

**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Petition No. 481/TT/2014**

**Coram:**

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

**Date of Hearing : 21.12.2015  
Date of Order : 29.01.2016**

**In the matter of:**

Truing up of transmission tariff of 2009-14 tariff period under Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009, and determination of transmission tariff for 2014-19 tariff period under Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 of combined assets of 400 kV Vindhyachal-Korba S/C transmission line (**Asset-I**), 400 kV Itarsi-Indore S/C transmission line-1 (**Asset-II**), 400 kV Vindhyachal-Jabalpur D/C transmission line-1 (**Asset-III**), 400 kV Jabalpur-Itarsi D/C transmission line-1 (**Asset-IV**), and 400 kV Indore-Asoj S/C transmission line-2 (**Asset-V**) under "Vindhyachal Stage-I transmission system" in Western Region under Regulation 86 of Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999.

**And in the matter of:**

Power Grid Corporation of India Ltd.  
'SAUDAMINI', Plot No-2,  
Sector-29, Gurgaon -122 001 (Haryana).

.....**Petitioner**

**Versus**

1. Madhya Pradesh Power Management Company Ltd.  
Shakti Bhawan, Rampur, Jabalpur-482008
2. Maharashtra State Electricity Distribution Co. Ltd.  
Prakashgad, 4<sup>th</sup> Floor, Bandra(East), Mumbai-400052
3. Gujarat UrjaVikas Nigam Ltd.  
Sardar Patel VidyutBhawan,  
Race Course Road  
Vadodara- 390007



4. Electricity Department  
Govt. of Goa,  
Vidyut Bhawan, Panaji- 403001
5. Electricity Department  
Administration of Daman & Diu,  
Daman- 396210
6. Electricity Department  
Administration of Dadra Nagar Haveli,  
U.T., Silvassa- 396230
7. Chhattisgarh State Electricity Board  
P.O Sunder Nagar, Dangania, Raipur  
Chhatisgaarh-492013
8. Madhya Pradesh Audyogik Kendra Vikas Nigam (Indore) Ltd.  
3/54, Press Complex, Agra-Bombay road  
Indore-452008

.....Respondents

The following were present:

For Petitioner:           Shri S.K. Venkatesan, PGCIL  
                                  Shri M.M. Mondal, PGCIL  
                                  Shri Avinash M. Pavgi, PGCIL  
                                  Shri Piyush Awasthi, PGCIL  
                                  Shri Anshul Garg, PGCIL  
                                  Shri Rakesh Prasad, PGCIL  
                                  Shri S.S. Raju, PGCIL  
                                  Shri J. Majumdar, PGCIL  
                                  Shri Shashi Bhushan, PGCIL  
                                  Shri Mohd. Mohsin, PGCIL  
                                  Shri S.K. Niranjana, PGCIL

For Respondent:       None

### **ORDER**

The present petition has been filed by Power Grid Corporation of India Ltd. ('the petitioner') for trueing up of capital expenditure and tariff for Vindhyachal Stage-I transmission system in Western Region (hereinafter referred as



“transmission asset”) under Regulation 6 of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009 (hereinafter referred to as “the 2009 Tariff Regulations”) based on actual expenditure for the period 1.4.2009 to 31.3.2014, and for determination of tariff under Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 (hereinafter referred to as “the 2014 Tariff Regulations”) for the period from 1.4.2014 to 31.3.2019.

2. The respondents are distribution licensees or centralised power procurement companies of States, who are procuring transmission service from the petitioner, mainly beneficiaries of Western Region.

3. The petitioner has served the petition to the respondents and notice of this application has been published in the newspaper in accordance with Section 64 of the Electricity Act, 2003 (“the Act”). No comments have been received from the public in response to the notices published by the petitioner under Section 64 of the Act. The hearing in this matter was held on 21.12.2015. Having heard the representatives of the petitioner and perused the material on record, we proceed to dispose of the petition.

4. The brief facts of the case are as follows:

- a. The tariff for the period up to 31.3.2001 was approved by the Central Government under notification dated 20.7.1998, which was revised by notification dated 14.5.1999 for the combined asset at a capital cost of ₹26988.25 lakh.



- b. Transmission charges for the transmission asset for the period 1.4.2004 to 31.3.2009 was initially approved by the Commission vide its order dated 14.12.2005 in Petition No. 111/2004. Subsequently, the transmission charges as approved were revised, vide order dated 14.2.2008, due to implementation of the Hon'ble APTEL's Judgment dated 4.10.2006, in Appeal No. 135/2005.
- c. The tariff for the 2009-14 tariff period was allowed vide order dated 1.8.2011 in Petition No. 275/2010 in accordance with the 2009 Tariff Regulations. The tariff allowed vide order dated 1.8.2011 for the tariff period 2009-14 is as under:-

| (₹ in lakh)                 |                |                |                |                |                |
|-----------------------------|----------------|----------------|----------------|----------------|----------------|
| Particulars                 | 2009-10        | 2010-11        | 2011-12        | 2012-13        | 2013-14        |
| Depreciation                | 402.98         | 404.08         | 405.26         | 405.26         | 413.61         |
| Interest on Loan            | 0.00           | 0.00           | 0.00           | 0.00           | 0.00           |
| Return on Equity            | 2358.91        | 2359.8         | 2360.7         | 2360.7         | 2366.05        |
| Interest on Working Capital | 122.65         | 126.41         | 130.40         | 134.56         | 139.23         |
| O & M Expenses              | 1301.19        | 1375.41        | 1454.40        | 1537.62        | 1625.18        |
| <b>Total</b>                | <b>4185.73</b> | <b>4265.70</b> | <b>4350.75</b> | <b>4438.14</b> | <b>4544.07</b> |

- d. The Commission, in its order dated 1.8.2011 in Petition No. 275/2010, has admitted capital cost of ₹27034.45 lakh as on 31.3.2009 and approved additional capital expenditure of ₹34.09 lakh and ₹204.19 lakh during 2010-11 and 2013-14, respectively.
- e. The MAT rate applicable as on 2008-09 was considered to arrive at rate of return on equity for the tariff period 2009-14, which is required to be adjusted as per the actual MAT rate applicable for the respective year at the time of truing up of tariff for 2009-14 tariff period.
- f. The instant petition was filed on 11.12.2014.



## **TRUING UP OF ANNUAL FIXED CHARGES FOR TARIFF PERIOD 2009-14**

5. The truing up of tariff for 2009-14 tariff period has been determined as discussed below.

### **Capital Cost**

6. The petitioner has claimed admitted capital cost of ₹27034.45 lakh as on 31.3.2009 for the purpose of tariff.

7. Last proviso to Clause (2) of Regulation 7 of the 2009 Tariff Regulations provides that:-

“Provided also that in case of the existing projects, the capital cost admitted by the Commission prior to 1.4.2009 duly trued up by excluding un-discharged liability, if any, as on 1.4.2009 and the additional capital expenditure projected to be incurred for the respective year of the tariff period 2009-14, as may be admitted by the Commission, shall form the basis for determination of tariff”.

8. The capital cost admitted as on 31.3.2009 vide order dated 14.2.2008 has been considered as the opening capital cost as on 1.4.2009 for determination of tariff in accordance with Regulation 7 of the 2009 Tariff Regulations. The admitted capital cost of ₹27034.45 lakh as on 1.4.2009 has been considered to work out the trued up tariff for the tariff period 2009-14.

### **Additional Capital Expenditure**

9. The petitioner has claimed additional capitalisation of ₹124.88 lakh, during 2010-11 towards tower strengthening work of Itarsi-Indore Ckt-I transmission line, which became necessary due to change in wind zone. The additional



capitalisation has been claimed in accordance with Clause 2 of Regulation 9 of the 2009 Tariff Regulations.

10. The relevant section of Clause 2 of Regulation 9 of the 2009 Tariff Regulations provides as follows:-

“(2) The capital expenditure incurred on the following counts after the cut-off date may, in its discretion, be admitted by the Commission, subject to prudence check:

.....

(v) 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 of switchyard equipment due to increase of fault level, emergency restoration system, insulators cleaning infrastructure, replacement of damaged equipment not covered by insurance and any other expenditure which has become necessary for successful and efficient operation of transmission system:

Provided that the details of works included in the original scope of work along with estimates of expenditure, undischarged liabilities and the works deferred for execution shall be submitted along with the application for determination of tariff.”

11. The Commission vide its order dated 1.8.2011 in Petition No. 275/2010 had approved additional capitalisation of ₹34.09 lakh for the year 2010-11 and ₹204.19 lakh for the year 2013-14. The total additional capitalisation approved for 2009-14 tariff period was ₹238.28 lakh. The Commission allowed additional capital expenditure amounting to ₹34.09 lakh during 2010-11 towards new lightning arresters (LAs) for reactors and ₹204.19 lakh during 2013-14 for carrying out tower strengthening works for transmission asset, which became necessary due to change in the wind zone.

12. The petitioner has submitted the Auditor’s Certificate to substantiate the actual additional capital expenditure incurred in 2009-14. As the actual additional capitalisation of ₹124.88 lakh during 2010-11 is less than the allowed additional



capitalisation of ₹204.19 lakh towards tower strengthening, the same is allowed under Clause 2(v) of Regulation 9 of the 2009 Tariff Regulations.

13. The total capital cost of the transmission asset including additional capitalisation incurred during 2009-14 is shown below:-

| Particulars  | Capital cost as on 31.3.2009 | Additional Capital Expenditure (2009-14) |        |       |       |        |               | Capital Cost as on 31.3.2014 |
|--|------------------------------|--|--------|-------|-------|--------|---------------|------------------------------|
|  |                              | 09-10                                    | 10-11  | 11-12 | 12-13 | 13-14  | Total         |                              |
| Approved in order dated 1.8.2011 in Petition No. 275/2010    | <b>27034.45</b>              | 0.00                                     | 34.09  | 0.00  | 0.00  | 204.19 | <b>238.28</b> | <b>27272.73</b>              |
| Actual incurred as per Auditor's Certificate dated 30.9.2014 | <b>27034.45</b>              | 0.00                                     | 124.88 | 0.00  | 0.00  | 0.00   | <b>124.88</b> | <b>27159.33</b>              |

### **Debt: Equity**

14. Clause 2 of Regulation 12 of the 2009 Tariff Regulations provides as follows:-

“In case of the generating station and the transmission system declared under commercial operation prior to 1.4.2009, debt:equity ratio allowed by the Commission for determination of tariff for the period ending 31.3.2009 shall be considered.”

15. The petitioner has claimed trued up Annual Fixed Charge based on debt:equity ratio of 50.09:49.91 as on 31.03.2009, considered by the Commission in its order dated 1.8.2011 in Petition No. 275/2010. The admitted debt:equity ratio of 50.09:49.91 as on 31.3.2009 has been considered as opening debt:equity ratio as on 1.4.2009 for the purpose of truing up of the approved tariff for tariff period 2009-14 as given under:-



| Funding      | Amount (₹ in lakh) | (%)           |
|--------------|--------------------|---------------|
| Debt         | 13540.32           | 50.09         |
| Equity       | 13494.13           | 49.91         |
| <b>Total</b> | <b>27034.45</b>    | <b>100.00</b> |

16. With respect to additional capitalization, the petitioner has submitted that the additional capitalization has been funded through debt:equity ratio of 70:30 for 2010-11. The actual loan deployed for all the years are at 70% and balance 30% amount has been deployed as equity. The petitioner was directed to submit an undertaking mentioning the actual equity infused for additional capitalization in the 2009-14 tariff period. The petitioner vide affidavit dated 28.12.2015 has submitted that actual equity infused for the additional capitalisation during 2009-14 tariff period is not less than 30% for the asset covered under the transmission system.

17. Debt-equity ratio is allowed in accordance with Clause 2 of Regulation 12 of the 2009 Tariff Regulations. The overall debt equity as on 31.3.2014 including additional capitalization is as under:-

| Funding      | Amount (₹ in lakh) | (%)           |
|--------------|--------------------|---------------|
| Debt         | 13627.74           | 50.18         |
| Equity       | 13531.59           | 49.82         |
| <b>Total</b> | <b>27159.33</b>    | <b>100.00</b> |

### **Interest on Loan (“IOL”)**

18. The petitioner has not claimed any interest on loan for 2009-14 tariff period, as the complete loan has already been repaid. Consequent to the additional capital expenditure during 2010-11, there is an addition to the normative loan amounting to ₹87.42 lakh during 2010-11. The Commission observes that the petitioner has not claimed any interest on loan as the





normative loan amount added during 2010-11 is less than the depreciation allowed for that year and therefore, the same is getting repaid in the same year. The petitioner has therefore, not claimed any IOL during 2010-11. Accordingly, IOL has been considered as NIL for the purpose of truing up of tariff for 2009-14 period.

### **Return on Equity (“ROE”)**

19. Clause (3), (4) and (5) of the Regulation 15 of the 2009 Tariff Regulations provides as follows:-

“(3) The rate of return on equity shall be computed by grossing up the base rate with the Minimum Alternate/Corporate Income Tax Rate for the year 2008-09, as per the Income Tax Act, 1961, as applicable to the concerned generating company or the transmission licensee, as the case may be.

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

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

Where “t” is the applicable tax rate in accordance with clause (3) of this regulation.

(5) The generating company or the transmission licensee, as the case may be, shall recover the shortfall or refund the excess Annual Fixed Charge on account of Return on Equity due to change in applicable Minimum Alternate/Corporate Income Tax Rate as per the Income Tax Act, 1961 (as amended from time to time) of the respective financial year directly without making any application before the Commission:

Provided further that Annual Fixed Charge with respect to the tax rate applicable to the generating company or the transmission licensee, as the case may be, in line with the provisions of the relevant Finance Acts of the respective year during the tariff period shall be trued up in accordance with Regulation 6 of these regulations.”

20. The petitioner has submitted that MAT rate of 11.330% applicable for 2008-09 was considered in the order dated 1.8.2011. However, for truing up purpose, the computation of ROE for the tariff period 2009-14 has been done on



the basis of actual MAT rate applicable during 2009-14. The petitioner has submitted the variation in the MAT rate during 2009-14 as per the Finance Act of the relevant year for the purpose of grossing up of ROE, as below:-

| Particulars | MAT Rate | Grossed up ROE (Base rate/(1-t)) |
|-------------|----------|----------------------------------|
| 2009-10     | 16.995 % | 18.674%                          |
| 2010-11     | 19.931 % | 19.358%                          |
| 2011-12     | 20.008 % | 19.377%                          |
| 2012-13     | 20.008 % | 19.377%                          |
| 2013-14     | 20.961 % | 19.610%                          |

21. Accordingly, the ROE as trued up is shown in the table below:-

| Particulars                        | (₹ in lakh) |         |         |         |         |
|------------------------------------|-------------|---------|---------|---------|---------|
|                                    | 2009-10     | 2010-11 | 2011-12 | 2012-13 | 2013-14 |
| Approved vide order dated 1.8.2011 | 2358.91     | 2359.80 | 2360.70 | 2360.70 | 2366.05 |
| As claimed by the petitioner       | 2519.89     | 2615.82 | 2622.01 | 2622.01 | 2653.54 |
| Allowed after trued up             | 2519.89     | 2615.82 | 2622.02 | 2622.02 | 2653.54 |

The return on equity allowed in the instant order is more than the return on equity allowed vide order 1.8.2011 due to increase in the applicable MAT rate for the purpose of grossing up of base rate of return on equity.

### **Depreciation**

22. Clause (4) of Regulation 17 of the 2009 Tariff Regulations provides as follows:-

**"17. Depreciation:**

...

(4) Depreciation shall be calculated annually based on Straight Line Method and at rates specified in Appendix-III 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 date of commercial operation shall be spread over the balance useful life of the assets."



23. The Commission, in its order dated 1.8.2011, has worked out the depreciation in accordance with Regulation 17 of the 2009 Tariff Regulations considering balance useful life of the asset as 15 years for 2009-10 and depreciation was spread over the balance useful life. Accordingly, the same approach has been continued in the instant order. With regard to de-capitalization, the petitioner has adjusted entire depreciable value corresponding to the de-capitalization and hence same has been considered to work out remaining depreciable value.

24. The depreciation for the tariff period 2009-14 has been worked out in accordance with Regulation 17 of the 2009 Tariff Regulations based on admitted capital expenditure and additional capitalisation as under:-

| Particulars                        | (₹ in lakh) |         |         |         |         |
|------------------------------------|-------------|---------|---------|---------|---------|
|                                    | 2009-10     | 2010-11 | 2011-12 | 2012-13 | 2013-14 |
| Approved vide order dated 1.8.2011 | 402.98      | 404.08  | 405.26  | 405.26  | 413.61  |
| As claimed by the petitioner       | 402.98      | 406.99  | 411.32  | 411.33  | 411.31  |
| Allowed after trued up             | 402.98      | 407.00  | 411.32  | 411.32  | 411.32  |

25. The depreciation allowed in the instant order for 2010-11 to 2012-13 is more than the depreciation allowed vide order 1.8.2011 due to increased additional capitalization for 2010-11 against the additional capitalisation allowed by the Commission in the said order. The total actual additional capitalisation of ₹124.88 lakh is less than the total approved additional capitalisation of ₹238.28 lakh for the tariff period 2009-14 and hence, the depreciation in 2013-14 is lower than the depreciation allowed vide order 1.8.2011.



### **Operation & Maintenance Expenses (“O&M Expenses”)**

26. The petitioner has computed O&M Expenses for the assets mentioned in the petition in accordance with the O&M norms for 400 kV S/C twin conductor transmission line, 400 kV D/C twin conductor transmission line, and 400 kV bays specified in Regulation 19(g) of the 2009 Tariff Regulations. The petitioner has claimed O&M Expenses for 400 kV S/C twin conductor of Itarsi-Indore Ckt. I (207 km.), Indore-Asoj Ckt.-II (273 km.), Vindhyachal- Korba Ckt. I (215 km.) with a total line length of 695 km., 400 kV D/C twin conductor of Vindhyachal Jabalpur Ckt. I &II (360 km.), Jabalpur Itarsi Ckt I & II (232 km.) with a total line length of 592 km., and 13 bays of 400 kV level.

27. The O&M Expenses claimed by the petitioner for tariff period 2009-14 are same as that approved in the tariff order dated 1.8.2011 in Petition No. 275/2010. Accordingly, the O&M Expenses claimed by the petitioner, allowed and trued up are the same, and are as follows:-

|                                    | (₹ in lakh) |         |         |         |         |
|------------------------------------|-------------|---------|---------|---------|---------|
| Particulars                        | 2009-10     | 2010-11 | 2011-12 | 2012-13 | 2013-14 |
| Approved vide order dated 1.8.2011 | 1301.19     | 1375.41 | 1454.40 | 1537.62 | 1625.18 |
| As claimed by the petitioner       | 1301.19     | 1375.41 | 1454.40 | 1537.62 | 1625.18 |
| Allowed after trued up             | 1301.19     | 1375.41 | 1454.40 | 1537.62 | 1625.18 |

### **Interest on working capital (“IWC”)**

28. Sub-clause (c) of clause (1) of Regulation 18 of the 2009 Tariff Regulations provides the components of the working capital for the transmission system and clause (3) of Regulation 18 of the 2009 Tariff Regulations provides for the rate of interest on working capital.



29. The petitioner has submitted that the rate of interest on working capital has been considered as 12.25% as per Clause (3) of Regulation 18 of the 2009 Tariff Regulations and the components of working capital are also considered in accordance with Sub-clause (c) of clause (1) to Regulation 18 of the 2009 Tariff Regulations.

30. The Commission in its order dated 1.8.2011 in Petition No. 275/1010 approved the rate of interest on working capital of 12.25% applicable for 2008-09. In accordance with clause (3) of Regulation 18 of the 2009 Tariff Regulations, rate of interest on working capital shall be on normative basis and in case of transmission assets declared under commercial operation prior to 1.4.2009, shall be equal to short-term Prime Lending Rate as applicable as on 1.4.2009. State Bank of India short-term Prime Lending Rate on 1.4.2009 was 12.25%. Therefore, interest rate of 12.25% has been considered to workout the interest on working capital in the instant case.

31. The IWC trued up is as under:-

| <b>(₹ in lakh)</b>   |               |               |               |               |               |
|----------------------|---------------|---------------|---------------|---------------|---------------|
| Particulars          | 2009-10       | 2010-11       | 2011-12       | 2012-13       | 2013-14       |
| Maintenance Spares   | 195.18        | 206.31        | 218.16        | 230.64        | 243.78        |
| O & M Expenses       | 108.43        | 114.62        | 121.20        | 128.13        | 135.43        |
| Receivables          | 725.01        | 755.00        | 770.62        | 785.18        | 805.87        |
| Total                | 1028.62       | 1075.93       | 1109.98       | 1143.96       | 1185.08       |
| Rate of Interest (%) | 12.25         | 12.25         | 12.25         | 12.25         | 12.25         |
| <b>IWC</b>           | <b>126.01</b> | <b>131.80</b> | <b>135.97</b> | <b>140.13</b> | <b>145.17</b> |



(₹ in lakh)

| Particulars                        | 2009-10 | 2010-11 | 2011-12 | 2012-13 | 2013-14 |
|------------------------------------|---------|---------|---------|---------|---------|
| Approved vide order dated 1.8.2011 | 122.65  | 126.41  | 130.40  | 134.56  | 139.23  |
| As claimed by the petitioner       | 126.01  | 131.80  | 135.97  | 140.14  | 145.17  |
| Allowed after trued up             | 126.01  | 131.80  | 135.97  | 140.13  | 145.17  |

32. The IWC has mainly increased on account of increase in receivables due to variation in ROE on account of applicable MAT rate during the 2009-14 tariff period.

### **ANNUAL FIXED CHARGES FOR 2009-14 TARIFF PERIOD**

33. The detailed computation of the various components of the trued up annual fixed charges for the transmission asset for the tariff period 2009-14 is summarised below:-

(₹ in lakh)

| Particulars  | 2009-10  | 2010-11  | 2011-12  | 2012-13  | 2013-14  |
|--|----------|----------|----------|----------|----------|
| <b>Gross Block</b>                                       |          |          |          |          |          |
| Opening Gross block                                      | 27034.45 | 27034.45 | 27159.33 | 27159.33 | 27159.33 |
| Addition during 2009-14 due to additional capitalisation | 0.00     | 124.88   | 0.00     | 0.00     | 0.00     |
| Closing Gross block                                      | 27034.45 | 27159.33 | 27159.33 | 27159.33 | 27159.33 |
| Average Gross block                                      | 27034.45 | 27096.89 | 27159.33 | 27159.33 | 27159.33 |
|  |          |          |          |          |          |
| <b>Depreciation</b>                                      |          |          |          |          |          |
| Rate of Depreciation (%)                                 | 1.491    | 1.502    | 1.514    | 1.514    | 1.514    |
| Depreciable Value  | 24123.97 | 24180.17 | 24236.36 | 24236.36 | 24236.36 |
| Elapsed Life (Beginning of year)                         | 19       | 20       | 21       | 22       | 23       |
| Weighted Balance Useful life of the assets               | 15       | 14       | 13       | 12       | 11       |
| Remaining Depreciable Value                              | 6044.73  | 5697.94  | 5347.14  | 4935.82  | 4524.51  |
| Depreciation   | 402.98   | 407.00   | 411.32   | 411.32   | 411.32   |
|  |          |          |          |          |          |
| <b>Interest on Loan</b>                                  |          |          |          |          |          |
| Gross Normative Loan                                     | 13540.32 | 13540.32 | 13627.74 | 13627.74 | 13627.74 |
| Cumulative Repayment upto Previous Year                  | 13540.32 | 13540.32 | 13627.74 | 13627.74 | 13627.74 |
| Net Loan-Opening   | 0.00     | 0.00     | 0.00     | 0.00     | 0.00     |



| Particulars                                  | 2009-10        | 2010-11        | 2011-12        | 2012-13        | 2013-14        |
|--|----------------|----------------|----------------|----------------|----------------|
| Addition due to Additional Capitalisation    | 0.00           | 87.42          | 0.00           | 0.00           | 0.00           |
| Repayment during the year                    | 0.00           | 87.42          | 0.00           | 0.00           | 0.00           |
| Net Loan-Closing                             | 0.00           | 0.00           | 0.00           | 0.00           | 0.00           |
| Average Loan                                 | 0.00           | 0.00           | 0.00           | 0.00           | 0.00           |
| Weighted Average Rate of Interest on Loan(%) | 0.00           | 0.00           | 0.00           | 0.00           | 0.00           |
| Interest                                     | 0.00           | 0.00           | 0.00           | 0.00           | 0.00           |
| <b>Return on Equity</b>                      |                |                |                |                |                |
| Opening Equity                               | 13494.13       | 13494.13       | 13531.59       | 13531.59       | 13531.59       |
| Additions                                    | 0.00           | 37.46          | 0.00           | 0.00           | 0.00           |
| Closing Equity                               | 13494.13       | 13531.59       | 13531.59       | 13531.59       | 13531.59       |
| Average Equity                               | 13494.13       | 13512.86       | 13531.59       | 13531.59       | 13531.59       |
| Return on Equity (Base Rate) (%)             | 15.500         | 15.500         | 15.500         | 15.500         | 15.500         |
| MAT Rate for respective year (%)             | 16.995         | 19.931         | 20.008         | 20.008         | 20.961         |
| Return on Equity (Pre Tax) (%)               | 18.674         | 19.358         | 19.377         | 19.377         | 19.610         |
| Return on Equity (Pre Tax)                   | 2519.89        | 2615.82        | 2622.02        | 2622.02        | 2653.54        |
| <b>Interest on Working Capital</b>           |                |                |                |                |                |
| Maintenance Spares                           | 195.18         | 206.31         | 218.16         | 230.64         | 243.78         |
| O & M expenses                               | 108.43         | 114.62         | 121.20         | 128.13         | 135.43         |
| Receivables                                  | 725.01         | 755.00         | 770.62         | 785.18         | 805.87         |
| Total  | 1028.62        | 1075.93        | 1109.98        | 1143.96        | 1185.08        |
| Interest Rate (%)                            | 12.250         | 12.250         | 12.250         | 12.250         | 12.250         |
| Interest                                     | 126.01         | 131.80         | 135.97         | 140.13         | 145.17         |
| <b>Annual Transmission Charges</b>           |                |                |                |                |                |
| Depreciation                                 | 402.98         | 407.00         | 411.32         | 411.32         | 411.32         |
| Interest on Loan                             | 0.00           | 0.00           | 0.00           | 0.00           | 0.00           |
| Return on Equity                             | 2519.89        | 2615.82        | 2622.02        | 2622.02        | 2653.54        |
| Interest on Working Capital                  | 126.01         | 131.80         | 135.97         | 140.13         | 145.17         |
| O & M Expenses                               | 1301.19        | 1375.41        | 1454.40        | 1537.62        | 1625.18        |
| <b>Total</b>                                 | <b>4350.08</b> | <b>4530.02</b> | <b>4623.71</b> | <b>4711.09</b> | <b>4835.22</b> |

### **DETERMINATION OF ANNUAL TRANSMISSION CHARGES FOR 2014-19**

34. The petitioner has claimed the transmission charges as under:-

| Particulars                 | (₹ in lakh) |         |         |         |         |
|-----------------------------|-------------|---------|---------|---------|---------|
|                             | 2014-15     | 2015-16 | 2016-17 | 2017-18 | 2018-19 |
| Depreciation                | 411.33      | 419.98  | 429.73  | 436.61  | 444.66  |
| Interest on Loan            | 0.00        | 0.00    | 0.00    | 0.00    | 0.00    |
| Return on Equity            | 2653.54     | 2658.64 | 2663.74 | 2666.89 | 2670.04 |
| Interest on Working Capital | 152.48      | 155.56  | 158.71  | 161.83  | 165.10  |
| O&M Expenses                | 1483.22     | 1533.16 | 1584.01 | 1636.36 | 1690.78 |



| Particulars  | 2014-15        | 2015-16        | 2016-17        | 2017-18        | 2018-19        |
|--------------|----------------|----------------|----------------|----------------|----------------|
| <b>Total</b> | <b>4700.57</b> | <b>4767.34</b> | <b>4836.19</b> | <b>4901.69</b> | <b>4970.58</b> |

35. The details submitted by the petitioner in support of its claim for interest on working capital are given hereunder:-

| (₹ in lakh)        |                |                |                |                |                |
|--------------------|----------------|----------------|----------------|----------------|----------------|
| Particulars        | 2014-15        | 2015-16        | 2016-17        | 2017-18        | 2018-19        |
| Maintenance Spares | 222.48         | 229.97         | 237.60         | 245.45         | 253.62         |
| O & M Expenses     | 123.60         | 127.76         | 132.00         | 136.36         | 140.90         |
| Receivables        | 783.43         | 794.56         | 806.03         | 816.95         | 828.43         |
| <b>Total</b>       | <b>1129.51</b> | <b>1152.29</b> | <b>1175.63</b> | <b>1198.76</b> | <b>1222.95</b> |
| Rate of Interest   | 13.500         | 13.500         | 13.500         | 13.500         | 13.500         |
| <b>Interest</b>    | <b>152.48</b>  | <b>155.56</b>  | <b>158.71</b>  | <b>161.83</b>  | <b>165.10</b>  |

### **Capital Cost**

36. Clause (1) and (3) of Regulation 9 of the 2014 Tariff Regulations provides as follows:-

“(1) 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.”

“(3) 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 modernisation as admitted by this Commission in accordance with Regulation 15.”

37. The petitioner has claimed capital expenditure of ₹27159.33 lakh as on 31.3.2014 including additional capitalization of ₹124.88 lakh during the 2009-14 tariff period.

38. The trued up capital cost of ₹27159.33 lakh as on 31.3.2014 is considered for the purpose of tariff for tariff period 2014-19.





### **Additional Capital Expenditure**

39. The petitioner has proposed additional capitalization of ₹240.00 lakh (₹220.00 lakh for Sub-station and ₹20.00 lakh for PLCC) and de-capitalisation of ₹66.72 lakh (₹65.82 lakh for Sub-station and ₹0.90 lakh for PLCC) for 2015-16 towards replacement of isolators, PLCC equipment, etc., at 400 kV Jabalpur and 400 kV Itarsi Sub-stations. The petitioner has proposed further additional capitalization of ₹120.00 lakh and de-capitalisation of ₹12.90 lakh for 2017-18 towards replacement of circuit breakers at 400 kV Jabalpur and 400 kV Itarsi Sub-stations. The petitioner has claimed the additional capitalisation for 2014-19 tariff period under Clause (3)(ix) of Regulation 14 of the 2014 Tariff Regulations.

40. Clause (3)(ix) of Regulation 14 of the 2014 Tariff Regulations provides as follows:-

“(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:

.....

(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 obsolescence 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.....

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:.....”

41. The Commission vide letter dated 18.12.2015 directed the petitioner to submit asset-wise projected additional capitalisation for the tariff period 2014-19



separately along with equipment-wise break up and the approval of competent authority along with detailed justification towards projected additional capitalization during the 2014-19 tariff period..

42. The petitioner in response, vide affidavit dated 28.12.2015 submitted the break up for replacement of equipment claimed as additional capitalisation during 2014-19 as provided in the table below:-

| Sl. No.      | Equipment to be replaced                  | Qty  | Location | Name of the bay                                | Estimated unit rate | Total estimated cost | Additional Capitalisation |             |               |
|--------------|---|------|----------|--|---------------------|----------------------|---------------------------|-------------|---------------|
|              |   |      |          |  |                     |                      | 15-16                     | 16-17       | 17-18         |
| 1            | Circuit Breaker                           | 2    | Jabalpur | 400 kV Vindhyachal # I main and tie bay        | 30.00               | 60.00                | -                         | -           | 60.00         |
|              |   | 2    | Itarsi   | 400 kV Indore # I main bay and Satpura tie bay | 30.00               | 60.00                | -                         | -           | 60.00         |
| 2            | Isolator                                  | 10   | Itarsi   | 400 kV Indore # I, Indore #2 & Satpura         | 6.00                | 60.00                | 60.00                     | -           | -             |
| 3            | PLCC                                      | 2    | Itarsi   | 400 kV Satpura                                 | 5.00                | 20.00                | 20.00                     | -           | -             |
|              |   | 2    | Itarsi   | 400 kV Itarsi                                  |                     |                      |                           |             |               |
| 4            | Repairing of Drainage                     | LS   | Jabalpur | Switchyard                                     | 30.00               | 30.00                | 30.00                     | -           | -             |
|              |   | LS   | Itarsi   | Switchyard                                     | 50.00               | 50.00                | 50.00                     | -           | -             |
| 5            | Replacement of cover slab of cable trench | 3000 | Jabalpur | Switchyard                                     | 0.01                | 30.00                | 30.00                     | -           | -             |
|              |   | 5000 | Itarsi   | Switchyard                                     | 0.01                | 50.00                | 50.00                     | -           | -             |
| <b>Total</b> |   |      |          |  |                     | <b>360.00</b>        | <b>240.00</b>             | <b>0.00</b> | <b>120.00</b> |

43. As regards the approval of competent authority, the petitioner has submitted that investment approval of competent authority is taken for execution of new projects being undertaken by the petitioner from time to time. All the new transmission projects agreed in Standing Committee Meeting of Regional



Planning after ratification in the Regional Power Committee (RPC) are taken up to the Board for approval for execution. The instant case is not capitalization of new project, it is replacement of problematic equipments due to ageing effect, through additional capitalization in tariff. These equipments are in service for about 25 years and replacement of the same is required to be carried out for smooth operation of the grid with reliability and stability without any untoward incident.

44. The petitioner further submitted that as per the prevailing practice, for replacement of problematic equipments in any project under operation through additional capitalisation in tariff, no prior approval is taken from the Board of Directors. However, following procedure is followed for carrying out additional capitalisation related activities for O&M assets.

45. The activities like investment approval and budget approval by Board, related to replacement work, starts only after the Commission's approval. These replacement activities are spread over the tariff block period. This is put up to the Board under the head of "Non-plan capital expenditure" in the annual revenue budget of the company based on the activities scheduled during that year and the subsequent years. On approval of the budget by the Board, activities are carried out. The proposal submitted before the Commission for the tariff block 2014-19 will also be taken up to the Board for approval under Non-capital Expenditure budget on yearly basis. After favourable outcome from the Commission on the same under various transmission schemes and the



expenditure on replacement through additional capitalisation will be made progressively during 2014-19 tariff block.

46. The petitioner also provided justification for replacement of equipments through add-cap during 2014-19 as given below:-

1. BHEL make 400 kV Circuit Breakers at Jabalpur and Itarsi Sub-stations

- a. Frequent problem in operating mechanism: It is due to frequent hydraulic oil leakages and other problems like non-building of hydraulic oil pressure due to problem in pilot valve assembly, etc., the circuit breaker remains out of service.
- b. The SF<sub>6</sub> gas consumption of this type of breaker is more as compared to other new type circuit breakers. Common SF<sub>6</sub> gas monitoring system (all 3-phases are monitored by single monitoring system) leading to more leakages of SF<sub>6</sub> gas and difficulty in maintenance.
- c. SF<sub>6</sub> is the most potent greenhouse gas that it has evaluated, with a global warming potential of 23,900 times that of CO<sub>2</sub> when compared over a 100-year period. (Source-the Inter-governmental Panel on Climate Change)
- d. Delay in support from BHEL: After phasing out of production of circuit breaker in BHEL the response to services and supply of spares has become unsatisfactory due to which getting support from BHEL is very difficult. After placement of supply/service orders, BHEL takes lot of time in responding to the problems.
- e. Cost-benefit analysis for replacement of the problematic circuit breaker.



The BHEL breaker is in service for more than 25 years and is having severe SF<sub>6</sub> gas leakage problem. The equipment needs to be overhauled or replaced for smooth operation with reliability and stability of the grid. The petitioner submitted that the total cost for replacement of complete circuit breaker comes to ₹32.43 lakh, which is almost equal to the maintenance cost of the old breaker (₹26.05 lakh) retaining major portion of old breaker, thus improving the reliability and stability of the grid.

- f. Due to ageing, various contactors of the circuit breakers and auxiliary contacts do not function properly, resulting in false alarms and improper control function of the circuit breakers.
- g. Due to ageing, the inter-pole wiring of the circuit breakers have worn out causing frequent DC leakage problem and is not desirable for the health of protection system of the sub-station.
- h. Grading Capacitors of the circuit breakers are showing high tan delta values.
- i. Frequent leakages of Nitrogen due to deteriorating accumulator condition.

2. 400 kV Isolators at Itarsi Sub-station

- a. Main contacts of the isolators have jammed and misaligned due to ageing.
- b. Mechanical and electrical interlocks of the isolators and earth switches are not operating properly due to ageing.



- c. Over travel and partial closing of the isolators due to sluggishness in operating mechanism and problem in limit switches.
- d. Stuck up auxiliary contacts, Local-Remote switches, push buttons. 3 pole ON-OFF switches, over load relays and non-operation of the various contactors of the Isolators and earth switches due to ageing.

### 3. PLCC of 400 kV Satpura-Itarsi

The subject PLCC has become obsolete and no service support from manufacturer is available. The PLCC panels are very old and there are incidents of mal-operations resulting in outage of the transmission lines. Further, there may be interruption of flow of telemetry data to RLDC. Therefore, it is prudent to replace these PLCC systems for smooth and reliable operation of the grid with stability.

Based on above considerations, the petitioner has requested to allow the additional capitalization as proposed in the petition.

47. The net capital cost of the transmission asset including additional capitalisation and de-capitalisation incurred during 2014-19 works out to ₹280.38 lakh. We have considered the petitioner's submission. As the additional capitalisation proposed is mainly towards the replacement of old equipments due to obsolescence of technology, the additional capitalisation of ₹240.00 lakh and de-capitalisation of ₹66.72 lakh for 2015-16 and additional capitalisation of ₹120.00 lakh and de-capitalisation of ₹12.90 lakh for 2017-18 is allowed in accordance with Clause 3(ix) of Regulation 14 of the 2014 Tariff Regulations for successful and efficient operation of the transmission system.



48. The total capital cost of the transmission asset including additional capitalisation projected to be incurred during 2014-19 is shown below:-

**(₹ in lakh)**

| Capital Cost as on 31.3.2014 | Projected Additional Capitalisation and (De-capitalisation) (2014-19) |         |       |         |       |                | Capital Cost as on 31.3.2019 |
|------------------------------|---|---------|-------|---------|-------|----------------|------------------------------|
|                              | 14-15   | 15-16   | 16-17 | 17-18   | 18-19 | Total          |                              |
| <b>27159.33</b>              | 0.00  | 240.00  | 0.00  | 120.00  | 0.00  | <b>360.00</b>  | <b>27439.71</b>              |
|                              | 0.00  | (66.72) | 0.00  | (12.90) | 0.00  | <b>(79.62)</b> |                              |

### **Debt: Equity Ratio**

49. Clause 3 and 4 of Regulation 19 of the 2014 Tariff Regulations provide as under:-

“(3) In case of the generating station and the transmission 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 the 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 ratio based on actual information provided by the generating company or the transmission licensee as the case may be.”

50. The petitioner has considered debt:equity ratio as 50.18:49.82 as on 1.4.2014. Debt equity ratio of 50.09:49.91 as on 31.3.2009 was considered by the Commission in its order dated 1.8.2011 in Petition No. 275/2010. In respect of additional capital expenditure in the tariff period 2009-14, debt-equity ratio of 70:30 has been approved. Accordingly, we have considered the debt-equity ratio of 50.18:49.82 as on 31.3.2014, as the debt-equity ratio as on 1.4.2014. The details of the debt:equity considered as on 1.4.2014 are as follows:-



| (₹ in lakh)  |                 |               |
|--------------|-----------------|---------------|
| Funding      | Amount          | (%)           |
| Debt         | 13627.74        | 50.18         |
| Equity       | 13531.59        | 49.82         |
| <b>Total</b> | <b>27159.33</b> | <b>100.00</b> |

51. For additional capitalisation, the petitioner has proposed normative debt:equity ratio of 70:30 and the same has been considered. The details of the debt:equity including additional capitalization are as follows:-

| (₹ in lakh)  |                 |               |
|--------------|-----------------|---------------|
| Funding      | Amount          | (%)           |
| Debt         | 13824.01        | 50.38         |
| Equity       | 13615.70        | 49.62         |
| <b>Total</b> | <b>27439.71</b> | <b>100.00</b> |

### **Interest on Loan (“IOL”)**

52. The petitioner has not claimed any interest on loan for the tariff period 2014-19 as the complete loan has already been repaid before the tariff period 2014-19. With regard to additional capital expenditure projected during the tariff period 2014-19, the petitioner has submitted that the funding has been done through debt:equity ratio of 70:30 and it has claimed debt corresponding to 70% of the additional capitalisation. It is observed that the petitioner has not claimed any interest on loan as the loan amount added corresponding to year-wise additional capitalisation is less than the depreciation allowed for the respective years and therefore, the same is getting repaid in the same year. The petitioner has therefore, not claimed any IOL during 2014-19. Accordingly, Interest on Loan has been considered as NIL.





## **Return on Equity (“ROE”)**

53. Clause (1) and (2) of Regulations 24 and Clause (2) of Regulation 25 of the 2014 Tariff Regulations specify 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....  
.....”

### **“25. Tax on Return on Equity:**

(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.”

54. The petitioner has computed ROE at the rate of 19.610% after grossing up the ROE with MAT rate as per the above Regulation. The petitioner has further submitted that the grossed up ROE is subject to truing up based on the actual tax paid along with any additional tax or interest, duly adjusted for any refund of tax including the interest received from IT authorities, pertaining to the tariff period 2014-19 on actual gross income of any financial year. Any under-recovery or over-recovery of grossed up ROE after truing up shall be recovered or refunded to the beneficiaries on year to year basis.



55. The petitioner has further submitted that adjustment due to any additional tax demand including interest duly adjusted for any refund of the tax including interest received from IT authorities shall be recoverable/adjustable after completion of income tax assessment of the financial year.

56. We have considered the submissions made by the petitioner. Regulation 24 read with Regulation 25 of the 2014 Tariff Regulations provides for grossing up of return on equity with the effective tax rate for the purpose of return on equity. It further provides that in case the generating company or transmission licensee is paying Minimum Alternative Tax (MAT), the MAT rate including surcharge and cess will be considered for the grossing up of return on equity. The petitioner has submitted that MAT rate is applicable to the petitioner's company. Accordingly, the MAT rate applicable during 2013-14 has been considered for the purpose of allowing return on equity, which shall be trued up with actual tax rate in accordance with Regulation 25(3) of the 2014 Tariff Regulations. Accordingly, the ROE allowed is given below:-

|   | (₹ in lakh)    |                |                |                |                |
|---|----------------|----------------|----------------|----------------|----------------|
| Particulars                               | 2014-15        | 2015-16        | 2016-17        | 2017-18        | 2018-19        |
| Opening Equity                            | 13531.59       | 13531.59       | 13583.57       | 13583.57       | 13615.70       |
| Addition due to Additional Capitalization | 0.00           | 51.98          | 0.00           | 32.13          | 0.00           |
| Closing Equity                            | 13531.59       | 13583.57       | 13583.57       | 13615.70       | 13615.70       |
| Average Equity                            | 13531.59       | 13557.58       | 13583.57       | 13599.64       | 13615.70       |
| Return on Equity (Base Rate) (%)          | 15.500         | 15.500         | 15.500         | 15.500         | 15.500         |
| MAT rate for the year (%)                 | 20.961         | 20.961         | 20.961         | 20.961         | 20.961         |
| Rate of Return on Equity (Pre Tax) (%)    | 19.610         | 19.610         | 19.610         | 19.610         | 19.610         |
| <b>Return on Equity (Pre Tax)</b>         | <b>2653.54</b> | <b>2658.64</b> | <b>2663.74</b> | <b>2666.89</b> | <b>2670.04</b> |



## **Depreciation**

57. Clause (2), (5) and (6) of Regulation 27 of the 2014 Tariff Regulations provides as follows:-

**"27. Depreciation:**

...(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

...

(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 on 1.4.2014 shall be worked out by deducting the cumulative depreciation as admitted by the Commission upto 31.3.2014 from the gross depreciable value of the assets."

58. The petitioner has computed depreciation considering capital expenditure of ₹27159.33 lakh as on 31.3.2014 along with net additional capitalisation of ₹230.38 lakh for the 2014-19 tariff period.

59. We have considered the submission made by the petitioner with respect to depreciation. It is observed that while computing depreciation the petitioner has not adjusted accumulated depreciation of the de-capitalized asset and has claimed depreciation accordingly.



60. Depreciation has been allowed as provided under Regulation 27 of the 2014 Tariff Regulations. The details of the depreciation allowed are given hereunder:-

| (₹ in lakh)  |               |               |               |               |               |
|--|---------------|---------------|---------------|---------------|---------------|
| Particulars  | 2014-15       | 2015-16       | 2016-17       | 2017-18       | 2018-19       |
| Opening Gross block  | 27159.33      | 27159.33      | 27332.61      | 27332.61      | 27439.71      |
| Additions during the year due to projected additional capitalization | 0.00          | 173.28        | 0.00          | 107.10        | 0.00          |
| Closing Gross block  | 27159.33      | 27332.61      | 27332.61      | 27439.71      | 27439.71      |
| Average Gross block  | 27159.33      | 27245.97      | 27332.61      | 27386.16      | 27439.71      |
| Rate of Depreciation   | 1.514         | 1.541         | 1.572         | 1.594         | 1.620         |
| Depreciable Value  | 24236.36      | 24314.34      | 24392.31      | 24440.51      | 24488.70      |
| Elapsed Life (Beginning of the year)                                 | 24            | 25            | 26            | 27            | 28            |
| Weighted Balance Useful life of the assets                           | 10            | 9             | 8             | 7             | 6             |
| Remaining Depreciable Value  | 4113.19       | 3779.84       | 3437.84       | 3056.30       | 2667.88       |
| <b>Depreciation</b>  | <b>411.32</b> | <b>419.98</b> | <b>429.73</b> | <b>436.62</b> | <b>444.65</b> |

### Operation & Maintenance Expenses (“O&M Expenses”)

61. The petitioner has computed normative O&M Expenses as per sub-clause (a) of clause (3) of Regulation 29 of the 2014 Tariff Regulations. Accordingly, the petitioner’s entitlement to O&M Expenses has been worked out as given hereunder:-

| Particulars                             |                                | (₹ in lakh) |         |         |         |         |
|---|--------------------------------|-------------|---------|---------|---------|---------|
|   |                                | 2014-15     | 2015-16 | 2016-17 | 2017-18 | 2018-19 |
| Actual line length (Km.)                | 400 kV, S/C, Twin Conductor    | 695         | 695     | 695     | 695     | 695     |
|   | 400 kV, D/C, Twin Conductor,   | 592         | 592     | 592     | 592     | 592     |
| Actual (No. of Sub-station bays)        | 400 kV Sub-station Bays        | 13          | 13      | 13      | 13      | 13      |
| Norms as per the 2014 Tariff Regulation | 400 kV, S/C, Twin Conductor (₹ | 0.404       | 0.418   | 0.432   | 0.446   | 0.461   |



| Particulars  |   | 2014-15        | 2015-16        | 2016-17        | 2017-18        | 2018-19        |
|--------------|---|----------------|----------------|----------------|----------------|----------------|
|              | lakh/km)                                |                |                |                |                |                |
|              | 400 kV, D/C, Twin Conductor (₹ lakh/km) | 0.707          | 0.731          | 0.755          | 0.78           | 0.806          |
|              | 400 kV Sub-stations (₹ lakh/bay)        | 60.30          | 62.30          | 64.37          | 66.51          | 68.71          |
| O&M Expenses | 400 kV, S/C, Twin Conductor             | 280.78         | 290.51         | 300.24         | 309.97         | 320.40         |
|              | 400 kV, D/C, Twin Conductor,            | 418.54         | 432.75         | 446.96         | 461.76         | 477.15         |
|              | 400 kV Sub-station bays                 | 783.9          | 809.9          | 836.81         | 864.63         | 893.23         |
| <b>Total</b> |   | <b>1483.22</b> | <b>1533.16</b> | <b>1584.01</b> | <b>1636.36</b> | <b>1690.78</b> |

62. The petitioner has submitted that O&M Expenses for the tariff period 2014-19 have been arrived on the basis of normalized actual O&M Expenses during the period 2008-13. The petitioner has further submitted that the wage revision of the employees of the petitioner company is due during 2014-19 and actual impact of wage hike, which will be effective at a future date, has not been factored in fixation of the normative O&M rate specified for the tariff period 2014-19. The petitioner has prayed to be allowed to approach the Commission for suitable revision in the norms of O&M Expenses for claiming the impact of such increase.

63. The O&M Expenses have been worked out as per the norms of O&M Expenses specified in the 2014 Tariff Regulations. As regards impact of wage revision, we would like to clarify that any application filed by the petitioner in this



regard will be dealt with in accordance with the appropriate provisions of the 2014 Tariff Regulations.

64. The details of O&M Expenses allowed are given hereunder:-

| Particulars                     | Year           |                |                |                |                |
|---------------------------------|----------------|----------------|----------------|----------------|----------------|
|                                 | 2014-15        | 2015-16        | 2016-17        | 2017-18        | 2018-19        |
| <b>O&amp;M Expenses allowed</b> | <b>1483.22</b> | <b>1533.16</b> | <b>1584.01</b> | <b>1636.36</b> | <b>1690.78</b> |

### **Interest on Working Capital (“IWC”)**

65. Clause 1 (c) of Regulation 28 and Clause 5 of Regulation 3 of the 2014 Tariff Regulations specifies as follows:-

#### **“28. Interest on Working Capital**

- (c)(i) Receivables equivalent to two months of fixed cost;
- (ii) Maintenance spares @ 15% of operation and maintenance expenses specified in regulation 29; and
- (iii) Operation and maintenance expenses for one month”

“(5) ‘Bank Rate’ means the base rate of interest as specified by the State Bank of India from time to time or any replacement thereof for the time being in effect plus 350 basis points;”

66. The petitioner has submitted that it has computed IWC for the tariff period 2014-19 considering the SBI Base Rate as on 1.4.2014 plus 350 basis points. The rate of interest on working capital considered for the purpose of computation of tariff is 13.50%.

67. The interest on working capital is worked out in accordance with Regulation 28 of the 2014 Tariff Regulations. The rate of interest on working capital considered is 13.50% (SBI Base Rate of 10% plus 350 basis points). The interest on working capital as determined is shown in the table below:-



**(₹ in lakh)**

| Particulars        | 2014-15        | 2015-16        | 2016-17        | 2017-18        | 2018-19        |
|--------------------|----------------|----------------|----------------|----------------|----------------|
| Maintenance Spares | 222.48         | 229.97         | 237.60         | 245.45         | 253.62         |
| O & M expenses     | 123.60         | 127.76         | 132.00         | 136.36         | 140.90         |
| Receivables        | 783.43         | 794.56         | 806.03         | 816.95         | 828.43         |
| <b>Total</b>       | <b>1129.51</b> | <b>1152.30</b> | <b>1175.63</b> | <b>1198.77</b> | <b>1222.94</b> |
| Rate of Interest   | 13.500         | 13.500         | 13.500         | 13.500         | 13.500         |
| <b>Interest</b>    | <b>152.48</b>  | <b>155.56</b>  | <b>158.71</b>  | <b>161.83</b>  | <b>165.10</b>  |

### Annual Transmission Charges

68. The Annual Transmission Charges allowed for the transmission asset for the tariff period 2014-19 is given hereunder:-

**(₹ in lakh)**

| Particulars      | 2014-15        | 2015-16        | 2016-17        | 2017-18        | 2018-19        |
|------------------|----------------|----------------|----------------|----------------|----------------|
| Depreciation     | 411.32         | 419.98         | 429.73         | 436.62         | 444.65         |
| Interest on Loan | 0.00           | 0.00           | 0.00           | 0.00           | 0.00           |
| Return on Equity | 2653.54        | 2658.64        | 2663.74        | 2666.89        | 2670.04        |
| Interest on WC   | 152.48         | 155.56         | 158.71         | 161.83         | 165.10         |
| O&M Expenses     | 1483.22        | 1533.16        | 1584.01        | 1636.36        | 1690.78        |
| <b>Total</b>     | <b>4700.57</b> | <b>4767.35</b> | <b>4836.19</b> | <b>4901.70</b> | <b>4970.56</b> |

69. The detailed computation of various components of annual fixed charges for the tariff period 2014-19 is summarized below:-

**(₹ in lakh)**

| Particulars  | 2014-15  | 2015-16  | 2016-17  | 2017-18  | 2018-19  |
|--|----------|----------|----------|----------|----------|
| <b>Gross Block</b>   |          |          |          |          |          |
| Opening Gross block  | 27159.33 | 27159.33 | 27332.61 | 27332.61 | 27439.71 |
| Addition during 2014-19 due to Projected Additional Capitalisation | 0.00     | 173.28   | 0.00     | 107.10   | 0.00     |
| Closing Gross block  | 27159.33 | 27332.61 | 27332.61 | 27439.71 | 27439.71 |
| Average Gross block  | 27159.33 | 27245.97 | 27332.61 | 27386.16 | 27439.71 |
|  |          |          |          |          |          |
| <b>Depreciation</b>  |          |          |          |          |          |
| Rate of Depreciation (%)   | 1.514    | 1.541    | 1.572    | 1.594    | 1.620    |
| Depreciable Value  | 24236.36 | 24314.34 | 24392.31 | 24440.51 | 24488.70 |



| Particulars   | 2014-15  | 2015-16  | 2016-17  | 2017-18  | 2018-19  |
|---|----------|----------|----------|----------|----------|
| Elapsed Life (Beginning of the year)                  | 24       | 25       | 26       | 27       | 28       |
| Weighted Balance Useful life of the assets            | 10       | 9        | 8        | 7        | 6        |
| Remaining Depreciable Value                           | 4113.19  | 3779.84  | 3437.84  | 3056.30  | 2667.88  |
| Depreciation  | 411.32   | 419.98   | 429.73   | 436.62   | 444.65   |
| Cumulative Depreciation/ Advance against Depreciation | 20534.49 | 20954.48 | 21384.21 | 21820.82 | 22265.47 |
|   |          |          |          |          |          |
| <b>Interest on Loan</b>                               |          |          |          |          |          |
| Gross Normative Loan                                  | 13627.74 | 13627.74 | 13749.04 | 13749.04 | 13824.01 |
| Cumulative Repayment upto Previous Year               | 13627.74 | 13627.74 | 13749.04 | 13749.04 | 13824.01 |
| Net Loan-Opening                                      | 0.00     | 0.00     | 0.00     | 0.00     | 0.00     |
| Addition due to Additional Capitalisation             | 0.00     | 121.30   | 0.00     | 74.97    | 0.00     |
| Repayment during the year                             | 0.00     | 121.30   | 0.00     | 74.97    | 0.00     |
| Net Loan-Closing                                      | 0.00     | 0.00     | 0.00     | 0.00     | 0.00     |
| Average Loan  | 0.00     | 0.00     | 0.00     | 0.00     | 0.00     |
| Weighted Average Rate of Interest on Loan(%)          | 0.00     | 0.00     | 0.00     | 0.00     | 0.00     |
| Interest  | 0.00     | 0.00     | 0.00     | 0.00     | 0.00     |
|   |          |          |          |          |          |
| <b>Return on Equity</b>                               |          |          |          |          |          |
| Opening Equity  | 13531.59 | 13531.59 | 13583.57 | 13583.57 | 13615.70 |
| Additions   | 0.00     | 51.98    | 0.00     | 32.13    | 0.00     |
| Closing Equity  | 13531.59 | 13583.57 | 13583.57 | 13615.70 | 13615.70 |
| Average Equity  | 13531.59 | 13557.58 | 13583.57 | 13599.64 | 13615.70 |
| Return on Equity (Base Rate) (%)                      | 15.500   | 15.500   | 15.500   | 15.500   | 15.500   |
| MAT Rate for respective year (%)                      | 20.961   | 20.961   | 20.961   | 20.961   | 20.961   |
| Return on Equity (Pre Tax) (%)                        | 19.610   | 19.610   | 19.610   | 19.610   | 19.610   |
| Return on Equity (Pre Tax)                            | 2653.54  | 2658.64  | 2663.74  | 2666.89  | 2670.04  |
|   |          |          |          |          |          |
| <b>Interest on Working Capital</b>                    |          |          |          |          |          |
| Maintenance Spares                                    | 222.48   | 229.97   | 237.60   | 245.45   | 253.62   |
| O & M expenses  | 123.60   | 127.76   | 132.00   | 136.36   | 140.90   |
| Receivables   | 783.43   | 794.56   | 806.03   | 816.95   | 828.43   |
| Total   | 1129.51  | 1152.30  | 1175.63  | 1198.77  | 1222.94  |
| Interest Rate (%)                                     | 13.500   | 13.500   | 13.500   | 13.500   | 13.500   |
| Interest  | 152.48   | 155.56   | 158.71   | 161.83   | 165.10   |
|   |          |          |          |          |          |
| <b>Annual Transmission Charges</b>                    |          |          |          |          |          |
| Depreciation  | 411.32   | 419.98   | 429.73   | 436.61   | 444.65   |





| Particulars                 | 2014-15        | 2015-16        | 2016-17        | 2017-18        | 2018-19        |
|-----------------------------|----------------|----------------|----------------|----------------|----------------|
| Interest on Loan            | 0.00           | 0.00           | 0.00           | 0.00           | 0.00           |
| Return on Equity            | 2653.54        | 2658.64        | 2663.74        | 2666.89        | 2670.04        |
| Interest on Working Capital | 152.48         | 155.56         | 158.71         | 161.83         | 165.10         |
| O & M Expenses              | 1483.22        | 1533.16        | 1584.01        | 1636.36        | 1690.78        |
| <b>Total</b>                | <b>4700.57</b> | <b>4767.35</b> | <b>4836.19</b> | <b>4901.70</b> | <b>4970.56</b> |

### **Filing Fee and Publication Expenses**

70. The petitioner has sought reimbursement of fee paid by it for filing the petition and publication expenses, in terms of Regulation 52 of the 2014 Tariff Regulations. The petitioner shall be entitled for reimbursement of the filing fees and publication expenses in connection with the present petition, directly from the beneficiaries on pro-rata basis in accordance with clause (1) of Regulation 52 of the 2014 Tariff Regulations.

### **Licence Fee and RLDC Fees and Charges**

71. The petitioner has requested to allow the petitioner to bill and recover licence fee and RLDC fees and charges, separately from the respondents. The petitioner shall be entitled for reimbursement of licence fee and RLDC fees and charges in accordance with Clause (2)(b) and (2)(a) of Regulation 52 of the 2014 Tariff Regulations, respectively.

### **Service Tax**

72. The petitioner has sought to recover service tax on transmission charges separately from the respondents, if at any time service tax on transmission is withdrawn from negative list in future. We are of the view that the petitioner's prayer is premature.



### **Deferred Tax Liability**

73. The petitioner has sought recovery of deferred tax liability before 1.4.2009 from the beneficiaries or long term consumers/DICs as and when materialized under Regulation 49 of the 2014 Tariff Regulations. The deferred tax liability shall be dealt as per Regulations 49 of the 2014 Tariff Regulations, as amended. Accordingly, the petitioner is entitled to recover the deferred tax liability upto 31.3.2009 whenever the same materializes, directly from the beneficiaries or long term transmission customers /DICs.

### **Sharing of Transmission Charges**

74. The billing, collection and disbursement of the transmission charges approved shall be governed by the provisions of Central Electricity Regulatory Commission (Sharing of Inter-State Transmission Charges and Losses) Regulations, 2010, as amended from time to time, as provided in Regulation 43 of the 2014 Tariff Regulations.

75. This order disposes of Petition No. 481/TT/2014.

sd/-  
**(Dr. M. K. Iyer)**  
**Member**

sd/-  
**(A.S. Bakshi)**  
**Member**

