	Intake Water System 2X800MW Thermal Power Plant, Godda , Jharkhand	Detailed Project Report
	Project Proponent – Adani Power (Jharkhand) Ltd.	

**A**  
**Detail Project Report**  
**on**

**Proposed Water Pipeline Route**

**of**

**1600 (2 x 800) MW GODDA THERMAL POWER  
PROJECT GODDA, JHARKHAND**



**ADANI POWER (JHARKHAND) LTD.**

**Village - Motia, Tehsil – Godda,  
District – Godda, Jharkhand**




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## 1. GENERAL INFORMATION

Adani Group is a well-established company based in Ahmedabad and is one of the famous business house of the country with diverse interest in global trading, development and operation of Ports, IDC terminal, establishment of SEZ, Oil refining, logistics, gas distribution, Power Generation, Power Transmission and Power Trading etc. Mundra promoted by the ADANI Group is operational since 1998.

India and Bangladesh desire to enhance traditional ties of friendship, through economic cooperation. Realizing the ever increasing demand of electricity for the socio-economic development and progress, the Government of India (GoI) and Government of Bangladesh (GoB) have signed a Memorandum of Understanding (MoU) on 11 January, 2010.

As provided in the MoU, GoB and GoI shall inter-alia undertake to encourage and facilitate joint co-operation between the parties in the following areas:

- I. Power generation, transmission, energy efficiency and development of various types of renewable energy;
- II. Encourage and facilitate investments in each other's country in the fields of power generation, distribution, including joint venture investments between the two countries subject to their prevailing policies & legislation.

Accordingly, Adani Power Limited (APL) on 11-Aug-2015 executed a MoU with Bangladesh Power Development Board (BPDB), to develop a 2x800 MW Thermal Power Plant on BOO basis in India and supply the entire power generated to Bangladesh Power Development Board (BPDB) through a dedicated Transmission Line.


Adani Power (Jharkhand) Limited, AP(J)L is a 100% subsidiary of APL, which has been formed to develop 2x800MW Thermal Power Plant in Jharkhand.

PPA for this generated power supply executed between AP(J)L and BPDB. As per terms of the MoU, the Power Plant together with a dedicated transmission line (within India) near the border shall be built Owned and Operated by AP(J)L. BPDB shall be responsible for getting the transmission line constructed by Power Grid Company of Bangladesh (PGCB) from interconnection point near the border onwards in Bangladesh

NOC from Ministry of Power, Government of India has been obtained to set up Thermal Power Plant in Jharkhand for supplying power to Bangladesh through a dedicated 400 kV transmission line.

AP(J)L has executed MoU with Government of Jharkhand for setting up the Plant in Jharkhand State.



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## 1.1 Company Profile

ADANI Group, is one of the leading business houses of the country with revenue of around US\$ 12 billion, employing over 10,000 people and having diverse interests in global trading, development and operation of Ports, IDC Terminal, establishment of SEZ, Oil Refining, Logistics, Gas Distribution, Power Generation, Power Transmission and Power Trading etc. Adani Port at Mundra promoted by the ADANI Group is operational since 1998.

ADANI Group is manned by experienced and highly qualified professionals including technocrats of repute. The team has demonstrated capabilities in conceptualization and implementation of large projects, excellent records of establishing benchmarks in the industry. ADANI Group has rich and extensive experience of liaison with government agencies, import, funding etc. With this track record of the organization in tying up finances, flow of funds will not pose any problem for implementation of the proposed project.

Adani Power Ltd (APL) has developed number of Power Projects along with its associated dedicated transmission systems in India. Adani Power Ltd has commissioned India's first super critical unit of 660MW at Mundra in Dec-2010. Presently, the company has total installed generation capacity of 10,440 MW, out of which 4620 MW (4x330 MW + 5x660 MW) at Mundra, 3300 MW (5x660 MW) at Tiroda, 1320 MW (2x660) at Kawai and 1200 MW (2x600 MW) at Udupi.

Also, in the field of Renewable Energy, Adani Group has commissioned 1,838 MW of Solar Power Plants including the world's largest single location solar Power Plant of 648 MW and 66 MW of Wind Generation Plants located across India.

Adani Power (Jharkhand) Limited, AP(J)L is a 100% subsidiary of APL, which has been formed to develop 2x800MW Thermal Power Plant in Jharkhand.

The objective of this DPR is to provide the technical details of the establishment of Intake Water System indicating the site features, salient technical features, financial and Project schedule.

## 2. PROJECT BACKGROUND / REQUIREMENT

AP(J)L is setting up a 2 x 800 MW Ultra Super Critical Thermal Power Project at Godda district of Jharkhand. To meet the water requirement of project Water availability study has been conducted and River Ganga being a perennial river, found most promising source of water. Accordingly, application was submitted to Water Resource Department (WRD), GoJ, for allocation of water. Based on Feasibility Study Report and CWC clearance, WRD, GOJ vide their letter dated 1-Jan-2018, allocated 36 MCM/Annum water from River Ganga and intake location in Shahibganj District of Jharkhand.

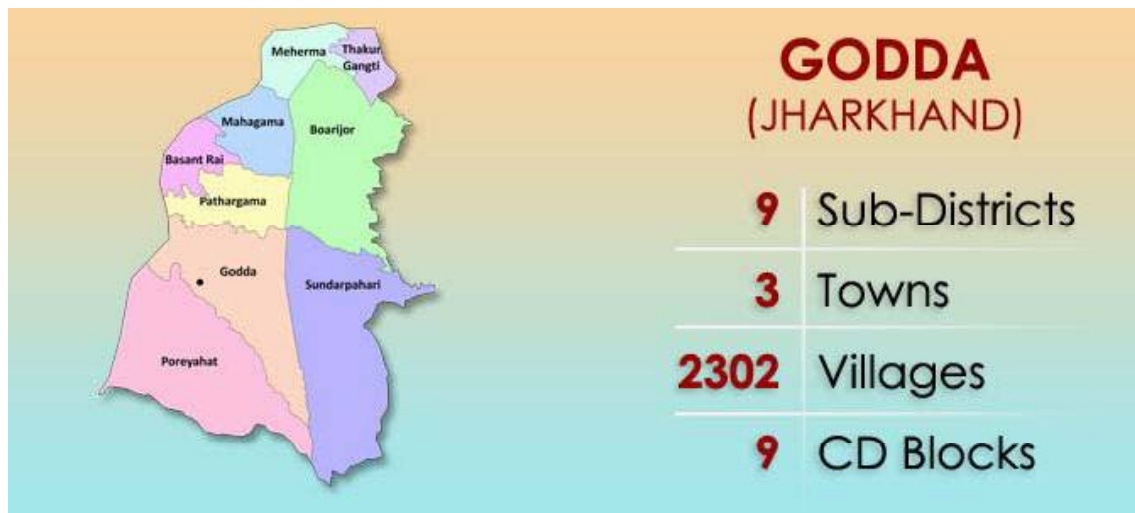


### 3. LOCATION MAP & KEY PLAN

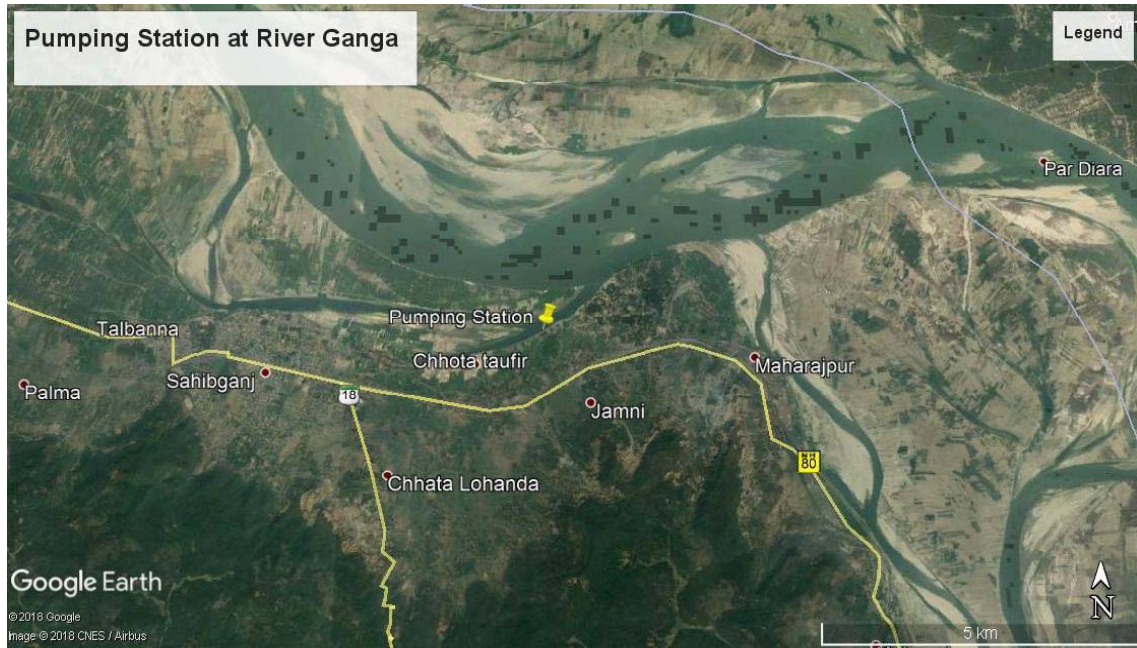
#### 3.1 Jharkhand State Map



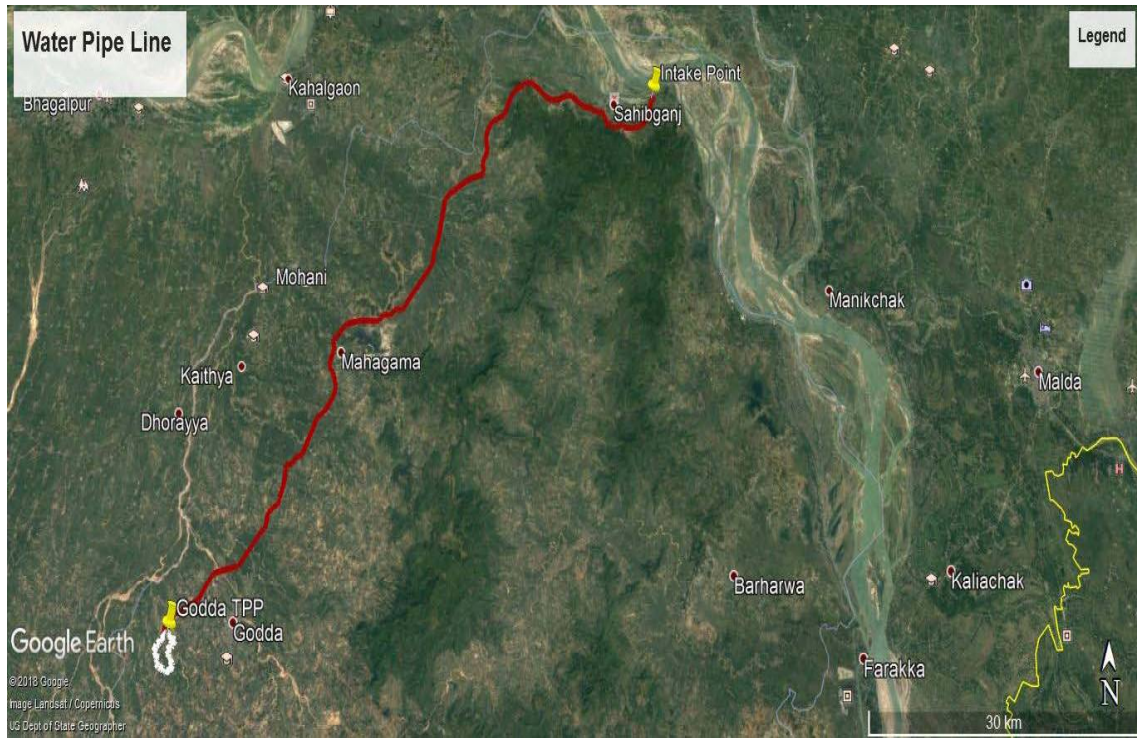
#### 3.2 Godda Districts



### 3.3 Project Site – Water Intake location



### 3.4 Proposed Water Pipe Line Route



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#### 4. KEY FEATURES OF THE PROJECT SITE

##### 4.1 Site Location Details:

Project Authority	Adani Power (Jharkhand) Ltd, AP(J)L
Project	Water Intake System & Water Pipe Line Project for 2x800 MW Ultra Super Critical Thermal Power Plant
Selected Location	Water Intake System – Villages – Sati Chowki Khutari in Bario block, Sahibganj District, Jharkhand, India.  Water Pipe Line Route – 92.5 km in two district: Sahibganj & Godda of Jharkhand

#### 5. CLIMATE AND METEOROLOGICAL DATA

Nearest meteorological station (of Indian Meteorological Department) to the proposed site is at Dumka. Meteorological data as recorded at Dumka are as below:

Dry Bulb Temperature	Max.: 34.4° C , Mean : 28.8° C , Min : 18.2 ° C
Relative Humidity	Max : 83% , Mean : 60%, Min: 39%
Rainfall Annual Average	1317 mm
Maximum 24 hour rainfall	307.3 mm
Rainfall (Sahibganj) Annual Average	1576 mm

#### 6. SELECTION CRITERIA

##### 6.1 Water Intake System

River Ganga is the only perennial river flows in Jharkhand and that too through Sahibganj area. To draw water from Ganga River, we have conducted water availability study and three options were emerged based on the morphological stability of the river bank line and feasibility of construction of intake system:

- Option -3 – Not found feasible considering land use pattern and habitation.
- Option -2 – Not found feasible considering the water pipe line passes through Rajmahal hills, Coal mine area and forest area.
- Option 1- Found feasible due to following points:



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- The river reach have been stable in past at this location and sufficient water depth is available throughout year.
- The pipeline route is also found more suitable for this option as it avoids hills, coal mine area and reduces forest area, making it comparatively less technical and regulatory constrains in implementation.

## 6.2 Water Pipe Line Route

Three routes have been evaluated and alternate – 01 is finalized based on lesser requirement of forest diversion.

Description	Considered Route 01	Alternate Route 02	Alternate Route 03
Route Length	92.5 km	99.0 km	91.5 km
Forest Length in Route	6.9 km	15 km	25 km
Coal Block Length in Route	Nil	8.0 km	Nil
Highest elevation	101.0 m	130.0 m	230.0 m
Availability of approach	80%	60%	60%

## 7. LAND REQUIREMENT

Pipeline corridor width has been envisaged as 20 mtr considering following:


- Pipe corridor (approx.8.3m) considering two number of pipes (1500NB/ 1600NB size, & considering provision of future pipe line)
- Transmission tower corridor (approx. 6.5m for 33kV)
- Service road (3.750m with 0.70m shoulder on either side)

## 8. LAND AREA STATEMENT

Pipe line corridor length from Water Intake System point at River Ganga at Sahibganj to Power Project site is approx. 92.5 km. It crosses through various villages/Blocks of two distt. Below table shows the complete area statement (Private, Government and Forest land)





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SL. NO.	District	Block	Total nos. of village	Required Private Land (In Ha.)	Required Govt. Land (In Ha.)	Total Forest Area Required (In Ha.)	Total required land in Block (in Ha.)
	(1)	(2)	(3)	(4)	(5)	(6)	(7=4+5+6)
1	<b>Sahibganj</b>	Borio	13	10.2145	0.000	2.1306	12.3452
2		Taljhari	2	2.4868	0.000	0.2465	2.6543
3		Mandro	28	41.7553	0.000	3.5988	45.3533
4		Sahibganj	1	2.6045	0.000	0.0401	2.6447
<b>Total</b>			<b>44</b>	<b>57.0608</b>		<b>6.0160</b>	<b>63.0768</b>
5	<b>Godda</b>	Meherma	16	20.2894	2.2561	--	22.5453
6		Boarigor	14	17.1342	0.5277	6.5606	24.2225
7		Mahagama	27	23.2452	2.0639	--	24.4090
8		Pathargama	18	20.6213	2.7190	--	23.3403
9		Godda	21	23.5985	4.3418	--	27.9404
10		Poreyahat	1	0.0000	0.000	0.7527	0.7527
<b>Total</b>			<b>97</b>	<b>115.8969</b>		<b>7.3133</b>	<b>123.2102</b>
<b>Total Area in water pipe line route</b>				<b>172.9577</b>		<b>13.3293</b>	<b>186.2870</b>
<b>Total Running km as per land type</b>				<b>80.4</b>	<b>5.2</b>	<b>6.9</b>	<b>92.5</b>

#### Strategy for Land Acquisition:

Non-Forest land shall be applied to Government of Jharkhand for ROU and Forest land shall be applied for diversion.

### 9. PRELIMINARY INTAKE WATER SYSTEM FEATURES

The proposed Intake water system for project consists of Pumping (drawl) water from River (Intake location) and conveying it in pipeline upto plant reservoir through Desilting basin and Intermediate reservoir.

A circular radial Intake well pump house is proposed in the Ganga River bed. A pump house is planned to have vertical pumps. The Raw Water Pumps at intake well will lift the water and deliver it to the Desilting basin through a Rising main MS pipeline.

There will be desilting basin (on land near to intake) of suitable size with associated pump house. Water will be lifted by the pump from the sump near



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desilting basin and transported to the Intermediate reservoir. From intermediate pump house, water shall be pumped to Raw Water Reservoir in plant through MS pipeline.

Suitable cathodic protection & coating system shall be adopted for corrosion protection of pipeline.

## 10. PROJECT COST

The estimated Intake Water System and Water Pipe Line project cost is approximately Rs. 410 Cr.

## 11. PROJECT COMPLETION SCHEDULE

The construction & infrastructure work of Intake Water system will be completed within 18 months from the start of construction activity.

