CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

Petition No. 419/GT/2020

Coram:
Shri P. K. Pujari, Chairperson
Shri I. S. Jha, Member
Shri Arun Goyal, Member
Shri Pravas Kumar Singh, Member

Date of Order: **23rd March, 2022**

In the matter of:

Petition for approval of tariff of the Korba STPS Stage-III (500 MW) for the period from 1.4.2019 to 31.3.2024

And

In the matter of:

NTPC Limited,
NTPC Bhawan, Core-7, Scope Complex,
7, Institutional Area, Lodhi Road
New Delhi-110003. **.....Petitioner**

Vs

1. Madhya Pradesh Power Management Company Limited,
   Shakti Bhawan, Vidyut Nagar, Rampur,
   Jabalpur-110003.

2. Maharashtra State Electricity Distribution Company Limited,
   Prakashgad, Bandra (East),
   Mumbai-400051.

3. Gujarat Urja Vikas Nigam Limited,
   2nd Floor Sardar Patel Vidyut Bhawan, Racecourse,
   Vadodara -390007.

4. Chhattisgarh State Power Distribution Company Limited,
   Vidyut Sewa Bhawan, Dagania,
   Raipur – 492001.

5. Electricity Department, Government of Goa,
   3rd Floor, Vidyut Bhawan,
   Panaji, Goa-403001.

6. DNH Power Distribution Corporation Limited,
   UT of DNH, Silvassa-396230.

7. Electricity Department,
Administration of Daman & Diu,
Daman-396210.

8. CESC (Chamundeshwari Electricity Supply Corporation Limited,
Corporate Office, No. 29, Vijayanagar,
2nd stage, Hinkal,
Mysore – 570 017.

9. Gulbarga Electricity Supply Company Limited,
Main road,
Gulbarga – 585 102, Karnataka.

10. Hubli Electricity Supply Company Limited,
Corporate office, P.B.Road, Navanagar,
Hubli – 580 025.

11. Kerala State Electricity Board Limited,
Vaidyuthi Bhavanam, Pattom,
Thiruvananthapuram – 695 004.

12. Electricity Department,
Government of Puducherry,
137, NSC Bose Salai
Puducherry- 605001 **...Respondents**

Parties present:

Shri Venkatesh Advocate NTPC Limited
Mr. Siddharth Joshi Advocate NTPC Limited
Mr. Abhiprav Singh Advocate NTPC Limited
Mr. Rishub Kapoor Advocate NTPC Limited
Mr. Parimal Piyush, NTPC Limited
Mr. Arvind Banerjee, CSPDCL
Ms. Anurag Naik, MPPMCL

ORDER

This petition has been filed by the Petitioner, NTPC Limited for approval of tariff of Korba STPS Stage-III (500 MW) (hereinafter referred to as 'the generating station') for the 2019-24 tariff period in accordance with the provisions of the Central Electricity Regulatory Commission (Terms & Conditions of Tariff) Regulations, 2019 (hereinafter referred to as 'the 2019 Tariff Regulations').

2. The generating station with an installed capacity of 500 MW achieved COD on 21.3.2011. Petition No.340/GT/2014 was filed by the Petitioner for approval of tariff of the generating station for the 2014-19 tariff period and the Commission vide its order dated 3.3.2017 approved the capital cost and annual fixed charges of the generating station. Thereafter, the Petitioner filed Petition No.395/GT/2020 for truing-up of tariff for the 2014-19 tariff period and the capital cost and annual fixed charges approved vide order dated 21.03.2022 are as under:

Capital Cost allowed

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Capital Cost (A)	250011.40	253002.11	254751.23	256316.16	257517.11
Add: Admitted Additional capital expenditure (B)	2990.71	1749.12	1564.93	1200.95	321.95
Closing Capital cost (C) = (A+B)	**253002.11**	**254751.23**	**256316.16**	**257517.11**	**257839.06**
Average Capital cost (D) = [(A+C)/2]	251506.75	253876.67	255533.69	256916.63	257678.08

Annual Fixed Charges allowed

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	13023.35	13040.78	13006.24	13070.15	13108.68
Interest on Loan	12547.69	11621.68	10305.61	8819.19	7591.75
Return on Equity	14357.42	14567.07	14665.02	14746.78	14831.57
Interest on Working Capital	2741.25	2763.95	2754.99	2789.25	2802.96
O&M Expenses	10032.20	10625.23	10976.06	11559.14	12188.63
Total annual fixed charges	**52701.91**	**52618.71**	**51707.93**	**50984.51**	**50523.59**

3. The capital cost and the annual fixed charges claimed by the Petitioner in the present petition are as under:

Capital cost claimed

(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Opening capital cost	257977.11	259077.11	261077.11	261943.11	261943.11
Add: Addition during the year/period	1100.00	2000.00	866.00	0.00	0.00
Closing Capital Cost	259077.11	261077.11	261943.11	261943.11	261943.11
Average Capital Cost	**258527.11**	**260077.11**	**261510.11**	**261943.11**	**261943.11**

Annual Fixed Charges claimed

(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Depreciation	13192.64	13271.74	13344.86	13366.96	6014.66
Interest on Loan	5234.06	4181.60	3281.86	2396.88	1795.60
Return on Equity	14146.77	14234.10	14314.85	14339.24	14339.24
Interest on Working Capital	2545.00	2557.88	2571.80	2585.24	2490.41
O&M Expenses	13905.32	14393.08	14899.08	15423.45	15961.30
Total	**49023.78**	**48638.39**	**48412.46**	**48111.77**	**40601.21**

4. The Respondent MPPMCL, Respondent MSEDCL and the Respondent CSPDCL have filed their replies vide affidavits dated 29.6.2021 16.6.2021 and 28.6.2021 respectively. The Petitioner has filed its rejoinder to the replies of the Respondents vide affidavits dated 21.7.2021, 29.6.2021 and 21.7.2021 respectively. The Petitioner in additional submission has submitted actual ash transportation expenses incurred during 2019-20 and 2020-21. The Petitioner vide affidavit dated 29.6.2021 has filled certain additional information such as revised Form-15, actual water charges incurred during 2019-20 etc. This petition, along with Petition No.395/GT/2020 (for truing-up of tariff of the generating station for the 2014-19 tariff period) was heard on 27.7.2021 and the Commission, after directing the Petitioner to furnish certain additional information (in Petition No.419/GT/2020), reserved its order in these petitions. In response, the Petitioner vide affidavit dated 18.8.2021 has filed the additional information after serving copies to the Respondents. Petition No. 395/MP/2020 has been disposed of vide order dated 21.03.2022 as stated above. Based on the submissions of the parties and the documents available on record, we proceed for approval of tariff of the generating station for the 2019-24 tariff period, in this petition, on prudence check, as stated in the subsequent paragraphs.

Capital Cost

5. 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 for determination of tariff for existing and new projects. Clause 3 of Regulation 19 of the 2019 Tariff Regulations provides that the capital cost of an existing project shall include the following:

> *(a) Capital cost admitted by the Commission prior to 1.4.2019 duly trued up by excluding liability, if any, as on 1.4.2019;*
>
> *(b) Additional capitalization and de-capitalization for the respective year of tariff as determined in accordance with these regulations;*
>
> *(c) Capital expenditure on account of renovation and modernization as admitted by this Commission in accordance with these regulations;*
>
> *(d) Capital expenditure on account of ash disposal and utilization including handling and transportation facility;*
>
> *(e) Capital expenditure incurred towards railway infrastructure and its augmentation for transportation of coal upto the receiving end of generating station but does not include the transportation cost and any other appurtenant cost paid to the railway; and*
>
> *(f) 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.*

6. The Petitioner vide Form-I(I) of the petition has claimed capital cost as indicated in the table under paragraph 3 above. The Commission vide its order dated 21.03.2022 in Petition No. 395/GT/2020, had approved the closing capital cost of Rs.257839.06 lakh as on 31.3.2019. Accordingly, in terms of Regulation 19(3) of the 2019 Tariff Regulations, the capital cost of Rs.257839.06 lakh as on 31.3.2019 (after removal of un-discharged liabilities of Rs.4306.83 lakh) has been considered as the opening capital cost as on 1.4.2019, on cash basis, for the purpose of determination of tariff for the 2019-24 tariff period.

Additional Capital Expenditure

7. Clauses (1) and (2) of Regulations 25 and Regulation 26 of the 2019 Tariff Regulations, provides as under:

"25. Additional Capitalisation within the original scope and after the cut-off date:

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

(a) 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;

(b) Change in law or compliance of any existing law;

(c) Deferred works relating to ash pond or ash handling system in the original scope of work;

(d) Liability for works executed prior to the cut-off date;

(e) Force Majeure events;

(f) Liability for works admitted by the Commission after the cut-off date to the extent of discharge of such liabilities by actual payments; and

(g) Raising of ash dyke as a part of ash disposal system.

(2) In case of replacement of assets deployed under the original scope of the existing project after cut-off date, the additional capitalization may be admitted by the Commission, after making necessary adjustments in the gross fixed assets and the cumulative depreciation, subject to prudence check on the following grounds:

(a) The useful life of the assets is not commensurate with the useful life of the project and such assets have been fully depreciated in accordance with the provisions of these regulations;

(b) The replacement of the asset or equipment is necessary on account of change in law or Force Majeure conditions;

(c) The replacement of such asset or equipment is necessary on account of obsolescence of technology; and

(d) The replacement of such asset or equipment has otherwise been allowed by the Commission.

26. Additional Capitalisation beyond the original scope

(1) The capital expenditure, in respect of existing generating station or the transmission system including communication system, incurred or projected to be incurred on the following counts beyond the original scope, may be admitted by the Commission, subject to prudence check:

(a) Liabilities to meet award of arbitration or for compliance of order or directions of any statutory authority, or order or decree of any court of law;

(b) Change in law or compliance of any existing law;

(c) Force Majeure events;

(d) Need for higher security and safety of the plant as advised or directed by appropriate Indian Government Instrumentality or statutory authorities responsible for national or internal security;

(e) Deferred works relating to ash pond or ash handling system in additional to the original scope of work, on case to case basis:

Provided also that if any expenditure has been claimed under Renovation and Modernisation (R&M) or repairs and maintenance under O&M expenses, the same shall not be claimed under this Regulation;

(f) Usage of water from sewage treatment plant in thermal generating station.

(2) In case of de-capitalisation of assets of a generating company or the transmission licensee, as the case may be, the original cost of such asset as on the date of de-capitalisation shall be deducted from the value of gross fixed asset and corresponding loan as well as equity shall be deducted from outstanding loan and the equity respectively in the year such de-capitalisation takes place with corresponding adjustments in cumulative depreciation and cumulative repayment of loan, duly taking into consideration the year in which it was capitalised.

8. The year-wise projected additional capital expenditure claimed by the Petitioner in respect of the generating station for the 2019-24 tariff period are as follows:

(Rs. in lakh)

	Head of Work/ Equipment	**Regulation**	**2019-20**	**2020-21**	**2021-22**	**2022-23**	**2023-24**	**Total**
1	Ash Dyke Raising	25 (1)(g)	100.00	600.00	0.00	0.00	0.00	700.00
2	Zero Liquid Discharge (ZLD) work	26(1)(b)	1000.00	200.00	0.00	0.00	0.00	1200.00
3	CLO_2 dosing system	26(1)(b) & 26 (1)(d)	0.00	1200.00	866.00	0.00	0.00	2066.00
	Total Projected additional capital expenditure claimed		**1100.00**	**2000.00**	**866.00**	**0.00**	**0.00**	**3966.00**

(a) Ash Dyke Raising

9. The Petitioner has claimed total projected additional capital expenditure of Rs.700.00 lakh during the period 2019-21 (i.e.Rs.100.00 lakh in 2019-20 and Rs.600.00 lakh in 2020-21) towards Ash Dyke Raising under Regulation 25(1)(g) of the 2019 Tariff Regulations. In justification of the same, the Petitioner has submitted that the said work is within the original scope of work of the project and is carried out periodically during the life of the plant, to ensure continuous and sustainable operation of the generating station.

10. The Respondents, MPPMCL and CSPDCL have submitted that as per Ministry of Environment, Forest and Climate Change (MOEF&CC) Notification dated 25.1.2016, a generating station has to ensure 100% utilization of ash produced. They have submitted that when it is mandatory to ensure 100% utilisation of Ash, there is no justified reason to further raise the height of Ash Dyke. The Respondents have further submitted that the Petitioner has also claimed transportation charges towards transportation of Fly Ash. Therefore, the projected expenditure claimed towards raising of Ash Dyke may be disallowed. The Petitioner, has, however, clarified that the rate of generation of fly ash may be much higher than the rate of utilization of fly ash, at any time during the operation of the generating station, in which case the unutilized ash needs to be diverted to ash dyke, for safe disposal of ash and continuous operation of the Plant. The Petitioner has further submitted that utilization of wet ash takes place from ash disposed in ash dyke only.

11. The matter has been considered. It is observed that ash related works are within the original scope of work of the project and these works are continuous in nature during the entire operational lifetime of the generating station. Therefore, the additional capital expenditure as claimed by the Petitioner is allowed under Regulation 25(1)(g) of the 2019 Tariff Regulations.

(b) Zero Liquid Discharge (ZLD) work

12. The Petitioner has claimed projected additional capital expenditure of Rs.1200.00 lakh during the period 2019-21 (i.e Rs.1000.00 lakh in 2019-20 and Rs.200.00 lakh in 2020-21) towards Zero Liquid Discharge (ZLD) work under Regulation 26(1)(b) of the 2019 Tariff Regulations. In justification of the claim, the Petitioner has submitted that the projected additional capital expenditure is planned as per the 'Consent to Operate', granted by Chhattisgarh Environment Conservation

Board (CECB). The Petitioner has furnished copy of the said order dated 9.10.2018 received from CECB and has prayed to allow the projected additional capital expenditure under Regulations 26(1)(b) of the 2019 Tariff Regulations.

13. The Respondents, MPPMCL and CSPDCL have submitted that the projected additional capital expenditure is not allowable under change in law. They have also submitted that the claim is based on a condition in the consent letter of the Pollution Control Board i.e. to ensure that treated effluent should not be discharged outside of the premises, which can be managed even without ZLD. The Petitioner has clarified that Return on Equity (ROE) for works under original scope as well for works beyond the original scope and after cut-off date, but due to Change in law were eligible at normal ROE as per Regulation 30(2) of the 2019 Tariff Regulations and therefore, the same head has been used for the claim. The Petitioner further submitted that these items are of capital nature and have become necessary in view of Change in Law / need for higher safety and security of the plant and are specifically covered under Regulation 26(1)(b) and 26(1)(d) of the 2019 Tariff Regulations.

14. The submissions have been considered. It is noticed that the CECB consent order dated 9.10.2018 is a renewal of consent of the generating station. It is not clear from the submissions of the Petitioner as to what compliances are to be made by the Petitioner in terms of the said order and whether it had been complying with the earlier directives, if any. Moreover, the Petitioner has also not projected any requirement of installations, in addition to the presence of existing facilities like Sewage Treatment Plant (STP), Effluent Treatment Plant and Ash Slurry recovery water system from ash dyke. It is pertinent to mention that the Petitioner has also filed Petition No. 521/MP/2020 (NTPC v MPPMCL & ors)

before this Commission seeking approval of the additional expenditure for installation of various Emission Control Systems in the generating station in compliance to the MOEF&CC, GoI Notification dated 7.12.2015. In the said petition, the Petitioner had prayed for grant of liberty to approach the Commission for approval of implementation of Revised Emission Systems on account of mercury, particulate matter, including specific water consumption, if required. The Commission by order dated 28.4.2021 has disposed of the said petition granting liberty to the Petitioner on this ground. As the said works are quite complimentary to the additional capital expenditure claimed by the Petitioner on account of ZLD work, in the present petition, the Petitioner's claim for additional capital expenditure of Rs.1200.00 lakh towards ZLD work in 2019-21 is not allowed. The Petitioner may claim the additional capital expenditure in a comprehensive manner in terms of liberty granted vide order dated 30.9.2021 in Petition No. 521/MP/2020.

(c) ClO_2 dosing system

15. The Petitioner has claimed projected additional capital expenditure of Rs.2066.00 lakh in 2020-22 (Rs.1200.00 lakh in 2020-21 and Rs.866.00 lakh in 2021-22) for ClO2 dosing system under Regulation 26(1)(b) and Regulation 26(1)(d) of the 2019 Tariff Regulations. In justification for the same, the Petitioner has submitted that at present Chlorine gas is being dozed directly at various stages of water treatment to maintain water quality and to inhibit organic growth in the water retaining structures/ equipment such as clarifiers, storage tanks, cooling towers, condenser tubes & piping etc. It has submitted that Chlorine dosing is carried out from chlorine stored in cylinders/ tonners and as chlorine gas is very hazardous, it may prove fatal in case of leakage; also, handling and storage of chlorine gas involves risk to the life of public at

large. Therefore, considering public safety, the chlorine dozing system is being replaced by Chlorine Dioxide (ClO2) system, which is much safer and less hazardous than chlorine. The Petitioner in support of its justification has submitted letter dated 23.3.2019 from Department of Factories, Boiler, Industrial Safety and Health, Government of Karnataka in respect of Kudgi NTPC project, which has asked the Petitioner to replace highly hazardous gas chlorination system with ClO_2 system. In addition, the Petitioner has also submitted copy of OM dated 28.2.2014 from SPCB, Odisha which has asked NTPC to explore the possibility of installing ClO_2 system instead of Chlorine gas system while issuing consent to establish in case of Darlipalli Station. Accordingly, the Petitioner has prayed to allow the claimed additional capital expenditure under Regulation 26(1)(b) read with Regulation 26(1)(d) of the 2019 Tariff Regulations.

16. The Respondents, MPPMCL and CSPDCL have submitted that the claim for ClO_2 package may not be allowed as there is no such mandatory directions to the Petitioner for this generating station, for carrying out such installation. The Respondent, MPPMCL has submitted that the generating station is operating well above the normative PLF, and the PLF for 2019-20 and 2020-21 is 86% and 98% respectively. It has submitted that the generating station is operating perfectly with existing system, and hence there appears no justification for CLO_2 system. The Petitioner has clarified that these items are of capital nature and have become necessary in view of change in law / need for higher safety and security of the plant.

17. The submissions have been considered. The Petitioner has submitted that for Kudgi project of the Petitioner, the Government of Karnataka, had directed the Petitioner to replace the highly hazardous gas chlorination system with ClO_2 system. It

is observed that the letter dated 23.9.2019 addressed by the Directorate of Factories, Industrial Safety & Health, State Government of Karnataka to the GM, NTPC, pertains to site clearance of Kudgi Super Thermal Power station of the Petitioner. This letter, in no manner, can be termed as a change in law event or for compliance with any existing law in respect of this generating station, warranting additional capitalization of the expenditure. As regards the claim of the Petitioner under Regulation 26(1)(d) of the 2019 Tariff Regulations, we find no specific direction or advice from any Governmental or statutory authorities as regards the requirement of this item i.e. (chlorine dozing system to be replaced by Chlorine Dioxide (ClO2) system) for safety and security of the generating station. Also, the OM dated 28.2.2014 received from SPCB, Odisha requesting the Petitioner to explore the possibility of installing ClO_2 system cannot be considered for this generating station for grant of relief to the Petitioner. It is observed that a similar claim of the Petitioner in Petition No. 418/GT/2020 had been disallowed by Commission vide its order dated 24.1.2022. Accordingly, the projected additional capital expenditure claimed by the Petitioner is not allowed.

18. Based on the above, the total projected additional capital expenditure claimed by the Petitioner and those allowed for the 2019-24 tariff period is summarized as under:

(Rs. in lakh)

		2019-20	**2020-21**	**2021-22**	**2022-23**	**2023-24**	**Total**
Ash Dyke Raising	Claimed	100.00	600.00	0.00	0.00	0.00	700.00
	Approved	**100.00**	**600.00**	**0.00**	**0.00**	**0.00**	**700.00**
Zero Liquid Discharge	Claimed	1000.00	200.00	0.00	0.00	0.00	1200.00
	Approved	0.00	0.00	0.00	0.00	0.00	0.00
ClO2 dosing system	Claimed	0.00	1200.00	866.00	0.00	0.00	2066.00
	Approved	0.00	0.00	0.00	0.00	0.00	0.00
Total Projected Additional Capital Expenditure	Claimed	1100.00	2000.00	866.00	0.00	0.00	3966.00
	Approved	**100.00**	**600.00**	**0.00**	**0.00**	**0.00**	**700.00**

Additional Capital Expenditure eligible for normal ROE

(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24	Total
Admitted projected additional capital expenditure (A)	100.00	600.00	0.00	0.00	0.00	700.00
Less: De-capitalization of assets (B)	0.00	0.00	0.00	0.00	0.00	0.00
Less: Undischarged Liabilities (C)	0.00	0.00	0.00	0.00	0.00	0.00
Add: Discharges of liabilities (against allowed assets / works) (D)	0.00	0.00	0.00	0.00	0.00	0.00
Net projected additional capital expenditure allowed (on cash basis) (E) = (A-B-C+D)	100.00	600.00	0.00	0.00	0.00	700.00

Additional Capital Expenditure eligible for ROE at Weighted Average Rate of Interest (WAROI)

19. There is no projected additional capital expenditure which has been allowed to be eligible for ROE at WAROI.

Capital cost allowed

20. As stated earlier, the closing capital cost of Rs.257839.06 lakh as on 31.3.2019, as approved by order dated 21.03.2022 in Petition No. 395/GT/2020 has been considered as the opening capital cost as on 1.4.2019. As such, the capital cost allowed for the purpose of tariff for the 2019-24 tariff period is as follows:

(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Opening Capital Cost (A)	257839.06	257939.06	258539.06	258539.06	258539.06
Projected additional capital expenditure (B)	100.00	600.00	0.00	0.00	0.00
Closing Capital Cost (C) = (A+B)	**257939.06**	**258539.06**	**258539.06**	**258539.06**	**258539.06**
Average Capital cost (D) =[(A+C)/2]	257889.06	258239.06	258539.06	258539.06	258539.06

Debt-Equity Ratio

21. Regulation 18 of the 2019 Tariff Regulations provides as follows:

"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."

22. The Commission vide its order dated 21.03.2022 in Petition No. 395/GT/2020 had considered the gross loan and equity of Rs.182724.60 lakh and Rs.75114.46 lakh respectively as on 31.3.2019. The proportionate equity as a percentage of admitted capital cost as on 31.3.2019 is 29.13%. Accordingly, the gross loan and equity

amounting to Rs.182724.60 lakh and Rs.75114.46 lakh has been considered as gross loan and equity as on 1.4.2019. In terms of the above regulations, the debt-equity ratio of 70:30 has been considered on the admitted additional capital expenditure for the purpose of tariff. Accordingly, debt-equity is worked out as under:

	As on 1.4.2019		Net Additional Capitalization during the period 2019-24		As on 31.3.2024	
	Amount (Rs. in lakh)	**(%)**	**Amount (Rs. in lakh)**	**(%)**	**Amount (Rs. in lakh)**	**(%)**
Debt (A)	182724.60	70.87%	490.00	70.00%	183214.60	70.87%
Equity (B)	75114.46	29.13%	210.00	30.00%	75324.46	29.13%
Total (C) = (A) + (B)	**257839.06**	**100.00%**	**700.00**	**100.00%**	**258539.06**	**100.00%**

Return on Equity

23. Regulation 30 and Regulation 31 of the 2019 Tariff Regulations provide as follows:

"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 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:

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;

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;

in case of a thermal generating station, with effect from 1.4.2020:rate of return on equity *shall be reduced by 0.25% in case of failure to achieve the ramp rate of 1% per minute; 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."

"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.

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:

Estimated Gross Income from generation or transmission business for FY 2019-20 is Rs 1,000 crore;
Estimated Advance Tax for the year on above is Rs 240 crore;
Effective Tax Rate for the year 2019-20 = Rs 240 Crore/Rs 1000 Crore = 24%;
Rate of return on equity = 15.50/ (1-0.24) = 20.395%.

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."

24. The Petitioner has claimed return on equity (ROE) considering the base rate of 15.50% and effective tax rate of 17.472% (i.e., MAT Rate of 15% + Surcharge of 12% + HEC of 4%) for the 2019-24 tariff period. Since, the additional capital expenditure approved above is under the original scope of work the same has been considered, subject to truing up. Accordingly, ROE has been worked out as under:

(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Normative Equity-Opening (A)	75114.46	75144.46	75324.46	75324.46	75324.46
Addition of Equity due to additional capital expenditure (B)	30.00	180.00	0.00	0.00	0.00
Normative Equity-Closing (C) = (A) + (B)	75144.46	75324.46	75324.46	75324.46	75324.46
Average Normative Equity (D) = [(A+C)/2]	75129.46	75234.46	75324.46	75324.46	75324.46
Return on Equity (Base Rate) (E)	15.500%	15.500%	15.500%	15.500%	15.500%
Effective Tax Rate (F)	17.472%	17.472%	17.472%	17.472%	17.472%
Rate of Return on Equity (Pre-Tax) (G) = [(E)/(1-F)]	18.782%	18.782%	18.782%	18.782%	18.782%
Return on Equity (Pre -tax) - annualised (H) = [(D)x(G)]	**14110.82**	**14130.54**	**14147.44**	**14147.44**	**14147.44**

Interest on loan

25. Regulation 32 of the 2019 Tariff Regulations provides as follows:

> *"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."

26. Interest on loan has been computed as under:

(i) The gross normative loan amounting to Rs.182724.60 lakh as on 31.3.2019 as considered in order dated 21.03.2022 in Petition No. 395/GT/2020 has been considered as on 1.4.2019;

(ii) Cumulative repayment amounting to Rs.101780.82 lakh as on 31.3.2019 as considered in order dated 21.03.2022 in Petition No. 395/GT/2020 has been considered as on 1.4.2019;

(iii) Accordingly, the net normative opening loan as on 1.4.2019 works out to be Rs.80943.78 lakh;

(iv) Addition to normative loan on account of additional capital expenditure approved above has been considered;

(v) Depreciation allowed has been considered as repayment of normative loan during the respective years of the 2019-24 tariff period.

(vi) The Petitioner has claimed interest on loan by considering WAROI of 6.9762%, 6.6501%, 6.4891%, 6.3879% and 6.4517% for the years 2019-20, 2020-21, 2021-22, 2022-23 and 2023-24, respectively, the same has been considered subject to truing up.

27. Necessary calculation of interest on loan is as under:

Rs. in lakh)

	2019-20	**2020-21**	**2021-22**	**2022-23**	**2023-24**
Gross opening loan (A)	182724.60	182794.60	183214.60	183214.60	183214.60
Cumulative repayment of loan upto previous year (B)	101780.82	114943.48	128124.00	141319.83	154515.67
Net loan opening (C) = [(A-B)]	80943.78	67851.12	55090.60	41894.76	28698.93
Addition due to additional capital expenditure (D)	70.00	420.00	0.00	0.00	0.00
Repayment of loan during the year (E)	13162.66	13180.52	13195.83	13195.83	5752.27
Net loan Closing (F) =[(C+D-E)]	67851.12	55090.60	41894.76	28698.93	22946.66

	2019-20	2020-21	2021-22	2022-23	2023-24
Average Loan (G) = [(C+F)/2]	74397.45	61470.86	48492.68	35296.85	25822.79
Weighted Average Rate of Interest on loan (H)	6.9762%	6.6501%	6.4891%	6.3879%	6.4517%
Interest on Loan (I) = [(GxH)]	**5190.11**	**4087.87**	**3146.74**	**2254.73**	**1666.01**

Depreciation

28. Regulation 33 of the 2019 Tariff Regulations provides as follows:

"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 up to 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 de-capitalized asset during its useful services."

29. Accordingly, cumulative depreciation amounting to Rs.101951.52 lakh as on 31.3.2019 as considered in order dated 21.03.2022 in Petition No. 395/GT/2020 has been considered for the purpose of tariff. The balance depreciable value (before providing depreciation) as on 31.3.2019 is Rs.126769.62 lakh. Since, as on 1.4.2019, the used life of the generating station is 8.03 years, which is less than 12 years from the effective station COD of 21.3.2011, the depreciation for the period 2019-23 has been calculated by applying weighted average rate of depreciation (WAROD) and depreciation for the year 2023-24 has been calculated applying spreading over of the remaining depreciable value over the balance useful life of the generating station. The calculations for WAROD are enclosed as Annexure-I to this order. Necessary calculation of depreciation is as under:

(Rs. in lakh)

	2019-20	**2020-21**	**2021-22**	**2022-23**	**2023-24**
Average Capital Cost (A)	257889.06	258239.06	258539.06	258539.06	258539.06
Value of freehold land included in average capital cost (B)	3754.46	3754.46	3754.46	3754.46	3754.46
Value of software and IT equipment included in average capital cost (C)*	0.00	0.00	0.00	0.00	0.00
Aggregated Depreciable value (D)= [(A-B-C)x90%+C]	228721.14	229036.14	229306.14	229306.14	229306.14
Remaining aggregate depreciable value at the beginning of the year (E) = [(D – (Cumulative depreciation at the end of the preceding period)]	126769.62	113921.96	101011.44	87815.61	74619.77
No. of completed years at the beginning of the year (F)	8.03	9.03	10.03	11.03	12.03

	2019-20	2020-21	2021-22	2022-23	2023-24
Balance useful life at the beginning of the year (G) = (25 - F)	16.97	15.97	14.97	13.97	12.97
Weighted Average Rate of Depreciation (H)	5.1040%	5.1040%	5.1040%	5.1040%	2.2249%
Depreciation during the year (I) = (A x H)	**13162.66**	**13180.52**	**13195.83**	**13195.83**	**5752.27**
Cumulative depreciation at the end (J)	115114.18	128294.70	141490.53	154686.37	160438.64

** subject to truing up.*

O&M Expenses

30. Regulation 35(1)(1) of the 2019 Tariff Regulations provides as follows:

"(35)(1) Thermal Generating Station: Normative Operation and Maintenance expenses of thermal generating stations shall be as follows:

(1) Coal based and lignite fired (including those based on Circulating Fluidised Bed Combustion (CFBC) technology) generating stations, other than the generating stations or units referred to in clauses (2), (4) and (5) of this Regulation:

(in Rs lakh/MW)

Year	200/210/ 250 MW Series	300/ 330/ 350 MW Series	500 MW Series	600 MW Series	800 MW Series and above
FY 2019-20	32.96	27.74	22.51	20.26	18.23
FY 2020-21	34.12	28.71	23.30	20.97	18.87
FY 2021-22	35.31	29.72	24.12	21.71	19.54
FY 2022-23	36.56	30.76	24.97	22.47	20.22
FY 2023-24	37.84	31.84	25.84	23.26	20.93

Provided that where the date of commercial operation of any additional unit(s)of a generating station after first four units occurs on or after 1.4.2019, the O&M expenses of such additional unit(s) shall be admissible at 90% of the operation and maintenance expenses as specified above;

xxx

Provided also that operation and maintenance expenses of generating station having unit size of less than 200 MW not covered above shall be determined on case to case basis.

31. The Petitioner has claimed normative O&M expenses in Form-3A as under:

(Rs. in lakh)

2019-20	2020-21	2021-22	2022-23	2023-24
11255.00	11650.00	12060.00	12485.00	12920.00

32. The matter has been considered. As stated earlier, the generating station, with a capacity of 500 MW comprises of one unit, with the date of commercial operation as

21.3.2011. Therefore, in terms of Regulation 35(1) of the 2019 Tariff Regulations, the O&M expenses as claimed by the Petitioner as above, has been allowed for the 2019-24 tariff period.

Water Charges

33. The first proviso to Regulation 35(1)(6) of the 2019 Tariff Regulations provides 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;*
>
> *xxxxx."*

34. The actual water charges claimed by the Petitioner and allowed by order dated 21.03.2022 in Petition No. 395/GT/2020 for the 2014-19 tariff period is as follows:

(in Rs. lakh/MW)

2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**
1947.31	1969.84	1936.06	1949.14	1950.57

35. In terms of the first proviso to Regulations 35(1)(6) of the 2019 Tariff Regulations, water charges shall be allowed separately, based on water consumption depending upon type of plant, type of cooling water system etc., subject to prudence check. The Petitioner has claimed water charges of Rs.2018.84 lakh in 2019-20, Rs.2089.50 lakh in 2020-21, Rs.2162.63 lakh in 2021-22, Rs.2238.32 lakh in 2022-23 and Rs.2316.67 lakh in 2023-24. The details furnished by the Petitioner in respect of water charges as applicable for 2019-24 tariff period are as under:

Description	**Remarks**
Type of Plant	Coal Based
Type of cooling water system	Closed Circuit Cooling system
Allocation of Water*	101 MCM
Consumption of Water*	64.97 MCM
Rate of Water Charges*	Rs 12.25/Cubic Meter
Total Water Charges**	1950.57 lakh

**As per truing up petition filed for Korba-I&II, Korba-III & BCPP.*

*** For Korba-III for 2018-19- Water charges during the period 2019-24 has been claimed based on the amount claimed in 2018-19 in the truing-up petition filed with an escalation@3.5% on annual basis.*

36. Accordingly, the Petitioner vide affidavit dated 29.6.2021 has revised the actual water charges claimed as Rs.1950.57 lakh in 2018-19, Rs.1955.91 lakh in 2019-20 and Rs.1950.57 lakh in 2020-21 for the generating station.

37. The Respondent, MPPMCL has submitted that the water charges @ Rs.12.25 per m^3 computes to Rs.1619.00 lakh in 2019-20 and Rs.1852.00 lakh in 2020-21 and same may be allowed. The Respondents MSEDCL and CSPDCL have submitted that the Petitioner has not provided any valid justification towards considering escalation of 3.5% every year, over the water charges of 2018-19, and therefore, escalation of water charges may be considered on a lower side. The Petitioner has clarified that the calculations indicated by the Respondent, MPPMCL is based on actual generation that varies month on month, based on seasonal variations and demand of various beneficiaries, whereas, the Petitioner has to arrange for water corresponding to the maximum availability of the generating station i.e. at the MCR/ Installed capacity. It has therefore prayed that the actual water charges during 2019-20 and 2020-21 may be allowed. The Petitioner has submitted that the details of the actual water charges incurred for the relevant years would be submitted at the time of truing up of tariff for the 2019-24 tariff period.

38. The matter has been considered. The actual water consumption for 2019-20 and 2020-21 as claimed by the Petitioner is allowed. However, water charges for 2021-22, 2022-23 and 2023-24 are allowed with escalation factor of 3.50% over the actual water charges for 2020-21 as claimed by the Petitioner. However, the Petitioner shall, at the time of truing up of tariff, furnish the details of the actual water consumption (in cubic meters), rate (Rs/ Cubic meter) and power charges separately. The water charges allowed are subject to the truing up, as per actual water charges

paid, after prudence check. The water charges allowed for the 2019-24 tariff period are summarized as follows:

(in Rs. lakh/MW)

2019-20	2020-21	2021-22	2022-23	2023-24
1955.91	1950.57	2018.84	2089.50	2162.63

Security Charges

39. The second proviso to Regulation 35(1)(6) of the 2019 Tariff Regulations provides as under:

> *"6) The Water Charges, Security Expenses and Capital Spares for thermal generating stations shall be allowed separately after prudence check:*
>
> *Xxxx*
>
> *Provided further that the generating station shall submit the assessment of the security requirement and estimated expenses;*
>
> *Xxx"*

40. The Petitioner vide affidavit dated 28.1.2020 has claimed total security expenses of Rs. 3386.26 lakh during 2019-24 (i.e. Rs.631.47 lakh in 2019-20, Rs.653.58 lakh in 2020-21, Rs.676.45 lakh in 2021-22, Rs.700.13 lakh in 2022-23 and Rs.724.63 lakh in 2023-24), in terms of the second proviso to Regulation 35(1)(6) of the 2019 Tariff Regulations. It has, however, not furnished any justification and the assessment of security, for such expenses claimed. It is further observed that the Petitioner vide affidavit dated 29.6.2021, has revised the actual security expenses for the generating station claim as Rs.610.12 lakh in 2018-19, Rs.703.07 lakh in 2019-20 and Rs.723.53 lakh in 2020-21. Considering the fact that security expenses for thermal generating stations for the 2019-24 tariff period, is required to be allowed separately, after prudence check, based on the assessment of the security requirement and estimated expenses to be furnished by the Petitioner, we allow the Security expenses for the 2019-24 tariff period, as claimed by the Petitioner. The Petitioner shall, at the time of truing up of tariff, furnish the actual security expenses incurred along with proper justification and assessment in terms of the second proviso to Regulation 35(1)(6) of

the 2019 Tariff Regulations. Accordingly, security expenses allowed are summarised below:

(in Rs. lakh)

2019-20	2020-21	2021-22	2022-23	2023-24
703.07	723.53	676.45	700.13	724.63

Capital spares

41. The Petitioner has not claimed any capital spares, on projection basis, during the 2019-24 tariff period and has submitted that the same shall be claimed at the time of truing up of tariff, in terms of the last proviso to Regulation 35(1)(6) of the 2019 Tariff Regulations, based on actual consumption of spares. Accordingly, the same has not been considered in this order. The claim of the Petitioner, if any, at the time of truing up, of tariff, shall be considered on merits, after prudence check.

42. Accordingly, the total O&M expenses, including Water charges and Security expenses, claimed and allowed for the 2019-24 tariff period is summarized below:

(Rs. in lakh)

		2019-20	2020-21	2021-22	2022-23	2023-24
Normative O&M Expenses under Regulation 35(1)(1) of the 2019 Tariff Regulations (A)	Claimed	11255.00	11650.00	12060.00	12485.00	12920.00
	Allowed	11255.00	11650.00	12060.00	12485.00	12920.00
Water Charges (B)	Claimed	1955.91	1950.57	2162.63	2238.32	2316.67
	Allowed	1955.91	1950.57	2018.84	2089.50	2162.63
Security Expenses (C)	Claimed	703.07	723.53	676.45	700.13	724.63
	Allowed	703.07	723.53	676.45	700.13	724.63
Total O&M expenses as allowed (including Water Charges and Capital Spares (D) = (A+B+C)	Claimed	**13913.98**	**14324.10**	**14899.08**	**15423.45**	**15961.30**
	Allowed	**13913.98**	**14324.10**	**14755.29**	**15274.63**	**15807.26**

Fly Ash Transportation charges

43. The Petitioner has claimed fly ash transportation charges of Rs.113.00 lakh in 2020-21, based on the actual expenses incurred. We, however, note that the Petitioner has filed Petition No. 205/MP/2021 seeking reimbursement of fly ash

transportation charges in respect of its generating stations. The Petitioner has raised similar issues with regard to fly ash transportation in that petition arguing higher liability of the Respondents therein on account of interest burden and cash flow issues that may be faced by the Petitioner. Some of the Respondents therein have raised issues on 'maintainability' of Petition No. 205/MP/2021. The reimbursement of charges towards transportation of fly ash shall, therefore, be governed by the decision of the Commission in Petition No. 205/MP/2021.

Additional Expenditure on Emission Control System

44. The Petitioner, in terms of the Ministry of Environment and Forests and Climate Change (MOEF&CC) notification dated 7.12.2015 has submitted that it is in the process of installing the Emission Control Systems (ECS) for this generating station. It is however noticed that the Petitioner had filed Petition No. 467/MP/2019, for approval of additional expenditure on installation of various Emission Control Systems at this generating station, in compliance of MOEF&CC notification dated 7.12.2015 and the Commission by a common order dated 30.9.2021 had disposed of the said petition, with certain observations. Therefore, we are not deciding this issue in this petition. The claim of the Petitioner for additional expenditure on emission control system shall therefore be guided by order dated 30.9.2021 in Petition No. 467/MP/2019.

Operational Norms

45. The operational norms considered by the Petitioner in Form-3 of the petition is as follows:

Normative Annual Plant Availability Factor (NAPAF) %	85
Gross Station Heat Rate (kcal/kwh)	2404.50
Auxiliary Power Consumption %	6.25
Specific Oil Consumption (ml/kwh)	0.50

(a) Normative Annual Plant Availability Factor

46. Regulation 49 of the 2019 Tariff Regulations provides as follows:

(A) Normative Annual Plant Availability Factor (NAPAF)
(a) For all thermal generating stations, except those covered under clauses (b), (c), (d), & (e) - 85%.

47. The Petitioner has considered NAPAF of 85% during the 2019-24 tariff period as per Regulation 49(A)(a) of 2019 Tariff Regulations and hence, the same is allowed.

(b) Station Heat Rate

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

"(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 percent 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:

Pressure Rating (Kg/cm2)	*150*	*170*	*170*
SHT/RHT (^{0}C)	*535/535*	*537/537*	*537/565*
Type of BFP	*Electrical Driven*	*Turbine Driven*	*Turbine Driven*
Max Turbine Heat Rate (kCal/kWh)	*1955*	*1950*	*1935*
Min. Boiler Efficiency			
Sub-Bituminous Indian Coal	*0.86*	*0.86*	*0.86*
Bituminous Imported Coal	*0.89*	*0.89*	*0.89*
Max. Design Heat Rate (kCal/kWh)			
Sub-Bituminous Indian Coal	*2273*	*2267*	*2250*
Bituminous Imported Coal	*2197*	*2191*	*2174*

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."

49. The Petitioner has furnished the Gross Station Heat Rate as 2404.50 kCal/kWh, based on the Guaranteed Design Gross Turbine Cycle Heat Rate of 1944.44 (kCal/kWh)[3] and Design / Guaranteed Boiler Efficiency of 84.91 (%), as provided in the Form 2 of the petition as follows:

Main Steams Pressure at Turbine inlet	(kg/Cm^2)	170
Main Steam Temperature at Turbine inlet	(^oC)	537
Reheat Steam Temperature at Turbine inlet	(^oC)	537
Type of BFP	(No.)	Steam Driven
Guaranteed Design Gross Turbine Cycle Heat Rate	(kCal/kWh)[3]	1944.44
Design / Guaranteed Boiler Efficiency	(%)	84.91

50. It is observed that the Petitioner, while computing the Station Heat Rate, has failed to take note that the Design Heat Rate of a generating unit is required to be computed, based on the heat rate guaranteed by the supplier at conditions of 100% MCR, zero percent make up, design coal and design cooling water temperature/back pressure. Therefore, the Station Heat Rate is required to be recomputed as per details provided in the Form-2 of the petition.

51. The Petitioner, in Form-2 of the petition, has furnished the design turbine cycle heat rate and boiler efficiency of the generating station as 1944.44 kcal/kWh and 84.91% respectively. Accordingly, the unit design heat rate is worked out as 2290.00 kcal/kWh (1944.44/0.8491). However, Regulation 49(C)(b)(i) of the 2019 Tariff Regulations provides that for new thermal generating stations achieving COD on or after 1.4.2009, the Gross Station Heat Rate is = 1.05 x Design Heat Rate (kcal/kWh) (1.05 x 2290.00 = 2404.50), provided that the design heat rate shall not exceed the maximum design unit heat rate depending upon the pressure and temperature ratings of the units, as specified under the 2019 Tariff Regulations.

52. Considering the design parameters of the generating station, for the pressure rating of 170 Kg/cm^2, super heater Temperature of 537^{0}C and re-heater temperature of 537^{0}C, the maximum design unit heat rate is 2267 kCal/kWh, considering the Max Turbine Heat rate of 1950 kCal/kWh and boiler efficiency of 86%, as per the 2019 Tariff Regulations. The design heat rate of 2260.98 kCal/kWh, is lesser than the ceiling design heat rate of 2267 kCal/kWh, as provided in the 2019 Tariff Regulations. However, in terms of the above regulation, 1950 kCal/kWh is the maximum Turbine Heat Rate and the Petitioner has furnished the same as 1944.44 kcal/kWh. Further, where the boiler efficiency is below 86% for Sub-bituminous Indian coal, the same shall be considered as 86%. The boiler efficiency furnished by the Petitioner is 84.91% and therefore the Turbine Cycle Heat rate and boiler efficiency has been considered as 1944.44 kcal/kWh and 86% respectively, for computation of design heat rate. The design heat rate of the generating station works out as 2260.98 kCal/kWh (i.e., 1944.44/0.86), which is lower than the ceiling design heat rate of 2267 kCal/kWh. Hence, the GSHR has been worked out as 2374.03 kCal/kWh = (1.05 x 2260.98) and the same has been considered for the purpose of tariff.

(c) Auxiliary Power Consumption:

53. Regulation 49(E)(a)(ii) of the 2019 Tariff Regulations provides for Auxiliary Power Consumption as follows:

> *"49(E) Auxiliary Energy Consumption*
>
> *(a) Coal-based generating stations except at (b) below:*

	With Natural Draft cooling tower or without cooling tower
(i) 200 MW series	*8.5%*
(ii) 300 MW and above	
Steam driven boiler feed pumps	*5.75%*
Electrically driven boiler feed pumps	*8.0%*

> *Provided that for thermal generating stations with induced draft cooling towers and where tube type coal mill is used, the norms shall be further increased by 0.5% and 0.8% respectively:*

54. The Petitioner has claimed Auxiliary Power Consumption (APC) of 6.25% as per Regulation 49(E)(a)(ii) of the 2019 Tariff Regulations, therefore same has been allowed.

(d) Specific Oil Consumption

55. Regulation 49(D)(a) of 2019 Tariff Regulations, provides for Secondary fuel oil consumption of 0.50 ml/kWh, for coal-based generating stations. As the Secondary fuel oil consumption considered by the Petitioner is as per the said regulations, the same is allowed for determination of tariff for the 2019-24 period.

56. Based on the above, the operational norms considered for determination of energy charges for the generating station for the 2019-24 tariff period are as under:

Normative Annual Plant Availability Factor (NAPAF) (%)	85
Heat Rate (kCal/kWh)	2374.03
Auxiliary Power Consumption (%)	6.25
Specific Oil Consumption (ml/kWh)	0.50

Interest on Working Capital

57. Sub-section (c) of clause (1) of Regulation 34 the 2019 Tariff Regulation provides as follows:

> *"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."*
>
> *(2) The cost of fuel in cases covered under sub-clauses (a) and (b) of clause (1) of this Regulation shall be based on the landed fuel cost (taking into account normative transit and handling losses in terms of Regulation 39 of these regulations) by the generating station and gross calorific value of the fuel as per actual weighted average for the third quarter of preceding financial year in case of each financial year for which tariff is to be determined:*
>
> *Provided that in case of new generating station, the cost of fuel for the first financial year shall be considered based on landed fuel cost (taking into account normative transit and handling losses in terms of Regulation 39 of these regulations) and gross calorific value of the fuel as per actual weighted average for three months, as used for infirm power, preceding date of commercial operation for which tariff is to be determined."*
>
> *"(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 for computation of working capital

58. The Petitioner has claimed ECR of Rs.1.367 per kWh and fuel component in working capital as follows:

(Rs. in lakh)

	2019-20	**2020-21**	**2021-22**	**2022-23**	**2023-24**
Cost of coal for 40 days of Generation	5151.89	5151.89	5151.89	5151.89	5151.89
Cost of Secondary fuel oil for 2 months of Generation	118.12	117.79	117.79	117.79	118.12

59. The Petitioner has claimed the fuel component cost in working capital and ECR based on:

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 Regulation 43(2)(b)} procured for the three months of October 2018, November 2018, and December 2018, and
c) Price and GCV of secondary fuel oil for the three months of October 2018, November 2018, and December 2018.

60. The Respondents, MPPMCL and MSEDCL have pointed out that the Petitioner, instead of considering the details of fuel for the preceding three months of the period from 1.4.2019, has considered details pertaining to October 2018, November 2018 and December 2018. The Petitioner has, however, clarified that fuel details for October 2018, November 2018 and December 2018, i.e. third quarter of the 2018-19 (preceding financial year to 2019-20) has been considered in accordance with the Regulation 34(2) of the 2019 Tariff Regulations.

61. It is observed that the Petitioner vide affidavit dated 29.6.2021, has submitted revised Form-15, indicating the opening stock of coal and coal received during the months of October 2018, November 2018 and December 2018, separately. On perusal of the data furnished by the Petitioner, it is observed that the Petitioner, while computing the landed cost of fuel, has considered the opening stock of coal for the

months of October 2018, November 2018 and December 2018 (closing stock of the coal for the previous months). However, in terms of the Regulation 39 of the 2019 Tariff Regulations, the computation of ECR and associated fuel components, in interest on working capital, is based on the landed price and GCV of fuel, which means that the fuel received during the specified three months (October 2018, November 2018 and December 2018) is only to be considered, without opening stock. Similarly, while calculating the weighted average price of the coal, the Petitioner has used the normative Transit & Handling loss of 0.22% for October 2018, 0.21% for November 2018 and 0.24% for December 2018 which is more than applicable normative Transit & Handling loss of 0.20% for the generating station. Accordingly, the normative cost of coal for stock of 40 days of generation and normative Transit & Handling loss of 0.20%, has been considered for the calculation of working capital requirements. After excluding the opening stock value, we have worked out the weighted average landed cost and weighted average GCV of coal for working out the fuel component in working capital for the months of October 2018, November 2018 and December 2018 as follows:

	Claimed	Allowed
Weighted average price of coal (Rs./MT)	1749.28	1748.83
Weighted average GCV of coal (kCal/kg) *	3324.00	3327.49
Weighted average price of oil (Rs./kl)	37967.72	37967.72
Weighted average GCV of oil (kCal/l)	10134.57	10135.09

** Weighted average GCV of coal as received net of 85 kCal/kg.*

62. The revised GCV is further reduced by a margin of 85 kCal/Kg towards storage losses and the revised price of landed cost of coal and GCV of oil as furnished, has been considered. The Fuel components in working capital are allowed as under:

(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Cost of Coal/Lignite towards Stock (10 Days of Generation)	1269.96	1269.96	1269.96	1269.96	1269.96
Cost of Coal/Lignite for Advance	3809.87	3809.87	3809.87	3809.87	3809.87

	2019-20	2020-21	2021-22	2022-23	2023-24
Payment (30 Days of Generation)					
Cost of Secondary fuel oil (2 months of Generation)	118.12	117.79	117.79	117.79	118.12

63. Regulation 34(2) of the 2019-24 Tariff Regulations provides that fuel components in working capital shall be based on the landed fuel cost of the generating station and gross calorific value of the fuel as per actual weighted average for the third quarter of preceding financial year in case of each financial year for which tariff is to be determined. The Petitioner has furnished the fuel data for the months of October, 2018 November, 2018 and December, 2018 only. Therefore, the fuel components in working capital allowed as above, are required to be revised at the time of truing-up, for the period 2020-24, by taking in to consideration the landed fuel cost by the generating station and gross calorific value of the fuel, as per actual weighted average for the third quarter of preceding financial year, in case of each financial year.

Energy Charge Rate (ECR)

64. The Petitioner has claimed ECR (ex-bus) of 1.367 Rs/kWh, based on the weighted average price, GCV of coal & oil procured and burnt for the preceding months of October 2018, November 2018 and December 2018. The ECR, as worked out, based on the operational norms specified under the 2019 Tariff Regulations and on "as received" GCV of coal for the preceding three months i.e., October 2018, November, 2018 and December 2018, have been considered for allowing two months of energy charge in working capital as follows:

Description	Unit	2019-24
Capacity	MW	500.00
Gross Station Heat Rate	kCal/kWh	2374.03
Auxiliary Energy Consumption	%	6.25
Weighted average GCV of oil	kCal/lit	10135.09
Weighted average GCV of coal	kCal/kg	3327.49 (3412.49-85.00)
Weighted average price of oil	Rs/KL	37967.72
Weighted average price of Coal	Rs/MT	1748.83
Rate of energy charge ex-bus	Rs/kWh	1.348

Working capital for O&M Expenses

65. O&M expenses for 1 month claimed by the Petitioner for the purpose of working capital (including water charges and security expenses) are as follows:

(Rs. in lakh)

2019-20	2020-21	2021-22	2022-23	2023-24
1158.78	1199.42	1241.59	1285.29	1330.11

66. Regulation 34(1)(a)(vi) of the 2019 Tariff Regulations provides for O&M expenses including water charges and security expenses for one month towards Working capital for O&M Expenses. Accordingly, the O&M expenses component of working capital is allowed as follows:

(Rs. in lakh)

2019-20	2020-21	2021-22	2022-23	2023-24
1159.50	1193.68	1229.61	1272.89	1317.27

Working capital for Maintenance Spares

67. Regulation 34(1)(a)(iv) of the 2019 Tariff Regulations provides for Maintenance spares @ 20% of the O&M expenses including water charges and security expenses. Accordingly, maintenance spares have been allowed as under:

(Rs. in lakh)

2019-20	2020-21	2021-22	2022-23	2023-24
2782.80	2864.82	2951.06	3054.93	3161.45

68. The difference between the claimed O&M expenses for 1 month and Maintenance spares by the Petitioner and those allowed as above is only on account of variation in the water charges and security expenses claimed by the Petitioner and those allowed in this order.

Working capital for Receivables

69. Regulation 34(1)(a)(v) of the 2019 Tariff Regulations provides for Receivables for 45 days. Accordingly, after taking into account the mode of operation of the generating station on secondary fuel, the Receivable component of working capital is

allowed as follows:

(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Energy charge for 45 days	5800.61	5800.61	5800.61	5800.61	5800.61
Fixed charge for 45 days	6012.60	5928.14	5850.42	5805.80	4857.56
	11813.21	**11728.76**	**11651.03**	**11606.41**	**10658.17**

70. As per Regulation 34(2) of 2019 Tariff Regulations, the cost of coal shall be based on landed fuel cost taking into account normative transit and handling losses in terms of Regulation 39 of the 2019 Tariff Regulations and gross calorific value of fuel as per actual weighted average for the third quarter of preceding financial year. Hence, the Petitioner is directed to furnish the details of quantity of coal as per Regulation 34(2) of the 2019 Tariff Regulations at the time of truing up of tariff. The Petitioner is also directed to submit the details strictly as provided in Forms/ Annexures attached to the 2019 Tariff Regulations.

71. The Petitioner on month to month basis shall compute and claim the energy charges from the beneficiaries, based on the formulae given under Regulation 43 of the 2019 Tariff Regulations.

Rate of Interest on working capital

72. In accordance with Regulation 34(3) of the 2019 Tariff Regulations, the Petitioner has claimed rate of interest on working capital as 12.05% (i.e., 1 year SBI MCLR of 8.55% as on 1.4.2019 + 350 basis points) on projection basis, for the 2019-24 tariff period. However, as the tariff of the generating station for 2019-24 tariff period is being determined during the year 2021-22, the SBI MCLR as on 1.4.2020 (7.75%) and as on 1.4.2021 (7.00%) is also available, which is lower in comparison to the same, as on 1.4.2019 (8.55%). Since the rate of interest on working capital is subject to revision at the time of truing-up of tariff, based on the bank rate as on 1st April of each financial year, we find it prudent to allow the rate of interest as on 1.4.2020 and

1.4.2021, for the subsequent financial years. Accordingly, the rate of interest for the year 2019-20 is 12.05%, 2020-21 is 11.25% and for the subsequent years, the rate of interest of 10.50% has been considered (i.e., 1-year SBI MCLR of 7.75% as on 1.4.2020 + 350 basis points and 1-year SBI MCLR of 7.00% as on 1.4.2021 + 350 basis points), subject to truing up.

73. Accordingly, Interest on working capital is allowed as under:

(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
WC towards cost of coal for stock - 10 days of generation (A)	1269.96	1269.96	1269.96	1269.96	1269.96
WC for Cost of Coal towards Advance Payment – 30 days of Generation (B)	3809.87	3809.87	3809.87	3809.87	3809.87
WC for Cost of Secondary fue l - 2 Months of Generation (C)	118.12	117.79	117.79	117.79	118.12
WC for Maintenance Spares - 20% of O&M (D)	2782.80	2864.82	2951.06	3054.93	3161.45
WC for Receivables – 45 days of Generation (E)	11813.21	11728.76	11651.03	11606.41	10658.17
WC towards O&M expenses – 1 month of Generation (F)	1159.50	1193.68	1229.61	1272.89	1317.27
Total Working Capital (G) = (A+B+C+D+E+F)	**20953.45**	**20984.88**	**21029.32**	**21131.85**	**20334.84**
Rate of Interest (H)	12.05%	11.25%	10.50%	10.50%	10.50%
Total Interest on Working capital (I) = (G x H)	**2524.89**	**2360.80**	**2208.08**	**2218.84**	**2135.16**

Annual Fixed Charges

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

(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Depreciation	13162.66	13180.52	13195.83	13195.83	5752.27
Interest on Loan	5190.11	4087.87	3146.74	2254.73	1666.01
Return on Equity	14110.82	14130.54	14147.44	14147.44	14147.44
Interest on Working Capital	2524.89	2360.80	2208.08	2218.84	2135.16
O&M Expenses	13913.98	14324.10	14755.29	15274.63	15807.26
Total annual fixed charges	**48902.46**	**48083.83**	**47453.38**	**47091.47**	**39508.15**

Application filing fees and Publication charges

75. The Petitioner has sought reimbursement of the fees paid by it for filing of the tariff petition and for publication expenses and has submitted that the reimbursement of the same are in accordance with Regulation 70(1) of the 2019 Tariff Regulations. In view of the above, the Petitioner is entitled for reimbursement of the filing fees and publication expenses in connection with the filing of this petition, directly from the beneficiaries, on pro-rata basis, in accordance with Regulation 70(1) of the 2019 Tariff Regulations.

76. Similarly, RLDC Fees & 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.

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

78. Annexure-I given hereinafter shall form part of the order.

79. Petition No. 419/GT/2020 is disposed of in terms of the above.

Sd/-	Sd/-	Sd/-	Sd/-
(Pravas Kumar Singh)	**(Arun Goyal)**	**(I. S. Jha)**	**(P. K. Pujari)**
(Member)	**(Member)**	**(Member)**	**(Chairperson)**

Annexure-I

Depreciation for the 2019-24 tariff period

(Rs. in lakh)

S.No.	Name of the Assets	Gross Block as on 1.4.2019 as on COD	Depreciation rates as per CERC Depreciation rate schedule	Depreciation Amount for each year up to 31.3.2024
1	Land- Free Hold	3354.03	0.00%	0.00
2	Land- Lease Hold	942.68	3.34%	31.49
3	Plant & Machinery	246310.69	5.28%	13005.20
4	Water supply, drainage & sewerage	422.62	5.28%	22.31
5	Main Plant Building	10249.54	3.34%	342.33
6	Service Building	6271.62	3.34%	209.47
7	MGR	0.00	5.28%	0.00
8	Railway siding	634.40	5.28%	33.50
9	Road/Bridge	220.83	3.34%	7.38
10	Electrical installations	243.51	6.33%	15.41
11	Furniture & Fixtures, Office equipment	563.28	6.33%	35.66
12	Other Office Equipment	351.51	6.33%	22.25
13	Communication Equipment	43.42	6.33%	2.75
14	EDP, WP&SATCOM	271.43	15.00%	40.72
15	VEHICLES	35.52	9.50%	3.37
16	Construction equipment	159.36	5.28%	8.41
17	Hospital equipment	209.35	5.28%	11.05
18	Software	10.67	15.00%	1.60
19	Temporary Constructions	0.00	100.00%	0.00
20	Spares (Ind AS)	466.05	5.28%	24.61
	TOTAL	270760.53		13817.52
	Weighted Average Rate of Depreciation (%)			**5.104**