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

**Petition No. 347/GT/2014**

**Coram:**

**Shri A.S. Bakshi, Member**
**Dr. M.K. Iyer, Member**

**Date of Hearing : 11.7.2016**
**Date of Order : 31.8.2016**

**In the matter of:**

Approval of tariff for Mejia Thermal Power Station, Unit-I to III (3x210 MW) for the period from 1.4.2014 to 31.3.2019.

**And in the matter of**

Damodar Valley Corporation (DVC),
DVC Towers, VIP Road
Kolkata **………Petitioner**

**Versus**

1. West Bengal State Electricity Distribution Company Limited
Block 'DJ' Sector-11, Salt Lake City,
Kolkata-700 091

2. Jharkhand Bijli Vitran Nigam Limited
Engineering Building, HEC, Dhurwa,
Ranchi- 834 004 **……….Respondents**

Damodar Valley Power Consumers Association (DVPCA)
9, A J C Bose Road,
4th Floor,
Kolkata - 700017 **………..Objector**

Parties present:

For Petitioner: Shri M. G. Ramachandran, Advocate, DVC
Ms Poorva Saigal, Advocate, DVC

Shri D.K Aich, DVC
Shri A.Biswas, DVC
Shri Subrata Ghosal, DVC

For Respondents: Shri Sanjay Sen, Senior Advocate, Damodar Valley Power Consumers' Association (DVPCA)
Shri Ruth Elwn, Advocate, DVPCA
Shri Rajiv Yadav, Advocate, DVPCA

## ORDER

This petition has been filed by the petitioner, Damodar Valley Corporation (DVC), for approval of tariff of Mejia Thermal Power Station, Units I to III (3 x 210 MW) (hereinafter referred to as "the generating station") for the period 2014-19 in accordance with the provisions of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 (hereinafter referred to as "the 2014 Tariff Regulations").

2. The petitioner is a statutory body established by the Central Government under the Damodar Valley Corporation Act, 1948 (hereinafter referred to as the 'DVC Act') for the development of the Damodar Valley, with three participating Governments, namely, the Central Government, the Government of West Bengal and the Government of Jharkhand. The dates of commercial operation of the different Units of the generating station is as under:-

| | |
|---|---|
| Unit - I : | March, 1996 |
| Unit - II : | March, 1998 |
| Unit - III : | September,1999 |

3. In Petition No. 269/GT/2012 filed by the petitioner for determination of tariff of the generating station for the period 2009-14, the Commission vide order dated 9.7.2013, determined the annual fixed charges based on actual additional capital expenditure for the years 2009-10, 2010-11 and 2011-12 and projected additional capital expenditure for the years 2012-13 and 2013-14. Thereafter, the Commission vide order dated 29.7.2016 in Petition No. 465/GT/2014 revised the annual fixed charges of the generating station for the period 2009-14 after truing-up exercise in terms of Regulation 6(1) of the 2009 Tariff Regulations, as summarized under.

*(₹ in lakh)*

| | 2009-10 | 2010-11 | 2011-12 | 2012-13 | 2013-14 |
|---|---|---|---|---|---|
| Depreciation | 9859.28 | 9861.40 | 9858.76 | 9862.84 | 1435.45 |
| Interest on Loan | 435.14 | - | - | - | - |
| Return on Equity | 8986.32 | 7460.53 | 9324.13 | 9327.99 | 7478.28 |
| Interest on Working Capital | 3334.90 | 3331.60 | 3416.53 | 3451.70 | 3281.98 |
| O&M Expenses | 11466.00 | 12121.20 | 12814.20 | 13551.30 | 14326.20 |
| Cost of secondary fuel oil | 2653.37 | 2653.37 | 2660.64 | 2653.37 | 2653.37 |
| Compensation Allowance | 63.00 | 94.50 | 136.50 | 136.50 | 178.50 |
| Special allowance | - | - | - | - | - |
| **Sub-Total** | **36798.02** | **35522.60** | **38210.76** | **38983.70** | **29353.78** |
| Common Office Expenditure | 325.07 | 344.16 | 201.53 | 142.16 | 109.71 |
| Additional O&M expenses | 1057.09 | 1133.28 | 1187.59 | 748.32 | 808.01 |
| Pension & Gratuity Contribution | 6429.12 | 6429.12 | 6429.12 | 6429.12 | 6429.12 |
| Sinking Fund Contribution | 3611.20 | 3489.80 | 3339.48 | 3320.91 | 3553.38 |
| Adjustment of secondary fuel oil | 148.81 | 733.78 | 1866.65 | 2255.91 | 2327.14 |
| Sub-Total | 11571.29 | 12130.14 | 13024.37 | 12896.43 | 13227.36 |
| **Total Annual Fixed Charges** | **48369.31** | **47652.74** | **51235.14** | **51880.12** | **42581.14** |

4. The annual fixed charges determined vide orders dated 9.7.2013 and 29.7.2016 are subject to the final outcome of the Civil Appeals pending before the Hon'ble Supreme Court in respect of the determination of tariff of the generating stations and inter-state

transmission systems of the petitioner by the Commission for the periods 2006-09 and 2009-14.

5. The petitioner vide affidavit dated 9.9.2014 has sought approval of tariff of the generating station for the period 2014-19 in accordance with the provisions of the 2014 Tariff Regulations. Accordingly, the capital cost and the annual fixed charges claimed by the petitioner for the period 2014-19 are as under:

**Capital Cost**

*(₹ in lakh)*

| | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 |
|---|---|---|---|---|---|
| Opening Capital Cost | 163288.46 | 163812.65 | 163918.88 | 163984.96 | 163984.96 |
| Additional capital expenditure | 943.12 | 198.58 | 129.23 | 0.00 | 604.86 |
| De-capitalization during the year/ period | 418.93 | 92.34 | 63.15 | 0.00 | 263.93 |
| **Closing Capital Cost** | **163812.65** | **163918.88** | **163984.96** | **163984.96** | **164325.89** |
| **Average Capital Cost** | **163550.55** | **163865.77** | **163951.92** | **163984.96** | **164155.43** |

**Annual Fixed Charges**

*(₹ in lakh)*

| | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 |
|---|---|---|---|---|---|
| Depreciation | 1390.33 | 653.36 | 160.65 | 86.57 | 153.42 |
| Interest on Loan | 0.00 | 0.00 | 0.00 | 0.00 | 4.94 |
| Return on Equity | 9621.90 | 9640.44 | 9645.51 | 9647.46 | 9657.48 |
| Interest on Working Capital | 6286.90 | 6429.92 | 6493.35 | 6571.25 | 6642.91 |
| O & M Expenses | 15057.00 | 16002.00 | 17010.00 | 18081.00 | 19221.30 |
| Compensation Allowance | 252.00 | 315.00 | 315.00 | 315.00 | 420.00 |
| Capital Spares | 173.82 | 238.89 | 395.34 | 532.00 | 0.00 |
| Share of Common Office Expenditure | 131.52 | 122.62 | 156.24 | 229.26 | 259.77 |
| Share of P&G & impact of pay revision | 3629.18 | 7583.50 | 7583.50 | 7583.50 | 7583.50 |
| Share of Additional O&M due to ash evacuation, Mega insurance CISF expenditure & expenditure for Subsidiary activity | 2950.61 | 3243.72 | 3589.41 | 3944.27 | 4293.58 |
| **Total** | **39493.26** | **44229.46** | **45348.99** | **46990.30** | **48236.91** |

6. In compliance with the directions of the Commission, the petitioner has filed additional information and has served copies on the respondents. Taking into consideration the documents available on record, we proceed to consider the claims of the petitioner and determine the tariff in respect of this generating station for the period 2014-19. The Commission on 10.8.2016 and 19.8.2016 directed the petitioner to submit certain information. In response, petitioner vide affidavit dated 29.8.2016 has submitted the replies.

**Capital cost as on 1.4.2014**

7. Clause (1) of Regulation 9 of the 2014 Tariff Regulations provides that the capital cost as determined by the Commission after prudence check, in accordance with this regulation shall form the basis of determination of tariff for existing and new projects. Clause 3 of Regulation 9 of the 2014 Tariff Regulations **p**rovides as under:

> *"The Capital cost of an existing project shall include the following:*
>
> *(a) the capital cost admitted by the Commission prior to 1.4.2014 duly trued up by excluding liability, if any, as on 1.4.2014;*
>
> *(b) additional capitalization and de-capitalization for the respective year of tariff as determined in accordance with Regulation 14; and*
>
> *(c) expenditure on account of renovation and modernization as admitted by this Commission in accordance with Regulation 15."*

8. The annual fixed charges claimed by the petitioner are based on opening capital cost of ₹163288.46 lakh as on 1.4.2014 as against the capital cost of ₹161072.25 lakh as on 31.3.2014 admitted by the Commission vide order dated 29.7.2016 in Petition No. 465/GT/2014. However, the closing capital cost of ₹161072.25 lakh as on 31.3.2014 as approved by the order dated 29.7.2016 has been considered as the opening capital cost as on 1.4.2014.

**Projected Additional Capital Expenditure**

9. Regulation 14 (3) of the 2014 Tariff Regulations provides as under:

> *"14.(3) 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 after the cut-off date, may be admitted by the Commission, subject to prudence check:*
> *(i) Liabilities to meet award of arbitration or for compliance of the order or decree of a court of law;*
>
> *(ii) Change in law or compliance of any existing law;*
>
> *(iii) Any expenses to be incurred on account of need for higher security and safety of the plant as advised or directed by appropriate Government Agencies of statutory authorities responsible for national security/internal security;*
>
> *(iv)Deferred works relating to ash pond or ash handling system in the original scope of work;*
>
> *(v) Any liability for works executed prior to the cut-off date, after prudence check of the details of such un-discharged liability, total estimated cost of package, reasons for such withholding of payment and release of such payments etc.;*
>
> *(vi)Any liability for works admitted by the Commission after the cut-off date to the extent of discharge of such liabilities by actual payments;*
>
> *(vii) Any additional capital expenditure which has become necessary for efficient operation of generating station other than coal / lignite based stations or transmission system as the case may be. The claim shall be substantiated with the technical justification duly supported by the documentary evidence like test results carried out by an independent agency in case of deterioration of assets, report of an independent agency in case of damage caused by natural calamities, obsolescence of technology, up-gradation of capacity for the technical reason such as increase in fault level;*
>
> *(viii) In case of hydro generating stations, any expenditure which has become necessary on account of damage caused by natural calamities (but not due to flooding of power house attributable to the negligence of the generating company) and due to geological reasons after adjusting the proceeds from any insurance scheme, and expenditure incurred due to any additional work which has become necessary for successful and efficient plant operation;*
>
> *(ix) In case of transmission system, any additional expenditure on items such as relays, control and instrumentation, computer system, power line carrier communication, DC batteries, replacement due to obsolesce of technology, replacement of switchyard equipment due to increase of fault level, tower strengthening, communication equipment, emergency restoration system, insulators cleaning infrastructure, replacement of porcelain insulator with polymer insulators,*

*replacement of damaged equipment not covered by insurance and any other expenditure which has become necessary for successful and efficient operation of transmission system; and*

*(x) Any capital expenditure found justified after prudence check necessitated on account of modifications required or done in fuel receiving system arising due to non-materialization of coal supply corresponding to full coal linkage in respect of thermal generating station as result of circumstances not within the control of the generating station:*

*Provided that any expenditure on acquiring the minor items or the assets including tools and tackles, furniture, air-conditioners, voltage stabilizers, refrigerators, coolers, computers, fans, washing machines, heat convectors, mattresses, carpets etc. brought after the cut-off date shall not be considered for additional capitalization for determination of tariff w.e.f. 1.4.2014:*

*……*

10. The break-up of the projected additional capital expenditure claimed during 2014-19 is detailed as under:

***(₹ in lakh)***

| S.N | Head of Works/ Equipment | Regulation | Additional Capital Expenditure Claimed | Year of commissioning of old asset | De-capitalization | Depreciation recovered |
|---|---|---|---|---|---|---|
| | **2014-15** | | | | | |
| 1 | 6.6 kV Vacuum CB U-1 | 54 & 55 | 80.00 | 1996 | 35.08 | 31.57 |
| 2 | Retrofitting numerical relays | 54 & 55 | 10.50 | 1996 | 4.29 | 3.86 |
| 3 | Up-gradation of obsolete HIACS 3000 DCS | 54 & 55 | 672.62 | 1996 | 291.60 | 262.44 |
| 4 | Replacement of old fire tender | 14(3)(iii) | 140.00 | 1996 | 60.69 | 54.63 |
| 5 | Procurement of thermo-gravimetric analyzer | 54 & 55 | 40.00 | 2005 | 27.26 | 17.17 |
| | **Total** | | **943.12** | | **418.93** | **369.67** |
| | **2015-16** | | | | | |
| 1 | 6.6 kV Vacuum CB U-2 | 54 & 55 | 93.55 | 1998 | 43.89 | 39.50 |
| 2 | H2 gas drier system U-1&2 | 54 & 55 | 62.02 | 1996 | 29.60 | 26.64 |
| 3 | Retrofitting of VCB in place of SF6 CB | 54 & 55 | 43.00 | 1996 | 18.85 | 16.97 |
| | **Total** | | **198.58** | | **92.34** | **83.11** |
| | **2016-17** | | | | | |
| 1 | 6.6 kV Vacuum CB-U 3 | 54 & 55 | 97.19 | 1999 | 46.20 | 41.58 |
| 2 | H2 gas drier system U-3 | 54 & 55 | 32.04 | 1999 | 16.94 | 15.25 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | **Total** | | **129.23** | | **63.15** | **56.83** |
| | **2017-18** | | - | - | - | - |
| | **2018-19** | | | | | |
| 1 | Up-gradation of obsolete SIEMENS as 220EA DES System by latest state of art system U-3 | 54 & 55 | 604.86 | 1999 | 263.93 | 237.54 |
| | | | **604.86** | | **263.93** | **237.54** |
| | **Total Claimed** | | **1875.78** | | **838.34** | **747.15** |

11. It is observed that the petitioner has claimed projected additional capital expenditure of certain assets/items for the period 2014-17 and 2018-19 and has prayed that the capitalization of the same may be allowed in exercise of powers under Regulation 54 (Power to relax) and Regulation 55 (Removal of difficulties) of the 2014 Tariff Regulations. We shall examine the year-wise claim of these assets as under:

12. Regulation 54 and 55 of the 2014 Tariff Regulations provides as under:

> *"54. Power to Relax: The Commission, for reasons to be recorded in writing, may relax any of the provisions of these regulations on its own motion or on an application made before it by an interested person.*
>
> *55. Power to Remove Difficulty:*
>
> *If any difficulty arises in giving effect to the provisions of these regulations, the Commission may, by order, make such provision not inconsistent with the provisions of the Act or provisions of other regulations specified by the Commission, as may appear to be necessary for removing the difficulty in giving effect to the objectives of these regulations."*

**6.6 kV Vacuum Circuit Breakers for Unit-I, Unit-II and Unit-III (2014-17)**

13. The petitioner has claimed projected additional capital expenditure of ₹80.00 lakh along with de-capitalization of ₹35.08 lakh in 2014-15, projected additional capital expenditure of ₹93.55 lakh along with de-capitalization of ₹43.89 lakh in 2015-16 and projected additional capital expenditure of ₹97.19 lakh along with de-capitalization of

₹46.20 lakh in 2016-17 for this asset under Regulation 54 & 55 of the 2014 Tariff Regulations. In justification of the same, the petitioner has submitted that NGEF make SF6 breakers are in service since the last 15 years. However currently, there are frequent failures of mechanism due to fatigue and ageing. The OEM manufacturing unit has closed permanently. Hence original spares as well as services and support are unavailable.

14. The Commission vide letter dated 10.8.2016, directed the petitioner to submit the OEM certificate in respect of the said replacement and in response, the petitioner vide affidavit dated 29.8.2016, has submitted that the same had been submitted in the petition (Petition No. 269/GT/2012) for truing up of tariff of this generating station for the period 2009-14. The petitioner has further submitted that the OEM, i.e. M/s NGEF has closed down its switchgear division and hence the original spares as well as support spares was not available. It has also submitted that the SF6 breaker was continuously giving trouble causing outage of equipment, loss of generation, higher Specific Oil Consumption and hence in a technical audit carried out by the petitioner it was recommended to replace the same.

**2014-15**

**Retro-fitting of numerical relays**

15. The petitioner has claimed projected additional capital expenditure of ₹10.50 lakh and de-capitalization of ₹4.29 lakh for the asset in 2014-15. The petitioner was directed to submit the OEM certificate for the same. In response, the petitioner submitted that CTMM relays were installed at BIPH and CWPH for protection of HT motors and is in service for more than 16 years. These relays are old electromagnetic disc type and inherently slow as compared to present day numerical relays. Due to ageing, it doesn't

operate effectively, resulting in unwanted tripping of motors. Further, the petitioner has submitted the OEM certificate dated 29.7.2015.

**Up-gradation of obsolete HIACS 3000 DCS**

16. The petitioner has claimed projected additional capital expenditure of ₹672.62 lakh and de-capitalization of ₹291.60 lakh for the asset in 2014-15. In justification of the same, the petitioner has submitted that the HIACS 3000 DCS system comprises of HISEC & HIDIC system supplied, erected & commissioned by M/s Keltron India (OEM) in collaboration with M/S Hitachi, Japan for supplying the above DCS System in India as well as providing all supports in India. It has also submitted that the HISEC System of Unit-I mainly consists of 13F controllers with their redundant for OLCS& CLCS drives whereas the HIDIC system comprises of the HMI & MIS system comprising four Hitachi make V 90/25 super microcomputer namely DAS CPU, PWS CPU and Control CPU & Back up CPU which has become obsolete. It has further submitted that one of the two hard discs of V 90/25 super microcomputer has gone faulty and the M/s Keltron has submitted that the supply of spare hard disc is regretted as the collaboration between M/s Hitachi, Japan & M/S Keltron doesn't exist at present. It has stated that if the remaining hard disc fails then the system will collapse. The petitioner has pointed out that in Mettur Thermal Power Station in Tamil Nadu, the same system was upgraded by HIAC 5000 M system which was compatible with the existing system. Accordingly, the petitioner has submitted that in line with this, in Unit-1 of this generating station the old and obsolete HIACS 3000 system has been upgraded by the HIACS 5000M system during March-2014. The Commission vide letter dated 10.8.2016 and 19.8.2016 directed the petitioner to submit documentary evidence for the same along with justification of how the capitalization of the asset would benefit the beneficiaries. The Commission also

directed the petitioner to clarify whether the additional capital expenditure is pertaining for Unit-1 or Unit- 2&3 and whether the same is to be claimed in 2013-14 i.e. March-14 or during 2014-15 period. In response, the petitioner vide affidavit dated 23.8.2016 has submitted that , up gradation of HIACS 3000 DCS system by HIACS 5000 M DCS system is for Unit-1 and claimed in 2014-15. The petitioner has also furnished a copy of the mail from M/s Keltron wherein it has recommended that HIACS 3000 DCS should be replaced as it is obsolete and that the petitioner should upgrade the same. The petitioner has further pointed out that there were outages in hard disk in Unit-I resulting in high Specific Oil Consumption and loss in generation and after up-gradation, there was improvement and as a result of the stable generation, the overall cost of generation has reduced which was beneficial to the beneficiaries.

**Procurement of thermo-gravimetric analyzer**

17. The petitioner has claimed projected additional capital expenditure of ₹40.00 lakh along with ₹27.26 lakh as de-capitalization of the old asset. In justification of the same the petitioner has submitted that thermo gravimetric analyzer is mandatory equipment for proximate analysis of coal samples. Proximate analysis for coal samples collected as feeder samples is required for efficiency calculation of Units. The OEM of the existing thermo gravimetric analyzer (Model No-TGA 601) has declared it obsolete & production of the equipment as well as its spares have been stopped. At present the equipment is not available due to lack of spares. Moreover, the old instrument is conventional type and analysis is being done at furnace, where analysis of only 05-06 nos. of samples can be done in a day. However, our requirement is average 15 nos. of proximate analysis for coal samples collected as station coal, Rake samples, Barjora coal, imported coal & feeder samples for efficiency calculation of units on daily basis. Manual testing with

such a big nos. of sample at our chemical laboratory will be impossible due to shortage/non availability of this equipment. The TGA -701 will carry out analysis of more than 15 samples at a time with precision & rules out wastage of time as well as extra manpower, proper monitoring of units efficiency can also be done. At Mejia TPS, Unit-I to III there are eight units and only 5-6 samples will not be helpful for proper monitoring the efficiencies of all the eight units on daily basis. The TGA-701 equipment is capable of handling about 15 samples per day. Thus the efficiency calculated on daily basis using the above equipment will be helpful to improve the overall unit efficiency by monitoring the other parameters closely.

18. The petitioner was directed to submit the OEM certificate in justification for the replacement of the item due to obsolescence and the same has not been furnished by the petitioner. Moreover, the petitioner has not submitted proper explanation as to how the expenditure would contribute to the efficient operation of the generating station. In view of this, the additional capital expenditure for the asset is disallowed. However, the petitioner is granted liberty to submit proper justification along with the OEM certificate /technical report for claiming tis asset at the time of truing-up of tariff in terms of Regulation 8 of the 2014 Tariff Regulations and the same will be considered in accordance with law.

**2015-16**

**Retrofitting of VCB in place of SF6 circuit breaker**

19. The petitioner has claimed projected additional capital expenditure of ₹43.00 lakh along with de-capitalization of ₹18.85 lakh for retrofitting of VCB in place of SF6 circuit breaker. In justification of the same, the petitioner has submitted that NGEF make SF6

breakers are in service since the last 15 years. There are frequent failures of mechanism and other parts due to fatigue and ageing. The OEM manufacturing unit is closed permanently. Hence original spares as well as services and support are not available. The petitioner vide affidavit dated 29.8.2016, has submitted that the OEM certificate had been submitted in the petition (Petition No. 269/GT/2012) for truing up of tariff of this generating station for the period 2009-14.

**$H_2$ gas drier system Unit-I, II and III (2015-17)**

20. The petitioner has claimed projected additional capital expenditure of ₹62.02 lakh along with de-capitalization of ₹29.60 lakh in 2015-16 and projected additional capital expenditure of ₹32.04 lakh along with de-capitalization of ₹16.94 lakh in 2016-17 for this asset under Regulation 54 & 55 of the 2014 Tariff Regulations. In justification of the same, the petitioner vide affidavit dated 29.8.2016 has submitted that as the R-12 gas used in H2 gas drier system of Units I, II and III is ozone depleting refrigerant and sales restriction is imposed on it as per recent Government norm. EPA (Environmental Protection Agency) had banned the sale and distribution of refrigeration and air-conditioning appliances containing CFCs (such as R-12) under Non-essential Products Ban. The petitioner also submitted documentary evidence for the ban imposed and has thus stated that the replacement of existing gas drier with eco-friendly refrigerant was thus essential.

**2018-19**

**Up-gradation of obsolete Siemens AS220EA DES system**

21. The petitioner has claimed projected additional capital expenditure of ₹604.86 lakh along with de-capitalization of ₹263.93 lakh in 2018-19. In justification of the same, the

petitioner has submitted that the AS220EA automation system of TELEPERM ME control system series shall be abandoned by 30.9.2015 as declared by M/s Seimens. The petitioner was directed to submit the OEM certificate and the same has been submitted vide affidavit dated 29.8.2016 wherein, the OEM has stated that, the AS220EA, AS220 EAHF and AS220EAI will be abandoned by 30.9.2015 from the TELEPERM ME control system series which should be upgraded to latest SPPA T3000 in a phased manner. The petitioner has further submitted that since in the Units II & III of the generating station BOP automation system is AS220EA system, in order to maintain a sustainable generation in the two units, at least one unit is required to be upgraded with the latest state of the art system so that the other unit can be run for further 5-10 years with the spares available from the upgraded units.

22. We have examined the matter. The petitioner has submitted that the above said assets are essential for the efficient operation and sustenance of operation of the generating station. The Commission in order dated 9.7.2013, based on the justification submitted by the petitioner that the additional capitalization shall increase the efficiency of the plant had allowed the capitalization of assets in relaxation of Regulation 9(2)(iv) of the 2009 Tariff Regulations, in exercise of its Power to relax under Regulation 44 of the 2009 Tariff Regulations. The relevant portion of the order dated 9.7.2013 in Petition No. 269/GT/2012 is extracted as under:

> *"Though Regulation 9(2)(iv) of the 2009 Tariff Regulations provides for consideration of expenditure incurred due to any additional work which has become necessary for successful and efficient plant operation for hydro projects only, we as a special case, in exercise of our power under Regulation 44 of the 2009 Tariff Regulation, relax Regulation 9(2)(iv) of the 2009 Tariff Regulations and allow the capitalization of the said expenditure in respect of this thermal generation station keeping in view that these assets are necessary for successful operation and for sustenance of operation of the generating station".*

23. Regulation 14(3)(vii) of the 2014 Tariff Regulations provides for consideration of expenditure due to any additional work which has become necessary for successful and efficient plant operation for hydro projects only. It also provides that the claim is required to be substantiated with the technical justification duly supported by the documentary evidence like test results carried out by an independent agency in case of deterioration of assets etc., As stated above, the petitioner has sought the replacement of these assets like 6.6 kV VCB for Units I to III, Retro-fitting of numerical relays, Up-gradation of obsolete HIACS 3000 DCS, H2 gas drier system for Units I to III, Up-gradation of obsolete Siemens AS220EA DES system, Retrofitting of VCB in place of SF6 circuit breaker on the ground that these assets are necessary for efficient operation of the generating station. Though Regulation 14(3)(vii) provides for consideration of additional capital expenditure which are necessary for successful and efficient plant operation for hydro projects only, we, in exercise of our power under Regulation 54 of the 2014 Tariff Regulations, relax Regulation 14(3)(vii) of the 2014 Tariff Regulations, as a special case and allow the capitalization of the said expenditure along with their de-capitalization in respect of the thermal generation station, keeping in view that these assets are necessary for successful operation and for sustenance of operation of the generating station. It is noticed that except for the projected additional capital expenditure claimed for thermo-gravimetric analyzer in 2014-15, the petitioner has submitted the technical report/OEM certificate in justification for the replacement of the additional capital expenditure claimed which has been considered. However, in respect of the assets where the OEM certificate /technical report has not been submitted by the petitioner, the projected additional capital expenditure claimed along with de-capitalization amount has

not been allowed and shall be considered at the time of truing up provided proper documentary evidence is submitted.

**Other claims**

**Replacement of old fire tender in 2014-15**

24. The petitioner has claimed projected additional capital expenditure of ₹140.00 lakh as along with ₹60.69 lakh as de-capitalization value of this asset under Regulation 14(3)(iii) of the 2014 Tariff Regulations. However, the petitioner has neither submitted any documentary evidence nor any justification for its claim under Regulation 14(3)(iii) to show that the said asset has been installed as per advice/direction of the appropriate Government Agencies or statutory authorities. In the absence of these, the projected additional capital expenditure claimed in 2014-15 has not been allowed. However, the petitioner is at liberty to submit the documentary evidence at the time of truing up of the petition.

**2017-18**

25. No additional capital expenditure has been claimed by the petitioner for the period 2017-18.

26. Based on the above discussions, the projected additional capital expenditure allowed for the period 2014-17 in respect of the above assets are summarized as under:

***(₹ in lakh)***

| S.N | Head of Works/ Equipment | Additional Capital Expenditure Claimed | De-capitalization claimed | Net Additional Capital Expenditure allowed |
|---|---|---|---|---|
| | **2014-15** | | | |
| 1 | 6.6 kV Vacuum CB U-1 | 80.00 | 35.08 | 44.92 |
| 2 | Retrofitting numerical relays | 10.50 | 4.29 | 6.21 |
| 3 | Up-gradation of obsolete HIACS 3000 DCS | 672.62 | 291.60 | |

| | | | | |
|---|---|---|---|---|
| 4 | Procurement of thermo-gravimetric analyzer | 40.00 | 27.26 | 0.00 |
| 5 | Replacement of old fire tender | 140.00 | 60.69 | 0.00 |
| | **Total** | 763.12 | 330.97 | 432.14 |
| | **2015-16** | | | |
| 1 | 6.6 kV Vacuum CB U-2 | 93.55 | 43.89 | 49.67 |
| 2 | H2 gas drier system U-1&2 | 62.02 | 29.60 | 32.42 |
| 3 | Retrofitting of VCB in place of SF6 CB | 43.00 | 18.85 | 24.15 |
| | **Total** | **198.58** | **92.34** | **106.23** |
| | **2016-17** | | | |
| 1 | 6.6 kV Vacuum CB-U 3 | 97.19 | 46.20 | 50.98 |
| 2 | H2 gas drier system U-3 | 32.04 | 16.94 | 15.10 |
| | **Total** | **129.23** | **63.15** | **66.08** |
| | **2018-19** | | | |
| 1 | Up-gradation of obsolete SIEMENS as 220EA DES System by latest state of art system U-3 | 604.86 | 263.93 | 340.93 |
| | | **604.86** | **263.93** | **340.93** |
| | **Total allowed** | **1875.78** | **838.34** | **945.39** |

**Capital cost for the period 2014-19**

27. As stated above, the opening capital cost considered is ₹161072.25 lakh as on 1.4.2014. Accordingly, the capital cost considered for the purpose of tariff for the period 2014-19 is as under:

***(₹ in lakh)***

| | **2014-15** | **2015-16** | **2016-17** | **2017-18** | **2018-19** |
|---|---|---|---|---|---|
| Opening Capital Cost | 161072.25 | 161504.39 | 161610.63 | 161676.71 | 161676.71 |
| Net Additions Allowed | 432.14 | 106.23 | 66.08 | - | 340.93 |
| Closing Capital Cost | 161504.39 | 161610.63 | 161676.71 | 161676.71 | 162017.64 |
| Average Capital Cost | 161288.32 | 161557.51 | 161643.67 | 161676.71 | 161847.18 |

**Debt-Equity Ratio**

28. Regulation 19 of the 2014 Tariff Regulations provides as under:

> *"(1) For a project declared under commercial operation on or after 1.4.2014, the debt-equity ratio would be considered as 70:30 as on COD. 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-equtiy 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 shall submit the resolution f the Board of the company or approval from Cabinet Committee on Economic Affairs (CCEA) regarding infusion of fund from internal resources in support of the utilisation 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 1.4.2014, debt-equity ratio allowed by the Commission for determination of tariff for the period ending 31.3.2014 shall be considered.*

*(4) In case of generating station and the transmission system including communication system declared under commercial operation prior to 1.4.2014, but where debt: equity ratio has not been determined by the Commission for determination of tariff for the period ending 31.3.2014, the Commission shall approve the debt: equity based on actual information provided by the generating company or the transmission licensee as the case may be.*

*(5) Any expenditure incurred or projected to be incurred on or after 1.4.2014 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.*

29. Accordingly, the gross normative loan and equity amounting to ₹112750.59 lakh and ₹48321.67 lakh respectively, as on 31.3.2014 as considered in order dated 29.7.2016 has been considered as normative loan and equity as on 1.4.2014. The

normative debt equity ratio of 70:30 has been considered in the case of additional capital expenditure. This is subject to truing-up in terms of Regulation 8 of the 2014 Tariff Regulations. The opening and closing debt and equity is as under.

***(₹ in lakh)***

| Asset | As on 1.4.2014 | | Net Additional capitalization during 2014-19 | | As on 31.3.2019 | |
|---|---|---|---|---|---|---|
| | **Amount** | **(%)** | **Amount** | **(%)** | **Amount** | **(%)** |
| Debt | 112750.59 | 70.00% | 661.77 | 70.00% | 113412.36 | 70.00% |
| Equity | 48321.67 | 30.00% | 283.62 | 30.00% | 48605.28 | 30.00% |
| **Total** | **161072.25** | **100.00%** | **945.39** | **100.00%** | **162017.64** | **100.00%** |

### Return on Equity

30. Regulation 24 of the 2014 Tariff Regulations provides as under:

> ***"24. Return on Equity**:*
> *(1) Return on equity shall be computed in rupee terms, on the equity base determined in accordance with regulation 19.*
> *(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 the 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:*
> *i) in case of projects commissioned on or after 1st April, 2014, an additional return of 0.50 % shall be allowed, if such projects are completed within the timeline specified in Appendix-I:*
> *ii). the additional return of 0.5% shall not be admissible if the project is not completed within the timeline specified above for reasons whatsoever:*
> *iii). additional RoE of 0.50% may be allowed if any element of the transmission project is completed within the specified timeline and it is certified by the Regional Power Committee/National Power Committee that commissioning of the particular element will benefit the system operation in the regional/national grid:*
> *iv). the rate of return of a new project shall be reduced by 1% 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)/ Free Governor Mode Operation (FGMO), data telemetry, communication system up to load dispatch centre or protection system:*
> *v) as and when any of the above requirements are found lacking in a generating station based on the report submitted by the respective RLDC, RoE shall be reduced by 1% for the period for which the deficiency continues:*

*vi) additional RoE shall not be admissible for transmission line having length of less than 50 kilometers.*

31. Regulation 25 of the 2014 Tariff Regulations provides as under:

***"Tax on Return on Equity***

*(1) The base rate of return on equity as allowed by the Commission under Regulation 24 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 the 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 income on other income stream (i.e., income of non-generation or non-transmission business, as the case may be) shall not be considered 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."*

32. The petitioner has claimed return on equity considering the base rate of 15.5% and effective tax rate (MAT rate) of 20.961%. Accordingly, the rate of return on equity works out to be 19.610% for the period 2014-19. This is however, subject to truing-up. Return on Equity has been worked out as under:-

***(₹ in lakh)***

| | **2014-15** | **2015-16** | **2016-17** | **2017-18** | **2018-19** |
|---|---|---|---|---|---|
| Notional Equity-Opening | 48321.67 | 48451.31 | 48483.18 | 48503.00 | 48503.00 |
| Addition of Equity due to Additional Capitalization | 228.93 | 59.57 | 38.77 | 0.00 | 181.46 |
| Adjustment on account of de-capitalization | 99.29 | 27.70 | 18.94 | 0.00 | 79.18 |
| Normative Equity- Closing | 48451.31 | 48483.18 | 48503.00 | 48503.00 | 48605.28 |
| Average Normative Equity | 48386.49 | 48467.24 | 48493.09 | 48503.00 | 48554.14 |
| Return on Equity (Base Rate ) | 15.500% | 15.500% | 15.500% | 15.500% | 15.500% |
| Tax rate for the year | 20.961% | 20.961% | 20.961% | 20.961% | 20.961% |
| Rate of Return on Equity | 19.610% | 19.610% | 19.610% | 19.610% | 19.610% |

| | | | | | |
|---|---|---|---|---|---|
| (Pre Tax ) | | | | | |
| **Return on Equity** | **9488.59** | **9504.43** | **9509.50** | **9511.44** | **9521.47** |

**Interest on Loan**

33. Regulation 26 of the 2014 Tariff Regulations provides as under:

> ***"26. Interest on loan capital:*** *(1) The loans arrived at in the manner indicated in regulation 19 shall be considered as gross normative loan for calculation of interest on loan.*
> *(2) The normative loan outstanding as on 1.4.2014 shall be worked out by deducting the cumulative repayment as admitted by the Commission up to 31.3.2014 from the gross normative loan.*
> *(3) The repayment for each of the year of the tariff period 2014-19 shall be deemed to be equal to the depreciation allowed for the corresponding year/period. In case of de-capitalization of assets, the repayment shall be adjusted by taking into account cumulative repayment on a pro rata basis and the adjustment should not exceed cumulative depreciation recovered upto the date of de-capitalization of such asset.*
> *(4) Notwithstanding any moratorium period availed by the generating company orthe 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:*

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

a. The gross normative loan of ₹112750.59 lakh has been considered on 1.4.2014 in order dated 29.7.2016 in Petition No. 465/GT/2016. In addition to this, loan component towards additional capitalization has been considered as per the approved debt equity ratio.

b. Cumulative repayment of loan as on 31.3.2014 has been considered as cumulative repayment as on 1.4.2014.

c. Addition to normative loan on account of additional capital expenditure approved above has been considered on year to year basis.

d. Depreciation allowed has been considered as repayment of normative loan during the respective year of the tariff period 2014-19. Proportionate adjustment has been made to the repayments on account of de-capitalizations considered in the additional capital expenditure approved above.

e. In line with the provisions of the regulations, the weighted average rate of interest has been calculated by applying the actual loan portfolio existing as on 1.4.2014 along with subsequent additions during the period 2014-19, if any, for the generating station. In case of loans carrying floating rate of interest the rate of interest as provided by the petitioner has been considered for the purpose of tariff. The necessary calculation for interest on loan is as under:

*(₹ in lakh)*

| | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 |
|---|---|---|---|---|---|
| Gross Notional Loan for the purpose of tariff in the instant petition | 112750.59 | 112821.40 | 112831.13 | 112833.18 | 112833.18 |
| Cumulative repayment of loan up to previous year | 112750.59 | 112821.40 | 112831.13 | 112833.18 | 112833.18 |
| Net opening loan | - | - | - | - | - |
| Addition due to Net Additional Capitalization | 302.50 | 74.36 | 46.26 | - | 238.65 |
| Repayment of Loan during the period | 534.18 | 139.00 | 90.46 | - | 390.95 |
| Add: Repayment adjustment on a/c of de-capitalization | 231.68 | 64.64 | 44.20 | - | 184.75 |
| Less: Repayment on account of adjustment in discharge in liabilities | - | - | - | - | - |
| Net Closing Loan | **-** | **-** | **-** | **-** | **32.40** |
| Average Loan | - | - | - | - | 16.20 |
| Weighted Average Rate of Interest on Loan (%) | 10.2433% | 10.3499% | 10.3547% | 11.5453% | 11.6025% |
| **Interest on Loan** | - | **-** | **-** | **-** | **1.88** |

**Depreciation**

35. Regulation 27 of the 2014 Tariff Regulations provides as under:

*“**27. Depreciation:** (1) Depreciation shall be computed from the date of commercial operation of a generating station or unit thereof or a transmission system including communication system or element thereof. 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 or elements thereof.*

*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 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 in case of hydro generating station, the salvage value shall be as provided in the agreement signed by the developers with the State Government for development of the Plant:*

*Provided further 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 generating unit or transmission system as the case may be, shall not be allowed to be recovered at a later stage during the useful life and 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-II** 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 on1.4.2014 shall be worked out by deducting the cumulative depreciation as admitted by the Commission up to 31.3.2014 from the gross depreciable value of the assets.*

*(7) The generating company or the transmission license, as the case may be, shall submit the details of proposed capital expenditure during the fag end of the project (five years before the useful life) along with justification and proposed life extension. The Commission based on prudence check of such submissions shall approve the depreciation on capital expenditure during the fag end of the project.*

*(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."*

36. Regulation 53(2)(iii) of the 2014 Tariff Regulations provides as under:

*"**53. Special Provisions relating to Damodar Valley Corporation.** (1) Subject to clause (2), these regulations shall apply to determination of tariff of the projects owned by Damodar Valley Corporation (DVC).*

*(2) The following special provisions shall apply for determination of tariff of the projects owned by DVC:*
*(i)….*
*(ii)….*
*(iii) Depreciation: The depreciation rate stipulated by the Comptroller and Auditor General of India in terms of section 40 of the Damodar Valley Corporation Act, 1948 shall be applied for computation of depreciation of projects of DVC.*

37. The rate of depreciation has been arrived at by considering the weighted average of depreciation computed on the gross value of asset as on 31.3.2009 and at the rates approved by C&AG which works out to 6.146%. Further, the proportionate adjustment has been made to the cumulative depreciation corresponding to de-capitalization during the period 2014-19 for the purpose of tariff. The necessary calculations in support of depreciation are as under:-

***(₹ in lakh)***

| | **2014-15** | **2015-16** | **2016-17** | **2017-18** | **2018-19** |
|---|---|---|---|---|---|
| Opening Capital Cost | 161072.25 | 161504.39 | 161610.63 | 161676.71 | 161676.71 |
| Net Additional Capitalization | 432.14 | 106.23 | 66.08 | - | 340.93 |
| Closing Capital Cost | 161504.39 | 161610.63 | 161676.71 | 161676.71 | 162017.64 |
| Average capital cost | 161288.32 | 161557.51 | 161643.67 | 161676.71 | 161847.18 |
| Value of freehold land | 1663.03 | 1663.03 | 1663.03 | 1663.03 | 1663.03 |
| Depreciable value | 143662.76 | 143905.03 | 143982.58 | 144012.31 | 144165.73 |
| Balance depreciable value | 639.04 | 325.38 | 134.37 | 29.74 | 390.95 |
| **Depreciation** | **639.04** | **325.38** | **134.37** | **29.74** | **390.95** |
| Cumulative depreciation at | 143662.76 | 143905.03 | 143982.58 | 144012.31 | 144165.73 |

| | | | | | |
|---|---|---|---|---|---|
| the end of the period (before adjustment) | | | | | |
| Less: Cumulative depreciation adjustment on account of de-capitalization | 83.11 | 56.83 | 0.00 | 237.54 | - |
| Cumulative depreciation after adjustment (at the end of the period) | 143579.66 | 143848.20 | 143982.58 | 143774.78 | 144165.73 |

**Compensation Allowance**

38. Regulation 17(1) of the 2014 Tariff Regulations provides as under:

> ***"17. Compensation Allowance:*** *(1) In case of coal-based or lignite-fired thermal generating station or a unit thereof, a separate compensation allowance shall be admissible to meet expenses on new assets of capital nature which are not admissible under Regulation 14 of these regulations, and in such an event, revision of the capital cost shall not be allowed on account of compensation allowance but the compensation allowance shall be allowed to be recovered separately*
> *(2) The Compensation Allowance shall be allowed in the following manner from the year following the year of completion of 10, 15, or 20 years of useful life:"*

| Years of operation | Compensation Allowance (lakh/MW/year) |
|---|---|
| 0-10 | Nil |
| 11-15 | 0.20 |
| 16-20 | 0.50 |
| 21-25 | 1.00 |

39. The petitioner has claimed compensation allowance (unit-wise) to meet the expenses on new assets of capital nature including in the nature of minor assets as under:

***(₹ in lakh)***

| **2014-15** | **2015-16** | **2016-17** | **2017-18** | **2018-19** |
|---|---|---|---|---|
| 252.00 | 315.00 | 315.00 | 315.00 | 420.00 |

40. In terms of above regulations, all the units of the generating station are in commercial operation for more than 10 years from their respective date of CODs. Accordingly, the compensation allowance worked out is as under:

***(₹ in lakh)***

| **Description** | **Unit-I** | **Unit-II** | **Unit-III** |
|---|---|---|---|
| Capacity in MW | 210 | 210 | 210 |
| COD | 1-Mar-96 | 1-Mar-98 | 1-Sep-99 |
| Balance useful life as on 1.4.2014 (yrs.) | 6.92 | 8.92 | 10.00 |
| a) 10 years | 01-Mar-06 | 01-Mar-08 | 01-Sep-09 |
| b) 15 years | 01-Mar-11 | 01-Mar-13 | 01-Sep-14 |
| c) 20 years | 01-Mar-16 | 01-Mar-18 | 01-Sep-19 |
| 2014-15 | 105.00 | 105.00 | 42.00 |
| 2015-16 | 105.00 | 105.00 | 105.00 |
| 2016-17 | 105.00 | 105.00 | 105.00 |
| 2017-18 | 210.00 | 105.00 | 105.00 |
| 2018-19 | 210.00 | 105.00 | 105.00 |
| **Total** | **735.00** | **525.00** | **462.00** |

41. It is observed that the petitioner while computing the compensation allowance for Unit I has considered the COD of the unit as December 1997. However, the actual COD of Unit I is March, 1996. Therefore, Unit I completes 21 years of operation in 2017-18 as against the petitioner's submission of completion of 21 years by Unit-I in 2018-19. Based on this, compensation allowance of ₹735.00 lakh for Unit-I, ₹525.00 lakh for Unit-II and ₹462.00 lakh for Unit-III for 2014-19 is allowed.

**Operation &Maintenance Expenses**

42. Regulation 29 (1) (c) of the 2014 Tariff Regulations provides the year-wise O&M expense norms claimed for the generating station of the petitioner as under:

***(₹ in lakh)***

| **2014-15** | **2015-16** | **2016-17** | **2017-18** | **2018-19** |
|---|---|---|---|---|
| 15057.00 | 16002.00 | 17010.00 | 18081.00 | 19221.30 |

43. In addition to above, the petitioner has claimed additional O&M expenses towards Ash evacuation, Mega insurance, CISF security and Share of Subsidiary activity.

*(₹ in lakh)*

| | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 |
|---|---|---|---|---|---|
| Ash Evacuation | 2047.01 | 2251.71 | 2476.88 | 2724.57 | 2997.03 |
| Mega Insurance | 71.81 | 71.81 | 78.99 | 92.96 | 102.26 |
| CISF Security | 507.49 | 539.72 | 573.99 | 610.44 | 649.20 |
| Share of Subsidiary activity | 324.29 | 380.48 | 459.54 | 516.30 | 545.10 |
| **Total** | **2950.61** | **3243.72** | **3589.41** | **3944.27** | **4293.58** |

44. The petitioner was directed vide ROP dated 20.5.2016 to submit the basis of claiming the additional O&M expenses. In response, the petitioner vide affidavit dated 13.6.2016 has submitted that some items of additional O&M expenses like Mega Insurance, CISF security, share of subsidiary activities was allowed in order dated 9.7.2013 in Petition No. 269/GT/2012. It has also submitted that currently, for ash evacuation and CISF, the projection is done considering yearly increase of 10% and 6.35% respectively, over and above its claim during the period 2009-14 tariff. The petitioner has also submitted that for projection of Mega Insurance an amount of ₹71.81 lakh was submitted in Petition No. 465/GT/2014 for the years 2012-13 and 2013-14 as per audited accounts and for the year 2014-15, the same amount of premium applicable for the generating station has been considered based on the actual premium already paid. The petitioner has also submitted that for the year 2015-16, the same rate of premium has been considered keeping in view that the rate of premium would be at the same under the scope of the existing contract, i.e. 2014-15. It has stated that for the rest of the years i.e. 2016-17 to 2018-19, the projection has been made by increasing 10% per annum as contingency measure to strike a balance with high claim ratio, since the premium to be quoted by the underwriter is directly proportional to the incurred claim ratio. The petitioner has further submitted that for subsidiary activities, expenditure has

been projected considering yearly escalation of 6.35% per annum while the expenditure on account of soil conservation has been considered as per Soil conservation department.

45. We have considered the submissions of the petitioner. In the statement of reasons in support of the 2009 Tariff Regulations, it has been observed by the Commission as under:

> *"…29.39 Some of the generating stations have suggested that site specific factors should be taken into account and additional O&M expenses should be allowed. The Commission is of the view that the site specific norms in case of thermal generating stations may not serve much purpose as there is a set of advantages and disadvantages associated with every site, which average out, and the proposed norms are also based on multiple stations with wide geographical spread and therefore, such aspects are already factored in the norms…"*

46. In line with the above observations and in accordance with the 2014 Traiff Regulations, the additional O&M expenses claimed by the petitioner under the above head have not been allowed.

**Water Charges**

47. Regulation 29(2) of the 2014 Tariff Regulations provide as under:

> "*29.(2) The Water Charges and capital spares for thermal generating stations shall be allowed separately:*
> *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:*
>
> *Provided that the generating station shall submit the details of year wise actual capital spares consumed at the time of truing up with appropriate justification for incurring the same and substantiating that the same is not funded through compensatory allowance or special allowance or claimed as a part of additional capitalization or consumption of stores and spares and renovation and modernization"*

48. In terms of the above regulation, water charges are to be allowed based on water consumption depending upon type of plant, type of cooling water system etc., subject to prudence check of the details furnished by the petitioner. The petitioner has submitted that at present water charges have not been claimed for the generating station. However, it has sought liberty to approach the Commission as and when the same is billed by the Authority and paid by the petitioner. In view of the above submission, we grant liberty to the petitioner to claim water charges at the time of truing up and the same will be considered in accordance with law.

**Capital spares**

49. The petitioner has claimed capital spares on projection basis under Regulation 29(2) of the 2014 Tariff Regulations. However, the petitioner has also submitted that the actual year-wise capital spares along with adequate justification will be submitted at the time of truing up. In view of this, the claim of the petitioner has not been considered in this order. The claim of the petitioner, if any, at the time of truing-up, shall be considered on merits, after prudence check in terms of the provisions of the 2014 Tariff Regulations.

**Operational Norms**

50. The operational norms in respect of the generating station claimed by the petitioner are as under:

| | |
|---|---|
| Target Availability (%) | 83.00 |
| Heat Rate (kCal/kWh) | 2450.00 |
| Auxiliary Energy Consumption (%) | 9.00 |
| Specific Oil Consumption (ml/kWh) | 1.00 |

51. The operational norms claimed by the petitioner are discussed as under:

**Normative Annual Plant Availability Factor (NAPAF)**

52. Regulation 36 (A) (a) of the 2014 Tariff Regulations provides as under:

> *"(a) All Thermal generating stations, except those covered under clauses (b), (c), (d) & (e) - 85%.*
>
> *Provided that in view of the shortage of coal and uncertainty of assured coal supply on sustained basis experienced by the generating stations, the NAPAF for recovery of fixed charges shall be 83% till the same is reviewed.*
>
> *The above provision shall be reviewed based on actual feedback after 3 years from 01.04.2014."*

53. The petitioner has considered the Target Availability of 83% during 2014-19 due to inadequate regular supply of quality coal. However, no proper justification has been furnished by the petitioner substantiating the inadequacy of coal. The target availability of 83% as claimed by the petitioner has ben provisionally considered for the years 2014-15 to 2016-17. The petitioner is directed to submit the details on this count at the time of truing up of tariff of the generating station. However, for the years 2017-18 and 2018-19 the target availability of 85% has been considered in terms of the Regulation 36(A) (a) of the 2014 Tariff Regulations.

**Heat Rate (kCal/kWh)**

54. Regulation 36(C)(a) of the 2014 Tariff Regulations provides the Gross Station Heat Rate of 2450 kCal/kWh for existing coal based thermal generating stations of 210 MW sets whose CODs were before 1.4.2009. The generating station was declared under commercial operation during the period 1996-99. Hence, the heat rate considered by the petitioner as per norms is in order and is allowed.

**Auxiliary Energy Consumption**

55. Regulation 36(E)(a) of the 2014 Tariff Regulations provides Auxiliary Energy Consumption of 8.5% for coal based generating stations of 210 MW sets with Natural

Draft cooling tower or without cooling tower with. It further provides that for thermal generating stations with induced draft cooling towers, the norms shall be further increased by 0.5%. The petitioner has claimed Auxiliary Energy Consumption of 9.00% during the period 2014-19. Accordingly, the Auxiliary Energy Consumption considered is as per the norms and the same is allowed.

**Specific fuel Oil Consumption**

56. Regulation 36(D)(c) of the 2014 Tariff Regulations provides secondary fuel oil consumption of 1.00 ml/kWh for coal-based generating stations of the petitioner. Accordingly, the secondary fuel oil consumption considered by the petitioner as per norms is in order and is allowed.

**Interest on working capital**

57. Sub-section (1) of clause (1) of Regulation 28 of the 2014 Tariff Regulations provides as under:

> *"28. Interest on Working Capital:*
> *(1) The working capital shall cover*
> *(a) Coal-based/lignite-fired thermal generating stations*
> *(i) Cost of coal or lignite and limestone towards stock, if applicable, for 15 days for pit-head generating stations and 30 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) Cost of coal or lignite and limestone for 30 days 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 specified in regulation 29;*
> *(v) Receivables equivalent to two months of capacity charges and energy charges for sale of electricity calculated on the normative annual plant availability factor; and*
> *(vi) Operation and maintenance expenses for one month.*

## Fuel Components and Energy Charges in working capital

58. The petitioner has claimed cost for fuel components in working capital based on "as received" GCV of coal procured for the preceding three months of January, 2014, February, 2014 and March, 2014 and secondary fuel oil for the preceding three months of January, 2014, February, 2014 and March, 2014, as under:

***(₹ in lakh)***

| | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 |
|---|---|---|---|---|---|
| Cost of Coal/Lignite- 2 months | 17431.46 | 17431.46 | 17431.46 | 17431.46 | 17431.46 |
| Cost of Main Secondary Fuel Oil- 2 months | 429.16 | 430.33 | 429.16 | 429.16 | 429.16 |
| **Total** | **17860.62** | **17861.80** | **17860.62** | **17860.62** | **17860.62** |

59. Accordingly, the fuel components in the working capital has been computed based on the price and GCV of coal & secondary fuel oil procured and burnt for the preceding three months of January, 2014, February, 2014 and March, 2014 and has been allowed as under:

***(₹ in lakh)***

| | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 |
|---|---|---|---|---|---|
| Cost of Coal/Lignite- 2 months | 17673.57 | 17721.99 | 17673.57 | 18099.44 | 18099.44 |
| Cost of Main Secondary Fuel Oil- 2 months | 429.16 | 430.33 | 429.16 | 439.50 | 439.50 |
| **Total** | **18102.72** | **18152.32** | **18102.72** | **18538.93** | **18538.93** |

## Maintenance spares

60. The petitioner has claimed maintenance spares in working capital as under:

***(₹ in lakh)***

| 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 |
|---|---|---|---|---|
| 3011.40 | 3200.40 | 3402.00 | 3616.20 | 3844.26 |

61. The petitioner has claimed maintenance spares as per the 2014 Tariff Regulations and the same has been considered.

**Receivables**

62. Receivables equivalent to two months of capacity charge and energy charge for sale of electricity has been calculated on normative plant availability factor. Accordingly, receivables have been worked out on the basis of two months of fixed and energy charges (based on primary fuel only) as shown below:

***(₹ in lakh)***

| | **2014-15** | **2015-16** | **2016-17** | **2017-18** | **2018-19** |
|---|---|---|---|---|---|
| Variable Charges -2 months | 18102.73 | 18152.32 | 18102.73 | 18538.94 | 18538.94 |
| Fixed Charges - 2 months | 5268.59 | 5398.13 | 5542.58 | 5752.65 | 6018.13 |
| Total | **23371.32** | **23550.45** | **23645.31** | **24291.58** | **24557.07** |

**O&M expenses for 1 month**

63. O & M expenses for 1 month as claimed by the petitioner for the purpose of working capital are allowed as under:

***(₹ in lakh)***

| **2014-15** | **2015-16** | **2016-17** | **2017-18** | **2018-19** |
|---|---|---|---|---|
| 1254.75 | 1333.50 | 1417.50 | 1506.75 | 1601.78 |

**Rate of interest on working capital**

64. Clause (3) of Regulation 28 of the 2014 Tariff Regulations provides as under:

*"Interest on working Capital: (3) Rate of interest on working capital shall be on normative basis and shall be considered as the bank rate as on 1.4.2014 or as on 1st April of the year during the tariff period 2014-15 to 2018-19 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."*

65. In terms of the above regulations, SBI PLR of 13.50% (Bank rate 10.00% + 350 bps) has been considered for the purpose of calculating interest on working capital. Interest on working capital has been computed as under:

*(₹ in lakh)*

| | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 |
|---|---|---|---|---|---|
| Coal Stock- 2 months | 17673.57 | 17721.99 | 17673.57 | 18099.44 | 18099.44 |
| Oil stock -2 months | 429.16 | 430.33 | 429.16 | 439.50 | 439.50 |
| O & M expenses | 1254.75 | 1333.50 | 1417.50 | 1506.75 | 1601.78 |
| Spares | 3011.40 | 3200.40 | 3402.00 | 3616.20 | 3844.26 |
| Receivables | 23371.32 | 23550.45 | 23645.31 | 24291.58 | 24557.07 |
| Total Working Capital | **45740.19** | **46236.67** | **46567.53** | **47953.47** | **48542.03** |
| Rate of Interest | 13.500% | 13.500% | 13.500% | 13.500% | 13.500% |
| **Total Interest on Working capital** | **6174.93** | **6241.95** | **6286.62** | **6473.72** | **6553.17** |

**Other Elements of tariff**

66. In addition, the petitioner has claimed expenditure towards Pension & Gratuity contribution and Cost of Common Offices. We now discuss and decide these elements as detailed below:

**Pension & Gratuity Contribution**

67. The petitioner has claimed pension and gratuity contribution for the period 2014-19 and has submitted that it has considered the actuarial valuation as on 31.3.2014, for liability towards pension and gratuity fund and projected P&G liability for the tariff period 2014-19. It is observed that the liability claimed by the petitioner pertains to the period 2009-14 and does not pertain to the tariff period 2014-19. In this regard it is observed that the Commission in its order dated 29.7.2016 in Petition No. 465/GT/2014, Para No. 107, has disallowed the claim of the petitioner and has observed as under:

> *"the Commission in order dated 9.7.2013 in Petition No. 269/GT/2012 had allowed the recovery of 40% of the difference in liability as per Actuarial valuation 31.3.2009 and 31.3.2006 in five equal installments. The Commission in the said*

*order had allocated the same on petitioner's generating stations except Mejia Unit 5 & 6. The Commission has revised the allocation and has also allocated share of P&G liability to Mejia Unit 5 and 6 on the basis of capital cost of ₹205946.66 lakh admitted by it as on 31.3.2009. It is observed that the O&M expenses norms specified by the Commission under the 2009 Tariff Regulations applicable for the period 2009-14 had taken into consideration the P&G liability as part of O&M expenses. The statement of reason of the 2009 Tariff Regulations, at para 20.3 clearly states that O&M cost for purpose of tariff covers expenditure incurred on the employees including gratuity, CPF, medical, education allowances etc. The expenses on account of CPF considered in Public Sector Undertakings take care of pension liability applicable in Government Undertaking."*

68. Since the claim of the petitioner relates to the tariff period 2009-14 which had not been allowed, the claim of the petitioner has not been considered in this order.

**Common Office Expenditure**

69. The petitioner has submitted that the expenditure pertaining to common office expenditure such as Direction Office, Central Office, Other Offices, Subsidiary activities, IT centre and R&D caters services to all generating stations as well as composite transmission and distribution systems. It has also submitted that the total cost of common assets computed is based on capital cost as on 31.3.2014 as per Audited Accounts for the year 2013-14 which have been apportioned based on the opening cost of all generation and T&D system as on 1.4.2014 and apportionment thereof to each of the productive generating station in proportion to their installed capacities in MW as per directive of the Commission vide its order dated 29.7.2013 in Petition No. 268/GT/2013. Accordingly, the additional capital expenditure claimed by the petitioner towards various offices is as under.

***(₹ in lakh)***

| | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 |
|---|---|---|---|---|---|
| Direction office | - | - | - | - | - |
| Subsidiary activities | - | - | - | - | - |
| Other offices | - | - | - | - | - |

| | | | | | |
|---|---|---|---|---|---|
| R&D | - | - | - | - | - |
| IT | 698.90 | 685.00 | 4508.00 | 4508.00 | 300.00 |
| Central Office | - | - | - | - | - |
| **Total expenditure** | **698.90** | **685.00** | **4508.00** | **4508.00** | **300.00** |

70. The petitioner has computed Return on Equity, Interest on Loan and Depreciation on the Common Assets for the period 2014-19 based on the opening capital cost as on 1.4.2014 and projected additional capitalization during the period 2014-19 towards different offices and has apportioned them to each generating stations and T&D system in proportion to the capital cost approved as on 31.3.2014. Further, the petitioner has allocated the cost of common offices among generating stations on the basis of installed capacity. Accordingly, the annual fixed charges claimed towards Common Assets are as under:-

***(₹ in lakh)***

| | **2014-15** | **2015-16** | **2016-17** | **2017-18** | **2018-19** |
|---|---|---|---|---|---|
| Direction office | 181.64 | 83.17 | 60.36 | 60.36 | 60.36 |
| Subsidiary activities | 169.44 | 89.54 | 58.91 | 58.91 | 58.91 |
| Other offices | 126.07 | 122.24 | 122.24 | 105.32 | 48.81 |
| R&D | 280.10 | 270.44 | 260.17 | 253.34 | 241.98 |
| IT | 100.99 | 219.39 | 667.10 | 1497.65 | 1893.35 |
| Central Office | 554.87 | 532.74 | 509.91 | 487.66 | 487.66 |
| **Total expenditure** | **1413.11** | **1317.51** | **1678.69** | **2463.24** | **2791.07** |

***(₹ in lakh)***

| | **2014-15** | **2015-16** | **2016-17** | **2017-18** | **2018-19** |
|---|---|---|---|---|---|
| Generating Stations claimed | 1327.15 | 1237.37 | 1576.58 | 2313.41 | 2621.29 |
| T&D claimed | 85.96 | 80.14 | 102.11 | 149.83 | 169.78 |
| **Total** | **1413.11** | **1317.51** | **1678.69** | **2463.24** | **2791.07** |

***(₹ in lakh)***

| | **2014-15** | **2015-16** | **2016-17** | **2017-18** | **2018-19** |
|---|---|---|---|---|---|
| Mejia TPS Unit-I to III | 131.52 | 122.62 | 156.24 | 229.26 | 259.77 |

71. In response to the directions of the Commission, it is observed that the petitioner has not submitted any details with regard to additional capitalization claimed under IT offices. In view of this, the additional capitalization claimed under IT office is not allowed. However, the petitioner is granted liberty to submit detailed justification on the said claim at the time of revision of tariff based on truing-up exercise.

72. It is noticed that the claim of the petitioner for common office expenditure is in line with the Commission's order dated 6.8.2009 in Petition No. 66/2005 and order dated 8.5.2013 in Petition No. 272/2010. Accordingly, the annual fixed charges for Common offices have been worked out by considering as the admitted opening capital cost as on 1.4.2014 in order dated 29.7.2016 in Petition No. 465/GT/2014. The annual fixed charges of Common offices as worked out have been apportioned to the generating stations / T&D systems as considered as on 31.3.2014.

73. Accordingly, the fixed charges have been computed as per the admitted capital cost as on 1.4.2014 (as approved in order dated 29.7.2016 in 465/GT/2014) and has been allocated to various generating stations as under.

***(₹ in lakh)***

| | **2014-15** | **2015-16** | **2016-17** | **2017-18** | **2018-19** |
|---|---|---|---|---|---|
| Depreciation | 438.37 | 390.47 | 331.22 | 331.22 | 331.22 |
| Interest on loan | 130.32 | 105.00 | 93.73 | 92.63 | 81.03 |
| Return on Equity | 725.94 | 725.94 | 725.94 | 725.94 | 725.94 |
| **Total** | **1294.63** | **1221.42** | **1150.90** | **1149.80** | **1138.20** |

***(₹ in lakh)***

| | **Capital cost as on 1.4.2014** | **2014-15** | **2015-16** | **2016-17** | **2017-18** | **2018-19** |
|---|---|---|---|---|---|---|
| Entire generating station | 574165.23 | 1121.21 | 1057.81 | 996.73 | 995.78 | 985.74 |
| T&D | 88805.81 | 173.42 | 163.61 | 154.16 | 154.02 | 152.46 |

| Total | 662971.04 | 1294.63 | 1221.42 | 1150.90 | 1149.80 | 1138.20 |
|---|---|---|---|---|---|---|

*(₹ in lakh)*

| | Capacity (MW) | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 |
|---|---|---|---|---|---|---|
| Bokaro TPS | 630 | 112.91 | 104.83 | 98.78 | 98.68 | 97.69 |
| Chandrapura TPS | 390 | 69.90 | 64.89 | 61.15 | 61.09 | 60.47 |
| Durgapur TPS | 350 | 62.73 | 58.24 | 54.88 | 54.82 | 54.27 |
| **Mejia TPS #1 to 3** | **630** | **112.91** | **104.83** | **98.78** | **98.68** | **97.69** |
| Mejia TPS #4 | 210 | 37.64 | 34.94 | 32.93 | 32.89 | 32.56 |
| Mejia TPS #5 & 6 | 500 | 89.61 | 83.20 | 78.39 | 78.32 | 77.53 |
| Maithon HS | 63.20 | 11.33 | 10.52 | 9.91 | 9.90 | 9.80 |
| Panchet HS | 80 | 14.34 | 13.31 | 12.54 | 12.53 | 12.40 |
| Tilaiya HS | 4 | 0.72 | 0.67 | 0.63 | 0.63 | 0.62 |
| **Total** | **2857.20** | **512.09** | **475.42** | **447.98** | **447.55** | **443.03** |
| Chandrapura TPS #7 & 8 | 500 | 89.61 | 83.20 | 78.39 | 78.32 | 77.53 |
| Mejia TPS 7 & 8 | 1000 | 179.23 | 166.39 | 156.79 | 156.64 | 155.06 |
| Durgapur Steel TPS # 1 & 2 | 1000 | 179.23 | 166.39 | 156.79 | 156.64 | 155.06 |
| Koderma TPS | 1000 | 161.06 | 166.39 | 156.79 | 156.64 | 155.06 |
| **Total** | **3500** | **609.13** | **582.38** | **548.76** | **548.23** | **542.70** |
| **Grand Total** | | **1121.21** | **1057.81** | **996.73** | **995.78** | **985.74** |

74. Accordingly, annual fixed charges approved for the generating station for the period from 1.4.2014 to 31.3.2019 is summarized as under:

*(₹ in lakh)*

| | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 |
|---|---|---|---|---|---|
| Depreciation | 639.04 | 325.38 | 134.37 | 29.74 | 390.95 |
| Interest on Loan | 0.00 | 0.00 | 0.00 | 0.00 | 1.88 |
| Return on Equity | 9488.59 | 9504.43 | 9509.50 | 9511.44 | 9521.47 |
| Interest on Working Capital | 6174.93 | 6241.95 | 6286.62 | 6473.72 | 6553.17 |
| O&M Expenses | 15057.00 | 16002.00 | 17010.00 | 18081.00 | 19221.30 |
| Compensation Allowance | 252.00 | 315.00 | 315.00 | 420.00 | 420.00 |
| **Sub-Total** | **31611.56** | **32388.75** | **33255.49** | **34515.89** | **36108.78** |
| Share of Common Office Expenses | 112.91 | 104.83 | 98.78 | 98.68 | 97.69 |

| | | | | | |
|---|---|---|---|---|---|
| Additional O&M on account of Ash Evacuation, Mega Insurance, CISF Security and Share of subsidiary activities | - | - | - | - | - |
| Share of Pension & Gratuity Contribution | - | - | - | - | - |
| **Sub-Total** | **112.91** | **104.83** | **98.78** | **98.68** | **97.69** |
| **Total Annual Fixed Charges** | **31724.47** | **32493.58** | **33354.26** | **34614.58** | **36206.46** |

**Energy Charge Rate (ECR)**

75. Clause (6) sub-clause (a) of Regulation 30 of the 2014 Tariff Regulations provides for computation and payment of Capacity Charge and Energy Charge for thermal generating stations:

> *"6. Energy charge rate (ECR) in Rupees per kWh on ex-power plant basis shall be determined to three decimal place in accordance with the following formulae*:
> *(a) For coal based and lignite fired stations*
> *ECR = {(GHR – SFC x CVSF) x LPPF / CVPF+SFC x LPSFi + LC x LPL} x 100 / (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.*
> *(b)….*
> *(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.*
> *GHR = Gross station heat rate, in kCal per kWh.*
> *LC = Normative limestone consumption in kg per kWh.*
> *LPL = Weighted average landed price of limestone in Rupees per kg.*
> *LPPF = Weighted average landed price 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 price 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 Price of Secondary Fuel in Rs./ml during the month."*

76. The petitioner has claimed an Energy Charge Rate (ECR) of 260.574 paise/kWh considering the normative transit and handling losses of 0.8% for coal supplied through Railway system. Accordingly, the base energy charge of 260.574 paise/kWh determined

based on the price and GCV of fuel for the preceding three months and calculated in accordance with the 2014 Tariff Regulations is allowed as under:

| Description | Unit | 2014-19 |
|---|---|---|
| Capacity | MW | 3x210 MW |
| Gross Station Heat Rate | Kcal/kWh | 2450.00 |
| Auxiliary Energy Consumption | % | 9.0% |
| Specific Fuel Oil Consumption | ml/kWh | 1.00 |
| Weighted Average GCV of Oil | Kcal/L | 9685.35 |
| Weighted Average GCV of Coal | kCal/kg | 3262.82 |
| Weighted Average Price of Coal | ₹/MT | 3095.28 |
| Weighted Average Price of Oil | ₹/ml | 0.0562 |
| **Rate of Energy Charge ex-bus per kWh** | **Paise/kWh** | **260.574** |

**Application Fee and Publication Expenses**

77. The petitioner has sought the reimbursement of filing fee and also the expenses incurred towards publication of notices for application of tariff for the period 2014-19. The petitioner has deposited the filing fees for the period 2014-15 in terms of the provisions of the Central Electricity Regulatory Commission (Payment of Fees) Regulations, 2012. Accordingly, in terms of Regulation 52 of the 2014 Tariff Regulations and in line with the decision in Commission's order dated 5.1.2016 in Petition No. 232/GT/2014, we direct that the petitioner shall be entitled to recover pro rata, the filing fees and the expenses incurred on publication of notices for the period 2014-15 directly from the respondents on submission of documentary proof. The filing fees for the remaining years of the tariff period 2015-19 shall be recovered pro rata after deposit of the same and production of documentary proof.

78. The annual fixed charges determined as above are subject to truing-up in terms of Regulation 8 of the 2014 Tariff Regulations.

79. Petition No. 347/GT/2014 is disposed of in terms of the above.

| | |
|---|---|
| Sd/- | Sd/- |
| **(Dr. M. K. Iyer)** | **(A.S. Bakshi)** |
| **Member** | **Member** |