CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

Petition No. 401/GT/2020

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

Date of Order: 31st January, 2022

IN THE MATTER OF
Petition for approval of tariff of Vindhyachal Super Thermal Power Station Stage-I (6 x 210 MW) for the period from 1.4.2019 to 31.3.2024.

AND

IN THE MATTER OF

NTPC Limited,
NTPC Bhawan, Core-7,
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,
Jabalpur – 482008

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

3. Gujarat Urja Vikas Nigam Limited,
Vidyut Bhawan, Race Course,
Vadodara – 390007

4. Chhattisgarh State Power Distribution Company Limited,
Sundar Nagar, Danganiya,
Raipur – 492013

5. Electricity Department,
Government of Goa,
Vidyut Bhawan,
Panji, Goa

6. Electricity Department,
Administration of Daman & Diu,
Daman – 396210

7. Electricity Department,
Administration of Dadra & Nagar Haveli,
Silvasa **…. Respondents**

Parties Present:

Shri Shri Venkatesh, Advocate, NTPC
Shri Ashutosh K. Srivastava, Advocate, NTPC
Shri Suhael Buttan, Advocate, NTPC
Shri Anant Singh Ubeja, Advocate, NTPC
Shri Abhishek Nangia, Advocate, NTPC
Shri Nihal Bhardwaj, Advocate, NTPC
Ms. Simran Saluja, Advocate, NTPC
Shri Jayant Bajaj, Advocate, NTPC
Ms. Mehak Verma, Advocate, NTPC
Shri Jatin Ghuliani, Advocate, NTPC
Shri A.S. Pandey, NTPC
Shri Parimal Piyush, NTPC
Shri Ravi Sharma, Advocate, MPPMCL
Shri Anurag Naik, MPPMCL

ORDER

This petition has been filed by the Petitioner, NTPC Limited (in short, 'NTPC') for approval of tariff of Vindhyachal Super Thermal Power Station Stage-I (6 x 210 MW) (hereinafter referred to as 'the generating station') for the 2019-24 tariff period in accordance with the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 (hereinafter referred to as 'the 2019 Tariff Regulations').

2. The generating station with a capacity of 1260 MW comprises of six units of 210 MW each. The dates of commercial operation of the different units of the generating station are as under:

Unit	Actual COD
Unit-I	1.9.1988
Unit-II	1.1.1989
Unit-III	1.2.1990
Unit-IV	1.9.1990
Unit-V	1.4.1991
Unit-VI	1.2.1992

3. The Commission vide order dated 24.2.2017 in Petition No. 338/GT/2014 had approved the tariff of the generating station for the 2014-19 tariff period. Subsequently, Petition No. 297/GT/2020 was filed by the Petitioner for truing-up of tariff of the generating station for the 2014-19 tariff period and the Commission vide its order dated 11.1.2022 had determined the capital cost and annual fixed charges of the generating station as under:

Capital Cost allowed

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Capital Cost	148158.63	148299.98	148282.07	148056.88	147243.60
Add: Additional capital expenditure	141.35	(-) 17.90	(-) 225.19	(-) 813.28	(-) 526.83
Closing Capital Cost	**148299.98**	**148282.07**	**148056.88**	**147243.60**	**146716.78**
Average Capital Cost	148229.30	148291.02	148169.48	147650.24	146980.19

Annual Fixed Charges allowed

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	654.30	654.78	262.38	10.30	12.12
Interest on Loan	265.82	204.25	163.80	149.26	150.61
Return on Equity	14443.02	14516.64	14509.45	14478.76	14477.99
Interest on Working Capital	7382.57	7502.34	7558.71	7800.91	7948.21
O&M Expenses	33045.30	34839.74	36037.81	38116.04	40485.31
Sub -Total	**55791.01**	**57717.75**	**58532.15**	**60555.27**	**63074.23**
Compensation Allowance	840.00	630.00	210.00	0.00	0.00
Special Allowance	3150.00	5025.04	8906.88	11366.96	12088.76
Total	**59781.01**	**63372.79**	**67649.03**	**71922.23**	**75162.99**

Present Petition

4. The Petitioner has filed the present Petition for determination of tariff of the generating station for the 2019-24 tariff period in accordance with the 2019 Tariff Regulations and has claimed the following annual fixed charges and capital cost:

Annual Fixed Charges claimed

(Rs in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Depreciation	0.00	1299.17	2886.30	1792.80	173.25
Interest on Loan	113.94	146.94	159.59	81.14	10.75
Return on Equity	8321.50	8405.79	8577.83	8681.40	8692.24
Interest on Working Capital	6444.30	6549.63	6660.53	6733.07	6796.42
O&M Expenses	44704.64	46346.20	48038.73	49821.18	51657.03
Special Allowance	11970.00	11970.00	11970.00	11970.00	11970.00
Total	**71554.38**	**74717.74**	**78292.98**	**79079.60**	**79299.68**

Capital Cost Claimed

(Rs in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Opening capital cost	147597.21	147774.21	150589.21	154188.21	154573.21
Add: Addition during the year/period	177.00	2815.00	3599.00	385.00	0.00
Less: De-capitalization during the year/ period	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
Add: Discharges during the year/ period	0.00	0.00	0.00	0.00	0.00
Closing capital cost	147774.21	150589.21	154188.21	154573.21	154573.21
Average capital cost	147685.71	149181.71	152388.71	154380.71	154573.21

(a) Capital cost eligible for Return on Equity at normal rate

(Rs in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Opening capital cost	147597.21	147774.21	150589.21	153526.21	153911.21
Add: Addition during the year/period	177.00	2815.00	2937.00	385.00	0.00
Less: De-capitalization during the year/ period	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
Add: Discharges during the year/ period	0.00	0.00	0.00	0.00	0.00
Closing capital cost	**147774.21**	**150589.21**	**153526.21**	**153911.21**	**153911.21**
Average capital cost	147685.71	149181.71	152057.71	153718.71	153911.21

(b) Capital cost eligible for Return on Equity at weighted average rate of interest:

(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Opening capital cost	0.00	0.00	0.00	662.00	662.00
Add: Addition during the year/period	0.00	0.00	662.00	0.00	0.00
Less: De-capitalization during the year/ period	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
Add: Discharges during the year/ period	0.00	0.00	0.00	0.00	0.00
Closing capital cost	**0.00**	**0.00**	**662.00**	**662.00**	**662.00**
Average capital cost	0.00	0.00	331.00	662.00	662.00

5. The Respondents, Maharashtra State Electricity Distribution Company Limited (MSEDCL) and Madhya Pradesh Power Management Company Limited (MPPMCL) have filed their replies vide affidavits dated 16.6.2021 and 15.7.2021 respectively and the Petitioner vide affidavit dated 29.6.2021and 30.7.2021 has filed its rejoinder to the replies of the Respondents. The Petition was heard through video conferencing on 10.8.2021 and the Commission reserved its order in the matter. Based on the submissions of the parties and the documents available on record and on prudence check, we proceed to determine the tariff of the generating station for the period 2019-24, as stated in the subsequent paragraphs.

Capital Cost

6. 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 3 of Regulation 19 of the 2019 Tariff Regulations provides as under:

"(3) 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 modernisation 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."*

7. The annual fixed charges claimed in the Petition is based on opening capital cost of Rs.147597.21 lakh, as against capital cost of Rs.146716.78 lakh on cash basis (after removal of un-discharged liabilities amounting to Rs.218.67 lakh) as on 31.3.2019 allowed vide order dated 11.1.2022 in Petition No. 297/GT/2020. Accordingly, in terms of Regulation 19(3) of the 2019 Tariff Regulations the capital cost of Rs.146716.78 lakh on cash basis has been considered as on 1.4.2019 for the purpose of determination of tariff for the 2019-24 tariff period.

Additional Capital Expenditure

8. Regulations 25 and 26 of the 2019 Tariff Regulations, provide as under:

25. Additional Capitalization 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 Modernization (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 decapitalization 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."

9. The projected additional capital expenditure claimed by the Petitioner for the 2019-24 tariff period is as under:

(Rs. in lakh)

	Regulation	2019-20	2020-21	2021-22	2022-23	2023-24
A. Works within original scope						
Ash Dyke works	25(1)(c) & 25(1)(g)	177.00	2815.00	1700.00	0.00	0.00
Cycle of Concentration	26(1)(b)	0.00	0.00	1160.00	0.00	0.00
CLO_2 Package	26(1)(b) read with 26(1)(d)	0.00	0.00	77.00	385.00	0.00
Sub-Total (A)		**177.00**	**2815.00**	**2937.00**	**385.00**	**0.00**
B. Works beyond original scope						

Integrated Security System	26(1)(d)	0.00	0.00	662.00	0.00	0.00
Sub-Total (B)		0.00	0.00	662.00	0.00	0.00
Additional capital expenditure claimed (A+B)		**177.00**	**2815.00**	**3599.00**	**385.00**	**0.00**

10. We now examine the additional capital expenditure claimed by the Petitioner on projected basis for the 2019-24 tariff period in the subsequent paragraphs.

<u>Ash Dyke Raising and related work</u>

11. The Petitioner has claimed projected additional capital expenditure of Rs.177.00 lakh in 2019-20, Rs.2815.00 lakh in 2020-21 and Rs.1700.00 lakh in 2021-22 towards Ash dyke raising and related works under Regulation 25(1)(c) and Regulation 25(1)(g) of the 2019 Tariff Regulations. In justification of the same, the Petitioner has submitted that the additional capital expenditure claimed is a part of ongoing work for raising of the existing ash dyke and is within the original scope of work of the project. It has submitted that since the existing capacity of ash dyke is envisaged to get exhausted, the raising of ash dyke is necessarily required for increasing its capacity, for further disposal of ash generated from the generating station, for sustained operation of the plant. The Petitioner vide affidavit dated 30.6.2021 has submitted that after installation of ECS, the generating station shall be operational for at least 10 years and raising of ash dyke will be required for further disposal of the generated ash for sustained operation of the generating station. Accordingly, the Petitioner has submitted that the claim may be allowed under Regulation 25(1)(c) and Regulation 25(1)(g) of the 2019 Tariff Regulations.

12. The Respondent MPPMCL has submitted that the need for ash dyke raising, in light of the requirement of ensuring 100% ash utilization by the generating stations

under MOEFCC Notification dated 7.12.2015, may be reviewed. It has also pointed out that the Petitioner, while on one hand is charging fly ash transportation cost, on the other hand, it is claiming expenditure towards ash dyke raising. The Petitioner has clarified that the issue of 'ash transportation' and 'raising of ash dyke' are two separate issues and have no bearing on each other. It has stated that the expenditure on account of ash transportation has been allowed to the generating station, while the issue of raising of ash dyke is an operational issue within the plant and the additional capital expenditure on this account is necessary for smooth operation of the plant.

13. The submission of the parties has been considered. In our view, the ash generation and ash disposal are a continuous process, to be carried out from time to time, during the operating life of the plant, to ensure the successful operation of the plant. Further, from the Petitioner's submission that the plant will be in operation for at least 10 years, makes it evident that there is no plan for phasing out the generating station in the near future. In this background, we allow the Petitioner's claim for additional capital expenditure, subject to the condition that the investment made for this activity, will be permitted to be recovered in the form of depreciation @5.28% per annum. This, according to us, will ensure that the Petitioner keeps the plant running for the period as mentioned above, to ensure the full recovery of investment and also beneficiaries are not burdened for upfront recovery of investment, without commensurate benefit in terms of supply of power.

Cycle of Concentration (COC)

14. The Petitioner has claimed projected additional capital expenditure of Rs.1160.00 lakh in 2021-22 for Cycle of Concentration (COC) under Regulation

26(1)(b) of the 2019 Tariff Regulations. In justification for the same, the Petitioner has submitted that the present work has been taken up by the Petitioner, in view of conservation of water in line with the guidelines issued by the Central Electricity Authority (CEA) in its report on minimization of water requirement in coal based thermal generating stations, by increasing operating level of COC for Cooling/ Circulating water. The Petitioner has further submitted that, presently, the COC being maintained in the generating station is in the range of 2.5 to 3.5. However, as per the guidelines of water conservation from CEA, the COC may be maintained at a level of 5 for the normal sources of raw water. The Petitioner has also submitted that the sustained operation of unit at a higher COC may cause scaling in condenser tubes, and, therefore, it needs comprehensive chemical treatment, on sustained basis, and the requirement of suitable improvement in chemical regime of the circulating water, has also been suggested by CEA.

15. The Respondent MPPMCL has submitted that CEA had issued the said report/ publication in January, 2012 whereas, the proposal of the Petitioner after a lapse of 10 years, treating the same as change in law, especially when the generating station has completed its useful life, is objectionable. It has added that the additional capital expenditure claimed after completion of useful life, may be met by the Petitioner from the Special allowance allowed to the generating station.

16. The submission of the parties has been considered. It is observed that the Petitioner had filed various petitions in respect of its generating stations, including Petition No. 335/MP/2020 (for this generating station) for approval of additional expenditure due to installation of Emission Control Systems. One of the issues involved in these petitions, was the reduction (minimization) of water consumption

albeit on account of the MoEF& CC notification dated 7.12.2015, for which the Petitioner has been granted liberty to approach the Commission at a later stage. Accordingly, the Commission in its order dated 28.4.2021 in Petition No. 335/MP/2020, based on the submissions of the Petitioner, had observed that the Petitioner was meeting the water consumption norms at present. As the water consumption of the generating station is within the limits specified by the norms notified by MOEF&CC and keeping in view that the report of CEA relied upon by the Petitioner is of the year 2010, we are not inclined to allow the additional capital expenditure claimed by the Petitioner under this head. The Petitioner is, however, granted liberty to approach the Commission with proper justification/ details for the additional capital expenditure claimed along with the benefits, if any, accruing to the beneficiaries on this count, at the time of truing up of tariff of the generating station. The Petitioner may also claim the same in Petition to be filed subsequently on basis of liberty granted to it vide order dated 28.4.2021 in Petition No. 335/MP/2020.

Chlorine Dioxide (ClO2) Package

17. The Petitioner has claimed projected additional capital expenditure of Rs.77.00 lakh in 2021-22 and Rs.385.00 lakh in 2022-23 for ClO_2 (Chlorine dioxide) Package, under Regulation 26(1)(b) read with 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 from chlorine stored in cylinders/ tonners, 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 stated that chlorine gas is very hazardous and may prove fatal in case of leakage and, therefore, in the interest of

public safety, the chlorine dozing system is being replaced by ClO_2 system, which is much safer and less hazardous than chlorine. The Petitioner has submitted that in the proposed scheme, ClO_2 shall be produced on site by use of commercial grade HCl and Sodium Chlorite and accordingly to avoid handling and storage risk. It has further submitted that at its Kudgi project, the Department of Factories, Boiler, Industrial Safety and Health, State Government of Karnataka has asked the Petitioner to replace the highly hazardous gas chlorination system with ClO_2 system. It has also submitted that the Odisha State Pollution Control Board while issuing consent to establish, in case of the Darlipalli generating station of the Petitioner, had requested the Petitioner to explore the possibility of installing ClO_2 system instead of chlorine gas system. The Petitioner has stated that for safety of public, it is replacing the chlorination system with ClO_2 system. The Petitioner vide affidavit dated 30.6.2021 has added that this is also in line with the duties necessitated for an employer (regarding ensuring that the work place is free from hazards which cause or likely to cause injury and keep working environment safe and without health hazard) in terms of section 6(1)(a) and section 6(1)(d) of "The Occupational Safety, Health and Working Conditions Code, 2020" notified by the Ministry of Law & Justice, Government of India.

18. The Respondent MPPMCL has submitted that reliance made to Regulations 26(1)(b) and 26(1)(d) of the 2019 Tariff Regulations is not justified in view of the fact that FGD installation has been mandated by MoEF&CC vide its notification dated 7.12.2015. It has further submitted that there is no incidence of change in law or compliance of any existing law in the present case for approval of the claim under Regulation 26(1)(b) of the 2019 Tariff Regulations. The Respondent has added that

Regulation 26(1)(d) of the 2019 Tariff Regulations will be applicable only for security and safety related expenses, if advised or directed by statutory authorities for which the Petitioner has not submitted any documentary proof and, hence, the claim is liable to be rejected.

19. We have considered the matter. The Petitioner has claimed additional capital expenditure for ClO_2 system under Regulation 26(1)(b) of the 2019 Tariff Regulations. 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 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 (Vindhyachal TPS) warranting the 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 ClO_2 system, for safety and security of the generating station. In view of this, the projected additional capital expenditure of Rs 77.00 lakh in 2021-22 and Rs.385.00 lakh in 2022-23 for works relating to ClO_2 system is not allowed.

Integrated Security System

20. The Petitioner has claimed projected additional capital expenditure of Rs.662.00 lakh in 2021-22 for Integrated Security System, under Regulation 26(1)(d)

of the 2019 Tariff Regulations. In justification for the same, the Petitioner has submitted that it has received letter dated 23.10.2019 from the Ministry of Power, GOI, for enhancement and automation of security at the power project, in view of consistent threat to various vital installations and infrastructure, including power stations, as per reports from external agencies. In view of similar information received earlier, the Petitioner, in collaboration with CISF has prepared a comprehensive multilayer e-security system, to be installed in various power stations across the country. The Petitioner has stated that the Integrated Security System (ISS) proposed to be installed in the generating station during the 2019-24 tariff period, shall not only enhance the reliability of the security system, but will also help rationalize the security manpower in the generating station.

21. The Respondent MPPMCL has submitted that the claim of the Petitioner is not maintainable as Regulation 26(1)(d) is applicable only for security and safety related expenses, if advised or directed by statutory authorities. It has stated that the documents furnished by the Petitioner reveal no such direction by appropriate statutory authorities and since the Petitioner has not furnished proper documentary proof to substantiate its claim, the same may be disallowed. The Respondent has added that the Petitioner may meet the expenses on this count from the normative O&M expenses or the Special allowance allowed to the generating station.

22. We have considered the matter. The Petitioner in support of its claim for projected additional capital expenditure has submitted that it has received letter dated 23.10.2019 from MOP, GOI mandating the enhancement and automation of security at power stations, in view of consistent threat to various vital installations

and infrastructure including the power stations, based on reports of external agencies. The Petitioner has, however, not furnished this document, on the ground of it being confidential in nature, but would be made available to the Commission, in a sealed envelope. In our view, the MOP, GOI has mandated the enhancement and automation of security at power stations, based on threat perception to vital installations received from external agencies. Also, the expenditure for this asset/ item will not only enhance the reliability of security system, but will also help in rationalizing the security manpower of the generating station. In this background, we allow the projected additional capital expenditure claimed by the Petitioner. The Petitioner is, however, directed to furnish the documentary proof, in support of the claim, in a sealed cover for consideration of the Commission, at the time of truing-up of tariff of the generating station.

23. Based on above discussion, the projected additional capital expenditure allowed for the 2019-24 tariff period, is as under:

(Rs in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Works within original scope, change-in-law etc. eligible for ROE at normal rate					
Ash Dyke Works	177.00	2815.00	1700.00	0.00	0.00
Cycle of Concentration	0.00	0.00	0.00	0.00	0.00
Clo2 Package	0.00	0.00	0.00	0.00	0.00
Sub-Total (A)	**177.00**	**2815.00**	**1700.00**	**0.00**	**0.00**
Works beyond original scope excluding add-cap due to change-in-law eligible for ROE at weighted average rate of interest (WAROI)					
Integrated Security System	0.00	0.00	662.00	0.00	0.00
Sub-Total (B)	0.00	0.00	662.00	0.00	0.00
Additional capital expenditure allowed	**177.00**	**2815.00**	**2362.00**	**0.00**	**0.00**

Capital Cost

24. Based on the above, the capital cost allowed for the purpose of tariff for the 2019-24 tariff period is as under:

(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Opening Capital Cost	146716.78	146893.78	149708.78	152070.78	152070.78
Add: Projected Additional capital expenditure	177.00	2815.00	2362.00	0.00	0.00
Closing Capital Cost	**146893.78**	**149708.78**	**152070.78**	**152070.78**	**152070.78**
Average Capital Cost	146805.28	148301.28	150889.78	152070.78	152070.78

Debt Equity Ratio

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

"18. Debt-Equity Ratio: (1) For a 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 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 modernization expenditure for life extension shall be serviced in the manner specified in clause (1) of this Regulation.

26. Gross loan and equity amounting to Rs. 73519.21 lakh and Rs. 73197.55 lakh respectively as on 31.3.2019 as determined in order dated 11.1.2022 in Petition No. 297/GT/2020 has been considered as gross loan and equity as on 1.4.2019. In terms of Regulation 18, the debt-equity ratio of 70:30 has been applied on year-wise admitted additional capital expenditure for arriving at the additions to loan and equity during each year of the 2019-24 tariff period. The debt-equity ratio considered for the purpose of computation of tariff is as follows:

(Rs. in lakh)

	Capital Cost as on 1.4.2019	(%)	Additional Capitalization during 2019-24	(%)	Capital Cost as on 31.3.2024	(%)
Debt	73519.21	50.11%	3747.80	70.00%	77267.01	50.81%
Equity	73197.55*	49.89%	1606.20	30.00%	74803.75	49.19%
Total	146716.78**	100.00%	5354.00	100.00%	152070.78**	100.00%

In line with the first proviso to Regulation 18(3) of 2019 tariff regulations equity has been restricted to Rs.44015.03 Lakh i.e 30% of capital cost for the purpose of tariff as explained below.variation due to rounding off.*

(Rs. In lakh)

	Amount
Closing equity as on 31.3.2019* (a)	73197.55
Equity in excess of 30% (b)	29182.52
Equity admissible as on 1.4.2019** (a-b)	44015.03

** Represents 49.89% of capital cost of Rs. 146716.78 lakh as on 01.04.2019.*

*** Represents 30% of capital cost of Rs. 146716.78 lakh as on 01.04.2019.*

27. The Petitioner has claimed gross normative loan of Rs.74135.52 lakh and equity of Rs.44279.16 lakh (net of equity adjustment of Rs.29182.53 lakh in terms of first proviso to Regulation 18(3) as on 1.4.2019) and has considered the debt-equity ratio of 70:30 for funding of the projected additional capital expenditure claimed during the 2019-24 tariff period. The gross normative loan and equity of the

generating station, as on 31.3.2019, as approved by order dated 11.1.2022 in Petition No. 297/GT/2020 is Rs.73519.21 lakh (i.e. 50.11% of the admitted capital cost as on 31.3.2019) and Rs.73197.55 lakh (i.e.,49.89% of the admitted capital cost as on 31.3.2019), respectively. Accordingly, in terms of Regulation 18(3) of the 2019 Tariff Regulations, the gross normative loan and equity to be considered as on 1.4.2019, works out to Rs.73519.21 lakh and Rs.73197.55 lakh respectively. However, considering the first proviso to Regulation 18(3) of the 2019 Tariff Regulations, equity to be considered for the purpose of tariff as on 1.4.2019, works out to Rs.44015.03 lakh. Accordingly, the gross normative loan of Rs.73519.21 lakh and net equity of Rs.44015.03 lakh has been considered for the purpose of tariff as on 1.4.2019. Further, the admitted projected additional capital expenditure has been allocated in debt: equity ratio of 70:30. This is subject to truing up.

Return on Equity

28. 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 stations 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."

29. 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 the generating company or the 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 the 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 1000 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 transmission customers as the case may be on year to year basis."

30. 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 opening equity, as on 1.4.2019 and projected additional capital expenditure claimed within the original scope of work, change in law etc. for the 2019-24 tariff period. The same has been considered for the purpose of tariff. Further, for additional capital expenditure claimed beyond the original scope of work (excluding additional capital expenditure due to change in law), the Petitioner, has claimed ROE after grossing up WAROI of 8.2970% in 2019-20, 8.2978% in 2020-21, 8.2988% in 2021-22, 8.2980% in 2022-23 and 8.2923% in 2023-24 with effective tax rate of 17.472%. WAROI as claimed, has been considered without grossing up of the same for the purpose of tariff. Accordingly, ROE has been worked out as under:

Return on Equity at Normal Rate (A)

(Rs. in lakh)

	2019-20	**2020-21**	**2021-22**	**2022-23**	**2023-24**
Gross Notional Equity	73197.55	73250.65	74095.15	74605.15	74605.15
Less: Adjustment to equity in terms of 1st proviso to Regulation 18(3)	29182.52	29182.52	29182.52	29182.52	29182.52
Normative Equity – Opening	**44015.03**	**44068.13**	**44912.63**	**45422.63**	**45422.63**
Addition of Equity due to additional capital expenditure	53.10	844.50	510.00	0.00	0.00
Normative Equity – Closing	**44068.13**	**44912.63**	**45422.63**	**45422.63**	**45422.63**
Average Normative Equity	44041.58	44490.38	45167.63	45422.63	45422.63
Return on Equity (Base Rate)	15.500%	15.500%	15.500%	15.500%	15.500%
Effective Tax Rate	17.472%	17.472%	17.472%	17.472%	17.472%
Rate of Return on Equity (Pre-tax)	18.782%	18.782%	18.782%	18.782%	18.782%
A: Return on Equity (Pre-tax) - (annualized)	**8271.89**	**8356.18**	**8483.38**	**8531.28**	**8531.28**

Return on Equity at WAROI (B)

(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Gross Notional Equity	0.00	0.00	0.00	198.60	198.60
Less: Adjustment to equity in terms of 1st proviso to Regulation 18(3)	0.00	0.00	0.00	0.00	0.00
Normative Equity – Opening	**0.00**	**0.00**	**0.00**	**198.60**	**198.60**
Addition of Equity due to additional capital expenditure	0.00	0.00	198.60	0.00	0.00
Normative Equity – Closing	**0.00**	**0.00**	**198.60**	**198.60**	**198.60**
Average Normative Equity	0.00	0.00	99.30	198.60	198.60
Weighted average rate of interest	8.2970%	8.2978%	8.2988%	8.2980%	8.2923%
B: Return on Equity - (annualized)	**0.00**	**0.00**	**8.24**	**16.48**	**16.47**

Total Return on Equity allowed

(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Return on Equity at Normal Rate (A)	8271.89	8356.18	8483.38	8531.28	8531.28
Return on Equity at WAROI (B)	0.00	0.00	8.24	16.48	16.47
Total Return on Equity allowed (A+B)	**8271.89**	**8356.18**	**8491.62**	**8547.76**	**8547.75**

Interest on loan

31. 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-capitalization 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 loan shall be reflected from the date of such re-financing."

32. Interest on loan has been worked out as under:

i) The gross normative loan amounting to Rs.73519.21 lakh on 31.3.2019 as considered in order dated 11.1.2022 in Petition 297/GT/2020 has been considered as on 1.4.2019;

ii) Cumulative repayment of Rs.71687.78 lakh as on 31.3.2019 as considered in order dated 11.1.2022 in Petition No.297/GT/2020 has been considered as on1.4.2019;

iii) Accordingly, the net normative opening loan as on 1.4.2019 works out to Rs.1831.44 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 year of the 2019-24 tariff period;

vi) The Petitioner has claimed interest on loan considering WAROI of 8.2970% in 2019-20, 8.2978% in 2020-21, 8.2988% in 2020-21, 8.2980% in 2022-23 and 8.2923% in 2023-24, the same has been considered subject to truing up.

33. Necessary calculation of interest of loan is as follows:

(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Gross opening loan	73519.21	73643.11	75613.61	77267.01	77267.01
Cumulative repayment of loan up to previous year/ period	71687.78	71830.80	71926.82	72159.50	72454.55
Net Loan Opening	**1831.44**	**1812.31**	**3686.79**	**5107.51**	**4812.46**
Addition on account of additional capital expenditure	123.90	1970.50	1653.40	0.00	0.00
Repayment of loan during the year	143.03	96.01	232.69	295.04	295.04
Net Loan Closing	**1812.31**	**3686.79**	**5107.51**	**4812.46**	**4517.42**
Average Loan	1821.87	2749.55	4397.15	4959.99	4664.94
Weighted Average Rate of Interest on Loan	8.2970%	8.2978%	8.2988%	8.2980%	8.2923%
Interest on Loan	**151.16**	**228.15**	**364.91**	**411.58**	**386.83**

Depreciation

34. Regulation 33 of the 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 de-capitalized asset during its useful services."

35. The generating station has completed its useful life of 25 years during the year 2016-17. Though the Petitioner has claimed projected additional capital expenditure during the 2019-24 tariff period, it has not provided any details for life extension of the generating station. Accordingly, the additional expenditure has been allowed with weighted average rate of depreciation at 5.28%. The closing cumulative depreciation as on 31.3.2019, amounting to Rs.129498.73 lakh (Rs.129457.79 lakh pertaining to assets that completed its useful life during 2016-17 (i.e., assets admitted upto 31.3.2014) and Rs.40.94 lakh pertaining to additional capital expenditure (i.e., assets admitted after 31.3.2014) as considered in order dated 11.1.2022 in Petition No. 297/GT/2020 has been considered as the opening cumulative depreciation as on 1.4.2019. Further, as considered in order dated 11.1.2022, the value of closing capital cost amounting to Rs. 146482.83 lakh as on 31.3.2019 and freehold land amounting to Rs.2500.84 lakh, for the assets admitted upto 31.3.2014 and closing capital cost amounting to Rs. 239.95 lakh as on 31.3.2019, for assets admitted after 31.3.2014, has been considered as opening capital cost as on 1.4.2019. Accordingly, the balance depreciable value, before providing depreciation for 2019-20 works out to Rs.126.00 lakh for assets admitted up to 31.3.2014 and Rs.249.27 lakh for assets

admitted through additional capital expenditure for the period after 31.3.2014, as detailed below. Further, as the details of life extension has not been provided by the petitioner, the balance depreciation for the assets admitted for the period upto 31.3.2014, has been allowed in 2019-20 and the depreciation for the assets (additional capital expenditure) admitted after 31.3.2014, has been allowed by considering the weighted average rate of depreciation of 5.28%. Necessary calculations with regard to depreciation are as under:

(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
For assets admitted up to 31.3.2014 (Assets which have completed its useful life)					
Opening Capital Cost	146482.83	146482.83	146482.83	146482.83	146482.83
Add: Projected Additional capital expenditure	0.00	0.00	0.00	0.00	0.00
Closing Capital Cost	**146482.83**	**146482.83**	**146482.83**	**146482.83**	**146482.83**
Average Capital Cost (A)	146482.83	146482.83	146482.83	146482.83	146482.83
Value of freehold land included above (B)	2500.84	2500.84	2500.84	2500.84	2500.84
Aggregated depreciable value (C) = [(A-B)x0.9]	129583.79	129583.79	129583.79	129583.79	129583.79
Remaining aggregate depreciable value at the beginning of the year (D) = [C – Cumulative depreciation at the end of the preceding period]	126.00	0.00	0.00	0.00	0.00
Number of completed years at the beginning of the year (E)	27.42	28.42	29.42	30.42	31.42
Balance useful life at the beginning of the year (F)	-	-	-	-	-
Weighted Average Rate of Depreciation (G) = [H/A]	0.0860%	0.0000%	0.0000%	0.0000%	0.0000%
Depreciation during the year (H)	126.00	0.00	0.00	0.00	0.00
Cumulative depreciation at the end (I)*	129583.79	129583.79	129583.79	129583.79	129583.79
For assets admitted after 31.3.2014 (Assets admitted through Additional capital expenditures)					
Opening Capital Cost	233.95	410.95	3225.95	5587.95	5587.95
Add: Projected Additional capital expenditure	177.00	2815.00	2362.00	0.00	0.00
Closing Capital Cost	**410.95**	**3225.95**	**5587.95**	**5587.95**	**5587.95**
Average Capital Cost (A)	322.45	1818.45	4406.95	5587.95	5587.95
Value of freehold land included above (B)	0.00	0.00	0.00	0.00	0.00
Aggregated depreciable value (C) = [(A-B)x0.9]	290.21	1636.61	3966.26	5029.16	5029.16
Remaining aggregate depreciable value at the beginning of the year (D) = [C – Cumulative depreciation at the end of the preceding period]	249.27	1578.64	3812.28	4642.49	4347.45

Number of completed years at the beginning of the year (E)	27.42	28.42	29.42	30.42	31.42
Balance useful life at the beginning of the year(F)	-	-	-	-	-
Weighted Average Rate of Depreciation (G)	5.2800%	5.2800%	5.2800%	5.2800%	5.2800%
Depreciation during the year (H1) = [A x G]	17.03	96.01	232.69	295.04	295.04
Cumulative depreciation at the end (I)*	57.97	153.98	386.67	681.71	976.75
Total Depreciation					
Total Depreciation during the year (H+H1)	143.03	96.01	232.69	295.04	295.04

**The Cumulative Depreciation at the end of 2018-19 is Rs.129457.79 lakh for assets admitted up to 31.03.2014 and Rs.40.94 lakh for assets admitted after 31.03.2014*.

O&M Expenses

36. Regulation 35(1)(1) of the 2019 Tariff Regulations provides for the following O&M expenses in respect of generating station/ units with capacity of 200/210/250 MW:

Year	200/210/250 MW Series (lakh/MW)
2019-20	32.96
2020-21	34.12
2021-22	35.13
2022-23	36.56
2023-24	37.84

37. The total O&M expenses claimed by the Petitioner are as follows:

(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Normative O&M expenses claimed under Regulation 35(1)(1) of the 2019 Tariff Regulations **(a)**	41529.60	42991.20	44490.60	46065.60	47678.40
O&M expenses under Regulation 35(1)(6) of the 2019 Tariff Regulations					
- Water Charges	2116.22	2190.29	2266.95	2346.29	2428.41
- Security Expenses	1058.82	1164.71	1281.18	1409.29	1550.22
- Capital Spares consumed	0.00	0.00	0.00	0.00	0.00
Total O&M Expenses	**44704.64**	**46346.20**	**48038.73**	**49821.18**	**51657.03**

38. The Petitioner's claim for normative O&M expenses is in accordance with Regulation 35(1)(1) of the 2019 Tariff Regulations and the same is, therefore,

allowed. The Petitioner has also claimed Water Charges, Security Expenses and Capital Spares, which are discussed in subsequent paragraphs.

Water Charges

39. The first proviso to Regulation 35(6) of the 2019 Tariff Regulations provides for the claim for Water charges as under:

> *"35(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;*
>
> *xxxxxxxx."*

40. The actual water charges claimed by the Petitioner in Petition No. 297/GT/2020 for the 2014-19 tariff period and allowed by the Commission in its order dated 11.1.2022 is as under:

(Rs. in lakh)

Water Charges for 2014-19 tariff period	**2014-15**	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Claimed	2353.63	2249.01	2106.40	1979.51	2044.66
Allowed	2353.37	2243.30	2017.81	1954.04	1954.04

41. In terms of the first proviso to Regulation 35(6) of the 2019 Tariff Regulations, water charges shall be allowed separately based on water consumption, depending upon the type of plant, type of cooling water system etc., subject to prudence check. The Petitioner has claimed water charges on the basis of the water charges claimed for 2018-19 i.e., Rs.2044.66 Lakh, with annual escalation of 3.5%, as follows:

(Rs. in lakh)

2019-20	**2020-21**	**2021-22**	**2022-23**	**2023-24**
2116.22	2190.29	2266.95	2346.29	2428.41

42. The Respondent MSEDCL has submitted that the Petitioner has not provided any valid justification towards consideration of escalation of 3.5% each year, over the

water charges for 2018-19 and the same is without any administrative or scientific proof and, hence, may be disallowed.

43. Thereafter, the Petitioner vide affidavit dated 30.6.2021 has submitted that actual water charges of the generating station for 2019-20 and 2020-21 as Rs.1959.40 lakh and Rs.1954.04 lakh, respectively.

44. We have examined the matter. The Petitioner has furnished actual water charges of the generating station for the years 2019-20 and 2020-21. It is observed that the water charges for the period 2021-24 have been claimed by the Petitioner based on the water charges claimed for 2018-19 period with an annual escalation of 3.5%. However, the actual water expenses incurred by the Petitioner for year 2020-21 are same as allowed by Commission for the year 2018-19 i.e. Rs.1954.04 lakh in order dated 11.1.2022 in Petition No.297/GT/2020. Therefore, as contested by MSEDCL, we find no justification in escalating the water charges by 3.5% for the years 2021-22 to 2023-24.

45. In view of above, we are considering the actual water charges of Rs.1954.04 lakh allowed for the year 2018-19 in order dated 11.1.2022 in Petition No. 297/GT/2020 and allowing the same for each year of the 2019-24 tariff period subject to truing up. Accordingly, the water charges claimed and allowed for the 2019-24 tariff period are as below:

(Rs. in lakh)

Water charges	**2019-20**	**2020-21**	**2021-22**	**2022-23**	**2023-24**
Claimed	2116.22	2190.29	2266.95	2346.29	2428.41
Allowed	1954.04	1954.04	1954.04	1954.04	1954.04

Security Expenses

46. The second proviso to Regulation 35(6) of the 2019 Tariff Regulations provides for the claim for Security expenses as under:

> *"35(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;*
> *Xxxx*

47. The security expenses claimed by the Petitioner are as under:

(Rs. in lakh)

2019-20	2020-21	2021-22	2022-23	2023-24
1058.82	1164.71	1281.18	1409.29	1550.22

48. The Petitioner submitted that the security expenses claimed is based on estimated expenses and shall be subject to retrospective adjustment, based on actuals at the time of truing up of tariff. Subsequently, the Petitioner vide affidavit dated 30.6.2021 has submitted that the actual security expenses of the generating station for the year 2019-20 as Rs.1173.92 lakh and for 2020-21 as Rs.1256.61 lakh.

49. It is noticed that the Petitioner has furnished actual security expenses for the generating station for the years 2019-20 and 2020-21 and projected security expenses for the years 2021-22, 2022-23 and 2023-24. However, the Petitioner has not furnished the assessment of security requirement as required under the said proviso to the regulations. Accordingly, we direct the Petitioner to furnish the requisite details for prudence check of the security expenses claimed at the time of truing up. However, for the present, the actual security expenses for the period 2019-21 and the projected security expenses for the period 2021-24 has been considered

for the purpose of tariff. Accordingly, the security expenses claimed and allowed for the generating station is as under:

(Rs. in lakh)

Security Expenses	**2019-20**	**2020-21**	**2021-22**	**2022-23**	**2023-24**
Claimed	1058.82	1164.71	1281.18	1409.29	1550.22
Allowed	1173.92	1256.61	1281.18	1409.29	1550.22

Capital Spares

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

51. Accordingly, the total O&M expenses including water charges and security expenses, as claimed by the Petitioner and allowed to the generating station 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 claimed under Regulation 35(1)(1) of the 2019 Tariff Regulations **(a)**	41529.60	42991.20	44490.60	46065.60	47678.40
Normative O&M expenses allowed under Regulation 35(1)(1) of the 2019 Tariff Regulations (b)	41529.60	42991.20	44490.60	46065.60	47678.40
Water Charges claimed under Regulation 35(1)(6) of the 2019 Tariff Regulations **(c)**	2116.22	2190.29	2266.95	2346.29	2428.41
Water Charges allowed under Regulation 35(6) of the 2019 Tariff Regulations (d)	1954.04	1954.04	1954.04	1954.04	1954.04
Security Expenses claimed under Regulation 35(6) of the 2019 Tariff Regulations **(e)**	1058.82	1164.71	1281.18	1409.29	1550.22
Security Expenses allowed	1173.92	1256.61	1281.18	1409.29	1550.22

under Regulation 35(6) of the 2019 Tariff Regulations (f)					
Total O&M expenses claimed (a + c + e)	44704.64	46346.20	48038.73	49821.18	51657.03
Total O&M expenses allowed (b + d + f)	**44657.56**	**46201.85**	**47725.82**	**49428.93**	**51182.66**

Additional expenditure on Emission Control System

52. The Petitioner has submitted that it is in the process of installation of Emission Control Systems (ECS) in compliance to the revised emission standards, notified by MOEFCC vide notification dated 7.12.2015, as amended. It has submitted that the completion of these schemes in compliance to the revised emission norms, will affect the Auxiliary Power Consumption (APC), Heat Rate, and O&M expenses etc. In addition, the Petitioner has submitted that the availability of the unit/ station would also be affected due to shutdown of the units for installation of ECS. The Petitioner has also submitted that it would be filing the details of the same in a separate petition in terms of Regulation 29 of the 2019 Tariff Regulations. It is, however, noticed that the Petitioner had filed Petition No. 335/MP/2020, 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 28.4.2021 had disposed of the said petition, with certain observations. The claim of the Petitioner for additional expenditure on emission control system shall, therefore, be guided by the order dated 28.4.2021 in Petition No. 335/MP/2020.

Additional expenditure towards Fly Ash transportation

53. The Petitioner has claimed recovery of additional expenditure of Rs.1673.00 lakh in 2020-21, subject to truing up, from the beneficiaries on account of ash

transportation charges after adjusting the revenue earned from sale of ash. The Petitioner has submitted that pursuant to Notification dated 25.1.2016 of MOEFCC, the Petitioner had filed Petition No. 172/MP/2016 seeking recovery of additional expenditure incurred due to fly ash transportation cost as “Change in Law” event. The Commission vide its order dated 5.11.2018 in Petition No. 172/MP/2016 recognized the Notification dated 25.1.2016 as ‘Change in Law’ event and admitted the claims that is amount spent over and above the ash sale fund on account of ash transportation and has directed as under:

> *“31. Accordingly, we in exercise of the regulatory power hold that the actual additional expenditure incurred by the Petitioner towards transportation of ash in terms of the MOEFCC Notification is admissible under “Change in Law“ as additional O&M expenses. However, the admissibility of the claims is subject to prudence check of the following conditions on case to case basis for each station:*
> *a) Award of fly ash transportation contract through a transparent competitive bidding procedure. Alternatively, the schedule rates of the respective State Governments ,as applicable for transportation of fly ash.*
> *b) Details of the actual additional expenditure incurred on Ash transportation after 25.1.2016, duly certified by auditors.*
> *c) Details of the Revenue generated from sale of fly ash/ fly ash products and the expenditure incurred towards Ash utilisation up to 25.1.2016 and from 25.1.2016 to till date, separately.*
> *d) Revenue generated from fly Ash sales maintained in a separate account as per the MoEF notification.”*

54. The Petitioner has submitted that in terms of above, the actual ash transportation expenses incurred for the generating station in 2019-20 and 2020-21 after adjustment of the revenue from sale of ash is as under:

(Rs. in lakh)

Year	**Ash sale fund as on 1.4.2019**	**Revenue from sale of ash**	**Ash fund available for meeting transportation expenses**	**Ash transportation expenses**	**Ash transportation expense met out of Ash sale fund**	**Ash transportation expenses to be recovered from beneficiaries**
	A	**B**	**C = A+B**	**D**	**E = D (if C>=D) = C (if C<D)**	**F = 0 (if C>=D) = D-C (if C<D)**
2019-20	63.00	76.00	139.00	41.00	41.00	0.00
2020-21	98.00	0.00	98.00	646.00	98.00	1673.00

55. The Petitioner has further submitted that ash transportation expenses are recurring in nature and recovery of the same at the time of truing up would attract carrying cost thereon and has, accordingly, prayed to allow reimbursement of above transportation charges for the year 2019-20 and 2020-21, subject to truing up. The Petitioner has also submitted that for balance tariff period 2021-24, billing and recovery of ash transportation expenditure may be allowed provisionally on monthly basis based on self-certification subject to truing up. The Petitioner has further added that the issue of monthly recovery and the procedure for recovery of costs is no more res integra as this Commission in its order dated 22.3.2021 in Petition No. 405/MP/2019 (*GKEL & Anr. v. DHBVNL & Ors)* had devised a mechanism for the generator therein to recover future expenditure incurred on transportation of fly ash, wherein, the Commission has directed recovery of expenditure on transportation of fly ash on a monthly basis along with reconciliation on an annual basis. The Petitioner has prayed that a similar procedure may also be made applicable in the case of the Petitioner.

56. We have examined the matter. The Commission vide its order dated 5.11.2018 in Petition No. 172/MP/2016 had decided that the MOEF&CC notification dated 25.1.2016 amending the earlier notification dated 14.9.1999 issued under Environment (Protection) Rules, 1986 as 'change in law' and had disposed of the said petition vide order dated 5.11.2018 as under:

> *"31. Accordingly, we in exercise of the regulatory power hold that the actual additional expenditure incurred by the Petitioner towards transportation of ash in terms of the MOEFCC Notification is admissible under "Change in Law" as additional O&M expenses. However, the admissibility of the claims is subject to prudence check of the following conditions on case to case basis for each station:*
> *a) Award of fly ash transportation contract through a transparent competitive bidding procedure. Alternatively, the schedule rates of the respective State Governments, as applicable for transportation of fly ash.*

b) Details of the actual additional expenditure incurred on Ash transportation after 25.1.2016, duly certified by auditors.
c) Details of the Revenue generated from sale of fly ash/ fly ash products and the expenditure incurred towards Ash utilisation up to 25.1.2016 and from 25.1.2016 to till date, separately.
d) Revenue generated from fly Ash sales maintained in a separate account as per the MoEF notification."

57. 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.

Operational Norms

58. The Petitioner has considered following norms of operation, for the purpose of tariff for the 2019-24 tariff period:

Normative Annual Plant Availability Factor (NAPAF) (%)	85
Heat Rate (kCal/kwh)	2430
Auxiliary Power Consumption (%)	9.00
Specific Oil Consumption (ml/kwh)	0.50

Normative Annual Plant Availability Factor

59. Regulation 49(A) of the 2019 Tariff Regulations provides as under:

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

60. In terms of Regulation 49(A)(a) of the 2019 Tariff Regulations, the Petitioner has considered Normative Annual Plant Availability Factor of 85% during the 2019-24 tariff period, and the same is allowed.

Gross Station Heat Rate (kCal/kWh)

61. Regulation 49(C)(a)(i) of 2019 Tariff Regulations provides as under:

(i) For existing Coal-based Thermal Generating Stations, other than those covered under clauses (ii) and (iii) below:

200/210/250 MW Sets	***500 MW Sets (Sub-critical)***
2430kCal/kWh	*2390kCal/kWh*

62. In terms of Regulation 49(C)(a)(i) of the 2019 Tariff Regulations, the Petitioner has considered the Gross Station Heat Rate (GSHR) of 2430 kCal/kWh during the 2019-24 tariff period, and the same is allowed.

Secondary Fuel Oil Consumption

63. Regulation 49(D)(a) of 2019 Tariff Regulations provides as under:

"(a) For Coal-based generating stations other than at (c) below: 0.50 ml/kWh"

64. 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 2019-24 tariff period, and the same is allowed.

Auxiliary Power Consumption

65. Regulation 49(E)(a) of 2019 Tariff Regulations provides as under:

"(a) For Coal-based generating stations except at (b) below:

S. No.	***Generating Station***	***With Natural Draft cooling tower or without cooling tower***
(i)	*200 MW series*	*8.50%*
(ii)	*300 MW and above*	
	Steam driven boiler feed pumps	*5.75%*
	Electrically driven boiler feed pumps	*8.00%*

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:

Provided further that Additional Auxiliary Energy Consumption as follows shall be allowed for plants with Dry Cooling Systems:

Type of Dry Cooling System	***(% of gross generation)***
Direct cooling air cooled condensers with mechanical draft fans	*1.0%*
Indirect cooling system employing jet condensers with pressure recovery turbine and natural draft tower	*0.5%*

Note: The auxiliary energy consumption for the unit capacity of less than 200 MW sets shall be dealt on case to case basis."

66. In terms of Regulation 49(E)(a) of the 2019 Tariff Regulations, the Petitioner has considered auxiliary energy consumption of 9.00% during the 2019-24 tariff period, and the same is allowed.

Interest on Working Capital

67. Sub-section (a) of clause (1) of Regulation 34 and Regulation 34(3) of the 2019 Tariff Regulations provide 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 for Working Capital Computation

68. Regulation 34(2) of the 2019 Tariff Regulations provides that the computation of 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.

69. 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 x CVSF) x LPPF / CVPF+SFC x LPSFi + LC x LPL} x 100 / (100 – AUX)

***(b) For gas and liquid fuel based stations**:*

ECR = SHR x LPPF x 100 / {(CVPF) x (100 – AUX)}

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."

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

(a) Operational norms as per the 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 for the three months of October, 2018, November, 2018 and December, 2018;

(c) Price and GCV of secondary fuel oil for the three months of October, 2018, November, 2018 and December, 2018.

71. Accordingly, the Petitioner has claimed ECR of Rs.1.677 per kWh and following fuel cost component in working capital for the 2019-24 tariff period:

(Rs. in lakh)

	2019-20	**2020-21**	**2021-22**	**2022-23**	**2023-24**
Cost of coal for 40 days	15435.46	15435.46	15435.46	15435.46	15435.46
Cost of secondary fuel oil for 2 months	395.37	394.29	394.29	394.29	395.37

72. On perusal of the Form-15 furnished by the Petitioner vide affidavit dated 29.6.2021, it is observed that the Petitioner has included opening stock of coal and its corresponding value while computing weighted average price of coal for the months of October 2018, November 2018 and December 2018. However, in terms of Regulation 34(2) of the 2019 Tariff Regulations, the computation of cost of fuel as part of IWC is to be based on the landed price and GCV of fuel as per actuals, which means that only fuel received during these three months is to be considered and no opening stock shall be included therein. Accordingly, the opening stock of coal and

its corresponding values have been excluded while computing the weighted average price and GCV of coal. However, the Petitioner has not furnished revised Form-15 for secondary fuel oil, specifying separate details in respect of opening stock for the months of October 2018, November 2018 and December 2018. For the present, the weighted average price and GCV of oil, as furnished by the Petitioner, has been considered. The Petitioner is directed to furnish Form-15, in respect of both coal and secondary fuel oil as mentioned above at the time of truing up of tariff. Accordingly, the weighted average price and GCV of coal and oil claimed and allowed for the 2019-24 tariff period, subject to truing up is as under:

	Claimed	**Allowed**
Weighted average price of coal (Rs./MT)	2231.09	2260.56
Weighted average GCV of coal (kCal/kg) *	3604.00	3612.17
Weighted average price of oil (Rs./kl)	9830.00	9830.00
Weighted average GCV of oil (kCal/l)	50432.01	50432.01

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

73. Accordingly, the fuel component in working capital, energy charges and ECR claimed and allowed for the 2019-24 tariff period is as under:

(Rs. in lakh)

	Claimed		**Allowed**	
	2019-20 & 2023-24	**2020-21 to 2022-23**	**2019-20 & 2023-24**	**2020-21 to 2022-23**
Cost of coal for 40 days *for generation corresponding to the NAPAF;*	15435.46		15603.98	
Cost of secondary fuel oil for 2 months *for generation corresponding to the NAPAF;*	395.37	394.29	395.37	394.29
Energy charges for 45 days	17656.56		17841.21	
ECR (Rs. /kWh	**1.677**		**1.695**	

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

Working Capital for Maintenance Spares

75. The Petitioner in Form-O has claimed the maintenance spares in the working capital as under:

(Rs. in lakh)

2019-20	2020-21	2021-22	2022-23	2023-24
8940.93	9269.24	9607.75	9964.24	10331.41

76. Regulation 34(1)(a)(iv) of the 2019 Tariff Regulations provide for maintenance spares @20% of the O&M expenses (including water charges and security expenses). Accordingly, maintenance spares @20% of the O&M expenses (including the water charges and security expenses) allowed for the 2019-24 tariff period is as under:

(Rs. in lakh)

2019-20	2020-21	2021-22	2022-23	2023-24
8931.51	9240.37	9545.16	9885.79	10236.53

Working Capital for Receivables

77. 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 are worked out and allowed as under:

(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Receivables equivalent to 45 days of energy charge	17841.21	17841.21	17841.21	17841.21	17841.21
Receivables equivalent to 45 days of capacity charge	7341.49	7521.53	7717.61	7957.29	8157.14
Total working capital for receivables	25182.70	25362.74	25558.82	25798.50	25998.35

Working Capital for O&M Expenses

78. The Petitioner in Form-O has claimed the O&M expenses for 1 month in the working capital as under:

(Rs. in lakh)

2019-20	2020-21	2021-22	2022-23	2023-24
3725.39	3862.18	4003.23	4151.77	4304.75

79. Regulation 34(1)(a)(vi) of the 2019 Tariff Regulations provide for O&M expenses equivalent to 1 month of the O&M expenses (including water charges and security expenses). Accordingly, O&M expenses, equivalent to 1 month of the O&M expenses (including water charges and security expenses) allowed for the 2019-24 tariff period is as under:

(Rs. in lakh)

2019-20	2020-21	2021-22	2022-23	2023-24
3721.46	3850.15	3977.15	4119.08	4265.22

80. 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 01.04.2019 + 350 bps) for the year 2019-20, 11.25% (i.e. 1-year SBI MCLR of 7.75% as on 01.04.2020 + 350 bps) for the year 2020-21 and 10.50% (i.e. 1 year SBI MCLR of 7.00% as on 01.04.2021 + 350 bps) for the period 2021-24. Accordingly, Interest on working capital has been computed as follows:

(Rs. in lakh)

		2019-20	2020-21	2021-22	2022-23	2023-24
	Working Capital for					
A	Working Capital for Cost of Coal towards Stock – 10 days	3901.00	3901.00	3901.00	3901.00	3901.00
B	Working Capital for Cost of Coal towards Generation - 30 days	11702.99	11702.99	11702.99	11702.99	11702.99
C	Working Capital for Cost of Secondary fuel oil – 2 months	395.37	394.29	394.29	394.29	395.37
D	Working Capital for Maintenance Spares @ 20% of O&M expenses	8931.51	9240.37	9545.16	9885.79	10236.53
E	Working Capital for Receivables - 45 days	25182.70	25362.74	25558.82	25798.50	25998.35
F	Working Capital for O&M expenses - 1 month	3721.46	3850.15	3977.15	4119.08	4265.22
G	**Total Working Capital (A+B+C+D+E+F)**	53835.03	54451.54	55079.41	55801.64	56499.46

H	Rate of Interest	12.0500%	11.2500%	10.5000%	10.5000%	10.5000%
I	**Interest on Working Capital (GxH)**	**6487.12**	**6125.80**	**5783.34**	**5859.17**	**5932.44**

Special Allowance

81. Regulation 28 of the 2019 Tariff Regulations provides for Special Allowance for coal-based/ lignite fired thermal generating stations as under:

> *"(1) In case of coal-based/lignite fired thermal generating station, the generating company, instead of availing renovation and modernization (R&M) may opt to avail a 'special allowance' in accordance with the norms specified in this Regulation, as compensation for meeting the requirement of expenses including renovation and modernization beyond the useful life of the generating station or a unit thereof and in such an event, upward revision of the capital cost shall not be allowed and the applicable operational norms shall not be relaxed but the Special Allowance shall be included in the annual fixed cost:*
>
> *Provided that such option shall not be available for a generating station or unit thereof for which renovation and modernization has been undertaken and the expenditure has been admitted by the Commission before commencement of these regulations, or for a generating station or unit which is in a depleted condition or operating under relaxed operational performance norms;*
>
> *Provided further that special allowance shall also be available for a generating station which has availed the Special Allowance during the tariff period 2009-14 or 2014-19 as applicable from the date of completion of useful life.*
>
> *(2) The special Allowance admissible to a generating station shall be @ Rs. 9.5 lakh per MW per year for the tariff period 2019-24.*
>
> *(3) In the event of a generating station availing Special Allowance, the expenditure incurred upon or utilized from Special Allowance shall be maintained separately by the generating station and details of same shall be made available to the Commission as and when directed.*
>
> *The Special Allowance allowed under this Regulation shall be transferred to a separate fund for utilization towards Renovation & Modernization activities, for which detailed methodology shall be issued separately."*

82. The Petitioner has claimed special allowance of Rs.11970.00 during each year of 2019-24 tariff period. Since the generating station has already completed its useful life during the 2014-19 tariff period itself, the Petitioner's claim of special allowance is allowed for the purpose of tariff.

Annual Fixed Charges

83. The annual fixed charges approved for the generating station for the 2019-24 tariff period is summarized as under:

(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Depreciation	143.03	96.01	232.69	295.04	295.04
Interest on Loan	151.16	228.15	364.91	411.58	386.83
Return on Equity	8271.89	8356.18	8491.63	8547.76	8547.75
Interest on Working Capital	6487.12	6125.80	5783.34	5859.17	5932.44
O&M Expenses	44657.56	46201.85	47725.82	49428.93	51182.66
Special Allowance	11970.00	11970.00	11970.00	11970.00	11970.00
Total	**71680.76**	**72978.00**	**74568.38**	**76512.49**	**78314.73**

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.*

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

Application Fee and Publication expenses

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

Summary

86. The annual fixed charges allowed in this order for the 2019-24 tariff period is summarized below:

(Rs. in lakh)

2019-20	2020-21	2021-22	2022-23	2023-24
71680.76	72978.00	74568.38	76512.49	78314.73

87. Petition No. 401/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**