

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 2017-18 to 2021-22

S.N	Particulars	Units	2019-20	2020-21	2021-22	Basis of Information/ Methodology/ Remarks
1	Name of Company		NTPC LTD.			
2	Name of Station/ Pit head or Non- Pit head		NTPC-BARAUNI / NON PIT-HEAD			
	Stage		Stage-2 (Unit#8: 250 MW & Unit#9: 250 MW)			
3	Installed Capacity and Configuration	MW	Unit#8-250MW, Unit#9-250MW			
3.1	Date of Commercial Operation - Unit Wise		Unit#8-22.11.2019, Unit#9-17.06.2021			
3.2	Effective COD		Unit#8-01.03.2020, Unit#9-01.11.2021			
	Make of Turbine		KWU	KWU	KWU	
4	Rated Steam Parameters (Also state the type of Steam turbine and Boiler)		Rated Steam Parameter at Turbine Inlet MS Pressure: 150 KSC, MS Temp: 537 Deg C RH Pressure: 35.77 KSC, HRH Temp: 537 Deg C Boiler Make: BHEL Turbine Make: BHEL(KWU Type)			
5	Type of BFP		Electrical Driven			
	Quantity		3 Nos BFP in Each Units			
6	Circulating water system		Closed circuit cooling & induced draft cooling			
7	Any other Site specific feature					
	Unit heat rate		2274.6			
	Boiler efficiency		85.60			
	Turbine cycle heat rate		1947.1			
8	Fuels :					
8.1	Primary Fuel :		Coal			
8.1.1	Annual Allocation under FSA	MT	8.85 LMT for Stage-1 & (1.44LMT for FY 20-21 & 1.528LMT for FY 21-22) for Stage-2			
	Annual Consumption	MT	31092	773969	1399279	
	Annual Requirement at NAPAF		ECL (G3-G8) & CCL (G8-G13)			
8.1.2	Sources of supply/ procurement along with contracted quantity and grade of coal					
8.1.2.1	FSA	LoA	LMT	8.85	8.85	
		MoU	LMT	1.44	1.528	
8.1.2.2	Imported*	MT				
8.1.2.	Spot Market/e-auction*	MT				
8.1.3	Transportation Distance of the station from the sources of supply	KM	ECL (205-258KM) / CCL (383-511KM)			For full station capacity
8.1.4	Mode of Transport		Rail			
8.1.5	Maximum Station capability to stock primary fuel (for days consider availability as NAPAF)	Days & MT	20 days, 2 LMT			
8.1.6	Maximum stock maintained for primary fuel	MT	139628	192963	166007	
	Date		01.03.2020	31.12.2020	04.06.2021	
8.1.7	Minimum Stock maintained for primary fuel	MT	4343	29030	0	
	Date		08.06.20219	27.08.2020	16.10.2021	
8.1.8	Average stock maintained for primary fuel	MT	57908	98841	69722	
8.2	Secondary Fuel :					
8.2.1	Annual Allocation/ Requirement	KL	79.05	933.3	1320.9	
8.2.2	Sources of supply		IOCL/HPCL/BPCL			

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8.2.3	Transportation Distance of the station from the sources of supply	KM	IOCL: Hadia Refinery (650 km)			
8.2.4	Mode of Transport		Rail Mode			
8.2.5	Maximum Station capability to stock secondary fuels	KL	9600			
8.2.6	Maximum Stock of secondary oil actually maintained	KL	5453.162	7250.674	3637.950	
8.2.7	Minimum Stock of secondary oil actually maintained	KL	364.412	2990.212	576.578	
8.2.8	Average Stock of secondary oil actually maintained	KL	2894.620	5078.634	2278.050	
9.	Cost of Spares :					
9.1	Cost of Spares capitalized in the books of accounts	(Rs. Lakh)	1785.54	701.03	2295.70	For full station capacity
9.2	Cost of spares included in capital cost for the purpose of tariff	(Rs. Lakh)	Tariff order not issued.			
9.3	Initial spares-list, quantity and cost	(Rs. Lakh)				
9.4	Maintenance spares - cost	(Rs. Lakh)	92.46	203.43	1115.82	For full station capacity
9.5	Other spares procured with high lead procurement time	(Rs. Lakh)				
10	Generation :					
10.1	-Actual Gross Generation at generator terminals	MU	52.8	1261.8	2268.2	
10.2	-Actual Net Generation Ex-bus	MU	48.0	1131.1	2057.9	
10.3	-Scheduled Generation Ex-bus	MU	44.6	1145.0	2063.6	
11	Average Declared Capacity (DC)	MW	17.8	212.8	280.9	
	DC Peak HD %	%		91.69	93.96	
	DC Off Peak HD %	%		92.89	92.72	
	DC Peak LD %	%		94.75	88.01	
	DC Off Peak LD %	%		94.53	86.88	
	Actual Declared Capacity	MU	156.8	1864.2	2460.6	
	Deemed Declared Capacity	MU	156.8	1864.2	2460.6	
12	Actual Auxiliary Energy Consumption excluding colony	MU	4.8	130.7	210.3	
13	Actual Energy supplied to Colony from the station	MU	0	0	0	
	Actual energy supplied to construction activities	MU	0.0	0	0	
	Actual energy supplied to long term and medium term beneficiaries	MU	44.61	1145.01	2063.62	
	Actual energy supplied in short term					
	Energy supplied under bilateral arrangements					
	Energy supplied through exchahnges	MU	0	0	0	
	Energy supplied under DSM	MU	3.41	-13.90	-5.72	
	Energy supplied SCED	MU	0.000	0.000	0.000	
14	Primary Fuel :					
14.1	Consumption :					
14.1.1	Domestic coal					
	From Linked Mines	MT	31092	773969	1399279	
	From Non-Linkd Mines	MT				
	From Integerated Mines	MT				
14.1.2	Imported coal	MT				
14.1.3	Spot market/e-auction coal	MT				
14.2	Gross Calorific Value (GCV) :					
	(As Billed) - EM Basis as per third party	kCal/kg	4604	4869	4656	

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S.N	Particulars	Units	2019-20	2020-21	2021-22	Basis of Information/ Methodology/ Remarks	
14.2.1	Domestic Coal (for each type)	(As Received) - TM Basis as per third party	kCal/kg	4041	3957	3911	
14.2.2	Imported Coal	(As Billed) - ADB Basis	kCal/kg	N/A	N/A	N/A	
		(As Received) - ADB Basis	kCal/kg	N/A	N/A	N/A	
14.2.3	Spot market/e- auction coal	(As Billed)	kCal/kg	N/A	N/A	N/A	
		(As Received)	kCal/kg	N/A	N/A	N/A	
14.2.4	Weighted Average Gross Calorific value (Domestic+Imported+Spot/e-auction) (As Billed)	kCal/kg	4604	4869	4656		
14.2.5	Weighted Average Gross Calorific value (Domestic+Imported+Spot/e-auction) (As Received)	kCal/kg	4041	3957	3911		
	Ash content in coal (%)	%	41.8	38.1	39		
14.3	Price of coal :						
	Billed Cost (including adjustments)						
	Amount Charged by transporting agency upto delivery point						
14.3.1	Weighted Average Landed price of Domestic coal	(Rs/MT)	3687.7	3923.2	3809.4		
	Components of landed cost and break up						
	1. Cost of coal,	(Rs/MT)	2589.0	2742.4	2675.9		
	2. Transportation	(Rs/MT)	1036.3	1064.1	1032.0		
	3. Other charges	(Rs/MT)	62.5	116.8	101.4		
14.3.2	Weighted Average Landed Price of Imported coal	(Rs/MT)		NA			
	Components of landed cost and break up						
14.3.3	Weighted Average Landed Price of Spot market / e-auction coal	(Rs/MT)		NA			
	Components of landed cost and break up						
14.3.4	Weighted Average Landed Price of all the Coals	(Rs/MT)	3688	3923	3809		
14.4	Blending :	% and MT (of the total coal consumed)		NA			
	Blending ratio of imported coal with domestic coal	Equivalent to domestic coal					
14.4.2	Proportion of e-auction coal in the blending	% & MT					
	Coal stockyard capacity	LMT		2 LMT	2 LMT		
14.5	Actual daily Average Coal stock maintained	MT	57908	98841	69722		
		Days	11.45	19.54	11.6		
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			
14.5.1.2	Transit loss from non-linked mines including e-auction coal mines.	%					
14.5.1.3	Transit loss of imported coal	%					
14.5.2	Non-Pit Head station						
14.5.2.1	Transit loss from linked mines	%					
14.5.2.2	Transit loss from non-linked mines including e-auction coal mines.	%	0.791	0.785	0.655		
14.5.2.3	Transit loss of imported coal	%					

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S.N	Particulars	Units	2019-20	2020-21	2021-22	Basis of Information/ Methodology/ Remarks	
15	Secondary Fuel Oil :						
15.1	Consumption	HFO	KL	N/A	N/A	N/A	
		HSD/LDO	KL	786	3183	2482	
15.2	Weighted Average Gross Calorific value (As received)	HFO	(kCal / Lit.)	N/A	N/A	N/A	
		HSD	(kCal / Lit.)	9100	9415	9433	
15.3	Weighted Average Price	HFO	(Rs / KL)				
		HSD/LDO	(Rs / KL)	47833	40805	66688	
15.4	Actual Average stock maintained	HFO	KL	N/A	N/A	N/A	
		HSD/LDO	KL	2895	5079	2278	
16	Weighted average duration of outages(unit-wise details):						
16.1	Planned Outages		(Days)	0.0	0.0	30.0	
16.2	Forced Outages		(Days)	160.0	119.1	40.6	
	Within control of generator		(Days)	0.0	0.1	0.1	
	beyond control of generator		(Days)	160.0	118.9	40.5	
16.3	Number of tripping		Nos.	2	37	26	
16.4	Number of start-ups:		Nos.	2	37	26	
16.4.1	Cold Start-up		Nos.	1	2	5	
16.4.2	Warm Start-up		Nos.	1	10	9	
16.4.3	Hot start-up		Nos.	0	25	12	
17	NOx , SOx ,and other particulate matter emission in : at conditions specified by MoEF&CC			ECS system under installation.			
17.1	Design value of emission control equipment (specify conditions)						
	FGD installation date						
	NOX Control system installation date						
17.2	Actual emission (Stage-I)	SPM	mg/Nm ³	Attached as Annexure-A			
		NOX	mg/Nm ³				
		SOX	mg/Nm ³				
	Actual emission (Stage-II)	SPM	mg/Nm ³				
		NOX	mg/Nm ³				
		SOX	mg/Nm ³				
	Ash dyke capacity as on 31st March						
	Ash pond capacity as on 31st March						
	Fund available in Ash Fund Account as on 31st			Attached as Annexure-B			
	Amount utilized from Ash Fund Account						
	Ash available as on 31st March		LMT	0.73	3.30	6.01	
	Ash utilized for construction of ash dyke		LMT	0.00	0.00	0.00	
	Ash utilized within plant premise, other than construction of ash dyke		LMT	0.01	0.00	0.00	
	Ash transported		LMT	0.11	1.33	1.70	
	Average Distance		Km	150	150	150	
19	Detail of Ash utilization % of fly ash produced		(%)	17.81	60.30	79.37	For full station capacity
19.1	Conversion of value added product		(%)	2.74	17.88	41.26	

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19.2	For making roads &embarkment	(%)	15.07	40.30	28.29	
19.3	Land filling	(%)	0.00	2.12	0.17	
19.4	Used in plant site in one or other form or used in some other site	(%)	0.00	0.00	0.00	
19.5	Any other use , Please specify	(%)	0.00	0.00	9.65	
20	Cost of spares actually consumed	(Rs. Lakh)			151.54	
21	Average stock of spares	(Rs. Lakhs)	470.7	1321.2	3914.9	For full station capacity
22	Number of employees deployed in O&M	Nos.				For full station capacity
22.1	- Executives	Nos.	101	108	156	
22.2	- Non Executives	Nos.	23	21	22	
22.3	- Corporate office	Nos.	2016	1815	1728	
23	Man-MW ratio	Man/MW	0.17	0.18	0.25	
	Total billed amount		Attached as Annexure-C			
	Total received amount within due date					
	Total amount received beyond due date					
	Total amount pending					
	Total amount under dispute					
	Total rebate given					
	Total LPSC recovered					
24	Generation Switchyard Details		220KV-14, 132KV- 6 bays (Under construction)			
	No. of Bays voltagewise		4 Nos. - 200KV/132KV, 150MVA			
	ICT - nos and rating					
	Dedicated transmission line - voltage and length		NA			

Note: Ash available on 31st March indicated is total ash generated during the FY and distance indicated is Weighted average distance of ash transportation.

Annexure-VI (C)**DETAILS OF WATER CHARGES****Name of the Company: NTPC****Name of the Power Station and Stage/Phase: Barauni Station**

(Rs. In Lakhs)

Sl.No.	ITEM	2019-20	2020-21	2021-22
1	2	5	6	7
(A)	Plant			
1	Type of Plant	Coal based Thermal		
2	Type of Cooling Tower	IDCT		
3	Type of Cooling Water System	Close Cycle		
4	Any Special Features which may increase/reduce water consumption	AWRS, DAES		
(B)	Quantum of Water : (Cubic Meter)			
5	Contracted Quantum	53727090	53580295	53580295
6	Allocation of Water	53727090	53580295	53580295
7	Actual water Consumption	284242	6330733	7221447
8.	Rate of Water Charges	1.19	1.19	1.19
9	Other charges/Fees , if paid as part of Water Charges			
10	Total water Charges Paid		1275	637.5

Annexure VI (D)

DETAILS OF OPERATIONS AND MAINTENANCE EXPENSES

Name of the Company: NTPC

Name of the Power Station or Transmission Region: Barauni TPS

(Rs. In Lakhs)

Sl. No.	ITEM	2019-20	2020-21	2021-22
1	2	5	6	7
(A)	Details of Capital Spares in opening Stock			
(B)	Details of Capital Spares procured during the year	1785.54	701.03	2295.70
(C)	Details of capital spares consumed during the year	92.46	203.43	1115.82
(D)	Details of capital spares closing at the end of the			

Annexure-XIX					
	Name of Utility:	NTPC Ltd.			
	Name of Generating Station:	Barauni II			
	Station Configuration:	2*250			
	Capacity (MW):	500			
	COD:	01.11.2021			
S.N	Particulars	Unit	2019-20	2020-21	2021-22
1	Plant Availability Factor (PAF)	%	93.43	94.37	88.11
2	Plant Load Factors (PLF)	%	28.40	57.61	73.26
2a	Loading Factor	%	75.40	85.52	84.88
3	Scheduled Energy	MU	44.61	1145.01	2063.62
4	Scheduled Generation	MU	44.61	1145.01	2063.62
5	Actual Generation	MU	52.83	1261.76	2268.18
	Actual Generation (ex-bus)	MU	48.02	1131.11	2057.90
	Actual energy supplied to beneficiaries (Long Term, Medium Term and Short Term)	MU	44.61	1145.01	2063.62
6	Quantum of coal consumption	MT	31092	773969	1399279
7	Value of coal	Rs. Lakh	817	33276	59348
8	Specific Coal Consumption	kg/kWh	0.589	0.613	0.617
9	Gross Calorific Value of Coal	(Kcal/ Kg)	3956.00	3871.74	3826.22
10	Heat Contribution of Coal	(Kcal/ kWh)	2328.40	2374.93	2360.46
11	Cost Of Specific Coal Consumption – Finally admitted by CERC (Ex-Bus)	(Rs./kWh)			
12	Quantum of Oil Consumption	(KL)	785.8	3183.08	2482.464
13	Value of Oil	(Rs. lakh)	1509	5031	4086
14	Gross calorific value of oil	(kcal/lit)	9100.0	9324.4	9433.2
15	Specific Oil Consumption	(ml/kWh)	14.88	2.52	1.09
16	Cost Of Specific Oil Consumption – Finally admitted by CERC	(Rs./kWh)			
17	Heat Contribution of Oil	(Kcal/ kWh)	135.36	23.52	10.32
18	Station Heat Rate	(Kcal/ kWh)	2463.76	2398.46	2370.78
19	Auxiliary Energy Consumption	(%)	9.10	10.35	9.27
20	Debt at the end of the year	(Rs. Crore)	1129.32	1082.17	1752.69
21	Equity - Average	(Rs. Crore)	479.04	494.42	819.83
22	Working Capital – finally admitted by CERC	(Rs. Crore)	182.26	171.13	375.22
23	Capital cost – finally admitted by CERC	(Rs. Crore)	1596.8017	1648.0697	2732.7677
24	Capacity Charges/ Annual Fixed Cost (AFC)	(Rs. Crore)	398.35	365.55	649.7687
	(a) Return on equity – post tax (admitted by CERC upto 2009) and Pre Tax post 2009				
	Absolute value	(Rs. Crore)	89.97	92.86	153.9805
	Rate	(%)	18.782	18.782	18.782
	(b) interest on Loan				
	Absolute value	(Rs. Crore)	85.6285	75.0797	115.9767
	Rate – Weighted Average Rate	(%)	7.6839	6.7899	6.6409
	(c) Depreciation (finally allowed by CERC)				
	Absolute value	(Rs. Crore)	79.7342	82.2942	137.8071
	AAD				
	Rate	(%)	4.99	4.99	5.04

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	Name of Utility:	NTPC Ltd.			
	Name of Generating Station:	Barauni II			
	Station Configuration:	2*250			
	Capacity (MW):	500			
	COD:	01.11.2021			
S.N	Particulars	Unit	2019-20	2020-21	2021-22
	(d) Interest on working Capital				
	Absolute value	(Rs. Crore)	21.96	19.2522	39.3977
	Rate	(%)	12.05	11.25	10.5
	(e) Operation and maintenance cost (finally admitted by				
	Absolute value	(Rs. Crore)	121.05	96.07	202.61
	Rate	(%)			
	(f) Compensation Allowances	(Rs. Crore)	NA	NA	NA
	(g) Special Allowance	(Rs. Crore)	NA	NA	NA
	h) Supplementary Tariff - Emission Control				
	Absolute value	(Rs. Crore)			
	Rate	(%)			
	i) Ash Utilisation Expenses	(Rs. Crore)			
25	AFC	(Rs./ kWh)	2.37	2.18	1.93
26	Energy Charge	(Rs./kWh)	2.27	2.64	2.64
26.1	Supplemental Energy Charges - Emission Control	(Rs./kWh)	0	0	0
27	Total tariff	(Rs. kWh)	4.64	4.82	4.57
28	Revenue realisation before tax	(Rs. Crore)			
29	Revenue realisation after tax	(Rs. Crore)			
30	Profit/ loss	(Rs. Crore)	-81.27	110.51	52.87
31	DSM Generation	(MU)	3.41	-13.90	-5.72
32	DSM Rate	(Rs/kWh)			
33	Revenue from DSM	(Rs. Crore)	0	0	0
34	Compensation received for operation below NAPAF	(Rs. Crore)	0.28	0	0
35	Part load Compensation received from beneficiariaes	(Rs. Crore)	0.28	0	0
36	Amount received from SCED	(Rs Crore)	0	0	0

Note : Barauni -II Tariff order to be issued data based on petition filed.

DSM Revenue (-)Received / (+) Paid

2a Extra Row inserted .

Gross calorific value indicated for 2019-20,2020-21,2021-22 here after adjusting 85 kcal storage loss