

**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Petition No. 217/TT/2012**

**Coram:**

**Shri Gireesh B. Pradhan, Chairperson  
Shri M. Deena Dayalan, Member  
Shri A. K. Singhal, Member**

**Date of Hearing : 26.11.2013**

**Date of Order : 21.07.2014**

**In the matter of:**

Determination of transmission tariff for 3x110 MVAR, 1-Phase 765 kV Shunt Reactor including Surge Arrestor and NGR at Sasaram Sub-station (date of commercial operation: 1.4.2012) under Sasan UMPP TS in Northern Region for tariff block 2009-14 period under Regulation-86 of Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999 and Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009.

**And in the matter of:**

Power Grid Corporation of India Limited  
"Saudamani", Plot No.2,  
Sector-29, Gurgaon -122 001.

.....**Petitioner**

**Vs**

1. Madhya Pradesh Power Trading Company Ltd.  
Shakti Bhawan, Rampur  
Jabalpur-482 008.
2. Madhya Pradesh Audyogik Kendra  
Vikas Nigam (Indore) Ltd.  
3/54, Press Complex, Agra-Bombay Road  
Indore-452 008.
3. Rajasthan Rajya Vidyut Prasaran Nigam Ltd.,  
Vidyut Bhawan, Vidyut Marg,  
Jaipur- 302 005.
4. Ajmer Vidyut Vitran Nigam Ltd.,  
400 kV GSS Building (Ground Floor), Ajmer Road,  
Heerapura, Jaipur.



5. Jaipur Vidyut Vitran Nigam Ltd.,  
400 kV GSS Building (Ground Floor), Ajmer Road,  
Heerapura, Jaipur.
6. Jodhpur Vidyut Vitran Nigam Ltd.,  
400 kV GSS Building (Ground Floor), Ajmer Road,  
Heerapura, Jaipur.
7. Punjab State Electricity Board  
The Mall, Patiala-147 001.
8. Haryana Power Purchase Centre,  
Shakti Bhawan, Sector-6,  
Panchkula (Haryana)-134 109.
9. UP Power Corporation Ltd.,  
Shakti Bhawan, 14, Ashok Marg,  
Lucknow-226 001.
10. Delhi Transco Ltd.,  
Shakti Sadan, Kotla Road,  
New Delhi-110 002.
11. BSES Yamuna Power Ltd.,  
BSES Bhawan, Nehru Place,  
New Delhi.
12. BSES Rajdhani Power Ltd.,  
BSES Bhawan, Nehru Place,  
New Delhi.
13. North Delhi Power Ltd.,  
Power Trading & Load Dispatch Group,  
Cennet Building, Adjacent to 66/11kV Pitampura-3,  
Grid Building, Near PP Jewellers,  
Pitampura, New Delhi-110 034.
14. Chandigarh Administration,  
Sector-9, Chandigarh.
15. Uttarakhand Power Corporation Ltd.,  
Urja Bhawan, Kanwali Road,  
Dehradun.
16. North Central Railway,  
Allahabad.

17. New Delhi Municipal Council,  
Palika Kendra, Sansad Marg,  
New Delhi-110 002.

18. Sasan Power Ltd.  
1<sup>st</sup> Floor, I Block  
Dhirubhai Ambani Knowledge City (DAKC)  
Thane-Belapur Road, Koparkhairane  
Navi Mumbai-400 710.

....Respondents

**For petitioner** : Shri S.S Raju, PGCIL  
Shri A. M. Pavgi, PGCIL  
Shri M. M. Mondal, PGCIL

**For respondent** : Shri Padamjit Singh, PSPCL  
Shri T. P. S. Bawa, PSPCL

### ORDER

The petition has been filed by Power Grid Corporation of India Limited (PGCIL) seeking approval of the transmission tariff for 3x110 MVAR, 1-Phase 765 kV Shunt Reactor including Surge Arrestor and NGR at Sasaram Sub-station (hereinafter referred to as "transmission asset") (date of commercial operation: 1.4.2012) under Sasan UMPP TS in Northern Region for tariff block 2009-14 period based on the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009 (hereinafter referred to as "the 2009 Tariff Regulations").

2. The Investment Approval (IA) to the transmission project was accorded by Board of Directors of Powergrid vide letter dated 10.12.2008 at an estimated cost of ₹703188 lakh, including IDC of ₹76782 lakh based on 2<sup>nd</sup> quarter, 2008 price level.



3. The scope of work includes construction of following transmission lines and Sub-stations:-

**Part-A: Transmission System of Sasan (4000 MW) UMPP:-**

**Transmission lines:**

- i. Sasan- Satna 765 kV 2xS/C line Ckt-I -- 268 km & Ckt-2 --279 km
- ii. Satna- Bina 765 kV 2xS/C line Ckt-I -- 272 km & Ckt-2 --274 km
- iii. LILO of both ckts of one of Vindhychal- Jabalpur 400 kV D/C line at Sasan-- 8 km.
- iv. Bina- Bina (MPPTCL) 400 kV D/C line-- 5 km.
- v. Sasaram- Fatehpur 765 kV S/C line --- 352 km
- vi. Fatehpur- Agra 765 kV S/C line --- 340 km

**Sub-stations:**

- i. Establishment of 765/400 kV , 2x1000 MVA sub-station at Satna
- ii. Line bays for operation of Agra- Gwalior- Bina- Seoni S/C lines at 765 kV level.

**Part-B: Regional System Strengthening in WR for Sasan UMPP:**

**Transmission Lines:**

- i. Bina- Indore 765 kV S/C line --- 320 km
- ii. Indore- Indore (MPPTL) 400 kV D/C (Quad) line --- 60 km

**Sub-stations:**

- i. Establishment of 765/400 kV , 2x1500 MVA sub-station at Indore
- ii. Upgrading Bina & Gwalior sub-stations to 765/400: 2x1000 MVA, 765/400 at Bina and 2x1500 MVA, 765/400 kV at Gwalior.

4. The instant petition includes single asset i.e. 3x110 MVAR, 1-Phase 765 kV Shunt Reactor including Surge Arrestor and NGR at Sasaram Sub-station (hereinafter referred as "the transmission asset").

5. The petitioner has submitted Auditor's Certificate dated 25.5.2012 along with original petition, for the expenditure based on actual date of commercial operation of the asset, showing audited accounts up to 31.3.2012. The instant petition covers determination of transmission tariff based on actual expenditure incurred for the asset up to 31.3.2012 and additional capital expenditure projected to be incurred during the period from 1.4.2012 to 31.3.2014 as indicated in the Auditor's Certificate dated 25.5.2012.

6. The transmission charges claimed by the petitioner based on the actual date of commercial operation are as under:-

(` in lakh)

<b>Particulars</b>	<b>2012-13</b>	<b>2013-14</b>
Depreciation	175.39	191.46
Interest on Loan	213.95	216.82
Return on Equity	174.20	190.16
Interest on working capital	17.76	18.84
O & M Expenses	86.68	91.64
<b>Total</b>	<b>667.98</b>	<b>708.92</b>

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

(` in lakh)

<b>Particulars</b>	<b>2012-13</b>	<b>2013-14</b>
Maintenance Spares	13.00	13.75
O & M Expenses	7.22	7.64
Receivables	111.33	118.15
<b>Total</b>	<b>131.55</b>	<b>139.54</b>
Rate of Interest	13.50%	13.50%
Interest	17.76	18.84

8. No comments or suggestions have been received from the general public in response to the notices published by the petitioner under Section 64 of the Electricity Act. Respondent No. 6, Punjab State Power Corporation Limited (PSPCL), has filed its reply vide affidavit dated 5.11.2013 and 18.11.2013. The petitioner has filed separate rejoinders to the reply of PSPCL vide affidavits dated 11.11.2013 and 24.1.2014. The objections raised by the respondent in their reply and the clarifications given by the petitioner in its rejoinder are addressed in the relevant paragraphs of this order.

9. Having heard the representatives of the parties and perused the material on records, we proceed to dispose of the petition.

10. PSPCL has submitted that as per the approved scheme the petitioner was to construct 765 kV Gaya-Sasaram line and Sasaram-Fatehpur line (first circuit) and then the second circuit of Sasaram-Fatehpur was to be constructed under the scheme approved for Sasan Transmission System. However, the petitioner has not executed the works according to the approved scheme and instead of constructing the second line between Sasaram and Fatehpur as approved, the petitioner has amended and deviated from the approved scheme by constructing

the Gaya-Fatehpur line without constructing the Sasaram 765 kV Sub-station. As this becomes a long line from Gaya to Fatehpur, the petitioner has provided midpoint reactor of 3X110 MVAR at Sasaram location. The date of commercial operation certificate makes it clear that the Gaya-Fatehpur line is by-passing the Sasaram Sub-station. PSPCL has requested to direct the petitioner to give the revised/amended investment approval as well as minutes of CEA meeting wherein it was approved to bypass the Sasaram location and construct the Gaya-Fatehpur line with midpoint reactors and by-passing of Sasaram Sub-station.

11. In response, the petitioner has clarified vide rejoinder dated 24.1.2014 that the petitioner encountered space constraints for establishment of 765 kV switchyard and it was not possible to implement all the works. Therefore, in the available space at Sasaram Sub-station only one 765 kV line bay for Sasaram-Fatehpur S/C T/L and 1x1500 MVA 765 kV/400 kV ICT with bays could be accommodated. The following modifications were discussed in 29<sup>th</sup> Standing Committee Meeting of NR (held on 19.12.2010) and 19<sup>th</sup> Special Meeting of NRPC (held on 19.1.2011) to be carried out at Sasaram Sub-station:-

- i. Implement one ckt of Gaya-Sasaram-Fatehpur as Gaya-Fatehpur
- ii. Provision of only 1x1500 MVA, 765/400 kV ICT at Sasaram
- iii. There will be one ckt between Sasaram and Fatehpur.

Adequate reactive compensation for Gaya-Fatehpur 765 kV S/C line by-passing Sasaram Sub-station has been provided at Sasaram in the form of 3x110 MVAR midpoint reactor.

12. PSPCL has further filed an affidavit on 18.11.2013 wherein it has been submitted that the proposal does not mention or state about the midpoint reactor of 330 MVAR on the Gaya-Fatehpur line at Sasaram. The CEA minutes do not approve/include the 330 MVAR reactor. The proposal before CEA Standing Committee should have clearly mentioned about the 330 MVAR shunt reactor (midpoint reactor). However, since this item is not stated in the minutes it cannot be claimed that PSPCL had approved this proposal before CEA. Midpoint reactor is unprecedented and it cannot be taken for granted unless it was clearly mentioned in the CEA minutes. With this anomalous situation of only 400 kV incoming line with two no. 765 kV outgoing lines, it would result in a situation where the 765 kV Gaya-Fatehpur line will be loaded to only 200 MW, which is the loading to be expected on a 220 kV line. Further, the Minutes of 19<sup>th</sup> NRPC Special Meeting do not mention the 330 MVAR midpoint shunt reactor. PSPCL also submitted that the petitioner never gave full and correct position regarding the Gaya-Fatehpur line proposal before CEA/NRPC.

13. In response, the petitioner has further submitted that the same was discussed and agreed by the members of the Standing Committee. Subsequently, same was also discussed and agreed during the 19th Special meeting of NRPC held on 19.1.2011. In the original scope of work, for reactive compensation of Gaya-Sasaram 765 kV S/C line one 240 MVAR line reactor at Sasaram end and for Sasaram-Fatehpur 765 kV S/C line 330 MVAR line reactor at both ends were considered. With implementation of 765kV S/C Gaya-Sasaram-Fatehpur line as 765 kV S/C Gaya-Fatehpur line, the same level of



compensation, which was envisaged earlier, was retained i.e one 240 MVAR Reactor and two 330 MVAR line reactors. Thus, no new line reactor has been considered due to above change in line configuration. The existing reactor at Sasaram was also originally considered at Sasaram. Provision of reactors at midpoint is an optimum way of controlling voltage. However, normally it is not done as additional infrastructure for installing the reactor is required to be created. In the present case, the reactor was placed without any additional infrastructure. In the NRPC meeting, similar to standing committee meeting, line reactor including midpoint reactor, was not discussed. That is because during Standing Committee Meeting, the main transmission elements are discussed. Gaya-Fatehpur 765kV transmission line is about 500km long hence line reactors are necessary. While finalizing the detailed scope, finer details like line reactive compensation are determined by CTU. This is a general accepted practice. In the present arrangement, line reactors size and MVAR considered are same as originally considered for Gaya-Sasaram-Fatehpur 765kV line. All planning is done in transparent manner, the fact that the midpoint reactor is recorded in the minutes of Standing Committee Meeting of Eastern Region, where the reactor is located, clearly indicates that the petitioner has carried out the system in transparent manner.

14. During the hearing on 7.11.2013, in response to a query of the Commission, the representative of petitioner submitted that because of space constraints for establishment of 765kV switchyard at Sasaram, the Gaya-Sasaram-Fatehpur line bypassed the Sasaram Sub-station. The petitioner further clarified that the total length of the line is 337+148 km. The instant petition is

regarding mid-point reactor at Sasaram and other issues raised by PSPCL are dealt in other petitions. The petitioner has also submitted that this issue was discussed in 19th Special meeting of NRPC and 29th Standing Committee, where PSPCL was one of the participants. In response to another query of the Commission, the representative of petitioner submitted that initially the Sasaram HVDC was to be shifted to Kolhapur and the same could not be done and that issue was already discussed in Petition No. 151/TT/2011. As the line was around 500 km, a midpoint reactor was commissioned to connect the line and this arrangement was made with the consent of the beneficiaries. He also submitted that there is no deviation from the approved scheme and the instant transmission asset is part of the approved scheme.

15. We have considered the submission made by the petitioner and respondent. It is observed that the main transmission elements are discussed in the Standing Committee Meetings and finer details like line reactive compensation are determined by CTU. We are of the view that these finer details should also be discussed in the Standing Committee Meetings and the RPC meetings so that the beneficiaries are aware of the assets that are being implemented for which they are required to pay the charges. Accordingly, we direct the CTU to discuss these issues in future both in the Standing Committee Meetings and the RPC meetings. We are also of the view that provision of reactor at mid point for controlling the voltage in the long line is in order. Accordingly, installation of 3x110 MVAR Shunt Reactor as mid-point reactor is allowed. We would like to further add that in the instant case, the Line Reactor

size and MVAR considered are same as originally conceived for Gaya-Sasaram-Fatehpur 765kV line and no additional infrastructure has been created.

### **Capital cost**

16. Regulation 7 of the 2009 Tariff Regulations so far as relevant provides as follows:-

**“(1) Capital cost for a project shall include:-**

- (a) The expenditure incurred or projected to be incurred, including interest during construction and financing charges, any gain or loss on account of foreign exchange risk variation during construction on the loan – (i) being equal to 70% of the funds deployed, in the event of the actual equity in excess of 30% of the funds deployed, by treating the excess equity as normative loan, or (ii) being equal to the actual amount of loan in the event of the actual equity less than 30% of the fund deployed, - up to the date of commercial operation of the project, as admitted by the Commission, after prudence check.
- (b) capitalised initial spares subject to the ceiling rates specified in regulation 8; and
- (c) additional capital expenditure determined under regulation 9:

Provided that the assets forming part of the project, but not in use shall be taken out of the capital cost.

(2) The capital cost admitted by the Commission after prudence check shall form the basis for determination of tariff:

Provided that in case of the thermal generating station and the transmission system, prudence check of capital cost may be carried out based on the benchmark norms to be specified by the Commission from time to time:

Provided further that in cases where benchmark norms have not been specified, prudence check may include scrutiny of the reasonableness of the capital expenditure, financing plan, interest during construction, use of efficient technology, cost over-run and time over-run, and such other matters as may be considered appropriate by the Commission for determination of tariff.”

17. The details of apportioned approved cost, actual expenditure incurred as on date of commercial operation and details of additional capitalization incurred/ projected to be incurred for the period from 1.4.2012 (date of commercial

operation) to 31.3.2014 for the asset covered in the petition are summarized below:-

(₹ in lakh)				
Apportioned / approved cost	Expenditure up to DOCO i.e. 1.4.2012	Projected Exp. from 1.4.2012 to 31.3.2013	Projected Exp. 2013-14	Total estimated completion cost
7920.94	3108.58	426.22	182.66	3717.46

### **Initial Spares**

18. The petitioner has claimed initial spares of ₹23.13 lakh (0.62%) against the sub-station cost of ₹3717.46 lakh, which is within the norms (2.50%) specified in the 2009 Tariff Regulations.

### **Cost Over-run**

19. Total estimated expenditure of the transmission asset is ₹3717.46 lakh against the total apportioned approved cost of ₹7920.94 lakh. Hence, there is no cost over-run. However, there is huge over estimation of FR cost.

20. In response to the Commission's query regarding cost variation, the petitioner has submitted, vide affidavit dated 22.7.2013 and 27.9.2013, that the variation amounting to more than ₹2000 lakh is attributable solely to the deletion from scope (1 No. of 765 kV line bay at Sasaram) due to acute space constraint. Further, the variation in cost of the item is due to actual awarded cost based on bids received from different vendors through domestic competitive biddings of 3x110 MVAR (Switchable) mid-point reactors for 765 kV S/C Gaya- Fatehpur Line instead of 3x110 MVAR switchable line reactors. The variation of 58.8% in

the cost of civil works is due to actual site conditions and actual awarded cost as given in revised Form 5B of the petition.

21. We have considered the submission made by the petitioner regarding cost-variation and we are of the view that the cost variation is beyond the petitioner's control and hence the cost variation is allowed. However, we are of the view that the cost estimates of the petitioner are not realistic. We direct the petitioner to adopt a prudent procedure to make cost estimates of different elements of the transmission projects more realistic. The petitioner is further directed to submit, in future the details of the projects which form the basis for FR, the actual awarded cost and the actual expenditure alongwith the justification for variation in cost.

### **Time Over-run**

22. As per investment approval, the scheme was scheduled to be commissioned within 48 months progressively from the date of investment approval (i.e. 10.12.2008). Accordingly, the schedule of completion works out to 10.12.2012 (say 1.1.2013) against this the asset was commissioned on 1.4.2012. Hence, there is no time over-run.

23. Accordingly, the following capital cost up to date of commercial operation of the transmission asset has been considered for the purpose of tariff:-

(₹ in lakh)		
DOCO	Capital cost considered for the purpose of tariff as on DOCO	Applicable Period of Tariff
1.4.2012	3108.58	1.4.2012 to 31.3.2014

## **Projected Additional Capital Expenditure**

24. Clause (1) of Regulation 9 of the 2009 Tariff Regulations provides as follows:-

“Additional Capitalisation: (1) The capital expenditure incurred or projected to be incurred, on the following counts within the original scope of work, after the date of commercial operation and up to the cut-off date may be admitted by the Commission, subject to prudence check:

- (i) Undischarged liabilities;
- (ii) Works deferred for execution;
- (iii) Procurement of initial capital Spares within the original scope of work, subject to the provisions of Regulation 8;
- (iv) Liabilities to meet award of arbitration or for compliance of the order or decree of a court; and
- (v) Change in Law.”

25. Clause (11) of Regulation 3 of the 2009 Tariff Regulations defines “cut-off” date as under:-

“cut-off date” means 31<sup>st</sup> March of the year closing after 2 years of the year of commercial operation of the project, and in case the project is declared under commercial operation in the last quarter of the year, the cut-off date shall be 31<sup>st</sup> March of the year closing after 3 years of the year of commercial operation”.

Therefore, cut-off date for the above mentioned assets is 31.3.2014.

26. The petitioner has claimed the following additional capital expenditure:-

(₹ in lakh)			
Year	Work / Equipment proposed to be added after DOCO up to 31.3.2014	Add -Cap	Justification/Purpose
2012-13	Substation	426.22	Balance & Retention payment
	Total	<b>426.22</b>	
2013-14	Substation	182.66	Balance & Retention payment
	Total	<b>182.66</b>	

27. The additional capital expenditure claimed is for balance and retention payment which is within the cut-off date and accordingly it is allowed.

## **Debt- Equity Ratio**

28. Regulation 12 of the 2009 Tariff Regulations provides as follows:-

“12. Debt-Equity Ratio (1) For a project declared under commercial operation on or after 1.4.2009, 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 where equity actually deployed is less than 30% of the capital cost, the actual equity shall be considered for determination of tariff: Provided further that the equity invested in foreign currency shall be designated in Indian rupees on the date of each investment.

**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, provided such premium amount and internal resources are actually utilised for meeting the capital expenditure of the generating station or the transmission system.

(2) 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.

(3) Any expenditure incurred or projected to be incurred on or after 1.4.2009 as may be admitted by the Commission as additional capital expenditure for determination of tariff, and renovation and modernisation expenditure for life extension shall be serviced in the manner specified in clause (1) of this regulation.”

29. Debt-equity ratio as on the actual date of commercial operation considered for the purpose of tariff calculation is as follows:-

( ` in lakh)

<b>Capital cost as on date of commercial operation</b>		
<b>Particulars</b>	<b>Amount</b>	<b>%</b>
Debt	2176.01	70.00
Equity	932.57	30.00
<b>Total</b>	<b>3108.58</b>	<b>100.00</b>

30. The add-cap mentioned in para 26 and 27 above has been considered in the debt-equity ratio of 70:30.

31. Details of debt-equity ratio of the transmission assets as on 31.3.2014 are as follows:-

( ` in lakh)

<b>Capital cost as on 31.3.2014</b>		
<b>Particulars</b>	<b>Amount</b>	<b>%</b>
Debt	2602.23	70.00
Equity	1115.23	30.00
<b>Total</b>	<b>3717.46</b>	<b>100.00</b>

### **Return on Equity**

32. Regulation 15 of the 2009 Tariff Regulations provides as under:-

“15. (1) Return on equity shall be computed in rupee terms, on the equity base determined in accordance with regulation 12.

(2) Return on equity shall be computed on pre-tax basis at the base rate of 15.5% for thermal generating stations, transmission system and run of the river generating station, and 16.5% for the storage type generating stations including pumped storage hydro generating stations and run of river generating station with pondage and shall be grossed up as per clause (3) of this regulation:

Provided that in case of projects commissioned on or after 1st April, 2009, an additional return of 0.5% shall be allowed if such projects are completed within the timeline specified in **Appendix-II**:

Provided further that the additional return of 0.5% shall not be admissible if the project is not completed within the timeline specified above for reasons whatsoever.

(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 financial year during the tariff period shall be trued up in accordance with Regulation 6 of these regulations".

33. Return on equity has been computed as per Regulation 15 of the 2009 Tariff Regulations. Pre-tax return on equity of 17.481% has been considered.

34. Based on the above, the return on equity has been considered as given hereunder:-

( ` in lakh)		
<b>Particulars</b>	<b>2012-13</b>	<b>2013-14</b>
Opening Equity	932.57	1060.44
Addition due to Additional Capitalisation	127.87	54.80
Closing Equity	1060.44	1115.23
Average Equity	996.50	1087.84
Return on Equity (Base Rate )	<b>15.50%</b>	<b>15.50%</b>
Tax rate for the year 2008-09 (MAT)	11.33%	11.33%
Rate of Return on Equity (Pre Tax)	17.481%	17.481%
<b>Return on Equity (Pre Tax)</b>	<b>174.20</b>	<b>190.16</b>

### **Interest on Loan**

35. Regulation 16 of the 2009 Tariff Regulations provides as under:-

“16. **Interest on loan capital** (1) The loans arrived at in the manner indicated in regulation 12 shall be considered as gross normative loan for calculation of interest on loan.

(2) The normative loan outstanding as on 1.4.2009 shall be worked out by deducting the cumulative repayment as admitted by the Commission up to 31.3.2009 from the gross normative loan.

(3) The repayment for the year of the tariff period 2009-14 shall be deemed to be equal to the depreciation allowed for that year:

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

(5) The rate of interest shall be the weighted average rate of interest calculated on the basis of the actual loan portfolio at the beginning of each year applicable to the project:

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

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

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

(7) The generating company or the transmission licensee, as the case may be, shall make every effort to re-finance the loan as long as it results in net savings on interest and in that event the costs associated with such re-financing shall be borne by the beneficiaries and the net savings shall be shared between the beneficiaries and the generating company or the transmission licensee, as the case may be, in the ratio of 2:1.

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

(9) In case of dispute, any of the parties may make an application in accordance with the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999, as amended from time to time, including statutory re-enactment thereof for settlement of the dispute:

Provided that the beneficiary or the transmission customers shall not withhold any payment on account of the interest claimed by the generating company or the transmission licensee during the pendency of any dispute arising out of re-financing of loan.”

36. In keeping with the provisions of Regulation 16 of the 2009 Tariff Regulations, the petitioner’s entitlement to interest on loan has been calculated on the following basis:-

(a) Gross amount of loan, repayment of instalments and rate of interest and weighted average rate of interest on actual average loan have been considered as per the petition.

(b) The yearly repayment for the tariff period 2009-14 has been considered to be equal to the depreciation allowed for that year.

(c) Weighted average rate of interest on actual average loan worked out as per (a) above is applied on the notional average loan during the year to arrive at the interest on loan.

37. The interest on loan has been calculated on the basis of prevailing rate available as on date of commercial operation. Any change in the rate of interest subsequent to date of commercial operation will be considered at the time of truing up.

38. Detailed calculations in support of the weighted average rates of interest have been given in Annexure to this order.

39. Based on the above, interest on loan has been calculated as follows:-

(` in lakh)		
Particulars	2012-13	2013-14
Gross Normative Loan	2176.01	2474.36
Cumulative Repayment upto previous year	0.00	175.39
Net Loan-Opening	2176.01	2298.98
Addition due to additional capital expenditure	298.35	127.86
Repayment during the year	175.39	191.46
Net Loan-Closing	2298.98	2235.38
Average Loan	2237.49	2267.18
Weighted Average Rate of Interest on Loan	9.5620%	9.5634%
<b>Interest</b>	<b>213.95</b>	<b>216.82</b>

### **Depreciation**

40. Regulation 17 of the 2009 Tariff Regulations provides as follows:-

“17. **Depreciation** (1) The value base for the purpose of depreciation shall be the capital cost of the asset admitted by the Commission.

(2) 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 stations, the salvage value shall be as provided in the agreement signed by the developers with the State Government for creation of the site;

Provided further that the capital cost of the assets of the hydro generating station for the purpose of computation of depreciable value shall correspond to the percentage of sale of electricity under long-term power purchase agreement at regulated tariff.

(3) 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.

(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.

(5) In case of the existing projects, the balance depreciable value as on 1.4.2009 shall be worked out by deducting the cumulative depreciation as admitted by the Commission up to 31.3.2009 from the gross depreciable value of the assets.

(6) 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.”

41. The transmission asset covered in the current petition was put under commercial operation as on 1.4.2012. The asset will complete 12 years beyond 2013-14. Accordingly, depreciation has been calculated annually based on Straight Line Method and at rates specified in Appendix-III of the 2009 Tariff Regulations.

42. Accordingly depreciation has been worked out on the basis of capital expenditure as on date of commercial operation and additional capital expenditure incurred/projected to be incurred thereafter, wherein depreciation for the first year has been calculated on pro-rata basis for the part of year.

43. Based on the above, depreciation has been calculated are as follows:-

(` in lakh)		
Particulars	2012-13	2013-14
Opening Gross Block	3108.58	3534.80
Addition due to Projected Additional Capitalisation	426.22	182.66
Closing Gross Block	3534.80	3717.46
Average Gross Block	3321.69	3626.13
Rate of Depreciation	5.2800%	5.2800%
Depreciable Value	2989.52	3263.52
Remaining Depreciable Value	2989.52	3088.13
Depreciation	<b>175.39</b>	<b>191.46</b>

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

44. The petitioner has claimed O&M Expenses specified for a 765 bay in the 2009 Tariff Regulations for the instant asset. The petitioner was directed to submit, vide letter dated 6.1.2014, the justification for claiming the O&M Expenses for midpoint reactor. In response, the petitioner has submitted, vide affidavit dated 12.2.2014, that the 3x110 MVAR 765 kV Shunt Reactor at Sasaram Sub-station is installed to control the line voltage for 765 kV S/C Gaya-Sasaram-Fatehpur transmission line. This is a switchable line reactor having all the bay equipment including circuit breaker at Sasaram sub-station and it is like any other switchable line reactor for which O&M Expenses are applicable and allowed by the Commission. The petitioner has submitted that in Petition No. 92/TT/2012 O&M Expenses were allowed for a 2x50 MVAR switchable line reactor bays and in Petition No. 112/TT/2011 O&M Expenses were allowed for 3x63 MVAR switchable line reactor bays. The petitioner has further submitted that the 3x110 MVAR 765 kV shunt reactor at Sasaram has already been identified as switchable line reactor and hence O&M Expenses are claimed as specified in the 2009 Tariff Regulations.

45. It has been observed that 3x110 MVAR 765 kV Shunt Reactor has been provided at Sasaram Sub-station to control the voltage of Gaya-Fatehpur line. This is a midpoint reactor and is acting as fixed line reactor. The said asset has been identified as Switchable line reactor having all the bay equipment including circuit breaker at Sasaram sub-station and it is like any other switchable line reactor for which O&M Expenses are applicable. Accordingly, the O&M Expenses are allowed for the instant asset as specified in the 2009 Tariff Regulations.

46. Regulation 19 (g) of 2009 Tariff Regulations, applicable for 2009-14 period, specifies the following norms for O&M Expenses for assets covered in this petition:-

Elements	2009-10	2010-11	2011-12	2012-13	2013-14
765 kV bays (₹ lakh per bay)	73.36	77.56	81.99	86.68	91.64

47. As per the norms of Tariff Regulations, 2009, allowable O&M Expenses for the asset covered in the petition are as under:

(₹ in lakh)					
Element	2009-10	2010-11	2011-12	2012-13	2013-14
1 no. 765 kV bay	-	-	-	86.68	91.64
<b>Total O&amp;M Expenses</b>	-	-	-	<b>86.68</b>	<b>91.64</b>

48. The petitioner has submitted that O&M Expenses for 2009-14 tariff block had been arrived on the basis of normalized actual O&M Expenses of the petitioner during the year 2003-04 to 2007-08. The wage hike of 50% on account of pay revision of the employees of public sector undertaking was also

considered while calculating the O&M Expenses for tariff period 2009-14. The petitioner has submitted that it would approach the Commission for suitable revision in the norms for O&M Expenses due to impact of wage revision.

49. The Commission has given effect to the impact of pay revision in the 2009 Tariff Regulations by factoring 50% on account of pay revision of the employees of PSUs after extensive consultation with the stakeholders. We do not see any reason why the admissible amount is inadequate to meet the requirement of the employee cost. However, in case the petitioner approaches with any such application, the same shall be dealt with in accordance with law.

### **Interest on Working Capital**

50. The petitioner is entitled to claim interest on working capital as per the 2009 Tariff Regulations. The components of the working capital and the petitioner's entitlement to interest thereon are discussed overleaf:-

#### **(i) Receivables**

As per Regulation 18(1) (c) (i) of the 2009 Tariff Regulations, receivables as a component of working capital will be equivalent to two months' of fixed cost. The petitioner has claimed the receivables on the basis of 2 months' of annual transmission charges claimed in the petition. In the tariff being allowed, receivables have been worked out on the basis of 2 months' transmission charges.

#### **(ii) Maintenance spares**

Regulation 18 (1) (c) (ii) of the 2009 Tariff Regulations provides for maintenance spares @ 15% per annum of the O & M Expenses as part of the working capital from 1.4.2009. The value of maintenance spares has accordingly been worked out.

**(iii) O & M expenses**

Regulation 18(1) (c) (iii) of the 2009 Tariff Regulations provides for O&M Expenses for one month to be included in the working capital. The petitioner has claimed O&M Expenses for 1 month of the respective year. This has been considered in the working capital.

**(iv) Rate of interest on working capital**

In accordance with clause (3) of Regulation 18 of the 2009 Tariff Regulations, as amended, rate of interest on working capital shall be on normative basis and shall be equal to State Bank of India Base Rate of 10.00% plus 350 bps as on 1.4.2012 (13.50%). The interest on working capital for the assets covered in the petition has been worked out accordingly.

51. Necessary computations in support of interest on working capital are given hereunder:-

(` in lakh)

<b>Particulars</b>	<b>2012-13</b>	<b>2013-14</b>
Maintenance Spares	13.00	13.75
O & M Expenses	7.22	7.64
Receivables	111.33	118.15
Total	131.55	139.54
Rate of Interest	13.50%	13.50%
Interest	<b>17.76</b>	<b>18.84</b>



### **Transmission charges**

52. The transmission charges being allowed for the assets are given overleaf:-

(` in lakh)

<b>Particulars</b>	<b>2012-13</b>	<b>2013-14</b>
Depreciation	175.39	191.46
Interest on Loan	213.95	216.82
Return on Equity	174.20	190.16
Interest on Working Capital	17.76	18.84
O & M Expenses	86.68	91.64
<b>Total</b>	<b>667.97</b>	<b>708.92</b>

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

53. The petitioner has sought reimbursement of fee paid by it for filing the petition and publication expenses. The petitioner shall also be entitled for reimbursement of the publication expenses in connection with the present petition, directly from the beneficiaries on *pro-rata* basis in accordance with Regulation 42A (1)(a) of the 2009 Tariff Regulations.

### **Licence Fee**

54. The petitioner has submitted that in O&M Expenses for tariff block 2009-14 the cost associated with license fees had not been captured and the license fee may be allowed to be recovered separately from the respondents.

55. The petitioner shall be entitled for reimbursement of licence fee in accordance with Regulation 42 A (1) (b) of the 2009 Tariff Regulations.

### **Service Tax**

56. The petitioner has made a prayer to be allowed to bill and recover the service tax on transmission charges separately from the respondents, if it is

subjected to such service tax in future. We consider petitioner's prayer premature and accordingly this prayer is rejected.

### **Sharing of Transmission Charges**

57. 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.

58. This order disposes of Petition No. 217/TT/2012.

sd/-  
**(A. K. Singhal)**  
**Member**

sd/-  
**(M. Deena Dayalan)**  
**Member**

sd/-  
**(Gireesh B. Pradhan)**  
**Chairperson**

**Annexure****CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN**

(` in lakh)

	<b>Details of Loan</b>	<b>2012-13</b>	<b>2013-14</b>
<b>1</b>	<b>Bond XXIX</b>		
	Gross loan opening	100.00	<b>100.00</b>
	Cumulative Repayment upto DOCO/previous year	0.00	<b>8.33</b>
	Net Loan-Opening	100.00	91.67
	Additions during the year	0.00	0.00
	Repayment during the year	8.33	8.33
	Net Loan-Closing	91.67	83.33
	Average Loan	95.83	87.50
	Rate of Interest	9.20%	9.20%
	Interest	8.82	8.05
	Rep Schedule	12 annual installments from 12.03.2013	
<b>2</b>	<b>Bond XXXIV</b>		
	Gross loan opening	159.00	<b>159.00</b>
	Cumulative Repayment upto DOCO/previous year	0.00	<b>0.00</b>
	Net Loan-Opening	159.00	159.00
	Additions during the year	0.00	0.00
	Repayment during the year	0.00	0.00
	Net Loan-Closing	159.00	159.00
	Average Loan	159.00	159.00
	Rate of Interest	8.84%	8.84%
	Interest	14.06	14.06
	Rep Schedule	12 annual installments from 21.10.2014	
<b>3</b>	<b>Bond XXXV</b>		
	Gross loan opening	1917.01	<b>1917.01</b>
	Cumulative Repayment upto DOCO/previous year	0.00	<b>0.00</b>
	Net Loan-Opening	1917.01	1917.01
	Additions during the year	0.00	0.00
	Repayment during the year	0.00	0.00
	Net Loan-Closing	1917.01	1917.01
	Average Loan	1917.01	1917.01
	Rate of Interest	9.64%	9.64%
	Interest	184.80	184.80
	Rep Schedule	12 annual installments from 31.05.2015.	
	<b>Total Loan</b>		
	Gross loan opening	2176.01	2176.01
	Cumulative Repayment upto DOCO/previous year	0.00	8.33
	Net Loan-Opening	2176.01	2167.68
	Additions during the year	0.00	0.00
	Repayment during the year	8.33	8.33
	Net Loan-Closing	2167.68	2159.34
	Average Loan	2171.84	2163.51
	Rate of Interest	<b>9.5620%</b>	<b>9.5634%</b>
	<b>Interest</b>	207.67	206.91