

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 436/GT/2020

Coram:

**Shri Jishnu Barua, Chairperson
Shri Ramesh Babu V., Member
Shri Harish Dudani, Member**

Date of Order: 17th February, 2025

In the matter of:

Petition for approval of tariff of Talcher Super Thermal Power Station Stage-I (1000 MW) for the period from 2019-24.

AND

In the matter of:

NTPC Limited
NTPC Bhawan, Core-7,
Institutional Area, Lodhi Road,
New Delhi-110003

.... Petitioner

Vs

1. West Bengal State Electricity Distribution Corporation Limited,
Vidyut Bhawan, Block-DJ,
Sector-II, Salt Lake City,
Kolkata – 700 091.
2. Bihar State Power Holding Company Limited,
Vidyut Bhawan, Bailey Road,
Patna – 800 001.
3. Jharkhand Urja Vikas Nigam Limited,
Engineering Bhawan, Heavy Engineering Corporation,
Dhurwa, Ranchi-834 004.
4. Grid Corporation of Orissa Limited,
Vidyut Bhawan, Janpath,
Bhubaneshwar – 751 007.
5. Damodar Valley Corporation,
DVC Towers, VIP Road,
Kolkata – 700 054.
6. The Energy & Power Department,
Govt. of Sikkim, Kazi Road, Gangtok,
Sikkim – 737 101.



7. Assam Power Distribution Company Limited,
Bijulee Bhawan, Paltan Bazar,
Guwahati – 781001.
8. Tamil Nadu Generation & Distribution Company Limited,
NPKRP Maaligail, 800, Anna Salai,
Chennai – 600 002.

....Respondents

Parties Present:

Ms. Swapna Seshadri, Advocate, NTPC
Ms. Ritu Apurva, Advocate, NTPC
Mr. Karthikeyan Murgan, Advocate, NTPC
Shri Raj kumar Mehta, Advocate, GRIDCO
Ms. Himanshi Andley, Advocate, GRIDCO
Shri Puneeth Ganapathy, Advocate, BSPHCL
Shri Chiranjiv Singh, Advocate, BSPHCL
Shri Sankalp Udgata, Advocate, BSPHCL

ORDER

This Petition has been filed by the Petitioner for approval of tariff of Talcher Super Thermal Power Station, Stage-I (1000 MW) (in short, 'the generating station') for the period 2019-24, in accordance with Regulation 9(2) of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 (in short 'the 2019 Tariff Regulations'). The generating station with a total capacity of 1000 MW comprises two units of 500 MW each, and the dates of commercial operation of Unit-I is 1.1.1997, and that of Unit-II is 1.7.1997.

2. The Commission, vide its order dated 19.5.2024 in Petition No. 387/GT/2020, had determined the capital cost and annual fixed charges for the generating station for the period 2014-19, after truing up exercise, as under:

Capital cost allowed

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Opening capital cost	258028.71	258560.17	259856.60	262424.83	263717.49
Add: Addition during the year	531.46	1296.43	2568.23	1292.65	6464.51
Closing capital cost	258560.17	259856.60	262424.83	263717.49	270182.00
Average Capital cost	258294.44	259208.38	261140.72	263071.16	266949.74



Annual Fixed Charges allowed

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	6921.27	7113.21	7481.74	7848.50	9100.85
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	25021.40	25172.03	25272.46	25350.64	25522.49
O&M Expenses	17889.95	18523.90	19559.41	20950.86	22332.35
Interest on Working Capital	5947.43	6001.27	6069.85	6270.85	6403.18
Compensation Allowance	500.00	500.00	500.00	750.00	1000.00
Total	56280.05	57310.40	58883.46	61170.85	64358.86
5km scheme (approved as reimbursement)	0.65	1.53	0.00	0.00	0.00
Payment of additional compensation and balance interest on enhanced compensation for land as per Court orders	0.27	0.95	0.00	0.00	0.00
Fly Ash Transportation expenses	0.00	0.00	0.00	0.00	344.79
Total other than annual fixed charges	0.92	2.48	0.00	0.00	344.79

Present Petition

3. The Petitioner, in the present petition, has claimed the following capital cost and annual fixed charges:

Capital cost claimed

(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Opening capital cost	276244.18	282856.18	302633.18	309868.18	314135.18
Additional capital expenditure claimed	6612.00	19777.00	7235.00	4267.00	1000.00
Closing capital cost	282856.18	302633.18	309868.18	314135.18	315135.18
Average capital cost	279550.18	292744.68	306250.68	312001.68	314635.18

Annual fixed charges claimed

(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Depreciation	12349.54	18316.90	30289.13	5175.90	2370.15
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	25174.96	25893.90	26630.58	17613.33	17740.10
Interest on Working Capital	5550.95	5708.77	5957.11	5501.31	5519.77
O&M Expenses	26107.24	27197.46	28337.18	29521.36	30749.80
Special Allowance	0.00	0.00	1171.23	8315.75	9500.00
Unrecovered depreciation to be recovered at the end of useful life.	0.00	0.00	0.00	580.49	0.00
Total (A)	69182.68	77117.03	92385.22	66708.15	65879.82

4. The Petitioner, vide affidavits dated 15.5.2021, 25.6.2021, 22.6.2022 and 16.8.2022, has made additional submissions to the main Petition. The Respondents,



GRIDCO, BSPHCL, and TANGEDCO, have filed their replies vide affidavits dated 22.7.2021/29.8.2022, 24.9.2021, and 4.2.2022, respectively. The Petitioner vide affidavits dated 29.9.2021/5.9.2022 (GRIDCO), 7.1.2022 (BSPHCL), and 27.3.2023 (TANGEDCO), respectively, has filed its rejoinder to the said replies. The Petition was heard on 6.1.2023 along with Petition No. 387/GT/2020 (tariff of the generating station for the period 2014-19), and the Commission, after directing the Petitioner to submit certain additional information, reserved its order in the Petition. In response, the Petitioner vide affidavit dated 13.2.2023 has filed the additional information after serving copies on the Respondents. The Respondent, GRIDCO, has filed its reply vide affidavit dated 4.3.2023 to the additional submissions filed by the Petitioner, and the Petitioner has filed a rejoinder to the same vide affidavit dated 27.3.2023. However, since the order in the Petition could not be issued prior to one Member of this Commission, who formed part of the Coram, demitting office, this Petition (along with Petition No. 387/GT/2020) was re-listed and heard on 6.2.2024 and the Commission, after directing the Petitioner to file certain additional information, reserved its order in these Petitions. In response, the Petitioner vide affidavit dated 21.3.2024 has submitted the additional information, with a copy to the Respondents. Subsequently, as the order in the Petition could not be issued prior to another Member, who formed part of the Coram, demitting office, the Petition was re-listed and heard on 13.6.2024 and the Commission, based on the consent of the parties, reserved its order in the Petition. However, since the order in the Petition could not be issued prior to one Member of this Commission, who formed part of the Coram, demitting office, the Petition was re-listed for hearing on 8.11.2024, and the Commission after allowing the Respondent GRIDCO to file its note of arguments, reserved its order in the Petition. In response, the said Respondent has filed its note



of arguments on 20.11.2024. In consideration of the submissions of the parties and the documents available on record, we proceed to examine the claims of the Petitioner in this petition on prudence check, as stated in the subsequent paragraphs.

Capital Cost

5. Clause (1) of Regulation 19 of the 2019 Tariff Regulations provides that the capital cost, as determined by the Commission after prudence check, in accordance with this Regulation, shall form the basis of the 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 Petitioner has claimed an opening capital cost of Rs. 276244.18 lakh, on a cash basis, as on 1.4.2019. However, the Commission vide order dated 19.5.2024 in Petition No. 387/GT/2020 allowed closing capital cost as on 31.3.2019 as Rs. 270182.00 lakh. Accordingly, in terms of Regulation 19(3) of the 2019 Tariff Regulations, the capital cost of Rs. 270182.00 lakh, on a cash basis, has been considered as the opening capital cost as on 1.4.2019.



Additional Capital Expenditure

7. Regulations 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 for the generating station for the period 2019-24 is as under:

(Rs. in lakh)

		Regulation	Additional capital expenditure claimed (Projected)				
			2019-20	2020-21	2021-22	2022-23	2023-24
A	Works under original scope, change in law etc., eligible for RoE at Normal Rate						
I	Ash dyke raising & Strengthening works						
1	Ash dyke works of Lagoon-1 (including Raising & strengthening)	25(1)(c)	3700.00	0.00	0.00	0.00	0.00
2	Ash dyke works of Lagoon-2 (Including Raising)	25(1)(c) & (g)	1900.00	7700.00	0.00	0.00	0.00
		25(1)(c)	0.00	0.00	6300.00	0.00	0.00
3	4th pump in ash slurry series	25(1)(c) & (g)	607.00	0.00	0.00	0.00	0.00
4	Mine void filling through lean slurry system	26(1)(b) & (e)	0.00	2700.00	0.00	0.00	0.00
5	Dry Ash evacuation system Stage-I		0.00	4500.00	0.00	0.00	0.00
6	Weigh bridge for Ash Utilization.		0.00	34.00	0.00	0.00	0.00
7	Ash mound L1 & L2	25(1)(c) & (g)	0.00	0.00	0.00	1000.00	1000.00
	Sub-Total (I)		6207.00	14934.00	6300.00	1000.00	1000.00
II	Works towards safety and security						
1	Track MGR (7km)	25(2)(b) & (c)	405.00	2400.00	800.00	1000.00	0.00
	Sub-Total (II)		405.00	2400.00	800.00	1000.00	0.00
III	Works under compliance of existing law						
1	Providing Fire detection and protection system in IT, Stores and CHP (MVW)	26(1)(d) & (b)	0.00	416.00	0.00	0.00	0.00
2	Supply, Retrofitting and Up-gradation of Passenger Lifts of Stage-1 (Unit-1 and Unit2), TSTPS	25(2)(c)	0.00	130.00	0.00	0.00	0.00
	Sub-Total (III)		0.00	546.00	0.00	0.00	0.00
III	Works due to obsolescence of technology						



1	Design, Supply, Erection & Commissioning of ABT system		0.00	52.00	0.00	0.00	0.00
2	Replacement of feed water chemical treatment from All volatile (oxidising) mode to Oxygenated Treatment in St-1	25(2) (c)	0.00	0.00	135.00	0.00	0.00
3	Replacement of Stage-I Stacker Reclaimer 1/2 DC drive to Variable frequency Drive (VFD).		0.00	0.00	0.00	600.00	0.00
Sub-Total (IV)		0.00	0.00	52.00	135.00	600.00	0.00
Total (A=I+II+III+IV)			6612.00	17932.00	7235.00	2600.00	1000.00
B Works beyond original scope excluding additional capital expenditure due to change in law eligible for RoE at weighted average rate of Interest							
1	Construction of New ash dyke (Starter Dyke: Masunihata construction and its land)	26(1)(e)	0.00	1667.00	0.00	1667.00	0.00
2	Township Building work	26(1) with Regulation 76	0.00	178.00	0.00	0.00	0.00
Total (B=1+2)			0.00	1845.00	0.00	1667.00	0.00
Total Additional capital expenditure claimed (A+B)			6612.00	19777.00	7235.00	4267.00	1000.00

Compliance of Regulation 33(7) of the 2019 Tariff Regulations

9. The Respondent, GRIDCO, has submitted that the Petitioner has claimed an additional capital expenditure of Rs. 38891 lakhs. However, it has not submitted the details of the proposed capital expenditure five years before the completion of its useful life (which was before 30.6.2017) along with the justification and proposed life extension as mandated under Regulation 33 (7) of the 2019 Tariff Regulations, hence this claim may be rejected. The Respondent BSPHCL has submitted that since the Tariff Regulations are formulated under the Electricity Act, 2003, which mandates protection of consumer interest and since the tariff determined under section 62 of the Electricity Act, 2003 directly burdens the end consumer, therefore, while implementing the Regulations, the intent of the Electricity Act, 2003 and consumer interest should be considered. The Respondent has further submitted that though the Petitioner has claimed special allowance to meet the requirement of its expenditure,



including R&M, beyond useful life, the Petitioner has not provided any proposal or justification for the extension of the useful life of the generating station. Further, both the Respondents, GRIDCO and BSPHCL, have submitted that the Petitioner has claimed special allowance under Regulation 28 of the 2019 Tariff Regulations, and the same is to meet the requirement of expenses, including R&M beyond the useful life of the generating station and in terms of Regulation 28(1) of the 2019 Tariff Regulations, the upward revision of capital cost is not allowed; therefore, the Petitioner should meet the additional capital expenditure from special allowance. In response, the Petitioner has submitted that Regulation 33 (7) of the 2019 Tariff Regulations cannot be read in isolation since it will obliterate the effect of other Regulations, such as Regulation 25 and Regulation 26 of the 2019 Tariff Regulations, which provides for additional capitalization. The Petitioner has further submitted that Regulation 33 (7) of the 2019 Tariff Regulations has to be complied with in case a life extension is proposed, and in such cases, the Commission, after prudence check based on the balance depreciable value as on 1.4.2019, has to approve depreciation on capital expenditure. The Petitioner has also clarified that the special allowance provided under Regulation 28 cannot replace the substantive provisions of Regulation 25 and 26 of the 2019 Tariff Regulations, and the special allowance is admissible for R&M activities irrespective of whether any additional capitalization is proposed or not and in case, additional capital expenditure is justified under various heads of either Regulation 25 or 26 of the 2019 Tariff Regulations, the same cannot be denied on the basis of special allowance. Further, in response to a query of the Commission to earmark the additional capitalization claimed to the units of the generating station, the Petitioner submitted that the additional capital expenditure had not been taken up unit-wise but only as a generating station as a whole.



10. We now examine the above projected additional capital expenditure claimed by the Petitioner for the period 2019-24 as under:

Mine void filling through lean slurry system, Dry Ash Evacuation System (DAES) Stage-I Ash dyke works of Lagoon-1 (including Raising & strengthening), Ash Dyke Works Lagoon-2 (including Raising), Ash mound L1 and L2 and Construction of New ash dyke (Starter Dyke: Masunihata construction and its land)

11. The Petitioner has claimed projected additional capital expenditure of Rs. 2700.00 lakh towards mine void filling, Rs. 4500.00 lakh towards Dry Ash Evacuation system, Rs. 3700.00 lakh towards Ash dyke works of Lagoon-1, Rs. 15900.00 lakh towards Ash dyke works of Lagoon-2, Rs. 2000.00 lakh towards Ash mound L1 and L2 and Rs. 3334.00 lakh towards the construction of new Ash dyke. As all these claims are associated with ash generated at the plant and are interconnected, these claims and the common analysis thereof are deliberated in subsequent paragraphs:

Mine void filling through lean slurry system

12. The Petitioner has claimed projected additional capital expenditure of Rs. 2700.00 lakh in 2020-21 under Regulation 26(1)(b) and (e) of the 2019 Tariff Regulations towards Mine void filling through lean slurry system. In justification for the same, the Petitioner has submitted that as per the 2009 MOEF Guidelines, the State Pollution Control Board (SPCB), vide consents dated 31.1.2012 and 19.8.2014, had directed to expedite the project for disposal of ash in the allotted mine voids of Jagannath OCP of MCL for achieving 100% ash utilisation. The Petitioner has further submitted that this work was projected during the year 2017-18, and based on all the documents and justifications, the Commission had allowed to consider the work at the time of true-up for the period 2014-19, subject to MOEF clearance. The Petitioner has further stated that the mine void package that was envisaged to be completed in the period 2014-19 got delayed due to statutory clearances and also due to the



signing of MOUs with MCL for the area through which the pipes were to be laid. Subsequently, the Expert Appraisal Committee (EAC) of MOEF vide its 4th meeting held on 16.3.2017, granted final approval for the diversion of forest land for the mine void-filling project in July 2019. The Petitioner has further clarified that since the project was taking time, a pilot project was taken up for a single pipeline disposal to the mine void, and this work was envisaged to be completed by the year 2020-21.

13. The Respondents GRIDCO and BSPHCL have submitted that the EAC had only recommended temporary permission for five (5) years, and in the absence of the final order/notification of MOEFCC, the recommendation of EAC was not final and binding. The Respondents have further stated that in case the mine void filling works are taken up for disposal of ash, then there will be no necessity of raising the height of the existing ash dykes and construction of New ash dykes. The Respondent TANGEDCO has submitted that since these expenses are claimed for Stage-II, it should be ensured that there is no overlapping of the claims of the generating station with the expenses claimed for Stage-II. The Respondent has further stated that as per the MoC guidelines dated 27.8.2009, the mine filling expenses form a part of the coal price, and hence, the responsibility for mine closure lies with the coal company and not on the thermal power plant. Also, the power plants buying coal from such coal mines would have already paid the expenditure for the closure of Jagannath mines and hence incurring expenses by TSTPS stage I and II for filling up of Jagannath mine voids will be double expenditure for the same work, which is not correct. In response, the Petitioner has reiterated its submissions made earlier and has further submitted that it has prepared a comprehensive scheme for the implementation of fly ash to be transported to Jagannath Quarry and had also applied for environment clearance, which was granted on 16.3.2017 and stage II/ final approval (diversion of



forest land for mine void filling) was granted in July 2019. The Petitioner has also clarified that this is a specific scheme for the generating station and not comparable to the cost incurred by it for the transportation of fly ash as per the MoEF&CC Notification dated 7.12.2015. The Petitioner has also submitted that based on the 4th appraisal committee of EAC held on 16.3.2017, the OSPCB issued a specific direction, and the same is a change in law and beyond the original scope of work, as it arises out of OSPCB's directions dated 24.3.2015.

Dry Ash Evacuation System (DAES) Stage-I

14. The Petitioner has claimed projected additional capital expenditure of Rs. 4500.00 lakh in 2020-21 towards the dry ash evacuation system under Regulation 26(1) (b) & (e) of the 2019 Tariff Regulations. In justification for the same, the Petitioner has submitted that as per MOEF gazette notification on ash utilization dated 3.11.2009, the generating station must achieve 100% ash utilization in the stipulated time frame. Further, 20% ESP dry fly ash must be kept reserved for issuing to fly ash brick manufacturing units. However, the present DAES capacity is barely sufficient to meet its requirement, and therefore, the augmentation of DAES of Stage-I Units is required to increase ash utilization percentage. The Petitioner has further pointed out that this work is also required as per SPCB consent guidelines for operating the generating station and as per the latest SPCB consent dated 27.3.2019.

15. The Respondents GRIDCO, BSHPCL, and TANGEDCO have submitted that the MoEF&CC notifications stipulate for maintaining separate account heads for the amount collected from the sale of fly ash and fly ash-based products, and the same shall be utilized only for the development of infrastructure or facilities, promotion and facilitation activities for use of fly ash until 100% fly ash utilization is achieved and



since the subject item is for 100% ash utilization, the same should be met out of the amount maintained in a separate account. The Respondent, GRIDCO, has further submitted that the Petitioner has not placed on record any documentary evidence from MOEF&CC to consider the relaxation of norms for the achievement of 100% ash utilization on the ground of the remote location of the generating station. Further, the Respondent, TANGEDCO, has submitted that SPCB, vide its consent to operate order dated 27.3.2019, has mentioned the installation of the 'Dust Extraction System' for environmental safety but not the 'Dry Ash Evacuation System'. In response, the Petitioner has reiterated its submissions made earlier and has clarified that this work was earlier allowed vide order dated 16.2.2017 in Petition No. 293/GT/2014, but the same could not be executed due to the continuous operation of the generating station and is expected to be capitalized by the period 2019-24 with 100% ash utilization in terms of the MoEF&CC notification. The Petitioner has further stated that it has taken various steps for ash utilization, including the MoU with NHAI for the transportation of ash, but was not able to achieve 100% ash utilization. The Petitioner has also clarified that even though steps have been taken for ash utilization, there is still a requirement for the evacuation of ash from the place of generation and its storage. The Petitioner has stated that vide order dated 5.11.2018 in Petition No. 172/ MP/2018, it was held that the proceeds from the sale of fly ash would go towards ash transportation, and therefore, the amounts received from the sale of ash cannot be utilized both for offsetting transportation charges as well as building ash disposal infrastructure.

Ash dyke works of Lagoon-1 (including Raising & strengthening) and Lagoon-2 (including Raising)

16. The Petitioner has claimed projected additional capital expenditure of Rs. 3700 lakh in 2019-20 for Lagoon-1 under Regulation 25(1) (c) of the 2019 Tariff



Regulations and Rs. 1900 lakh and Rs.7700 lakh in 2019-20 and 2020-21, respectively for Lagoon-2, under Regulation 25(1) (c) & (g) of the 2019 Tariff Regulations. In addition, the Petitioner has claimed Rs. 6300 lakhs in 2021-22 towards Lagoon-2 under Regulation 25(1)(c) of the 2019 Tariff Regulations. In justification for these works, the Petitioner has submitted that during the initial design stage and due to poor coal quality and low ash utilization, the actual annual ash production of the generating station was around 26.5 lakh cum as against the estimated disposal of 14.4 lakh cum. The Petitioner has also submitted that in order to create extra space in the existing dyke, NIT, Rourkela, was engaged as a consultant for examining the feasibility of enhancement of dyke capacity. The Petitioner has stated that the ultimate/ final raising (up to 7th raising) has already been exhausted, in both the Lagoons of Stage-I, to accommodate the excess ash production as well as to strengthen the ash dyke. Also, buttressing works are being taken up, as per the recommendation of the consultant. The Petitioner has further submitted that the ash dyke raising works for Lagoon-1 and Lagoon-2 for the period 2014-19 were earlier allowed vide order dated 30.7.2016 in Petition No. 281/GT/2014 and liberty was given to the Petitioner for consideration of the buttressing/ strengthening works, at the time of truing up of tariff, based on expert advice. It has been submitted that buttressing works of Lagoon-1 were claimed in the period 2014-19, and the balance works are projected in tariff for the period 2019-24; however, the works of Lagoon-2 could not be started during the period 2014-19 due to delay in finalising of expert advice report for carrying out these works and the same have been finalised and are projected for capitalisation in the period 2019-24.



Ash mound L1 and L2

17. The Petitioner has claimed projected additional capital expenditure of Rs. 1000.00 lakh in 2022-23 and Rs. 1000 lakh in 2023-24 towards ash mound L1 & L2 under Regulation 25(1) (c) & (g) of the 2019 Tariff Regulations. In justification for the same, the Petitioner has submitted that these are the original scope of works related to ash dyke construction and ash handling. The Petitioner has clarified that the additional ash mound was planned in the existing ash dyke area of stage-I Lagoon-1 & 2, based on the expert advice from NIT Rourkela, and the same will create additional space for discharging of ash and also utilise ash and will help cater to ash handling and evacuation problems that TSTPS-I is facing.

Construction of New ash dyke (Starter Dyke: Masunihata construction and its land)

18. The Petitioner has claimed projected additional capital expenditure of Rs. 3334.00 lakh in 2020-23 (Rs. 1667.00 lakh in 2020-21 and Rs. 1667.00 lakh in 2022-23) for construction of a new ash dyke (starter dyke: Masunihata construction and its land), under Regulation 26(1) (e) of the 2019 Tariff Regulations. In justification for the same, the Petitioner has submitted that the original ash dyke of TSTPS-I was designed for an average PLF of 62.8 % and much less ash quantity in coal. However, over the period, as the PLF/availability norms have been raised to 85% and the coal quality of MCL mines got deteriorated, there is a substantial increase in the ash generation that cannot be disposed of with the existing ash ponds, and the existing ash dyke is already nearing its full capacity; therefore, additional ash dyke is required for discharging the ash. The Petitioner has further submitted that the State administration has given administrative approval for the acquisition of 535 acres of land, wherein notification u/s 4(1) has already been published for private land. The



Petitioner has also stated that vide order dated 30.7.2016 in Petition No. 281/GT/2014, these works have been allowed, and capitalization towards land of Rs. 24.58 crore was also allowed on a projection basis; however, the land could not be acquired during the period 2014-19 due to delay in government clearances which increased the estimated amount from 24.58 core to Rs. 33 crores (projection basis). The Petitioner has clarified that the Government has now issued notification for land acquisition, and accordingly, the ash dyke construction work is being planned for the period 2019-24.

19. The Respondents, GRIDCO and BSPHCL, have submitted that the MoEF&CC vide notification dated 3.11.2009, mandated the Petitioner to achieve target of ash utilization to at least 50%, 60%, 75%, 90%, and 100% of the fly ash generated within one, two, three, four and five years of notification, respectively and the unutilized ash during first five years, if any, shall be utilized progressively in next five years. In addition, the Respondents have stated that the MoEF&CC notification dated 25.1.2016 stipulated 100% utilization of fly ash by 31.12.2017, and in case the Petitioner failed to utilize 100% Ash generated by 31.12.2017, it is a violation of Environment (Protection) Rules. The Respondents have further stated that if the Petitioner had achieved 100% ash utilization by 31.12.2017 and continued achieving the same, there would not have been any requirement for raising height of ash dyke nor of new ash dyke, except maintenance of existing ash dykes, which can be met from O&M, therefore if the claim is raised out of non-compliance of law or failure of Petitioner, the Respondents may not be compelled to compensate in terms of additional capital expenditure and the claims may be rejected. The Respondents have also stated that since the Petitioner has claimed ash transportation charges for ash



utilization, there is no requirement for the construction of a new ash dyke. In response, the Petitioner has submitted that:

- i. Raising an ash dyke is a continuous process and needs to be done in a phased manner throughout the life of the plant. The fly ash utilization is a parallel process and MoEF&CC has prescribed notifications from time to time for consumption of fly ash. It cannot be contended that by merely achieving more fly ash utilization, there will not be any need for ash dyke raising or ash-related works.
- ii. As the rate of ash generation is often at variance with the rate of ash utilization, the entire ash generated cannot be utilized immediately and on day to day basis, and the same needs to be stored in the ash dyke. Thus, the raising of ash dykes is planned in an advanced manner anticipating the ash required to be stored. Therefore, these works are needed for the safe disposal of ash and subsequent utilization based on demand, contracts, etc.
- iii. Increase in PLF from the designed value of 68% to 85%, poor quality of coal, etc., are resulting in higher production of ash.
- iv. Though efforts are being made to achieve 100% ash utilization, due to the remote location of the plant, mismatch in the demand-supply, unavailability of ash utilization-based projects in the vicinity of the plant, etc., only a small quantum of ash is utilized in sectors, such as brick industries, etc. Therefore, non-compliance of the MoEF&CC Notifications cannot be attributable to the petitioner.
- v. As all the legacy ash lying at generating station cannot be utilized overnight, the ash dyke raising is required from time to time.

20. Respondent TANGEDCO has submitted that the Petitioner has claimed that these works were allowed in the period 2014-19, and due to a delay in work, they were executed during the period 2019-24. However, the Petitioner in Petition No. 387/GT/2020 (for truing up of tariff for the period 2014-19) has not furnished any details regarding the works that were pending and yet to be completed during the period 2019-24. The Respondent has also submitted that the total expenses claimed in Petition No. 387/GT/2020 and the present Petition, i.e., Rs. 10178.91 lakh for Lagoon-1 and Rs. 18059.54 lakh for Lagoon-2, are in excess of the claims allowed



(Rs. 10050 lakhs for Lagoon-1 and Rs. 3352 lakhs for Lagoon-2) vide order dated 29.7.2016, and therefore the claim towards Lagoon-1 may be restricted to the expenses allowed vide order dated 29.7.2016. Further, the excess amount (338.75% increase) claimed towards Lagoon-2 is due to a delay on the part of the Petitioner in getting the expert report finalized, and therefore, the same should be borne by the Petitioner and the beneficiaries cannot be burdened for the same. The Respondent further stated that the Petitioner has not furnished the details of work that are approved under the original scope of works and has also not furnished existing ash dyke capacity, capacity utilized, ash deposited, ash utilized, expenses incurred for dyke, etc. for both stages of Talcher STPS. However, considering the information provided in Petition No. 441/GT/2020, for determination of tariff during the period 2019-24 for TSTPS Stage II and the present petition, the total ash related expenses claimed by Petitioner for Stages-I and II is Rs. 32775 lakhs and 87683 lakhs respectively. The Respondent has stated that there is an overlapping of claims since Stage-I has almost completed its useful life and Stage-II has completed 16-21 years, and therefore, the Petitioner may be directed to furnish a comprehensive proposal in respect of the ash handling system for both Stages-I and II and also to ensure that there is no double claims for the same work. With regard to the construction of a new ash dyke, the Respondent, TANGEDCO, has submitted that since the Petitioner has made similar claims in Petition No. 441/GT/2020 (for Talcher STPS Stage-II), i.e., for the construction of new ash dyke (Masunihata) for Rs. 6668 lakhs (Rs. 3334 lakhs in 2020-21 and Rs. 3334 lakhs in 2022-23), the Petitioner shall confirm the requirement of the subject asset for this generating station also. With regard to expenditure on Ash Mound L1 and L2, the Respondent, TANGEDCO, has submitted that while, on the one hand, the Petitioner has claimed these works to be within the original scope



of work, it has, on the other hand, claimed that these have been proposed on the basis of NIT Rourkela's recommendation. Thus, it is not clear as to whether these are within the original scope of work or is an additional work. The Respondent has stated that in case this is an additional requirement, then Regulation 25 of the 2019 Tariff Regulations will not be applicable.

21. Subsequently, the Commission, vide ROP of the hearing dated 6.1.2023, had directed the Petitioner to furnish the reasons for claiming the various ash-related expenses over and above the claim allowed for Ash transportation charges in Petition No. 205/MP/2021. Also, the Petitioner was directed to furnish the details regarding the grade of coal envisaged in the FSA, the year-wise actual grade of coal received, the ash content in the coal, and penalty/ adjustment made thereof, along with the supporting documents to substantiate the designed PLF of 62.8%; the actual and envisaged generation, the ash production, the ash transported and the ash utilized, etc. In response, the Petitioner has reiterated its submissions made earlier and also clarified that the claim allowed in Petition No. 205/MP/2021 was in the nature of a recurring revenue expenditure due to the MoEF&CC notifications, which amounts to a 'change in law' and the same has nothing to do with the additional capital expenditure proposed on the ash related works. The Petitioner has further submitted that the energy charge rate of the generating station is low, with the plant getting full schedule and operating at a higher PLF. The Petitioner also submitted that the annual energy envisaged was 5501.28 Mus and the details of PLF, electricity generated, ash produced, ash utilized, GCV of coal, ash percentage in coal etc., during the past period as under:



PLF, Energy generated, Ash produced and Ash utilization details

Financial Year	PLF (%)	Actual Energy (MUs)	Ash Produced (MT)	Ash Transported (MT)	Ash Utilized in Other than Transportation (MT)	Ash Utilization (%)
2014-15	-	7487.9921	2173230	115252	880649	-
2015-16	-	7855.04	2260538	139109	917796	-
2016-17	-	7626.68	2373811	120706	983822	-
2017-18	-	7679.19	2640144	97919	1221088	-
2018-19	-	7020.93	2528430	338361	1156128	-
2019-20	68.80	6043.30	2336405	1028747	1228930	67
2020-21	84.13	7369.73	2281426	1958121	950218	70
2021-22	82.84	7257.15	2292557	1525879	1015689	54

The grade of coal and percentage of ash content in coal during 2017-22

	Grade of supplied (GCV)	Ash content (%)
2017-18	2988	43.20
2018-19	2933	44.27
2019-20	2910	44.13
2020-21	3164	41.49
2021-22	3069	40.74

22. Respondent GRIDCO has reiterated its submissions made earlier and has added the following:

- a. Had the Petitioner taken adequate steps to set up or promote the setting up of infrastructure/ fly ash-based product manufacturing units in the vicinity in terms of MOEF&CC's notifications, maximum ash could have been utilized locally.
- b. Though the consultant was engaged in raising ash dyke height, strengthening, and buttressing at the cost of consumers, it has failed to achieve maximum ash utilization.
- c. The ash utilization in 2020-21 and 2021-22 is more than the ash produced, i.e., legacy ash has been utilized. Thus, there is no requirement for ash dyke raising and construction of new ash ponds.
- d. As the expenditure incurred for ash transportation is allowed, the beneficiaries cannot be burdened with simultaneously capitalization of various ash-related works, including ash dyke raising or construction of new ash dyke.
- e. The Petitioner is being solely responsible for obtaining good quality coal with reasonable content of ash. The Petitioner has not furnished a penalty clause w.r.t grade of coal.
- f. In spite of the Commission's direction, the Petitioner has not furnished the grade of coal envisaged in FSA, the documents for percentage of ash content in FSA, GCV, and ash content from COD to 2016-17, originally planned ash dyke is for 62.8 % PLF, etc.



23. Thereafter, the Petitioner was again directed vide ROP of the hearing dated 6.2.2024 to submit the detailed scope of works completed during the period 2014-19 and the detailed scope of works envisaged during the period 2019-24 for Lagoon-1 and Lagoon-2, including the year-wise expenses incurred/to be incurred, raisings completed/to be completed, increase in storage capacity, the existing quantity of ash, etc, and apportionment of expenses made to Stage I and Stage II etc. In response, the Petitioner has clarified that Lagoon-1 and Lagoon-2 pertain to the present generating station only, and during the period 2014-19, the 6th and 7th raisings for both lagoons as well as the interim strengthening works for Lagoon-2 were completed. The Petitioner has stated that after the execution of the 6th and 7th raisings, the increase in the storage capacity of Lagoon-1 and Lagoon-2 was 36.21 lakh m³ and 36.14 lakh m³, respectively, and the cumulative ash stored in Lagoon-1 and Lagoon-2 as on 29.2.2024 is 270.80 lakh m³ and 217.93 lakh m³, respectively. The Petitioner has added that the works envisaged during the period 2019-24 for Lagoon-1 are phases 2 and 3 of buttressing, and that of Lagoon-2 are phases 1 to 4 of buttressing.

Analysis and Decision

24. The submissions of the parties have been considered, and on examination of the above claims, it is noted that:

- a. The Petitioner, in addition to ash transportation charges, has also projected an additional capital expenditure towards raising existing ash dyke works, mine void filling, DAES for dry ash evacuation, construction of new ash dyke, and establishing ash mounds 1 and 2.
- b. In terms of MoEF&CC Notifications 2009, 2016, and 2021, the Petitioner, from time to time, has been making efforts to improve the ash utilization and striving towards 100% ash utilization, including ash transportation and as a result, in



the years 2020-21 and 2021-22, the ash utilization is more than ash produced in that year.

- c. The Petitioner in Petition No. 281/GT/2014 (for determination of tariff for 2014-19) has projected additional capitalization of Rs. 16490 lakh towards various ash dyke related works, including raising, strengthening, and buttressing of Lagoon-1 and Lagoon-2, wherein, the Commission vide order dated 29.7.2016 allowed these works, exclusive of liberty granted to buttressing of Lagoon-2 and directed to claim the same at the time of truing up of tariff along with documentary evidence to justify the works (recommendation of expert), the cost incurred for each work under the raising of Ash dyke works, the expenditure envisaged for Ash handling system/ Ash dyke Raising within the original scope of work, the actual expenditure incurred as on COD of the generating station and from COD to 2018-19. The Petitioner has submitted two reports prepared by the consultants for Lagoon-2, i.e., 'Interim strengthening' and 'strengthening & buttressing and Peripheral dyke raising'.
- d. The Petitioner had used Ash for the raising of Ash dykes and, during the period 2014-19, completed the 6th and 7th raisings for both, Lagoon-1 and Lagoon-2 and also started buttressing works for Lagoon-1. This has created an additional storage capacity of 88 lakh m³. The balance buttressing works for Lagoon-1 and complete buttressing for Lagoon-2 are planned for the period 2019-24.
- e. As regards DAES, the subject claim is an augmentation/ additional capacity, but the Petitioner has not furnished any details regarding the capacity of the existing system and the requirement of the proposed work over and above the existing facility.
- f. With regard to Mine void filling claims made, it is observed that the permission is on a temporary basis and for 5 years only. In this context, in Petition No. 281/GT/2014, the Petitioner submitted that the OPCB, in their consent order dated 13.1.2012, directed the Petitioner to expedite all works towards ash disposal in mine voids of Jagannath quarry. It has been submitted that during the high-level meeting held on 8.7.2011 with the Govt. of Odisha, Ministry of Environment, Odisha, and OSPCB on the issue of closure notice served to the generating station for ash dyke problem, deliberations were held on mine filling with ash and accordingly, the generating station has prepared a comprehensive scheme for implementing the scheme for transportation of fly ash to mine void at Jagannath quarry.
- g. With regard to construction of a new ash dyke, it is observed that the Petitioner has claimed similar expenses (apportioned to Stage II) in Petition No. 441/GT/2020 (for determination of tariff during the period 2019-24 for Stage II



of Talcher STPS), wherein, the Petitioner vide affidavit dated 28.7.2021 submitted that the subject work has been deferred and will not be capitalized during the period 2019-24. However, the Petitioner, in the present petition, has continued to seek additional capitalization.

25. In consideration of the above submissions, the Commission is inclined to allow the projected expenditure towards balance ash dyke works, including raising and strengthening of Lagoon-1 as the subject works and corresponding major expenditure on the same was allowed during the truing up for the period 2014-19. Further, with regard to expenditure claimed for Lagoon-2, it is observed that the Commission, while determining the tariff for the period 2014-19 vide order dated 30.7.2016 in Petition no. 281/GT/2014 allowed liberty to the Petitioner to claim the expenditure on ash dyke works, including raising and strengthening of Lagoon-2 during the truing up of 2014-19, subject to submission of documentary evidence to justify the works (recommendation of expert). As such, considering the fact that the Petitioner has submitted two reports prepared by the consultants i.e., 'Interim strengthening' and 'Strengthening & Buttrressing and Peripheral Dyke Raising' and further in consideration of the fact that the major works of Lagoon-2 have been taken up during 2019-24, Commission is inclined to allow the projected expenditure on ash dyke works including raising and strengthening of Lagoon-2, under Regulation 25(1)(g).

26. With regard to the projected expenditure claimed for "Dry Ash Evacuation System (DAES) Stage-I," the main contention of the Petitioner is that the capacity of existing DAES is barely sufficient to meet the requirement of 100% ash utilization and, as such, needs to be augmented for increasing the ash utilization percentage. However, the Petitioner has not furnished any details regarding the capacity of the existing system and the requirement of the proposed work over and above the existing facility. We further note that even with the existing DAES, the Petitioner was



able to meet 100% ash utilization during the years 2020-21 and 2021-22. As such, the Commission is not inclined to allow the projected expenditure on DAES at this stage. However, the Petitioner is at liberty to claim the expenditure during truing up, if incurred, along with complete details clearly establishing the inadequacy of the existing DAES.

27. With regard to projected additional capital expenditure towards Mine void filling, Ash mound L1 and L2, and the construction of the New ash dyke (Starter Dyke: Masuhara), it is observed that the Petitioner, by way of 6th. and 7th raising of Lagoon-1 and Lagoon-2, expenditure for which has been allowed, has created additional ash holding capacity, which would be sufficient during the 2019-24 period considering the level of ash generation and ash utilization details as submitted by the Petitioner. As such, Commission is not inclined to allow the projected expenditure as claimed by the Petitioner for Mine void filling, Ash mound L1 and L2, and the construction of the New ash dyke (Starter Dyke: Masunihata). However, the Petitioner is at liberty to claim the actual expenditure on these assets/works during truing up, if actually incurred, along with complete details with regard to the level of ash generation, level of ash utilization, and inadequacy of the additional ash holding capacity created during the 6th and 7th raising of Lagoon-1 and Lagoon-2 to hold the left-out ash after ash utilization.

4th Pump in Ash Slurry Series

28. The Petitioner has claimed the projected additional capital expenditure of Rs. 607.00 lakh in 2019-20 under Regulation 25(1) (c) & (g) of the 2019 Tariff Regulations towards the 4th pump in the Ash slurry series. In justification for the same, the Petitioner has submitted that this claim is part of the original scope of ash dyke and ash handling-related works. The Petitioner has also submitted that the pumps are required to increase the pumping power for carrying ash slurry to the ash dyke with



increasing height. Further, this work was allowed by the Commission in the period 2014-19 vide order dated 30.7.2016 in Petition No. 281/GT/2014. The Petitioner has submitted that the 4th slurry pump was awarded to M/s Indure; however, due to the slow pace of work, the work could not be completed during the period 2014-19, and since the said work is expected to be completed during 2019-20, the expenditure has been claimed during the period 2019-24.

29. The matter has been examined. It is noticed that the Petitioner in Petition No. 281/GT/2014, had claimed an expenditure of Rs. 630 lakhs for the said works, and the Commission allowed the same vide its order dated 29.7.2016. It is also noticed that the Petitioner, in Petition No. 387/GT/2020 (truing up of the period 2014-19 of this generating station) referring to the decision of the Commission in its order dated 29.7.2016, has already claimed Rs. 423.23 lakh (cash – Rs. 389.38 lakh and liability- Rs. 33.84 lakh) in 2017-18 under the head 'Ash handling plant (AHP) for Unit-I' towards Augmentation of ash slurry pump series (4th ash slurry series) and the Commission vide order dated 19.5.2024 has allowed the claim of the Petitioner. However, in the present petition, the Petitioner has claimed Rs. 607.00 lakh towards the subject work but has not furnished any reasons for the said claim. It is further noticed that in the present petition, the Petitioner has submitted that this work was awarded to M/s Indure; however, due to slow progress, the work could not be completed during the period 2014-19 and is expected to be completed during 2019-20, and the same is claimed during the period 2019-24. It is, however, noticed that the Petitioner has not furnished any reasons for the additional capital expenditure claimed in 2017-18 prior to the asset being put to use. In view of this, the projected additional capital expenditure is **not allowed** at this stage. However, the Petitioner is granted liberty to claim the same at the time of truing up of tariff, subject to the



production of a few relevant documents, including the date of award, the awarded cost, detailed scope of works, specifications, scheduled timelines, actual timelines, reasons for delay (if any), delays attributable to petitioner, delay attributable to contractor, the scope of works completed in 2017-18, the scope of works completed in 2019-20, quarterly basis physical and financial progress of works from 1.4.2017 to 31.3.2020, the decapitalization of the old assets, penalty clause for the delay, the LD recovered and the BG withheld, etc., for further consideration of the Commission.

Weigh bridge for Ash Utilization

30. The Petitioner has claimed projected additional capital expenditure of Rs. 34.00 lakh in 2020-21 towards Weigh bridge for ash utilisation under Regulation 26(1) (b) & (e) of the 2019 Tariff Regulations. In justification for the same, the Petitioner has submitted that as per MOEF Gazette notification on ash utilization dated 3.11.2009, the generating station has to achieve 100% ash utilization in a stipulated time frame. In line with this, pond ash is being used by NHAI in its road construction projects to facilitate the above “in-motion weigh bridge” to be installed.

31. The submissions have been considered. It is noticed that the Petitioner has been transporting ash prior to the year 2018-19 also. However, the Petitioner has not provided any reasons for the requirement of the proposed additional capital expenditure on this item/asset, over and above the existing facilities, particularly at the fag end of the useful life of the station. In view of this, the projected capital expenditure claimed is **not allowed at this stage**. However, the Petitioner is at liberty to claim the actual expenditure on these assets/works during truing up, if actually incurred, along with complete details with regard to the inadequacy of existing facilities to meet the requirement of 100% ash utilization.



Track MGR (7km)

32. The Petitioner has claimed a total projected additional capital expenditure of Rs. 4605.00 lakh, for the period 2019-23 (Rs. 405.00 lakh in 2019-20, Rs. 2400.00 lakh in 2020-21, Rs. 800.00 lakh in 2021-22 and Rs. 1000.00 lakh in 2022-23) for track MGR (7 km) under Regulation 25(2) (b) & (c) of the 2019 Tariff Regulations. In justification for the same, the Petitioner has submitted that the MGR track of TSTPS-I was laid 20 years back and has outlived its normal life, and the replacement of 52 kg rails and sleepers with 60 kg rails and sleepers is required to avoid derailment. The Petitioner has further stated that in order to increase the speed on the MGR track, Railways has recommended the use of 60 kg sleepers of the latest design in Indian Railway track, therefore, in line with the Railway's circular, the upgradation work is planned for the MGR track of the present generating station.

33. Respondents GRIDCO and BSPHCL have submitted that the circular relied on by the Petitioner is applicable for Indian Railways but not for the MGR track of the Petitioner. The Respondents have further submitted that the Petitioner has neither submitted any documentary evidence from any competent authority in support of the expiry of the subject track nor had the railways banned the use of 52 kg rails and sleepers. In response, the Petitioner has reiterated its submissions made earlier and has further submitted that it has complied with the circular of Indian Railways, which is a statutory authority. Subsequently, the Petitioner has clarified that the existing MGR track consists of 52 kg rails and sleepers and this track was laid in 1993, i.e., 25 years back, to cater to specific traffic density. Ministry of Railway's letter dated 24.5.2006 provides details of the normal life of various railway assets and the Railways official safety audit team, during the inspection of the track route, had



recommended for replacement of the existing track structure, i.e., 52 kg rails on 52 kg PSC sleepers, with 60 Kg rails and 60 kg PSC sleepers. The Petitioner has further submitted that the Ministry of Railways vide letters dated 9.7.2018 and 17.10.2018 had recommended for Complete Track Renewal (CTR) with the use of wider and heavier sleepers and 60 kg rails from 2019-20 onwards for its track and the replacement of the old tracks needs to be undertaken to cater to increased traffic density over the period from initial 250 GMT for ensuring safe and timely movement of racks to the plant. The Petitioner has further submitted that to ensure the efficient operation of the plant, the replacement of the track could not be avoided due to uncontrollable factors such as obsolescence, force majeure, etc.

34. Respondent GRIDCO has submitted that the Petitioner has not provided any documentary evidence in support of its claim. Further, the Petitioner has not provided any reason for claiming this after 12 years of issuance of safety audit inspection report, and the subject claim is neither allowed under change in law nor under obsolescence of technology. GRIDCO has further submitted that as per Regulation 33 (7) of the 2019 Tariff Regulations, the Petitioner is required to submit the justification for the extension of the life of the generating station along with details of proposed capital expenditure, five years before the completion of useful life however, the Petitioner has not submitted any such proposal before the Commission. In response, the Petitioner has submitted that the safety audit report 2010 had recommended this work; however, the life of the rail, i.e., 25 years, was not completed at that time, and the track was maintained with existing rail and sleepers. Further, the Petitioner has stated that Regulation 33 (7) of the 2019 Tariff Regulations cannot be read in isolation, and this has to be complied with in case of a proposed life extension.



35. The matter has been considered. It is noticed that the Petitioner has claimed the projected additional capital expenditure for replacement of the existing 7 km MGR track having 52 kg rails and sleepers with 60 kg rails and sleepers, relying upon the Railway official safety audit team's report of 2010, Indian Railways' letters dated 24.5.2006, 9.7.2018 and 17.10.2018. On examining the documents available on record, it is noticed that the safety report referred to is of the year 2010, but the claim for replacement was made in 2019-20 and 2021-22, i.e., after the lapse of 9 years. The Petitioner has submitted that as the life of 25 years of the rail was not completed in 2010, the same was not taken up at that time, and the same is being proposed now. Though the report mentions for upgradation of the item/ asset, neither the Petitioner nor the report indicate any issues with regard to the existing track and the reasons for its proposed upgradation. It is also noticed that the Railway letters dated 9.7.2018 and 17.10.2018 provide for the implementation of the upgradation of the existing 52 kg rail and sleeper tracks with the 60 kg rail and the sleepers from 2019-20 onwards for the Indian Railway network, wherein the load was increased over the period, but not MGR under the subject work, with dedicated and limited use. In view of the above discussions, we are not inclined to allow the projected additional capital expenditure on the subject asset at this stage. However, the Petitioner is at liberty to claim the actual expenditure on these assets/works during truing up, if actually incurred, along with complete details, any further justification for replacement, the gross value of the replaced assets, and clarification as to how the supporting documents i.e. Railway official safety audit team's report of 2010, Indian Railways' letters dated 24.5.2006, 9.7.2018 and 17.10.2018 are applicable to MGR track of the generating station



Fire detection and protection system in IT, Stores, and CHP (MVW)

36. The Petitioner has claimed the projected additional capital expenditure of Rs. 416.00 lakh in 2020-21 towards Fire detection and Protection systems in IT, stores, and CHP, under Regulation 26(1) (b) & (d) of the 2019 Tariff Regulations. In justification for the same, the Petitioner has submitted that these works are necessary as per the CEA Regulations, 2010, under compliance with existing law for the security and safety of the plant. The Petitioner has also submitted that the work includes providing automatic fire detection cum Medium Velocity Water (MVW) spray system for stacker-reclaimer (4 Nos.) of CHP and fire detection of IT building and central store at NTPC/ TSTPS Kaniha and the same was projected to be capitalised in Petition No. 281/GT/2014, but was disallowed vide order dated 29.7.2016 in Petition No. 281/GT/2014. Subsequently, the Petitioner filed Review Petition No. 47/RP/2016 against the said order, and the Commission vide its order dated 21.2.2017 in the said Review Petition had observed that the matter would be considered at the time of truing-up, based on the CEA's recommendations. As the works could not be completed during the period 2014-19, the same has been projected during the period 2019-24.

37. Respondent GRIDCO has submitted that the Petitioner claimed the Fire detection and Protection system in Petition No.316/GT/2014 (for Farakka STPS Stages I&II for the period 2014-19), and the Commission, vide its order dated 10.3.2017, disallowed the same and directed the Petitioner to submit the claim in compliance of the TAC Guidelines. Respondents GRIDCO and BSHPCCL have also submitted that the claim has been made at the fag end of the useful life of 25 years of the generating station, and therefore, the same may be disallowed. In response,



the Petitioner has submitted that the Commission, vide its order dated 10.3.2017 in Petition No.316/GT/2014, chose to consult the CEA as to whether the CEA Regulations, 2010 and 2011 are applicable to the existing generating stations and if so, whether the implementation of the augmentation of the fire-fighting system should be considered as a change in law and is required for the safety and security of the plant in terms of Regulation 14(3)(ii) and (iii) of the 2014 Tariff Regulations. The Petitioner has pointed out that against the Commission's order dated 27.6.2016 in Petition No. 270/GT/2014 (for Simhadri STPS for the period 2014-19), the Petitioner had filed Petition No. 36/RP/2016 and the Commission vide its order dated 27.1.2017 allowed the prayer of the Petitioner and kept open this issue pending the report of the CEA. The Petitioner has further submitted that APTEL vide its judgement dated 5.8.2019 in Appeal No.40/2017 (against order dated 27.10.2016 in Petition No. 269/GT/2014 (in Rajiv Gandhi Combined Cycle Power Project of the Petitioner) had allowed the additional capitalization towards the fire-fighting system and hence the claim may be considered.

38. The submissions have been considered. It is noticed that the Petitioner has claimed the projected additional capital expenditure for the item/asset under Regulation 26(1)(b) and 26(1)(d) of the 2019 Tariff Regulations in terms of the mandate under the CEA (Technical Standards for construction of Electrical Plants and Electric Lines) Regulation, 2010 read with the Central Electricity Authority (Safety requirement for Construction, Operation and Maintenance of Electric plants and Electric lines), Regulations, 2011. As regards the Respondent GRIDCO submission regarding consultation of CEA as to whether the Regulations, 2010 and 2011 are applicable to the existing generating stations and if so, whether the implementation of the augmentation of fire-fighting system should be considered as a change in law



and is required for the safety and security of the plant in terms of Regulation 14(3)(ii) and (iii) of the 2014 Tariff Regulations is concerned, there appears to have been no response on this count, from the CEA. In our view, the 2010 CEA Regulations are in the nature of delegated legislation, and must be compulsorily complied with by the generating station. Regulation 12(5)(f)(iii) of the 2010 CEA Regulations mandated every thermal power plant to be equipped with a comprehensive/automatic fire detection, alarm, and fire protection system. Also, the installation of a fire detection and protection system was mandated by the 2010 CEA Regulations, with regard to higher security and safety of the plant. Considering the fact that the CEA Regulations mandate the requirement of the said work for higher security and safety of the plant and is mandated under Regulation 12(5) of the 2010 CEA Regulations, the projected additional capital expenditure claimed is **allowed** under Regulation 26(1)(d) of the 2019 Tariff Regulations. As the additional capital expenditure is allowed beyond the cut-off date and is not covered within the original scope of work or change in law, Return on Equity has been considered at the Weighted Average Rate of Interest (WAROI) in terms of Regulation 30(2) of the 2019 Tariff Regulations. However, the Petitioner is directed to place on record the detailed scope of works, scheduled and actual timelines for implementation, reasons for delay (if any) in the execution of works, IDC, compliance with TAC guidelines, the discount received from the insurance companies, apportionment of these expenses to Stages-I and II, the decapitalized value of old asset, etc., at the time of truing up of tariff of the generating station for consideration.

Supply, Retrofitting, and up-gradation of passenger lifts of Stage-1 (Unit-1 and Unit-2), TSTPS

39. The Petitioner has claimed the projected additional capital expenditure of Rs. 130.00 lakh in 2020-21 for the Supply, retrofitting, and up-gradation of passenger lifts



of Stage-1 (Units-1 & 2) under Regulation 25(2) (c) of the 2019 Tariff Regulations. In justification for the same, the Petitioner has submitted that there are two nos. of OTIS make passenger lifts in Stage 1, one each in Unit-1 and Unit-2. These lifts are approximately 25 years old and run on DC drives. They are causing frequent problems because of very old technology and need upgradation to new technology, i.e., VFD drive with microprocessor control to improve reliability. The Petitioner has also submitted that the job can be carried out by M/s OTIS Elevator Company India Ltd. (OTIS), OEM, and that the work is essential for safety and security.

Replacement of feed water chemical treatment from all volatile (oxidising) mode to Oxygenated Treatment in Stage-1

40. The Petitioner has claimed projected additional capital expenditure of Rs. 135.00 lakh in 2021-22 for the Replacement of the feed water chemical treatment from all volatile (oxidising) modes to oxygenated treatment under Regulation 25(2) (c) of the 2019 Tariff Regulations. In justification for the same, the Petitioner has submitted that the units of the generating station are tower type once through boilers and the feed water cycle chemistry is being maintained in all volatile (Oxidising) modes with 100% CPU in service and in oxygenated treatment, Ferric Oxide Hydrate (FeOOH) or Hematite (Fe₂O₃) forms over the porous magnetite layer is more stable in comparison that in AVT(O), which will minimize CRUD in the steam water cycle. The Petitioner has also submitted that in the AVT(O) regime, the CPU is operated at high pH (9.2-9.6); thereby, chances of chloride slippage are high, which may lead to Sulphide stress cracking in the austenitic steel region of the boiler. In view of better reliability and efficient operation of the boiler, the claim may be allowed.



Design, Supply, Erection & Commissioning of ABT system

41. The Petitioner has claimed a projected additional capital expenditure of Rs. 52.00 lakh in 2020-21 for the Design, supply, erection, and commissioning of the ABT system under Regulation 25(2) (c) of the 2019 Tariff Regulations. In justification for the same, the Petitioner has submitted that the existing ABT system is more than 10 (ten) years old has completed its life, and is hanging very frequently during this period, many updates have been done to incorporate the changing requirements however, supports for server/ hardware are now not available due to obsolescence. The Petitioner has further submitted that in the last few years, it has been observed that each update in the legacy system affects various functionalities in the system, and many patchworks resulted in an unstable system, disturbance in day-to-day operation, and increased maintenance. In addition, the increased load on the system, has impacted the functioning of the system. Further, the software technologies (dot net frame version-01, sql-2000) used in the system are obsolete now, and it is difficult to get support on the same. Also, the existing ABT software is compatible with the windows 32 system, which has been obsolete in the market. The Petitioner has also submitted that the architecture of the software is very old and hence not suitable for the dynamic changing (break-even frequency and UI according to ECR) needs as per DSM (Demand Settlement Mechanism). Therefore, the system is required to be replaced with a new one to facilitate the operation group towards smooth generation.

Replacement of Stage-I Stacker Reclaimer 1/2 DC drive to Variable frequency Drive (VFD)

42. The Petitioner has claimed the projected additional capital expenditure of Rs. 600.00 lakh in 2022-23 for the Replacement of Stage-I stacker reclaimer 1/2 DC drive to Variable Frequency Drive (VFD), under Regulation 25(2) (c) of the 2019 Tariff Regulations. In justification for the same, the Petitioner has submitted that the Original



Equipment Supplier (OES) of Stacker cum Reclaimers 1 and 2 of CHP is M/S ELECON, and these have DC drives for slew and travel with DC controllers of Kirloskar make. However, as these controllers are obsolete, M/s Kirloskar is unable to supply spares for the same; hence, the reliability of the equipment is going down. The Petitioner has also submitted that these drives will save energy and help in reducing APC consumption. Therefore, it is proposed that OES, M/S ELECON will supply and retrofit the VFD drives and replace the DC drives with VFD drives, associated MCC, cables, operators' desk, wireless communication in place of CCRD, etc., to improve reliability.

Analysis and Decision

43. With regard to the abovementioned claims (paras 39 to 42), the Respondents, GRIDCO, and BSHPCCL have submitted that the said work is towards replacement and, therefore, the same should be met from the O&M expenses allowed to the generating station. The Respondent GRIDCO has submitted that CEA is the competent technical authority to declare that any technology is obsolescence and assets/ items are required to be replaced, however, the Petitioner has not furnished any such declaration from the CEA. The Respondent BSPHCL has submitted that the Petitioner has not furnished any supporting documents to declare the obsolescence of technology or replacement of equipment. In response, the Petitioner has submitted that the existing asset is old and requires replacement. It has also submitted that the said replacement is not in the nature of a day to day O&M, but is a capital expenditure. The Petitioner has contended that the regulations do not contemplate any certificate from the CEA, on this count. With regard to the expenditure on 'Supply, Retrofitting, and Up-gradation of Passenger Lifts of Stage-1 (Unit-1 and Unit-2), TSTPS,' the Petitioner, vide its additional submissions dated 16.8.2022, has reiterated the



submissions made earlier and has also submitted that these lifts were maintained with the availability of spares. However, due to recurring breakdowns and most of the components no longer being available in OEM's current line of production, the cost of the procurement of components has become exorbitant, and maintenance is also difficult. In this regard, the Petitioner has furnished the OEM's letter dated 28.3.2022 in support of its claim. Thereafter, the Petitioner, vide its written submissions dated 6.1.2023, has submitted that the claims towards the 'Supply, Retrofitting and Up-gradation of Passenger Lifts of Stage-1 (Unit-1 and Unit-2), TSTPS' and 'Replacement of feed water chemical treatment from all volatile (oxidising) mode to Oxygenated Treatment in Stage-1' are being dropped.

44. Since the Petitioner has not pressed for its claims towards items/assets mentioned in paras 39 and 40 above viz 'Supply, Retrofitting and Up-gradation of Passenger Lifts of Stage-1 (Unit-1 and Unit-2), TSTPS' and 'Replacement of feed water chemical treatment from all volatile (oxidising) mode to Oxygenated Treatment in Stage-1', these have not been considered. However, we have examined the submissions of the parties with regard to the claims of the Petitioner on assets/items mentioned in para 41 and 42 above, viz., Design, Supply, Erection & Commissioning of ABT system' and 'Replacement of Stage-I Stacker Reclaimer 1/2 DC drive to Variable Frequency Drive (VFD)'.

45. As regards the projected additional capital expenditure claimed towards the Design, Supply, Erection & Commissioning of the ABT system', we note that the said claim is towards the obsolescence of hardware and software. It is observed that the Petitioner has not furnished any supporting documents in justification for the obsolescence of the existing system. However, considering the fact that Regulation



25(2) (c) explicitly provides for allowing expenditure on assets whose replacement becomes necessary on account of obsolescence, we **allow** the projected expenditure claimed by the Petitioner during the year 2020-21 under said Regulation. The decapitalization value of the old asset has been determined under 'Assumed Deletion.' Accordingly, we direct the Petitioner to submit the detailed scope of works, the scheduled and actual timelines, IDC, the obsolescence certificate from the OEM or CEA or RLDC along with the decapitalization value of the old asset, at the time of truing-up of tariff for consideration.

46. As regards the projected additional capital expenditure claimed towards the 'Replacement of Stage-I Stacker Reclaimer 1/2 DC drive to Variable Frequency Drive (VFD)' it is noticed that the said work is beyond the original scope of work and has been claimed at the fag end/after the completion of the major useful life of plant and also, the Petitioner has not furnished any supporting documents to justify the obsolescence of technology, cost-benefit analysis, quantifiable benefits/improvements in efficiency, auxiliary power consumption, energy saved, etc. Even otherwise, these assets would improve the auxiliary energy consumption, particularly during the starting, and the Petitioner can avail of such benefits, Therefore, the projected additional capital expenditure claimed for this asset/item is **not allowed**.

Township Building work

47. The Petitioner has claimed projected additional capital expenditure of Rs. 178 lakhs in 2020-21 for Township building work under Regulation 26(1) read with Regulation 76 (power to relax) of the 2019 Tariff Regulations. In justification for the same, the Petitioner has submitted that the installation of package AC in the public utility building would minimize the power consumption due to the quantum of standalone ACs owing to the large size of the structure, and the said work is required



for promoting energy saving at the generating station. Subsequently, the Petitioner, vide its written submissions dated 6.1.2023, has indicated that the subject item has been dropped. In view of this, the claim for this asset/item has not been considered.

Assumed Deletion

48. As per the consistent methodology adopted by the Commission, the expenditure on the replacement of assets, if found justified, is to be allowed for the purpose of tariff, provided that the capitalization of the said asset is followed by the de-capitalization of the original value of the old asset. However, in certain cases where de-capitalization is affected in books during the following years, to the year of capitalization of a new asset, the de-capitalization of the old asset for the purpose of tariff is shifted to the very same year in which the capitalization of the new asset is allowed. Such decapitalization, which is not a book entry in the year of capitalization is termed as “Assumed deletion”. Further, in the absence of the gross value of the asset being decapitalized or not furnished by the Petitioner, the same is calculated by de-escalating the gross value of the new asset @ 5% per annum till the year of capitalization of the old asset.

49. It is observed that the Petitioner, while claiming certain additional capital expenditure on a replacement basis for the period 2014-19, has not furnished the de-capitalization value of the old asset, i.e., ‘Design, Supply, Erection, and Commissioning of ABT System.’ Since this item has been allowed on a projection basis, the decapitalization value of an old asset, based on the above methodology, has been worked out as under:

(Rs. in lakh)

		Additional Capitalization	Assumed Deletion
2020-21	Design, Supply, Erection & Commissioning of ABT system	52.00	16.93



Emission Control System

50. The Petitioner has submitted that it is in the process of installing the Emission Control System (ECS) in compliance with the revised emission standards, as notified by the MoEF&CC vide notification dated 7.12.2015, as amended, and therefore, a separate Petition would be filed for the same. We note that the Petitioner has filed Petition No. 333/MP/2020 for approval of the additional expenditure on account of the installation of various Emission Control Systems at this generating station in compliance with the MOEF&CC, GOI notification dated 7.12.2015 and the Commission vide combined order dated 31.10.2021 has disposed of the same. In view of this, the claim on this count has not been considered.

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

		<i>(Rs. in lakh)</i>					
		Regulation	Projected Additional capital Expenditure allowed				
			2019-20	2020-21	2021-22	2022-23	2023-24
A	Works under original scope, change in law etc. eligible for RoE at Normal Rate						
I	Ash dyke raising & Strengthening works						
1	Ash dyke works of Lagoon-1 (including Raising & strengthening)	25(1) (c)	3700.00	-	-	-	-
2	Ash dyke works of Lagoon-2 (Including Raising)	25(1) (c)	1900.00	7700.00	6300.00	-	-
3	4th pump in ash slurry series	25(1) (c) &(g)	-	-	-	-	-
4	Ash mound L1 & L2	25(1) (c) &(g)	-	-	-	-	-
II	Works under compliance of existing law						
1	Supply, Retrofitting and Up-gradation of Passenger Lifts of Stage-1 (Unit-1 and Unit2), TSTPS	25 (2) (c)	-	-	-	-	-
III	Work due to obsolescence of technology						
1	Design, Supply, Erection & Commissioning of ABT system	25 (2) (c)	-	52.00	-	-	-
B	Works beyond original scope excluding add-cap due to change in law eligible for RoE at Weighted average rate of Interest						
1	Providing Fire detection and protection system in IT, Stores and CHP (MVW)	26(1) (d)	-	416.00	-	-	-
	Total		5600.00	8168.00	6300.00	0.00	0.00
	Less: Assumed Deletion		-	16.93	-	-	-
	Net additional Capitalization		5600.00	8151.07	6300.00	0.00	0.00



Capital cost allowed for the period 2019-24

52. Based on above, the capital cost allowed for the period 2014-19 is as under:

	(Rs. in lakh)				
	2019-20	2020-21	2021-22	2022-23	2023-24
Opening capital cost	270182.00	275782.00	283933.07	290233.07	290233.07
Add: Admitted Additional capital expenditure	5600.00	8151.07	6300.00	0.00	0.00
Closing capital cost	275782.00	283933.07	290233.07	290233.07	290233.07
Average capital cost	272982.00	279857.54	287083.07	290233.07	290233.07

Debt-Equity Ratio

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

“18. Debt-Equity Ratio: (1) For a new project, 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.

54. The debt-equity ratio for the projected additional capital expenditure allowed has been considered as 70:30. Accordingly, debt-equity is worked out and allowed as under:

Funding	Capital cost up to COD / 1.4.2019		Additional capital expenditure during 2019-20, 2020-21 and 2021-22		Capital cost as on 1.4.2022	
	Amount	(%)	Amount	(%)	Amount	(%)
Debt	140504.39	52.00%	14035.75	70.00%	154540.14	53.25%
Equity	129677.61	48.00%	6015.32	30.00%	135692.93	46.75%
Total	270182.00	100.00%	20051.07	100.00%	290233.07	100.00%

	Amount
Closing equity as on 31.3.2022* (a)	135692.93
Equity in excess of 30% (b)	48623.01
Equity admissible as on 1.4.2022** (a-b)	87069.92

* Represents 46.75% of capital cost of Rs. 290233.07 lakh as on 01.04.2022.

** Represents 30% of capital cost of Rs. 290233.07 lakh as on 01.04.2022.

Funding	Capital cost as on 1.4.2022		Capital cost as on 31.3.2024	
	Amount	(%)	Amount	(%)
Debt	154540.14	53.25%	154540.14	53.25%
Equity	135692.93**	46.75%	135692.93****	46.75%
Total	290233.07	100.00%	290233.07	100.00%

** Equity to be serviced as on 1.4.2022 is Rs. 87069.92 lakh (Rs. 135692.93 lakh-Rs. 48623.01 lakh i.e. equity in excess of 30%)

**** Equity to be serviced as on 31.3.2024 is Rs. 87069.92 lakh (Rs. 135692.93 lakh-Rs. 48623.01 lakh i.e. equity in excess of 30%)

55. As the generating station has completed its useful life as on 1.4.2022, in accordance with the first proviso to Regulation 18(3) of the 2019 Tariff Regulations, the equity component in excess of 30% of the capital cost has not been considered for the purpose of tariff. The Petitioner in Form-1(II A), has also claimed the Return on Equity (ROE) after reducing the equity of Rs.49619.12 lakh, from the gross equity



of Rs. 142579.57 lakh, as on 1.4.2022. Accordingly, in terms of the first proviso to Regulation 18(3) of the 2019 Tariff Regulations, equity to be considered for the purpose of tariff as on 1.4.2022, works out to Rs. 87069.92 lakh, as indicated in the table above. However, this adjustment in equity for the purpose of ROE, will be reviewed at the time of truing up of tariff. The gross normative loan of Rs. 154540.14 lakh and the net equity of Rs. 87069.92 lakh has been considered for the purpose of tariff, as on 1.4.2022. Further, the admitted projected additional capital expenditure has been allocated in the debt: equity ratio of 70:30.

Return on Equity

56. Regulation 30 and Regulation 31 of the 2019 Tariff Regulations provide 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.”

“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 = $15.50 / (1 - 0.2155) = 19.758\%$ (i)

(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 = $15.50 / (1 - 0.24) = 20.395\%$.

(2) 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.”

57. The Respondent GRIDCO has submitted that the Petitioner has not confirmed whether the Restricted Governor Mode Operation (RGMO) or Free Governor Mode



Operation (FGMO), Data Telemetry, Communication System up to the Load Dispatch Centre or Protection System for all the units of the generating station are in operation and therefore, for such non-compliance, the ROE may be reduced by 1% in accordance with clause (ii) of Proviso 2 to Regulation 30 of the 2019 Tariff Regulations. It has also been submitted that the Petitioner has not confirmed whether all the units of the generating station are capable of achieving the Ramp Rate of 1% Per Minute w.e.f. 1.4.2020, and for such non-compliance the rate of ROE may be reduced by 0.25% in accordance with clause (iii) of Proviso 2 to Regulation 30 of the 2019 Tariff Regulations.

58. The matter has been considered. With regard to the submission of the Respondent GRIDCO that ROE may be reduced by 1% and 0.25% as the Petitioner has not confirmed whether the Restricted Governor Mode Operation (RGMO) or Free Governor Mode Operation (FGMO), Data Telemetry, Communication System up to Load Dispatch Centre or Protection System for all the units of the generating station are in operation and whether all the units of the generating station are capable of achieving the Ramp Rate of 1% Per Minute w.e.f. 1.4.2020, it is held that such reduction in ROE shall be considered at the time of truing up based on the report submitted by the respective RLDC.

59. Equity from 2022-23 onwards has been restricted to 30% as per the first proviso to Regulation 18(3) of the 2019 Tariff Regulations. The Petitioner has claimed ROE considering the base rate of 15.50% and the effective tax rate of 17.472% for the opening equity as on 1.4.2019 and the projected additional capital expenditure claimed under the original scope of work, change in law, etc., for the period 2019-24. The same has been considered for the purpose of tariff. Regulation 30(1) of the 2019



Tariff Regulations provides for the computation of ROE on the equity base, as determined in accordance with Regulation 18 of the 2019 Tariff Regulations. While clause (1) of Regulation 18 provides for the determination of the debt-equity ratio for new projects, clauses (3) and (4) of the said Regulation provide for consideration/ determination of the debt-equity ratio in respect of the generating stations declared under commercial operation prior to 1.4.2019. Further, clause (5) of the said regulation provides that the admitted additional capital expenditure incurred or projected to be incurred on or after 1.4.2019, is to be serviced in the manner specified in clause (1) of Regulation 18 of the 2019 Tariff Regulations. On the same analogy, Regulation 30(2) of the 2019 Tariff Regulations provides for the computation of at the base rate of 15.50% (for thermal generating stations), while the proviso to Regulation 30(2) provides for the computation of ROE in respect of additional capitalization after the cut-off date, beyond the original scope, excluding additional capitalization due to change in law, at the weighted average rate of interest on the actual loan portfolio of the generating station. It is however noticed that as per clause (1) of Regulation 31 of the 2019 Tariff Regulations (Tax on ROE), the base rate of return on equity, as allowed by the Commission under Regulation 30 of the said regulations, is required to be grossed up with the effective tax rate of the respective financial year. Thus, we are of the view that on a harmonious construction of the provisions of Regulation 18 with Regulation 30 and 31 of the 2019 Tariff Regulations, the ROE computed at the predetermined base rate of 15.50% and ROE computed at the weighted average rate of interest (WAROI) are required to be grossed up with the effective tax rate of the respective financial year. Accordingly, for additional capital expenditure claimed beyond original scope of work (excluding additional capital expenditure due to change in law) ROE after grossing up WAROI of 9.923% in 2020-21, 9.956% in 2021-22,



9.87% in 2022-23 and 10.022% in 2023-24 with effective tax rate of 17.472% has been considered. Accordingly, ROE has been worked out as under:

Return on Equity at Normal Rate

	(Rs. in lakh)				
	2019-20	2020-21	2021-22	2022-23	2023-24
Gross Normative Equity	129677.61	131357.61	133678.13	135568.13	135568.13
Less: Adjustment to equity in terms of 1st proviso to Regulation 18(3)	-	-	-	48623.01	48623.01
Notional Equity- Opening	129677.61	131357.61	133678.13	86945.12	86945.12
Add: Addition of Equity due to additional capital expenditure	1680.00	2320.52	1890.00	0.00	0.00
Normative Equity – Closing	131357.61	133678.13	135568.13	86945.12	86945.12
Average Normative Equity	130517.61	132517.87	134623.13	86945.12	86945.12
Return on Equity (Base Rate)	15.500%	15.500%	15.500%	15.500%	15.500%
Effective Tax Rate for respective years	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) - (annualised)-(A)	24513.82	24889.51	25284.92	16330.03	16330.03

Return on Equity at WAROI:

	(Rs. in lakh)				
	2019-20	2020-21	2021-22	2022-23	2023-24
Gross Notional Equity	0.00	0.00	124.80	124.80	124.80
Less: Adjustment to equity in terms of 1st proviso to Regulation 18(3)	0.00	0.00	0.00	0.00	0.00
Normative Equity – Opening	0.00	0.00	124.80	124.80	124.80
Addition of Equity due to additional capital expenditure	0.00	124.80	0.00	0.00	0.00
Normative Equity – Closing	0.00	124.80	124.80	124.80	124.80
Average Normative Equity	0.00	62.40	124.80	124.80	124.80
Return on Equity (Base Rate)	8.1574%	8.1891%	8.2168%	8.2419%	8.2708%
Effective Tax Rate *	17.4720%	17.472%	17.472%	17.472%	17.472%
Rate of Return on Equity (Pre-tax)	9.884%	9.923%	9.956%	9.987%	10.022%
Return on Equity (Pre-tax) - (annualized)-(B)	-	6.19	12.43	12.46	12.51
Total RoE allowed (A+B)	24513.82	24895.70	25297.34	16342.50	16342.54

Interest on loan

60. 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 decapitalization 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.”

61. The Petitioner has not claimed any Interest on loan, and therefore, the same is not considered.

Depreciation

62. 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.”

63. Since the generating station has completed its useful life of 25 years in 2021-22, the depreciation on the existing assets is allowed during the years 2019-20, 2020-21, and 2021-22 on a spreading basis, considering the capital cost of Rs. 270182 lakh as on 1.4.2019, and the cumulative depreciation recovered up to 31.3.2019 for Rs. 206287.20 lakh as per the Commission order dated 19.5.2024 in Petition No. 387/GT/2020. It is noticed that during the fag end and upon completion of its useful life, the Petitioner has claimed the additional capital expenditure, which has been allowed on a projection basis as dealt with in the relevant paras above. However, for the additional capital expenditure, the Petitioner has not indicated the period for which the life of the generating station would be extended beyond its useful life. In the



absence of this information, the depreciation for new assets has been computed considering the weighted average rate of depreciation (WAROD) of 5.28%.

Accordingly, depreciation allowed for the generating station is as under:

(A) For Existing Assets

(Rs. in lakh)

		2019-20	2020-21	2021-22	2022-23	2023-24
Opening capital cost	(A)	270182.00	270182.00	270182.00	270182.00	270182.00
Add: Admitted Projected additional capital expenditure	(B)	0.00	0.00	0.00	0.00	0.00
Closing capital cost	(C)	270182.00	270182.00	270182.00	270182.00	270182.00
Average capital cost	(D)	270182.00	270182.00	270182.00	270182.00	270182.00
Value of Freehold Land included in average capital cost on cash basis	(E)	2831.54	2831.54	2831.54	2831.54	2831.54
Depreciable Value	(F)	240615.41	240615.41	240615.41	240615.41	240615.41
Cumulative Depreciation at the beginning	(G)	206287.20	217768.2	229233.96	240615.41	240615.41
Remaining Depreciable Value	(H)=(F)-(G)	34328.21	22847.21	11381.43	0.00	0.00
Balance Useful life of the asset	(I)	2.99	1.99	0.99	0.00	0.00
Depreciation (Annualized)	(J)=(H)/(I)	11481.00	11481.00	11381.43	0.00	0.00
Depreciation adjustment on a/c of decapitalization	(K)	0.00	15.24	0.00	0.00	0.00
Cumulative Depreciation at the end	(L)=(G)+(J)-(K)	217768.21	229233.98	240615.41	240615.41	240615.41

(B) For New Assets

(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Opening Capital Cost	0.00	5600.00	13751.07	20051.07	20051.07
Add: Admitted Projected additional capital expenditure	5600.00	8151.07	6300.00	0.00	0.00
Closing capital cost	5600.00	13751.07	20051.07	20051.07	20051.07
Average capital cost	2800.00	9675.54	16901.07	20051.07	20051.07
Aggregated Depreciable value	2520.00	8707.98	15210.96	18045.96	18045.96
Remaining aggregate depreciable value at the beginning of the year	2520	8560.14	14552.26	16494.87	15436.17
Weighted Average Rate of Depreciation (WAROD)	5.28%	5.28%	5.28%	5.28%	5.28%
Depreciation during the year/ period	147.84	510.87	892.38	1058.70	1058.70
Cumulative depreciation at the end of the year	147.84	658.71	1551.09	2609.79	3668.49

Unrecovered Depreciation up to 31.3.2014 on account of lower availability of the generating station

64. The Petitioner has claimed an amount of Rs.580.49 lakh towards the unrecovered depreciation during the years 2002-03, 2010-11, 2011-12, and 2012-13 on account of the lower availability of the generating station based on APTEL



judgment dated 13.6.2007 in Appeal No. 139 of 2006 & batch, on the issue of “admissibility of depreciation up to 90% of the value of assets”. APTEL, in its judgment dated 13.6.2007 in Appeal Nos. 139 of 2006 and batch (NTPC Ltd. Vs CERC and ors), has held as follows:

“In a regulatory cost-plus regime all costs have to be reimbursed. Depreciation amount up to 90% being a cost has to be allowed over the life of the plant. If due to underperformance in a particular year the appellant is not able to recover full depreciation allowed in that year and if this denial is forever, it will tantamount to a penalty. In a contract between the appellant and the beneficiaries, only levy of liquidated damages can be permitted. It will, therefore, be enough deterrent for the appellant if the depreciation is not allowed during the year of underperformance. However, the same cannot be denied forever and, therefore, it will be only fair to allow the unpaid portion of the depreciation after the plant has lived its designated useful life. In this view of the matter the CERC needs to examine this aspect as per the aforesaid observations.”

65. The APTEL judgment provides for considering the recovery of the unrecovered depreciation over the life of the plant, after the plant has lived its designated useful life. It is observed that both, the 2004 Tariff Regulations and the 2009 Tariff Regulations were silent about the recovery of the unrecovered depreciation due to underperformance of the generating station, in terms of the Plant Availability Factor (PAF) in comparison to NAPAF. As such, in absence of such explicit provision in the 2004 Tariff Regulations, APTEL vide its judgment dated 13.6.2007 observed as under:

“It will, therefore, be enough deterrent for the appellant if the depreciation is not allowed during the year of underperformance. However, the same cannot be denied forever and, therefore, it will be only fair to allow the unpaid portion of the depreciation after the plant has lived its designated useful life”

66. In line with the decision of APTEL dated 13.6.2007, the unrecovered depreciation of Rs.580.49 lakh in 2022-23 is allowed and is considered as part of the fixed cost in 2022-23, after the completion of the useful life of the generating station. The Petitioner may recover the same from the beneficiaries after reconciliation of the



PAF, billed amount, and the unrecovered depreciation during the period of claim, as indicated by the Petitioner.

Special Allowance

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

“(1) In case of coal-based/lignite fired thermal generating station, the generating company, instead of availing renovation and modernization (R&M) may opt to avail a ‘special allowance’ in accordance with the norms specified in this Regulation, as compensation for meeting the requirement of expenses including renovation and modernization beyond the useful life of the generating station or a unit thereof and in such an event, upward revision of the capital cost shall not be allowed and the applicable operational norms shall not be relaxed but the Special Allowance shall be included in the annual fixed cost:

Provided that such option shall not be available for a generating station or unit thereof for which renovation and modernization has been undertaken and the expenditure has been admitted by the Commission before commencement of these regulations, or for a generating station or unit which is in a depleted condition or operating under relaxed operational performance norms;

Provided further that special allowance shall also be available for a generating station which has availed the Special Allowance during the tariff period 2009-14 or 2014-19 as applicable from the date of completion of useful life.

(2) The special Allowance admissible to a generating station shall be @ Rs. 9.5 Lakhs per MW per year for the tariff period 2019-24.

(3) In the event of a generating station availing Special Allowance, the expenditure incurred upon or utilized from Special Allowance shall be maintained separately by the generating station and details of same shall be made available to the Commission as and when directed.

The Special Allowance allowed under this Regulation shall be transferred to a separate fund for utilization towards Renovation & Modernization activities, for which detailed methodology shall be issued separately.”

68. The Petitioner has claimed special allowance as under:

<i>(Rs. in lakh)</i>				
2019-20	2020-21	2021-22	2022-23	2023-24
0.00	0.00	1171.23	8315.75	9500

69. Respondents TANGEDCO and GRIDCO, have submitted that the Petitioner has not submitted the details of the expenditure met out from the Special allowance in accordance with Regulation 28 (3) of the 2019 Tariff Regulations. The Respondent GRIDCO, has also submitted that the claim of the Petitioner for Special allowance in



respect of the generating station for the year 2021-22 and from April 2022 to 13.2.2023 is liable to be rejected since the Petitioner has failed to furnish the expenditure incurred/utilized from the said allowance for the above periods as per Regulation 28 (3) read with Regulation 28 (2) of the 2019 Tariff Regulations. The Respondent has further stated that no additional capital expenditure can be allowed for the period for which special allowance is allowed.

70. With regards to the specific query of the Commission vide ROP of the hearing dated 6.1.2023 regarding the details of expenses incurred upon or utilized from special allowance, the Petitioner has submitted that the expenses to be met out of special allowance are left to the generator and the expenditures envisaged to be met from the special allowance provided for the period 2019-24 are R&M of Stage-1 400/220 kV Switchyard, R&M of stage-I cooling towers (1A and 2A), R&M of Hydraulic System of CW Pumps, Renovation by waterproofing and repair of quarters and public buildings, renovation by replacement of cement flooring with tiles/ granite in quarters, Repair and rehabilitation including painting of Stage-I Chimney etc.

71. It is noticed that the COD of Units 1 and 2 are 1.1.1997 and 1.7.1997, respectively, and these units have completed their useful life on 31.12.2021 and 30.6.2022. Accordingly, the special allowance allowed to these units is from 1.4.2022 and 1.4.2023, respectively, as under:

<i>(Rs. in lakh)</i>				
2019-20	2020-21	2021-22	2022-23	2023-24
0.00	0.00	0.00	4750.00	9500.00

72. However, in terms of Regulation 28(3) of the 2019 Tariff Regulations, the Petitioner is directed to submit the actual expenses incurred as on 31.3.2024, out of special allowance allowed to the generating station, for the period 2019-24, at the time of truing up of tariff.



O&M Expenses

73. Regulation 35(1)(1) of the 2019 Tariff Regulations provides for the following O&M expenses for 500 MW thermal power units:

<i>(Rs. in lakh)</i>				
2019-20	2020-21	2021-22	2022-23	2023-24
22.51	23.20	24.12	24.97	25.84

74. The normative O&M expenses claimed by the Petitioner are as under:

<i>(Rs. in lakh)</i>				
2019-20	2020-21	2021-22	2022-23	2023-24
22510.00	23300.00	24120.00	24970.00	25840.00

75. The generating station has two units of 500 MW each and the COD of these units are all prior to 1.4.2019. Since the normative O&M expenses as claimed by the Petitioner are in terms of Regulation 35(1)(1) of the 2019 Tariff Regulations, the same is allowed for the period 2019-24.

Water Charges

76. Regulation 35(1)(6) of the 2019 Tariff Regulations provides for claims towards water charges, security expenses, and capital spares as under:

“35(1)(6) The Water, Security Expenses and Capital Spares for thermal generating stations shall be allowed separately and after prudence check: Provided that water charges shall be allowed based on water consumption depending upon type of plant, type of cooling water system etc., subject to prudence check. The details regarding the same shall be furnished along with the petition and considering the norms of specific consumption notified by Ministry of Environment and Forest and Climate Change”

77. In terms of the above regulation, water charges are to be allowed based on water consumption depending upon the type of plant, type of cooling water system, etc., subject to prudence check. In this regard, the Petitioner has submitted that the water resource department, vide order dated 27.9.2016, has escalated the water charges at 10% per annum w.e.f., 1.4.2017. The Petitioner has claimed water charges based on the actual information for 2018-19 and the annual escalation rate at 10%. The water charges claimed are as under:



	Remarks
Type of plant	Coal based Thermal Power Plant
Type of cooling water system	Induced Draft Cooling Tower (IDCT)
Consumption of water	2.90 TMC
Rate of water charges	Rs. 6.72/m ³
Total water charges (2018-19)	Rs. 2100.34 Lakh (proportioned based on MW capacity from total paid amount)

78. Accordingly, the water charges claimed by the Petitioner are as under:

<i>(Rs. in lakh)</i>				
2019-20	2020-21	2021-22	2022-23	2023-24
2281.67	2450.33	2625.33	2800.33	2983.67

79. The Petitioner, vide additional affidavit dated 25.6.2021, has submitted that the actual water charges during the years 2018-19, 2019-20, and 2020-21 are Rs. 2100.34 lakh, Rs. 2281.59 lakh and Rs. 2450.39 lakh, respectively.

80. Respondent BSPHCL has submitted that in terms of Regulation 35(1)(6) of the 2019 Tariff Regulations, the Petitioner is required to furnish the details of water consumption depending upon the type of plant and cooling system. However, the Petitioner has not provided documentary evidence for the rate and volume of consumption. Respondent GRIDCO has submitted that the Petitioner has not stated whether the water consumption is in line with Proviso 1 to Regulation 35(1) (6), and therefore, it may be directed to provide the actual water consumption for the required months, as certified by Water Resources Department, Govt. of Odisha so as to allow the water charges, based on the actual water consumption vis-à-vis water bills, failing which the claim may be rejected.

81. The submissions have been considered. It is observed that the Commission vide order dated 19.5.2024 in Petition No. 387/GT/2020 (truing up of tariff for the period 2014-19) had considered the rate of water charges as Rs. 6.72/m³ and allowed Rs. 3721.93 lakh in 2018-19. It is also noticed that the 2019 Tariff Regulations



specifies for 3.5 m³/ MWh and the water resources department specifies for 10% annual escalation. Considering the above and the applicable NAPAF during the period 2019-24, the water charges allowed on a projection basis are as follows:

<i>(Rs. in lakh)</i>						
	Units	2019-20	2020-21	2021-22	2022-23	2023-24
Projected gross generation @ 85% load factor	MWHR	7466400	7446000	7446000	7446000	7466400
Normative specific water consumption as per MoEF&CC norm	Cubic Meter/M Wh	3.5	3.5	3.5	3.5	3.5
Normative water consumption as per MoEF&CC norm	Cubic Meter	26132400	26061000	26061000	26061000	26132400
Rate of water charges based on 2018-19 approved rates	Rs./Cubic Meter	7.39	8.13	8.94	9.84	10.82
Total Normative water charges		1931.71	2119.07	2330.98	2564.08	2828.21

82. The water charges allowed, as above, are subject to truing-up in terms of the provisions of the regulations. Accordingly, the Petitioner is directed to submit the year-wise actual generation, actual water consumption for plant and other than plant, the actual water charges paid along with the bills, the apportionment of the water charges to Stages I and II, etc., at the time of truing up of tariff.

Capital Spares

83. The Petitioner has not claimed any capital spares for the period 2019-24 but has submitted that the same shall be claimed 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.

Security Expenses

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



<i>(Rs. in lakh)</i>				
2019-20	2020-21	2021-22	2022-23	2023-24
1315.57	1447.13	1591.84	1751.03	1926.13

85. The Petitioner has submitted that the said expenses have been claimed based on the estimated expenses for the period 2019-24 and are subject to retrospective adjustment based on the actuals at the time of truing up. Subsequently, the Petitioner vide affidavit dated 25.6.2021 has submitted that the actual security expenses during the years 2018-19, 2019-20, and 2020-21 for Talcher STPS (3000 MW), and the apportioned amount for the present generating station is Rs.1181.18 lakh, Rs. 1297.99 lakh and Rs. 1254.31 lakh, respectively.

86. Respondents BSPHCL and GRIDCO have submitted that in terms of the 2019 Tariff Regulations, the Petitioner is required to furnish the security assessment and estimated expenses thereof. In response, the Petitioner has submitted that the actual security expenses incurred for Talcher STPS Stages I & II in 2018-19 are Rs. 3543.55 lakh, and the apportioned charges (based on the installed capacity) for the generating station is Rs. 1181.18 lakh. It has also stated that an appropriate escalation has also been considered for the period 2019-24.

87. We have examined the matter. The Petitioner has furnished the apportioned actual security expenses associated with the generating station as Rs. 1181.18 lakh and has escalated the same with 10% (approx.) annually for the period 2019-24. However, the Petitioner has not furnished the assessment of security requirements as required under the provisions of the 2019 Tariff Regulations. In view of this, the actual security charges for the year 2018-19, with an annual escalation thereof @3.51% as provided in the 2019 Tariff Regulations, have been considered for the period 2019-24. Accordingly, the security charges allowed on a projection basis are as under:



(Rs. In lakh)

2019-20	2020-21	2021-22	2022-23	2023-24
1222.64	1265.56	1309.98	1355.96	1403.55

88. However, in terms of the proviso to Regulation 35(1)(6) of the 2019 Tariff Regulations, the Petitioner is directed to furnish the auditor-certified actual bills matching the books of accounts, the assessment for the security requirement, the number of personnel, pay level, year-wise segregated expenses associated with CISF and non-CISF, year-wise segregated expenses pertaining to plant and other than a plant, apportionment of expenses, etc., and other relevant information in terms of the proviso to the said regulations, at the time of truing up of tariff.

89. Accordingly, the total O&M expenses, including the water charges and security expenses, as claimed by the Petitioner and allowed to the generating station for the period 2019-24 are 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)	22510.00	23300.00	24120.00	24970.00	25840.00
Normative O&M expenses allowed under Regulation 35(1)(1) of the 2019 Tariff Regulations (b)	22510.00	23300.00	24120.00	24970.00	25840.00
Water charges claimed under Regulation 35(1)(6) of the 2019 Tariff Regulations (c)	2281.667	2450.333	2625.333	2800.333	2983.667
Water charges allowed under Regulation 35(1)(6) of the 2019 Tariff Regulations (d)	1931.707	2119.072	2330.979	2564.077	2828.212
Security Expenses claimed under Regulation 35(1)(6) of the 2019 Tariff Regulations (e)	1315.572	1447.129	1591.842	1751.026	1926.129
Security expenses allowed under Regulation 35(1)(6) of the 2019 Tariff Regulations (f)	1222.64	1265.56	1309.98	1355.96	1403.55
Total O&M expenses claimed under Regulation 35 of the 2019 Tariff Regulations (a + c + e)	26107.24	27197.46	28337.18	29521.36	30749.80
Total O&M expenses allowed under Regulation 35 of the 2019 Tariff Regulations (b + d + f)	25664.35	26684.63	27760.96	28890.04	30071.77



Additional capital expenditure towards Fly ash transportation charges

90. The Petitioner has claimed for recovery of additional capital expenditure of Rs. 2521 lakhs in 2019-20 and Rs. 6369 lakhs in 2020-21 after adjusting the revenue earned from the sale of ash from the beneficiaries on account of ash transportation charges, subject to truing up. Subsequently, the Petitioner vide affidavit dated 22.6.2022 has claimed the estimated ash transportation charges in 2022-23 and 2023-24 as 16871.36 lakh and 17416.25 lakh, respectively.

91. We note that the Petitioner had filed Petition No. 205/MP/2021 for the recovery of additional expenditure incurred due to Fly Ash transportation charges consequent to the MOEF & CC notifications dated 3.11.2009 and 25.1.2016 and the Commission vide its order dated 28.10.2022 had allowed the Ash transportation expenses incurred by the Petitioner for the period 2019-22 and permitted the recovery of such expenses through the supplementary bills in 2022-24. The relevant portion of the order is as below:

“Petitioner has furnished the details of the distance to which fly ash has been transported from the generating station, schedule rates applicable for transportation of fly ash, as notified by the State Governments along with details, including Auditor certified accounts. These documents have been examined and accordingly, the total fly ash transportation expenditure allowed to the Petitioner generating station wise for the period 2019-22 is as per the table in para 38 above totalling to Rs.309704.03 Lakhs and the same shall be recovered from the beneficiaries of the respective generating stations in 6 (six) equal monthly instalments. However, the Petitioner is directed to submit details regarding award of transportation contracts, distance to which fly ash has been transported along with duly reconciled statements of expenditure incurred on ash transportation at the time of filing petitions for truing up of tariff for the 2019-24 tariff period of the generating stations.”

92. Accordingly, the claim of the Petitioner has not been considered in this order.

Operational Norms

93. The Petitioner has considered the following norms of operation as under:

Normative Annual Plant Availability Factor (NAPAF) (%)	85
Heat Rate (kCal/kwh)	2390
Auxiliary Power Consumption (%)	7.05
Specific Oil Consumption (ml/kwh)	0.50



94. The operational norms claimed by the Petitioner are discussed below:

Normative Annual Plant Availability Factor (NAPAF)

95. 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.”*

96. NAPAF of 85% claimed by Petitioner is in terms of Regulation 49(A)(a) of the 2019 Tariff Regulations, and hence, the same is allowed.

Gross Station Heat Rate (kCal/kWh)

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

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

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

98. As the Petitioner has considered the Gross Station Heat Rate of 2390 kCal/kWh in terms of Regulation 49(C)(a)(i) of the 2019 Tariff Regulations, the same is allowed.

Specific Oil Consumption

99. Regulation 49(D)(a) of 2019 Tariff Regulations provides for the Secondary fuel oil consumption of 0.50 ml/kWh for coal-based generating stations. The claim of the Petitioner for secondary fuel oil of 0.50 ml/kWh, in terms of the said regulations, is allowed.

Auxiliary Power Consumption

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

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

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



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

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

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

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

101. The Petitioner has claimed the cooling system as IDCT and mills as tube mills. Accordingly, the additional auxiliary power consumption of 0.8% and 0.5% are considered over and above 5.75%. As the Petitioner has claimed auxiliary energy consumption of 7.05% in terms of Regulation 49(E)(a) of the 2019 Tariff Regulations, the same is allowed. The Petitioner is directed to furnish the details of the cooling system, number of mills, type of mills, date of commissioning of mills, etc., for each unit along with supporting documents at the time of truing up of tariff.

102. Accordingly, the operational norms allowed for the generating station are as under:

Normative Annual Plant Availability Factor (NAPAF) (%)	85
Heat Rate (kCal/kwh)	2390
Auxiliary Power Consumption (%)	7.05
Specific Oil Consumption (ml/kwh)	0.50

Interest on Working Capital

103. 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) xxxxx

xxxxx

(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.”

104. 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;”

105. The details of the Interest on Working capital claimed by Petitioner are as under:

	(Rs. in lakh)				
	2019-20	2020-21	2021-22	2022-23	2023-24
Cost of Coal- 40 days for generation	13980.37	13980.37	13980.37	13980.37	13980.37
Cost of secondary fuel oil-2 months	261.59	260.88	260.88	260.88	261.59
Maintenance Spares-20% of O&M	5221.45	5439.49	5667.44	5904.27	6149.96
Receivables	24426.97	25428.48	27166.46	23048.40	22852.85
O&M Expenses-1 month	2175.60	2266.46	2361.43	2460.11	2562.48
Total Working Capital	46065.99	47375.68	49436.58	45654.04	45807.26



Rate of Interest	12.05%	12.05%	12.05%	12.05%	12.05%
Total Interest on Working Capital	5550.95	5708.77	5957.11	5501.31	5519.77

Fuel Cost and Energy Charges in Working Capital

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

107. Regulation 43 of 2019 Tariff Regulations provide as under:

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

(a) For coal based and lignite fired stations:

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

(b) For gas and liquid fuel based stations:

$$ECR = SHR \times LPPF \times 100 / \{(CVPF) \times (100 - AUX)\}$$

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.”

108. Regulation 39 of 2019 Tariff Regulations provides as under:



“39. Transit and Handling Losses: For coal and lignite, the transit and handling losses shall be as per the following norms: -

Thermal Generating Station	Transit and Handling Loss (%)
<i>Pit head</i>	<i>0.20 %</i>
<i>Non-pit head</i>	<i>0.80 %</i>

Provided that in case of pit-head stations, if coal or lignite is procured from sources other than the pit-head mines which is transported to the station through rail, transit and handling losses applicable for non-pit head station shall apply;

Provided further that in case of imported coal, the transit and handling losses applicable for pit-head station shall apply.”

109. The Petitioner, on the basis of the cost and GCV of coal and oil for the preceding three months, i.e., October 2018 to December 2018, has claimed the weighted average price of coal as Rs. 1944.43 / MT, weighted average ‘as received GCV’ of coal, after reducing the same by 85 kcal/ kWh, as 2706.77 kCal/ kg, the weighted average price of oil as Rs. 42043.54 / kl and GCV of oil as 9998 kCal / ltr. Accordingly, the Petitioner has claimed the ECR of Rs.1.8659/ kWh and the following fuel cost component in working capital for the period 2019-24:

	<i>(Rs. in lakh)</i>				
	2019-20	2020-21	2021-22	2022-23	2023-24
Cost of Coal (40 days for generation)	13980.37	13980.37	13980.37	13980.37	13980.37
Cost of secondary fuel oil (2 months)	261.59	260.88	260.88	260.88	261.59

110. Respondent GRIDCO has submitted that there is a huge difference, i.e., 299 kCal/kg to 594 kCal/kg, between the GCV billed at the mine end and at the station ended in 2020-21, and the same is contrary to the CEA’s opinion and the Commission’s order dated 30.7.2016 in Petition No. 293/GT/2014, which states that the despatch of GCV of coal by the coal suppliers should be approximately same as “as received GCV” of coal. The Respondent has also submitted that the heat energy per kg of coal may vary from the mine end to the generating station end due to the addition/ release of moisture, which would only increase/ decrease the weight of the coal consignment but the total heat content of the coal consignment from mine end



to the generating station end would remain unaffected. However, there is no justification for the change in the heat content of the coal consignment, from the mine end to the generating station end. The Respondent has stated that coal may be subjected to higher moisture levels due to the addition of moisture externally, which leads to the increase in ECR and burdening the consumers thereof, and by allowing the “GCV on Total Moisture basis” at the generating station end, the Petitioner is able to factor the externalities such as ingress moisture, rain, dew etc. during transit, in addition to the Total Moisture (Surface Moisture + Equilibrated Moisture), as received by them at the colliery end. It has also pointed out that the Commission, in its order dated 3.3.2017 in Petition No. 281/GT/2014, had determined the “as received GCV” by subjecting the “billed GCV’ (equilibrated GCV) to total moisture correction and the same is as per the relevant Indian Standards. The Respondent has added that it has filed Appeal No. 238/2017 before APTEL, challenging the order dated 25.1.2016 in Petition No. 283/GT/2014 (approval of tariff of Kahalgaon STPS for the period 2014-19), praying to consider the “as received GCV” at the mines end for billing, and the same is pending adjudication. Respondent BSPHCL has submitted that the Petitioner may be directed to provide the auditor certified information/ bills as per Form-15, i.e. segregated details shall be submitted for MGR and railways, source-wise, GCV of opening stock as per bill of the coal company and as received at the station. It has also submitted that in terms of Regulation 38 of the 2019 Tariff Regulations, GCV shall be measured by a third-party sampling, but the Petitioner has not submitted any such report. The Respondent has also stated that in terms of Regulation 40 of the 2019 Tariff Regulations, the Commission may direct the Petitioner to furnish the specific website link to access the copy of bills and parameters, such as the GCV of fuel, price of fuel, etc. In response, the Petitioner has submitted that the GCV on an



“as received” basis has been submitted for the period from October 2018 to December 2018.

111. It is noted that the Petitioner has not submitted the third-party sample reports for the months of October 2018, November 2018, and December 2018. Further, it is observed that the Petitioner has used both the secondary oils, i.e., LDO and HFO, and has considered the opening stock and value thereof in the applicable forms with regard to oil. As per the details submitted by the Petitioner, it is observed that HFO is the prominent secondary oil used by the Petitioner. Accordingly, in terms of Regulation 34(1)(a)(iii) of the 2019 Tariff Regulations, in case of the use of more than one secondary fuel oil, the cost of fuel oil stock for the main secondary oil is to be considered for allowing two months of secondary oil cost in the working capital. Accordingly, the cost of HFO and GCV thereof have been considered in the working capital.

112. With regard to the information furnished by the Petitioner on coal (inclusive of opening stock) in Form-15 for the months of October 2018, November 2018, and December 2018, it is noticed that Form-15, enclosed with the main petition was inclusive of the opening stock and the Petitioner vide affidavit dated 26.5.2021 has revised the Form-15 for these months. However, on assessing the information furnished in the revised Form-15, it is noted that the total coal (inclusive of opening stock) mentioned in the initial Form-15 has been considered as the coal received in the revised forms also and has, therefore, claimed as an opening coal stock for all three months as ‘zero,’ which appears to be incorrect. Though Form-15 specifically provides for separate entries of each source of coal and the mode of transport, the Petitioner has not provided any such segregated information cost, billed GCV,



received GCV, etc, in any of the months, except for the quantity of coal received. It is also noticed that the Petitioner has claimed the 'Cost of Diesel in transporting coal through MGR system, if applicable' for the coal supplied through Railways, as well as imported coal. However, the Petitioner has not furnished any reasons for such a claim. In addition, it is also noticed that the Petitioner has claimed charges under the head 'Others (stone picking charges, Loco driver's salary, sampling charges, etc.)' of Rs. 30796105/-, Rs. 29440889/- and Rs. 47295704/- respectively for the coal supplied through rail during the months of October 2018 November 2018 and December 2018 respectively and Rs. 403895/-, Rs. 1759110/- and Rs. 1761996/- for the imported coal received during the said months. However, the Petitioner has not furnished any detailed breakdown of these expenses. It is observed that the Petitioner has claimed GCV billed and GCV received for domestic and imported coal during the months of October 2018 November 2018 and December 2018 as under:

	October, 2018		November, 2018		December, 2018	
	Domestic	Imported	Domestic	Imported	Domestic	Imported
GCV Billed (kCal/kg)	3285	5691	3481	5669	3675	5708
GCV Received (kCal/ kg)	2521	4949	2662	4882	2898	4933

113. . It is noted from Form-15 that the Petitioner has claimed the blending ratio during the months of October 2018 November 2018, and December 2018 as 74.42, 15.93, and 19.96, respectively, which appears to be incorrect. However, considering the actual quantity of domestic and imported coal, the blending ratio is 97.2: 2.8.

114. In view of the above inconsistencies, as the diesel charges are applicable only to the coal supplied through MGR but not for coal supplied through Railways, the GCV measurement and billing of imported coal are being done at the premises of the Petitioner, and there is no justification provided for the losses claimed. The Petitioner



has also not provided any details of the credit note, other charges, etc., the diesel charges for railways, other charges, and the loss in the GCV claimed in the imported coal has not been considered. Further, considering the actual blending ratio, i.e., 97.2: 2.8 and restricting the transit losses to 0.2% for the coal received through MGR as well as imports and 0.8% for the coal received through railways, the weighted average price and GCV of coal and oil claimed and allowed for the period 2019-24 are as under:

	claimed	approved
Weighted average price of coal (Rs./MT)	1944.43	1897.39
Weighted average GCV of coal (kCal/kg) *	2706.77	2701.20
Weighted average price of oil (Rs./KL)	42043.54	42043.54
Weighted average GCV of oil (kCal/Ltr.)	9998	9998

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

115. Further, this generating station being a pit head station, the working capital for the coal stock has been provided for 10 days. Accordingly, the fuel component in working capital allowed is as under:

	<i>(Rs. in lakh)</i>				
	2019-20	2020-21	2021-22	2022-23	2023-24
Working Capital for Cost of Coal towards Stock- (10 days generation corresponding to NAPAF) (A)	3417.56	3417.56	3417.56	3417.56	3417.56
Working Capital for Cost of Coal towards Generation- (30 days generation corresponding to NAPAF) (B)	10252.67	10252.67	10252.67	10252.67	10252.67
Cost of secondary fuel oil – 2 months	261.59	260.88	260.88	260.88	261.59

116. The Petitioner is directed to submit Form-15, as per the prescribed format, source-wise for the respective months, excluding the opening stock, along with CIMFR/ third party reports, GCV computation details from the third party reports, actual blending ratio, monthly declared grade and GCV of coal, monthly received grade (GCV EM basis), the quantity of coal received, quantity of coal consumed, closing quantity of coal, opening balance of coal, etc., Total moisture, Equilibrated moisture, adjustment made, demurrage charges paid, reasons for the high loss of



GCV between GCV billed and GCV received of domestic coal, detailed break up, other charges along with supporting documents, etc., at the time of truing up of tariff.

Working Capital for Maintenance Spares

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

<i>(Rs. in lakh)</i>				
2019-20	2020-21	2021-22	2022-23	2023-24
5221.45	5439.49	5667.44	5904.27	6149.96

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

<i>(Rs. in lakh)</i>				
2019-20	2020-21	2021-22	2022-23	2023-24
5132.87	5336.93	5552.19	5778.01	6014.35

Working Capital for Receivables

119. The Petitioner has claimed ECR as Rs. 1.866/ kWh. Considering the GCV and cost of oil and coal as determined above, the ECR determined is Rs. 1.825/ kWh. Accordingly, 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 at 85% NAPAF are worked out and allowed as under:

<i>(Rs. in lakh)</i>					
	2019-20	2020-21	2021-22	2022-23	2023-24
Variable Charges - for 45 days at 85 % PLF	15572.38	15572.38	15572.38	15572.38	15572.38
Fixed Charges - for 45 days at NAPAF	8266.55	8469.21	8650.38	6276.28	6493.67
Total	23838.93	24041.59	24222.75	21848.66	22066.05



120. 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 O&M Expenses (1 month)

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

<i>(Rs. in lakh)</i>				
2019-20	2020-21	2021-22	2022-23	2023-24
2175.60	2266.46	2361.43	2460.11	2562.48

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

<i>(Rs. in lakh)</i>				
2019-20	2020-21	2021-22	2022-23	2023-24
2138.70	2223.72	2313.41	2407.50	2505.98

123. In line with Regulation 34(3) of the 2019 Tariff Regulations, the rate of interest on working capital is considered as 12.05% (i.e., 1 year SBI MCLR of 8.55% as on 1.4.2019 + 350 bps) for the year 2019-20, 11.25% (i.e., 1 year SBI MCLR of 7.75% as on 1.4.2020 + 350 bps) for the year 2020-21, 10.50% (i.e., 1 year SBI MCLR of 7.00% as on 1.4.2021/ 1.4.2022 + 350 bps) for the period 2021-23 and 12.00% (i.e. 1 year SBI MCLR of 8.50% as on 1.4.2023 + 350 bps) for the year 2023-24 and same is subject to true up. Accordingly, Interest on working capital is allowed as under:

<i>(Rs. in lakh)</i>					
	2019-20	2020-21	2021-22	2022-23	2023-24
Working Capital for Cost of Coal towards Stock - (10 days generation corresponding to NAPAF) (A)	3417.56	3417.56	3417.56	3417.56	3417.56



Working Capital for Cost of Coal towards Generation – (30 days generation corresponding to NAPAF) (B)	10252.67	10252.67	10252.67	10252.67	10252.67
Working Capital for Cost of Secondary fuel oil - (2 months generation corresponding to NAPAF) (C)	261.59	260.88	260.88	260.88	261.59
Working Capital for Maintenance Spares at 20% of O&M expenses (D)	5132.87	5336.93	5552.19	5778.01	6014.35
Working Capital for Receivables – (45 days of sale of electricity at NAPAF (E))	23838.93	24041.59	24222.75	21848.66	22066.05
Working Capital for O&M expenses - 1 month (F)	2138.70	2223.72	2313.41	2407.50	2505.98
Total Working Capital	45042.32	45533.34	46019.46	43965.27	44518.20
Rate of Interest	12.05%	11.25%	10.50%	10.50%	12.00%
Interest on Working Capital	5427.60	5122.50	4832.04	4616.35	5342.18

Annual Fixed Charges for the period 2019-24

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

	<i>(Rs. in lakh)</i>				
	2019-20	2020-21	2021-22	2022-23	2023-24
Depreciation	11628.85	11991.88	12273.81	1058.70	1058.70
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	24513.82	24895.70	25297.34	16342.50	16342.54
Interest on Working Capital	5427.60	5122.50	4832.04	4616.35	5342.18
O&M Expenses	25664.35	26684.63	27760.96	28890.04	30071.77
Unrecovered depreciation to be recovered at the end of the useful life	-	-	-	580.49	-
Special allowance	0.00	0.00	0.00	4750.00	9500.00
Total annual fixed charges	67234.62	68694.71	70164.16	56238.08	62315.19
Reimbursed from Ash fund					
Mine void filling through lean slurry system	-	2700.00	-	-	-
Dry Ash evacuation system Stage-I	-	4500.00	-	-	-

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.

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



Application Fee and Publication expenses

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

127. 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 to recover the statutory taxes, levies, duties, cess, etc., levied by the statutory authorities in accordance with the 2019 Tariff Regulations.

128. Petition No. 436/GT/2020 is disposed of in terms of the above.

**Sd/-
(Harish Dudani)
Member**

**Sd/-
(Ramesh Babu V)
Member**

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

