

Coal Movement for Power Plants through Inland Water Transport

Inland Waterways Authority of India

27th November, 2009

Present Scenario

- Thermal Power Plants main source of energy (70%) in India
- At least 11 TPS located in the vicinity of Ganga (NW 1) & Brahmaputra (NW 2)
- So far, railways dominant mode of transport for coal – whether domestic or imported
- Shortfall in wagon availability along with 120% line occupancy ratio on Eastern, South Eastern & East Coast railway routes pose major transport bottleneck
- CEC study reveals negligible coal stock at plants impacting electricity generation
- Power shortage has caused production loss of about Rs.43,000 crore in 2008-09*
- Indians spend over Rs.30,000 crore every year to run their power back up systems
- * Study by MAIT & Emerson Network Power

Coal shortage for NTPC plants in WB & Bihar

- CEA reports reveal that Farakka & Kahalgaon STPS are facing coal shortage due to inadequate coal availability in linked ECL mine (Rajmahal)
- Against requirement of 27 MMT p.a, present supply 17 MMT p.a by ECL
- This can at best go up to 24 MMT p.a – clear shortfall of 3 MMT p.a
- Due to Andal – Santhia single-line section, railways could not supply more than 7 rakes per day from other sources including imported coal
- NTPC has reported annual coal shortfall of 1.2 MMT for Farakka & 1.6 MMT for Kahalgaon STPS to IWAI
- Unit -6 of Farakka (500 MW) to be commissioned by Dec.2010 & those of Barh from 2013 onwards
- Coal demand & supply gap likely to worsen despite best efforts of CIL

NTPC power plants

- **International Coal Ventures Pvt. Ltd. (ICVL)** – a JV company of CIL, NTPC, SAIL, RINL, NDMC – seriously scouting for coal mines in Australia, Indonesia etc.
- Import of 28 MMT of thermal coal permitted in current year of which NTPC allowed to import 12.5 MMT
- In 2008 - 09, orders for import of 8.2 MMT of thermal coal for NTPC power plants were placed but only 5.4 MMT could be received
- Dependence on imported coal likely to continue

Present status of NW 1

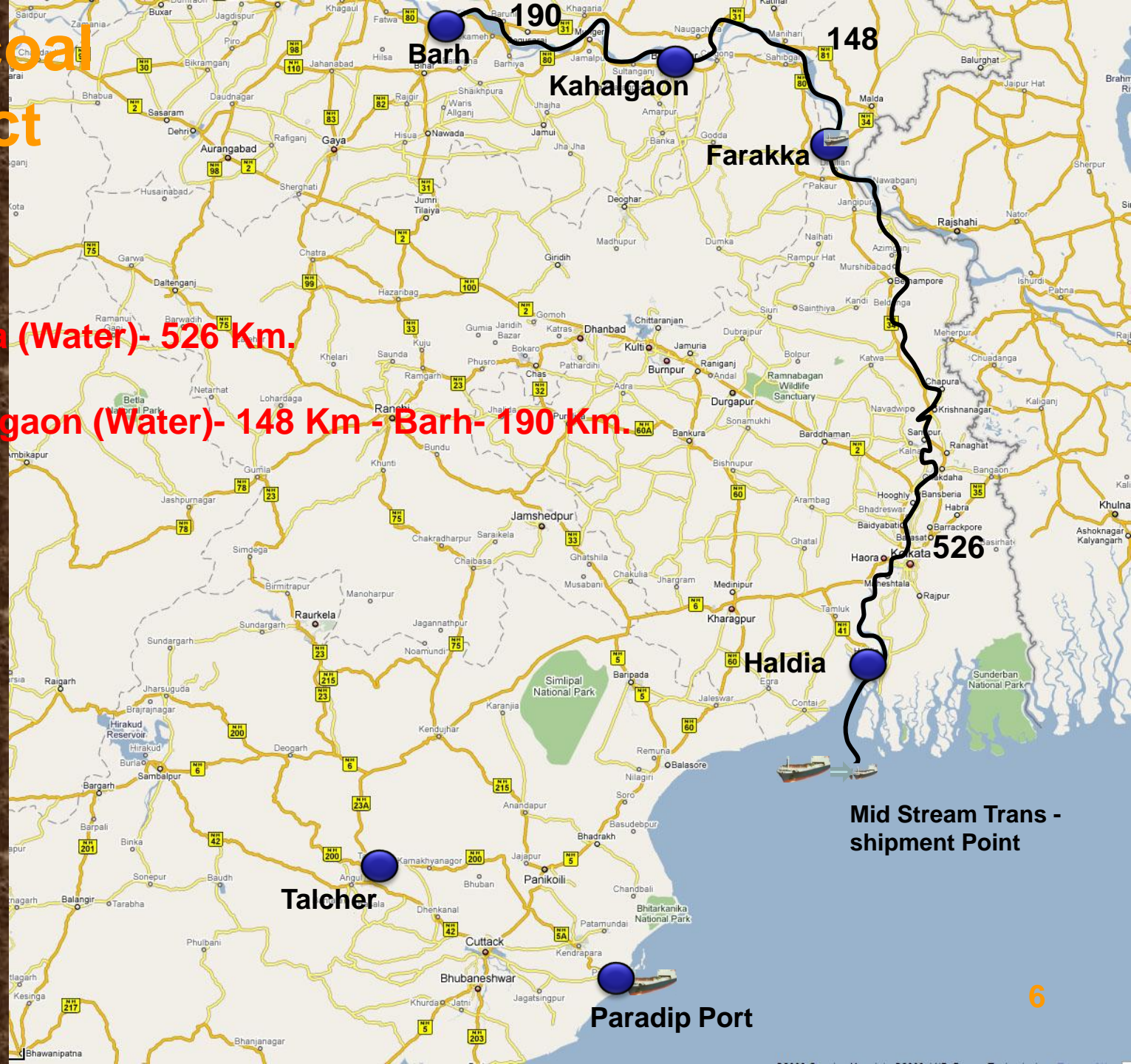
- Investments over last ten years in NW 1 by IWAI have led to –
 - 2.5 – 3 m LAD Haldia to Farakka
 - 2.0 m LAD from Farakka to Varanasi
 - 1.5 m LAD from Varanasi to Allahabad
- LAD of 2.5 – 3 m available for 210 days in entire stretch & with more dredgers, can become possible for at least 300 days
- Night navigation facilities up to Varanasi by March & Allahabad by Dec.2010
- To facilitate safe navigation, DGPS station at Bhagalpur operational & those proposed at Katwa, Patna & Varanasi likely to become operational by March 2011
- Stage set for movement of bulk cargo on NW 1

NTPC coal project

Distances

Haldia - Farakka (Water)- 526 Km.

Farakka - Kahalgaon (Water)- 148 Km - Barh- 190 Km.



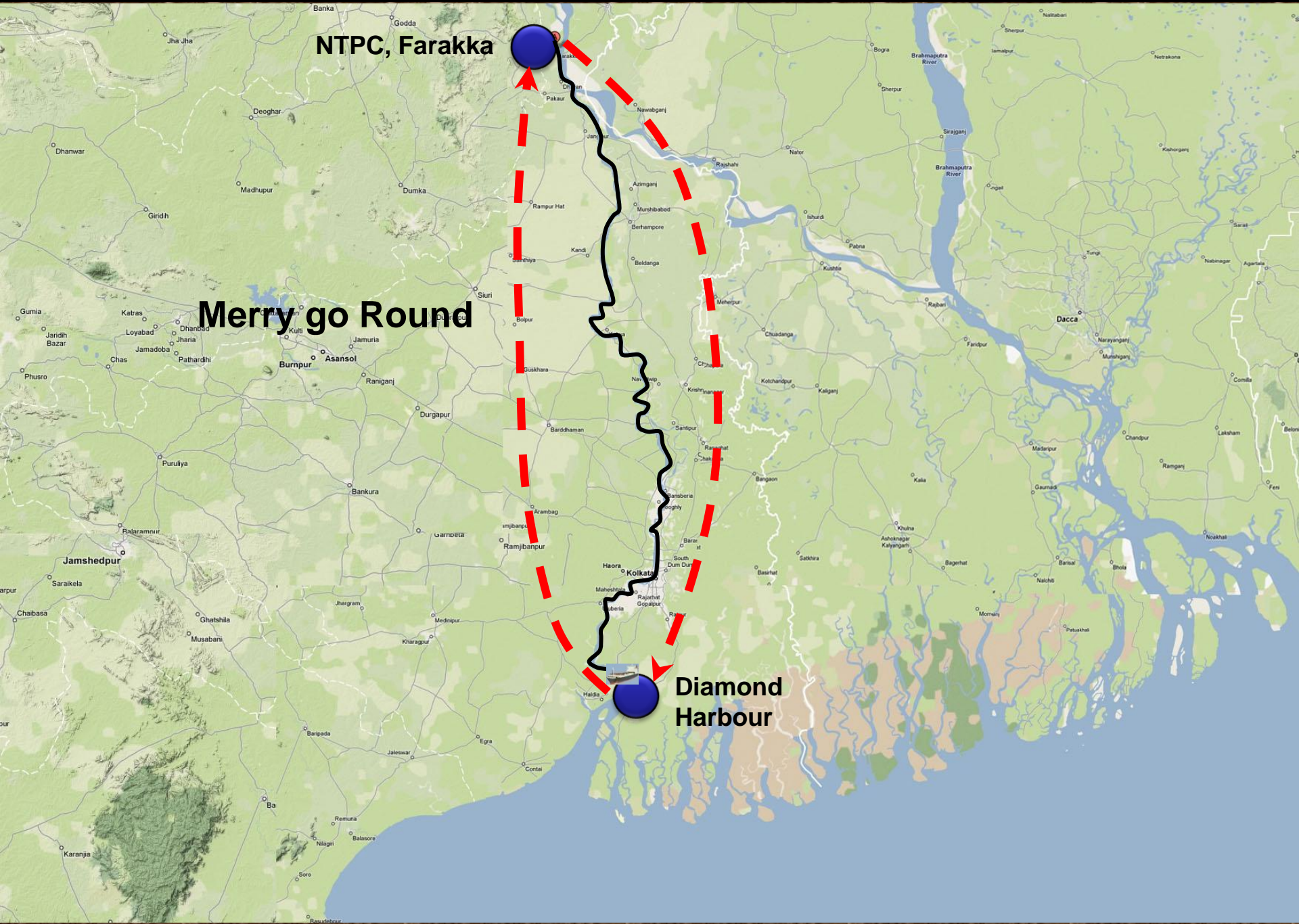
Mid Stream Trans -
shipment Point

Logistics Solution for Coal



Mid Stream Transshipment Point

Logistics Solution for Coal



NTPC, Farakka

Merry go Round

Diamond Harbour

Logistics Solution for Coal



Tildanga

New Farakka

Conveyer Belt

NTPC Plant, Farakka

NH 34

NH 34

NH 34

Project Details

- 43 Barges (1500 m.t.) - Rs.258 crore
- Trans-shipper – Rs.115 crore
- Material Handling equipments – Rs.206 crore
- Terminals – Rs. 33 crore
- Other costs - Rs. 48 crore
- Total - **Rs.660 crore**

Cost Comparison

- IWT cost per m.t. at Farakka – Rs.650
- Comparative Railway cost per m.t. - **Rs.650**
- IWT cost per m.t. at Kahalgaon – Rs.935
- Comparative Railway cost per m.t. - Rs.1170
(Paradip to Kahalgaon)
- IWT cost includes savings of Rs.225 per m.t. from use of Panmax vessels & return cargo of fly ash

Coal Movement through IWT- Critical issues

- MoU between IWAJ & NTPC signed in Sept. 2008
- Feasibility study by IL&FS
 - coal received at Trans-shipper placed at Sagar Islands
 - can be taken to Farakka & Kahalgaon through IWT
 - at rates competitive with present payments
- Transportation can commence 18 months from date of signing of contract
- **Bottleneck: a long term contract for supply of coal through IWT for about 7-10 yrs. required from NTPC as supplier needs to invest Rs.600 crore+**
- For imported coal, NTPC / its agents will need to firm up long term coal import contracts
- Government will need to permit NTPC to import 3 MMT coal through IWT for Farakka & Kahalgaon; Fuel Transport Agreement (FTA) for 10 yrs

Way Forward for NTPC project

- Global bid will attract logistics players who will make the requisite investment in mega trans-shippers, barge operations & terminal facilities
- Facilities provided by IWAI such as fairway, night navigation facilities will be described in bid document
- Floating of tender, award of contract & payment could be through NTPC or its agents
- Parties to bid for bringing coal from coal mine / trans-shipper to coal stack yard of Farakka & Kahalgaon STPS
- NTPC to make investment in setting up coal handling facilities on river terminal at Kahalgaon & Barh
- Fly ash as return cargo for export (to Bangladesh) from power plants will further improve viability

Other Benefits

- 3 MMT (2.1 btkm) for Farakka / Kahalgaon alone will give fuel savings of Rs.84 crore and other economic savings of Rs.306 crore per annum

(Arrived on the basis of NCAER -2008 Report)

- NTPC coal transportation project may pave the way for similar movement for other existing / upcoming power plants – domestic or imported
- Private investment of about Rs.5000 crore can take place in next five years in barges, trans-shippers, loading / unloading facilities
- Generation of additional power

**THANK YOU
FOR YOUR
CONSIDERATION**

Details of IWT Freight Cost

(In Rs. Per m.t.)

S.N.	Particulars	Farakka	Kahalgaon
1	Barge Movement	625	770
2	Trans-shipper	90	140
3	Material handling (O&M)	135	210
4	Terminal costs	25	40
	Total	875	1160

Existing Transport Cost to NTPC

(In Rs. Per m.t.)

S.No.	Particulars	Haldia- Kahalgaon	Paradip - Kahalgaon
1	Railway Freight	488.40	804.00
2	Port Charges	370.00	366.00
	Total	858.40	1170.00

70% of Kahalgaon's imported coal comes via Paradip

NTPC coal project

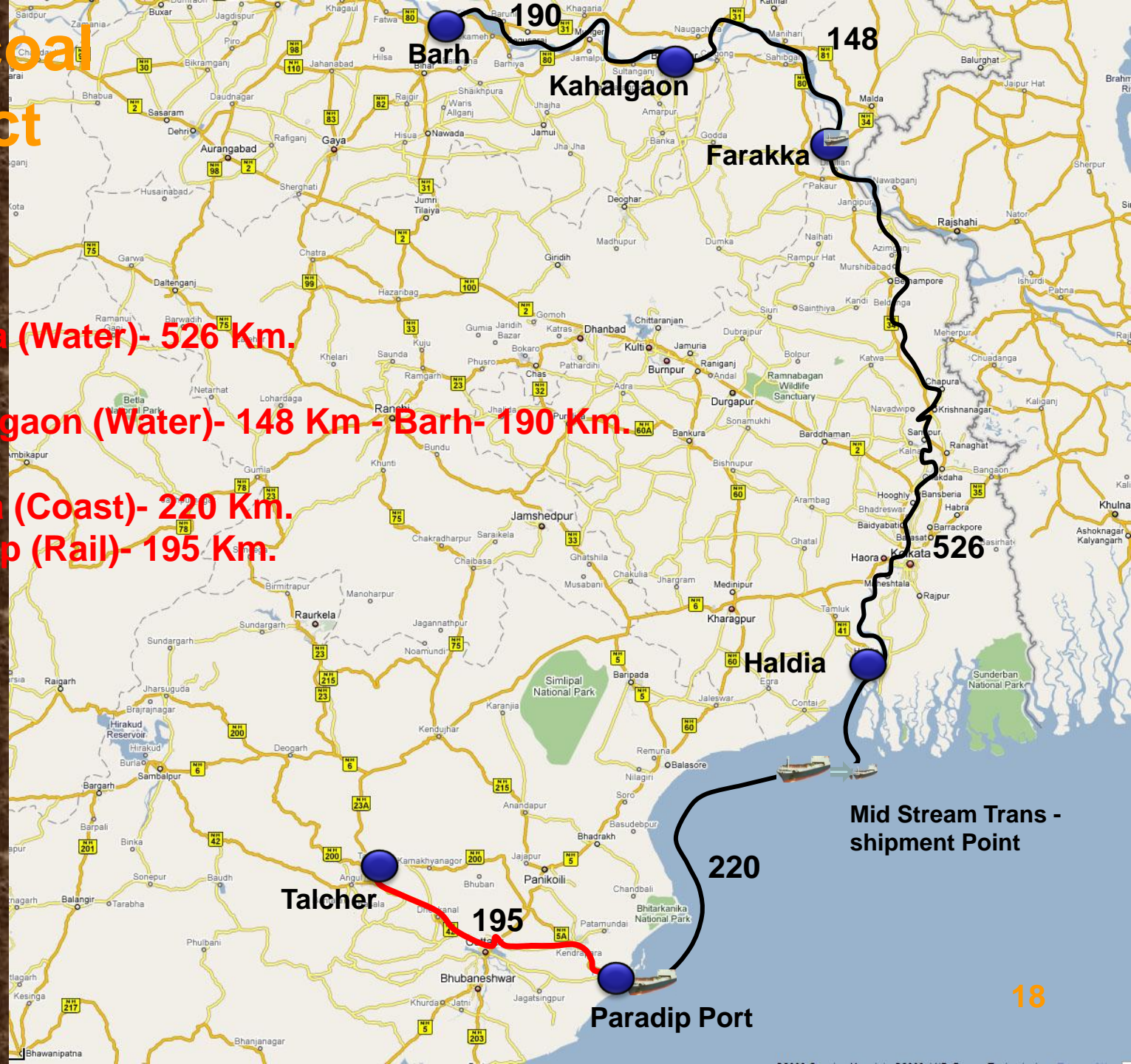
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Paradip - Haldia (Coast)- 220 Km.

Talcher - Paradip (Rail)- 195 Km.



Movement of Domestic coal

- IWT also offers possibility for taking coal from Mahanadi coal fields to Farakka & Kahalgaon if coal made available at Paradip
 - Rail link – Talcher to Paradip -195 km.
 - Coastal link – Paradip to Haldia – 220 km.
- IWT can also be used to transport coal to Jogighopa and then by rail to Bongaigaon TPS in Assam
- Separate Feasibility Study for the same being undertaken