

**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Petition No. 183/GT/2022**

**Coram:**

**Shri Jishnu Barua, Chairperson  
Shri Arun Goyal, Member  
Shri Pravas Kumar Singh, Member**

**Date of Order : 19<sup>th</sup> May, 2024**

**In the matter of**

Petition for approval of tariff of Meja Thermal Power Station Stage-I (1320 MW) for the period from COD of Unit-I (i.e. 30.4.2019) to 31.3.2024.

**And**

**In the matter of**

Meja Urja Nigam Private Limited,  
Meja Thermal Power Project  
P.O.-Kohdar Meja Tehsil, Allahabad-212 301 (UP).

**.....Petitioner**

**Vs**

1. Uttar Pradesh Power Corporation Limited,  
Shakti Bhawan 14, Ashok Marg,  
Lucknow – 226 001 (UP).
2. Rajasthan Urja Vikas Nigam Limited,  
(on behalf of JVVNL, AVVNL, JdVVNL)  
Vidyut Bhawan, Janpath,  
Jaipur – 302 005 (Rajasthan)
3. Punjab State Power Corporation Limited,  
The Mall, PSEB Head Office  
Patiala – 147 001
4. Power Development Department,  
Govt. of J&K, Civil Secretariat,  
Srinagar.
5. Uttarakhand Power Corporation Limited,  
Urja Bhawan, Kanwali Road,  
Dehradun – 248 001



6. Electricity Department,  
Union Territory of Chandigarh,  
Addl. Office Building  
Sector-9D, Chandigarh.

....Respondent(s)

**Parties present:**

Ms Swapna Seshadri, Advocate, MUNPL  
Ms Ritu Apurva, Advocate, MUNPL  
Shri M. Karhikeyan, Advocate, MUNPL  
Ms Neelam Singh, Advocate, MUNPL  
Shri Amit Arora, MUNPL

**ORDER**

This Petition has been filed by the Petitioner, Meja Urja Nigam Private Limited (MUNPL), a Joint Venture Company between NTPC Limited and Uttar Pradesh Rajya Vidyut Utpadan Nigam Limited, under Section 79 (1) (a) of the Electricity Act, 2003 for approval of tariff of Meja Thermal Power Station Stage-I (1320 MW) (in short 'the generating station') for the period from the COD of Unit-I (i.e., 30.4.2019) to 31.3.2024, in accordance with the provisions of the Central Electricity Regulatory Commission (Terms & Conditions of Tariff) Regulations, 2019 (in short 'the 2019 Tariff Regulations'). The generating station, with a total capacity of 1320 MW, comprises two units of 660 MW each. The actual date of commercial operation of various units of the generating station are as under:

Unit-I	30.4.2019
Unit-II	31.1.2021

2. Petition No. 182/GT/2019 was filed by the Petitioner for approval of the tariff of the generating station for the period from the anticipated COD of Unit-I 30.4.2019 to 31.3.2024 along with the anticipated additional capitalisation up to 31.3.2024. Subsequently, after Unit-I of the generating station was declared under commercial operation on 30.4.2019, the Petitioner, vide affidavit dated 26.11.2020, filed a revised



Petition No. 182/GT/2019, based on the actual additional capitalization as on the actual COD of Unit-I along with the projected additional capital expenditure upto 31.3.2024, in accordance with Regulation 24 and Regulation 26 of the 2019 Tariff Regulations. Further, the declaration of COD of Unit-II on 31.1.2021, the Petitioner vide letter dated 27.4.2022 in Petition No. 182/GT/2019, sought liberty to file a fresh tariff petition for the generating station, based on the audited capital cost as on station COD (i.e., 31.1.2021) and the projected capital expenditure upto 31.3.2024. The Commission vide order dated 7.5.2022 disposed of Petition No. 182/GT/2019, granting liberty to the Petitioner to file a fresh Petition for determination of tariff of Units-I & II of the generating station. Accordingly, the present Petition has been filed by the Petitioner, based on the audited capital cost as on COD of the generating station along with the projected additional capital expenditure for the period from the COD of the generating station to 31.3.2024.

3. The Petitioner has furnished the Board Resolution dated 8.4.2019, wherein the Board has approved the Revised Cost Estimate of the project for Rs. 12176.28 crore at the 2018 IInd Qtr price level. The original investment approval was sanctioned by the Petitioner's Board on 10.12.2010 at Rs. 10829.58 crore at the 2010 IVth Qtr price level. The investment approval of the generating station was accorded by the Petitioner's Board in its 14th meeting held on 10.12.2010, subject to the approval from both the promoters, environmental clearances of MoEF, and award of SG package for the project, whichever is later. The Petitioner has further submitted that as per the resolution passed in the 14th Board meeting, the effective date of investment approval of the generating station shall be reckoned from the date of approval from both the promoters, environmental clearances of MoEF, and award of SG package for the project, whichever is later. The dates of award of the Main plant SG package, environmental clearance by



the MoEF, and approval from both the promoters are 30.4.2012, 10.1.2011 and 19.3.2012 & 24.6.2011, respectively. Accordingly, the zero date of the project is 30.4.2012. Further, as per the investment approval, the COD of the I<sup>st</sup> Unit of 660 MW of the generating station was envisaged at 52 months from the date of SG package award (date of notification of the award of SG Package: 30.4.2012) and the II<sup>nd</sup> Unit of 660 MW was envisaged at an interval of 6 (six) months thereafter. The specific dates and events associated with the construction and commissioning, as submitted by the Petitioner, are as under:

S.No.	Event	Date
1	Investment Approval of Board (IA)	10.12.2010
2	Promoters Approval	24.6.2011 & 19.3.2012
3	Award of SG package	30.4.2012
4	Zero Date for work on SG	30.4.2012
5	SCOD of Unit-I	31.8.2016 (52 months from 30.4.2012 as per IA)
6	SCOD of Unit-II	28.2.2017 (58 months from 30.4.2012 as per IA)

4. The unit-wise COD, along with details of the time over-run in respect of the generating station, are as under:

Assets	SCOD	COD	Time over-run
Unit-I	31.8.2016	30.4.2019	32 months
Unit-II	28.2.2017	31.1.2021	47 months

5. The reasons furnished by the Petitioner, in justification for the time-overrun, are summarised below:

S.No.	Reasons	Period	Months of Stoppage
1	Excess rain	2012-2016 & 2016-2020	26.5
2	Prohibition on mining of sand and mooram by NG, HC and Govt.	13.1.2015-22.4.2017	20.0
3	Non-availability of aggregates	1.6.2012-10.11.2012	5.5
4	Ash dyke delay due to delay in land acquisition	31.7.2013-1.3.2018	29.0
5	Delay on account of QSGM issue	1.2.2014-19.2.2016	24.0
6	Delay on account of COVID-19	25.3.2020-31.5.2020	2.3



7	Delay in Railway siding due to land acquisition in Unchihdi & Lehdi Village	Nov,2011-31.10.2018 (Unchidih Village) & Nov2011-15.7.2017 (Lehdi Village)	45.0 & 68.0
8	Law & Order issue during construction of Road Under Bridge	Jan 2015-June 2021	47.0
9	Delay in coal supply from SECI	1.10.2018-30.4.2019	6.0

6. The capital cost and the annual fixed charges claimed by the Petitioner for the period from 30.4.2019 to 31.3.2024, are as under:

**Capital Cost claimed**

(Rs. in lakh)

	2019-20 (30.4.2019 to 31.3.2020)	2020-21		2021-22	2022-23	2023-24
		(1.4.2020 to 30.1.2021)	(31.1.2021 to 31.3.2021)			
Capital Cost as on COD of Unit-I/station	614375.61	641014.63	1065033.87	0.00	0.00	0.00
Notional IDC	13537.81	13537.81	13537.81	0.00	0.00	0.00
Short term FERV	726.03	1858.02	1995.39	0.00	0.00	0.00
Loan FERV transferred to P&L	(-)817.64	727.98	745.59	0.00	0.00	0.00
Opening Capital Cost	627821.80	657138.43	1081312.65	1094371.24	1105656.24	1165288.24
Add: Addition during the year / period	14114.12	5217.15	3044.28	11285.00	59632.00	44200.00
Less: De-capitalisation during the year / period	0.00	0.00	0.00	0.00	0.00	0.00
Less: Reversal during the year / period	0.00	0.00	0.00	0.00	0.00	0.00
Add: Discharges during the year / period	12524.89	760.75	10014.31	0.00	0.00	0.00
<b>Closing Capital Cost</b>	<b>654460.82</b>	<b>663116.33</b>	<b>1094371.24</b>	<b>1105656.24</b>	<b>1165288.24</b>	<b>1209488.24</b>
Average Capital Cost	641141.31	660127.38	1087841.94	1100013.74	1135472.24	1187388.24

**Annual Fixed Charges claimed**

(Rs. in lakh)

	2019-20 (30.4.2019 to 31.3.2020)	2020-21		2021-22	2022-23	2023-24
		(1.4.2020 to 30.1.2021)	(31.1.2021 to 31.3.2021)			
Depreciation	32246.84	33201.77	55992.31	56618.81	58443.89	61116.06
Interest on Loan	34080.17	29438.96	53689.60	52098.90	49718.06	48064.49
Return on Equity	29813.07	30695.92	50584.65	51150.64	52799.46	55213.55
Interest on Working Capital	6202.85	6596.80	10692.21	10012.75	10181.21	10271.56
O&M Expenses	14728.43	15117.81	30463.29	31571.24	33863.17	35082.67
Special allowance	0.00	0.00	0.00	0.00	0.00	0.00
Compensation allowance	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total</b>	<b>117071.36</b>	<b>115051.25</b>	<b>201422.06</b>	<b>201452.33</b>	<b>205005.79</b>	<b>209748.35</b>



7. The Petitioner has filed additional information on 14.9.2022 and 24.4.2023. Respondent UPPCL and the Respondent RUVNL have filed their replies vide affidavits dated 13.9.2022 and 11.1.2023, respectively, and the Petitioner has filed its rejoinders to the said replies vide affidavits dated 20.3.2023. The Petition was heard virtually on 6.1.2023, and the Petitioner was directed to file certain additional information. In response, the Petitioner has filed additional information vide affidavit dated 13.2.2023, with a copy to the Respondents. Subsequently, the matter was heard on 6.4.2023, wherein the counsel for the Petitioner circulated a note of arguments and made detailed oral submissions in the matter, and on the request of learned counsel, the Commission permitted him to upload the note of argument and subsequently the order was reserved in the Petition. None was present on behalf of the Respondents. The Petitioner was also directed to file certain additional information, and in response, the Petitioner vide its affidavit dated 22.4.2023, has filed the additional information with a copy to the Respondents. The Petitioner has also uploaded its note of argument on 6.4.2023. Since the order in the present Petition could not be issued prior to one Member of this Commission, who formed part of the Coram demitting office, this Petition was relisted and heard on 6.2.2024. During the hearing, the learned counsel for the Petitioner submitted that the pleadings and arguments in the present Petition have been completed, and the Commission may reserve its order in the petition. The learned counsel added that in case any clarification/additional information is required, the Petitioner would furnish the same. The Commission, after hearing the Petitioner, reserved its order in the Petition, subject to the Petitioner filing certain additional information and after serving copies on the Respondents. The Petitioner has filed the additional information vide affidavit dated 26.2.2024. Accordingly, based on the submissions of the parties and the documents available on record we proceed to revise



the tariff of the generating station after the truing up exercise, as stated in the subsequent paragraphs

**Time over-run**

8. The summary of the reasons for the time over-run as furnished by the Petitioner in Form-G are as under:

**Details of Time Over-run in respect of the COD of Unit-I**

S.No.	Description of Activity/Works /Service	Original Schedule (As per Planning)		Actual Schedule (As per Actual)		Time Over-Run Days	Reasons for the delay	Other activities affected
		Start Date	Completion Date	Actual Start Date	Actual Completion Date			
1	Civil works of Main Plant & offsite	1.6.2012	30.12.2015	1.6.2012	31.12.2017	732	Heavy rains during 2012 (July & Sep'12),2013 (Feb,June,July, Aug,Oct '13), 2014 (Jan, Feb, Oct '14), 2015 (Jan, March, April' 15), 2016 (Mar, July, Aug, Sept' 16), 2017 (April, July, Aug ' 17) Non availability of sand and mooram due to ban on Mining by Hon'ble NGT & Hon'ble High Court Non availability of Stone aggregate due to ban on Dala Quarry	2,3,6
2	Boiler Erection start upto Synchronization	1.7.2013	29.4.2016	1.7.2013	27.3.2018	697	Heavy rains during 2013 (June, July, Aug,Oct '13),2014(Jan, Feb, Oct '14), 2015(Jan, March, April' 15), 2016 (Mar, July, Aug, Sep'16), 2017(Apr, July, Aug) Non availability of sand and mooram due to ban on Mining by Hon'ble High Court Demonetisation	6
3	TG & Auxilliary erection upto oil flushing completion	31.5.2014	31.10.2015	30.9.2014	25.11.2016	391	start of oil flushing delayed due to non availability of civil fronts for flushing eqmt erection(361 days)	6
4	Ash Dyke and Reservoir	29.7.2013	29.4.2016	15.9.2015	1.3.2018	671	Law and order issue in ash dyke and reservoir: Oct 2013 - Oct 2015	2, 6
5	Railway siding	11.7.2012	10.1.2015	11.7.2012	31.10.2018	1390	Delay in land acquisition of railway siding due to change in Land Acquisition law Law and order issues during works execution in Railway siding Heavy rains during 2015 (March,April' 15), 2016 (July, Aug, Sept' 16), 2017 ( April,July , Aug' 17), 2018 (April, May'18)	6
6	Declaration of COD		31.8.2016		304.2019	972	Heavy rains during the project execution Non availability of sand and mooram due to ban on Mining by Hon'ble High Court Non availability of Stone aggregate due to ban on Dala Quarry Demonetisation Law and order issue in ash dyke and reservoir : Oct 2013- Oct 2015 Delay in land acquisition of railway siding due to change in Land Acquisition law Law and order issues during works execution in Railway siding Delay in Coal supply from SECL	

**Details of the Time Over-run in respect of the COD of Unit-II**



Sr.No	Description of Activity/Works /Service	Original Schedule (As per Planning)		Actual Schedule (As per Actual)		Time Over-Run	Reasons for delay	Other Activity affected (Mention Sr No of activity affected)
		Start Date	Completion Date	Actual Start Date	Actual Completion Date	Days		
1	Civil works of Main Plant & offsite	1.6.2012	30.4.2016	1.6.2012	30.11.2019	1309	Heavy rains during 2012 (July, & Sep'12), 2013(Feb,June,July, Aug,Oct '13), 2014(Jan,Feb, Oct '14), 2015(Jan, March, April' 15), 2016( Mar, July, Aug, Sept' 16), 2017( April, July, Aug ' 17), 2018 (July, August '18), 2019 (July, Aug, Sept' 19) Non availability of sand and mooram due to ban on Mining by Hon'ble NGT & Hon'ble High Court Non availability of Stone aggregate due to ban on Dala Quarry Law & Order issue in plant area/ gate	2,3,6
2	Boiler (& Aux) Foundation start upto Synchronization	1.2.2013	31.10.2016	1.2.2013	14.9.2020	1414	Heavy rains during 2013 (June, July, Aug, Oct '13), 2014(Jan, Feb, Oct '14), 2015(Jan, March, April' 15), 2016( Mar, July, Aug, Sep'16), 2017(Apr, July, Aug), 2018 (July, August '18), 2019 (July, Aug, Sept' 19) Law & Order issue in plant area/ gate Non availability of sand and mooram due to ban on Mining by Hon'ble High Court Delay on account of QSGM issue Consequent Delay due to delay in Turbine barring (TG on Barring - 23.12.2019) COVID -19 impact	6
3	TG and Aux erection upto TG on Barring	1.1.2015	31.5.2016	1.8.2018	23.12.2019	1301	Heavy rains during 2012 (July, & Sep'12), 2013 (Feb, June, July, Aug, Oct '13), 2014 (Jan, Feb, Oct '14), 2015 (Jan, March, April' 15), 2016 (Mar, July, Aug, Sept' 16), 2017 (April, July, Aug ' 17), 2018 (July, August '18) Non availability of Stone aggregate due to ban on Dala Quarry Non availability of sand and mooram due to ban on Mining by Hon'ble High Court Law & Order issue in plant area/ gate	2, 6
4	Ash Dyke and Reservoir	29.7.2013	31.10.2016	16.9.2015	15.11.2020	1476	Heavy rains during 2016 (Mar, July, Aug, Sept' 16), 2017 (April, July, Aug ' 17), 2018 (July, August '18), 2019 (July, Aug, Sept' 19), 2020 (June, July, Aug' 20) Law and order issue in ash dyke and reservoir : Oct 2013- Oct 2015 Law & Order issue in plant area/ gate Non availability of sand and mooram due to ban on Mining by Hon'ble High Court COVID -19 impact	6
5	Railway siding	11.7.2012	10.1.2015	11.7.2012	28.2.2021	2241	Delay in land acquisition due to change in law - Lehdi village (Meja Road Loop) Elimination of Level Crossing No 24 at Bishanjan Khurd (Meja Loop) Heavy rains during 2015(March, April' 15), 2016( July, Aug, Sept' 16), 2017( April, July, Aug ' 17), 2018(April, May'18)	6
6	Declaration of COD		28.2.2017		31.1.2021	1433	Heavy rains during the project execution Non availability of sand and mooram due to ban on Mining by Hon'ble High Court	





						Non availability of Stone aggregate due to ban on Dala Quarry	
						Law and order issue in ash dyke and reservoir : Oct 2013- Oct 2015	
						Law & Order issue in plant area/ gate	
						Delay in land acquisition of railway siding due to change in Land Acquisition law	
						Elimination of Level Crossing No 24 at Bishanjan Khurd (Meja Loop)	
						Delay on account of QSGM issue	
						COVID -19 impact	

9. We now proceed to examine the aforesaid reasons for the time overrun in the declaration of COD of the units as stated below:

**A. Delay on account of the Qualified Steam Generator Manufacturer (QSGM) Issue**

10. The Petitioner has submitted the following reasons for the delay on account of Qualified Steam Generator Manufacturer (QSGM):

- a) With a view to inducting supercritical technology and creating indigenous manufacturing facilities in India through the transfer of technology in the Power Sector, the GOI had directed the Petitioner to invite Bulk Tenders for 11 Power units of 660 MW and 9 units of 800 MW for Steam Generator (SG) and Steam Turbine Generator (STG) packages. Under the above Bulk Tenders, the bidders were required to set up an Indian manufacturing facility with the QSGM/ Qualified Steam Turbine Generator Manufacturer (QTGM) or augment its existing facilities, as the case may be.
- b) MoP letter also stipulated that the bidders shall be required to furnish a Deed of Joint Undertaking (DJU), in which all the executing parties i.e. the bidder, the technology provider(QSGM/QSTM), the Indian manufacturing company and the Indian Promoter of JV as applicable would be jointly and severally liable for successful performance of contract including successful implementation of passed manufacturing program.
- c) Accordingly, BGR Energy systems Limited (BGRE) partnered with Hitachi Thermal Power Europe, Germany (HPE, 100% subsidiary of Hitachi for Europe) as QSGM for the SG package for the aforementioned bids. As per bid conditions, BGR Energy limited entered into Deed of Joint Undertaking (DJUs) with HPE to ensure the successful performance of contracts including the successful implementation of the phase manufacturing program.
- d) Subsequent to the bid process, BGRE was awarded an SG package for the project in the year 2012. Meanwhile, the thermal power generation systems business involving Hitachi group (HL) and Mitsubishi group (MHI) were merged



globally w.e.f. 1.2.2014 and all the assets of HPE (the employees, intellectual property etc.) have been transferred to a newly incorporated company i.e. Mitsubishi Hitachi Power Systems (MHPS). As a result, HPE was rendered as a mere shell company for the Thermal Power generation business and is completely dependent on MHPS (being the new technology provider) for execution of the contract, which was beyond the provisions of the Bid Documents, DJU, and the contract agreement.

- e) In view of non-maintenance of QSGM status of HL/HPE subsequent to merger, NTPC requested BGRE and HL/HPE to ensure that MHPS and MHPSE (being the new technology provider) should step into the shoes of HL/HPE and sign, novate & execute the DJU and other relevant undertakings and the same was agreed to by the Senior Executives of HL, HPE, MHPS, MHPSE and BGRE during the meeting held on April 29-30, 2014.
  
- f) The Petitioner insisted upon MHPS through HPE and BGRE to step into the shoes of HPE to execute the contract by executing deeds of joint undertaking and other documents. However, subsequent to the above meeting, letters dated 10.5.2014 & 23.5.2014 were issued by HL/HPE to BGRE which indicated that no action was taken by HL/HPE/MHPS/MHPSE to implement the understanding/agreement reached during the meeting on 29-30 April, 2014. NTPC vide letter dated 21.5.2014, 25.5.2015 and 20.6.2014 addressed to HL/HPE/MHPS/MHPSE, again requested to promptly take action as agreed in the meeting of 29-30 April, 2014. Despite all efforts, no steps have been taken by the entities to address the Petitioner's concerns. As the issue was not getting resolved, CMD (NTPC) vide letter dated 28.8.2014 requested the Ambassador of India to Japan to take up the issue of signing the novation agreement at an appropriate forum. The issue had been taken up with the Government of Japan through the Embassy of Japan at Delhi. The merger had posed many difficulties in the execution of the works. Owing to this, the design, manufacturing, inspection/testing, supply and erection of major equipment's like header, spiral walls, transition tubes, separator, water collecting vessels, coal mills, Burners got delayed with respect to their scheduled dates for Unit-1 and Unit-2.
  
- g) All other subsequent activities also got delayed due to this occurrence of global merger of business entities. The system returned to normalcy when the issue was resolved after a rigorous follow up by the Petitioner and the intervention of GOI and signing of a tripartite agreement among Hitachi Ltd., MHPS, and BGRE on 19.2.2016, wherein M/s Hitachi/HPE has been granted exclusive, royalty-encumbrance hindrance free right to use the technologies in India through BGR-Hitachi JV. The delay on account of inconclusiveness arose due to the global merger of Hitachi Power with MHPS, and its impact on execution of the works by BGR- HPE was not attributable to the Petitioner.



- h) All the efforts were made by the Petitioner to ensure the completion of supply of equipment and its erection for Unit-1 to make it ready for sustained full load operation of the boiler. After the completion of all the major supplies for Unit-1, the equipments supplies and its erection led to delays in the hydro test, boiler chemical cleaning, boiler light up and boiler readiness which were essentially required to be in place for sustained full load operation for the declaration of commercial operation of Unit-2.

11. The Respondent UPPCL has submitted that during this period, the Petitioner could have taken up the ground leveling and other civil works, which it could not take up safely, in the absence of necessary co-ordinates or design aspects of SG, for taking up works of the main and balance of plant due to impending QSGM issue. Therefore, all the other reasons cited for the delay have run concurrently from April 2012 to 19.2.2016. The Respondent has submitted that the said period of 47 months delay cannot be condoned for any reason, including on account of QSGM. Hence, the Respondent has prayed that the delay may not be condoned and the Petitioner may be directed to bear the costs on account of the time over run and cost overrun from its internal resources. The Respondent RUVNL has submitted that the Petitioner is responsible for the delay, as the same was within its control to invite new bids to avoid delay and fast track the project. The work on SG design and manufacturing could start only after 19.2.2016. During the period of 47 months, the Petitioner did not notify RUVNL regarding the IDC cost, which was being built upon RUVNL due to an inordinate delay in pursuing QSGM. It was a unilateral decision of the Petitioner to pursue the scheme of QSGM. As such, the Respondent is not liable to pay IDC and cost over-run on this account.

12. The Petitioner, in the rejoinder to RUVNL dated 25.3.2023, has submitted that there can be no question of MUNPL unilaterally pursuing the scheme of QSGM, which



was a mandate required by the Government of India for any person executing the projects pertaining to super critical technology. The Guidelines of MoP were titled “Indigenous manufacturing facilities in India through the transfer of technology” and dated 04.09.2009. With regard to informing RUVNL and other beneficiaries, it is submitted that under Tariff Regulations,2019 there is no provision that stipulates that every challenge which is faced by MUNPL is project execution should be informed to the beneficiaries. The details of the time overrun have been given by MUNPL in the present petition, RUVNL being a party, can raise all its objections herein. RUVNL cannot widen the scope of the contract between MUNPL and its BTG contractor by contending that the delay and issues faced due to the Global Merger ought to have been provided for while drafting the contract itself. No contracting party can actually predict whether its counter party would be having a global merger and also predict how this Global merger would affect its contract and then provide remedies for the same.

13. The Petitioner, in the rejoinder to UPPCL dated 25.3.2023, in the instant Petition, has presented the reasons of hardships faced during the project execution, including the issue pertaining to QSGM and the efforts by NTPC at all possible levels to expedite and resolve the same. It is humbly submitted that the issue of QSGM was not an isolated case for MUNPL but had an impact on various projects in the country wherever the supplier of SG package was same. The Respondent, RUVNL, has failed to appreciate the efforts made by the Petitioner & its promoter to resolve the issue of QSGM, in no way attributable to the Petitioner. It is further submitted that the delay has not taken place primarily on account of any contractual dispute between the Petitioner and BGRE partnered with Hitachi Thermal Power Europe, Germany (‘HPE’) (100% subsidiary of



Hitachi Limited for Europe) as QSGM for SG Package, but due to the global merger of Hitachi Ltd. ('HL'), and Mitsubishi Heavy Industries Ltd. ('MHI').

14. The matter has been considered. On careful scrutiny of the documents submitted by the Petitioner in justification of time over run due to the merger issue following facts emerge which need consideration of the issue in hand:

- a) The bulk tendering for BTG was an initiative of GOI with an intend to induct supercritical technology and for creating an indigenous manufacturing facility in India through the transfer of technology. For carrying out the above process, MOP issued the guidelines and had directed the Petitioner to strictly adhere to the same.
- b) In terms of the guidelines issued by MoP, GOI, the Petitioner awarded the contracts under "Bulk tenders". As the entire process was specified by MOP, GOI, any modification to the performance requirement and the terms and conditions was beyond the purview of the Petitioner
- c) Consequent upon Global merger of Hitachi Power with Mitsubishi Hitachi Power Systems Ltd. (MHPS), HL & HPE no longer remained the technology provider / QSGM.
- d) In order to meet the requirements of the contract framed as per the MOP and GOI guidelines, MHPS/ MHPS-E (being the new technology provider) was required to substitute HL/ HPE as QSGM through the signing of a novation agreement, which could only be be established by 19.2.2016, after the intervention at the highest diplomatic level between India and Japan.

15. We notice that the Petitioner had made correspondences with the Embassies of India and Japan, the Ministry of External Affairs, GOI and the Ministry of Power, GOI



and had actively pursued the matter with regard to the non-availability of boiler material due to the global merger of the Japanese companies. Since the matter was taken up by the Embassies of India and Japan and the Ministry of External Affairs along with the resolution at an International Stage involving multiple stakeholders, the Petitioner had minimal controlling influence in the matter. The Petitioner has made multiple correspondences and made efforts at the highest possible level for the resolution of the matter with utmost priority. Hence, we are of the view that the above-mentioned issue is a force majeure event, which was beyond the reasonable control of the Petitioner. Accordingly, we hold that the delay from 1.2.2014 (date of merger) to 19.2.2016 (signing of novation agreement) on this count and its consequential impact on Boiler readiness for the plant is an uncontrollable event for which the Petitioner cannot be held responsible. Therefore, the said delay of 24 months, as claimed by the Petitioner, has been condoned.

#### **B. Delay in Railway Siding due to issues in Land Acquisition**

16. On this issue, the Petitioner has submitted that:

- (i) For the transportation of coal to the generating station, a Railway siding (Route length approx. 25km) was envisaged from Meja Road railway station and Unchidih railway station to the Plant Site, for the construction of the above railway siding, a total of 137.029 hectare of land was to be acquired outside plant premises. Railway Siding for Meja TPS Stage-I for transportation of coal is connected to the route between Prayagraj Junction (PRYJ) and Pt. Deen Dayal Upadhyaya Junction (DDU) of Indian Railways at Meja Road Junction (Meja Road Loop) and Unchidih junction (Unchidih Loop), respectively. As per the original scheme of coal transportation through Railway Siding, FSA coal was



envisaged to be supplied for both the units through the PRYJ-DDU route wherein loaded coal rakes were to be brought in through Meja Road Junction to Meja TPS, and the empty rakes were to be sent back through Unchidih Junction.

(ii) However, due to the delay in land acquisition in Lehdi village, which falls in the Meja Road loop, siding towards the Meja Road junction could not be completed as per the schedule. Therefore, in order to commission at least one unit at the earliest, the scheme was modified such that the coal was to be transported to Unchidih junction, and then, the same shall be shunted to a parallel siding at Unchidih junction and then brought to the Meja TPS through the Unchidih loop.

(iii) The Petitioner submissions for timeline are summarized as under:

- |       |   |   |               |
|-------|---|---|---------------|
| i)    | Identification of land in 27 villages   | : | 6.9.10/7.1.11 |
| ii)   | 10% of estimated compensation deposited   | : | 28.2.2011     |
| iii)  | Notice U/S-4 (1) issued   | : | Nov, 2011     |
| iv)   | Declaration U/S-6 made  | : | Nov, 2012     |
| v)    | Determination of compensation rate  | : | Aug, 2013     |
| vi)   | Signing of consent letter begins  | : | Aug, 2013     |
| vii)  | Land Acquisition, Rehabilitation and Resettlement Act (LARR) passed on  | : | 4.9.2013      |
| viii) | Land compensation rate in LARR Act  | : | 4 Time market |
| ix)   | Consent from land owners at old rate  | : | 72%           |
| x)    | High court order dated 15.3.2014 directed to determine compensation in accordance with Section- 24 (1) (a) of LARR Act- 2013.   |   |               |
| xi)   | Collector declared award on 12.11.2014 with land compensation payable as per market rate+ 100% solatium without using a multiplication factor.  |   |               |
| xii)  | On 18.4.2015, Collector declared further supplementary award as four times of the market rate only for those land owners who had not signed consent letters. This declaration excluded remaining land in Lehdi village. |   |               |
| xiii) | Two different rates were decided for villagers of the same village which resulted into severe resentment among land owners causing in regular hindrances in the work of railway siding.                                 |   |               |



xiv) On 19.1.2016, the Petitioner raised the issue of interruption of work in the meeting with District officials and it was decided to pay differential compensation be paid to land owners.

xv) On 29.4.2016, differential compensation was paid by the Petitioner from May,16 to July,16.The physical possession of land was thus got and work on railway siding could be started.

xvi) The railways siding work for Unchidih could be completed on 31.10.2018, after delay of 45 month.

xvii) Railway siding work delayed due to reasons beyond control of the Petitioner.

(iv)The delay is on account of Land Acquisition Act and the procedural delays.

Therefore, due to a change in law (and non-notification of rules by the State Govt. under the new act LARR, 2013), land was not physically made available to the Petitioner for construction till June 2016. Physical possession of the land could only be made available after the payment of the differential compensation on the receipt of approval from the District administration vide letter dated 29.4.2016.

(v) In the above background, the planned start of the Railway siding work was scheduled on 11.7.2012, but the Petitioner proactively started the Land Acquisition work by advance payment of 10% of estimated compensation amount towards the land acquisition to the SLAO office on 28.2.2011 (referred in letter dated 27.9.2011).

(vi)However, on account of the various reasons mentioned above, the land acquisition for the Railway Siding work got delayed, which was beyond the control of the Petitioner. Subsequent to the progressive availability of the assorted land patches during the period from July'2016 to Apr'2018, the Railway Siding work for the Unchidih loop could be completed on 31.10.2018 after a delay of about 45 months from the scheduled completion date of railway siding works i.e. 10.1.2015. This delay is on account of the promulgation of the new Land





Acquisition Act and the procedural delay thereof, unequal compensation rates as per the new Act causing the Law and Order issue, etc., which is beyond the control of the Petitioner.

(vii) However, to sustain the simultaneous operations of both Units-I & II, around six (06) coal rakes were to be transported daily, which was practically not possible to meet through Unchidih Loop alone through shunting in/out to/of parallel siding. Therefore, it was utmost important for the Petitioner to complete the Meja Road loop for declaration of COD of Unit-II.

17. The Respondent UPPCL and the Respondent RUVNL have submitted the following:

- (i) hold that the delay in the acquisition of land in Unchidih village was 81 months instead of the Petitioner's claim of 45 months;
- (ii) hold that the delay has happened due to the failure of the Petitioner in meaningful coordination with the District Administration;
- (iii) not to allow IDC on the composition amount paid from 28.2.2011 to June 2016;
- (iv) allow IDC after June 2016, after the land acquisition could be completed after compliance with the land acquisition laws.

18. In response, the Petitioner has submitted that due to the change in law (and non-notification of rules by State Govt. under new Act-LARR, 2013), the land was not physically made available to the Petitioner for construction till June 2016. It has further submitted that the physical possession of the land could only be available after payment of the differential compensation on the receipt of approval from District administration vide letter dated 29.4.2016. Subsequent to the progressive availability of the assorted



land patches during the period from July 2016 to April 2018, the Petitioner has stated that the Railway Siding work for the Unchidih loop could be completed on 31.10.2018 after a delay of about 45 months from the scheduled completion date of railway siding works ie. 10.1.2015. The Petitioner has also submitted that this delay is on account of the promulgation of the new Land Acquisition Act and the procedural delay thereof, unequal compensation rates as per the new Act, causing the law and order issue etc., which is beyond the control of the Petitioner.

#### **a. Land Acquisition in Lehdi Village**

19. The summary of a claimed timeline as per the Petitioner is as follows:

- i) The Petitioner proposed special Land Acquisition officer (SLAO) Allahabad to commence acquisition of identified land in 27 villages including Lehdi village on 6.9.2010 and 7.1.2011.
- ii) 10% estimated compensation amount was deposited on 28.2.2011.
- iii) Declaration of land acquisition was made in November, 2012.
- iv) Collector, Allahabad determined compensation rate, but no land owner signed the consent letter.
- v) In November 2014, SLAO declared rate at twice the market rate for 134 hectors out of 137 hectors land under acquisition under Land Acquisition Act,1894. Despite the increase in the rate, the acquisition could not be completed.
- vi) On 26.9.2015, the District Administration advised the re-routing of rail alignment and acquisition was required to be made on direct purchase on veiling-buyer-willing-seller basis.
- vii) On 18.4.2015, a supplementary award was declared only for 38.75 ha, excluding the land in Lehdi village.
- viii) The Petitioner requested the District Administration for land acquisition and determination of the rate of composition in letters dated 16.6.2015, 20.1.2016, 11.1.2016, 23.9.2016, 10.2.2017 and 20.5.2017.
- ix) Pursuant to the meeting with SLAO on 5.7.2017 for the compensation rate, 172 land owner gave consent and execution of sale deeds commenced from 1.9.2017.
- x) As per Section- 1A, award under Section- 11 of the Act-1894 was expected within two years from the declaration dated 7.11.2014. However, due to the promulgation of LARR Act- 2013, the activities of land acquisition could not be completed in the stipulated time.



20. The Respondents UPPCL and RUVNL have prayed for the following:

- i) hold that the delay in the acquisition of land in Lehdi village has happened due to the failures of the Petitioner in meaningful coordination with the District Administration; ii) not to allow IDC on the composition amount paid from 7.1.2011 to 1.9.2017; and iii) allow IDC after 1.9.2017 after the acquisition could be completed.

21. In response, the Petitioner has submitted that it has acted proactively for the completion of land acquisition in the Lehdi village, so that the balance Railway siding works can be completed at the earliest. The Petitioner has further submitted that it has pursued with the landowners for their consent and had constantly apprised the District administration, Govt of UP, and the Govt. of India and had sought their help in the land acquisition for Railway siding. In view of the above, the delay in the land acquisition for Railway Siding works of the Project is not attributable to the Petitioner.

**b. Law & order issue during the construction of Road Under Bridge (RUB):**

22. On this issue, the Petitioner has submitted that:

- a) Level crossing no. 24 (LC-24) was available to the village for crossing and the Railways decided to eliminate it and make a Road Under Bridge (RUB). The villagers had an apprehension that RUB shall be flooded in the rains. The villagers did not allow work, and all efforts failed to ward off their apprehension. Help of District Administration taken by letter 30.1.2020, 26.2.2020 and 3.3.2020. After the intervention of the District Administration, the work was completed in the month of May, 2020. Due to issues in Lehdi village and RUB, work on the Railway siding was delayed by 77 months from January, 2015 to June, 2021. The said delay of 77 months delay in the commissioning of Unit-2 may be condoned.
- b) Meja road loop was necessary to meet the coal requirement for both units simultaneously. Due to the delay in land acquisition in Lehdi village and Law & order issues during the construction of Road Under Bridge, the completion of the Railway siding work got delayed by approx. 77 months (January 2015 to June 2021). The Petitioner has behaved in a bonafide manner to expedite the work execution so that the Railway Siding scheme may be completed at the earliest. The aforesaid reasons were not attributable to the Petitioner and the delay on account of the same was beyond the control of the Petitioner.



The Commission may condone the delay of 47 months in the declaration of COD of Unit-II on account of the delay in the completion of the Railway siding works.

23. The Respondents UPPCL and RUVNL have submitted that:

- a) The Petitioner has not properly documented the delay in the work of RUB from January, 2015 to May, 2020. There is no evidence that RUB issue erupted in January, 2015 and delayed the work till June, 2021.
- b) The issue of RUB was raised only in January, 2020 and the issue resolved in May, 2020. Therefore, there was an interruption of work for about 5 months.
- c) The work on the Railway siding was mainly interrupted due to (i) land acquisition issue in Unchidih village from 28.2.2011 to June, 2016 for 81 months and, (ii) land acquisition issue in Lehdi village from 7.1.2011 to 1.9.2017 for 69 month and both the periods ran concurrently. Railway siding work for Unchidih village was completed on 31.10.2018 and that at Lehdi village after 1.9.2017, to, o ran concurrently. RUB issue came up on 31.1.2020 and was resolved in the month of May, 2020, not being concurrent to issues in Unchidih and Lehdi village. Therefore, the Petitioner is wrong to link the RUB issue with the construction of Railway siding and may be rejected.
- d) RUB issue had material effect on the commissioning of Unit-II, because Unit-I had already been commissioned on 30.4.2019, after the work on railway siding was completed on 31.10.2018 at Unchidih and Lehdi village.
- e) In light of the above submissions, the Commission may hold that RUB had no effect on the construction work or the operation of Railway siding, which was completed by the Petitioner on 31.10.2018, and may reject the claim for delay condonation of 77 months on account of RUB and 47 months in the declaration of COD of Unit-II.

24. The matter has been considered. The Petitioner vide Annexure-D25 (in the original Petition) has submitted the correspondence with the District Administration dated 30.1.2020 regarding the law and order situation and challenges faced in the execution of the Railway Under Bridge. We are of the view that since the Petitioner has submitted the documents containing the approval of rates from the District Administration, the correspondances with the District Magistrate on various dates (viz.,



10.2.2017, 20.5.2017, 23.9.2016, 11.1.2016, 16.6.2015, 20.1.2016), we note that the Petitioner has been prudently following up with the authorities and any delay, on this count, is beyond the control of the Petitioner. Further, it is observed that due to the delay in land acquisition in Lehdi village and Law & order issues during the construction of Road Under Bridge, the completion of Railway siding work got delayed by approx. total of 77 months (January 2015 to June 2021). The period from January 2015 to February 2016 has already been condoned under the QSGM issue. Therefore, the Commission is inclined to condone the period from February 2016 to June 2021 (about 63 months) on account of the railway siding issue. However, the Petitioner has claimed a total timeover run of only 47 months on account of delay in railway siding issue and the Commission condones the same.

### **C. Excess Rainfall**

25. The Petitioner has provided the following details in regard to the delay due to heavy rainfall:

- a) The average cumulative rainfall during the months of July & September in the year 2012 in the Allahabad region is 363 mm. However, during the execution of the project works, heavy rainfall (around 931 mm) was witnessed during these months, which was 256% of the average rainfall recorded in the region during the months of July & September. The initial civil works like main plant erection, and offsite civil work (as planned) were severely affected during the period.
- b) Further, the months of February, June, July, August and October of the year 2013, witnessed very heavy rainfall of 1010.4 mm against the last 30-year average rainfall of 541.2 mm during the same period, which was 187% of the normal rainfall. The working area was flooded during the period, due to which many civil works like Main plant erection, offsite civil work, Boiler erection work, Ash dyke work as planned during these periods got hindered severely.
- c) Again, during the months of January, February and October of the year 2014, the site received unprecedented rainfall of 237 mm which is 358% of the average rainfall of 51.7 mm during these periods. The scheduled civil work corresponding to Main Plant, offsite civil work, Boiler erection, were severely



affected. The affected Boiler erection works further caused delay to the subsequent activities.

- d) During the months of January, March & April, in the year 2015, the site received rainfall of approx. 144 mm, which was six times to the average rainfall of 24 mm. Due to the unexpected rainfall during this period, the activities such as civil works corresponding to Main Plant & offsite, Boiler erection works, and Ash dyke works were severely affected.
- e) Again, during the months of March, July, August & September in year 2016, MUNPL faced unprecedented rainfall of 907.4 mm, which was 156% of the average rainfall (578.5 mm) recorded in the last 30 years in the region during the same period, thereby resulting in the working area being flooded with water causing stoppage of the civil works corresponding to the Main Plant & offsite, Boiler erection works and activities related to Railway siding work.
- f) The rainfall experienced during the months of April & July in 2017 is unexpectedly very high 552 mm against the average July month rainfall of 215 mm which is around 256% of the average rainfall during these periods and hampered the sequential activities related to the boiler erection, Railway siding and other civil foundation works of SG & Auxiliaries.
- g) The rainfall experienced during the months of April & May in 2018 is unexpectedly very high 65.9 mm, against the average rainfall of 17.8 mm which is around 270% higher than the average rainfall during these periods which hampered the activities related to the Railway siding works. As the Railway siding works were outside the plant premises, no dewatering/drainage system was there during the execution. Accordingly, even small rainfall flooded the area and related civil works like levelling, compacting etc. of the track area got hampered severely, delaying the railway siding works.
- h) The rainfall experienced during the months of July, August, September and October in 2019 is unexpectedly very high with 1135.2 mm, as against the average rainfall of 604 mm, which is around 87% higher than the average rainfall during these periods and hampered the activities related to the Main Plant civil works, Ash Dyke works & Railway siding works.
- i) The rainfall experienced during the month of June 2020 is unexpectedly very high with 282.1 mm as against the average rainfall of 83.4 mm, which is around 212 % than the average rainfall during the June month and hampered the activities related to the Ash Dyke works & Railway siding works.
- j) The rainfall experienced during the period from July 2012 to June 2020 was much higher than the average rainfall. This hampered the various activities like Main Plant Civil works, offsite civil works. The delay in Main Plant Civil



Works further delayed sequential activities such as SG & TG erection, TG Oil flushing, TG on barring and Unit synchronization.

- k) As per the construction drawing, the Final Finished Ground Level (FFGL) for the main plant area was 112.5 m, which was achieved by soil filling of 2.5 m (around 7.5 ft). Thus, the main plant area, with a soil cover of 2.5 m, was vulnerable to frequent work stoppage during rainfall periods. Therefore, even after rain had stopped, it required lot of efforts and time to dewater and dry the area and to make the passage healthy for movement of heavy materials and cranes, which effectively means the civil works were delayed by not only during the raining period but also got delayed during the subsequent months/ periods.
- l) The project management has been planned based on the historical rainfall data. However, the average rainfall during the project execution months is way too higher, even in the non-monsoon months. The erratic and unpredictable rainfall was an element of surprise for the Petitioner causing the delay to civil works which was beyond the control of the Petitioner.

26. The Respondent UPPCL and the Respondent RUVNL have submitted that the Petitioner has taken data from the metrological department and compared the historical 'average rain' with the 'actual rain' to show the excess rain fall. The Respondents have also submitted that even the months of January, February, March, April, May, July, and October have been included in the months of excess rainfall and the meagre excess rainfall in these months in comparison to the "average rainfall" does not mean that rain had flooded the project area and stopped the work. The Respondents have pointed out that the months of July, August and September are the monsoon months and excess rain was expected in these months, which can cause flooding and stoppage of work. Therefore, the Respondents have submitted that the reasons for the delay due to excess rainfall in the months, other than July, August and September of the year, is imaginary in nature and should not be considered in the computation of time-overrun. The Respondents have further prayed as under:



- i. Not to consider the excess rainfall during the period from April 2012 till 19.2.2016 for delay, which actually has run concurrently with the stoppage of project work due to QSGM issue.
- ii. Consider the excess rainfall during the months of July-August-September after 19.2.2016 until the commissioning of Unit- I & II, only in case such excess rainfall had caused flooding of the project site, where, the main and balance of plant was under construction;
- iii. Direct the Petitioner to submit the design rainfall for which the plant was designed and;
- iv. Allow the delay due to excess rainfall from 19.2.2016 to 31.1.2021 only if such excess rainfall was in excess of the designed rainfall causing flooding and stoppage of work.

27. In response, the Petitioner has submitted that though the project was planned based on the historical rainfall data, however, the average rainfall during the project execution months was way too higher, even in the non-monsoon months. The Petitioner has further submitted that the erratic and unpredictable rainfall was an element of surprise for the Petitioner, causing the delay to civil works, which was beyond its control and hence, the contentions raised by the Respondents are denied.

28. The matter has been considered. It is observed that the Petitioner has neither specified the exact number of days affected by the said rainfall, nor furnished the steps/measures taken up to mitigate the situation. Therefore, the Commission is not inclined to allow the delay on account of excess rain, Anyway, the claimed period is subsumed in the time period condoned for QSGM and railway siding issue.

**D. Non-availability of Sand and Mooram due to ban in Mining**

29. The Petitioner has submitted the following:





- a) The non-availability of sand for prolonged durations due to the imposition of ban on mining and sale of sand by various State Governments, including the State of UP, in terms of the direction of the National Green Tribunal (**NGT**) had resulted in delay in the civil works of major packages.
- b) The Hon'ble NGT, in its order dated 13.1.2015, had directed the States to stop giving permits for carrying out Sand mining. The relevant extract of the NGT order is as under:

*“In the meanwhile, no State shall permit carrying on of sand mining or minor mineral extraction on riverbed or otherwise without the concerned person obtaining Environmental Clearance from the competent authority.”*

- c) Further, the Hon'ble Allahabad High Court vide its order dated 29.2.2016 had directed to stop the excavation of minor minerals. The relevant extract of the order is as under:

*“For the aforesaid reasons, we direct that until the next date of listing, no excavation activity in respect of minor minerals shall be carried out in pursuance of the leases which have been granted to the private parties.”*

- d) In view of the above orders of the NGT and the Hon'ble Allahabad High Court, the supplies of Sand and Moorum, which are essential raw materials used in the civil construction got severely affected, which subsequently hampered the civil works of the major packages like main plant auxiliaries equipment civil works and offsite civil package (ash dyke & handling, coal unloading civil structures), Railway siding civil works, ash dyke civil works etc.
- e) Due to the ban on mining of sand or minor minerals by the NGT, the availability of the sand & moorum became abysmally low in the State of Uttar Pradesh and neighborhood states. Further, due to various ongoing infrastructure projects in the nearby area, the sand & moorum supply from the alternate sources / locations was not adequate to carry out the civil works.
- f) Later, the Government of UP, vide letter dated 22.4.2017, allowed the resumption of mining on grant of mining permits through e-auctioning. This necessitated the e-tendering process to be followed for the approval of mining permits. Also, the letter specified the period (from 1.7.2017 to 30.9.2017) as the monsoon season, during which period the mining was not permitted. Therefore, the grant of mining e-permits and the regularization of supplies took another six (06) months.
- g) It was noted by the Govt. of UP in the letter dated 22.4.2017 that all the construction activities had come to a halt due to the paucity of minor materials, as stated below:



*“The State Government itself has taken note of the prevailing situation where, because of paucity of legally available minor minerals being sold in the open market, the entire construction activities, both by the government as well as private agencies have to come to a halt, which can never be in the interest of State.”*

- h) The Petitioner has submitted that it could resume the balance civil works, only after the normalization of supply of sand and moorum in December 2017. However, the delay in early resolution of this issue had affected the civil works that came to an almost standstill from February 2016 onwards. The delay in the construction activities due to the shortage of sand, caused by change in law, was beyond the control of the Petitioner and on account of this, the civil works of many of the major packages in the Main Plant, Ash Dyke, Railway siding and Balance of Plant got affected. The non-availability of sand & moorum adversely affected the balance civil works by around 20 months, leading to a subsequent delay in timely achievement of other milestones of the project.

30. The Respondent UPPCL and Respondent RUVNL have submitted that NGT, the Hon'ble High Court and the Govt. of UP had never imposed any ban on mining of sand and moorum. The Respondents have further stated that all persons, who had environmental clearance as on 13.1.2015 were allowed to mine. The Respondents have pointed out that the Hon'ble Allahabad High Court had imposed the ban on mining of minor minerals, not on sand and moorum. The Respondents have further submitted that the Government had mandated by letter dated 22.4.2017, that henceforth, the permit for mining shall be issued only through e-auction procedure, meaning thereby, that the persons having valid permits, prior to the issuance of the said letter were allowed to mine sand and moorum. Therefore, all persons having environment clearance, not involved in the excavation of minor minerals and having valid mining permit prior to the issuance of the letter dated 22.4.2017, were eligible for mining of sand and moorum. Hence, the Respondents stated that there was no ban on mining and the contention of the Petitioner in this regard may be rejected. The Respondents have further prayed as under:



- i. Hold that NGT and Hon'ble Allahabad High Court, had not banned mining of sand and mooram.
- ii. There was no ban on mining of sand and moorum even by the UP Govt. and by letter dated 22.4.2017 it had just mandated that, hence forth, the permits for mining shall be granted through e- auction procedure only.
- iii. There was no ban on mining of sand and mooram during entire period of construction/development of the project.
- iv. Reject the contention that the project was delayed due to ban on mining of sand and moorum.

31. In response, the Petitioner has submitted that the mining agencies as well as the Petitioner followed up the matter with the District Administration for an early resolution of the issue. However, the delay in the early resolution of this issue, had affected the civil works that were almost standstill from April, 2016 onwards. The Petitioner has also submitted that the delay in the construction activities due to the shortage of sand caused by a change in law was beyond the control of the Petitioner and on account of the above, the civil works of many of the major packages in the main plant, Railway siding and balance of plant got affected.

32. The matter has been considered. It is evident from the above submissions that there was non-availability of sand for a prolonged period, due to the imposition of ban on mining and sale of sand by the various State Governments, including the State of UP under the directions/orders of the NGT and the guidelines of MoEF&CC, GOI which resulted in a significant delay in the Main plant and offsite civil works. In our view, the ban imposed by the Government of UP, had impacted the availability of sand for the construction activities of the generating station. Though the Petitioner has explored the possibility to arrange river sand from other sources, the Government of UP vide letter dated 22.4.2017, necessitated the e-tendering process to be followed for approval of



the mining permits. Also, the letter specified the period from 1.7.2017 to 30.9.2017, as the monsoon season, during which mining was not permitted. Therefore, the grant of mining e-permits and the regularization of supplies took another six months. In our view, although NGT vide its order dated 13.1.2015 imposed a ban on mining, the order reads that ban is on miners without any environmental clearance from the competent authority. Also, the mining of minor minerals were directed to be stopped by NGT which, in our view, had affected the supply of 'sand and moorum' which are the essential raw materials used in the civil construction of the project. Consequent upon this, the civil works of the major packages in the main plant and balance of plant, got affected from April 2016. Though the Petitioner has not furnished the date of lifting of the ban and the resumption of the supply of minerals, pursuant to the judgment of Hon'ble High Court. It is noticed from the letter dated 22.4.2017 of the Additional Chief Secretary, Govt of UP, addressed to the District officers, Mining Department, stated that the State Government had directed the resumption of mining through e-auctioning procedure. The Petitioner has claimed the period from February 2016 to December 2017 on account of unavailability of sand and mooram. As the Commission has already condoned the claimed dealy period on account of QSGM issue and of railway siding due to land acquisition issues has been condoned, the issue of delay caused by disruption in supply of 'Sand and Moorum' from February 2016 till March, 2017 has not been dealt on merit.

#### **E. Non-availability of Aggregates**

33. The Petitioner has submitted the following;

- a) For carrying out the civil works at the generating station, huge volume of aggregates was required to be procured. The available quarry for procurement of aggregates was Dalla mine. This Dalla mine was already serving the aggregates demands of other projects like NTPC Rihand-III



(1000MW), NTPC Vindhyachal Stage-IV (1000 MW), Reliance Sasan UMPP (3960 MW) and Essar Mahan-I & II (1200 MW).

- b) In February 2012, there was a major accident at Dalla mine resulting in a number of casualties of the mine workers. As per the direction of the District administration dated 28.2.2012, the mining of stones at Dalla was stopped immediately and the mining activities were allowed to be restored by the District Administration from 2.11.2012 only. However, regularization of the supply/crushing activities further took some time and resulted in consequential delays.
- c) Thereafter, during the closure of the Dalla Mine, an alternate source of aggregates near Rewa could provide only partial relief, as heavy demand of aggregates from the nearby projects shifted to Rewa and the adequate quantity of aggregates were not available at Rewa. This resulted in severe shortage of supply of aggregate and virtually a stoppage of all civil works at the generating station for around 162 days (from 1.6.2012 to 10.11.2012 i.e. 162 days).
- d) After clearance from the District Administration, the supply/crushing activities were allowed to be resumed from 10.11.2012, in a reduced way. The non-availability of aggregate completely hampered the initial civil works of main plant and offsite civil works which could only be taken up after regularization of the supply/crushing activities which further took some time (as this mine is catering to other projects also) and resulted in consequential delays. The closure of Dalla mine caused a setback to the supplies of aggregates and commencement/ progress of civil works. As the delay on account of the non-availability of aggregates is beyond the control of the Petitioner, the delay of around 5 months on account of the same, may be condoned.

34. The Respondent UPPCL and the Respondent RUVNL vide affidavit dated 11.1.2023 have submitted that there was no shortage of 'aggregates' for the generating station due to other generating stations and Dalla mine stoppage from 28.2.2012 to 2.11.2012. The Respondents have further submitted that there was no material effect on supply of aggregates because major works at site were not taking place due to impending QSGM issue. Even otherwise, the arrangement for aggregates was the responsibility of the Petitioner and it cannot just depend on Dalla mine only for its



requirement and let the plant suffer the construction activity. In response, the Petitioner has reiterated its submissions made in the Petition.

35. The matter has been considered. It is noticed from the above submissions, that the time overrun due to the non-availability of 'aggregates' as claimed by the Petitioner is for the period from 1.6.2012 to 10.11.2012 i.e. 162 days. Since the period of delay in the COD due to the non-availability of 'aggregates' had been subsumed in the delay on account of the QSGM and railway siding issue, the issue of non-availability of 'aggregates' has not been dealt on merit.

**F. Delay in the execution of Ash dyke package due to Land acquisition Issue:**

36. The Petitioner has submitted that:

- a) The Ash dyke package was awarded to M/s Subhash Infra Engineers Pvt. Ltd. on 29.7.2013 and the Ash dyke works required for Unit-I and Unit-II were scheduled to be completed by 30.4.2016 and six months thereafter (i.e. 31.10.2016) respectively.
- b) The land of Salaiyan Kalan village was identified for the construction of Ash Dyke for the generating station. Although, the Petitioner had paid land compensation to the land oustees/ villagers, they kept on demanding a higher compensation while interrupting the construction work at site. The local occupants kept on creating hindrance to the mobilization of manpower at site through belligerent means. Stone-pelting incidents took place every time the Petitioner tried to mobilize the man & machinery to work site. Several stone-pelting incidents caused damage to the construction equipments and hurting the operators with a view to discouraging the execution of work .
- c) From the very beginning, the Petitioner made various attempts for commencement of work without delay. The Petitioner held regular interaction with the villagers and put in all its efforts to remove the hindrance placed by the villagers through talks. The Petitioner also sought assistance from the local district authorities for de-escalation of the situation and raised the above law & order issue before the Chief Secretary, Govt.of UP. Further, based on the discussion in the meeting, it was decided to deploy the Police force to facilitate uninterrupted progress of work. Despite all these efforts, the work site could not be freed from encumbrance. The agitation by local



people kept growing. Little progress made in the presence of police personnel / PAC was nullified with the withdrawal of the police deployment, as the local land agitators started breaking/ lifting the stones from the Ash dyke area. Later, the agitators continuously stopped the work even in the presence of District Administration/ local authorities at site. On several occasions, the agitators threatened to even self-immolate themselves in order to prevent the Petitioner from executing the Ash Dyke work.

- d) The agitation of the locals continued under the banner of 'Visthapit Virodhi Sanghrash Samiti' till the land was finally gpt vacated in September 2015 by the district administration in the presence of heavy police force.
- e) The Ash dyke works were scheduled to commence in July 2013. However, due to the severe resistance and hindrance caused by the local villagers/ land oustees, the commencement of work delayed by around 25 months (i.e. upto 15.9.2015). The hindrance/ resistance caused by the local agitators / villagers was beyond the control of the Petitioner. The Petitioner put in its best efforts to resolve the matter through meetings with villagers, local/ district administration and state administration also. Despite the Petitioner's various efforts, the above law & order issue delayed the commencement of Ash dyke construction work by 778 days. However, after the resolution of the issue, the Petitioner deployed all its resources to complete the work at the earliest. In spite of the delay in start of this work by 778 days, the complete works required for commissioning of Unit-I was completed on 1.3.2018 under stringent time schedule.
- f) Even after the commencement of work, the Petitioner faced several challenges such as ban on sand mining by the Hon'ble High Court of Allahabad, heavy rainfall halting the movement of heavy machinery, the spread of COVID-19 pandemic etc. during the execution of the Ash dyke works.
- g) During the period from 16.9.2015 to 1.3.2018, the Petitioner faced the hindrance of around 612 days on account of the aforesaid reasons and effectively took only 285 days for ash dyke works required for commissioning of Unit-I. Further, during the period from 1.3.2018 to 15.11.2020, the Petitioner completed the balance ash dyke works wherein the hindrance of around 411 days affected the progress of works. Therefore, the balance work completion took effectively 579 days.
- h) The Petitioner with its proactive efforts could complete the Ash dyke works in 864 days (i.e. 285 + 579 days) under stringent time schedule against the scheduled duration of 1006 days (from the date of award to scheduled completion 29.4.2016) thereby saving 142 days with respect to the execution



period as per schedule. Therefore, the delay of 1709 days in the execution of Ash Dyke work on account of the aforesaid reasons may be condoned since the same were beyond the control of the Petitioner.

37. The Respondent UPPCL and the Respondent RUVNL have submitted that:

- i) The Petitioner must explain the reasons for buying land with so many encumbrances. The Petitioner has also not stated as to the manner in which the issue was resolved with the villagers and when it happened. The Petitioner should explain and provide the date of actual start of work and completion.
- ii) The project had delayed due to QSGM issue that remained unresolved until 19.2.2016 and the work on the main and balance-of-plant was severely affected, as such, the delay in the development of ash dyke has flown concurrently to the delay an account of QSGM issue.
- iii) The delay after 19.2.2016 may be considered only if the Petitioner provide the actual start of work and the date of completion.

38. In response, the Petitioner has submitted that:

- a) Although the Petitioner had paid the land compensation, the villagers kept on demanding higher compensation while interrupting the construction at site. Stone pelting incidences of the damage to the construction equipments occurred due to which there occurred a delay. Also, while buying the land, the Petitioner was not aware of the rising demands of the villagers.
- b) Police force was required to facilitate the uninterrupted progress of work. The hindrance was thus beyond the control of the Petitioner and it had put in best efforts to resolve the matter through meetings with villagers, local/ district administration and the State Administration.

39. The matter has been considered. The Petitioner has not specified the exact date of start of the work and the end date for the same. The delay in the period of implementation, if any, is subsumed in the period condoned on account of QSGM and Railway Siding issue.

#### **G. Delay on account of COVID-19**

40. The Petitioner has submitted as follows:





- i) Prior to the spread of COVID-19 pandemic, the commissioning activities of Unit-II were running at a good pace. Unit-II was test synchronized on 18.3.2020 and it was anticipated that the Unit shall be declared under COD within the next 6 months' period, i.e., upto 17.9.2020.
- ii) Meanwhile, due to rapid spread of COVID-19 all across the world, the World Health Organization (WHO) had declared it a pandemic. Foreseeing the threat of this pandemic in the country, the Ministry of Home Affairs, Government of India, had imposed lockdown in the country vide its order dated 24.3.2020 for containment of its spread in the country which was extended further as follow:
  - i. Phase 1 Lockdown: 25.3.2020 – 14.4.2020 (21 days)
  - ii. Phase 2 Lockdown: 15.4.2020 – 3.5.2020 (19 days)
  - iii. Phase 3 Lockdown: 4.5.2020 – 17.5.2020 (14 days)
  - iv. Phase 4 Lockdown: 18.5.2020 – 31.5.2020 (14 days)
- iii) During the above stated 68 days lockdown, various measures were to be taken across the country such as suspension of public transport services & closure of manufacturing units, social distancing, work-with-minimum-number-of-employees or work-from-home measures etc.
- iv) Due to the fear of spread of pandemic and the lockdown imposed by the Government of India, the erection works at site came to a complete standstill. The workforce/ labors fled the place to their home due to the fear and panic during lockdown.
- v) Although the Petitioner was permitted to resume work following covid protocol of social distancing, PPE, quarantine etc, the commissioning activities at site could not pick up pace because of various restrictions imposed on the movement of gogs/transport etc., by the various States/districts/local administrations. Such measures, although aimed to contain the spread of pandemic, posed impediments in inspection of materials, dispatch of goods, transport, and mobilization of manpower & machinery to Meja site.
- vi) All out efforts were taken up by the Petitioner to prevent the spread of COVID-19 pandemic as under:
  - a) All the persons entering the plant premises were scanned through the thermal scanner at the entry gate to screen off potentially infected persons.
  - b) Gate passes for workers issued only after medical examination.
  - c) Workers coming from outside district quarantined as per prevailing government guidelines.
  - d) Washbasin/ arrangements for hand washing provided at different location of the site.



- e) Regular sanitization of work places.
  - f) Regular Awareness sessions on COVID-19 organized.
  - g) Distribution of masks and gloves to contract workers and other associates done.
  - h) Ensured round the clock availability of Ambulance (Basic & Advance Life Support) and first-aid kits. Necessary tie up with State administration were done for COVID-19 testing of contract workers/associates as per requirement.
  - i) Any other guidelines issued by MHA, MOHFW and MOP from time to time in this regard were practiced.
- vii) In spite of all the efforts by the Petitioner, the erection & commissioning activities of the units could not be normalized as the labourers/ workforce did not turn up fully and social distancing was also to be followed at work site. The month-wise data showing the labour force at Meja site is given below:

S.No.	Month	Number of workers
1	Mar-20	3246
2	Apr-20	1509
3	May-20	1495
4	Jun-20	1793
5	Jul-20	1782
6	Aug-20	1947
7	Sep-20	1529

- viii) In the month of March 2020 i.e. at the beginning of COVID pandemic, the average labor force of various agencies was around 3250 which went significantly lower (around 1500) in the month of April 2020 due to COVID pandemic. Due to the lockdown restriction, half of the workforce had migrated to their native places and the work had come to a standstill. Only due to persuasion by the Petitioner, the other half (around 1500) agreed to stay in the labor colony of Meja station. Although the labour force stayed at the site, but on account of the COVID guidelines, the work remained severely affected. Even after the unlock process started with effect from 1.6.2020, the Petitioner faced challenge in the mobilization of the labour force back to the Plant site. The pre-pandemic labor force level could not be achieved and the erection & commissioning work got delayed.
- ix) The problem in mobilization of the migrant labourers was one of the key issues during the period of lockdown as well as thereafter, which was faced by almost all the States in India including the Plant site. A letter from one of the agency M/s BGR Energy stating the uncertainty over the manpower mobilization on account of COVID-19 pandemic, is placed at Annexure-D14.



- x) Manufacturing units of various vendors worked at part capacity, causing the delay in supply of material at site. Supplies from many vendors, falling in red/containment zones, could not be dispatched on time. Due to suspension of public transport services, the periodic visits of technical advisors/ experts for supervision of the commissioning of various equipments/systems could not take place promptly. Further, the commissioning activities in various areas including Boiler, cooling tower, coal handling plant, Ash handling plant, Electrical and C&I works, civil construction, Railway siding works etc. have been heavily affected due to the foregoing reasons. On several occasions, agencies/ sub-contractors' manpower left the site fearing the risk of potential spread of COVID from the COVID positive persons. Such incidences resulted into complete suspension of ongoing commissioning activities.
- xi) On account of the various restrictions caused by the imposition of country-wide lockdown for the containment of COVID-19, the commissioning activities of Unit-II got delayed. It may be pertinent to mention that erection activities like welding, cutting, lifting etc are carried out in a confined place. However, due to the enforcement of guidelines pertaining to social distancing such parallel activities consumed more time for completion leading to delay in erection/ commissioning activities.
- xii) Further, recognizing COVID-19 situation as an extraordinary event, beyond human control and taking note of limitations placed on movement of men and material as per Central/State Govt guidelines leading to impairment of various contractual obligations by parties, Ministry of Finance, GoI issued Office Memorandum (OM) dated 13.5.2020 by which COVID-19 situation was treated as a force majeure event and the extension in completion of works from three to six months was allowed, without the imposition of any cost or penalty. Copy of the OM dated 13.5.2020 is attached as Annexure-D16.
- xiii) Limited availability of the labourers & experts as well as problem in the supplies by the agencies, the balance works pertaining to COD of Unit-II were prioritised and started at the end of September 2020.
- xiv) The supervening circumstances mentioned hereinabove, delayed the progress of Unit-II by around 186 days (i.e. upto September 2020) which is not attributable to the Petitioner.

41. The Respondent UPPCL and the Respondent RUVNL submitted that the prayer of the Petitioner to allow 186 day extension of COD up to September, 2020 may be rejected, since major works had already been completed by it, prior to commencement



of Covid-19 and the remaining work may be completed, by the date fixed for synchronization. The Respondents further stated that the Commission may consider allowing the extension of COD from 14.4.2020, to the date of synchronization with the grid. In response, the Petitioner has submitted that if major works were completed before COVID-19, even then the other works had to be completed to ensure the COD of the particular unit.

42. The matter has been considered. We are of the view that the work got delayed due to lockdown and COVID-19 is a force majeure event and beyond the control of the Petitioner. Hence, the delay from 25.3.2020 to 31.9.2020 is condoned.

#### **H. Delay in Coal supply from SECL**

43. As regards to the above issue the Petitioner submitted as under:

- a) Full load of the 1st unit of 660 MW was achieved successfully on 31.3.2018. Further, fulfilling the coal requirement for the commissioning and trial operation, an MOU was signed with South Eastern Coalfields Limited (SECL) for supply of 2,00,000 MT coal on 7.6.2017.
- b) Despite, the signing of MOU with SECL, the coal supply was constrained. To avail the coal supply under MOU, the Petitioner took up the matter with SECL & Coal India Limited. The matter was also escalated to the MOP, GOI. The Petitioner also approached the Principal Secretary (GoUP) to divert the coal rakes from Obra TPS, which was under shutdown (marked as Annexure-D26 to the Petition). However, the requisite quantity of coal could not be received at the generating station, despite the advance payment made to SECL.
- c) The Petitioner had communicated to SECL several times regarding the supply of the balance quantity of coal after the successful trial run completion, but could not declare the COD because of little stock of coal. The supply of coal could be normalized only in the month of April, 2019. The Petitioner could declare the Unit-I under commercial operation on 30.4.2019
- d) In light of the above submissions, the delay on account of coal supply as required for COD was beyond the control of the Petitioner, since it had made various efforts for the same and even approached to MoP, GOI and also tried for arrangement of coal from other sources. Therefore, the delay of



approximately 6 months (from October 2018 to April 2019) may be condoned on account of delay in coal supply.

44. The Respondent UPPCL and the Respondent RUVNL have submitted that:

(i) The Petitioner has failed in its obligation to make arrangement of coal for the commissioning of Unit-I (ii) The commercial loss suffered due to the delayed commissioning of Unit-I might be compensated by claiming liquidated damages from SECL and (iii) The prayer of the Petitioner for condonation of 6 months delay in commissioning of Unit-I may be rejected.

45. In response, the Petitioner has submitted that coal supply was constrained even after the signing of the MoU and the correspondences vide letter 9.3.2016, for one-time coal supply for start-up and trial run of Unit-I of the generating station.

46. The matter has been considered. It is noticed that the Petitioner has not made enough efforts to resolve the issue of coal supply. We are of the view that since the total time over-run of 47 months as claimed by the Petitioner has been condoned under QSGM and Railway Siding issue, the same has not been dealt with on merit.

### **Cost overrun**

47. The Petitioner has submitted that the total expenditure of Rs.1132551.70 lakh till the COD of Unit-II, is within the Revised Cost Estimate approved in the 52<sup>nd</sup> meeting of the Petitioner's Board on 8.4.2019 for Rs.1217627.49 lakh including IDC, IEDC, FC, FERV & Hedging cost of Rs.195847.05 lakh at Q2 2018 Price level. Hence, there is no cost over-run. The reasons for the variation in the capital cost between the actual expenditure with respect to the cost estimate, as submitted by the Petitioner, are as under:

- a) Pre-Commissioning activities
- b) Overheads/IEDC



### **A. Cost escalation in the Pre-commissioning activities**

48. The Petitioner has submitted that the conditional investment approval for the present station was accorded in December 2010. As regards the variation in the start-up fuel and the pre-commissioning expenses, there was a significant increase of approximately 15% in the wholesale price index of the domestic coal from 2013 to 2018-19 which contributed significantly to the variation in the start-up fuel cost. Further, the increase in the secondary fuel price in India by approx 14% during this period, contributing to the increase in the pre-commissioning expenses. , This was not anticipated at the time of investment approval.

49. The Petitioner has also submitted that during the investment approval for the generating station, which was accorded during the period 2009-14, as per the provisions of the said regulations, the unit could be declared commercial only after achieving the full load. However, as per the IEGC 4th amendment regulations, the 72 hours trial run was necessitated prior to the declaration of COD for a thermal generating unit and the trial run is to be repeated, if there is an interruption of more than 4 hours during the trial operation. In this regard, it is submitted that the trial run operation was repeated to comply with the provisions laid down in the IEGC.

50. The Petitioner further submitted that the estimates were prepared based on the historic details of coal and oil consumption of the units of NTPC, which were corresponding to the sub-critical units and also it was not mandatory for a 72 hour trial operation then. The present unit being a super critical unit, strict water/ steam chemistry needs to be adhered to, as recommended by OEM, before admitting water/ steam into the SG/TG systems. Typically, a cold start-up of super-critical unit needs about 36 hours leading to fuel oil consumption of about 350 kl, on the other hand, a sub-critical unit takes about 8 (eight) hours for cold start-up and fuel oil consumption being much less



in comparison. The boiler was lighted up a number of times before the declaration of COD of any unit, for proving of various systems including the interlock & protection corresponding to the system/units. Some of these important activities comprise steam blowing/ hot flushing, safety valve setting, electrical testing including full load testing, GRP commissioning, unit stabilization, full load trial operation, Governor testing, auto-loop tuning, over speed testing, AVR tuning etc. Proving of various systems is necessary, which requires numerous start/stops (mostly cold start-ups) for this supercritical unit resulting in longer commissioning activities. Further, in accordance with the Regulation 7 of the 2019 Tariff Regulations, the revenue earned by the generating station from the sale of infirm power has been adjusted in the capital cost, after taking into account the fuel expenses incurred. It is submitted that as per the IEGC 2010 (amended in 2012), the operating band frequency was 49.7 to 50.2 Hz, and the price vector of UI regulation was prescribed in the frequency range of 49.5 to 50.2 Hz, applicable during the investment approval of the project. However, the operating frequency band was subsequently tightened through IEGC/ DSM amendments and it was revised to 49.85 Hz to 50.05 Hz. These developments ensured the grid frequency to operate at near constant value of 50 Hz thereby reducing the realization through sale of infirm power to very low, sometimes even zero as per the applicable rate(s) of DSM with regard to the earnings as envisaged at the time of investment approval.

#### **B. Increase in Overheads/IEDC**

51. The Petitioner has further submitted that the increase in expenditure against the head “overheads”/ “IEDC” is mainly because of the impact of implementation of recommendations of 7th pay Commission/ Office memorandum issued by Department of Public Enterprises (“DPE”), which was not possible to be included during the initial



investment approval. It has submitted that the revision in the salary and wages for the employees and staff of CISF w.e.f. 1.1.2017 and 1.1.2016 respectively, is a necessary expenditure and the same are in addition to the salaries of the employees/staff.

52. We have examined the submissions made by the Petitioner since the actual cost submitted by the Petitioner as on COD Unit-II is Rs.1132551.70 against the Investment approval cost of Rs. 1082958.00 lakh and RCE approved cost of Rs. 1217628.00 lakh as per the 52<sup>nd</sup> meeting of the Board of Directors held on 8.4.2019. The Petitioner has projected the estimated cost of completion of the Project as Rs. 1209488.24 lakhs, which is well within the RCE approved cost. Hence, there is no cost over-run.

### **Capital Cost**

53. Clause (1) of Regulation 19 of the 2019 Tariff Regulations provides that the capital cost as determined by the Commission after prudence check, in accordance with this regulation, shall form the basis of determination of tariff for existing and new projects. Clause 2 of Regulation 19 of the 2019 Tariff Regulations provides as under:

*“(2) The Capital Cost of a new project shall include the following:*

*(a) The expenditure incurred or projected to be incurred up to the date of commercial operation of the project;*

*(b) Interest during construction and financing charges, on the loans (i) being equal to 70% of the funds deployed, in the event of the actual equity in excess of 30% of the funds deployed, by treating the excess equity as normative loan, or (ii) being equal to the actual amount of loan in the event of the actual equity less than 30% of the funds deployed;*

*(c) Any gain or loss on account of foreign exchange risk variation pertaining to the loan amount availed during the construction period;*

*(d) Interest during construction and incidental expenditure during construction as computed in accordance with these regulations;*

*(e) Capitalised initial spares subject to the ceiling rates in accordance with these regulations;*

*(f) Expenditure on account of additional capitalization and de-capitalisation determined in accordance with these regulations;*

*(g) Adjustment of revenue due to sale of infirm power in excess of fuel cost prior to the date of commercial operation as specified under Regulation 7 of these regulations;*

*(h) Adjustment of revenue earned by the transmission licensee by using the assets before the date of commercial operation;*





- (i) Capital expenditure on account of ash disposal and utilization including handling and transportation facility;
- (j) Capital expenditure incurred towards railway infrastructure and its augmentation for transportation of coal upto the receiving end of the generating station but does not include the transportation cost and any other appurtenant cost paid to the railway;
- (k) Capital expenditure on account of biomass handling equipment and facilities, for co-firing;
- (l) Capital expenditure on account of emission control system necessary to meet the revised emission standards and sewage treatment plant;
- (m) Expenditure on account of fulfilment of any conditions for obtaining environment clearance for the project;
- (n) Expenditure on account of change in law and force majeure events; and
- (o) Capital cost incurred or projected to be incurred by a thermal generating station, on account of implementation of the norms under Perform, Achieve and Trade (PAT) scheme of Government of India shall be considered by the Commission subject to sharing of benefits accrued under the PAT scheme with the beneficiaries.”

### **Capital Cost as on COD of Unit-I (30.4.2019)**

54. The details of the capital cost claimed by the Petitioner, as on COD of Unit-I is as under:

	<i>(Rs. in lakh)</i>
	<b>As on the COD of Unit-I (30.4.2019)</b>
Gross Block as per IND AS as on COD of Unit-I	667242.45
Add: IND AS adjustment to Gross Block as on COD of Unit-I	(-)2108.33
Gross Block as per IGAAP as on COD of Unit-I (on accrual basis)	665134.12
Less: Un-discharged liabilities included above	50758.49
Gross Block as per IGAAP as on COD of Unit-I (on cash basis)	<b>614375.63</b>
Add: Notional IDC	13,537.81
Add: Short term FERV	726.03
Add: Loan FERV transferred to P&L	(-)817.64
Less: Rounding off	0.02
<b>Capital Cost for the purpose of tariff</b>	<b>627821.80</b>

55. The auditor certified capital cost, on an accrual basis, as well as on a cash basis, amounting to Rs.665134.12 lakh and Rs.614375.63 lakh respectively, as on the COD of Unit-I is inclusive of IDC and FC of Rs.139724.16 lakh and FERV of Rs.4711.06 lakh. Accordingly, the hard cost component of the capital cost, as on the COD of Unit-I works out to Rs.520698.90 lakh, on an accrual basis and Rs.469940.41 lakh, on a cash basis. The hard cost, on an accrual and on a cash basis, as on the COD of Unit-I, also includes IEDC of Rs.40945.83 lakh.



56. Having held that the time and cost overrun for Unit-I and Unit-II were beyond the control of the Petitioner, we are inclined to allow the capital expenditure towards hard cost of Rs. 469940.41 lakh, as on the COD of Unit-I (net of un-discharged liabilities of Rs.50758.49 lakh) subject to prudence check of the cost of initial spares and the adjustment of capital cost on account of the sale of infirm power, at the time of truing up of tariff.

57. The Petitioner, vide its affidavit dated 26.2.2024, also submitted the Audited balance sheet for the years 2020-21 and 2021-22.

58. We now proceed to examine the Petitioner's claim for IDC & FC, Notional IDC, IEDC and FERV charged to revenue as under:

#### **Incidental Expenditure During Construction (IEDC)**

59. As stated above, the hard cost, on an accrual and on a cash basis, as on the COD of Unit-I also includes the IEDC of Rs. 40945.83 lakh. The Petitioner vide affidavit dated 26.2.2024, furnished the audited IEDC details along with the revised Form-M. Considering the details of IEDC furnished by the Petitioner vide affidavit dated 26.2.2024, it is observed that IEDC has been claimed from 2008-09, whereas the zero date of the project is 30.4.2012. Accordingly, the allowable IEDC, after the deduction of the claim from 2008-09 to zero date (30.4.2012) and after adjustment of the depreciation capitalised in the gross block and forming part of it, amounting to Rs. 4714.54 lakh and Rs. 4066.94 lakh respectively, as on the COD of Unit-I, works out to Rs. 32164.35 lakh.

#### **IDC, FC and FERV**

60. The Petitioner has claimed IDC & FC amounting to Rs. 139724.16 lakh and FERV amounting to Rs. 4711.06 lakh, as on the COD of Unit-I. However, it is observed



that the Petitioner has not furnished the documentary evidence/details of the interest rates and the exchange rates pertaining to the various loans considered for the purpose of calculation of IDC and FERV. Accordingly, based on available details, the prudence check of IDC claimed by the Petitioner could not be carried out at this stage. Further, since the tariff of the generating station is subject to truing up, for the present IDC, FC and FERV, as claimed by the Petitioner is allowed. However, the Petitioner is directed to furnish the relevant details to carry out prudence check of the IDC calculations, at the time of the truing up of tariff. Considering the fact that the entire time overrun, as on the COD of Unit-I has been allowed for the purpose of tariff, IDC & FC amounting to Rs. 139724.16 lakh and FERV amounting to Rs. 4711.06 lakh have been considered for the purpose of tariff, as on COD of Unit-I.

### **Notional IDC**

61. The Petitioner has claimed an amount of Rs. 13537.81 lakh, as Notional IDC, as on the COD of Unit-I, starting from the year 2008-09, while the zero date of the project has been considered as 30.4.2012. Thus, there is a variation in considering the zero date for claiming notional IDC by the Petitioner. Considering the fact that notional IDC numbers are dependent on IDC workings /calculations, allowable notional/normative IDC works out to Rs.10772.27 lakh, based on the zero date as 30.4.2012. The amount of Rs. 10772.27 lakh, as notional IDC, is towards both the units of the generating station. However, the Petitioner has not furnished the unit-wise bifurcation of the notional IDC. Based on the information furnished by the Petitioner in respect of IDC, it has been observed that the ratio of capitalisation of the cumulative IDC in capital works in progress to the gross block as on COD of Unit-I is 66.74%. Accordingly, in the absence of unit-wise bifurcated details, we have relied upon the said ratio of 66.74% for computing the notional IDC of Rs.7189.33 lakh, and the same is allowed, as on the



COD of Unit-I. This is subject to review at the time of truing up. The Petitioner is directed to furnish the unit-wise bifurcation of the notional IDC at the time of truing-up of tariff.

**Short term FERV and Loan FERV transferred to P&L**

62. The Petitioner has claimed FERV amounting to Rs. 726.03 lakh, as short term FERV and Rs. (-) 817.64 lakh as Loan FERV transferred to P&L as on COD of Unit-I. The Petitioner vide affidavit dated 26.2.2024 has submitted that during the construction period, in the erstwhile IGAAP as per para 46A of AS-11, FERV on loan was to be capitalized and accordingly the same was claimed as part of the capital cost. However, as per Ind-AS, the FERV on foreign currency loans drawn after 1.4.2016, shall not form part of gross block and shall be charged to the statement of Profit & Loss as Borrowing cost/FERV. However, as per Regulation 19(2)(C) of the 2019 Tariff Regulations, in case of the new projects, any gain or loss on account of FERV pertaining to the loan availed during the construction period, shall form part of capital cost. Accordingly, the Petitioner has considered FERV (incurred during construction period) on foreign currency loan drawn after 1.4.2016, charged to P&L in the capital cost. The Petitioner has also furnished the details of the short term FERV and Loan FERV charged to P&L, duly certified by the auditor. Accordingly, the amount of FERV of Rs. 726.03 lakh, as short term FERV and Rs. (-) 817.64 lakh as Loan FERV transferred to P&L, is considered as on the COD of Unit-I.

63. Based on the above discussions, the capital cost allowed as on the COD of Unit-I is worked out as Rs. 612691.85 lakh.

**Capital Cost as on the COD of Unit-II (31.1.2021)**

64. The Petitioner has claimed the capital cost of Rs. 1065033.87 lakh, on a cash basis, as on the COD of Unit-II, as under:



<i>(Rs. in lakh)</i>	
	<b>As on COD of Unit-II (31.1.2021)</b>
Gross Block as per IND AS as on COD of Unit-II	1130832.00
Add: IND AS adjustment to Gross Block as on COD of Unit-I	1719.70
Gross Block as per IGAAP as on COD of Unit-I (on accrual basis)	1132551.70
Less: Un-discharged liabilities included above	67517.80
Gross Block as per IGAAP as on COD of Unit-I (on cash basis)	<b>1065033.90</b>
Add: Notional IDC	13537.81
Add: Short term FERV	1995.39
Add: Loan FERV transferred to P&L	745.59
Less: Rounding off	0.03
<b>Capital cost for the purpose of Tariff</b>	<b>1081312.65</b>

65. The auditor certified capital cost on an accrual basis and on a cash basis amounting to Rs.1132551.67 lakh and Rs.1065033.87 lakh, respectively, as on the COD of Unit-II is inclusive of IDC and FC of Rs. 250585.94 lakh and FERV of Rs. 18897.04 lakh. Accordingly, the hard cost component of the capital cost, as on the COD of Unit-II works out to Rs.863068.69 lakh, on an accrual basis and Rs.795550.89 lakh on a cash basis. The hard cost, on an accrual and on a cash basis, as on the COD of Unit-II also includes the IEDC of Rs.68664.46 lakh. Accordingly, we are inclined to allow the capital expenditure towards hard cost of Rs. 795550.89 lakh, as on the COD of Unit-II (net of un-discharged liabilities of Rs.67517.80 lakh), subject to prudence check of the cost of initial spares and the adjustment of the capital cost on account of the sale of infirm power, at the time of truing-up of tariff.

66. We now proceed to examine the Petitioner's claim for IDC & FC, Notional IDC, IEDC and Contingency as under:

### **Incidental Expenditure During Construction**

67. The Petitioner has claimed IEDC amounting to Rs. 68664.46 lakh, as on the COD of Unit-II. In line with paragraph 56 above and considering the details of IEDC as



furnished by the Petitioner vide affidavit dated 26.2.2024, the allowable IEDC, after deduction of claim from 2008-09 to zero date (30.4.2012) and depreciation from zero date to COD amounting to Rs. 4714.54 lakh and Rs. 4375.18 lakh included in the capital cost as on COD of Unit-I works out to Rs. 59574.74 lakh.

### **IDC, FC and FERV**

68. The Petitioner has claimed IDC & FC amounting to Rs. 250585.94 lakh and FERV amounting to Rs. 18897.04 lakh as on COD of Unit-II. However, it is observed that the Petitioner has not submitted the documentary evidence/details of the interest rates and exchange rates pertaining to various loans considered for the purpose of calculation of IDC and FERV. Based on the available details, the prudence check of IDC claimed by the Petitioner cannot be carried out at this stage. Since the tariff of the generating station is subject to truing up, for IDC & FC and FERV also, considering the fact that entire time overrun as on COD of the Unit-II has been condoned for the purpose of tariff, the Petitioner's claim under this head is allowed. However, the Petitioner is directed to furnish the relevant details to carry out prudence check of the IDC calculations, at the time of truing-up of tariff. Accordingly, IDC & FC of Rs. 250585.94 lakh and FERV amounting to Rs. 18897.04 lakh respectively, have been considered for the purpose of tariff.

### **Notional IDC**

69. The Petitioner has claimed an amount of Rs. 13537.81 lakh as Notional IDC as on COD of Unit-II. As detailed in paragraph 62 above, the Notional IDC works out to Rs.10772.27 lakh as on COD of Unit-II.

### **Short term FERV and Loan FERV transferred to P&L**

70. The Petitioner has claimed FERV amounting to Rs. 1995.39 lakh as Short term FERV and Rs. 745.59 lakh and Loan FERV transferred to P&L as on COD of the



generating station. In line with paragraph 59 above of this order and as per the consistent methodology adopted by the Commission, the amount of Rs. 1995.39 lakh as Short Term FERV and Rs. 745.59 lakh as Loan FERV transferred to P&L has been considered under this head as on COD of the station.

71. Based on the above discussions, the capital cost allowed as on COD of Unit-II is worked out as Rs. 1069457.39 lakh.

### **Adjustment of the revenue generated from the sale of Infirm Power**

72. As regards the adjustment of the revenue earned from sale of infirm power, it is observed from the balance sheets, that these figures pertaining to pre-commissioning expenses are on net basis, after reduction of revenue generated from the sale of infirm power, amounting to Rs. 3442.75 lakh, till COD of first unit and Rs. 6591.76 lakh (3442.75+3149.01) till the COD of second unit. As such, considering the fact that the revenue generated from sale of infirm power has been reduced by the Petitioner to arrive at the net capital expenditure claimed on COD of various units, no further adjustment is required in claimed capital cost on account of revenue generated from sale of infirm power.

### **Liquidated Damages**

73. The Petitioner has not furnished any details regarding the amount of Liquidated Damages (LD) recovered. Accordingly, the Petitioner is directed to submit the complete details of the amount of LD recovered for the delay under the contract for different packages, at the time of truing-up of tariff.

### **Initial Spares**

74. Regulations 23 of the 2019 Tariff Regulations provides for initial Spares as under:



“23. Initial Spares: Initial spares shall be capitalised as a percentage of the Plant and Machinery cost, subject to following ceiling norms:

(a) Coal-based/lignite-fired thermal generating stations - 4.0%

xxxx

Provided that:

- i. Plant and Machinery cost shall be considered as the original project cost excluding IDC, IEDC, Land Cost and Cost of Civil Works. The generating company and the transmission licensee for the purpose of estimating Plant and Machinery Cost, shall submit the break-up of head wise IDC and IEDC in its tariff application;
- ii. where the generating station has any transmission equipment forming part of the generation project, the ceiling norms for initial spares for such equipment shall be as per the ceiling norms specified for transmission system under these regulations.”

75. The COD of the Unit-II of the generating station is 31.1.2021 and accordingly, the cut-off date of the generating station is 31.3.2024. The Petitioner has claimed the total Initial Spares for Rs.17814.05 lakh on an accrual basis, upto the cut-off date as detailed below:

**(Rs. in lakh)**

	2019-20	2020-21		2021-22	2022-23	2023-24
	30.4.2019 to 31.3.2020	1.4.2020 to 30.1.2021	31.1.2021 to 31.3.2021	1.4.2021 to 31.3.2022	1.4.2022 to 31.3.2023	1.4.2023 to 31.3.2024
Accrual basis	6849.62	2444.56	1019.87	500.00	2000.00	5000.00
Undischarged Liability	1842.52	0.00	0.00	0.00	0.00	0.00
Cash Basis	5007.10	2444.56	1019.87	500.00	2000.00	5000.00

76. Further, the Petitioner vide affidavit dated 13.2.2023, has submitted the actual Initial Spares, duly certified by auditor upto 2021-22, as under:

**(Rs. in lakh)**

Year-wise initial spares up to the cut-off date						
	Upto 29.4.2019	30.4.2019 to 31.3.2020	1.4.2020 to 30.1.2021	31.3.2021	2021-22	Total
Accrual Basis	4239.56	5270.47	804.02	2995.3	6415.75	19725.11
Liability	0.00	1842.52	0.00	229.13	0.00	2071.65
Cash basis	4239.56	3427.95	804.02	2766.17	6415.75	17653.46





77. The Petitioner vide Form-B of the affidavit dated 11.5.2022, has furnished the anticipated Plant and Machinery cost of Rs. 605961 lakh, as on the cut-off date. Therefore, the ceiling limit of initial spares as per Regulation 23(a) of the 2019 Tariff Regulations works out to Rs.24426.48 lakh  $[(605961-19725.11)*4/96]$ . Since the claim for initial spares by the Petitioner, as on COD of the generating station (Rs.10314.05 lakh) and upto the cut-off date (Rs. 19725.11 lakh) is within the ceiling limit as worked out above, the claim of the Petitioner is allowed. The Petitioner is, however, directed to furnish the break-up of actual Plant & Machinery cost and the details of the initial spares capitalised up to the cut-off date, at the time of truing-up of tariff. It is observed that there is a mismatch between the amount claimed in Form-B and Form 9A submitted initially and the amount claimed in the subsequent additional submissions. Therefore, the Petitioner is directed to submit the reconciled auditor certified amount of the initial spares at the time of truing-up of tariff.

78. In view of the above, the capital cost allowed as on COD of Unit-I and Unit-II are as under:

	<i>(Rs. in lakh)</i>	
	<b>As on COD of Unit-I (30.4.2019)</b>	<b>As on COD of Unit-II (31.1.2021)</b>
Hard Cost (excluding IDC, IEDC and FERV)	428994.56	726886.43
IEDC	32164.35	59574.74
IDC and FC	139724.16	250585.94
FERV	4711.06	18897.04
Capital Cost as on COD of generating station	<b>605594.13</b>	<b>1055944.15</b>
Notional IDC	7189.33	10772.27
Short term FERV	726.03	1995.39
Loan FERV transferred to P&L	(-)817.64	745.59
<b>Capital Cost for the purpose of Tariff (Cash basis)</b>	<b>612691.85</b>	<b>1069457.39</b>

### **Additional Capital Expenditure**

79. Regulations 25 and 26 of the 2019 Tariff Regulations provides as under:

*“ 24. Additional Capitalisation within the original scope and upto the cut-off date*



*(1) The additional capital expenditure in respect of a new project or an existing project incurred or projected to be incurred, on the following counts within the original scope of work, after the date of commercial operation and up to the cut-off date may be admitted by the Commission, subject to prudence check:*

- (a) Undischarged liabilities recognized to be payable at a future date;*
- (b) Works deferred for execution;*
- (c) Procurement of initial capital spares within the original scope of work, in accordance with the provisions of Regulation 23 of these regulations;*
- (d) Liabilities to meet award of arbitration or for compliance of the directions or order of any statutory authority or order or decree of any court of law;*
- (e) Change in law or compliance of any existing law; and*
- (f) Force Majeure events:*

*Provided that in case of any replacement of the assets, the additional capitalization shall be worked out after adjusting the gross fixed assets and cumulative depreciation of the assets replaced on account of de-capitalization.*

*(2) The generating company or the transmission licensee, as the case may be shall submit the details of works asset wise/work wise included in the original scope of work along with estimates of expenditure, liabilities recognized to be payable at a future date and the works deferred for execution.”*

80. The year-wise, projected additional capital expenditure claimed by the Petitioner, for the period 2019-24, is as under:



(Rs. in lakh)

Sl. No	Head of Work/ Equipments	Additional capital expenditure claimed (actual)			Additional capital expenditure claimed (Projected)			Regulation
		2019-20 (30.4.2019 to 31.3.2020)	2020-21 (1.4.2020 to 30.1.2021)	2020-21 (31.1.2021 to 31.3.2021)	2021-22	2022-23	2023-24	
<b>A. Works under Original scope, change in law etc. eligible for ROE at normal rate</b>								
1	Land and infrastructure	1320.61	1195.15	0.35	100.00	100.00	100.00	24(1)(b)
2	Right of Use - Land	5.95	8.25	140.71				
3	Main Plant Civil & Chimney	47.17	526.42	298.96	1750.00	1140.00	3525.00	
4	Permanent township	2.91	8.25	2.59	50.00	1400.00	950.00	
5	Construction Tools & Plants	631.97	71.34	0.00	0.00	0.00	0.00	
6	SG & Auxiliaries	0.00	0.00	0.00	380.00	1500.00	2120.00	
7	TG & Auxiliaries	3989.45	382.50	0.00	655.00	800.00	8045.00	
8	C&I	0.00	0.00	(3.13)	150.00	213.00	0.00	
9	Railway Siding & LOCO	371.02	0.00	0.00	5000.00	6200.00	0.00	
10	CHP	1222.50	0.00	1007.79	50.00	2250.00	0.00	
11	Fuel oil system	0.00	0.00	0.00	0.00	0.00	0.00	
12	Ash handling system	(0.29)	7.10	0.10	500.00	2000.00	1140.00	
13	Ash Dyke	0.00	0.00	0.00	100.00	0.00	0.00	
14	Water and cooling system	0.00	28.97	34.10	700.00	641.00	270.00	
15	Fire detection & protection systems, Air Conditioning, Ventilation system	866.96	59.24	25.95	50.00	180.00	100.00	
16	Electrical System	2.91	0.00	0.00	0.00	300.00	200.00	
17	Switchyard system and Transformers( Power and Outdoor) system	260.53	277.33	341.67	800.00	258.00	0.00	
18	FGD	0.00	0.00	0.00	0.00	40000.00	22000.00	24(1)(e)
19	ZLD	0.00	0.00	0.00	0.00	150.00	250.00	24(1)(e)
20	Initial spares	5007.10	2444.56	1019.87	500.00	2000.00	5000.00	24(1)(c)
21	MBOA	385.34	208.04	175.32	500.00	500.00	500.00	24(1)(b)
	<b>Total (A)</b>	<b>14114.12</b>	<b>5217.15</b>	<b>3044.28</b>	<b>11285.00</b>	<b>59632.00</b>	<b>44200.00</b>	
<b>B. Works beyond Original scope eligible for ROE at Weighted Average rate of Interest</b>								
	<b>Total (B)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	
<b>C. Discharge of Liabilities</b>								
	Discharge of Liabilities	12524.89	760.75	10014.31				24(1)(a)
	<b>Total Additional Capitalization Claimed (A+B)</b>	<b>26639.01</b>	<b>5977.90</b>	<b>13058.59</b>	<b>11285.00</b>	<b>59632.00</b>	<b>44200.00</b>	



78. The Petitioner has claimed the additional capital expenditure under Regulation 24(1) of the 2019 Tariff Regulations. It is observed from Form-9A that the additional capital expenditure incurred for the assets under the original scope of work is essentially required for the operation of thermal generating stations and has been capitalized within the cut-off date. Accordingly, the additional capital expenditure claimed by the Petitioner is allowed under Regulation 24(1) of the 2019 Tariff Regulations.

**Works within the original scope and upto cut-off date claimed under Regulation 24(1)(b) of the 2019 Tariff Regulations**

81. The Petitioner has claimed the additional capital expenditure of Rs.56852.33 lakh under Regulation 24(1)(b) of the 2019 Tariff Regulations, mainly towards works carried out within the original scope and up to the cut-off date, but deferred for execution. The Petitioner has claimed the additional capital expenditure for works/ assets such as, Land and Infrastructure, Right of Use-Land, Main Plant Civil & Chimney, SG & Auxiliaries etc. Since the claim of the Petitioner is for works within the original scope and within the cut-off date, but deferred for execution, the same are allowed under Regulation 24(1)(b) of the 2019 Tariff Regulations.

**Works within the original scope but carried out due to 'change in law' under Regulation 24(1)(b) and 24(1)(e) of the 2019 Tariff Regulations**

82. The Petitioner has claimed the additional capital expenditure of Rs.62400.00 lakh under Regulation 24(1)(e) of the 2019 Tariff Regulations, which includes an amount of Rs.62000.00 lakh for the FGD installation and Rs.400.00 lakh for the installation of Zero Liquid Discharge (ZLD). As regards FDG, the Commission vide ROP of the hearing dated 6.1.2023, had sought clarification from the Petitioner for details such as, the suitable technology recommended by CEA, the justification for assuming the estimated



cost of the FGD system for Rs. 620 crore and whether such cost has been arrived at by the competitive bidding. In response, the Petitioner vide affidavit dated 13.2.2023 has submitted that CEA in its recommendations vide letter dated 20.2.2019 on 'Operation Norms for thermal generating stations for the period 2019-24' has provided the operational norms for four technologies, to comply with revised SO<sub>2</sub> emission norms reduction, as under:

- a) Wet Limestone based Flue Gas De-sulphurisation ("FGD")
- b) Lime Spray Drier/ Demi-dry Semi FGD;
- c) Dry Sorbent Injection based FGD; and
- d) Furnace Injection in CFBC Boilers.

83. The Petitioner has submitted that in view of the listed advantages, the other technologies such as dry type FGD, Ammonia Based FGD and Sea Water FGD system have not been selected by the Petitioner and hence it has adopted the Wet Limestone based FGD, in order to comply with the SO<sub>x</sub> norms, as per the MoEF&CC Notification. The Petitioner has also submitted that on 7.7.2020, CEA issued 'Advice on FGD Technology selection for different units size'. The said advisory issued by the CEA provides suggestions to the Thermal Power Plants for selection of appropriate FGD technology based upon various parameters of the respective plant. The Petitioner has further submitted that the Invitation for Bids (IFB) for installation of FGD system at the present station was issued by the Petitioner on 30.6.2017 and pursuant to the bidding in terms of the above IFB dated 30.6.2017, M/S GE Power India Ltd (GEPIL) emerged as the successful bidder (L1) and was awarded the contract for installation of FGD at the generating station. Accordingly, on 20.9.2018, Notification of Award ("NoA") was issued to M/S GE Power India Ltd. (GEPIL) for FGD installation at the present station and it is further submitted that the technology adopted for ECS at the generating station



is as per the CEA recommendation, and the price has been arrived through Competitive bidding.

84. As regards the claim of the Petitioner for ZLD, the Petitioner has submitted that the current capital expenditure pertains to implementation of ZLD to reduce the specific water consumption to comply with the environmental norms specified under the MoEFCC notification dated 7.12.2015 and accordingly the same may be allowed under Regulation 24(1)(b) and Regulation 24(1)(e) of the 2019 Tariff Regulations.

85. The matter has been considered. In view of the aforementioned submission/details furnished, the additional capital expenditure claimed by the Petitioner for FGD and ZLD mainly pertaining to works carried out within the original scope, but deferred for execution, is allowed under Regulation 24(1)(b) of the 2019 Tariff Regulations.

**Work within original scope for the Procurement of initial capital spares under Regulation 24(1)(c) of the 2019 Tariff Regulations**

86. The Petitioner has claimed the following Initial spares after the COD of Unit-I:

*(Rs. in lakh)*

2019-20 (30.4.2019 to 31.3.2020)	2020-21		2021-22	2022-23	2023-24
	(1.4.2020 to 30.1.2021)	(31.1.2021 to 31.3.2021)			
5007.10	2444.56	1019.87	500.00	2000.00	5000.00

87. The capitalization of initial spares, have already been considered as above and it has been verified that the initial spares claimed upto the cut-off date ,i.e., 31.3.2024 is within the permissible limits as per the Regulation 23 of the 2019 Tariff Regulations. Therefore, the claim is allowed under Regulation 24(1)(c) of the 2019 Tariff Regulations.

**Discharge of Liabilities**

88. The Petitioner has claimed the discharge of liabilities under Regulation 24(1)(a) of the 2019 Tariff Regulations for Rs. 23299.95 lakh during the period from 30.4.2019 to



31.3.2021 and the same is as per Form-S (i.e. Liability Flow Statement) for the period from COD of Unit-I (30.4.2019) to 31.3.2021. The discharges of liabilities amounting to Rs. 23299.95 lakh, as claimed by the Petitioner is considered and allowed, subject to the submission of the revised Form-S (Liability Flow Statement) from COD of Unit-I to 31.3.2024, at the time of truing-up of tariff.

89. In view of the above the additional capital expenditure allowed for the purpose of tariff is as under:

		<i>(Rs. in lakh)</i>						
		2019-20 (30.4.2019- 31.3.2020)	2020-21 (1.4.2020- 30.1.2021)	2020-21 (31.1.2021- 31.3.2021)	2021-22	2022-23	2023-24	Total
Land and infrastructure	Claimed	1320.61	1195.15	0.35	100.00	100.00	100.00	2816.11
	Approved	1320.61	1195.15	0.35	100.00	100.00	100.00	2816.11
Right of Use - Land	Claimed	5.95	8.25	140.71	0.00	0.00	0.00	154.91
	Approved	5.95	8.25	140.71	0.00	0.00	0.00	154.91
Main Plant Civil & Chimney	Claimed	47.17	526.42	298.96	1750.00	1140.00	3525.00	7287.55
	Approved	47.17	526.42	298.96	1750.00	1140.00	3525.00	7287.55
Permanent township	Claimed	2.91	8.25	2.59	50.00	1400.00	950.00	2413.75
	Approved	2.91	8.25	2.59	50.00	1400.00	950.00	2413.75
Construction Tools & Plants	Claimed	631.97	71.34	0.00	0.00	0.00	0.00	703.31
	Approved	631.97	71.34	0.00	0.00	0.00	0.00	703.31
SG & Auxiliaries	Claimed	0.00	0.00	0.00	380.00	1500.00	2120.00	4000.00
	Approved	0.00	0.00	0.00	380.00	1500.00	2120.00	4000.00
TG & Auxiliaries	Claimed	3989.45	382.50	0.00	655.00	800.00	8045.00	13871.95
	Approved	3989.45	382.50	0.00	655.00	800.00	8045.00	13871.95
C&I	Claimed	0.00	0.00	(-)3.13	150.00	213.00	0.00	359.87
	Approved	0.00	0.00	(-)3.13	150.00	213.00	0.00	359.87
Railway Siding & LOCO	Claimed	371.02	0.00	0.00	5000.00	6200.00	0.00	11571.02
	Approved	371.02	0.00	0.00	5000.00	6200.00	0.00	11571.02
CHP	Claimed	1222.50	0.00	1007.79	50.00	2250.00	0.00	4530.29
	Approved	1222.50	0.00	1007.79	50.00	2250.00	0.00	4530.29
Fuel oil system	Claimed	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Approved	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ash handling system	Claimed	(-)0.29	7.10	0.10	500.00	2000.00	1140.00	3646.91
	Approved	(-)0.29	7.10	0.10	500.00	2000.00	1140.00	3646.91
Ash Dyke	Claimed	0.00	0.00	0.00	100.00	0.00	0.00	100.00
	Approved	0.00	0.00	0.00	100.00	0.00	0.00	100.00
Water and cooling system	Claimed	0.00	28.97	34.10	700.00	641.00	270.00	1674.07
	Approved	0.00	28.97	34.10	700.00	641.00	270.00	1674.07
Service and General Facilities	Claimed	0.00	0.00	0.00	0.00	0.00	100.00	100.00
	Approved	0.00	0.00	0.00	0.00	0.00	100.00	100.00
Fire detection & protection systems, Air Conditioning, Ventilation system	Claimed	866.96	59.24	25.95	50.00	180.00	0.00	1182.16
	Approved	866.96	59.24	25.95	50.00	180.00	0.00	1182.16
Electrical System	Claimed	2.91	0.00	0.00	0.00	300.00	200.00	502.91
	Approved	2.91	0.00	0.00	0.00	300.00	200.00	502.91
Switchyard system and Transformers(	Claimed	260.53	277.33	341.67	800.00	258.00	0.00	1937.53
	Approved	260.53	277.33	341.67	800.00	258.00	0.00	1937.53



		2019-20 (30.4.2019- 31.3.2020)	2020-21 (1.4.2020- 30.1.2021)	2020-21 (31.1.2021- 31.3.2021)	2021-22	2022-23	2023-24	Total
Power and Outdoor) system								
FGD	Claimed	0.00	0.00	0.00	0.00	40000.00	22000.00	62000.00
	Approved	0.00	0.00	0.00	0.00	40000.00	22000.00	62000.00
ZLD	Claimed	0.00	0.00	0.00	0.00	150.00	250.00	400.00
	Approved	0.00	0.00	0.00	0.00	150.00	250.00	400.00
Initial spares	Claimed	5007.10	2444.56	1019.87	500.00	2000.00	5000.00	15971.53
	Approved	5007.10	2444.56	1019.87	500.00	2000.00	5000.00	15971.53
MBOA	Claimed	385.34	208.04	175.32	500.00	500.00	500.00	2268.70
	Approved	385.34	208.04	175.32	500.00	500.00	500.00	2268.70
Discharge of liability of allowed items	Claimed	12524.89	760.75	10014.31	0.00	0.00	0.00	23299.95
	Approved	12524.89	760.75	10014.31	0.00	0.00	0.00	23299.95
<b>Total Additional capital expenditure</b>	<b>Claimed</b>	26639.01	5977.90	13058.59	11285.00	59632.00	44200.00	160792.51
	<b>Approved</b>	26639.01	5977.90	13058.59	11285.00	59632.00	44200.00	160792.51

## **Exclusions**

90. The summary of exclusions claimed by the Petitioner, on an accrual basis for the is as under:

	2019-20 (30.4.2019 - 31.3.2020)	2020-21 (1.4.2020 - 30.1.2021)	2020-21 (31.1.2021- 31.3.2021)
Reversal of Liability	(-)2293.65	(-)1542.73	(-)3156.65
Reinstatement of Liability: TG & Auxiliaries	-	-	(-)2745.84
<b>Total Exclusion claimed</b>	<b>(-)2293.65</b>	<b>(-)1542.73</b>	<b>(-)5902.49</b>

91. We now examine the exclusions claimed by the Petitioner in the subsequent paragraphs:

### **Reversal of Liability**

92. The Petitioner has claimed an amount of Rs. (-) 2293.65 lakh from the COD of Unit-I to 31.3.2020, (-) Rs. 1542.73 lakh for the period from 1.4.2020 to 30.1.2021 and (-)Rs. 3156.65 lakh for the period from 31.1.2021 to 31.3.2021. The Petitioner has submitted that since the tariff is on a cash basis, the liability reversal has been kept under exclusion. In view of the above, the claim of the Petitioner is allowed under exclusion.





## Reinstatement of Liability: TG & Auxiliaries

93. The Petitioner has submitted that the negative value pertains to the reinstatement of the loan liability at the end of financial year, on account of Exchange Rate Variation and hence, the same is kept under exclusion. The Petitioner has claimed an amount of (-) Rs. 2745.84 lakh for the period 31.1.2021 (from COD of Unit-II) to 31.3.2021. In view of the above, the claim of the Petitioner is allowed under exclusion.

94. In view of the above discussions, the capital cost allowed for the purpose of tariff, is as under:

	2019-20 (30.4.2019- 31.3.2020)	2020-21		2021-22	2022-23	2023-24
		(1.4.2020- 30.1.2021)	(31.1.2021- 31.3.2021)			
Opening capital cost	612691.85	639330.87	1069457.39	1082515.99	1093800.99	1153432.99
Additional capital expenditure allowed	26639.01	5977.90	13058.59	11285.00	59632.00	44200.00
Closing capital cost	<b>639330.87</b>	<b>645308.77</b>	<b>1082515.99</b>	<b>1093800.99</b>	<b>1153432.99</b>	<b>1197632.99</b>
Average capital cost	626011.36	642319.82	1075986.69	1088158.49	1123616.99	1175532.99

## Debt-Equity Ratio

95. Regulation 18 of the 2019 Tariff Regulations provides as under:

*“ 18. Debt-Equity Ratio: (1) For new projects, the debt-equity ratio of 70:30 as on date of commercial operation shall be considered. If the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan:*

*Provided that:*

- i. where equity actually deployed is less than 30% of the capital cost, actual equity shall be considered for determination of tariff:*
- ii. the equity invested in foreign currency shall be designated in Indian rupees on the date of each investment:*
- iii. 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.*

*Explanation-The premium, if any, raised by the generating company or the transmission licensee, as the case may be, while issuing share capital and investment of internal resources created out of its free reserve, for the funding of the project, shall be reckoned as paid up capital for the purpose of computing return on equity, only if*



such premium amount and internal resources are actually utilised for meeting the capital expenditure of the generating station or the transmission system.

(2) The generating company or the transmission licensee, as the case may be, shall submit the resolution of the Board of the company or approval of the competent authority in other cases regarding infusion of funds from internal resources in support of the utilization made or proposed to be made to meet the capital expenditure of the generating station or the transmission system including communication system, as the case may be.

(3) In case of the generating station and the transmission system including communication system declared under commercial operation prior to 1.4.2019, debt: equity ratio allowed by the Commission for determination of tariff for the period ending 31.3.2019 shall be considered:

Provided that in case of a generating station or a transmission system including communication system which has completed its useful life as on or after 1.4.2019, if the equity actually deployed as on 1.4.2019 is more than 30% of the capital cost, equity in excess of 30% shall not be taken into account for tariff computation;

Provided further that in case of projects owned by Damodar Valley Corporation, the debt: equity ratio shall be governed as per sub-clause (ii) of clause (2) of Regulation 72 of these regulations.

(4) In case of the generating station and the transmission system including communication system declared under commercial operation prior to 1.4.2019, but where debt: equity ratio has not been determined by the Commission for determination of tariff for the period ending 31.3.2019, the Commission shall approve the debt: equity ratio in accordance with clause (1) of this Regulation.

(5) Any expenditure incurred or projected to be incurred on or after 1.4.2019 as may be admitted by the Commission as additional capital expenditure 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.”

96. Accordingly, the debt equity-ratio claimed by the Petitioner as on the COD has been considered for the purpose of tariff. Similarly, for the purpose of funding of additional capital expenditure, considering the debt-equity ratio at the end of various periods, the debt-equity ratio allowed for the purpose of tariff is 70:30 for the period from COD of Unit-I to 31.1.2021 and 70:30 for the period from COD of Unit-II to 31.3.2024, is as under:

	<i>(Rs. in lakh)</i>					
	As on COD of Unit-II (31.1.2021)		Net additional capitalization from station COD to 31.3.2024		As on 31.3.2024	
	Amount	(%)	Amount	(%)	Amount	(%)
Debt (A)	748620.17	70.00%	89722.92	70.00%	838343.09	70.00%
Equity (B)	320837.22	30.00%	38452.68	30.00%	359289.90	30.00%
<b>Total (C) = (A) + (B)</b>	<b>1069457.39</b>	<b>100.00%</b>	<b>128175.59</b>	<b>100.00%</b>	<b>1197632.99</b>	<b>100.00%</b>



## **Return on Equity**

97. Regulation 30 of the 2019 Tariff Regulations provides as under:

*30. Return on Equity: (1) Return on equity shall be computed in rupee terms, on the equity base determined in accordance with Regulation 18 of these regulations.*

*(2) Return on equity shall be computed at the base rate of 15.50% for thermal generating station, transmission system including communication system and run-of river hydro generating station, and at the base rate of 16.50% for the storage type hydro generating stations including pumped storage hydro generating stations and run-of river generating station with pondage:*

*Provided that return on equity in respect of additional capitalization after cut-off date beyond the original scope excluding additional capitalization due to Change in Law, shall be computed at the weighted average rate of interest on actual loan portfolio of the generating station or the transmission system;*

*Provided further that:*

*i. In case of a new project, the rate of return on equity shall be reduced by 1.00% for such period as may be decided by the Commission, if the generating station or transmission system is found to be declared under commercial operation without commissioning of any of the Restricted Governor Mode Operation (RGMO) or Free Governor Mode Operation (FGMO), data telemetry, communication system up to load dispatch centre or protection system based on the report submitted by the respective RLDC;*

*ii. in case of existing generating station, as and when any of the requirements under (i) above of this Regulation are found lacking based on the report submitted by the concerned RLDC, rate of return on equity shall be reduced by 1.00% for the period for which the deficiency continues;*

*iii. in case of a thermal generating station, with effect from 1.4.2020:*

*a) rate of return on equity shall be reduced by 0.25% in case of failure to achieve the ramp rate of 1% per minute;*

*b) an additional rate of return on equity of 0.25% shall be allowed for every incremental ramp rate of 1% per minute achieved over and above the ramp rate of 1% per minute, subject to ceiling of additional rate of return on equity of 1.00%:*

*Provided that the detailed guidelines in this regard shall be issued by National Load Dispatch Centre by 30.6.2019.*

98. Regulation 31 of the 2019 Tariff Regulations provides as under:

*“ 31. Tax on Return on Equity. (1) The base rate of return on equity as allowed by the Commission under Regulation 30 of these regulations shall be grossed up with the effective tax rate of the respective financial year. For this purpose, the effective tax rate shall be considered on the basis of actual tax paid in respect of the financial year in line with the provisions of the relevant Finance Acts by the concerned generating company or the transmission licensee, as the case may be. The actual tax paid on income from other businesses including deferred tax liability (i.e. income from business other than business of generation or transmission, as the case may be) shall be excluded for the calculation of effective tax rate.*



(2) Rate of return on equity shall be rounded off to three decimal places and shall be computed as per the formula given below:

Rate of pre-tax return on equity = Base rate / (1-t)

Where "t" is the effective tax rate in accordance with clause (1) of this Regulation and shall be calculated at the beginning of every financial year based on the estimated profit and tax to be paid estimated in line with the provisions of the relevant Finance Act applicable for that financial year to the company on pro-rata basis by excluding the income of non-generation or non-transmission business, as the case may be, and the corresponding tax thereon. In case of generating company or transmission licensee paying Minimum Alternate Tax (MAT), "t" shall be considered as MAT rate including surcharge and cess.

*Illustration-*

(i) In case of a generating company or a transmission licensee paying Minimum Alternate Tax (MAT) @ 21.55% including surcharge and cess:

Rate of return on equity =  $15.50/(1-0.2155) = 19.758\%$

(ii) In case of a generating company or a transmission licensee paying normal corporate tax including surcharge and cess:

(a) Estimated Gross Income from generation or transmission business for FY 2019-20 is Rs 1,000 crore;

(b) Estimated Advance Tax for the year on above is Rs 240 crore;

(c) Effective Tax Rate for the year 2019-20 = Rs 240 Crore/Rs 1000 Crore = 24%;

(d) Rate of return on equity =  $15.50/(1-0.24) = 20.395\%$ .

(3) The generating company or the transmission licensee, as the case may be, shall true up the grossed up rate of return on equity at the end of every financial year based on actual tax paid together with any additional tax demand including interest thereon, duly adjusted for any refund of tax including interest received from the income tax authorities pertaining to the tariff period 2019-24 on actual gross income of any financial year. However, penalty, if any, arising on account of delay in deposit or short deposit of tax amount shall not be claimed by the generating company or the transmission licensee, as the case may be. Any under-recovery or over-recovery of grossed up rate on return on equity after truing up, shall be recovered or refunded to beneficiaries or the long term customers, as the case may be, on year to year basis."

99. The Petitioner has claimed the Return on Equity (ROE) considering the base rate of 15.50% without grossing-up, for the period 2019-24. The same has been considered for the purpose of tariff. Accordingly, ROE has been worked out as under:

	2019-20 (30.4.2019- 31.3.2020)	2020-21		2021-22	2022-23	2023-24
		(1.4.2020- 30.1.2021)	(31.1.2021- 31.3.2021)			
Normative Equity-Opening (A)	183807.56	191799.26	320837.22	324754.80	328140.30	346029.90
Addition of Equity due to additional capital expenditure (B)	7991.70	1793.37	3917.58	3385.50	17889.60	13260.00
Normative Equity-Closing (C) = (A) + (B)	191799.26	193592.63	324754.80	328140.30	346029.90	359289.90
Average Normative Equity (D) = (A+C)/2	187803.41	192695.94	322796.01	326447.55	337085.10	352659.90



Return on Equity (Base Rate) (E)	15.500%	15.500%	15.500%	15.500%	15.500%	15.500%
Effective Tax Rate (F)	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
Rate of Return on Equity (Pre Tax) (G) = (E)/(1-F)	15.500%	15.500%	15.500%	15.500%	15.500%	15.500%
<b>Return on Equity(Pre Tax) = (D)x(G) (Annualised)</b>	<b>29109.53</b>	<b>29867.87</b>	<b>50033.38</b>	<b>50599.37</b>	<b>52248.19</b>	<b>54662.28</b>

## Interest on Loan

100. Regulation 32 of the 2019 Tariff Regulations provides as under:

*“ 32. Interest on loan capital: (1) The loans arrived at in the manner indicated in Regulation 18 of these regulations shall be considered as gross normative loan for calculation of interest on loan.*

*(2) The normative loan outstanding as on 1.4.2019 shall be worked out by deducting the cumulative repayment as admitted by the Commission up to 31.3.2019 from the gross normative loan.*

*(3) The repayment for each of the year of the tariff period 2019-24 shall be deemed to be equal to the depreciation allowed for the corresponding year/period. In case of de-capitalization of assets, the repayment shall be adjusted by taking into account cumulative repayment on a pro rata basis and the adjustment should not exceed cumulative depreciation recovered upto the date of de-capitalisation of such asset.*

*(4) Notwithstanding any moratorium period availed by the generating company or the transmission licensee, as the case may be, the repayment of loan shall be considered from the first year of commercial operation of the project and shall be equal to the depreciation allowed for the year or part of the year.*

*(5) The rate of interest shall be the weighted average rate of interest calculated on the basis of the actual loan portfolio after providing appropriate accounting adjustment for interest capitalized:*

*Provided that if there is no actual loan for a particular year but normative loan is still outstanding, the last available weighted average rate of interest shall be considered;*

*Provided further that if the generating station or the transmission system, as the case may be, does not have actual loan, then the weighted average rate of interest of the generating company or the transmission licensee as a whole shall be considered.*

*(6) The interest on loan shall be calculated on the normative average loan of the year by applying the weighted average rate of interest.*

*(7) The changes to the terms and conditions of the loans shall be reflected from the date of such re-financing.”*

101. Interest on Loan has been computed as under:

- a) Gross normative loan corresponding to admissible capital cost works out to Rs. 428884.30 lakh, as on the COD of Unit-I and Rs. 748620.17 lakh, as on the COD of the generating station.
- b) Addition to normative loan on account of the additional capital expenditure approved above, has been considered.
- c) Depreciation allowed has been considered as repayment of the normative loan, during the respective period of the 2019-24.



- d) The weighted average rate of interest (WAROI) claimed by the Petitioner has been considered for the purpose of tariff.

102. Based on the above, interest on loan has been worked out as under:

	2019-20 (30.4.2019- 31.3.2020)	2020-21		2021-22	2022-23	2023-24
		(1.4.2020- 30.1.2021)	(31.1.2021- 31.3.2021)			
Gross opening loan (A)	428884.30	447531.60	748620.17	757761.19	765660.69	807403.09
Cumulative repayment of loan upto previous year (B)	0.00	28991.09	55986.61	65090.52	121099.12	178932.81
Net Loan Opening (C) = (A) - (B)	428884.30	418540.52	692633.57	692670.67	644561.57	628470.28
Addition due to additional capital expenditure (D)	18647.31	4184.53	9141.02	7899.50	41742.40	30940.00
Repayment of Loan during the period (E)	28991.09	26995.52	9103.91	56008.61	57833.69	60505.86
Less: Repayment adjustment on a/c of decap (F)	0.00	0.00	0.00	0.00	0.00	0.00
Net Repayment of Loan during the period (G) = (E) - (F)	28991.09	26995.52	9103.91	56008.61	57833.69	60505.86
Net Loan Closing (H) =(C) +(D) - (G)	418540.52	395729.53	692670.67	644561.57	628470.28	598904.42
Average Loan (I) = (C+H)/2	423712.41	407135.02	692652.12	668616.12	636515.92	613687.35
Weighted Average Rate of Interest of loan (J)	7.8534%	7.0340%	7.6760%	7.7177%	7.7400%	7.7660%
<b>Interest on Loan (K) = (I)*(J) (Annualised)</b>	<b>33275.93</b>	<b>28637.76</b>	<b>53167.68</b>	<b>51601.57</b>	<b>49266.51</b>	<b>47658.82</b>

## Depreciation

103. Regulation 33 of 2019 Tariff Regulations provides as under:

*“ 33. Depreciation: (1) Depreciation shall be computed from the date of commercial operation of a generating station or unit thereof or a transmission system or element thereof including communication system. In case of the tariff of all the units of a generating station or all elements of a transmission system including communication system for which a single tariff needs to be determined, the depreciation shall be computed from the effective date of commercial operation of the generating station or the transmission system taking into consideration the depreciation of individual units:*

*Provided that effective date of commercial operation shall be worked out by considering the actual date of commercial operation and installed capacity of all the units of the generating station or capital cost of all elements of the transmission system, for which single tariff needs to be determined.*

*(2) The value base for the purpose of depreciation shall be the capital cost of the asset admitted by the Commission. In case of multiple units of a generating station or multiple elements of a transmission system, weighted average life for the generating station of the transmission system shall be applied. Depreciation shall be chargeable from the first year of commercial operation. In case of commercial operation of the asset for part of the year, depreciation shall be charged on pro rata basis.*

*(3) The salvage value of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the capital cost of the asset:*

*Provided that the salvage value for IT equipment and software shall be considered as NIL and 100% value of the assets shall be considered depreciable; Provided*



*further that in case of hydro generating stations, the salvage value shall be as provided in the agreement, if any, signed by the developers with the State Government for development of the generating station:*

*Provided also that the capital cost of the assets of the hydro generating station for the purpose of computation of depreciated value shall correspond to the percentage of sale of electricity under long-term power purchase agreement at regulated tariff: Provided also that any depreciation disallowed on account of lower availability of the generating station or unit or transmission system as the case may be, shall not be allowed to be recovered at a later stage during the useful life or the extended life.*

*(4) Land other than the land held under lease and the land for reservoir in case of hydro generating station shall not be a depreciable asset and its cost shall be excluded from the capital cost while computing depreciable value of the asset.*

*(5) Depreciation shall be calculated annually based on Straight Line Method and at rates specified in Appendix-I to these regulations for the assets of the generating station and transmission system:*

*Provided that the remaining depreciable value as on 31st March of the year closing after a period of 12 years from the effective date of commercial operation of the station shall be spread over the balance useful life of the assets.*

*(6) In case of the existing projects, the balance depreciable value as on 1.4.2019 shall be worked out by deducting the cumulative depreciation as admitted by the Commission upto 31.3.2019 from the gross depreciable value of the assets.*

*(7) The generating company or the transmission licensee, as the case may be, shall submit the details of proposed capital expenditure five years before the completion of useful life of the project along with justification and proposed life extension. The Commission based on prudence check of such submissions shall approve the depreciation on capital expenditure.*

*(8) In case of de-capitalization of assets in respect of generating station or unit thereof or transmission system or element thereof, the cumulative depreciation shall be adjusted by taking into account the depreciation recovered in tariff by the decapitalized asset during its useful services.”*

104. The Petitioner has claimed depreciation considering the weighted average rate of depreciation of 5.030% for the period from the COD of Unit-I to 30.1.2021, 5.147% from the COD of Unit-II to 31.3.2024. The Petitioner has also considered the value of freehold land amounting to Rs.13192.14 lakh, for the period from the COD of Unit-I to 30.1.2021 and for Rs.13287.21 lakh for the period from the COD of Unit-II to 31.3.2024, for the purpose of computing the depreciable value. The Petitioner has also stated that the value of IT equipment and software for the purpose of working out the depreciable value shall be revised at the time of truing-up and accordingly 'nil' value has been considered. Accordingly, the WAROD as claimed by the Petitioner has been considered



subject to truing up. The depreciation allowed for the generating station has been calculated as under:

**(Rs. in lakh)**

	<b>2019-20 (30.4.19- 31.3.20)</b>	<b>2020-21 (1.4.20- 30.1.21)</b>	<b>2020-21 (31.1.21- 31.3.21)</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>
Average Capital Cost (A)	626011.36	642319.81	1075986.69	1088158.49	1123616.99	1175532.99
Value of freehold land included in average capital cost (B)	13192.14	13192.14	13287.21	13287.21	13287.21	13287.21
Aggregated Depreciable Value (C)= (A-B)*90%	551537.30	566214.91	956429.53	967384.15	999296.80	1046021.20
Remaining aggregate depreciable value at the beginning of the year (D) = (C) - (J)	551537.30	537223.83	900442.92	911397.54	878197.68	867088.39
Weighted Average Rate of Depreciation (WAROD) (E)	5.030%	5.030%	5.147%	5.147%	5.147%	5.147%
Depreciation during the period (F) = (A) * (E)(Pro-rated)	28991.09	26995.52	9103.91	56008.61	57833.69	60505.86
Depreciation during the year/ period (annualized) (G)	<b>31485.87</b>	<b>32306.12</b>	<b>55382.11</b>	<b>56008.61</b>	<b>57833.69</b>	<b>60505.86</b>
Cumulative depreciation at the end of the year (before adjustment for de-capitalisation) (H) = (F) + (Cumulative Depreciation (shown at J), at the end of the previous year)	28991.09	55986.61	65090.52	121099.12	178932.81	239438.67
Less: Depreciation adjustment on account of de-capitalisation (I)	0.00	0.00	0.00	0.00	0.00	0.00
Cumulative depreciation at the end of the year (J) = (H) - (I)	28991.09	55986.61	65090.52	121099.12	178932.81	239438.67

### **Operation and Maintenance Expenses**

105. Regulation 35(1)(1) of the 2019 Tariff Regulations provides the following O&M norms for coal based generating stations of 600 MW series and above capacity:

**(Rs. in Lakh/MW)**

<b>2019-20</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>
20.26	20.97	21.71	22.47	23.26

106. The Petitioner has claimed the following O&M expenses:

**(Rs. in lakh)**

<b>2019-20</b>	<b>2020-21</b>		<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>
<b>(30.4.2019- 31.3.2020)</b>	<b>(1.4.2020- 30.1.2021)</b>	<b>(31.1.2021- 31.3.2021)</b>			
13371.60	13840.20	27680.40	28657.20	29660.40	30703.20





107. It is noticed that the claims of the Petitioner in 2019-20 and 2020-21, on an annualized basis, are in line with the O&M expense norms. Accordingly, the O&M expenses claimed by the Petitioner are allowed as under:

	<i>Rs. in lakh)</i>					
	<b>2019-20 (30.4.2019- 31.3.2020)</b>	<b>2020-21 (1.4.2020- 30.1.2021)</b>	<b>2020-21 (31.1.2021- 31.3.2021)</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>
Annualized O&M expenses	13371.60	13840.20	27680.40	28657.20	29660.40	30703.20
Normative O&M Expenses for the period	12309.20	11565.10	4550.20	28657.20	29660.40	30703.20

### **Water Charges**

108. Regulation 35(1) (6) of the 2019 Tariff Regulations provide as under:

*“ (6) The Water Charges, Security Expenses and Capital Spares for thermal generating stations shall be allowed separately after prudence check:*

*Provided that water charges shall be allowed based on water consumption depending upon type of plant and type of cooling water system, subject to prudence check. The details regarding the same shall be furnished along with the petition;*

*Provided further that the generating station shall submit the assessment of the security requirement and estimated expenses;*

*Provided also that the generating station shall submit the details of year-wise actual capital spares consumed at the time of truing up with appropriate justification for incurring the same and substantiating that the same is not funded through compensatory allowance as per Regulation 17 of Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 or Special Allowance or claimed as a part of additional capitalisation or consumption of stores and spares and renovation and modernization.”*

109. In terms of the above regulation, water charges are to be allowed based on the water consumption depending upon type of plant, type of cooling water system etc., subject to prudence check of the details furnished by the Petitioner. The details furnished by the Petitioner in respect of claimed water charges are as under:

	<b>Remarks</b>
Type of Plant	Coal
Type of cooling water system	Closed Circuit Cooling System
Allocation of Water	44 Cusec
Rate of Water charges	Royalty – Rs. 6 Lakh/Cusec/year Water charges- Rs. 0.44/m3



110. The Petitioner vide affidavit dated 26.2.2024 has submitted the unit-wise actual water charges for the years 2019-20, 2020-21 and 2021-22 duly certified by the auditor.

111. The Petitioner has claimed water charges vide Form 3A and Form-19 of the Petition. Accordingly, the water charges are allowed as under:

	<i>(Rs. in lakh)</i>					
	2019-20 (30.4.2019-31.3.2020)	2020-21 (1.4.2020-30.1.2021) (31.1.2021-31.3.2021)		2021-22	2022-23	2023-24
Water charges allowed on annualized basis	109.22	131.59	319.86	327.85	327.85	328.21

### **Capital Spares**

112. The Petitioner has not claimed capital spares, on consumption basis and hence, the same has not been considered.

### **Security Expenses**

113. The Security expenses claimed by the Petitioner are as under:

<i>(Rs. in lakh)</i>					
2019-20 (30.4.2019 to 31.3.2020)	2020-21 (1.4.2020 to 30.1.2021) (31.1.2021 to 31.3.2021)		2021-22	2022-23	2023-24
1247.61	1146.02	2463.03	2586.18	2715.49	2851.27

114. The Petitioner has submitted that the above expenses have been claimed based on the estimated expenses for the period 2019-24 and is subject to a retrospective adjustment, based on actuals, at the time of the truing-up of tariff. Further, the Petitioner vide affidavit dated 24.4.2023, has submitted that the actual security expenses from the COD of Unit-I to 31.3.2020, 1.4.2020 to COD of Unit-II and 31.1.2021 to 31.3.2021 is Rs. 1148.77 lakh, Rs. 957.64 lakh and Rs. 404.49 lakh respectively. The matter has been considered. Since the Petitioner has furnished the actual security expenses incurred for the period from 2019-20 to 2020-21, the same are allowed. Also, the total



actual expenditure for the year 2020-21 is allowed for the years 2021-22, 2022-23 and 2023-24 after escalation of 5% per annum on a projection basis, subject to truing-up. The Petitioner has not furnished the assessment of security requirement, as required under the provisions of the 2019 Tariff Regulations. Accordingly, the Petitioner is directed to furnish the requisite details for carrying out the prudence check of the security expenses at the time of truing-up of tariff. Accordingly, the security expenses claimed and allowed for the generating station are as under:

	2019-20 (30.4.2019 to 31.3.2020)	2020-21		2021-22	2022-23	2023-24
		(1.4.2020 to 30.1.2021)	(31.1.2021 to 31.3.2021)			
Security expenses claimed	1247.61	1146.02	2463.03	2586.18	2715.49	2851.27
Security expenses allowed	1148.77	957.64	404.49	1430.24	1501.75	1576.84

**O&M expenses- ECS (FGD & SCR)**

115. It is observed that the Petitioner has claimed amounts for Rs. 1159.42 lakh and Rs 1200.00 lakh towards O&M expenses for ECS (FGD &SCR) in 2022-23 and 2024 on a projection basis. The Commission is of the view that the O&M expenses towards ECS (FGD & SCR) is tentative and the Petitioner has not yet implemented the same. Accordingly, the claims are not considered at this stage. However, the Petitioner is permitted to claim the O&M expenses towards FGD on the basis of the actual cost of FGD package, at the time of truing-up of tariff and the same will be considered in accordance with law.

116. In view of the above deliberations, the total O&M expenses allowed to the generating station for the period 2019-24 is as under:



(Rs. in lakh)

		2019-20 (30.4.2019- 31.3.2020)	2020-21 (1.4.2020- 30.1.2021)	2020-21 (31.1.2021- 31.3.2021)	2021-22	2022-23	2023-24
Installed Capacity (MW) (A)		660.00	660.00	1320.00	1320.00	1320.00	1320.00
O&M Expenses under Reg.35(1) in Rs lakh / MW (B)	Claimed	20.26	20.97	20.97	21.71	22.47	23.26
	Allowed	20.26	20.97	20.97	21.71	22.47	23.26
Total O&M Expenses (in Rs lakh) (C) = (A)*(B)	Claimed	13371.60	13840.20	27680.40	28657.20	29660.40	30703.20
	Allowed	13371.60	13840.20	27680.40	28657.20	29660.40	30703.20
Water Charges (D)	Claimed	109.22	131.59	319.86	327.85	327.85	328.21
	Allowed	109.22	131.59	319.86	327.85	327.85	328.21
Security Expenses (E)	Claimed	1247.61	1146.02	2463.03	2586.18	2715.49	2851.27
	Allowed	1148.77	957.64	404.49	1430.24	1501.75	1576.84
O&M expenses- ECS (FGD & SCR) (F)	Claimed	0.00	0.00	0.00	0.00	1159.42	1200.00
	Allowed	0.00	0.00	0.00	0.00	0.00	0.00
Total O&M Expenses as allowed (including Water Charges & Security expenses) (G) = (C+D+E+F) (Annualised)	Claimed	14728.43	15117.81	30463.29	31571.24	33863.17	35082.67
	Allowed	14629.59	14929.43	28404.75	30415.29	31490.00	32608.25

### **Operational Norms**

117. The operational norms in respect of the generating station i.e. normative annual plant availability factor, gross station heat rate, specific fuel oil consumption and auxiliary power consumption are discussed below:

#### **(a) Normative Annual Plant Availability Factor**

118. In terms of Regulation 49(A)(a) of the 2019 Tariff Regulations, the Petitioner has considered NAPAF of 85% during the period 2019-24 and the same is allowed.

#### **(b) Gross Station Heat Rate (kCal/kWh)**

119. Regulation 49(C)(b)(i) of the 2019 Tariff Regulations provides as under:

*“ b) Thermal Generating Stations achieving COD on or after 1.4.2009:*

*(i) For Coal-based and lignite-fired Thermal Generating Stations:*

*1.05 X Design Heat Rate (kCal/kWh)*

*Where the Design Heat Rate of a generating unit means the unit heat rate guaranteed by the supplier at conditions of 100% MCR, zero per cent make up, design coal and design cooling water temperature/back pressure.*

*Provided that the design heat rate shall not exceed the following maximum design, unit heat rates depending upon the pressure and temperature ratings of the units:*

<i>Pressure Rating (Kg/cm<sup>2</sup>)</i>	<i>150</i>	<i>170</i>	<i>170</i>
<i>SHT/RHT (°C)</i>	<i>535/535</i>	<i>537/537</i>	<i>537/565</i>



Type of BFP	Electrical Driven	Turbine Driven	Turbine Driven
Max Turbine Heat Rate (kCal/kWh)	1955	1950	1935
<b>Min. Boiler Efficiency</b>			
Sub-Bituminous Indian Coal (%)	0.86	0.86	0.86
Bituminous Imported Coal (%)	0.89	0.89	0.89
<b>Max. Design Heat Rate (kCal/kWh)</b>			
Sub-Bituminous Indian Coal (%)	2273	2267	2250
Bituminous Imported Coal (%)	2197	2191	2174

Pressure Rating (Kg/cm <sup>2</sup> )	247	247	270	270
SHT/RHT (0C)	537/565	565/593	593/593	600/600
Type of BFP	Turbine Driven	Turbine Driven	Turbine Driven	Turbine Driven
Max Turbine Heat Rate (kCal/kWh)	1900	1850	1810	1800
<b>Min. Boiler Efficiency (%)</b>				
Sub-Bituminous Indian Coal (%)	0.86	0.86	0.865	0.865
Bituminous Imported Coal (%)	0.89	0.89	0.895	0.895
<b>Max. Design Heat Rate (kCal/kWh)</b>				
Sub-Bituminous Indian Coal (%)	2222	2151	2105	2081
Bituminous Imported Coal (%)	2135	2078	2034	2022

Provided further that in case pressure and temperature parameters of a unit are different from above ratings, the maximum design heat rate of the unit of the nearest class shall be taken:

Provided also that where heat rate of the unit has not been guaranteed but turbine cycle heat rate and boiler efficiency are guaranteed separately by the same supplier or different suppliers, the design heat rate of the unit shall be arrived at by using guaranteed turbine cycle heat rate and boiler efficiency:

Provided also that where the boiler efficiency is lower than 86% for Subbituminous Indian coal and 89% for bituminous imported coal, the same shall be considered as 86% and 89% for Sub-bituminous Indian coal and bituminous imported coal respectively, for computation of station heat rate:

Provided also that maximum turbine cycle heat rate shall be adjusted for type of dry cooling system:

Provided also that in case of coal based generating station if one or more generating units were declared under commercial operation prior to 1.4.2019, the heat rate norms for those generating units as well as generating units declared under commercial operation on or after 1.4.2019 shall be lowest of the



*heat rate norms considered by the Commission during tariff period 2014-19 or those arrived at by above methodology or the norms as per the sub-clause (C)(a)(i) of this Regulation:*

*Provided also that in case of lignite-fired generating stations (including stations based on CFBC technology), maximum design heat rates shall be increased using factor for moisture content given in sub-clause (C)(a)(iv) of this Regulation:*

*Provided also that for Generating stations based on coal rejects, the Commission shall approve the Station Heat Rate on case to case basis.*

*Note: In respect of generating units where the boiler feed pumps are electrically operated, the maximum design heat rate of the unit shall be 40 kCal/kWh lower than the maximum design heat rate of the unit specified above with turbine driven Boiler Feed Pump.”*

120. In terms of Regulation 49(C)(b)(i) of the 2019 Tariff Regulations, the Petitioner has claimed the GSHR of 2255.77 kCal/kWh. The Petitioner has submitted that in respect of units declared after 31.3.2009, the Commission has prescribed the norms for boiler efficiency and turbine heat rate separately, for deriving the unit heat rate, where the Unit Heat Rate is not guaranteed by the supplier(s). It has submitted that the TG and SG packages, in the generating station, were awarded during the period 2009-14 (SG: 30.4.2012 & TG 1.5.2012) and the equipments including SG and TG specifications for tendering/award was stipulated, considering the boiler efficiency and the turbine heat rate specified under the Tariff Regulations prevalent at that time, and based on the same, the equipments were ordered through international competitive bidding. The Petitioner has further submitted that it was not possible for the Petitioner to specify the efficiency parameters at the time of finalizing the contracts in the generating station as per the efficiency parameters specified in the subsequent Tariff Regulations or the 2019 Tariff Regulations, which are more stringent. The Petitioner has also stated that if it had stipulated more stringent unit heat rate, this would have increased the capital cost commensurate to the efficiency parameters sought. It has submitted that the benefit of the lower capital cost due to lower efficiency parameters has already been passed onto the beneficiaries in terms of lower capital cost. Therefore, the Petitioner has pointed out



that if the boiler efficiency for working out the normative heat rate is considered as 86% instead of the actual design efficiency of 85.74%, the unit heat rate would be worked out to be 2248.95 kcal/kwh and the operating margin available over the design heat rate would be 4.68% only, which is less than the operating margin of 5% allowed in the 2019 Tariff Regulations. The Petitioner has therefore prayed to allow the Gross Station Heat Rate (GSHR) based on guaranteed turbine cycle heat rate of 1842 kcal/kwh and design boiler efficiency of 85.74%, with an operating margin of 5% from the guaranteed design value.

121. The matter has been considered. It is observed that the Commission has discussed the rationale for fixing the minimum boiler efficiency norm as 86%. It is therefore evident that the Commission, after considering the comments/suggestions of the stakeholders, had specified the terms and conditions for the determination of tariff, including the operational norms, applicable for the period from 1.4.2019. In our considered view, the operational norms specified under Regulation 49(C)(a) of the 2019 Tariff Regulations, cannot be categorised as unreasonable, so as to justify the exercise of power to relax.

122. Further, the Petitioner has prayed for relaxation of the heat rate norms under Regulation 49(C)(b) of 2019 Tariff Regulations, by considering the lower boiler efficiency than 86%, only on the premise that its units are not being able to meet the norms prescribed in the 2014 Tariff Regulations. In our considered view, the Petitioner, through better and improved O&M practices, can achieve the boiler efficiency of 86% as specified under the 2014 Tariff Regulations. Therefore, we do not find any justification to relax the Heat rate norms. In our view, there is no merit in the submissions of the Petitioner to grant the relief prayed for.



123. Based on the above discussions, the prayer of the Petitioner is rejected and the GSHR in accordance with Regulation 49(C)(b) of the 2019 Tariff Regulations, is calculated as under:

- a) Guaranteed Turbine Cycle Heat Rate indicated in the Form 2 of the Tariff forms is 1842 kCal/kWh and design boiler efficiency is 85.74% as submitted by the Petitioner vide Form-2. As claimed, the boiler efficiency is less than 86%. Accordingly, the boiler efficiency is considered as 86% for the determination of the allowable GSHR. Accordingly, the design heat rate of the generating station is 2248.95 kCal/kWh ( $2141.86 \times 1.05$ ). Hence, the GSHR of 2248.95 Kcal/kWh is considered as per Regulation 49(c)(b) of the 2019 Tariff Regulations.

**(b) Specific Oil Consumption**

124. In terms of Regulation 49(D)(a) of the 2019 Tariff Regulations, the Petitioner has considered the secondary fuel oil consumption of 0.50 ml/kWh during the period 2019-24, and the same is allowed.

**(c) Auxiliary Energy Consumption**

125. In terms of Regulation 49(E)(a) of the 2019 Tariff Regulations, the Petitioner has considered the auxiliary energy consumption of 6.25% and the same is allowed.

**Interest on Working Capital**

126. Regulation 34 of the 2019 Tariff Regulations provides as under:

*“34. Interest on Working Capital: (1) The working capital shall cover:*

*(a) For Coal-based/lignite-fired thermal generating stations:*

*(i) Cost of coal or lignite and limestone towards stock if applicable for 10 days for pit-head generating stations and 20 days for non-pit-head generating stations for generation corresponding to the normative annual plant availability factor or the maximum coal/lignite stock storage capacity whichever is lower;*

*(ii) Advance payment for 30 days towards cost of coal or lignite and limestone for generation corresponding to the normative annual plant availability factor;*

*(iii) Cost of secondary fuel oil for two months for generation corresponding to the normative annual plant availability factor and in case of use of more than one secondary fuel oil cost of fuel oil stock for the main secondary fuel oil;*

*(iv) Maintenance spares @ 20% of operation and maintenance expenses including water charges and security expenses;*

*(v) Receivables equivalent to 45 days of capacity charge and energy charge for sale of electricity calculated on the normative annual plant availability factor; and*

*(vi) Operation and maintenance expenses including water charges and security expenses for one month.*

*(b) xxxx*





(3) Rate of interest on working capital shall be on normative basis and shall be considered as the bank rate as on 1.4.2019 or as on 1st April of the year during the tariff period 2019-24 in which the generating station or a unit thereof or the transmission system including communication system or element thereof as the case may be is declared under commercial operation whichever is later.

Provided that in case of truing-up the rate of interest on working capital shall be considered at bank rate as on 1st April of each of the financial year during the tariff period 2019-24.

(4) Interest on working capital shall be payable on normative basis notwithstanding that the generating company or the transmission licensee has not taken loan for working capital from any outside agency.”

### **Fuel Cost and Energy Charges in Working Capital**

127. Regulation 34(2) of the 2019 Tariff Regulations provides that the computation of the cost of fuel as part of Interest on Working Capital (IWC) is to be based on the landed price and GCV of fuel as per actuals, for the third quarter of preceding financial year in case of each financial year for which tariff is to be determined. Regulation 43(2) of the 2019 Tariff Regulations provides as under:

“(2) Energy charge rate (ECR) in Rupees per kWh on ex-power plant basis shall be determined to three decimal places in accordance with the following formulae:

(a) For coal based and lignite fired stations:

$$ECR = \{(SHR - SFC \times CVSF) \times LPPF / CVPF + SFC \times LPSFi + LC \times LPL\} \times 100 / (100 - AUX)$$

xxxx

Where,

AUX = Normative auxiliary energy consumption in percentage.

CVPF = (a) Weighted Average Gross calorific value of coal as received, in kCal per kg for coal based stations less 85 Kcal/Kg on account of variation during storage at generating station;

(b) Weighted Average Gross calorific value of primary fuel as received, in kCal per kg, per litre or per standard cubic meter, as applicable for lignite, gas and liquid fuel based stations;

(c) In case of blending of fuel from different sources, the weighted average Gross calorific value of primary fuel shall be arrived in proportion to blending ratio:

CVSF = Calorific value of secondary fuel, in kCal per ml;

ECR = Energy charge rate, in Rupees per kWh sent out;

SHR = Gross station heat rate, in kCal per kWh;

LC = Normative limestone consumption in kg per kWh;

LPL = Weighted average landed cost of limestone in Rupees per kg;

LPPF = Weighted average landed fuel cost of primary fuel, in Rupees per kg, per litre or per standard cubic metre, as applicable, during the month. (In case of blending of fuel from different sources, the weighted average landed fuel cost of primary fuel shall be arrived in proportion to blending ratio);

SFC= Normative specific fuel oil consumption, in ml per kWh;

LPSFi= Weighted Average Landed Fuel Cost of Secondary Fuel in Rs./ ml during the month:



*Provided that energy charge rate for a gas or liquid fuel based station shall be adjusted for open cycle operation based on certification of Member Secretary of respective Regional Power Committee during the month.”*

128. The Petitioner has claimed the cost of fuel component in the working capital and Energy Charge Rate (ECR) based on the following:

- a) Operational norms as per 2019 Tariff Regulations.
- b) Price and “as received” GCV of coal (after reducing the same by 85 kCal/kWh in terms of above-quoted Regulation) procured or the three months before COD of Unit-I January 19, February 19 and March 19, and three months preceding COD of Unit-II October 20, November 20, December 20.
- c) Price and GCV of secondary fuel oil for the three months.

129. The Petitioner has claimed the Energy Charge Rate (ECR) ex-bus of 274.1 paise/kWh from 30.4.2019 (COD of Unit-I) till 31.3.2020, 334.7 paise/kWh from 1.4.2020 to 30.1.2021, 256.5 paise/kWh from 31.1.2021 (COD of Unit-II) to 31.3.2022, 261.4 paise/kWh till 31.3.2024 for the generating station, based on the GCV and price of fuel (coal and secondary fuel oil) prevailing during the preceding three months. The summary is as under below:

2019-20 (COD Unit-I 30.4.2019 to 31.3.2020)	2020-21		2021-22	2022-23	2023-24
	(1.4.2020 to 30.1.2021)	(COD Unit-II 31.1.2021 to 31.3.2021)			
274.067	334.660	256.500	256.500	261.444	261.444

130. As regards the details of coal for computation of the Energy charges, the Petitioner vide affidavit dated 24.4.2023 has submitted a revised Form-15. The cost of ‘reagent’ has not been considered in the calculation of the working capital, since the same is on a tentative basis and the Petitioner is at liberty to approach the Commission, with the actual amount at the time of truing-up of tariff. It is observed that the Petitioner has claimed the Weighted Average Price and GCV of coal, including the opening coal stock and value and the same has been considered, keeping in view that the value for



the coal sourced in the respective months, have already been taken into consideration while calculating the Weighted Average Price and GCV of coal on a monthly basis (three months). It is observed that for the claim of Weighted Average Price and GCV of coal for the year 2020-21, the Petitioner has submitted the details of coal sourced for the month of October, 2019 only, but has not submitted the details for the months of November, 2019 and December, 2019 (since there is no coal supply observed during the period). It is further noticed that during the month of October 2019, the Petitioner has claimed an adjustment of Rs. 215.57 lakh charged by the coal companies, which does not pertain to October, 2019 and Rs. 116.71 lakh (which is on the higher side as compared to other months data during the period 2019-24). However, the reasons for the same have not been made available. Accordingly, in the absence of this information, we have considered the Weighted Average Price and GCV of coal, as considered for the year 2019-20, i.e., for the months of January 2019, February, 2019 and March, 2019. The Petitioner is, however, directed to furnish the Weighted Average Price and GCV of coal as per Regulation 34(2) of the 2019 Tariff Regulations, at the time of truing-up of tariff. In view of above, the following Weighted Average Price and GCV of coal has been considered for the purpose of tariff:

	<b>2019-20 (30.4.2019-31.3.2020)</b>		<b>2020-21 (1.4.2020-30.1.2021)</b>		<b>2020-21 (31.1.2021-31.3.2021)</b>	
	Claimed	Allowed	Claimed	Allowed	Claimed	Allowed
Weighted average price of coal (Rs./MT)	4261.52	4508.25	5078.04	4508.25	3753.05	3865.19
Weighted average GCV of coal (kCal/kg)	3777.55	3925.28	3777.55	3925.28	3544.48	3503.15

131. Accordingly, the rate of energy charges, based on the operational norms, as approved above, is determined as under:



**(Rs. in lakh)**

S. No		Unit	2019-20 (30.4.2019-31.3.2020)	2020-21		2021-22	2022-23	2023-24
				(1.4.2020-30.1.2021)	(31.1.2020-31.3.2021)			
1	Capacity	MW	660	660	1320	1320	1320	1320
2	Gross Station Heat Rate	Kcal/kWh	2248.95	2248.95	2248.95	2248.95	2248.95	2248.95
3	Auxiliary Power Consumption	%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%
4	Secondary Fuel Oil Consumption	mL/kWh	0.50	0.50	0.50	0.50	0.50	0.50
5	Weighted Average GCV of Oil	kCal/L	9569.09	9339.00	9562.08	9562.08	9562.08	9562.08
6	Weighted Average GCV of Coal (as received)	kCal/kg	3925.28	3925.28	3503.15	3503.15	3503.15	3503.15
7	Weighted Average price of oil	Rs/KL	59999.90	54904.87	42522.84	42522.84	42522.84	42522.84
8	Weighted Average price of coal	Rs/MT	4508.25	4508.25	3865.19	3865.19	3865.19	3865.19
9	Rate of energy charge ex-bus	Rs/kWh	2.7810	2.7790	2.6640	2.6640	2.6640	2.6640

132. Considering the above, the cost for fuel component in working capital is worked out and allowed as under:

**(Rs. in lakh)**

	2019-20 (30.4.2019-31.3.2020)	2020-21 (1.4.2020-30.1.2021)	2020-21 (31.1.2020-31.3.2021)	2021-22	2022-23	2023-24
Cost of Coal towards stock (30 days per annum) corresponding to NAPAF	10410.91	10411.44	20002.98	20002.98	20002.98	20002.98
Cost of Secondary fuel oil 2 months per annum corresponding to NAPAF	246.39	224.85	348.29	348.29	348.29	349.24

### **Working Capital for Maintenance Spares**

133. The Petitioner has claimed the maintenance spares in the working capital on annualised basis, as under:

**(Rs. in lakh)**

2019-20 (30.4.2019 to 31.3.2020)	2020-21		2021-22	2022-23	2023-24
	(1.4.2020 to 30.1.2021)	(31.1.2021 to 31.3.2021)			
2945.69	3023.56	6092.66	6314.25	6772.63	7016.53

134. Regulation 34(1)(a)(iv) of the 2019 Tariff Regulations provide for the maintenance spares @ 20% of the O&M expenses (including water charges and



security expenses). Accordingly, the maintenance spares @20% of the O&M expenses (including water charges and security expenses) is allowed as under:

*(Rs. in lakh)*

2019-20 (30.4.2019 to 31.3.2020)	2020-21		2021-22	2022-23	2023-24
	(1.4.2020 to 30.1.2021)	(31.1.2021 to 31.3.2021)			
2925.92	2985.89	5680.95	6083.06	6298.00	6521.65

### **Working Capital for Receivables**

135. In terms of Regulation 34(1)(a)(v) of the 2019 Tariff Regulations, the receivables equivalent to 45 days of capacity charges and energy charges is worked out and allowed as under:

*(Rs. in lakh)*

	2019-20 (30.4.2019- 31.3.2020)	2020-21		2021-22	2022-23	2023-24
		(1.4.2020- 30.1.2021)	(31.1.2021- 31.3.2021)			
Variable Charges (45 days)	15796.43	15785.07	30263.71	30263.71	30263.71	30263.71
Fixed Charges (45 days)	14105.42	13748.68	24390.20	24511.83	24792.31	25484.78
<b>Total</b>	29901.85	29533.74	54653.91	54775.54	55056.02	55748.49

### **Working Capital for O&M Expenses (1 month)**

136. The Petitioner has claimed the O&M expenses for 1 month in the working capital on annualised basis, as under:

*(Rs. in lakh)*

2019-20 (30.4.2019 to 31.3.2020)	2020-21		2021-22	2022-23	2023-24
	(1.4.2020 to 30.1.2021)	(31.1.2021 to 31.3.2021)			
1227.37	1259.82	2538.61	2630.94	2821.93	2923.56

137. Regulation 34(1)(a)(vi) of the 2019 Tariff Regulations provide for the O&M expenses equivalent to 1 month of the O&M expenses (including water charges and security expenses). Accordingly, the O&M expenses, equivalent to 1 month of the O&M expenses (including water charges and security expenses) is allowed as under:

*(Rs. in lakh)*

2019-20 (30.4.2019 to 31.3.2020)	2020-21		2021-22	2022-23	2023-24
	(1.4.2020 to 30.1.2021)	(31.1.2021 to 31.3.2021)			
1219.13	1244.12	2367.06	2534.61	2624.17	2717.35



### Rate of Interest on working capital

138. The cost of reagent has not been considered In line with Regulation 34(3) of the 2019 Tariff Regulations. The rate of interest on working capital is considered as 12.05% (i.e. 1 year SBI MCLR of 8.55% as on 1.4.2019 + 350 bps) for the year 2019-20, 11.25% (i.e. 1 year SBI MCLR of 7.75% as on 1.4.2020 + 350 bps) for the year 2020-21, 10.50% (i.e. 1 year SBI MCLR of 7.00% as on 1.4.2021 / 1.4.2022 + 350 bps) for the period 2021-23 and 12.00% (i.e. 1 year SBI MCLR of 8.50% as on 1.4.2023 + 350 bps) for the year 2023-24. Accordingly, interest on working capital is allowed as under:

	2019-20 (30.4.2019- 31.3.2020)	2020-21		2021-22	2022-23	2023-24
		(1.4.2020- 30.1.2021)	(31.1.2021- 31.3.2021)			
Cost of Coal - 10 or 20 days (pit or non-pit) (A)	6940.61	6940.96	13335.32	13335.32	13335.32	13335.32
Cost of Coal - 30 days(B)	10410.91	10411.44	20002.98	20002.98	20002.98	20002.98
Cost of Secondary fuel- 2 months (C)	246.39	224.85	348.29	348.29	348.29	349.24
Maintenance Spares - 20% of O&M expenses (D)	2925.92	2985.89	5680.95	6083.06	6298.00	6521.65
Receivables - 45 days (E)	29901.85	29533.74	54653.91	54775.54	55056.02	55748.49
O&M expenses - 1 month (F)	1219.13	1244.12	2367.06	2534.61	2624.17	2717.35
<b>Total Working Capital (I) = (A+B+C+D+E+F)</b>	<b>51644.81</b>	<b>51341.01</b>	<b>96388.51</b>	<b>97079.79</b>	<b>97664.77</b>	<b>98675.03</b>
Rate of Interest (G)	12.05%	11.25%	11.25%	10.50%	10.50%	12.00%
<b>Total Interest on Working capital (H) = (I)*(G) (Prorated)</b>	<b>6223.20</b>	<b>5775.86</b>	<b>10843.71</b>	<b>10193.38</b>	<b>10254.80</b>	<b>11841.00</b>

### Annual Fixed Charges approved for the period 2019-24

139. Accordingly, the annual fixed charges approved for the generating station for the period 2019-24, is summarised below:

	2019-20 (30.4.2019- 31.3.2020)	2020-21		2021-22	2022-23	2023-24
		(1.4.2020- 30.1.2021)	(31.1.2021- 31.3.2021)			
Depreciation (A)	31485.87	32306.12	55382.11	56008.61	57833.69	60505.86
Interest on Loan (B)	33275.93	28637.76	53167.68	51601.57	49266.51	47658.82
Return on Equity (C)	29109.53	29867.87	50033.38	50599.37	52248.19	54662.28
Interest on Working Capital (D)	6223.20	5775.86	10843.71	10193.38	10254.80	11841.00
O&M Expenses (E)	14629.59	14929.43	28404.75	30415.29	31490.00	32608.25



<b>Total AFC (F) = (A+B+C+D+E)</b>	<b>114724.12</b>	<b>111517.04</b>	<b>197831.63</b>	<b>198818.21</b>	<b>201093.20</b>	<b>207276.21</b>
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Note: (1) All figures are on annualized basis. (2) All figures under each head have been rounded. The figure in total column in each year is also rounded. As such the sum of individual items may not be equal to the arithmetic total of the column.

140. The pro-rata fixed charges shall be calculated using the bases as under:

	<b>2019-20 (30.4.2019- 31.3.2020)</b>	<b>2020-21</b>		<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>
		<b>(1.4.2020- 30.1.2021)</b>	<b>(31.1.2021- 31.3.2021)</b>			
Number of days in year	366	365	365	365	365	366
<b>Number of days for which tariff is to be calculated</b>	<b>337</b>	<b>305</b>	<b>60</b>	<b>365</b>	<b>365</b>	<b>366</b>

141. The annual fixed charges approved as above, is subject to truing up in terms of Regulation 13 of the 2019 Tariff Regulations.

### **Application Fee and Publication expenses**

142. The Petitioner has sought the reimbursement of the fees paid by it, for filing the tariff petition for the period 2019-24 and for publication expenses. The Petitioner shall be entitled to reimbursement of the filing fees and publication expenses in connection with the present petition, directly from the beneficiaries on a pro-rata basis in accordance with Regulation 70(1) of the 2019 Tariff Regulations.

143. Similarly, RLDC Fees and charges paid by the Petitioner in terms of the Central Electricity Regulatory Commission (Fees and Charges of Regional Load Dispatch Centre and other related matters) Regulations, 2019, shall be recovered from the beneficiaries. In addition, the Petitioner is entitled for recovery of statutory taxes, levies, duties, cess etc. levied by the statutory authorities in accordance with the 2019 Tariff Regulations.

144. Petition No. 183/GT/2022 is disposed of in terms of the above.

**Sd/-  
(Pravas Kumar Singh)  
Member**

**Sd/-  
(Arun Goyal)  
Member**

**Sd/-  
(Jishnu Barua)  
Chairperson**

