

**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Petition No. 111/TT/2012**

**Coram:**

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

**Date of Hearing : 20.03.2014**

**Date of Order : 05.08.2014**

**In the matter of:**

Approval of transmission tariff from anticipated DOCO (1.1.2012) to 31.3.2014 for 400kV D/C Neemrana-Sikar line along with associated bays under Northern Region System Strengthening Scheme-XVII, for tariff block 2009-14 in Northern Region 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. Rajasthan Rajya Vidyut Prasaran Nigam Ltd.,  
Vidyut Bhawan, Vidyut Marg,  
Jaipur- 302 005.
2. Ajmer Vidyut Vitran Nigam Ltd.,  
400 kV GSS Building (Ground Floor), Ajmer Road,  
Heerapura, Jaipur.
3. Jaipur Vidyut Vitran Nigam Ltd.,  
400 kV GSS Building (Ground Floor), Ajmer Road,  
Heerapura, Jaipur.
4. Jodhpur Vidyut Vitran Nigam Ltd.,  
400 kV GSS Building (Ground Floor), Ajmer Road,  
Heerapura, Jaipur.



5. Himachal Pradesh State Electricity Board,  
Vidyut Bhawan, Kumar House Complex Building II,  
Shimla-171 004.
6. Punjab State Electricity Board  
The Mall, Patiala-147 001.
7. Haryana Power Purchase Centre,  
Shakti Bhawan, Sector-6,  
Panchkula (Haryana)-134 109.
8. Power Development Department,  
Govt. of Jammu and Kashmir,  
Mini Secretariat, Jammu.
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.

....Respondents

**For petitioner** : Ms. Sangeeta Edwards, PGCIL  
Shri S.S Raju, PGCIL  
Shri M. M. Mondal, PGCIL

**For respondent** : Shri R. B. Sharma, Advocate, BRPL  
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 400 kV D/C Neemrana-Sikar line along with associated bays (hereinafter referred to as "transmission asset") under Northern Region System Strengthening Scheme-XVII, in Northern Region from anticipated date of commercial operation (1.1.2012) to 31.3.2014 for tariff block 2009-14 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 to the transmission project was accorded by Board of Directors of the petitioner vide the Memorandum ref:- C/CP/NRSSXVII dated 16.2.2009 at an estimated cost of ₹21079 lakh, including IDC of ₹1377 lakh based on 4<sup>th</sup> quarter, 2008 price level. The scope of work under the project includes following transmission lines and sub-stations:-

### **Transmission Lines**

400 kV D/C Neemrana-Sikar line along with associated bays

### **Sub-stations**

- 1) Neemrana 400/220 kV (POWERGRID) Sub-station Extension
- 2) Sikar 400/220 kV (POWERGRID) Sub-station Extension

3. The instant petition covers the entire scope of work covered under this project.

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

(₹ in lakh)			
Particulars	2011-12 (pro-rata)	2012-13	2013-14
Depreciation	162.55	1005.68	1034.63
Interest on Loan	190.32	1128.17	1071.81
Return on Equity	161.85	1002.02	1030.88
Interest on working capital	14.12	87.01	88.42
O & M Expenses	80.14	508.30	537.24
<b>Total</b>	<b>608.98</b>	<b>3731.18</b>	<b>3762.98</b>

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

(₹ in lakh)			
Particulars	2011-12 (pro-rata)	2012-13	2013-14
Maintenance Spares	72.13	76.24	80.59
O & M Expenses	40.07	42.36	44.77
Receivables	608.98	621.86	627.16
<b>Total</b>	<b>721.18</b>	<b>740.46</b>	<b>752.52</b>
Rate of Interest	11.75%	11.75%	11.75%
Interest	14.12	87.00	88.42

6. 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. BSES Rajdhani Power Ltd (BRPL), Respondent No. 12, has filed its reply vide affidavit dated 6.1.2014. BRPL raised the issue of cost variation, time over-run, petition filing fee, service tax and licence fee. The petitioner has filed its rejoinder to the reply of BRPL, vide affidavit dated 17.4.2014. The objections raised by the respondent in its reply and the clarifications given by the petitioner in its rejoinder are addressed in the relevant paragraphs of this order.

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

### **Capital cost**

8. 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.”

### **Cost Variation**

9. The total estimated completion cost of the transmission asset is ₹20063.69 lakh against apportioned approved cost of ₹21079.00 lakh and accordingly there is no cost over-run. However, there is a cost variation in certain items as per Form-5B.

10. BRPL has pointed out that the estimated completion cost of the instant transmission asset is ₹20451 lakh as against the approved cost of ₹21079 lakh, resulting in a net savings in the execution of the transmission asset. BRPL has submitted that inspite of increase in the length of the transmission line by more than 15 km there is savings in the cost of transmission line. BRPL has further submitted that there is huge over-estimation of the cost by the petitioner and thus it is difficult to determine the cost over-run. In response, the petitioner has submitted that the estimates are prepared as per well defined procedures for cost estimate. The cost estimate is broad indicative cost worked out generally on the basis of average unit rates of recently awarded contracts. For procurement, open competitive bidding route is followed and by providing equal opportunity to all eligible firms, lowest possible market prices for required product/services is

obtained and contracts are awarded on the basis of lowest evaluated eligible bidder. The best competitive bid price against tenders is lower as compared to the cost estimate depending upon prevailing market conditions. The petitioner has further submitted that a provision of ₹11.65 crore was made for forest clearance and compensation in FR. The FR is prepared on the basis of walkover survey, however at the time of execution of the project the detailed survey was conducted and it was found that no forest land is involved. As such the allocated amount was not spent and accordingly the completion cost of the project is less than the FR cost.

11. The petitioner has further submitted that the cost variation is due to change in line length from 160 km to 175.89 km for avoiding the mining area in possession of Grasim Industries Limited, resulting in increase in quantities of tower, conductor, earth-wire, hardware fittings and conductor & earth-wire accessories increased proportionately. The petitioner has submitted that the quantity of the following items increased:-

(₹ in lakh)

Item	FR Qty.	Actual Qty.	Reasons
Tower (MT)	7221	7767	Increase in cost due to increase in line length and proportional increase in quantity
Conductor (km)-(D/C with six phase)	1949	2131	
Earth Wire (km)	325	355	
Hardware fittings	349.66	528.17	
Conductor and Earth-wire Accessories	323.76	398.56	
Switchgear	1203.73	1806.91	
PLCC	100.69	150.90	
Misc. Common Equipments	5	7	

12. During the hearing on 20.3.2014 the representative of PSPCL submitted that there is substantial increase in cost of the transmission line material and the

switchgear and this cost over-run should not be allowed. The petitioner was directed to submit the detailed reasons for huge variation in the cost.

13. In response, the petitioner vide affidavit dated 17.4.2014 has submitted as follows:-

- a. For working out project cost estimate, presently Schedule of Rates (SOR) for various items of Bill of Quantities (BOQ) for the transmission line and sub-station are prepared on bi-monthly basis. Such SOR forms the basis for preparation of cost estimate. The Schedule of Rates (SOR) is prepared for all major items of transmission lines and sub-stations (e.g., Tower parts, Conductors Insulators, Transformer, Substation Equipment etc.) on the basis of average of awarded unit rates of generally three latest award letters for similar work. This is done in order to avoid any unbalanced unit rate in a single contract. These unit rates obtained against open competitive bidding are considered to represent best possible market rates for similar work prevailing at that time as participant bidders offer their best possible competitive prices so as to win the contract after taking into consideration the factors like cost of raw material cost and future variations, local conditions and risk performance, availability of resources, implications of technical specification and conditions of contracts, overheads/profit margin besides considering their marketing strategies, order booking position and organization strength, availability of skilled manpower and type of terrain, etc.



- b. These factors are considered for the purpose of working out cost estimate. These unit rates are, however, updated from respective base dates till the latest quarter using applicable PV formula and published indices for the material involved and labour to take care of variation in input cost during the intervening period. (The base date means the date 30 days prior to the Bid Operating Date (OBD) of respective package as defined in the Bidding Documents).
- c. The unit rates thus arrived at on the basis of SOR and the BOQ furnished by the respective engineering group is used for preparation of the cost estimate. For the items, for which in-house cost data/latest cost data is not available, budgetary quotation are obtained from the prospective bidders for such items/services. The various taxes and duties such as Excise duty, Sales tax, Customs duty, Service tax, State Entry tax or any other applicable taxes/duties are also taken into account for preparation of cost estimates. The cost of preliminary works, land and compensation, civil works for infrastructure, building and colony is further added to the equipment cost. Further, the cost towards Centages (i.e., IEDC) such as Miscellaneous Tools and Plants, Maintenance during construction, Engineering & Administration and Contingency is added on percentage basis. Thereafter, considering the implementation schedule and the funding pattern of the project, interest during construction (IDC) is worked out and added to the above cost to arrive at the total cost of the project at particular quarterly price level.

d. Based on the experience, the existing methodology of estimation is continuously revisited in order to make the estimates more realistic as is detailed below:-

- Initially in 1990s, cost estimates were prepared on the basis of unit rates of latest LOA (Single LOA).
- Subsequently, cost estimates were prepared on the basis of average of unit rates of three latest contracts awarded so as to avoid any unbalanced unit rate in a single contract.
- From January 2008, based on advice of CTE (Chief Technical Examiner, CVC), methodology for working out schedule of rates (SOR) on quarterly basis was started.
- From June 2011 onwards, estimates are being prepared considering average of three latest bids opened (instead of three latest award letters) for similar work.
- From December 2011 onwards, the unit rates of major Transmission Line items viz. Tower Steel, Conductor, concreting & Reinforcement Steel are derived based on Raw material cost, labour, etc.
- From February 2012 onwards, SOR is prepared on a bi-monthly basis instead of quarterly basis.

e. However, in spite of all these endeavors, certain variation between estimated price and actual price are inevitable as bid prices against competitive bidding are market driven and based on perception of the bidder.

f. Further, in some cases the cost variation is also due to quantity variation. At the time of preparation of FR, the quantities are considered on the basis walkover survey. However, the contract is awarded after the detailed survey and detailed engineering. There may be variation in line length due to diversion, etc. The type of tower may also vary depending upon the wind zone routing after detailed survey. The cost of foundation may also vary due to the type of soil and geographical surprises encountered during the construction. The various factors may lead to changes in quantities in actual execution of the project as compared to the estimates. Therefore, such variation is beyond the control of the executing agencies. The petitioner is continuously reviewing its methodology of preparation of cost and quality estimates in order to make the estimates more realistic.

14. We have considered the submissions made by both the petitioner and respondents. The variation in cost of certain items is due to increase in length of the transmission line from 160 km to 175.89 km to avoid the proposed mining area owned by Grasim Industries Limited. This increase in length of the transmission line cannot be attributed to the petitioner and therefore the related cost increase is allowed. As regards cost over-estimation, we have carefully gone through the detailed justification submitted by the petitioner vide affidavit dated 17.4.2014. Though the petitioner is stated to have taken various steps to make the cost estimates realistic, in actuality there continues to be wide variation between the FR cost and the actual cost. We are of the view that the petitioner

should analyse the reasons for such huge variation and come out with the methodologies or procedure for preparation of cost estimates which is realistic and does not vary widely from the actual expenditure. The petitioner is further directed to submit in all future transmission tariff petitions the details of the basis of FR cost estimates of the transmission asset covered in the petition and the actual cost along with reasons for variation as per the following format:-

S No	Element	Basis forming FR Cost									FR Cost			Actual Cost			Remarks
		Project-1			Project-2			Project-3			Estimated						
		Q	R	PL	Q	R	PL	Q	R	PL	Q	R	PL	Q	R	PL	
1																	
2																	
3																	

Q-Quantity R-Rate PL-Price Level

### **Time Over-run**

15. As per the investment approval dated 16.2.2009, the instant transmission asset was scheduled to be commissioned within 30 months from the date of investment approval. Accordingly, the schedule date of completion works out to 16.8.2011 i.e. 1.9.2011, against which the instant transmission asset was commissioned on 1.2.2012. Accordingly, there is time over-run of 5 months.

16. BRPL has submitted that the scheduled commissioning as per investment approval works out to 21.7.2011. However, as per Form-5C the date of completion of the work is 5.3.2011. There is time over run of eight and half

months. BRPL has further submitted that the petitioner has attributed the time over-run to the delayed clearance from mining department. However, the documents filed with the petition show that the mining clearance dated 13.10.2010 was inconsequential and not considered necessary as the petitioner had already agreed, during the meeting held on 26.3.2010, to realign the route of the line as per requirements of the Grasim Industries Limited as the work of 400 kV D/C Neemrana-Sikar line was under preliminary survey stage. Thus, the responsibility of time over-run of this project rests with the petitioner and accordingly the IDC and the IEDC for the period of time over-run should not be allowed. In response, the petitioner in its rejoinder has clarified that the date of completion given in Form-5C is related to the various individual contracts given by the petitioner for completion of various activities, the same cannot be considered as completion schedule of the project. The completion schedule as specified in Appendix-II of the 2009 Tariff Regulations should be considered on the basis of investment approval. Accordingly, there is a time over-run of 5 months in completion of the assets. The progress of work was mainly hampered due to objections raised by Ministry of Mines, Rajasthan as some portion of the line was falling in the proposed mining area. Re-routing of the line from the proposed mining area and subsequent clearance from the Ministry of Mines, Rajasthan delayed completion of this line.

17. During the hearing on 20.3.2014, the representative of PSPCL submitted that the instant line is passing through the land allotted to Grasim Industries Limited for the purpose of mining and accordingly the line was diverted and this

diversion and delay in issue of clearance by mining department led to time over-run of five months. The investment approval was granted on 16.2.2009 and the land was allotted to Grasim Industries Limited in the year 2007. The petitioner should have conducted survey before planning the line and if sufficient care was taken by the petitioner at the time of planning, the delay of five months could have been avoided. The contract for tower packages was awarded in March, 2009 and as per the documents submitted by the petitioner, the issue of land was taken up with Grasim Industries Limited only in the year 2010 and the issue was taken up with the Government of Rajasthan in a meeting held in March, 2010. There is considerable delay on the part of the petitioner in taking up the issue of land with concerned authorities and hence the delay of five months should not be condoned and the IDC and IEDC for a period of five months should not be allowed. The representative of BRPL submitted that IDC and IEDC for the period of 5 months delay should not be allowed. The representative of petitioner has clarified that at the time of FR, a walk over survey was conducted and later a detailed survey was conducted. The objection from Grasim Industries Limited was received only in the year 2010 and thereafter discussions with various authorities were held. The mining clearance was received after a period of one year and hence the time over-run of five months. As regards BRPL's observation regarding of date of completion in Form 5C, the representative of the petitioner clarified that the cushion of five months, after completion of various packages, is kept to meet any contingency.

18. We have considered the submissions made by the petitioner and respondents. We have also gone through the documents submitted by the

petitioner and we are convinced that the progress of work was mainly hampered due to delayed clearance received from Ministry of Mines, Rajasthan. Accordingly, the time over-run of 5 months is condoned.

### **Initial Spares**

19. The petitioner has not claimed any initial spares for both sub-station and transmission line.

20. Details of capital cost submitted by the petitioner vide Management Certificate dated 16.9.2013, vide affidavit dated 7.10.2013 as on the actual date of commercial operation and estimated additional capital expenditure projected to be incurred for the asset and the cost considered for the purpose of are tariff computation are summarized below:-

(` in lakh)

Apportioned approved cost	Cost incurred upto actual DOCO	Additional capital expenditure			Total estimated completion cost
		2011-12	2012-13	2013-14	
21079.00	18070.90	892.38	287.15	813.26	20063.69

The expenditure up to 31.3.2013 has been verified on the basis of the information drawn from the audited statement of accounts of the petitioner. Expenditure from 1.4.2013 to 30.6.2013 is on the basis of statement of accounts furnished by the Management.

### **Projected Additional Capital Expenditure**

21. 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.”

22. 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.

23. The petitioner, vide affidavit dated 7.10.2013, has claimed the following revised additional capital expenditure:-

(₹ in lakh)				
Sr. No.	Year	Work	Amount capitalised and proposed to be capitalised	Justification as per propose
1.	2011-12	Building	43.39	Balance and Retention payment
		Transmission Line	287.96	Balance and Retention payment
		Sub-Station	538.75	Balance and Retention payment
		PLCC	22.28	Balance and Retention payment
		TOTAL	892.38	
2.	2012-13	Building	48.18	Balance and Retention payment
		Transmission Line	76.47	Balance and Retention payment
		Sub-Station	155.23	Balance and Retention payment
		PLCC	7.27	Balance and Retention payment
		TOTAL	813.26	



3.	2013-14	Transmission Line	486.84	Balance and Retention payment
		Sub-Station	264.08	Balance and Retention payment
		PLCC	62.34	Balance and Retention payment
		TOTAL	287.15	

24. The additional capital expenditure incurred and projected to be incurred for the instant transmission asset from the date of commercial operation to 31.3.2012 and during 2012-13 and 2013-14 is on account of Balance/Retention payments. The additional capital expenditure claimed by the petitioner is within the cut-off date and accordingly it is allowed.

### **Debt- Equity Ratio**

25. Regulation 12 of the 2009 Tariff Regulations provides as under:-

“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.”

26. The details of debt-equity as on date of commercial operation of the transmission assets are as follows:-

( ` in lakh)

<b>Capital cost as on date of commercial operation</b>		
<b>Particulars</b>	<b>Amount</b>	<b>%</b>
Debt	12649.63	70.00
Equity	5421.27	30.00
<b>Total</b>	<b>18070.90</b>	<b>100.00</b>

27. The details of debt-equity considered for additional capital expenditure for the purpose of tariff calculation is as follows:-

( ` in lakh)

<b>2011-12</b>		
<b>Particulars</b>	<b>Amount</b>	<b>%</b>
Debt	624.67	70.00
Equity	267.71	30.00
<b>Total</b>	<b>892.38</b>	<b>100.00</b>
<b>2012-13</b>		
<b>Particulars</b>	<b>Amount</b>	<b>%</b>
Debt	201.01	70.00
Equity	86.14	30.00
<b>Total</b>	<b>287.15</b>	<b>100.00</b>
<b>2013-14</b>		
<b>Particulars</b>	<b>Amount</b>	<b>%</b>
Debt	569.28	70.00
Equity	243.98	30.00
<b>Total</b>	<b>813.26</b>	<b>100.00</b>

28. The details of debt-equity ratio for the instant transmission assets as on 31.3.2014 is as follows:-

( ` in lakh)

<b>Capital cost as on 31.3.2014</b>		
<b>Particulars</b>	<b>Amount</b>	<b>%</b>
Debt	14044.58	70.00
Equity	6019.11	30.00
<b>Total</b>	<b>20063.69</b>	<b>100.00</b>

## **Return on Equity**

29. 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".

30. The petitioner's prayer to recover the shortfall or refund the excess Annual Fixed Charges, on account on return on equity due to change in applicable

Minimum Alternate Tax/Corporate Income Tax rate as per the Income Tax Act, 1961 of the respective financial year directly without making any application before the Commission shall be dealt under Regulation 15(3) as state above. Return on Equity has been computed @ 17.481% p.a on average equity as per Regulation 15 of the 2009 Tariff Regulations.

31. Based on the above, the return on equity allowed is as follows:-

( ` in lakh)			
Particulars	2011-12 (pro-rata)	2012-13	2013-14
Opening Equity	5421.27	5688.98	5775.13
Addition due to Additional Capitalisation	267.71	86.15	243.98
Closing Equity	5688.98	5775.13	6019.11
Average Equity	5555.13	5732.06	5897.12
Return on Equity (Base Rate )	<b>15.50%</b>	<b>15.50%</b>	<b>15.50%</b>
Tax rate for the year 2008-09 (MAT)	11.33%	11.33%	11.33%
Rate of Return on Equity (Pre Tax)	17.481%	17.481%	17.481%
<b>Return on Equity (Pre-tax)</b>	<b>161.85</b>	<b>1002.02</b>	<b>1030.88</b>

### **Interest on Loan**

32. 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.”

33. 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 repayment for the tariff period 2009-14 shall be deemed to be equal to the depreciation allowed for that period.

(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.

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

35. Based on the above, Interest on Loan has been calculated as given hereunder:-

(` in lakh)			
Particulars	2011-12 (pro-rata)	2012-13	2013-14
Gross Normative Loan	12649.63	13274.30	13475.30
Cumulative Repayment upto previous year	0.00	162.55	1168.23
Net Loan-Opening	12649.63	13111.75	12307.07
Addition due to additional capital expenditure	624.67	201.01	569.28
Repayment during the year	162.55	1005.68	1034.63
Net Loan-Closing	13111.75	12307.07	11841.72
Average Loan	12880.69	12709.41	12074.40
Weighted Average Rate of Interest on Loan	8.8656%	8.8766%	8.8767%
<b>Interest</b>	<b>190.32</b>	<b>1128.17</b>	<b>1071.81</b>

### **Depreciation**

36. 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.”

37. The date of commercial operation of the instant transmission asset is 1.2.2012 and it 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 Tariff Regulation 2009-14, as per details given hereunder:-

Particulars	(` in lakh)		
	2011-12 (pro-rata)	2012-13	2013-14
Opening Gross Block	18070.90	18963.28	19250.43
Addition due to Projected Additional capitalisation	892.38	287.15	813.26
Closing Gross Block	18963.28	19250.43	20063.69
Average Gross Block	18517.09	19106.86	19657.06
Rate of Depreciation	5.2669%	5.2635%	5.2634%
Depreciable Value	16665.38	17196.17	17691.35
Remaining Depreciable Value	16665.38	17033.62	16523.13
Depreciation	<b>162.55</b>	<b>1005.68</b>	<b>1034.63</b>

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

38. Clause (g) of Regulation 19 of the 2009 Tariff Regulations prescribes the norms for O&M Expenses for the transmission system based on the type of sub-station and the transmission line. Norms specified in respect of the instant transmission asset are as under:-

#### **Norms for AC and HVDC lines:**

(₹ lakh per km)					
Element	2009-10	2010-11	2011-12	2012-13	2013-14
D/C (Twin & Triple Conductor)	0.627	0.663	0.701	0.741	0.783

#### **Norms for Sub-station:**

(₹ lakh per bay)					
Element	2009-10	2010-11	2011-12	2012-13	2013-14
400 kV bay	52.40	55.40	58.57	61.92	65.46

39. The O&M Expenses for the assets covered in the petition, as per norms specified in 2009 Tariff Regulations, are as follows:-

(` in lakh)			
Element	2011-12 (Pro-rata)	2012-13	2013-14
400 kV D/C Neemrana-Sikar line (175.859 km)	20.55	130.31	137.70
2 Nos. 400 kV bays at Neemrana Sub-Station	19.52	123.84	130.92
2 Nos. 400 kV bays at Sikar Sub-Station	19.52	123.84	130.92
<b>Total</b>	<b>59.59</b>	<b>377.99</b>	<b>399.54</b>

40. The petitioner has submitted that O & M Expenses for the year 2009-14 had been arrived at on the basis of normalized actual O & M expenses during the period 2003-04 to 2007-08 and by escalating it by 5.72% per annum for arriving at the norms for the years of tariff period. The wage hike of 50% on account of pay revision of the employees of public sector undertaking has also been considered while calculating the O & M Expenses for the tariff period 2009-14.



The petitioner has further submitted that it would approach the Commission for suitable revision in the norms for O & M Expenses in case the impact of wage hike with effect from 1.1.2007 is more than 50%.

41. The Commission has given effect to impact of pay revision in the 2009 Tariff Regulations by factoring 50% on account of pay revision of the employees of PSUs after extensive stakeholders' consultation. 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**

42. 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 hereunder:-

##### **(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 operation and maintenance 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 8.25% plus 350 bps as on 1.4.2011 (11.75%). The interest on working capital for the assets covered in the petition has been worked out accordingly.

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

(` in lakh)

<b>Particulars</b>	<b>2011-12 (pro-rata)</b>	<b>2012-13</b>	<b>2013-14</b>
Maintenance Spares	53.63	56.70	59.93
O & M Expenses	29.80	31.50	33.30
Receivables	587.45	599.10	603.11
Total	670.87	687.30	696.34
Rate of Interest	11.75%	11.75%	11.75%
Interest	<b>13.14</b>	<b>80.76</b>	<b>81.82</b>

### **Transmission Charges**

44. The transmission charges being allowed for the assets are summarized below:-

( ` in lakh)			
Particulars	2011-12 (pro-rata)	2012-13	2013-14
Depreciation	162.55	1005.68	1034.63
Interest on Loan	190.32	1128.17	1071.81
Return on Equity	161.85	1002.02	1030.88
Interest on Working Capital	13.14	80.76	81.82
O & M Expenses	<b>59.59</b>	<b>377.99</b>	<b>399.54</b>
<b>Total</b>	<b>587.45</b>	<b>3594.62</b>	<b>3618.68</b>

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

45. The petitioner has sought reimbursement of fee paid by it for filing the petition and publication expenses. The BRPL submitted that the petitioner's prayer for filing fee should be rejected in line with the Commission's order dated 11.9.2008 in Petition No.129/2005. The petitioner in its rejoinder has clarified that the Commission allowed the filing fee and expenses related to publication of notices in its order dated 1.9.2010 in Petition No.71/2010 and submitted that said expenses have been claimed in terms of Regulation 42 of the 2009 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 Regulation 42A (1) (a) of the 2009 Tariff Regulations.

### **Licence Fee**

46. The petitioner has submitted that in O&M norms 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. The petitioner shall be entitled for reimbursement of licence fee in accordance with Regulation 42A (1) (b) of the 2009 Tariff Regulations

### **Service Tax**

47. 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. The BRPL has objected to recovery of service tax from the beneficiaries in future as CBEC has exempted service tax on transmission. Vide notification No. 11/2010-service tax dated 20.7.2010. The petitioner clarified that if notifications regarding granting of exemption to transmission service are withdrawn at a later date, the beneficiaries shall have to share the service tax paid by the petitioner. We consider petitioner's prayer premature and accordingly this prayer is rejected.

### **Sharing of Transmission Charges**

48. The billing, collection & disbursement of the transmission charges 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.

49. This order disposes of Petition No. 111/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>2011-2012</b>	<b>2012-2013</b>	<b>2013-14</b>
<b>1</b>	<b>Bond XXX</b>			
	Gross loan opening	<b>1450.00</b>	<b>1450.00</b>	<b>1450.00</b>
	Cumulative Repayment upto DOCO/previous year	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
	Net Loan-Opening	1450.00	1450.00	1450.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	120.83
	Net Loan-Closing	1450.00	1450.00	1329.17
	Average Loan	1450.00	1450.00	1389.58
	Rate of Interest	8.80%	8.80%	8.80%
	Interest	127.60	127.60	122.28
	Rep Schedule	12 annual installments from 29.09.2013		
<b>2</b>	<b>Bond XXXI</b>			
	Gross loan opening	<b>3437.00</b>	<b>3437.00</b>	<b>3437.00</b>
	Cumulative Repayment upto DOCO/previous year	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
	Net Loan-Opening	3437.00	3437.00	3437.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	286.42
	Net Loan-Closing	3437.00	3437.00	3150.58
	Average Loan	3437.00	3437.00	3293.79
	Rate of Interest	8.90%	8.90%	8.90%
	Interest	305.89	305.89	293.15
	Rep Schedule	12 annual installments from 25.02.2014		
<b>3</b>	<b>Bond XXXVI</b>			
	Gross loan opening	<b>1185.62</b>	<b>1185.62</b>	<b>1185.62</b>
	Cumulative Repayment upto DOCO/previous year	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
	Net Loan-Opening	1185.62	1185.62	1185.62
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	1185.62	1185.62	1185.62
	Average Loan	1185.62	1185.62	1185.62
	Rate of Interest	9.35%	9.35%	9.35%
	Interest	110.86	110.86	110.86
	Rep Schedule	12 annual installments from 29.08.2016		
<b>4</b>	<b>Bond XXXIII</b>			
	Gross loan opening	<b>4000.00</b>	<b>4000.00</b>	<b>4000.00</b>
	Cumulative Repayment upto DOCO/previous year	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
	Net Loan-Opening	4000.00	4000.00	4000.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00

	Net Loan-Closing	4000.00	4000.00	4000.00
	Average Loan	4000.00	4000.00	4000.00
	Rate of Interest	8.64%	8.64%	8.64%
	Interest	345.60	345.60	345.60
	Rep Schedule	12 annual installments from 08.07.2014		
<b>5</b>	<b>Bond XXXIV</b>			
	Gross loan opening	<b>2297.00</b>	<b>2297.00</b>	<b>2297.00</b>
	Cumulative Repayment upto DOCO/previous year	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
	Net Loan-Opening	2297.00	2297.00	2297.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	2297.00	2297.00	2297.00
	Average Loan	2297.00	2297.00	2297.00
	Rate of Interest	8.84%	8.84%	8.84%
	Interest	203.05	203.05	203.05
	Rep Schedule	12 annual installments from 21.10.2014		
<b>6</b>	<b>Bond XXXV</b>			
	Gross loan opening	<b>280.00</b>	<b>280.00</b>	<b>280.00</b>
	Cumulative Repayment upto DOCO/previous year	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
	Net Loan-Opening	280.00	280.00	280.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	280.00	280.00	280.00
	Average Loan	280.00	280.00	280.00
	Rate of Interest	9.64%	9.64%	9.64%
	Interest	26.99	26.99	26.99
	Rep Schedule	12 annual installments from 31.05.2015		
<b>7</b>	<b>Bond XXXVI Add cap for 2011-12</b>			
	Gross loan opening	<b>0.00</b>	<b>605.38</b>	<b>605.38</b>
	Cumulative Repayment upto DOCO/previous year	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
	Net Loan-Opening	0.00	605.38	605.38
	Additions during the year	605.38	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	605.38	605.38	605.38
	Average Loan	302.69	605.38	605.38
	Rate of Interest	9.35%	9.35%	9.35%
	Interest	28.30	56.60	56.60
	Rep Schedule	12 annual installments from 29.08.2016		
	<b>Total Loan</b>			
	Gross loan opening	12649.62	13255.00	13255.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	12649.62	13255.00	13255.00
	Additions during the year	605.38	0.00	0.00
	Repayment during the year	0.00	0.00	407.25
	Net Loan-Closing	13255.00	13255.00	12847.75

	Average Loan	12952.31	13255.00	13051.38
	Rate of Interest	<b>8.8656%</b>	<b>8.8766%</b>	<b>8.8767%</b>
	<b>Interest</b>	1148.30	1176.60	1158.54