**CENTRAL ELECTRICITY REGULATORY COMMISSION**
**NEW DELHI**

**<u>Petition No. 425/GT/2020</u>**

**Coram:**

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

**Date of Order: 6th June, 2022**

**IN THE MATTER OF**

Petition for approval of tariff of Sipat Super Thermal Power Station, Stage-I (1980 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 – 482 008

2. Maharashtra State Electricity Distribution Company Limited,
   Prakashgad, Bandra (East),
   Mumbai – 400 051

3. Gujarat Urja Vikas Nigam Limited,
   Vidyut Bhawan, Race Course,
   Vadodara – 390 007

4. Chhattisgarh State Power Distribution Company Limited,
   P.O. Sundar Nagar, Dangania,
   Raipur – 492 013

5. Electricity Department,
   Government of Goa,
   Vidyut Bhawan, Panji,
   Goa – 403 001

6. Electricity Department,
   Administration of Daman & Diu,
   Daman – 396 210

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

**Parties Present:**

Ms. Swapna Seshadri, Advocate, NTPC
Shri Anand K. Ganesan, Advocate, NTPC
Ms. Ritu Apurva, Advocate, NTPC
Shri Jai Dhanani, Advocate, NTPC
Shri Arvind Banerjee, CSPDCL
Shri Anurag Naik, MPPMCL

## ORDER

This petition has been filed by the Petitioner, NTPC for approval of tariff of Sipat Super Thermal Power Station Stage-I (3 x 660 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'). The generating station with a capacity of 1980 MW comprises of three units of 660 MW each. The dates of commercial operation of the different units of the generating station are as under:

| Unit | Actual COD |
|---|---|
| Unit-I | 1.10.2011 |
| Unit-II | 25.5.2012 |
| Unit-III/ Generating Station | 1.8.2012 |

2. The Commission vide order dated 29.3.2017 in Petition No. 337/GT/2014 had approved the tariff of the generating station for the 2014-19 tariff period. Subsequently,

by order dated 14.2.2022 in Petition No. 240/GT/2020, the tariff of the generating station for the 2014-19 tariff period, was revised, after truing up exercise, in terms of the 2014 Tariff Regulations. Accordingly, the annual fixed charges and the capital cost allowed vide order dated 14.4.2022 are as under:

**Annual Fixed Charges allowed**

***(Rs. in lakh)***

| | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 |
|---|---|---|---|---|---|
| Depreciation | 45170.38 | 46204.41 | 46762.35 | 46896.48 | 46981.36 |
| Interest on Loan | 39403.99 | 36877.66 | 34309.77 | 31085.40 | 27449.73 |
| Return on Equity | 52348.35 | 53821.47 | 54441.49 | 54576.41 | 54814.58 |
| Interest on Working Capital | 12409.40 | 12543.71 | 12708.33 | 13052.56 | 12819.71 |
| O&M Expenses | 37206.72 | 39195.73 | 42538.60 | 46479.00 | 43959.25 |
| **Total** | **186538.84** | **188642.98** | **190760.54** | **192089.85** | **186024.64** |

**Capital Cost allowed**

**(Rs. *in lakh)***

| | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 |
|---|---|---|---|---|---|
| Opening Capital Cost | 877727.16 | 901921.03 | 918986.33 | 922897.72 | 923551.00 |
| Add: Additional capital expenditure | 24193.87 | 17065.30 | 3911.39 | 653.28 | 2430.22 |
| **Closing Capital Cost** | **901921.03** | **918986.33** | **922897.72** | **923551.00** | **925981.22** |
| Average Capital Cost | 889824.09 | 910453.68 | 920942.02 | 923224.36 | 924766.11 |

**<u>Present Petition</u>**

3. The Petitioner, in the present petition, has claimed the capital cost and annual fixed charges for the 2019-24 tariff period, as under:

**Annual Fixed Charges claimed**

**(Rs. *in lakh)***

| | 2019-20 | 2020-21 | 2021-22 | 2022-23 | 2023-24 |
|---|---|---|---|---|---|
| Depreciation | 47468.59 | 47644.09 | 47819.59 | 47845.21 | 47870.83 |
| Interest on Loan | 25359.55 | 22348.65 | 18741.55 | 14619.48 | 10480.65 |
| Return on Equity | 52198.78 | 52391.76 | 52584.75 | 52612.92 | 52641.09 |
| Interest on Working Capital | 9239.28 | 9293.21 | 9334.30 | 9365.44 | 9392.80 |
| O&M Expenses | 49902.91 | 51640.48 | 53448.77 | 55308.37 | 57239.48 |
| **Total** | **184169.11** | **183318.19** | **181928.96** | **179751.42** | **177624.86** |

**Capital Cost claimed**

***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 | 926397.21 | 926397.21 | 933247.21 | 933247.21 | 934247.21 |
| Add: Addition during the year/ period | 0.00 | 6850.00 | 0.00 | 1000.00 | 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** | 926397.21 | 933247.21 | 933247.21 | 934247.21 | 934247.21 |
| Average capital cost | **926397.21** | **929822.21** | **933247.21** | **933747.21** | **934247.21** |

4. The Respondent MSEDCL has filed its reply affidavit on 4.6.2021. The Respondent CSPDCL and Respondent MPPMCL have also filed their separate reply affidavits on 23.7.2021. The Petitioner has filed its rejoinder affidavits to the replies of the above respondents on 30.7.2021. The Petitioner has also filed certain additional information on 12.5.2021, 4.6.2021 respectively. The Commission, after hearing the parties, on 30.11.2021, through video conferencing, reserved its order in the matter. The Petitioner has also filed certain additional information vide affidavits on 1.12.2021 and 31.12.2021 respectively. Based on the submissions of the parties and the documents available on record and on prudence check, we proceed to examine the claims of the Petitioner, in this Petition, for the 2019-24 tariff period, 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 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 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 annual fixed charges claimed by the Petitioner, is based on opening capital cost of Rs.926397.21 lakh as on 1.4.2019. However, the Commission vide order dated 14.4.2022 in Petition No. 240/GT/2020 had approved the capital cost of Rs.925981.22 lakh, on cash basis as on 31.3.2019. The recognized undischarged liabilities as on 31.9.2019 is Rs. 31822.32 lakh. Accordingly, the capital cost of Rs.925981.22 lakh, as on 31.3.2019, on cash basis, has been considered as the opening capital cost, as on 1.4.2019, in terms of Regulation 19(3) of the 2019 Tariff Regulations.

## Additional Capital Expenditure

7. Regulation 25 and 26 of the 2019 Tariff Regulations, provides 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 Capitalization 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-capitalization 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-capitalization takes place with corresponding adjustments in cumulative depreciation and cumulative repayment of loan, duly taking into consideration the year in which it was capitalized."*

8. The projected additional capital expenditure claimed by the Petitioner is as under:

*(Rs. in lakh)*

| | Regulation | 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 Raising | 25(1)(c) read with 25(1)(g) | 0.00 | 650.00 | 0.00 | 1000.00 | 0.00 |
| Dry Fly Ash Extraction System | 26(1)(b) | 0.00 | 5000.00 | 0.00 | 0.00 | 0.00 |
| $Clo_2$ Package | 26(1)(b) read with 26(1)(d) | 0.00 | 1200.00 | 0.00 | 0.00 | 0.00 |
| **Additional capital expenditure claimed (on projected basis)** | | **0.00** | **6850.00** | **0.00** | **1000.00** | **0.00** |

9. We now examine the additional capital expenditure claimed by the Petitioner on projected basis for the 2019-24 tariff period as under:

***(a) Ash Dyke Raising***

10. The Petitioner has claimed projected additional capital expenditure of Rs.650.00 lakh in 2020-21 and Rs.1000.00 lakh in 2022-23, towards Ash dyke raising works, under Regulation 25(1)(c) read with Regulation 25(1)(g) of the 2019 Tariff Regulations. In justification of the same, the Petitioner has submitted that the expenditure claimed under this head, is within the original scope of work and is carried out periodically, at different tranches during the life of the generating station, for disposal of ash for continuous and sustained operation of the generating station.

11. The Respondent CSPDCL and Respondent MPPMCL in their replies, have objected to the requirement of Ash dyke raising, in the light of 100% ash utilization to be ensured by generating stations, in terms of the MOEF& CC Notification dated 25.1.2016. They have also pointed out that the Petitioner, while on the one hand is charging fly ash transportation cost, it has, on the other hand, claimed expenditure towards ash dyke raising. In response, the Petitioner in its rejoinder, has clarified that the raising of Ash dyke is undertaken in a phased manner, at intermittent intervals,

during the life of the plant. It has also submitted that at any time during the operation of the plant, the rate of generation of fly ash, could be much higher than the rate of utilization of fly ash, in which case, the unutilized ash needs to be diverted to ash dyke, for a safe disposal of ash and for continuous operation of the plant. The Petitioner has further submitted that the utilization of wet ash takes place from ash disposed in ash dyke only and the capital expenditure on this count, is necessary for the smooth operation of the plant.

12. The matter has been considered. In our view, the ash generation and ash disposal is a continuous process to be carried out from time to time during the operating life of the plant, in order to ensure the successful running of the plant. In view of this, we allow the Petitioner's claim under Regulation 25(1)(g) of the 2019 Tariff Regulations.

***(b) Dry Fly Ash Extraction System (DAES)***

13. The Petitioner has claimed projected additional capital expenditure of Rs.5000.00 lakh in 2020-21 under Regulation 26(1)(b) of the 2019 Tariff Regulations. In justification for the same, the Petitioner submitted that the expenditure claimed under this head has been envisaged for 100% ash utilization in the generating station, which has also been directed by the Chhattisgarh Environment Conservation Board (CECB) in consent to operate dated 3.4.2018.

14. The Respondent, CSPDCL has submitted that the above works are not covered within the original scope of work and since it is a subsequent development, the claim of the Petitioner under change in law, is incorrect. The Respondent, MPPMCL has submitted that the Petitioner's submission that the expenditure envisaged is for 100% ash utilization and has been directed by CECB, in the 'consent to operate' is baseless,

as the COD of the generating station is 1.8.2012. It has also stated that in case the expenditure was necessary for operation, the reason as to why the Petitioner waited for 8 years to comply is not known. The respondent has also submitted that the expenditure claimed is huge and the purpose is also redundant, keeping in view that ash utilization has been mandated by other previous MOEF & CC Notifications during the period 1999 and 2009 respectively.  etc. on which no action was taken by the Petitioner. In response, the Petitioner in its rejoinder has clarified that DAES is required to be installed for 100% utilization of ash in line with the direction of CECB, in 'consent to operate' granted vide letter dated 3.4.2018 for the generating station. The Petitioner has also submitted that DAES will facilitate the disposal of ash in safe and scientific manner, and would also enhance the utilization of ash and is necessary to comply with the statutory provisions.

15. The mater has been examined. The Petitioner has claimed additional capital expenditure under change in law/ compliance to existing law, based on the 'consent to operate' granted by CECB, vide its letter dated 3.4.2018, valid for period from 1.12.2016 to 30.11.2021. It is also noticed that Clause 2(10) of the MoEF& CC Notification dated 25.1.2016 provides as under:

> "*Every Coal or lignite based thermal power plant shall install dedicated dry ash silos having separate access roads so as to ease the delivery of fly ash"*

16. In our view, the DAES shall help in reducing the burden of ash disposal in the ash dyke area, which will reduce the regular or time to time capitalization of expenditure for raising of ash dyke and environmental ground water pollution. In this background and keeping in view that the additional expenditure claimed is for compliance with the existing norms under the MoEF notification/directions of CECB, we allow the same

under Regulation 26(1)(b) of the 2019 Tariff Regulations. The Petitioner is, however, directed to furnish details of revenue earned from sale of fly ash (excluding transportation charges if any paid by the petitioner) and a copy of accounts, duly certified by the auditor, which is required to be mandatorily maintained by the petitioner in terms of the said notification at the time of truing up of tariff.

***(c) $ClO_2$ Package***

17. The Petitioner has claimed projected additional capital expenditure of Rs.1200.00 lakh in 2020-21 under Regulation 26(1)(b) read with Regulation 26(1)(d) of the 2019 Tariff Regulations. In justification for the same, the Petitioner 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. Chlorine gas is very hazardous and may prove fatal in case of leakage. In the interest of public safety the chlorine dozing system is now being replaced by Chlorine Dioxide ($ClO_2$) system, which is much safer and less hazardous than chlorine. In the proposed scheme $Clo_2$ shall be produced on site by use of commercial grade HCl and Sodium Chlorite and accordingly avoids handling and storage risk. Further, at Kudgi NTPC project Department of Factories, Boiler, Industrial Safety and Health, Government of Karnataka has asked the Petitioner to consider replacement of highly hazardous gas Chlorination system with ClO2 system. SPCB, Odisha while issuing consent to establish in case of Darlipalli Station has asked the Petitioner, to explore the possibility of installing $ClO_2$ system instead of Chlorine gas system. The Petitioner has further submitted that for safety of public, the Petitioner is replacing the Chlorination system with ClO2 system.

18. The Respondent, MPPMCL has submitted that the claim of the Petitioner under Regulation 26(1)(b) and Regulation 26(1)(d) of the 2019 Tariff Regulations, is unjustified as there is no incidence of change in law or compliance of any existing law. It has also submitted that Regulation 26(1)(d) is 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. The Respondent has further submitted that the directions of authority of State of Karnataka, cannot be applicable to the State of Madhya Pradesh as 'change in law'. In response, the Petitioner has clarified that that there is no advisory of statutory authority with regard to the expenditure claimed towards $Clo_2$ package. It has submitted that the "Draft Safety, Health and Working Conditions Code 2018" put up by the Ministry of Labour and Employment, in March 2018 inviting comments/suggestions of various stakeholders, wherein the responsibilities of various faculties of industries/factories were mentioned, including the employer. The Petitioner has stated that as a responsible employer, it has taken cognizance of the requirement of $Clo_2$ package for safe handling of Chlorine gas. The Petitioner has added that the "The Occupational Safety, Health and Working Conditions Code, 2020" was notified by Ministry of Law & Justice, Government of India vide notification dated 29.9.2020 and installation of the said system is in line with the duties necessitated by Clause 6(1)(a) and 6(1)(d) of the said Code.

19. We have considered the matter. The Petitioner has claimed additional capitalization of the expenditure 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 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 can in no manner be termed as a 'change in law' event in respect of this generating station warranting capitalization of the expenditure. Also, the request of SPCB, Odisha to the Petitioner, to explore the possibility of installing $ClO_2$ system for Darlipalli station, cannot be considered, for this generating station, for grant of relief to the Petitioner. 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 ($ClO_2$) system) for safety and security of the generating station. Similar claim of the Petitioner in respect of tariff petitions for other generating stations of the Petitioner for the 2019- 24 tariff period has not been allowed by the Commission in its various orders. In view of this, the projected additional capital expenditure claimed by the Petitioner is not allowed.

20. Based on above, the projected additional capital expenditure allowed for the 2019-24 tariff period, is summarized below:

***(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 Raising | 0.00 | 650.00 | 0.00 | 1000.00 | 0.00 |
| Dry Fly Ash Extraction System | 0.00 | 5000.00 | 0.00 | 0.00 | 0.00 |
| $Clo_2$ Package | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Additional capital expenditure allowed (on projected basis)** | **0.00** | **5650.00** | **0.00** | **1000.00** | **0.00** |

**<u>Capital Cost</u>**

21. Based on the above, the capital cost allowed for generating station 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 | 925981.22 | 925981.22 | 931631.22 | 931631.22 | 932631.22 |
| Add: Additional capital expenditure | 0.00 | 5650.00 | 0.00 | 1000.00 | 0.00 |
| **Closing Capital Cost** | **925981.22** | **931631.22** | **931631.22** | **932631.22** | **932631.22** |
| Average Capital Cost | 925981.22 | 928806.22 | 931631.22 | 932131.22 | 932631.22 |

## Debt Equity Ratio

22. 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.*

23. The Petitioner has claimed gross normative loan of Rs.648478.05 lakh and equity of Rs.277919.16 lakh as on 1.4.2019 and has considered debt: equity ratio of 70:30 for funding of 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 approved by order dated 14.4.2022 in Petition No. 240/GT/2020 is Rs.648186.86 lakh (i.e. 70% of the admitted capital cost as on 31.3.2019) and Rs.277794.36 lakh (i.e. 30% of the admitted capital cost as on 31.3.2019), respectively, which has been retained, as on 1.4.2019. Further, the projected additional capital expenditure approved above, has been allocated to debt and equity in the ratio of 70:30. Accordingly, the debt: equity ratio is worked out as under:

| | **Capital cost as on 1.4.2019** ***(Rs. in lakh)*** | **(%)** | **Additional capital expenditure** ***(Rs. in lakh)*** | **(%)** | **Total cost as on 31.3.2024** ***(Rs. in lakh)*** | **(%)** |
|---|---|---|---|---|---|---|
| Debt | 648186.86 | 70.00 | 4655.00 | 70.00 | 652841.86 | 70.00 |
| Equity | 277794.36 | 30.00 | 1995.00 | 30.00 | 279789.36 | 30.00 |
| **Total** | **925981.22** | **100.00** | **6650.00** | **100.00** | **932631.22** | **100.00** |

## Return on Equity

24. 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.*

25. 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."*

26. The Petitioner has claimed Return on Equity (ROE) considering base rate of 15.50% and effective tax rate of 17.472% for the 2019-24 tariff period. Since, the additional capital expenditure approved above, is within the original scope of work, the same has been considered for the purpose of tariff. Accordingly, ROE has been worked out as under:

***(Rs. in lakh)***

| | **2019-20** | **2020-21** | **2021-22** | **2022-23** | **2023-24** |
|---|---|---|---|---|---|
| Normative Equity – Opening | 277794.36 | 277794.36 | 279489.36 | 279489.36 | 279789.36 |
| Addition of Equity due to additional capital expenditure | 0.00 | 1695.00 | 0.00 | 300.00 | 0.00 |
| Normative Equity – Closing | 277794.36 | 279489.36 | 279489.36 | 279789.36 | 279789.36 |
| Average Normative Equity | 277794.36 | 278641.86 | 279489.36 | 279639.36 | 279789.36 |
| 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% |
| **Return on Equity (Pre-tax) - (annualized)** | **52175.34** | **52334.51** | **52493.69** | **52521.86** | **52550.04** |

## Interest on loan

27. 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."*

28. The Petitioner has claimed tariff considering weighted average rate of interest (WAROI) of 8.3044% in 2019-20, 8.5885% in 2020-21, 8.7218% in 2021-22, 8.7333% in 2022-23 and 8.7418% in 2023-24. This has been considered and Interest on loan has been worked out as under:

i) The gross normative loan amounting to Rs.648186.86 lakh has been retained as on 1.4.2019;

ii) Cumulative repayment of Rs.321337.43 lakh as on 31.3.2019 as considered in order dated 14.4.2022 in Petition No. 240/GT/2020 has been retained as on 1.4.2019;

iii) Accordingly, the net normative opening loan as on 1.4.2019 works out to Rs.326849.44 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;

29. Necessary calculation of interest of loan is as under:

***(Rs. in lakh)***

| | | 2019-20 | 2020-21 | 2021-22 | 2022-23 | 2023-24 |
|---|---|---|---|---|---|---|
| A | Gross opening loan | 648186.86 | 648186.86 | 652141.86 | 652141.86 | 652841.86 |
| B | Cumulative repayment of loan up to previous year | 321337.43 | 368784.70 | 416376.73 | 464113.52 | 511875.92 |
| C | Net Loan Opening | 326849.44 | 279402.16 | 235765.13 | 188028.35 | 140965.94 |
| D | Addition on account of additional capital expenditure | 0.00 | 3955.00 | 0.00 | 700.00 | 0.00 |
| E | Repayment of loan during the year | 47447.28 | 47592.03 | 47736.78 | 47762.40 | 47788.02 |
| F | Net Loan Closing | 279402.16 | 235765.13 | 188028.35 | 140965.94 | 93177.92 |
| G | Average Loan | 303125.80 | 257583.64 | 211896.74 | 164497.14 | 117071.93 |
| H | Weighted Average Rate of Interest on Loan | 8.3044% | 8.5885% | 8.7218% | 8.7333% | 8.7418% |
| I | **Interest on Loan** | **25172.78** | **22122.57** | **18481.21** | **14366.03** | **10234.19** |

## Depreciation

30. 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 31$^{st}$ 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."*

31. The cumulative depreciation and freehold land amounting to Rs.321337.43 lakh and Rs.3552.08 lakh, as on 31.3.2019, as considered in order dated 14.4.2022 in Petition No. 240/GT/2020, has been considered, as on 1.4.2019. The Petitioner has not considered the cost of IT equipment and software, while calculating the depreciable value and hence, the same is considered as 'nil'. Accordingly, the balance depreciable value, before providing depreciation for the year 2019-20, works out to Rs.508848.80 lakh. Since, the elapsed life of the generating station as on 1.4.2019 (i.e. 7.01 years) is less than 12 years from the effective station COD of 29.3.2012, depreciation has been

calculated by considering the weighted average rate of depreciation (WAROD) of 5.124% as claimed by the Petitioner. Necessary calculations in support of depreciation are as under:

***(Rs. in lakh)***

| | | 2019-20 | 2020-21 | 2021-22 | 2022-23 | 2023-24 |
|---|---|---|---|---|---|---|
| A | Average Capital Cost | 925981.22 | 928806.22 | 931631.22 | 932131.22 | 932631.22 |
| B | Value of freehold land included above | 3552.08 | 3552.08 | 3552.08 | 3552.08 | 3552.08 |
| C | Depreciable value [(A-B) x 0.9] | 830186.23 | 832728.73 | 835271.23 | 835721.23 | 836171.23 |
| D | Remaining aggregate depreciable value at the beginning of the year [(C) – (Cumulative depreciation at the end of the preceding period)] | 508848.80 | 463944.02 | 418894.49 | 371607.71 | 324295.30 |
| E | No. of completed years at the beginning of the year | 7.01 | 8.01 | 9.01 | 10.01 | 11.01 |
| F | Balance useful life at the beginning of the year (25 – E) | 17.99 | 16.99 | 15.99 | 14.99 | 13.99 |
| G | WAROD | 5.124% | 5.124% | 5.124% | 5.124% | 5.124% |
| H | **Depreciation during the year (A x G)** | 47447.28 | 47592.03 | 47736.78 | 47762.40 | 47788.02 |
| I | Cumulative depreciation at the end [(H) + (Cumulative depreciation at the end of the preceding period)] | 368784.70 | 416376.73 | 464113.52 | 511875.92 | 559663.95 |

## **O&M Expenses**

32. The O&M expenses claimed by the Petitioner is as under:

***(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 | 40114.80 | 41520.60 | 42985.80 | 44490.60 | 46054.80 |
| O&M expenses under Regulation 35(1)(6) of the 2019 Tariff Regulations: | | | | | |
| - Water Charges | 7831.85 | 8105.96 | 8389.67 | 8683.31 | 8987.22 |
| - Security Expenses | 1956.27 | 2013.92 | 2073.30 | 2134.46 | 2197.46 |
| - Capital Spares consumed | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total O&M Expenses** | **49902.91** | **51640.48** | **53448.77** | **55308.37** | **57239.48** |

33. The normative O&M expenses claimed by the Petitioner, in terms of the Regulation 35(1)(1) of the 2019 Tariff Regulations is in order and is therefore allowed.

***Water Charges***

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

> *"35(1)(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."*

35. The actual water charges claimed by the Petitioner in Petition No. 240/GT/2020 for the 2014-19 tariff period and allowed by the Commission in order dated 14.4.2022 are as under:

***(Rs. in lakh)***

| **2014-19 Tariff Period** | **2014-15** | **2015-16** | **2016-17** | **2017-18** | **2018-19** |
|---|---|---|---|---|---|
| Water charges claimed | 8694.72 | 8881.93 | 9194.46 | 9853.12 | 7566.85 |
| Water charges allowed | 8694.72 | 8881.93 | 9194.46 | 9853.12 | 7566.85 |

36. In terms of first proviso to Regulation 35(1)(6) of the 2019 Tariff Regulations, water charges shall be allowed separately based on the water consumption depending upon the type of plant, type of cooling water system etc., subject to prudence check. The details in respect of water charges for the 2019-24 tariff period as furnished by the Petitioner is as under:

| **Description** | **Remarks** |
|---|---|
| Type of plant | Coal based Thermal Power Plant |
| Type of cooling water system | Closed Circuit Cooling System |
| Yearly allocation of water* | # 120 MCM |
| Consumption of water* | 78.38 MCM |
| Rate of water charges* | Rs.12.25/$m^3$ |
| Total water charges** | Rs.7567 lakh |

** as per truing up petition filed for the instant station for Sipat-I & Sipat-II;*

*** for Sipat-I for 2018-19.*

*# as per truing up Petition filed for 2014-19 tariff period, it is 93 MCM for 2018-19.*

37. For the 2019-24 tariff period, the Petitioner has claimed water charges, on the basis of water charges claimed for 2018-19 with an annual escalation of 3.5%, as under:

***(Rs. in lakh)***

| 2019-20 | 2020-21 | 2021-22 | 2022-23 | 2023-24 |
|---|---|---|---|---|
| 7831.85 | 8105.96 | 8389.67 | 8683.31 | 8987.22 |

38. The Respondent MSEDCL has submitted that the Petitioner has not provided any valid justification towards consideration of escalation of 3.5% every year, over the water charges of 2018-19 and as the same is without any administrative or scientific proof, ought to be disallowed. The Respondent, CSPDCL has submitted that water charges of Rs.6834.00 lakh, computed, based on maximum water consumption limits of 3.5 $m^3$/MWh as per Ministry of Environment, Forest and Climate Change (MOEFCC) Notification dated 7.12.2015, may be considered for 2019-24 tariff period, without any escalation, subject to adjustment as per actual generation limited to 3.5 $m^3$/MWh. Similar arguments have been made by the Respondent, MPPMCL, which recommended for admissibility of Rs.6347.00 lakh for 2019-20 and for the period 2021-24 and Rs.6797.00 lakh for 2020-21. The Petitioner in its rejoinder has submitted that water charges claimed are on estimated basis, subject to true up, based on actual water charges paid for 2018-19, with an escalation @ 3.5%, as considered for O&M expenses, in the 2019 Tariff Regulations. The Petitioner has also submitted that water charges paid depends upon actual water consumption, as well as contracted water quantity, in line with the water agreement as signed with the State Water Resources Department. The Petitioner has further submitted that water is the raw material for any thermal generating plant like fuel and the generator has to ensure water and coal corresponding to the ex-bus MCR capacity or at least the normative ex-bus capacity of

the station, so that it can offer its availability for supply of energy to the respective beneficiaries, as per their entitlements. As regards water, it is arranged, taking into account the peak requirements of the units, in different season, and the maximum demand envisaged. The Petitioner has added that the calculations indicated by Respondent MPPMCL are based on the actual generation of the station that varies month-on-month, based on seasonal variations, and demand of various beneficiaries. However, the petitioner has stated that it has to arrange for water corresponding to the maximum availability of the station i.e. at the MCR/Installed capacity.

39. We have examined the matter. It is observed that the rate of water charges considered by the Petitioner for the 2019-24 tariff period, is same as that considered for the 2014-19 tariff period. The actual consumption of water as shown by the Petitioner for the year 2018-19, is on a combined basis for both the Stages of the generating station, and is well within the maximum water consumption limits of 3.5 $m^3$/MWh as per MOEFCC Notification dated 7.12.2015. Accordingly, for the present, we are not inclined to allow the annual escalation of 3.5% as claimed by the Petitioner. However, we allow the actual water charges of Rs.7566.85 lakh (as allowed for the year 2018-19 in order dated 14.4.2022 in Petition No. 240/GT/2020) 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 is as under:

***(Rs. in lakh)***

| | 2019-20 | 2020-21 | 2021-22 | 2022-23 | 2023-24 |
|---|---|---|---|---|---|
| Water charges claimed | 7831.85 | 8105.96 | 8389.67 | 8683.31 | 8987.22 |
| **Water charges allowed** | **7566.85** | **7566.85** | **7566.85** | **7566.85** | **7566.85** |

***Security Expenses***

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

> *"35(1)(6) The Water, Security Expenses and Capital Spares for thermal generating stations shall be allowed separately and after prudence check:*
>
> *xxxx:*
>
> *Provided further that the generating station shall submit the assessment of the security requirement and estimated expenses;*
>
> *xxxxx."*

41. The security expenses claimed by the Petitioner for the 2019-24 tariff period is as under:

***(Rs. in lakh)***

| **2019-20** | **2020-21** | **2021-22** | **2022-23** | **2023-24** |
|---|---|---|---|---|
| 1956.27 | 2013.92 | 2073.30 | 2134.46 | 2197.46 |

42. The Petitioner has submitted that security expenses has been claimed, based on the estimated expenses for the 2019-24 tariff period and shall be subject to retrospective adjustment, based on actuals, at the time of truing up.

43. We have examined the matter. The Petitioner has claimed projected security expenses for the 2019-24 tariff period, but has not furnished the assessment of security requirement, as required, under the provisions of the 2019 Tariff Regulations. Accordingly, the Petitioner is directed to furnish the requisite details for carrying out the prudence check of security expenses, at the time of truing up of tariff. For the present, the projected security expenses for the 2019-24 tariff period has been considered for the purpose of tariff. Accordingly, the security expenses claimed and allowed, for the generating station for the 2019-24 tariff period is under:

*(Rs. in lakh)*

| | 2019-20 | 2020-21 | 2021-22 | 2022-23 | 2023-24 |
|---|---|---|---|---|---|
| Security expenses claimed | 1956.27 | 2013.92 | 2073.30 | 2134.46 | 2197.46 |
| Security expenses allowed | 1956.27 | 2013.92 | 2073.30 | 2134.46 | 2197.46 |

***Capital Spares***

44. The Petitioner has not claimed capital spares during 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, in terms of proviso to Regulation 35(1)(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, shall be considered on merits, after prudence check.

45. Accordingly, the total O&M expenses including water charges and security expenses, as claimed by the Petitioner and allowed for the 2019-24 tariff period is summarized as under:

*(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)** | 40114.80 | 41520.60 | 42985.80 | 44490.60 | 46054.80 |
| **Normative O&M expenses allowed under Regulation 35(1)(1) of the 2019 Tariff Regulations (b)** | **40114.80** | **41520.60** | **42985.80** | **44490.60** | **46054.80** |
| Water Charges claimed under Regulation 35(1)(6) of the 2019 Tariff Regulations **(c)** | 7831.85 | 8105.96 | 8389.67 | 8683.31 | 8987.22 |
| **Water Charges allowed under Regulation 35(1)(6) of the 2019 Tariff Regulations (d)** | **7566.85** | **7566.85** | **7566.85** | **7566.85** | **7566.85** |
| Security Expenses claimed under Regulation 35(1)(6) of the 2019 Tariff Regulations **(e)** | 1956.27 | 2013.92 | 2073.30 | 2134.46 | 2197.46 |
| **Security Expenses allowed under Regulation 35(1)(6) of the 2019 Tariff Regulations (f)** | **1956.27** | **2013.92** | **2073.30** | **2134.46** | **2197.46** |
| Total O&M expenses claimed under Regulation 35 of the 2019 Tariff Regulations (a + c + e) | 49902.91 | 51640.48 | 53448.77 | 55308.37 | 57239.48 |
| **Total O&M expenses allowed under Regulation 35 of the 2019 Tariff Regulations (b + d + f)** | **49637.92** | **51101.37** | **52625.95** | **54191.91** | **55819.11** |

**Additional expenditure on Emission Control System**

46. The Petitioner has submitted that it is in the process of installing Emission Control Systems (ECS) in compliance to the revised emission standards, as notified by the MOEFCC vide notification dated 7.12.2015, as amended. It is however noticed that the Petitioner had filed Petition No. 67/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 30.7.2021 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 30.7.2021 in Petition No. 67/MP/2020.

**Additional expenditure towards Fly ash transportation**

47. The Petitioner vide affidavit dated 12.5.2021 has claimed the recovery of additional expenditure of Rs.256.00 lakh in 2019-20 and Rs.2525.00 lakh in 2020-21 from the beneficiaries, on account of ash transportation charges, after adjusting the revenue earned from sale of ash. 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 and the Respondents have raised the issue of 'maintainability' of the said petition. However, the Commission vide its order dated 28.5.2022 has 'admitted' the petition and directed the parties to complete their pleadings in the matter, on merits. The

reimbursement of charges towards fly ash transportation shall, therefore, be governed by the final decision of the Commission in Petition No. 205/MP/2021.

## Operational Norms

48. The Petitioner has considered the following norms of operation:

| | |
|---|---|
| Normative Annual Plant Availability Factor (NAPAF) (%) | 85 |
| Heat Rate (kCal/kwh) | 2317.37 |
| Auxiliary Power Consumption (%) | 6.25 |
| Specific Oil Consumption (ml/kwh) | 0.50 |

### *Normative Annual Plant Availability Factor*

49. 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."*

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

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

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

*"(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* | |
| *Pressure Rating (Kg/cm2)* | *247* | *247* | *270* | *270* |
| *SHT/RHT ($^0$C)* | *537/565* | *565/593* | *593/593* | *600/600* |
| *Type of BFP* | *Turbine Driven* | *Turbine Driven* | *Turbine Driven* | *Turbine Driven* |
| *Max Turbine Heat Rate (kCal/kWh)* | *1900* | *1850* | *1810* | *1800* |
| *Min. Boiler Efficiency* | | | | |
| *Sub-Bituminous Indian Coal* | *0.86* | *0.86* | *0.865* | *0.865* |
| *Bituminous Imported Coal* | *0.89* | *0.89* | *0.895* | *0.895* |
| *Max. Design Heat Rate (kCal/kWh)* | | | | |
| *Sub-Bituminous Indian Coal* | *2222* | *2151* | *2105* | *2081* |
| *Bituminous Imported Coal* | *2135* | *2078* | *2034* | *2022* |

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

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

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

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

*Provided also that in case of coal based generating station if one or more generating units were declared under commercial operation prior to 1.4.2019, the heat rate norms for those generating units as well as generating units declared under commercial operation on or after 1.4.2019 shall be lowest of the heat rate norms considered by the Commission during tariff period 2014-19 or those arrived at by above methodology or the norms as per the sub-clause (C)(a)(i) of this Regulation:*

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

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

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

52. The Petitioner has considered Gross Station Heat Rate (GSHR) of 2317.38 kCal/kWh, based on following parameters:

| | | |
|---|---|---|
| Main Steams Pressure at Turbine inlet | (kg/Cm$^2$) | 247 |
| Main Steam Temperature at Turbine inlet | ($^o$C) | 537 |
| Reheat Steam Temperature at Turbine inlet | ($^o$C) | 565 |
| Type of BFP | (No.) | Steam Driven |
| Guaranteed Design Gross Turbine Cycle Heat Rate | (kCal/kWh)[3] | 1904 |
| Design / Guaranteed Boiler Efficiency | (%) | 86.27 |

53. 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 GSHR is required to be recomputed. Accordingly, considering the guaranteed design gross turbine cycle heat rate of 1904 kCal/kWh and boiler efficiency of 86.27% for the generating station, the unit design heat rate is worked out as 2207.02 kCal/kWh (i.e. 1904 / 0.8627).

54. Considering the design parameters of the generating station, for the pressure rating of 247 Kg/cm$^2$, super heater Temperature of 537$^o$C and re-heater temperature of 565$^0$C, Max Turbine Heat rate of 1900.00 kCal/kWh and boiler efficiency of 86%, the maximum design unit heat rate is 2222 kCal/kWh, as per the 2019 Tariff Regulations. The design heat rate of 2207.02 kCal/kWh, is less than the ceiling design heat rate of 2222 kCal/kWh, as provided in the 2019 Tariff Regulations. However, in terms of the above regulations, 1900 kCal/kWh is the maximum Turbine Heat Rate, and the Petitioner has furnished the same as 1904 kcal/kWh. Further, where the boiler efficiency is below 86% for Sub-bituminous Indian coal, the same shall be considered as 86%. Therefore, the Turbine Cycle Heat rate and boiler efficiency has been considered as 1900 kcal/kWh and 86.27% respectively, for computation of design heat rate. The design heat rate of the generating station works out as 2202.39 kCal/kWh (i.e., 1900 /

0.8627), which is within the ceiling design heat rate of 2222 kCal/kWh. Hence, the GSHR has been worked out as 2312.51 kCal/kWh = (1.05 x 2202.39) and the same has been considered for the purpose of tariff.

### *Secondary Fuel Oil Consumption*

55. 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"*

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

### *Auxiliary Power Consumption*

57. 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 Sysem*** | ***(% 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."*

58. In terms of Regulation 49(E)(a) of the 2019 Tariff Regulations, the Petitioner has considered auxiliary energy consumption of 6.25% for the 2019-24 tariff period, and the same is allowed.

**<u>Interest on Working Capital</u>**

59. Sub-section (a) of clause (1) of Regulation 34 of the 2019 Tariff Regulations provides as under:

> *"34. Interest on Working Capital:*
> *(1) The working capital shall cover:*
>
> *(a) For Coal-based/lignite-fired thermal generating stations:*
>
> *(i) Cost of coal or lignite and limestone towards stock if applicable for 10 days for pit-head generating stations and 20 days for non-pit-head generating stations for generation corresponding to the normative annual plant availability factor or the maximum coal/lignite stock storage capacity whichever is lower;*
>
> *(ii) Advance payment for 30 days towards cost of coal or lignite and limestone for generation corresponding to the normative annual plant availability factor;*
>
> *(iii) Cost of secondary fuel oil for two months for generation corresponding to the normative annual plant availability factor and in case of use of more than one secondary fuel oil cost of fuel oil stock for the main secondary fuel oil;*
>
> *(iv) Maintenance spares @ 20% of operation and maintenance expenses including water charges and security expenses;*
>
> *(v) Receivables equivalent to 45 days of capacity charge and energy charge for sale of electricity calculated on the normative annual plant availability factor; and*
>
> *(vi) Operation and maintenance expenses including water charges and security expenses for one month.*
>
> *(b) xxxx*
> *(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 and Energy Charges for computing Working Capital*

60. 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.

61. 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."*

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

(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.

63. Accordingly, the Petitioner has claimed ECR of Rs.1.232 per kWh and the 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 50 days | 18203.99 | 18203.99 | 18203.99 | 18203.99 | 18203.99 |
| Cost of secondary fuel oil for 2 months | 695.24 | 693.34 | 693.34 | 693.34 | 695.24 |

64. On perusal of the Form-15 furnished by the Petitioner, 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 month 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 only 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. Similarly, while calculating normative transit and handling losses in respect of coal the Petitioner has

considered the same in excess of prescribed limit of 0.2%. The normative transit and handling losses of 0.2% has been considered for the purpose of tariff. Based on the above, 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) | 1869.33 | 1868.78 |
| Weighted average GCV of coal (kCal/kg) * | 3836.33 | 3834.67 |
| Weighted average price of oil (Rs./KL) | 56433.74 | 56433.74 |
| Weighted average GCV of oil (kCal/Ltr.) | 10179.67 | 10183.92 |

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

65. 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 of generation at NAPF | 18203.99 | | 18168.19 | |
| Cost of secondary fuel oil for 2 months of generation at NAPF | 695.24 | 693.34 | 695.24 | 693.34 |
| Energy charges for 45 days of generation at NAPF | 20992.37 | | 20959.66 | |
| **ECR *(Rs./kWh)*** | 1.232 | | 1.230 | |

66. 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***

67. The Petitioner has claimed the maintenance spares in the working capital as under:

***(Rs. in lakh)***

| **2019-20** | **2020-21** | **2021-22** | **2022-23** | **2023-24** |
|---|---|---|---|---|
| 9980.58 | 10328.10 | 10689.75 | 11061.67 | 11447.90 |

68. 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 |
|---|---|---|---|---|
| 9927.58 | 10220.27 | 10525.19 | 10838.38 | 11163.82 |

***Working Capital for Receivables***

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

***(Rs. in lakh)***

| | 2019-20 | 2020-21 | 2021-22 | 2022-23 | 2023-24 |
|---|---|---|---|---|---|
| Variable Charges - for 45 days | 20959.66 | 20959.66 | 20959.66 | 20959.66 | 20959.66 |
| Fixed Charges - for 45 days | 22579.62 | 22411.29 | 22118.66 | 21812.79 | 21453.20 |
| **Total** | **43539.28** | **43370.96** | **43078.33** | **42772.45** | **42412.86** |

***Working Capital for O&M Expenses***

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

***(Rs. in lakh)***

| 2019-20 | 2020-21 | 2021-22 | 2022-23 | 2023-24 |
|---|---|---|---|---|
| 4158.58 | 4303.37 | 4454.06 | 4609.03 | 4769.96 |

71. Regulation 34(1)(a)(vi) of the 2019 Tariff Regulations provide for O&M expenses equivalent to one (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 |
|---|---|---|---|---|
| 4136.49 | 4258.45 | 4385.50 | 4515.99 | 4651.59 |

***Rate of Interest on working capital***

72. In line with the 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.

73. Accordingly, Interest on working capital has been computed as under:

*(Rs. in lakh)*

| | **2019-20** | **2020-21** | **2021-22** | **2022-23** | **2023-24** |
|---|---|---|---|---|---|
| WC for cost of coal towards Stock - 10 days of generation | 4542.05 | 4542.05 | 4542.05 | 4542.05 | 4542.05 |
| WC for cost of coal towards advance payment - 30 days of generation | 13626.15 | 13626.15 | 13626.15 | 13626.15 | 13626.15 |
| WC for cost of Secondary fuel oil – 2 months of generation | 695.24 | 693.34 | 693.34 | 693.34 | 695.24 |
| WC for Maintenance Spares @ 20% of O&M expenses | 9927.58 | 10220.27 | 10525.19 | 10838.38 | 11163.82 |
| WC for Receivables – 45 days of generation | 43539.28 | 43370.96 | 43078.33 | 42772.45 | 42412.86 |
| WC for O&M expenses – 1 month of generation | 4136.49 | 4258.45 | 4385.50 | 4515.99 | 4651.59 |
| **Total Working Capital** | **76466.79** | **76711.21** | **76850.54** | **76988.36** | **77091.70** |
| Rate of Interest | 12.0500% | 11.2500% | 10.5000% | 10.5000% | 10.5000% |
| **Interest on Working Capital** | **9214.25** | **8630.01** | **8069.31** | **8083.78** | **8094.63** |

## Annual Fixed Charges

74. Accordingly, the annual fixed charges approved for the 2019-24 tariff period for the generating station is summarized as under:

*(Rs. in lakh)*

| | **2019-20** | **2020-21** | **2021-22** | **2022-23** | **2023-24** |
|---|---|---|---|---|---|
| Depreciation | 47447.28 | 47592.03 | 47736.78 | 47762.40 | 47788.02 |
| Interest on Loan | 25172.78 | 22122.57 | 18481.21 | 14366.03 | 10234.19 |
| Return on Equity | 52175.34 | 52334.51 | 52493.69 | 52521.86 | 52550.04 |

| | | | | | |
|---|---|---|---|---|---|
| Interest on Working Capital | 9214.25 | 8630.01 | 8069.31 | 8083.78 | 8094.63 |
| O&M Expenses | 49637.92 | 51101.37 | 52625.95 | 54191.91 | 55819.11 |
| **Total** | **183647.56** | **181780.50** | **179406.94** | **176925.99** | **174485.99** |

***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.*

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

**Application Fee and Publication expenses**

76. 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.

77. 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.

78. Petition No. 425/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** |