



1.5.26 UPRVUNL should be directed to provide the certificate of weighted average rate of interest from REC. Regulation 24(ii)(e) cast a duty upon the generating company to make effort to re-finance however, UPRVUNL has not taken any effort to re-finance the loan which is violation of the duty cast upon it by the Tariff Regulations.

UPRVUNL Rejoinder

1.5.27 UPRVUNL has claimed interest as per interest rate claimed by REC. These are indicative figures for the provisional Petition. UPRVUNL shall submit final figures at the time of finalisation of the tariff after the COD of the project. UPRVUNL has always endeavoured to reduce the cost of funds. Further, UPRVUNL shall make all feasible efforts to refinance the loans if beneficial terms are available to it.

(k) Interest on Working Capital:

UPPCL's Reply

1.5.28 Unit II will not get commissioned during the tariff period 2019-24. Thus, the interest on Working Capital should be restricted to Unit I only.

1.5.29 UPRVUNL has taken the cost of coal on the basis of Obra-B power project's cost of coal. The working capital is to be calculated on normative basis as per its own project's normative cost of coal and not some other power project's cost of coal. As per Regulation 24(v)(a)(i), the target availability and the maximum coal stock storage capacity, both has to be checked and the lower of the two has to be considered for the computation of working capital. However, it seems this phrase "whichever is lower" has been completely ignored by UPRVUNL under the Petition.

UPRVUNL Rejoinder

1.5.30 UPRVUNL has considered all the provisions as specified in Regulation 24(v) while computing Normative Interest on Working Capital for approval of Provisional Tariff of Obra-C TPS. Obra-C TPS is yet to be commissioned, therefore, there is no reference available for fuel cost estimates. Therefore, the Petitioner has considered the actual fuel cost of Obra-B TPS for the months of October, November & December 2022 for computation of the Provisional Tariff of Obra-C TPS. UPRVUNL shall file Petition for determination of the final cost post-COD & also the fuel cost shall be considered based on cost of actual coal/grade mix consumed.

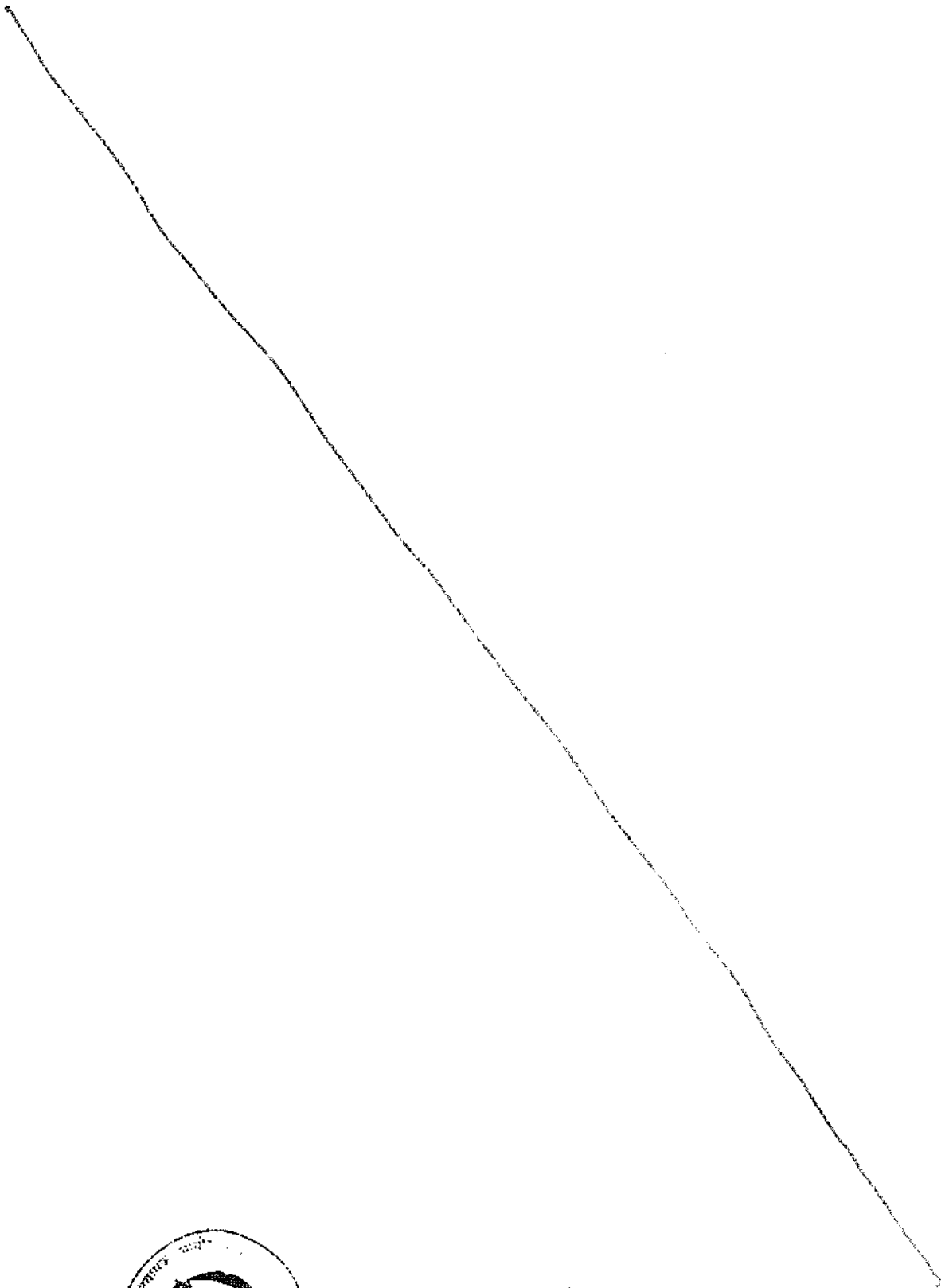
1.5.31 Further, maximum coal storage capacity of Obra-C TPS is more than 5 Lakh MT which is higher than 10 days of stock storage capacity i.e. 1.83 Lakh MT required for calculation of normative working capital.

1.6 Additional Affidavit filed by UPPCL on 20.11.2023.





a) UPPCL has reiterated its earlier reply and has made detailed submissions to the UPRVUNL's rejoinder regarding issues such as Delay in SCOD, Outdated DPR, Incomplete Tariff Forms, Revision of project cost, Interest During Construction, Depreciation, Refinancing of Loan, Interest on Loan, Return on Equity, Energy Charges etc.





Analysis & Decision

2. Regulatory Framework

- 2.1 The Uttar Pradesh Electricity Regulatory Commission (Terms and Conditions of Generation Tariff) Regulations, 2019 ("Generation Tariff Regulations, 2019") was notified on 11.09.2019 and is reckoned to have come into force with effect from 01.04.2019 for a period of 5 years, i.e., up to 31.03.2024. These regulations are applicable in all cases where a tariff for a generating station or unit thereof is required to be determined by the Commission under Section 62 of the Electricity Act read with Section 86 thereof.
- 2.2 Regulation 15 of the Generation Tariff Regulations 2019 provides terms & conditions of the application for determination of tariff including provisional tariff. The relevant extract of the said Regulation 15 is reproduced for ready reference as under:

"15. Application for determination of tariff:

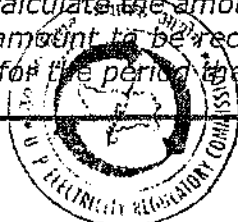
- (1) *The generating company shall make an application for fixation of tariff in respect of the completed units of the generating station in such forms and such manners as prescribed in these Regulations and Uttar Pradesh Electricity Regulatory Commission (Conduct of Business) Regulations, 2004 as amended from time to time or any statutory reenactment thereof:*

Provided that the applications for determination of tariff shall be filed covering the period for which the terms and conditions of tariff shall remain in force.

- (2) *In case of a generating station declared under commercial operation on or after the date of commencement of these Regulations, an Application for fixation of tariff shall be made as per Appendix-II to these Regulations, for determination of provisional tariff within 180 days prior to the anticipated date of commercial operation based on the Capital Expenditure actually incurred up to the date of making of the Application or a date prior to making of the Application, duly audited and certified by the Statutory Auditors, and the provisional tariff shall be charged from the date of commercial operation of the respective Unit of the generating station.*
- (3) *The generating company shall make a fresh Application as per Appendix-II to these Regulations, for determination of Final tariff based on actual Capital Expenditure incurred up to the date of commercial operation of the generating station, duly audited and certified by the Statutory Auditors:*

Provided further that over or under recovery of charges by the generating company on account of provisional tariff shall be subject to retrospective adjustment on the basis of final tariff determined by the Commission. The generating company, on the basis of such Final tariff, shall calculate the amount of under or over recovery of charges and bill such amount to be recovered or paid by it from or to the beneficiary (ies), for the period the provisional tariff remained effective, within six

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months of determination of final tariff, along with simple interest calculated at rate equal to Bank Rate as on 1st April of the relevant year.

(4) Where application for determination of tariff of a new project has been filed before the Commission in accordance with clause 16(2) of these Regulations, the Commission may consider to grant provisional tariff up to 90% of the Annual Fixed Cost of the project claimed in the Application subject to adjustment as per proviso to clause 16(3) of these Regulations after the final tariff order has been issued:

Provided that recovery of Capacity Charges and Energy Charges, as the case may be, in respect of the existing or new project for which provisional tariff has been granted shall be made in accordance with the relevant provisions of these Regulations.

3. Provisional Tariff Computations

3.1 Capacity/Fixed Charges

3.1.1 The Commission has considered the parameters as provided under Generation Tariff Regulations, 2019 for the determination of components of Fixed Charges for the FY2023-24. Thus, the considered parameters are as follows:

Particulars	Value	Remarks
Debt-Equity	70:30	As per Regulation
Return on Equity	15%	As per Regulation
Interest on Loan	10.65%	Wt. Average of the Loan portfolio
O&M Expense (₹lakh/MW)	23.26	As per Regulation
Rate of Interest on Working Capital	12.00%	As per Regulation

a) GFA Balance

3.1.2 The Petitioner has submitted details regarding the Original estimated cost which were further revised and approved as under.

Sl. No.	Particulars	Approval of the BoD of UPRVUNL	Approval of the Authority	Amount (Rs. Cr.)
1	Original Project Cost	152 nd meeting dated 14.09.2012	Letter No. 1651/24-1-12-1534/2012 dated 31.07.2012	8,777.71
2	Cost revision due to prices obtained in bidding process	169 th meeting dated 14.09.2016	Letter No. 2532/24-1-2016-2354/2016 dated 24.11.2016	1,638.29
3	Additional Expenditure on account of GST Impact, Price Variation, CER, Rail siding start-up, etc. (new/AS)	202 nd meeting dated 25.02.2022	Letter No.1540/24-1-2022-2354/2016 dated 10.11.2022	1,289.85





Provisional Tariff of Obra-C Thermal Power Station of UPRVUNL

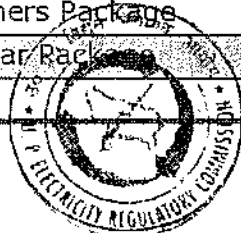
	Dyke construction & Land Acquisition etc.			
4	Total Revised Project Cost			11,705.85

3.1.3 The Petitioner for the purpose of instant Petition has considered GFA balance as on 31.12.2022 based on the Statutory Auditor's certificate. Further, the Petitioner has requested the Commission to consider Rs. 8,697.80 Cr. for approval of provisional tariff. The details of the cost estimate for the thermal power station as submitted is given in the table below:

Table: Cost Estimate as on 31.12.2022

Sl. No.	Particulars	Cost (₹ Crores)
1.0	Cost of Land & Site Development	
1.1	Land	-
1.2	Rehabilitation & Resettlement (R&R)	-
1.3	Preliminary Investigation & Site Development	27.92
	Total cost (Land & Site Development)	27.92
2.0	Plant & Equipment	
2.1	Steam Generator	2,008.17
2.2	Turbine Generator	1,131.65
2.3	BOP Mechanical	
2.3.1	External water supply system	-
2.3.2	CW system	
2.3.3	DM water Plant	
2.3.4	Clarification plant	133.79
2.3.5	Chlorination Plant	
2.3.6	Fuel Handling & Storage system	0.50
2.3.7	Ash Handling System	70.83
2.3.8	Coal Handling Plant	182.65
2.3.9	Rolling Stock and Locomotives	-
2.3.10	MGR	-
2.3.11	Air Compressor System	6.53
2.3.12	Air Condition & Ventilation System	24.74
2.3.13	Firefighting System	23.71
2.3.14	HP/LP Piping	-
2.3.15	FGD system, if any	296.34
2.3.16	De-salination plant for seawater intake	-
2.3.17	External coal handling in Jetty, if any	-
	Total BOP Mechanical	739.09
2.4	BOP Electrical	
2.4.1	Switch Yard Package	
2.4.2	Transformers Package	
2.4.3	Switch gear Package	

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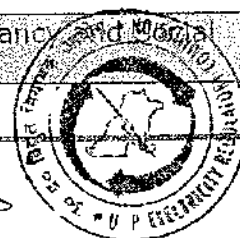


Provisional Tariff of Obra-C Thermal Power Station of UPRVUNL

2.4.4	Cables, Cable facilities & grounding	337.93
2.4.5	Lighting	
2.4.6	Emergency D.G. set	
	Total BOP Electrical	337.93
2.5	C & I Package	139.43
	Total Plant & Equipment excluding taxes & Duties	4,384.19
2.6	Taxes and Duties	
2.6.1	Custom Duty	205.14
2.6.2	Other Taxes & Duties	844.25
	Total Taxes & Duties	1,049.39
	Total Plant & Equipment with Taxes & Duties	5,433.58
3.0	Initial spares	134.05
4.0	Civil Works	
4.1	Main plant/Adm. Building	649.04
4.2	CW system	
4.3	Cooling Towers	194.28
4.4	DM water Plant	
4.5	Clarification plant	
4.6	chlorination plant	-
4.7	Fuel Handling & Storage system	7.06
4.8	Coal Handling Plant	239.81
4.9	MGR & Marshalling Yard	67.47
4.10	Ash Handling System	-
4.11	Ash disposal area development	44.21
4.12	Firefighting System	-
4.13	Township & Colony	78.37
4.14	Temp. construction & enabling works	-
4.15	Road & Drainage	67.02
	Total Civil works	1,347.26
5.0	Construction & Pre- Commissioning Expenses	
5.1	Erection Testing and commissioning	-
5.2	Site supervision	-
5.3	Operator's Training	-
5.4	Construction Insurance	-
5.5	Tools & Plant	2.53
5.6	Depreciation	0.16
5.7	Startup fuel	20.63
	Total Construction & Pre- Commissioning Expenses	23.31
6.0	Overheads	
6.1	Establishment (Incl. Co. sultancy Responsibility)	148.20

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6.2	Design & Engineering	-
6.3	Audit & Accounts	-
6.4	Others (Administration & Gen Exp)	5.77
6.5	Contingency (Incl. Loss on Stocks)	5.44
	Total Overheads	159.41
7.0	Capital cost excluding IDC & FC	7,097.61
7.1	Interest During Construction (IDC)	1,606.73
7.2	Financing Charges (FC)	1.47
7.3	Foreign Exchange Rate Variation (FERV)	(8.02)
	Total of IDC, FC, FERV & Hedging Cost	1,500.19
8.0	Working Capital Margin	-
9.0	Capital cost including IDC & FC	8,697.80

3.1.4 The Commission notes that the total actual expenditure incurred as on 31.12.2022 is Rs. 8,697.80 Cr. and the Statutory Auditor Certificate dated 15.03.2023 in this regard is placed on record. The Commission finds that none of the proposed units of 2x660MW power project has achieved COD though as per PPA dated 16.01.2013 the respective SCOD of the two units of Obra-C TPS was 31.08.2017 & 28.02.2018. **Therefore, prudence check of the Capital cost of the project shall be performed by the Commission at the time of determination of final tariff. The determination of provisional tariff is detailed in the succeeding paragraphs of this Order.**

3.1.6 Regulation 15(2) of the Generation Tariff Regulations, 2019 provide that in case of a generating station declared under commercial operation on or after the date of commencement of these Regulations, an Application for fixation of tariff shall be made as per Appendix-II to these Regulations, for determination of provisional tariff within 180 days prior to the anticipated date of commercial operation based on the Capital Expenditure actually incurred up to the date of making of the Application or a date prior to making of the Application, duly audited and certified by the Statutory Auditors, and the provisional tariff shall be charged from the date of commercial operation of the respective Unit of the generating station.

3.1.7 Accordingly, the Commission for the purpose of the instant Petition, has considered @90% to the opening GFA balance for the FY 2023-24 and approves the following GFA:

(₹ Crore)

Particulars	FY 2023-24	
	Claimed	Approved
Opening GFA	8,697.80	7828.02
Additional Capitalization	0.00	0.00
Closing GFA	8,697.80	7828.02
Average GFA	8,697.80	7828.02

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b) Depreciation

3.1.8 The Commission for the purpose of calculation is guided by clause 24(iii) of the Generation Tariff Regulations, 2019. The Commission has applied depreciation rates as prescribed in Appendix III of the Generation Tariff Regulations, 2019 based on the Gross Fixed Asset and worked out depreciation for the FY 2023-24 accordingly.

(₹ Crore)		
S. No.	Particulars	2023-24
1	Total Capital Cost	8,697.80
2	Land Cost	(27.92)
3	Capital Cost excluding Land Cost	8669.88
4	90% of Capital Cost excluding land cost	7802.89
5	Rate of depreciation	5.23%
6	Depreciation Approved	408.12

c) Means of Finance

3.1.9 As per Petitioner's submission, the Debt: Equity ratio is 70:30 for the Obra-C TPS. Regulation 22(1) of the Generation Tariff Regulations, 2019 provides that debt-equity ratio as on the COD shall be 70:30 for the purpose of determination of tariff. The relevant extract of the said Regulation is reproduced as under:

22. Debt-Equity Ratio:

(1) In case of all generating stations, debt-equity ratio as on the date of commercial operation shall be 70:30 for determination of tariff. Where equity employed is more than 30%, the amount of equity for determination of tariff shall be limited to 30% and the balance amount shall be considered as the normative loan:

Provided that—

- (i) The generating company shall submit the resolution of the Board of the company regarding infusion of fund from internal resources in support of the utilization made or proposed to be made to meet the capital expenditure of the generating station.
- (ii) In case of a generating station where actual equity employed is less than 30%, the actual debt and equity shall be considered for determination of tariff;
- (iii) The equity invested in foreign currency shall be designated in Indian Rupees on the date of each investment; and
- (iv) Any grant obtained for the execution of the project shall not be considered as a part of capital structure for the purpose of debt-equity ratio.
- (v) The debt and equity amount arrived at in accordance with clause (1) shall be used for calculating interest on loan and return on equity.

Any expenditure incurred on or after 01.04.2019 as may be admitted by the Commission as additional capital expenditure

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for determination of tariff, and Renovation and Modernisation expenditure for life extension shall be serviced in the manner specified in clause (1) of this Regulation.

3.1.10 The Commission has approved the Debt-Equity ratio as per Govt. approval and as claimed by UPRVUNL and worked out Debt, Equity for the project as under:

(₹ Crore)	
Particulars	FY 2023-24
Opening GFA @90%	7828.02
Additions	0.00
Deletions/Decapitalisation	0.00
Closing GFA	7828.02
Financing	
Debt %	70%
Equity %	30%
Opening Debts	5479.61
Additions	0.00
Deletions	0.00
Less: Depreciation/Repayment	(408.12)
Closing Debts	5071.50
Opening Equity	2348.41
Additions	0.00
Deletions	0.00
Closing Equity	2348.41

d) Return on Equity

3.1.11 The Commission has approved rate of Return on Equity @15% in terms of Regulation 24(i) of the Generation Tariff Regulations, 2019. Accordingly, the Return on Equity to the Petitioner has been approved as under:

(₹ Crore)	
Particulars	FY 2023-24
Opening Equity	2348.41
Additions	0.00
Deletions	0.00
Closing Equity	2348.41
Average Equity	2348.41
Rate of Return on Equity	15%
Approved RoE	352.26

e) Interest on Loan



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3.1.12 The Commission has considered the opening and closing loan as worked out at paragraph 3.1.10 above and weighted average rate of interest of loan as submitted by the Petitioner for the calculation of the Interest on Loan for the FY 2023-24.

(₹ Crore)	
Particular	FY 2023-24
Opening loan balance	5479.81
Loan addition during year	0.00
Repayment during year	(408.12)
Closing loan balance	5071.50
Average loan balance	5275.56
Effective Interest Rate %	10.65%
Interest on Loan Approved	561.85

f) Operation and Maintenance (O&M) expenses

3.1.12 Regulation 24(iv)(a) of the Generation Tariff Regulations, 2019 provides the normative O&M expense for the Coal based thermal power plants. The relevant extract of the said regulation is as below:

"(iv) Operation and Maintenance expenses

(a) For Coal-based generating stations except for those covered under clause (b):

(Rs. in lakh/MW)

Year	Upto 200/210/250 MW sets	300/330/350 MW sets	500 MW sets	500 MW & above sets
2019-20	32.96	27.74	22.51	20.26
2020-21	34.12	28.71	23.30	20.97
2021-22	35.31	29.72	24.12	21.71
2022-23	36.56	30.76	24.97	22.47
2023-24	37.84	31.84	25.84	23.26

(b)

(Rs. in lakh/MW)

Year	Harduaganj (U#7)	Parichha (U#2)
2019-20	64.80	38.80
2020-21	67.07	40.16
2021-22	69.43	41.57
2022-23	71.86	43.03
2023-24	74.39	44.54

3.1.13 The Commission, accordingly, approves the O&M expenses for the FY 2023-24 as below:

Particulars	FY 2023-24
Normative O&M Expenses (₹ Lakh/MW)	23.26
Installed Capacity (MW)	1320
O&M Expense (₹)	307.03



O&M Expense Approved @90% (₹ Crore)

276.33

g) Interest on Working Capital

3.1.14 Regulation 24(v) of the Generation Tariff Regulations, 2019 provide normative parameters for computing the Working Capital for the coal based thermal power plants. The relevant extract of the said Regulation is reproduced as follows:

"(v) Interest on Working Capital:

(a) Working Capital shall be allowed on a normative basis and for coal based generating stations shall include:

(i) Cost of Coal towards stock for 10 days for pit-head generating stations and 20 days for non-pit-head generating stations, corresponding to the Target Availability or maximum coal stock storage capacity, whichever is lower

(ii) Advanced payment for 30 days towards Cost of coal for generation corresponding to the Target Availability;

(iii) Cost of Secondary fuel oil for two months corresponding to the target availability and in case of use more than one secondary fuel oil, cost of fuel oil stock for the main secondary fuel oil;

(iv) Operation and maintenance expenses, including water charges, for one month;

(v) Maintenance spares @20% of operation and maintenance expenses; and

(vi) Receivables equivalent to 45 days of capacity charges and energy charges for sale of electricity calculated on the target availability.

(b) The cost of fuel in cases covered under sub-clauses (i) and (ii) of clause (a) of this Regulation shall be based on the landed cost incurred (taking into account normative transit and handling losses) by the generating company and gross calorific value of the fuel on 'as received basis' for the three months preceding the first month of the period for which tariff is to be determined and no fuel price escalation shall be provided during the tariff period.

.....

(d) Rate of interest on Working capital shall be on normative basis and shall be considered as the Bank Rate as on 1st April of each of the financial year during the tariff period, 2019-24. "

3.1.15 The Commission has considered the fuel details as submitted by the

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Petitioner in Tariff Form for the months of October, November, and December 2022 and the average values worked out are as under:

Particulars	Unit	Oct, 2022	Nov, 2022	Dec, 2022	Average
Wt. Average Landed Cost of Coal	₹/MT	2651.19	2687.04	2677.79	2672.01
Wt. Average GCV of Coal	kCal/kg	3446.00	3441.00	3441.00	3442.67
Wt. Average Landed Cost of Oil	₹/kL	108327.00	96049.00	94726.00	98034.00
Wt. Average GCV of Oil	kCal/L	9184.00	9111.00	9112.00	9135.67

3.1.16 Regulation 24(v)(d) of the Generation Tariff Regulations 2019 provides rate of Interest on Working Capital to be bank rate as on 01.04.2023, which worked out to be 12% (i.e., 8.5% +350 bp). Accordingly, the Commission has approved Interest on Working Capital for the FY 2023-24 as under:

Particulars	(₹ Crore)
Cost of Coal for 40 (i.e., 10+30) days	186.64
Cost of Main Secondary Fuel Oil for 2 months	8.05
O&M Expenses for 1 month	25.59
Maintenance Spares @ 20% of O&M.	61.41
Receivables equivalent to 45 days	422.97
Total Working Capital	704.65
Rate of Interest	12.00%
Interest on Working Capital Approved @90%	76.10

Annual Fixed Charges

3.1.17 In view of the above discussion, the fixed/capacity Charges as claimed by the Petitioner and as approved by the Commission in the instant provisional tariff for the FY 2023-24 is as below:

Particulars	(₹ Crore)	
	Claimed	Approved
Depreciation	454.92	408.12
Interest on Loan	624.2	561.85
Return on Equity	391.4	352.26
Interest on Working Capital	76.24	76.10
O&M Expenses	307.03	276.33
Total	1853.79	1674.65
Rate of Capacity Charge ex-bus (₹/kWh)	2.01	1.81

3.2 Variable/Energy Charges

3.2.1 As per the operational norms provided in the Generation Tariff Regulations, 2019 and in view of the discussion in foregoing paragraphs of this tariff Order,





the representative Energy Charge for the FY 2023-24 is given in the below table:

Description	Unit	2023-24
Capacity	MW	1,320.00
PLF	%	85%
Gross Station Heat Rate	kCal/kWh	2,182
Auxiliary Energy Consumption*	%	6.25%
Gross Energy Generation	MU	9,856
Auxiliary Energy Consumption	MU	616
Ex-bus Energy Sent Out	MU	9,240
Specific Oil Consumption	ml/kWh	0.50
Wt. Avg. GCV of Oil	kCal/L	9,135.67
Price of Oil	₹/kL	98,034
Wt. Avg. GCV of Coal	kCal/kg	3442.67
GCV of Primary Fuel (Coal) less 85 kCal/kg on account of variation during storage	kCal/kg	3357.67
Price of Coal	₹/MT	2,672
Heat Contribution from SFO	kCal/kWh	4.57
Secondary Fuel Oil Consumption	kL	4928
Heat Contribution from Coal	kCal/kWh	2177
Specific Coal Consumption	kg/kWh	0.648
Coal Consumption	MMT	6.391
Total Cost of Oil	₹ Cr.	48.31
Total Cost of Coal	₹ Cr.	1,707.77
Total Fuel Cost	₹ Cr.	1,756.08
Rate of Energy Charge from Secondary Fuel Oil ex-bus	Paise/kWh	5.23
Rate of Energy Charge from Coal ex-bus	Paise/kWh	184.83
Rate of Energy Charge ex-bus per kWh	₹/kWh	1.90

*Additional 0.5% for Induced Draught Cooling Tower

4. Observation of the Commission:

- 4.1 The provisional tariff as determined above shall be applicable from the date of commercial operation (COD) till determination of final tariff by the Commission in terms of the applicable provisions of prevalent Tariff Regulations.
- 4.2 Over or under recovery of charges by the Petitioner on account of provisional tariff shall be subject to retrospective adjustment along with carrying cost on the determination of final tariff by the Commission in terms of the applicable provisions of prevalent Tariff Regulations.
- 4.3 The Petitioner shall be entitled to recovery of application fee and other





statutory charges as per Regulation 33 of the UPERC (Terms & Conditions of Generation Tariff) Regulations, 2019.

4.4 The Commission has observed that increased IDC in claimed expenditure is not as per last cost approval of the Government.

5. Directions of the Commission

5.1 The Petitioner is directed to ensure timely availability of fuel and logistics as to utilise the assets instead of procuring coal by any other means to safeguard the customer interest from unwarranted cost.

5.2 The Petitioner is also directed to furnish details strictly in terms of the format of the Tariff Forms in Appendix of the prevalent Tariff Regulations at the time of filing Petition for determination of final tariff.

With the above directions, the Petition is disposed of.

(Sanjay Kumar Singh)
Member

(Vinod Kumar Silvastava)
Member (Law)

(Arvind Kumar)
Chairman

Place: Lucknow

Dated: 05.07.2024

