

पावर ग्रिड कारपोरेशन ऑफ इंडिया लिमिटेड
(भारत सरकार का उद्यम)
POWER GRID CORPORATION OF INDIA LIMITED
(A Government of India Enterprise)



CIN : L40101DL1989GOI038121

केन्द्रीय कार्यालय : "सौदामिनी" प्लॉट सं. 2, सैक्टर-29, गुडगाँव-122 001, हरियाणा
फोन : 2571700 - 719, फैक्स : 2571760, 2571761 तार 'नेटग्रिड'
Corporate Office : "Saudamini" Plot No. 2, Sector-29, Gurgaon-122 001, Haryana
Tel. : 2571700 - 719, Fax : 2571760, 2571761 Gram : 'NATGRID'

संदर्भ संख्या/Ref. Number

C/CP/ Mangdechhu HEP in Bhutan

March 15, 2016

MEMORANDUM

SUB: INVESTMENT APPROVAL FOR "TRANSMISSION SYSTEM STRENGTHENING IN INDIAN SYSTEM FOR TRANSFER OF POWER FROM MANGDECHHU HYDROELECTRIC PROJECT IN BHUTAN".

The Board of Directors of POWERGRID, in exercise of powers delegated to it by the Department of Public Enterprises (DPE), Ministry of Heavy Industries and Public Enterprises, Government of India through its Office Memorandum No. 26(3)/2005-GM-GL-92 dated 1st May, 2008 and Office Memorandum No. DPE/11(2)/97-Fin. dated 22nd July, 1997 (modified subsequently through Office Memorandum No. 18(24)/2003-GM-GL.64 dated 5th August, 2005), have accorded investment approval for "Transmission System Strengthening in Indian System for Transfer of power from Mangdechhu Hydroelectric Project in Bhutan" in its 326th meeting held on March-09, 2016, as per the details given below:

1. SCOPE OF PROJECT

Broad scope of works is given below:

Transmission Lines

1. Jigmeling - Alipurduar 400kV D/C(Quad) line (Indian side) NER -portion
2. Jigmeling - Alipurduar 400kV D/C(Quad) line (Indian side) ER-II -portion (D/c + M/c Portion)

Substation

- a) 400 kV Alipurduar Substation Extn
 - 2 nos. 400 kV line bays for termination of Jigmeling - Alipurduar 400kV D/c (Quad) line.

2. PROJECT COST & FUNDING

The estimated cost of the project based on October, 2015 price level is ₹ 808.63 Crore including IDC of ₹ 46.85 Crore. The abstract cost estimate is attached as Annexure-I.

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3. COMMISSIONING SCHEDULE

The project is scheduled to be commissioned within **22 months** progressively from the date of approval of Board of Directors, i.e. March 09, 2016 with best efforts matching with the completion of the transmission line with the commissioning of 1st unit of Mangdechhu HEP.

25/03/16

(Sunil Samuel)
Chief Manager (CP)

Distribution:

1. PS to Secretary (Power), MoP, Shram Shakti Bhawan, New Delhi-110 001
2. Chairman, CERC, 3rd & 4th Floor, Chanderlok buliding, 36, Janpath, New Delhi – 110001
3. Chairman, CEA , R.K.Puram, New Delhi –66
4. Chairman, BSEB, Bidyut Bhawan, Bailey Road, Patna – 800 001.
5. Chairman, WBSEB, Bidyut Bhawan, Bidhan Nagar, Block- DJ, Sector – II, Salt Lake City, Kolkata – 700 091.
6. Chairman, JSEB, Jharkhand Vidyut Bhawan, Nepal House, Doranda, Ranchi-02.
7. Secretary (Power), Power Department, Govt. of Sikkim, Gangtok – 727 102.
8. CMD, GRIDCO, Vidyut Bhawan, Janpath, Bhubaneswar – 751 007.
9. Member Secretary, ERPC, 14, Golf Club Roar, Kolkata – 700 033.
10. Advisor, PAMD, NITI Aayog, Yojana Bhawan, New Delhi
11. CEO, NITI Aayog, Yojana Bhawan, New Delhi
12. Member (Power Systems), CEA, R.K.Puram, New Delhi – 110 066.
13. Secretary, CEA, Sewa Bhawan, R.K.Puram, New Delhi – 110 066. – 03 copies
14. Joint Secretary (Trans.), MoP, Shram Shakti Bhawan, New Delhi.
15. Joint Secretary & Financial Advisor, MoP, Shram Shakti Bhawan, New Delhi.
16. Director (Trans.), MoP, Shram Shakti Bhawan, New Delhi.
17. Joint Secretary (Plan Finance Div.-II), Ministry of Finance, North Block, New Delhi.
18. Director (Plan Finance-II Div.), Ministry of Finance, North Block, New Delhi.
19. Joint Secretary, Ministry of Statistics & Programme Implementation, Sardar Patel Bhawan, New Delhi.
20. Deputy Secretary, Cabinet Secretariat, Rashtrapati Bhawan, New Delhi.
21. Under Secretary, Finance & Budget Section, MoP, New Delhi.

25/01/16
15/3/16

(Sunil Samuel)
Chief Manager (CP)

Important Note:

The Board has desired that the following critical activities may be monitored:

- (i) Award of tower package in March, 2016.
- (ii) Timely supply of equipment.
- (iii) Risk Management Matrix indicating various milestones to be monitored for the subject project is attached at **Annexure-II**.

Distribution:

CEO, POSOCO

COO (CTU- Planning)

ED : **CMG**/ ERP/ Eggh.- HVDC/ QA&I and CMD Co-ordination Cell / Eggh.- SS, TL & Civil/ Finance/ CS/ Commercial & RC/ ESMD & CSR/ AM/ ERTS-I/ ERTS-II

GM : ERLDC

AGM : Law

Company Secretary

For kind information of:

Director (Operation)/ Director (Finance)/ Director (Personnel)/ CVO

25/3/16
15/3/16

(Sunil Samuel)
Chief Manager (CP)

ABSTRACT COST ESTIMATE

(BASE COST)

**TRANSMISSION SYSTEM STRENGTHENING IN INDIAN SYSTEM FOR TRANSFER OF
POWER FROM MANGDECHHU HEP IN BHUTAN**

(Cost updated to OCTOBER 2015 price level)

Sl. No.	DESCRIPTION	AMOUNT (Rs. in Crore)
A	Preliminary Survey & Soil Investigation	0.50
B	Cost of Compensation for Transamission Lines	
	i) Compensation towatds Crop, Tree, PTCC & Land	37.97
	ii) Compensation towards Forest	51.29
C	<u>Civil Works</u>	
	i) Infrastructure for substations	0.20
D	<u>Equipment Cost</u>	
	a) Trans.Lines	607.18
	b) Sub-Stations	11.61
E	Sub Total A TO D	708.74
F	Incidental Expenditure During construction (IEDC) @ 5% of [E - B(ii)]	32.87
G	Contingencies @ 3% of [E - B(ii)]	19.72
H	Centages & Contingencies @ 8% on Compensatory Afforestation (considering Rs.1,40,000 per Ha) for 387.676 Ha	0.434
I	Customs Duty @ 23.4155% plus 2% handling charges	0.01
	Sub Total (A TO I)	761.78
J	Interest During Construction(IDC)	46.85
	GRAND TOTAL	808.63

24/10/15

**RISK MANAGEMENT MATRIX FOR TRANSMISSION SYSTEM STRENGTHENING IN INDIAN SYSTEM FOR TRANSFER OF POWER FROM
MANGDECHHU HYDROELECTRIC PROJECT IN BHUTAN**

Sl. No.	Risk Parameters	Intermediate Milestones				Completion	Responsibility Centre**	Remarks
		Milestone-1 (MS1)	Milestone-2 (MS2)	Milestone-3 (MS3)	Milestone-4 (MS4)			
A	Award of Major Work Pkgs.							
1	Tower Pkg	Award within 1 month of investment approval (IA)					CC Asst. GM, (CS-Group G10)	
B	Forest Clearance							
1	Submission of Proposal	Within 2 months of IA					Site Project Head	Recommendation/Approval to be given by State Govt./MoEF, so constant follow-up needed to achieve this time line.
2	Follow-up & approval	Recommendation of State Govt within 5 months of Submission	Stage-I approval within 9 months of submission	Compliance within 2 month of Stage-I approval	Stage-II approval within 2 months of Compliance	3 months before schedule completion	Upto State Level & RMoEF: Site Project Head & Nodal Officer (Env.) MoEF Level: AGM (ESMD)	
C	Construction of Transmission Line/ Substation							
1	Site Mobilisation	Within 2 months from LOA					Site Project Head	
2	Stringing	Start within 15 months from LOA				Before schedule completion of project	Site Project Head	

Note: ** Overall in-charge for Responsibility Centre is Head of the respective Region/Department.

25/6/24