

Annexure-I

**Pro-forma for furnishing Actual annual performance/operational data for the coal/lignite based thermal generating stations for the 5-year period
from 2012-13 to 2016-17**

Sl.No.	Particulars	Units	2012-13	2013-14	2014-15	2015-16	2016-17	Basis of Information/ Methodology
1	Name of Company		NTPC Ltd.					
2	Name of Station/ Pit head or Non- Pit head		Barh STPS Stage-II (Non- pit head)					
3	Installed Capacity and Configuration	MW	2 X 660 = 1320 MW					
4	Rated Steam Parameters (Also state the type of Steam turbine and Boiler)		BHEL Make Main Steam- 247 ksc /565 deg C Once through, Supercritical, Corner fired boiler					
5	Type of BFP		2 Nos TDBFP (Normal Operation) + 1Nos MDBFP					
6	Circulating water system		Closed Cycle					
7	Any other Site specific feature		Dry Ash Extraction System First Indegenious 660 MW units supplied by BHEL					
8	Fuels :							
8.1	Primary Fuel :		Coal/Lignite					Requirement based on 90% PLF of 1320 MW
8.1.1	Annual Allocation or/andRequirement		Annual allocation through MOU for Bridge Linkage dated 16.08.2016 with CCL for Barh-II 3.322 MMT -valid upto 07.09.2018 Annual allocation through MOU for Bridge Linkage dated 22.08.2016 with ECL for Barh-II 1.33 MMT -valid upto 07.09.2018 Annual Requirement : 6.57					
8.1.2	Sources of supply/ procurement along with contracted quantity and grade of coal	MMT	CCL, ECL					
							4.65	
			CCL: G 8 to G13 ECL: G3 to G5 & G13					
8.1.2.1	FSA	MMT	—	0.09	0.00	1.04	2.22	
			—	0.00	0.64	1.74	2.91	
8.1.2.2	Imported		—	13.78	235.57	520.13	63.95	
8.1.2.3	Spot Market/e-auction		—	70.00	197.40	—	—	
8.1.3	Transportation Distance of the station from the sources of	KM	300 - 500 km					
8.1.4	Mode of Transport		Rail/Road					
8.1.5	Maximum Station capability to stock primary fuel	Days & MMT	30 days / 0.5					
8.1.6	Maximum stock maintained for primary fuel	MT	—	—	157218	405729	407000	
8.1.7	Minimum Stock maintained for primary fuel	MT	—	—	16000	40017	135000	
8.1.8	Average stock maintained for primary fuel	MT	—	—	81927	161922	245471	
8.2	Secondary Fuel :		LDO					
8.2.1	Annual Allocation/ Requirement	KL	5781.6					
8.2.2	Sources of supply		BPCL, HPCL & IOCL					
8.2.3	Transportation Distance of the station from the sources of supply	KM	300-500					
8.2.4	Mode of Transport		Road					
8.2.5	Maximum Station capability to stock secondary fuels	KL	8000					

Sl.No.	Particulars	Units	2012-13	2013-14	2014-15	2015-16	2016-17	Basis of Information/ Methodology
8.2.6	Maximum Stock of secondary oil actually maintained	KL			3262			For the year 2016-17
8.2.7	Minimum Stock of secondary oil actually maintained	KL			1185			
8.2.8	Average Stock of secondary oil actually maintained	KL			2565			
9	Cost of Spares :							
9.1	Cost of Spares capitalized in the books of accounts	Rs. Lakhs			4391.94	3577.04	1535.32	
9.2	Cost of spares included in capital cost for the purpose of tariff				4391.94	3577.04	1535.32	Tariff order yet to be issued. Considered as within the limit of 4% of P&M
10	Generation :							
10.1	-Actual Gross Generation at generator terminals	MU			1332	4353	7642	
10.2	-Actual Net Generation Ex-bus	MU			1234	4055	7177	
10.3	-Scheduled Generation Ex-bus	MU			1323	4270	7366	
11	Average Declared Capacity (DC)	MW			516	627	1022	
12	Actual Auxiliary Energy Consumption excluding colony consumption	MU			86	267	439	
13	Actual Energy supplied to Colony from the station	MU			0.65	2.17	3.95	
14	Primary Fuel :							
14.1	Consumption :	MT			806822	2716887	5087127	
14.1.1	Domestic coal	From linked mines	MT		NA	NA	NA	
		Non-linked mines	MT		627183	2301870	5007634	
14.1.2	Imported coal	MT			179639	415017	79493	
14.1.3	Spot market/e-auction coal	MT						
14.2	Gross Calorific Value (GCV) :							
14.2.1	Domestic Coal	(As Billed) (Eq. Basis)	kCal/kg			5166	5402	4597
		(As Received) (TM Basis)	kCal/kg			3374	3605	3602
		(As Fired) (TM Basis)	kCal/kg			NA	NA	NA
14.2.2	Imported Coal	(As Billed) (Eq. Basis)	kCal/kg			5701	5701	5701
		(As Received) (TM Basis)	kCal/kg			4672	4564	4578
14.2.3	Spot market/e-auction coal	(As Billed)	kCal/kg			NA	NA	NA
		(As Received)	kCal/kg			NA	NA	NA
14.2.4	Weighted Average Gross Calorific value (As Billed)	kCal/kg			5307	5426	4610	
14.2.5	Weighted Average Gross Calorific value (As Received)	kCal/kg			3784	3714	3611	
14.2.6	Weighted Average Gross Calorific value (As Fired)	kCal/kg			NA	NA	NA	
14.3	Price of coal :							
14.3.1	Weighted Average Landed price of Domestic coal				6065	4592	3829	
14.3.2	Weighted Average Landed Price of Imported coal				5803	5371	4995	

Sl.No.	Particulars	Units	2012-13	2013-14	2014-15	2015-16	2016-17	Basis of Information/ Methodology
14.3.3	Weighted Average Landed Price of Spot market/e-auction coal				NA	NA	NA	
14.3.4	Weighted Average Landed Price of all the Coals				6006	4711	3847	
14.4	Blending :	% and MT (of the total coal consumed)			22.26	15.28	1.56	
14.4.1	Blending ratio of imported coal with domestic coal	Equivalent to domestic coal						
14.4.2	Proportion of e-auction coal in the blending				NA	NA	NA	
14.5	Actual Average Coal stock maintained	MT	—	—	81927	161922	245471	No. of days based on normative operating levels. For 2016-17 no. of days computed for 1320 MW
		Days			9.6	19.0	14.4	
14.5	Actual Transit & Handling Losses for coal/Lignite							
14.5.1	Pit- Head Station							
14.5.1.1	Transit loss from linked mines				NA	NA	NA	
14.5.1.2	Transit loss from non-linked mines including e-auction coal				NA	NA	NA	
14.5.1.3	Transit loss of imported coal				NA	NA	NA	
14.5.2	Non-Pit Head station							
14.5.2.1	Transit loss from linked mines	MT %						
14.5.2.2	Transit loss from non-linked mines including e-auction coal mines.				0.80	0.80	0.80	
14.5.2.3	Transit loss of imported coal				0.20	0.20	0.20	
15	Secondary Fuel Oil : (If more than one fuel used then give details of all the fuels							
15.1	Consumption	KL			1509	2839	6689	
15.2	Weighted Average Gross Calorific value (As received)	Kcal/l			9863	9839	9659	
15.3	Weighted Average Price	Rs/ KL			59361	49316	49667	
15.4	Actual Average stock maintained	KL			3687	3507	2565	
16	Weighted average duration of outages(unit-wise							
16.1	Planned Outages	Days			0	11.6	15.9	
16.2	Forced Outages	Days			21.5	25.8	38.3	
16.3	Number of tripping	Nos			14	41	54	
16.4	Number of start-ups:	Nos			14	40	56	
16.4.1	Cold Start-up	Nos			2	1	4	
16.4.2	Warm Start-up	Nos			5	12	23	
16.4.3	Hot start-up	Nos			7	27	29	

Sl.No.	Particulars	Units	2012-13	2013-14	2014-15	2015-16	2016-17	Basis of Information/ Methodology
17	NOx , SOx ,and other particulate matter emission in :							
17.1	Design value of emission control equipment	mg/Nm3	ESP design dust outlet Conc. : 50					
17.2	Actual emission	SPM			43	44	38	
		SOX			572	409	605	
		NOX			234	171	225	
19	Detail of Ash utilization % of fly ash produced	%			-	6.42	4.72	
19.1	Conversion of value added product	%			-	0.44	3.26	
19.2	For making roads &embarkment	%			-	0.00	1.46	
19.3	Land filling	%			-	1.86	0.00	
19.4	Used in plant site in one or other form or used in some other	%			-	4.11	0.00	
19.5	Any other use , Please specify	%			-	0.00	0.00	
20	Cost of spares actually consumed	Rs. Lakhs			1059.01	2573.87	3882.14	
21	Average stock of spares	Rs. Lakhs			42.40	1838.30	7346.10	
22	Number of employees deployed in O&M							
22.1	- Executives				436	371	336	As on last year of FY. For 2016-17 installed capacity considered is 1320 MW
22.2	- Non Executives				75	101	91	
22.3	- Corporate office				2916	2973	2787	
23	Man-MW ratio				0.77	0.72	0.32	

Note: Allocation of stations attached at Appendix-I
Man-MW ratio computed excluding Corporate Employees
Average Coal stock computed based on monthly closing stock

Annexure-VI (A)

DETAILS OF OPERATION AND MAINTENANCE EXPENSES

Name of the Company:

NTPC Ltd.

Name of the Power Station:

Barh Super Thermal Power Station (1320 MW)

Rs. Lakhs

Sl. No.	Items	2012-13	2013-14	2014-15	2015-16	2016-17
1	Consumption of stores & spares	COD of first unit on 15.11.2014			2573.87	3882.14
2	Repair & Maintenance				623.96	4724.88
3	Insurance				263.91	379.67
4	Security				575.11	1665.78
5	Water Charges				318.86	788.72
6	Administrative Expenses					
6.1	Rent				4.72	0.68
6.2	Electricity charges				57.01	125.10
6.3	Travelling & Conveyance				339.87	440.03
6.4	Communication Expenses				56.33	96.28
6.5	Advertising				1.16	14.92
6.6	Foundation Laying & Inaugration				0.00	0.00
6.7	Donation				0.00	0.00
6.8	Entertainment				31.21	49.70
6.9	Filing fee				28.91	44.59
	Subtotal (Administrative Expenses)				519.22	771.29
7.0	Employee Cost					
7.1.1	Salaries, Wages & Allowances				2093.45	5631.01
7.1.2	Pension				523.96	482.11
7.1.3	Gratuity				-13.12	697.32
7.1.4	Provident Fund				482.17	475.91
7.1.5	Leave Encashment				509.49	818.66
7.2	Staff welfare expenses					
7.2.1	-Medical expenses on superannuated employees				1.40	0.00
7.2.2	-Medical expenses on regular employees & others				619.96	308.54
7.2.3	-Uniform/Livries & safety equipment				100.96	141.94
7.2.4	-Canteen expenses				97.67	182.12
7.2.5	-Other staff welfare expenses				100.13	131.78
	Subtotal (Staff welfare Expenses)				920.12	764.38
7.3	Productivity linked Incentive				13.12	0.00
7.4	Expenditure on VRS				0.00	0.00
7.5	Ex-gratia				52.09	59.67
7.6	Performance Related Pay (PRP)				722.52	822.36
	Sub Total (Employee Cost)				5303.80	9751.42
8	Loss of Store				0.00	0.00
9	Provisions				806.64	145.43
10	Prior Period Expenses				-7.06	0.00
11	Corporate Office expenses allocation				1928.94	3840.41
12	Others					
12.1	Rates & Taxes				-9.01	11.16
12.2	Water cess				23.60	22.48
12.3	Training & recruitment expenses				35.47	13.71
12.4	Tender Expenses				50.85	101.41

DETAILS OF OPERATION AND MAINTENANCE EXPENSES

Name of the Company: NTPC Ltd.
 Name of the Power Station: Barh Super Thermal Power Station (1320 MW)

Rs. Lakhs

Sl. No.	Items	2012-13	2013-14	2014-15	2015-16	2016-17
12.5	Guest house expenses				49.77	93.62
12.6	Education expenses				0.00	0.00
12.7	Community Development Expenses				1588.24	409.08
12.8	Ash utilisation expenses				0.00	0.00
12.9	Books & Periodicals				0.52	3.27
12.10	Professional Charges				38.56	28.52
12.11	Legal expenses				11.16	29.99
12.12	EDP Hire & other charges				18.14	33.77
12.13	Printing & Stationery				12.80	37.60
12.14	Misc Expenses				239.48	862.53
	Sub Total (Others)				2059.57	1647.13
13	(Total 1 to 12)				14966.83	27596.87
14	Revenue / Recoveries				-6.50	-40.83
15	Net Expenses				14960.33	27556.03
16	Capital spares consumed				0.00	1037.58
	Total O&M Cost				14960.33	28593.62
	No. of Emp. Applied for VRS	0	No. VRS scheme was in operation			

Annexure-VI (C)

DETAILS OF WATER CHARGES

Name of the Company: NTPC Ltd.

Name of the Power Station and Stage/Phase: Barh Super thermal Power Stations Stage-II

(Rs. In Lakhs)

Sl.No.	ITEM	2012-13	2013-14	2014-15	2015-16	2016-17
1	2	3	4	5	6	7
(A)	Plant					
1	Type of Plant	Thermal : Coal Fired				
2	Type of Cooling Tower	Induced draft				
3	Type of Cooling Water System	Closed Cycle				
4	Any Special Features which may increase/reduce water consumption	AWRS System				
(B)	Quantum of Water : (Cubic Meter)					
5	Contracted Quantum			12068105	32240340	32152251
6	Allocation of Water			12068105	32240340	32152251
7	Actual water Consumption			9382174	21888731	20612634
8	Rate of Water Charges (lakhs/ cusecs)					
9	Other charges/Fees , if paid as part of Water Charges Rs lakhs					
	Water Charges paid Rs lakhs			119.35	318.86	788.72
	Total water Charges Paid Rs lakhs			119.35	318.86	788.72

Note: COD of Units were as on 14.11.2014 and 18.02.2016

Annexure-VI (D)**Details of capital Spares****Name of Company : NTPC Limited****Name of Power station : Barh Super Thermal Power Station Stage-II (1320 MW)**

SI . No.	ITEM	2012-13	2013-14	2014-15	2015-16	2016-17
(A)	Details of capital spares in Opening stock	0	0	0.0	4391.9	7969.0
(B)	Details of capital spares procured during the year	0	0	4391.9	3577.0	1535.3
(C)	Details of capital spares consumed during the year	0	0	0.0	0.0	1037.6
(D)	Details of capital spares closing at the end of the year	0	0	4391.9	7969.0	8466.7

Note: Details of spares being provided in soft copy as voluminous

Name of the Utility: NTPC Ltd														
Name of the Generating Station: Barh SuperThermal Power Station														
Station/ Stage/ Unit: 2 x 660 MW (Stage-II)														
Fuel Type (Coal/ Lignite/ Gas/ Liquid Fuel/ Nuclear/ Hydro): Coal														
Capacity of Plant (MW): 1320 MW														
COD : 08.03.2016														
		2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
1	Plant Availability Factor (PAF) (%)											83.00	90.20	82.13
2	Plant Load Factors (PLF) (%)											61.36	67.19	66.09
3	Scheduled Energy (MU)											1322.95	4269.76	7365.66
4	Scheduled Generation (MU)											1322.95	4269.76	7365.66
5	Actual Generation (MU)											1233.96	4055.46	7176.58
6	Quantum of coal consumption (MT)											806822	2716888	5087127
7	Value of coal (Rs. Lakh)											48461	127993	195725
8	Specific Coal Consumption (kg/kwh)											0.606	0.624	0.666
9	Gross Calorific Value of Coal (Kcal/ Kg)											3784.03	3714.21	3611.19
10	Heat Contribution of Coal (Kcal/ kwh)											2293.00	2318.00	2405.00
11	Cost Of Specific Coal Consumption (Rs./Kwh) – Finally admitted by CERC (Ex Bus) \$													
12	Quantum of Oil Consumption (Lit.)											1509.77	2838.55	6688.49
13	Value of Oil (Rs. lakh)													
14	Gross calorific value of oil (kcal/lit)											9863.37	9838.87	9658.95
15	Specific Oil Consumption (ml/ kwh)											1.13	0.65	0.88
16	Cost Of Specific Oil Consumption (Rs./Kwh) – Finally admitted by CERC (Ex Bus) \$													
17	Heat Contribution of Oil (Kcal/ kwh)											11.20	6.42	8.50
18	Station Heat Rate (kcal/kwh)											2304.05	2324.71	2412.35
19	Auxiliary Energy Consumption (%)											6.47	6.14	5.75
20	Debt at the end of the year (Rs. Cr)													
21	Equity (Rs. Cr - (Average) #													
22	Working Capital (Rs. Cr) – finally admitted by CERC													
23	Capital cost (Rs. Cr) – finally admitted by CERC (Average) #													
24	Capacity Charges/ Annual Fixed Cost (AFC) in Rs. Cr													
	(a) Return on equity – post tax (admitted by CERC) for 2004-09 & pre tax (admitted by CERC) for 2009-17 \$													
	Absolute value (in Rs. Cr)													
	Rate (%)													
	(b) Interest on Loan													
	Absolute value (in Rs Cr)													
	Rate (%) – Weighted Average Rate													
	(c) Depreciation (finally allowed by CERC)													
	Absolute value (in Rs Cr)													
	Rate (%)													
	(d) Interest on working Capital													
	Absolute value (in Rs Cr)													
	Rate (%)													

NA Tariff Order yet to be issued

Name of the Utility: NTPC Ltd														
Name of the Generating Station: Barh SuperThermal Power Station														
Station/ Stage/ Unit: 2 x 660 MW (Stage-II)														
Fuel Type (Coal/ Lignite/ Gas/ Liquid Fuel/ Nuclear/ Hydro): Coal														
Capacity of Plant (MW): 1320 MW														
COD : 08.03.2016														
		2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
	(e) Operation and maintenance cost (finally admitted by CERC)													
	Absolute value (in Rs Cr)													
	Water charges (finally admitted by CERC) (in Rs Cr) #													
	Rate (%)													
	(f) Compensation Allowances (in Rs Cr)													
25	AFC (Rs. Kwh)													
26	Energy Charge (Rs./Kwh)													
27	Total tariff (Rs. Kwh)													
28	Revenue realisation before tax (Rs. Crore)													
29	Revenue realisation after tax (Rs. Crore)													
30	Profit/ loss (Rs. Crore)											98.56	239.83	376.03
31	DSM Generation (MU)											-88.99	-214.3	-189.08
32	DSM Rate (Ps/Kwh)													
33	Revenue from DSM (Rs. Crore)											17.93	48.51	38.27

Note:

- 1 \$ "Ex-Bus" word is additionally inserted.
- 2 # "Average" word is additionally inserted.
- 3 \$ "for 2004-09 & pre tax (admitted by CERC) for 2009-17" word is additional inserted
- 4 # Additional Row 24(e) inserted