Coal Movement on Ganga (NW1)

IWAI
25th February, 2010
Waterways of India

- Role of IWAI - Develop infrastructure and Regulate movement on National Waterways

- 3 National Waterways developed & operational

- GoI has notified two more waterways i.e NW 4 and NW 5 in Nov. 2008

- Other waterways to be developed by States
**Distance**
1620 km Haldia- Allahabad

**Fairway**
Least available depth (LAD)
- 3 m Haldia-Farakka
- 2.5 m Farakka - Patna
- 2 m Patna - Varanasi
- 1.5m Varanasi-Allahabad

**Navigational Aids**
- Night navigation aids available between Tribeni and Varanasi (1187 km)
- Day navigational aids on entire stretch
Inland Waterway Terminals on National Waterways 1 & 2
Inland waterways Advantage

- Energy efficiency – 1HP can move approx. 150 kg on road, 500 kg by rail & 4000 kg by IWT

- Fuel efficiency – 1 litre of fuel can move 24 ton km by road, 85 ton km by rail & 105 ton km by IWT

- High single unit carrying capacity – one Barge = 15 rail wagons = 60 trucks

- Environment friendly – low air & noise pollution

- No need for land acquisition

- Preferred mode for movement of ODC cargo - most efficient and reliable

- Least capital intensive
• NW 1 provides direct connectivity to the Kolkata and Haldia port-nearest gateway port for State of Bihar

• Also provides direct connectivity to North Eastern States through NW 1 and NW 2

• Could provide an alternative mode of transportation for both EXIM and Domestic cargo

• De-congest Railway network in the State

• Pivotal role in transportation of **Over Dimension Cargo**

• Long distance **River Cruise** has commenced on NW 1

• Ganga – Operational **Dedicated Freight Corridor** for Bihar
• Cheapest mode for transportation for bulk commodities like Fertilizers, Food grains, Cement, stone chips, steel and coal

• This presentation will provide an insight on
  – problems faced by power utilities
  – coal requirement of the existing & proposed power plants and
  – logistic solution for the movement of the same through IWT- especially of imported coal
Problems faced by existing Power Utilities

• Operating at low PLF (50%-60% in some cases) due to erratic supplies of coal

• Shortage of railways wagons especially in the month of November to March each year- due to shifting of wagons for transportation of Food grains

• Purchase of coal at higher rates through E-Auction (in some cases) to fulfill the demand

• Over size coal increases the turnaround of wagon results into higher freight cost in the form of demurrage
Bihar - Existing and Proposed Power plants

- **Existing Power plants on / in proximity to NW1**
  - Muzaffarpur - 1000 MW
  - Barauni - 220 MW – proposed expansion - 500 MW
  - Kahalgaon - 2340 MW

- **Proposed Power Plants on / in proximity to NW1**
  - Pirpainty - 2000 MW
  - Bhagalpur - 1320 MW
  - Muzaffarpur – 500 MW
  - Lakhisarai- 1320 MW
  - Barh-3300 MW
  - Buxar-1320 MW
<table>
<thead>
<tr>
<th>New Projects</th>
<th>Capacity</th>
<th>Coal Requirement</th>
<th>Expected Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barauni TPS-Extension</td>
<td>2x250 MW</td>
<td>2.65 MMTPA</td>
<td>2013-14</td>
</tr>
<tr>
<td>Muzaffarpur TPS-Extension</td>
<td>2x195 MW</td>
<td>2.20 MMTPA</td>
<td>2013-14</td>
</tr>
<tr>
<td>Chausa-Buxar</td>
<td>2x660 MW</td>
<td>6.25 MMTPA</td>
<td>2015-16</td>
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<tr>
<td>Lakhisarai</td>
<td>2x660 MW</td>
<td>6.25 MMTPA</td>
<td>2015-16</td>
</tr>
<tr>
<td>Pirpainty</td>
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<td>6.25 MMTPA</td>
<td>2015-16</td>
</tr>
<tr>
<td>Bhagalpur</td>
<td>4x660 MW</td>
<td>12.50 MMTPA</td>
<td>2014-15</td>
</tr>
<tr>
<td>Pirpainty</td>
<td>4x500 MW</td>
<td>10.48 MMTPA</td>
<td>2014-15</td>
</tr>
<tr>
<td>Lakhisarai/Bhagalpur</td>
<td>2x500 MW</td>
<td>5.30 MMTPA</td>
<td>2014-15</td>
</tr>
<tr>
<td><strong>TOTAL COAL REQUIREMENT</strong></td>
<td><strong>51.88 MMTPA</strong></td>
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</table>
Imported Coal Requirement

- Total Coal requirement for the proposed power plants located on / in proximity to NW 1 - 51.88 MMTPA
- These coal requirement is calculated based on the normative PLF of 85%
- Gap with respect to coal linkage of NTPC Plants in 11\textsuperscript{th} & 12\textsuperscript{th} Plan is as under:
  - Farakka -0.62 +3.63 =4.25 MMT
  - Barh - 1.24+7.49 = 8.73 MMT
  - Kahalgaon – 0.21+1.92 = 2.13 MMT
  - Muzaffarpur exp. - 1.24 MMT
  - Total 16.35 MMT
- This gap can be met by sourcing it from other distant coal mines or imports
- To overcome the erratic supplies of indigenous coal- MOP allows power plants to blend imported coal to the extent of 20%
- As per above assumption of 20\%, total imported coal requirement could be of over 10 MMT
Proposed Logistic Solution for Imported Coal

- Vessel call at Sands Head or any other location capable for handling Panamax vessel
  - Mid stream transshipment (Transshipper)

- Movement of Transshipper and Panamax vessel to Diamond Harbour and Sagar for midstream discharge into barges

- Movement of coal through barges to Farakka and Kahalgaon
  - Target Quantity **2.8 mn MT**
  - Merry Go round of Barges for 1500 MT (43 nos)

- Farakka and Kahalgaon Terminal
- Material handling equipments as stipulated by NTPC
Logistics Solution for Coal

Mid Stream Transshipment Point

Sagar Islands

Diamond Harbour

Kolkata
Logistics Solution for Coal Transportation on Haldia - Farakka stretch

- NTPC, Farakka
- Merry go Round
- Diamond Harbour

**MERRY GO ROUND-I- BARGES**
- Target Quantity: 1.2 mn MT
- Turnaround of Barges: 6 days
- No. of Barge required: 16
- Operational period: 10 months
Logistics Solution for Coal Movement: Haldia - Kahalgaon Stretch

MERRY GO ROUND-II- BARGES
Target Quantity: 1.6 mn MT
Turnaround of Barges: 7 days
No. of Barge required: 27
Operational period: 10 months
Way Forward

- Govt. of Bihar could sign a MoU with IWAI for examining prospects of coal supply through IWT.

- IWAI to carry out a Feasibility Study

- The proposed study would be carried out by IL&FS-existing PDO of IWAI

- The study will also cover other cargo which has potential to move onto waterway

- IWAI would also assist in preparation of suitable projects for earning ‘carbon credits’.

- BSEB/State Government to facilitate IWAI / its agency in carrying out the above study
Waterways of India

THANK YOU