Bus interconnection of Generator Bus of the respective Central Generating Stations of NTPC with 400 KV bus of Central Transmission Utility (CTU) of India.

System Monitoring and Control:

- The National Load Dispatch Centre (NLDC) / Power System Operation Corporation Limited (POSOCO) presently subsidiary of POWERGRID is entrusted with the responsibility for coordination of scheduling, monitoring and controlling the operation of the power system and its parameters such as voltage, frequency, active and reactive power flows in the Grid.
- BPDB/ Power Grid Company Of Bangladesh (PGCB) or its designated party shall, on a daily basis provide / exchange information regarding scheduling to the control room of NRVN at New Delhi for smooth coordination between two parties.

Transmission Charges:

- All charges of any and every nature including transmission charges, scheduling fees, open access charges, transmission losses and adjustment therefore from the Delivery Point shall entirely be to the account of BPDB.

Metering:

- The energy recorded by the main meters at Delivery Point(s) shall be used for computing the energy supplied by NVVN.

Tariff:

- Tariff will have the Capacity Charges, Energy charges.
- In case the availability factor of the generating stations of NTPC from where power is being supplied is not maintained as per the norms decided by CERC from time to time, the tariff shall be adjusted as per the CERC formula of the terms and conditions for tariff.

Taxes, duties etc.:

- All statutory taxes, levies, duties, royalty, fees or any other kind of levies imposed/charged by either GoB or Gol or any state Government(s) in India and/or any other local bodies/authorities on generation of electricity shall be borne by BPDB and repaid by the BPDB.

REBATE:

- As per the presently applicable Regulation of CERC, a rebate of 2 % on the value of invoice raised by NVVN for payment through a letter of credit on presentation of bills is allowed.

Energy Invoices:

- NVVN shall raise invoice (Provisional / Monthly Invoice) based on the energy scheduled by BPDB in the previous month.
- Payment for Capacity and Energy charges shall be effective from the date of commencement of supply.

LETTER OF CREDIT:

- BPDB shall provide to NVVN, in respect of payment of its Invoices, an unconditional, revolving, irrevocable, confirmed and transferable sight Letter of Credit (“LC”) in Indian Rupee / US DOLLAR, opened and maintained by BPDB at Dhaka, which may be drawn upon by NVVN/NTPC through negotiating bank (State Bank of India) at New Delhi.
- The amount of the LC is equivalent to the expected Invoice value in Indian Rupee/US DOLLAR for 90 (ninety) days of export of energy based on Contracted Capacity.

PAYMENT OF INVOICE:

- BPDB will pay Invoices through sight LC.

GUARANTEE

- The failure to make payment by BPDB to NVVN and the due performance of BPDB and other obligations under the Agreement shall be duly secured by the Guarantee of the GoB.

DISPUTE RESOLUTION:

- Either party is entitled to raise any claim, dispute or difference of whatever nature arising under, out of or in connection with the Agreement.
- Such Dispute shall be referred to the Chairman NVVN and Chairman BPDB for discussion and resolving the issues.
- Within 30 (thirty) Business Days from the date of referring the Dispute to the Chairman NVVN and Chairman BPDB , if issue is not resolved then Secretary (Power) of GoI and the Secretary, Power Division, Ministry of Power, Energy & Mineral Resources of the GoB shall promptly meet and attempt to negotiate in good faith to resolve the Dispute.
- If the Dispute is not resolved within 30 (thirty) Business Days. It shall be referred to and finally settled by arbitration in accordance with the Rules of Arbitration of Singapore International Arbitration Centre (“SIAC Rules”).
- The seat and venue of the arbitration shall be Singapore.

QUARTERLY AND ANNUAL RECONCILIATION:

- The parties acknowledge that all payments made against the Invoices shall be subject to quarterly reconciliation within 30 (thirty) Business Days of the end of the quarter of each Financial Year and annual reconciliation within 30 (thirty) Business Days of the end of each Financial Year to take into account the Regional Energy Accounts, Tariff, Rebate, interest charge etc. under this Agreement.

FORCE MAJEURE EVENT:

- Standard Force Majeure Event clause is included in the Contract.

Force Majeure Exclusion:

- (a) Non-performance resulting from normal wear and tear typically experienced in power generation materials and equipment;
- (b) Strikes at the facilities of the Affected Party;

(c) Non-performance caused by, or connected with, the Affected Party's:

(i) Negligent or intentional acts, errors or omissions;

(ii) Failure to comply with an Indian law; or

(d) Breach of, or default under the Agreement.

Available Relief for a Force Majeure Event:

- No party shall be in breach of its obligations pursuant to the Agreement.
- No payments shall be made by either party affected by a Force Majeure Event for the period of such event on account of its inability to perform its obligations due to such Force Majeure Event

Bangladesh-India Power Trade: Prospects

- Sale of power from surplus to deficit lead to rationalize development & operating cost.
- Lower the capital cost by lowering the reserve margins
- Will strengthen Indo-Bangla ties, eventually lead to prosperity.
- Will reduce huge financial investment for development and/or upgrading of power generation projects.

Bangladesh-India Power Trade: Prospects

Present Power Generation Scenario:

- **Generation Capacity:**

Public Sector = 5,381 MW (59%)

Private Sector = 3,678 MW (41%)

Total = 9059 MW

- **Demand Supply Situation:**

Generation = 6,300 MW to 6,600 MW

Highest Generation = 6,675 MW (July 12, 2013)

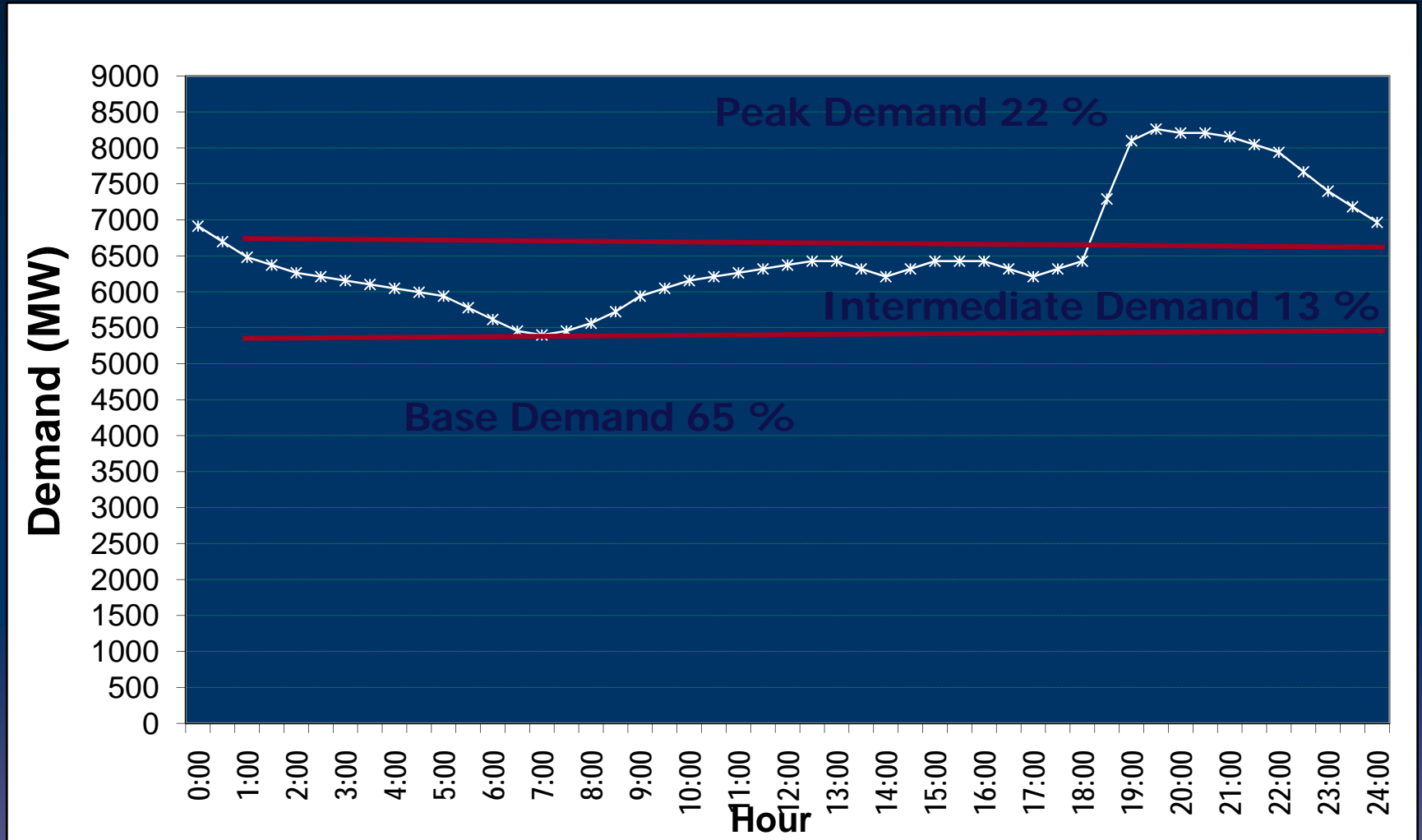
Peak Demand = 7,000 MW (2013)

Peak Demand forecast = 17,304 MW (2020)

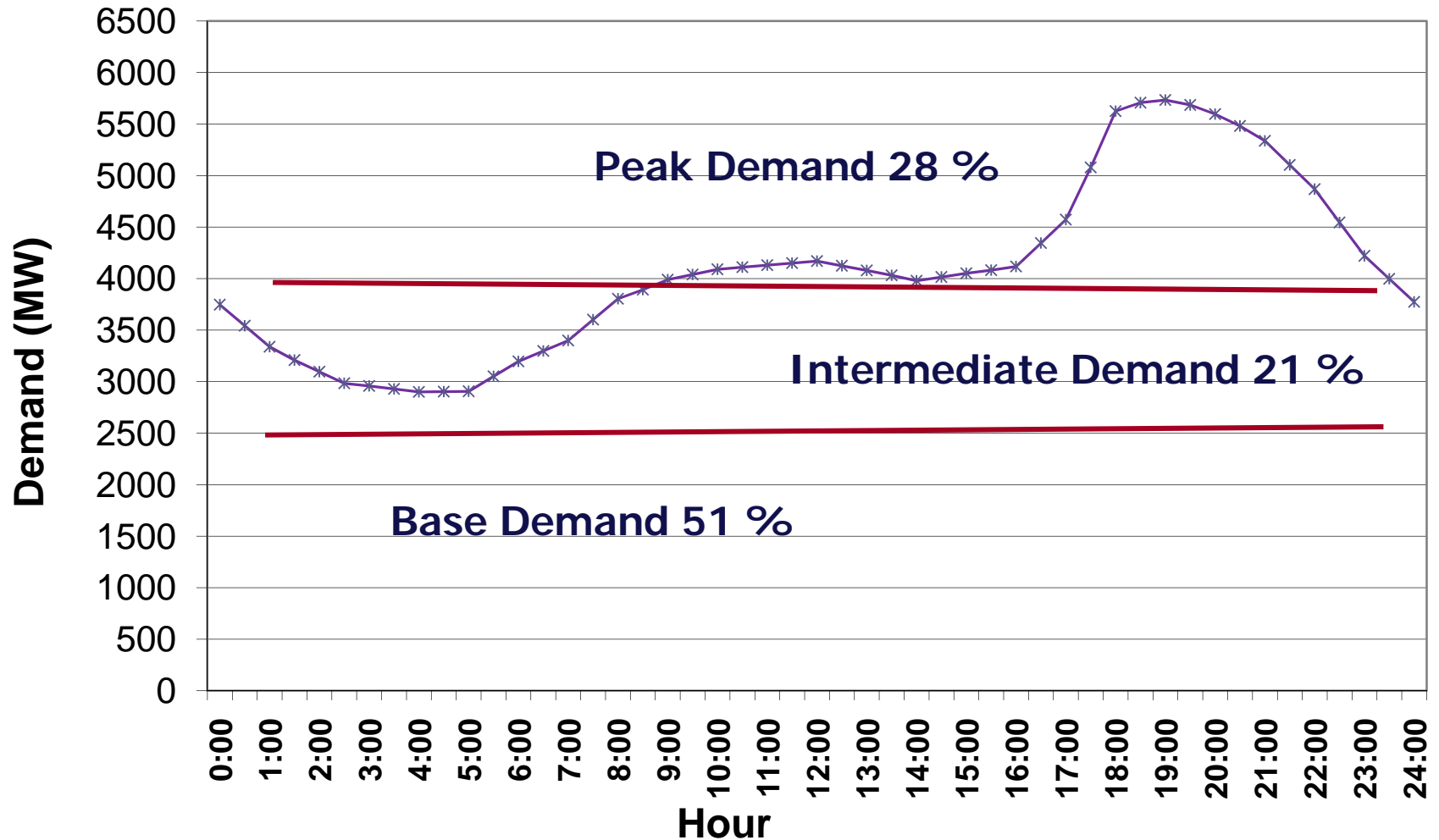
Peak Demand forecast = 25,199 MW (2025)

Peak Demand forecast = 33,708 MW (2030)

Typical Demand Curve for Summer



Typical Demand Curve for Winter



Bangladesh-India Power Trade: Prospects

- Gas shortage causes 600-800 MW less Power Generation
- Load shedding up to 800-1000 MW during hot summer days
- Shortage and unreliable power supply has constrained economic growth

Energy Generation by Fuel Type

• Natural Gas	=	78.12%
• Furnace Oil	=	14.56%
• Coal	=	3.02%
• Hydro	=	2.34%
• Diesel	=	1.95%

Power Generation Plan upto 2030

Sl. No.	Description	Capacity (MW)	%	Possible Location (s)
1	Domestic Coal	11,250	51	North West Region at Mine Mouth
2	Imported Coal	8,400		Chittagong and Khulna
3	Domestic Gas/LNG	8,850	23	Gas- Near Load Centers LNG- Near Costal Area
4	Regional Grid	3,500	9	Bohrompur - Bheramara, Silchar - Fenchuganj, Purnia- Barapukuria- Bongaigaon, Myanmar – Chittagong
5	Nuclear	4,000	10	Ruppur
6	Others (Oil, Hydro and Renewable)	2,700	7	Near Load Centers
Total		38,700		

Bangladesh-India Power Trade: Challenges

- Diverse Electricity Regulations/Laws and Regulatory Framework
- Investments Issues in the cross borders power transmission projects
- Bidding documents and contracts of two countries are not same
- Quantum of Power and Term of Contract
- Operating issues relating to scheduling and dispatch.

- Conduct detailed study on the feasibility of a Electricity grid and a regional power market.
- Needs to adopt relevant legal and regulatory measures in respective countries to establish 'Regional Power Market'
- Multilateral, Regional bodies and other energy related institutions should extend technical and financial Co-operation
- Needs to identify win-win options for sustainability of Regional Co-operation
- Strong Political will is key to move forward towards Regional Energy Co-operation to ensure energy security in this region for overall socio-economic benefit.

Conclusion

The following measures may be taken for Bangladesh – India Power Trade:

- Government decision for trading of cross border power.
- Standardization of Bidding documents and contracts & a committee may be formed with members from Bangladesh & India.
- Enhancement of cross border power transmission capacity.
- Similar scheduling and dispatch procedures

Thank You

