CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

Petition No. 420/GT/2020

Coram:

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

Date of Order: **4th June, 2022**

In the matter of:

Petition for determination of tariff of Jhanor Gandhar GPS (657.39 MW) for the period from 1.4.2019 to 31.3.2024.

And

In the matter of:

NTPC Limited,
NTPC Bhawan,
Core-7, Scope Complex,
7, Institutional Area, Lodhi Road,
New Delhi – 110 003 **.....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 Bhavan, Race Course,
   Vadodara – 390 007

4. Chattisgarh State Power Distribution Company Limited,
   P.O. Sundar Nagar, Danganiya,
   Raipur – 492013

5. Electricity Department of Goa,
   Vidyut Bhawan, Panaji,
   Goa

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

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

Parties Present:

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 Ravindra Khare, MPPMCL

ORDER

This petition has been filed by the Petitioner, NTPC limited, for determination of tariff of Jhanor Gandhar GPS (657.39 MW) (hereinafter referred to as 'the generating station') for the 2019-24 tariff period, in terms of the provisions of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 (in short 'the 2019 Tariff Regulations'). The generating station with a capacity of 657.39 MW comprises of three units of 144.30 MW each and one unit of 224.49 MW. The dates of commercial operation of the different units of the generating station are as follows:

	Capacity (MW)	Actual COD
GT Unit-I	144.30	1.3.1995
GT Unit-II	144.30	1.7.1995
GT Unit-III	144.30	1.3.1995
ST Unit-IV/ Generating station	224.49	1.11.1995

2. The Commission vide its order dated 13.5.2022 in Petition No. 301/GT/2020 had approved the tariff of the generating station for the 2014-19 tariff period, after truing-up exercise, based on the actual additional capital expenditure incurred for the generating station for the 2014-19 tariff period. Accordingly, the capital cost and the annual fixed charges approved by order dated 13.5.2022 in Petition No. 301/GT/2020 are as follows:

Capital Cost allowed

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Capital Cost	253017.08	266029.32	283543.90	285841.56	285641.40
Add: Additional Capital Expenditure allowed	13012.24	17514.58	2297.66	(-)200.16	(-)73.56
Closing Capital Cost	266029.32	283543.90	285841.56	285641.40	285567.84
Average Capital Cost	259523.20	274786.61	284692.73	285741.48	285604.62

Annual Fixed Charges allowed

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	3817.46	4868.46	5403.24	5648.53	5654.68
Interest on Loan	1541.78	2089.58	2814.33	2269.02	1959.63
Return on Equity	24564.48	25317.18	25706.29	25732.42	25784.68
O&M Expenses	10244.66	10795.89	12312.90	13029.29	12840.65
Interest on Working Capital	5354.56	5461.27	5603.80	5651.91	5631.81
Total	**45522.94**	**48532.38**	**51840.57**	**52331.17**	**51871.46**

TARIFF FOR THE 2019-24 TARIFF PERIOD

3. The capital cost and annual fixed charges claimed by the Petitioner for the 2019-24 tariff period are as follows:

Capital Cost claimed

(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Opening Capital Cost	288021.45	288601.45	289760.45	294760.45	294760.45
Add: Additional Capital Expenditure	580.00	1159.00	5000.00	0.00	0.00
Closing Capital Cost	288601.45	289760.45	294760.45	294760.45	294760.45
Average Capital Cost	288311.45	289180.95	292260.45	294760.45	294760.45

Annual Fixed Charges claimed

(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Depreciation	5798.89	5914.14	6392.82	6862.55	6862.55
Interest on Loan	1725.86	1360.07	1027.81	622.98	168.66

	2019-20	2020-21	2021-22	2022-23	2023-24
Return on Equity	25248.53	25297.00	25470.00	25610.87	25610.87
Interest on Working Capital	5011.05	5039.67	5079.24	5116.71	5153.57
O&M Expenses	13273.93	13816.86	14377.63	14932.24	15607.30
Total	**51058.26**	**51427.75**	**52347.50**	**53145.35**	**53402.95**

4. The Respondent, MPPMCL filed their reply vide affidavit dated 19.10.2020. The Petitioner vide affidavit dated 30.7.2021 filed rejoinder to the replies of MPPMCL. The Petitioner has also filed certain additional information vide affidavit date 29.6.2021. The Commission vide Record of Proceedings (ROP) of the hearing dated 10.8.2021, reserved order in the matter. Taking into consideration the submissions of the parties and the documents available on record, we proceed to examine the claims of the Petitioner in this petition as stated in the subsequent paragraphs.

Capital Cost

5. Clauses (1), (3) and (5) of Regulation 19 (3) of the 2019 Tariff Regulations provides as under:

"19. Capital Cost: (1) The Capital cost of the generating station or the transmission system, as the case may be, as determined by the Commission after prudence check in accordance with these regulations shall form the basis for determination of tariff for existing and new projects.

(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.

(5) The following shall be excluded from the capital cost of the existing and new projects:

(a) The assets forming part of the project, but not in use, as declared in the tariff petition;

(b) De-capitalised Assets after the date of commercial operation on account of replacement or removal on account of obsolescence or shifting from one project to another project:

Provided that in case replacement of transmission asset is recommended by Regional Power Committee, such asset shall be de-capitalised only after its redeployment;

Provided further that unless shifting of an asset from one project to another is of permanent nature, there shall be no de-capitalization of the concerned assets.

(c) In case of hydro generating stations, any expenditure incurred or committed to be incurred by a project developer for getting the project site allotted by the State Government by following a transparent process;

(d) Proportionate cost of land of the existing project which is being used for generating power from generating station based on renewable energy; and

(e) Any grant received from the Central or State Government or any statutory body or authority for the execution of the project which does not carry any liability of repayment."

6. The Petitioner has claimed capital cost of Rs.288021.45 lakh as on 1.4.2019. However, the closing capital cost of Rs.285567.84 lakh as on 31.3.2019, as approved by order dated 13.5.2022 in Petition No. 301/GT/2020 has been considered as the opening capital cost as on 1.4.2019, for the purpose of determination of tariff for the 2019-24 tariff period, in accordance with the 2019 Tariff Regulations.

Additional Capital Expenditure

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

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

8. The Petitioner in Form-9 has claimed projected additional capital expenditure for the 2019-24 tariff period, in terms of Regulation 25(2) and Regulation 26(1) of the 2019 Tariff Regulations as follows:

(Rs. in lakh)

Sl. No.	Description of Works/ Equipment	Projected Additional Capital Expenditure				
		2019-20	**2020-21**	**2021-22**	**2022-23**	**2023-24**
1	LED Installation in Plant	30.00	0.00	0.00	0.00	0.00
2	Roof Solar PV systems within Plant	0.00	50.00	0.00	0.00	0.00
3	Installation of Smart Energy meters	0.00	49.00	0.00	0.00	0.00
4	Chlorine Dioxide Plant	0.00	574.00	0.00	0.00	0.00
5	Storage Shed for GT Air Intake Filters	0.00	49.00	0.00	0.00	0.00
6	Zero Liquid Discharge Scheme	125.00	0.00	0.00	0.00	0.00
7	Reservoir Lining work for Reservoir-2	415.00	0.00	0.00	0.00	0.00
8	Reservoir Lining work for Reservoir- 1	0.00	397.00	0.00	0.00	0.00
9	Laying of Pipeline from SSNL main Branch canal to Plant	0.00	0.00	5000.00	0.00	0.00
10	Supply & Fixing of Sluice Gate under Rainwater Harvesting scheme	10.00	0.00	0.00	0.00	0.00
	Sub-Total	**580.00**	**1119.00**	**5000.00**	**0.00**	**0.00**
11	Safety Cell	0.00	40.00	0.00	0.00	0.00
	Total additional capital exp.	**580.00**	**1159.00**	**5000.00**	**0.00**	**0.00**

The claim of the Petitioner is examined below:

a) LED Installation in Plant

9. The Petitioner has claimed projected additional capital expenditure of Rs.30.00 lakh in 2019-20 for installation of LED in plant under Regulation 26(1)(b) of 2019 Tariff Regulations. In justification of the same, the Petitioner has submitted the following:

a. The Prime Minister of India on 5.1.2015 had launched the National LED programme with an objective to reduce energy consumption by using energy efficient lighting. In line with the objective, Unnat Jyoti by Affordable LEDs for All (UJALA) and Street Lighting National Program is being implemented by M/s EESL.

b. Further, on 2.8.2017, the Ministry of Power, GoI, issued letter to the Petitioner Company, wherein it mandated to replace all old bulbs with LED bulbs in all Petitioner's buildings including compound/street lighting occupied by the Petitioner company.

c. Any direction of the Government of India is required to be implemented and has the force of law. Therefore, in order to comply with the directions issued by the Prime Minister and the GOI, the Petitioner initiated the work of replacing the old inefficient lights with energy efficient LED lighting in the premises of the station compound/ building owned and operated by the Petitioner Company. Hence, the claim may be allowed under change in law as per Regulation 26(1)(b) of the 2019 Tariff Regulations.

10. The Respondent, MPPMCL has submitted that the Petitioner's claim does not fall within the scope of Regulation 26(1)(b) of the 2019 Tariff Regulations and hence may be disallowed.

11. The submissions have been considered. It is noticed that the additional capital expenditure incurred towards installation of 'LED lights' is in terms of the MOP, GoI letter dated 2.8.2017, which recommends the replacement of existing old bulbs with LED bulbs, resulting in reduction of about 50% to 90% in energy consumption by lighting. In our view, the letter of the MOP, GoI, as referred to by the Petitioner, is recommendatory in nature and cannot be construed as a 'change in law' event or for compliance to an existing law, in order to consider the additional capital expenditure

claimed by the Petitioner. Moreover, the benefits of replacement of incandescent light with LED lighting system, accrues to the benefit of the Petitioner. It is also noticed that the Commission in its order dated 13.5.2022 in Petition No. 301/GT/2020 had disallowed the additional capital expenditure claimed by the Petitioner towards for installation of LED in this generating station, while truing up the tariff for the 2014-19 tariff period. Accordingly, the projected additional capital expenditure claimed by the Petitioner is not allowed.

b) Roof-top Solar PV Systems within Plant

12. The Petitioner has claimed projected additional capital expenditure of Rs.50.00 lakh towards Roof-top Solar PV System within Plant in 2020-21 under Regulation 26(1)(b) of the 2019 Tariff Regulations. In justification for the same, the Petitioner has submitted that in view of the Government of India target for installation of 175 GW of Renewable power by the end of 2022, and as a measure of energy conservation, the Petitioner has taken the initiative by installing Rooftop Solar. It has also submitted that the said initiative shall not only help reduce the coal consumption, by reducing the CO2 emission, but also will contribute to the decrease in Auxiliary Power Consumption (APC). The Petitioner, while pointing out that the asset will also contribute towards the cleaner environment for the benefit of the public at large, has submitted that the Ministry of Environment and Forests (MoEF) has prescribed the installation of renewable generation plants in the premises of thermal generating station, while granting MOEF clearance for new projects. Accordingly, the Petitioner has submitted that the claim may be allowed under Regulation 26(1)(b) of the 2019 Tariff Regulations (change in law) in exercise of the power under Regulation 76 of the 2019 Tariff Regulations.

13. The Respondent, MPPMCL has submitted that the Petitioner has already claimed additional capital expenditure against this head in Petition No. 301/GT/2020 and hence the same may not be allowed. In response, the Petitioner has submitted that the installation of Rooftop Solar was an initiative towards Environment and Energy Conservation measures, in order to reduce Green House Gases (GHG) and to save electricity. The Petitioner has also pointed out that by order dated 13.7.2020 in Petition No. 270/GT/2019 (Torrent Power Ltd. Vs. Torrent Power Ltd. (Ahmedabad Distribution) &Ors), the Commission had allowed the claim for additional capital expenditure incurred for the installation of KW Rooftop Solar Panels.

14. The matter has been considered. It is observed that the Petitioner has not placed on record any documentary evidence indicating that the projected additional capital expenditure claimed is on account of 'change in law' or for 'compliance of any existing law'. It is also not clear from the submissions of the Petitioner, as to extent of benefits/ advantages, which the beneficiaries would derive on account of the installation of Rooftop Solar system by the Petitioner. It is also noticed that the claim of the Petitioner tor Rooftop Solar system in Petition No. 301/GT/2020 (truing up of tariff for 2014-19) in respect of tis generating station was disallowed by the Commission vide its order dated 13.5.2022. In this background, the projected additional capital expenditure claimed by the Petitioner is not allowed.

c) Installation of Smart Energy meters

15. The Petitioner has claimed projected additional capital expenditure of Rs.49.00 lakh for installation of Smart Energy meters in 2020-21 under Regulation 25(2)(c) of the 2019 Tariff Regulations. In justification for the same, the Petitioner has submitted that in line with the guidelines of Energy Conservation Act (amendment), 2010 and its

subsequent implementation by the Bureau of energy efficiency (BEE) for reduction in Specific Energy Consumption (SEC) of energy intensive industries, the smart energy meters are being installed, with an aim to monitor the SEC of various HT drives, so that the timely corrective measures may be taken to control/reduce the SEC of the drives having higher energy consumption. It has also submitted that the replacement of these meters is required in view of its obsolescence and that the monitoring of SEC of various equipment's and timely corrective actions in case of deviation in energy consumption will help in controlling the Auxiliary Power Consumption (APC) of the generating station as well as carbon footprint, which in turn is beneficial for the public at large. The Petitioner has further stated that the saving in APC shall be shared with beneficiaries in terms of the 2019 Tariff Regulations. The Petitioner has added that the existing energy meters are not capable of online monitoring and their replacement is needed.

16. The Respondent MPPMCL has submitted that the Petitioner has not furnished any document evidence indicating the obsolescence of technology of the existing energy meters, which is mandatory and therefore, the same may not be allowed.

17. The matter has been considered. The Petitioner has claimed projected additional capital expenditure towards the installation of smart energy meters, in view obsolescence of the existing energy meters, under Regulation 25(2)(c) of the 2019 Tariff Regulations. In terms of Regulation 25(2)(c) of the 2019 Tariff Regulations, the Petitioner is required to furnish the obsolescence certificate towards the replacement of the smart energy meters, which, admittedly, has not been furnished by the Petitioner, in the present case. In view of this, the projected additional capital expenditure claimed is not allowed. The Petitioner is however, granted liberty to

approach the Commission with relevant documents at the time of truing up of tariff and the same will be considered in accordance with law.

d) Chlorine Dioxide system

18. The Petitioner has claimed projected additional capital expenditure of Rs.574.00 lakh for Chlorine dioxide Plant in 2020-21 in terms of Regulation 26(1)(b) read with Regulation 26(1)(d) of the 2019 Tariff Regulations. In justification of the same, the Petitioner has submitted that at present Chlorine gas is being dozed directly at various stages of water treatment to maintain water quality and to inhibit organic growth in the water retaining structures/ equipment such as clarifiers, storage tanks, cooling towers, condenser tubes & piping etc. It has also submitted that chlorine dosing is done from chlorine stored in cylinders/ tonners and since chlorine gas is very hazardous and may prove fatal in case of leakage; handling and storage of same involves risk to the life of public at large. Hence, in the interest of public safety, the chlorine dozing system is now being replaced by Chlorine Dixoide (ClO2) system, which is much safer and less hazardous than chlorine. The Petitioner has stated that in the proposed scheme, ClO_2 shall be produced on site by use of commercial grade HCl and sodium chlorite, avoiding handling and storage risk. The Petitioner has further submitted that in the Kudgi Project of the Petitioner, the Department of Factories, Boiler, Industrial Safety and Health, Govt of Karnataka, has directed the Petitioner, to replace the highly hazardous gas chlorination system with ClO2 system. Also, the State Pollution Control Board, Odisha while issuing consent to establish for Darlipalli generating station of the Petitioner, has requested the Petitioner to explore the possibility of installing ClO_2 system, instead of Chlorine gas system. The Petitioner has submitted that for the safety of public, the Chlorination system is being replaced with ClO_2 system.

19. The Respondent MPPMCL has submitted that the Petitioner has not furnished any documents/report indicating as to how the existing process has become obsolete and has also failed to submit supporting documents towards disadvantages /hazardousness of the existing process. It has also stated that the Petitioner has failed to establish that the said expenditure is covered within the scope of Regulation 26(1)(b) of 2019 Tariff Regulations. In response, the Petitioner has submitted that the "Draft Safety, Health and Working Conditions Code 2018" was put up by Ministry of Labour and Employment, GOI 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 took cognizance of the requirement of ClO2 system for safe handling of Chlorine gas. The Petitioner has further submitted that "The Occupational Safety, Health and Working Conditions Code, 2020" was notified by Ministry of Law & Justice, GoI vide notification dated 29.9.2020 and the installation of the said system is in line with the duties necessitated by clause 6(1)(a) and clause 6(1)(d) of the said Code.

20. We have examined the matter. The Petitioner has claimed projected additional capitalization of Rs.574.00 lakh in 2020-21 for ClO2 system under Regulation 26(1)(b) i.e., 'Change in law' and under Regulation 26(1)(d) i.e., 'expenditure required for safety and security of the plant as advised or as per directions of appropriate governmental agency or statutory authorities. Though the Petitioner has contended that the chlorine dozing system is to be replaced by Chlorine Dioxide (ClO2) system, in the interest of public safety, it has not demonstrated that the projected expenditure is on account of 'change in law' or for compliance with the existing law. Similarly, the

Petitioner has also not enclosed any documentary evidence indicating that the projected additional capital expenditure is required for safety and security of the plant, based on the advice and or directions of the appropriate Governmental agency or statutory authorities. In view of this, the projected additional capitalization claimed by the Petitioner on this count is not allowed.

e) Storage shed for GT Air Intake Filters

21. The Petitioner has claimed projected additional capital expenditure of Rs.49.00 lakh for Storage shed for GT Air Intake Filters 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 has submitted that the Air intake filter for Gas Turbine (GT) is a critical spare, helpful in continuous and uninterrupted generation of power. It has submitted that the storage for the same was constructed for the useful life of the station as 15 years, as per the prevailing Tariff Regulations, at that point in time. The Petitioner has also stated that the storage shed has now outlived its useful life, and the same is required to be reconstructed, in view of the extended useful life of GT, so that the intake air filter may be stored safely. The Petitioner has submitted that as the necessity of work has arisen on account of change in useful life of the machine, the claim for additional capitalisation may be allowed under 'change in law' i.e Regulation 26(1)(b) read with Regulation 26(1)(d) of the 2019 Tariff Regulations.

22. The Respondent MPPMCL has submitted that the Petitioner has not furnished any notification/circular/orders of the competent authority to show that the expenditure claimed falls within the ambit of Regulation 26(1)(b) of the 2019 Tariff Regulations.

23. We have examined the matter. The Petitioner has claimed projected additional capitalization for Storage shed for GT Air Intake Filters under Regulation 26(1)(b) i.e.

‘Change in law’ read with Regulation 26(1)(d) i.e. ‘expenditure required for safety and security of the plant as advised or as per directions of appropriate governmental agency or statutory authorities’. Though the Petitioner has contended that the Storage shed for GT Air Intake Filters is to be reconstructed, in the interest of safety and security, it has not demonstrated that the same is on account of ‘change in law’ or for compliance with the existing law. Similarly, the Petitioner has also not enclosed any documentary evidence indicating that the projected expenditure is required for the safety and security of the plant, based on the advice and or directions of the appropriate Governmental agency or statutory authorities. In view of this, the projected additional capitalization claimed by the Petitioner on this count is not allowed and same may be met from the normative O&M expenses allowed to the Petitioner.

f) Zero Liquid Discharge scheme

24. The Petitioner has claimed projected additional capital expenditure of Rs.125.00 lakh for Zero Liquid Discharge (ZLD) scheme in 2019-20 under Regulation 26(1)(b) of the 2019 Tariff Regulations for. In justification for the same, the Petitioner has submitted that as per directions of Central Pollution Control Board (CPCB), ZLD is to be ensured in various water polluting industries including thermal generating stations. Accordingly, the Petitioner has submitted that the work was taken up by the generating station in compliance to the directions.

25. The Respondent MPPMCL has submitted that the Petitioner has not submitted any notification/circular/orders of the competent authority indicating that the additional capital expenditure claimed is mandatory for the generating station. It has also submitted that the report on “Techno Economic feasibility of implementation of ZLD for

water polluting industries" furnished by the Petitioner does not include power generating stations' as water polluting industries.

26. The submissions have been considered. It is observed that the Commission in its order dated 13.5.2022 in Petition No. 301/GT/2020 had not allowed the claim of the Petitioner for this asset/work for the 2014-19 tariff period on the ground that CPCB guidelines dated 19.1.2015 are not mandatory in nature. The Petitioner has claimed projected additional capitalization of Rs.125.00 lakh in 2019-20 for Zero Liquid Discharge under Regulation 26(1)(b) i.e., 'change in law'. Though the Petitioner has contended that ZLD scheme is as per the CPCB guidelines, it has not demonstrated that the claim for the projected expenditure is on account of 'change in law' or for compliance with the existing law. In this background, the additional capitalization projected by the Petitioner on this count is not allowed.

g) Reservoir Lining work for Reservoir-1, Reservoir Lining work for Reservoir-2, Laying of Pipe line from SSNL main Branch Canal to Plant and Supply & Fixing of Sluice Gate under Rain Water Harvesting scheme

27. The Petitioner has claimed projected additional capital expenditure of Rs.397 lakh in 2020-21, Rs.415 lakh in 2019-20, Rs.5000 lakh in 2021-22 and Rs.10 lakh in 2019-20 for Reservoir Lining work for Reservoir-1, Reservoir Lining work for Reservoir- 2, Laying of Pipe line from SSNL main Branch Canal to Plant and Supply & Fixing of Sluice Gate, respectively, under Regulation 26(1)(b) read with Regulation 76 of the 2019 Tariff Regulations. In justification for the same, the Petitioner has submitted that the State Government prioritises the supply of water for irrigation in the State of Gujarat. It has submitted that on account of the diversion of water for irrigation from Narmada river, various industries are facing the scarcity of water including this generating station. The Petitioner has further submitted that the generating station is

facing acute water salinity issue since last two years, as Narmada water is getting contaminated due to backwater from sea and this has resulted in very high conductivity and chloride content in raw water thereby making it unusable for station. In view of the same, this generating station has taken up various measures for conservation as well as the supply of water. As regards the first step i.e. conservation of water, the Petitioner has submitted that there are two raw water reservoirs at the generating station, each having a capacity of approx. 65000 cubic meters (i.e. 130000 cubic meter in aggregate), which is sufficient to run the generating station for approx. 6 to 7 days only. In view of the water scarcity being faced by the generating station, it has become essential to plug any type of loss taking place in water storage/supply. Hence, the Petitioner has taken up the work of 'concrete lining scheme' to prevent water percolation loss, thereby reducing station water intake and is a step towards efficient utilisation of water in the station. As regards the supply of required quantum of fresh water, the Petitioner has submitted that it has sent request to Saradar Sarovar Nigam Limited (SSNL) for allocation of 12 MLD water and SSNL intimated that water can be taken from 1st pool of Miyagam Branch Canal by constructing off-take point at Channel-2175 meter. Accordingly, the Petitioner has submitted that it is required to lay the water pipeline from Sardar Sarovar Canal main branch of pool-1 to the generating station, which is approximately 85 KM and this work is essential to ensure the sustained operation of the station making water available. Another step taken by the Petitioner is Rainwater Harvesting, for which sluice gates are required to be installed under this scheme. The Petitioner has stated that Rainwater (Harvesting and Storage) Bill, 2016 envisages compulsory harvesting of rainwater in every Government, residential, commercial and institutional building to conserve water and ensure recharge of groundwater. The Petitioner has therefore prayed to allow the expenditure proposed for Reservoir lining and laying of pipeline for the plant and allow the same under 'change in law' in terms of Regulation 26(1)(b) read with Regulation 76 of the 2019 Tariff Regulations (power to relax). The Petitioner has also submitted that the expenditure claimed for the work of water harvesting as water conservation measure may be allowed under change in law i.e., under Regulation 26(1)(b) of the 2019 Tariff Regulations keeping in view, the Water Harvesting Bill.

28. The Respondent MPPMCL has submitted that reservoir lining work is to separate the contact of water with soil and thus, work to be carried by the Petitioner is to defeat the very purpose of conservation of water i.e. this work may reduce the discharge of water into the ground, and therefore, may not be allowed. The Respondent has also submitted that the Petitioner has not submitted any notification/circular/orders of the competent authority to indicate that the expenditure claimed under this head is mandatory for the generating station. The Respondent has stated that the Petitioner's claim does not fall within the scope of Regulation 26(1)(b) and Regulation 76 of the 2019 Tariff Regulations.

29. The submissions have been considered. The Petitioner has claimed projected additional capitalization for Reservoir-1, Reservoir Lining work for Reservoir- 2, Laying of Pipe line from SSNL main Branch Canal to Plant and Supply & Fixing of Sluice Gate under Rain Water Harvesting scheme under Regulation 26(1)(b) (change in law'). However, the Petitioner has not been able to demonstrate that the projected additional capital expenditure claimed is on account of 'change in law' or for compliance with the existing law. In view of this, the projected additional capitalization claimed is not being allowed at present. However, The Petitioner is granted liberty to

approach the Commission with all relevant documents and proper justification for consideration of the claim through a separate petition.

h) Safety Cell

30. The Petitioner has projected the additional capital expenditure of Rs.40.00 lakh towards Safety cell in 2020-21 under Regulation 26(1)(d) of the 2019 Tariff Regulations. In justification for the same, the Petitioner has submitted that in terms of Paragraph 6(2)(c) in Chapter-III of 'Occupational Safety, Health and Working Conditions (OSHWC) Code 2019', tabled by the Ministry of Labour & Employment, GoI, in Lok Sabha, for amendment in provisions pertaining to OSHWC, the employer has to ensure the provision of information, instruction, training and supervision related to safety and risk of health. The Petitioner has submitted that in compliance to the said Code, 'Safety Cell' has been proposed to be installed for training of labourers, regarding awareness and training of safety practices, of the energy intensive industries. According to the Petitioner, this cell shall be helpful to enhance the safety culture in the generating station and as compliance to the provisions as specified by the GoI.

31. We have examined the matter. The Petitioner has claimed projected additional capitalization of Rs.40.00 lakh in 2020-21 for Safety cell under Regulation 26(1)(d) i.e., 'expenditure required for safety and security of the plant as advised or as per directions of appropriate governmental agency or statutory authorities. The Petitioner has contended that the safety cell is proposed for training of labourers regarding awareness and training of safety practices, in the interest of safety and security. It is however noticed that the Petitioner has not enclosed any documentary evidence indicating that the projected expenditure is required for the safety and security of the plant and is based on the advice and or directions of the appropriate Governmental

agency or statutory authorities. It is also not clear as to whether the amendment of the Code has come into force. In view of this, the projected additional capitalization claimed by the Petitioner on this count is not allowed.

32. Based on the above discussions, no projected additional capital expenditure has been allowed for the generating station for the 2019-24 tariff period.

Capital cost allowed for the 2019-24 tariff period

33. Accordingly, the capital cost approved for the generating station is summarized as under:

(Rs in lakh)

	2019-20	**2020-21**	**2021-22**	**2022-23**	**2023-24**
Opening Capital Cost	285567.84	285567.84	285567.84	285567.84	285567.84
Add: Additional Capital Expenditure allowed	0.00	0.00	0.00	0.00	0.00
Closing Capital Cost	285567.84	285567.84	285567.84	285567.84	285567.84
Average Capital Cost	285567.84	285567.84	285567.84	285567.84	285567.84

Debt-Equity Ratio

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

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

Provided that:

i. where equity actually deployed is less than 30% of the capital cost, actual equity shall be considered for determination of tariff:

ii. the equity invested in foreign currency shall be designated in Indian rupees on the date of each investment:

iii. any grant obtained for the execution of the project shall not be considered as a part of capital structure for the purpose of debt: equity ratio.

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

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

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

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

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

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

(5) Any expenditure incurred or projected to be incurred on or after 1.4.2019 as may be admitted by the Commission as additional capital expenditure for determination of tariff, and renovation and modernisation expenditure for life extension shall be serviced in the manner specified in clause (1) of this Regulation."

35. Regulation 3(73) of the 2019 Tariff Regulations provides as under:

"3. Definitions. - In these regulations, unless the context otherwise requires:-
…
(73) 'Useful Life' in relation to a unit of a generating station, integrated mines, transmission system and communication system from the date of commercial operation shall mean the following:
(a) Coal/Lignite based thermal generating station 25 years
(b) Gas/Liquid fuel based thermal generating station 25 years
(c) AC and DC sub-station 25 years
(d) Gas Insulated Substation (GIS) 25 years
(e) Hydro generating station including pumped storage hydro generating stations 40 years
(f) Transmission line (including HVAC & HVDC) 35 years
(g) Communication system 15 years

Provided that the extension of life of the projects beyond the completion of their useful life shall be decided by the Commission on case to case basis;

36. The COD of the generating station is 1.11.1995 and the useful life of the generating station (i.e. 25 years) expires in 2020-21. However, due to extension of life in 2015-16 and 2016-17 vide order dated 19.2.2019 in Petition No. 32/RP/2017 in Petition No.325/GT/2014, the balance useful life of the generating station is 8.40 years as on 1.4.2014, 9.60 years as on 1.4.2015, 10.79 years as on 1.4.2016, 9.79 years as on 1.4.2017 and 8.79 years as on 1.4.2018. Accordingly, in terms of the first proviso to Regulation 18(3) of 2019 Tariff Regulations read with Regulations 3(73) of the 2019 Tariff Regulations, the debt: equity ratio, as allowed for the period ending 31.3.2019, has been considered for determination of tariff for the 2019-24 tariff period. The details of the debt and equity in respect of the generating station are as follows:

	Capital Cost as on 1.4.2019 ***(Rs. in lakh)***	**(%)**	**Additional Capital Expenditure 2019-24** ***(Rs. in lakh)***	**Capital Cost as on 31.3.2024** ***(Rs. in lakh)***	**(%)**
Debt	155101.02	54.31%	0.00	155101.02	54.31%
Equity	130466.82	45.69%	0.00	130466.82	45.69%
Total	**285567.84**	**100.00%**	**0.00**	**285567.84**	**100.00%**

Return on Equity

37. Regulations 30 and of the 2019 Tariff Regulations provides as under:

"30. Return on Equity:

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

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

Provided that return on equity in respect of additional capitalization after cut-off date beyond the original scope 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."

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

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

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

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

Illustration-

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

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

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

(a) Estimated Gross Income from generation or transmission business for FY 2019-20 is Rs 1,000 crore;
(b) Estimated Advance Tax for the year on above is Rs 240 crore;

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

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

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

38. We have considered the matter. For grossing up of Return on Equity (ROE) during the 2019-24 tariff period, the Petitioner has applied the MAT rate of 17.472% and the same is allowed. This is, however, subject to revision, if any, at the time of truing up of tariff. Accordingly, ROE has been worked out and allowed as follows:

(Rs. in lakh)

		2019-20	**2020-21**	**2021-22**	**2022-23**	**2023-24**
Normative Equity-Opening	A	130466.82	130466.82	130466.82	130466.82	130466.82
Addition of Equity due to additional capital expenditure	B	0.00	0.00	0.00	0.00	0.00
Normative Equity-Closing	C=(A+B)	130466.82	130466.82	130466.82	130466.82	130466.82
Average Normative Equity	D=Average (C,A)	130466.82	130466.82	130466.82	130466.82	130466.82
Return on Equity (Base Rate)	E	15.500%	15.500%	15.500%	15.500%	15.500%
Effective Tax Rate for the year	F	17.472%	17.472%	17.472%	17.472%	17.472%
Rate of Return on Equity (Pre-Tax)	G=[E/(1-F)]	18.782%	18.782%	18.782%	18.782%	18.782%
Return on Equity (Pre-Tax) annualized	**H=(D*G)**	**24504.28**	**24504.28**	**24504.28**	**24504.28**	**24504.28**

Interest on Loan

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

"32. Interest on loan capital:

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

(2) The normative loan outstanding as on 1.4.2019 shall be worked out by

deducting the cumulative repayment as admitted by the Commission up to 31.3.2019 from the gross normative loan.

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

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

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

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

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

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

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

40. Interest on loan has been computed as under:

a. Gross normative loan amounting to Rs.155101.02 lakh as on 31.3.2019 as considered in order dated 13.5.2022 in Petition No. 301/GT/2020 has been considered as on 1.4.2019;

b. Cumulative repayment amounting to Rs.131345.44 lakh as on 31.3.2019 as considered in order dated 13.5.2022 in Petition No. 301/GT/2020 has been considered as on 1.4.2019;

c. Accordingly, the net normative opening loan considered as on 1.4.2019, is Rs.23755.58 lakh.

d. The repayments for the respective years of the 2019-24 tariff period, has been considered equal to the depreciation allowed for that year.

e. The Petitioner has claimed interest on loan by considering WAROI of 7.9989%, 8.3295%, 8.3355%, 8.3590% and 8.3877% for the years 2019-20, 2020-21, 2021-22, 2022-23 and 2023-24 respectively, the same has been considered.

41. Interest on loan has been worked out as follows:

(Rs. in lakh)

		2019-20	2020-21	2021-22	2022-23	2023-24
Gross opening loan	A	155101.02	155101.02	155101.02	155101.02	155101.02
Cumulative repayment of loan up to previous year	B	131345.44	137024.34	142703.24	148382.14	154061.04
Net Loan Opening	C=(A-B)	23755.58	18076.68	12397.78	6718.88	1039.98
Addition due to additional capital expenditure	D	0.00	0.00	0.00	0.00	0.00
Repayment of loan during the year	E	5678.90	5678.90	5678.90	5678.90	1039.98
Net Loan Closing	F=(C+D-E)	18076.68	12397.78	6718.88	1039.98	0.00
Average Loan	G=Average (C,F)	20916.13	15237.23	9558.33	3879.43	519.99
Weighted Average Rate of Interest of loan	H	7.9989%	8.3295%	8.3355%	8.3590%	8.3877%
Interest on Loan	**I=(G*H)**	**1673.06**	**1269.19**	**796.73**	**324.28**	**43.62**

Depreciation

42. 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."

43. Depreciation has been worked out considering the admitted capital cost of Rs.285567.84 lakh as on 1.4.2019 and the cumulative depreciation of Rs.209248.02 lakh as on 31.3.2019, as considered in order dated 13.5.2022 in Petition No. 301/GT/2020. Since, as on 1.4.2019, the used life of the generating station is more than 12 years from the effective station COD of 1.11.1995, depreciation has been computed by spreading over the balance depreciable value over the balance useful life of the assets. Accordingly, depreciation allowed for the generating station is as follows:

(Rs. in lakh)

		2019-20	**2020-21**	**2021-22**	**2022-23**	**2023-24**
Average Capital Cost	A	285567.84	285567.84	285567.84	285567.84	285567.84
Value of freehold	B	3,916.01	3,916.01	3,916.01	3,916.01	3,916.01

		2019-20	2020-21	2021-22	2022-23	2023-24
land						
Aggregated Depreciable Value	C=[(A-B)*90%]	253486.65	253486.65	253486.65	253486.65	253486.65
Remaining Aggregate Depreciable value at the beginning of the year	D=[(C)-(Cumulative Depreciation of Previous year)]	44238.63	38559.73	32880.83	27201.93	21523.03
Balance useful life at the beginning of the year	E	7.79	6.79	5.79	4.79	3.79
Depreciation (annualized)	F=(D/E)	5678.90	5678.90	5678.90	5678.90	5678.90
Cumulative depreciation (at the end of the period)	G= [(Cumulative Depreciation of Previous year) + (F)]	214926.92	220605.82	226284.72	231963.62	237642.52

Operation & Maintenance Expenses

44. Regulation 35(1)(1) of the 2019 Tariff Regulations provides the year-wise O&M expense norms for the generating station as under:

(Rs. In lakh/MW)

2019-20	2020-21	2021-22	2022-23	2023-24
17.58	18.20	18.84	19.50	20.19

45. The normative O&M expenses claimed by the Petitioner for the 2019-24 tariff period is as follows:

(Rs. in lakh)

2019-20	2020-21	2021-22	2022-23	2023-24
11556.92	11964.50	12385.23	12819.11	13272.70

46. As the year-wise O&M expenses claimed by the Petitioner for the 2019-24 tariff period as above, is in accordance with Regulation 35(1)(1) of the 2019 Tariff Regulations, the same is allowed.

Water Charges, Security Charges and Capital Spares

47. Regulation 35(6) of the 2019 Tariff Regulations provides for the following:

"The Water Charges, Security Expenses and Capital Spares for thermal generating stations shall be allowed separately after prudence check:

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

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

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

Water Charges

48. The water charges claimed by the Petitioner for the 2019-24 tariff period in terms of the first proviso to Regulation 35(6) of the 2019 Tariff Regulations are as under:

(Rs. in lakh)

2019-20	2020-21	2021-22	2022-23	2023-24
553.01	572.37	592.40	613.13	634.59

49. The Petitioner has furnished details in respect of water charges namely the type of cooling water system, water consumption, rate of water charges as applicable for the year 2018-19 as follows:

Description	Remarks
Type of Plant	Gas
Type of cooling water system	Closed Circuit cooling system
Consumption of Water (All stage)	6.205 MCM (2018-19)
Rate of Water charges	25.94 Rs/m3 (Industrial Water) & 3.14 Rs/m3 (Drinking water)
Total water charges (2018-19)	Rs.534.31 Lakh.

50. The Petitioner has escalated water charges for 2018-19 at the rate of 3.5% per year and has accordingly projected water charges for the 2019-24 tariff period. The Petitioner has also submitted that the claim for water charges is subject to retrospective adjustment, based on actuals, at the time of truing up of tariff for the

2019-24 tariff period. The Petitioner has also submitted that the actual water charges for 2019-20 and 2020-21 as under:

(Rs. in lakh)

2019-20	2020-21
304.54	666.33

51. The Respondent MPPMCL has submitted that the Petitioner has failed to provide adequate/proper information and therefore, the Commission may direct the Petitioner to submit proper information and the expenses may be allowed after the prudence check. In response, the Petitioner has submitted that as per Regulation 35(1)(6) of the 2019 Tariff Regulations, water charges for thermal generating stations are to be allowed separately. The details in respect of water charges such as type of cooling water system, water consumption, rate of water charges as applicable for 2018-19 have been furnished in the petition.

52. We have considered the matter. The Petitioner has claimed actual water charges incurred for the years 2019-20 and 2020-21 and on prudence check, the same is considered and allowed. As regards the projected water charges claimed for 2021-22 to 2023-24, we have considered the actual water charges of Rs.666.33 lakh incurred of 2020-21 without any escalation, with the direction that the Petitioner, at the time of truing-up of tariff, shall submit actual bills along with other relevant details in terms of the said proviso to Regulation 35(1)(6) of the 2019 Tariff Regulations. Accordingly, water charges allowed for 2019-24 period is as under:

(Rs. in lakh)

2019-20	2020-21	2021-22	2022-23	2023-24
304.54	666.33	666.33	666.33	666.33

Security Expenses

53. The Petitioner has claimed the following security expenses, on projection basis, for the 2019-24 tariff period, in terms of the second proviso to Regulation 35(6) of the

2019 Tariff Regulations.

(Rs. in lakh)

2019-20	2020-21	2021-22	2022-23	2023-24
1164.00	1280.00	1400.00	1500.00	1700.00

54. However, the Petitioner has claimed actual security charges incurred for the years 2019-20 and 2020-21 as under:

(Rs. in lakh)

2019-20	2020-21
1299.20	1220.44

55. The Respondent MPPMCL has submitted that security charges shall be allowed only after submission of assessment of security requirement and estimated expenses by the Petitioner and after prudence check. In response, the Petitioner has submitted that security expenses have been claimed based on the estimated expenses for the 2019-24 tariff period and the same is subject to retrospective adjustment, based on actuals, at the time of truing up of tariff, in terms of the Regulation 35(1)(6) of the 2019 Tariff Regulations.

56. We have considered the matter. The Petitioner has claimed actual security charges incurred for the years 2019-20 and 2020-21 and on prudence check, the same is considered and allowed. As regards the projected security expenses claimed for 2021-22 to 2023-24, we are inclined to allow the actual security expenses of Rs.1220.44 lakh incurred in 2020-21, without any escalation, with the direction that the Petitioner, at the time of truing-up of tariff, shall submit actual bills along with other relevant details in terms of the said proviso to Regulation 35(1)(6) of the 2019 Tariff Regulations. Accordingly, the security expenses allowed are as under:

(Rs. in lakh)

2019-20	2020-21	2021-22	2022-23	2023-24
1299.20	1220.44	1220.44	1220.44	1220.44

Capital Spares

57. As regards capital spares consumed, the Petitioner has submitted that the same shall be claimed at the time of truing up of tariff in terms of the last proviso to Regulation 35(6) of the 2019 Tariff Regulations, based on actual consumption of capital spares during the 2019-24 tariff period. In view of this, capital spares have not been considered in this order. The Petitioner is permitted to claim actual capital spares consumed, at the time of truing-up of tariff, along with proper justification.

58. Accordingly, the total O&M expenses allowed for the 2019-24 tariff period is summarised as under:

(Rs. in lakh)

	2019-20	**2020-21**	**2021-22**	**2022-23**	**2023-24**
O&M expenses allowed under Regulation 35(1)(1)	11556.92	11964.50	12385.23	12819.11	13272.70
O&M expenses allowed under Regulation 35(6)					
Water Charges	304.54	666.33	666.33	666.33	666.33
Security Expenses	1299.20	1220.44	1220.44	1220.44	1220.44
Total O&M expenses allowed	**13160.66**	**13851.27**	**14272.00**	**14705.88**	**15159.47**

<u>Operational Norms</u>

59. The operational norms claimed by the Petitioner, as under, is in accordance with the provisions of Regulation 49 of the 2019 Tariff Regulations, and is therefore allowed for the 2019-24 tariff period:

	Claimed	**Allowed**
Normative Annual Plant Availability Factor (NAPAF) %	85.00	85.00
Gross Station Heat Rate (kcal/kwh)	2040.00	2040.00
Auxiliary Power Consumption %	2.75	2.75

<u>Interest on Working Capital</u>

60. Regulation 34(1)(b) of the 2019 Tariff Regulations provide as under:

"34. Interest on Working Capital: (1) The working capital shall cover:
(b) For Open-cycle Gas Turbine/Combined Cycle thermal generating stations:

(i) Fuel cost for 30 days corresponding to the normative annual plant availability factor, duly taking into account mode of operation of the generating station on gas fuel and liquid fuel;

(ii) Liquid fuel stock for 15 days corresponding to the normative annual plant availability factor, and in case of use of more than one liquid fuel, cost of main liquid fuel duly taking into account mode of operation of the generating stations of gas fuel and liquid fuel;

(iii) Maintenance spares @ 30% of operation and maintenance expenses including water charges and security expenses;

(iv) Receivables equivalent to 45 days of capacity charge and energy charge for sale of electricity calculated on normative plant availability factor, duly taking into account mode of operation of the generating station on gas fuel and liquid fuel; and
(v) Operation and maintenance expenses, including water charges and security expenses, for one month."

61. Clause (3) and (4) of Regulation 34 of the 2019 Tariff Regulations provides as under:

"(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."

62. Regulation 3(7) of the 2019 Tariff Regulations defines Bank Rate as under***:***

"*In these regulations, unless the context otherwise requires: -*
Bank Rate' means the one-year marginal cost of lending rate (MCLR) of the State Bank of India issued from time to time plus 350 basis points;"

a) Fuel Cost and Cost of Liquid stock for computation of Working Capital

63. The Petitioner has claimed the following fuel components as part of working capital, based on the price and GCV of APM gas, Non APM gas and LNG for the preceding three months i,e October 2018, November, 2018 and December, 2018 and the mode of operation between APM gas, Non APM gas and LNG projected for the generating station is 76.30%, 16.54% and 7.16% respectively.

(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Fuel cost for 30 days	12207.86	12174.51	12174.51	12174.51	12207.86

64. The fuel components based on the price and GCV of APM gas, Non APM gas and LNG for the preceding three months i.e. October 2018, November, 2018 and December, 2018 and the mode of operation among APM gas, Non APM gas and LNG for the generating station was 76.30%, 16.54% and 7.16% respectively, as submitted by the Petitioner in Form-15 of the petition. As per Regulation 34(1)(b)(i) and (ii) of the 2019 Tariff Regulations, fuel cost (gas) for 30 days and the cost of liquid fuel for 15 days, are allowed as part of working capital as follows:

(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Cost of Fuel (gas) for 30 days	12009.39	12009.39	12009.39	12009.39	12009.39
Cost of liquid fuel for 15 days	0.00	0.00	0.00	0.00	0.00

65. The Petitioner has claimed Energy Charge Rate (ECR) of Rs.3.069/kWh based on the weighted average price and GCV of APM gas, Non APM gas and LNG used for operation of the generating station, during the preceding three months i.e. October 2018, November 2018 and December 2018 and the mode of operation as follows:

Parameters	Unit	2019-24
Landed Fuel Cost (APM gas)	Rs./1000 SCM	11896.90
(%) of Fuel Quantity	(%)	76.30
Landed Fuel Cost (Non-APM)	Rs./1000 SCM	13022.09
(%) of Fuel Quantity	(%)	16.54
Landed Fuel Cost (LNG)	Rs./1000 SCM	36491.59
(%) of Fuel Quantity	(%)	7.16
Energy Charge Rate (APM) ex-bus-CC	Rs./kWh	2.62
Energy Charge Rate (Non-APM) ex-bus-CC	Rs./kWh	2.89
Energy Charge Rate (LNG) ex-bus-CC	Rs./kWh	8.26
Weighted Average Energy Charge Rate ex-bus-Closed Cycle (CC)	Rs./kWh	3.069

66. Based on the operational norms, the price and GCV of the generating station

during the preceding three months i.e., October 2018, November 2018 and December 2018, the ECR, for the purpose of working capital, has been worked out and allowed for the 2019-24 tariff period is as follows:

(Rs. per kWh)

	2019-24 (Claimed)	2019-24 (Allowed)
Energy Charge Rate Primary fuel-ex-bus	3.069	3.069

67. Energy charges for 45 days, on the basis of weighted average GCV and weighted average cost, for the purpose of interest on working capital, has been worked out as follows:

(Rs. in lakh)

2019-20	2020-21	2021-22	2022-23	2023-24
18011.60	18011.60	18011.60	18011.60	18011.60

b) Working Capital for Maintenance spares

68. The Petitioner has claimed the following maintenance spares in the working capital:

(Rs. in lakh)

2019-20	2020-21	2021-22	2022-23	2023-24
3982.18	4145.06	4313.29	4479.67	4682.19

69. Maintenance spares for the purpose of working capital in accordance with Regulation 34(1)(b)(iii) of the 2019 Tariff Regulations *(30% of operation and maintenance expenses including water charges and security expenses)* is worked out as under:

(Rs. in lakh)

2019-20	2020-21	2021-22	2022-23	2023-24
3948.20	4155.38	4281.60	4411.76	4547.84

c) Working Capital for Receivables

70. Receivables equivalent to 45 days of capacity charge and energy charges (based on primary fuel only) for the purpose of working capital has been worked out and allowed as follows:

(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Variable Charges (45 days)	18011.60	18011.60	18011.60	18011.60	18011.60
Fixed Charges (45 days)	6145.43	6160.86	6117.65	6115.01	6121.90
Total	**24157.03**	**24172.46**	**24129.25**	**24126.61**	**24133.50**

d) Working Capital for O & M Expenses

71. The O&M expenses for the purpose of working capital claimed by the Petitioner is as under:

(Rs. in lakh)

2019-20	2020-21	2021-22	2022-23	2023-24
1106.16	1151.41	1198.14	1244.35	1300.61

72. The Working Capital for O&M expenses (1 month of O&M Expenses) allowed is as under:

(Rs. in lakh)

2019-20	2020-21	2021-22	2022-23	2023-24
1096.72	1154.27	1189.33	1225.49	1263.29

e) Rate of interest on working capital

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

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

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

(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Working capital for coal cost expenses 30 days	12009.39	12009.39	12009.39	12009.39	12009.39
Working capital for cost of secondary oil for 2 months	0.00	0.00	0.00	0.00	0.00
Working capital for O & M expenses 1 month	1096.72	1154.27	1189.33	1225.49	1263.29
Working capital for Maintenance Spares (30% of O&M expenses)	3948.20	4155.38	4281.60	4411.76	4547.84
Working capital for Receivables for 45 days	24157.03	24172.46	24129.25	24126.61	24133.50
Total Working Capital	**41211.34**	**41491.51**	**41609.57**	**41773.25**	**41954.02**
Rate of Interest	12.05%	11.25%	10.50%	10.50%	10.50%
Total Interest on Working capital	**4965.97**	**4667.79**	**4369.01**	**4386.19**	**4405.17**

Annual Fixed Charges for the 2019-24 Tariff Period

75. Based on the above discussion, the annual fixed charges allowed for the generating station for the 2019-24 tariff period is summarised as follows:

(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Depreciation	5678.90	5678.90	5678.90	5678.90	5678.90
Interest on Loan	1673.06	1269.19	796.73	324.28	43.62
Return on Equity	24504.28	24504.28	24504.28	24504.28	24504.28
O&M Expenses	13160.66	13851.27	14272.00	14705.88	15159.47
Interest on Working Capital	4965.97	4667.79	4369.01	4386.19	4405.17
Total	**49982.86**	**49971.43**	**49620.92**	**49599.53**	**49791.44**

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

Application filing fees and Publication Expenses

77. The Petitioner has sought reimbursement of fees paid by it for filing the tariff petition and publication expenses. The Petitioner shall be entitled for reimbursement of the tariff petition filing fees along with the publication expenses incurred 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.

78. Petition No. 420/GT/2020 is disposed of in terms of the above.

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