CENTRAL ELECTRICITY REGULATORY COMMISSION

NEW DELHI

<u>Petition No. 33/TT/2011</u>

Coram:

Dr. Pramod Deo, Chairperson
Shri S. Jayaraman, Member
Shri V.S. Verma, Member
Shri Deena Dayalan, Member

Date of Hearing: 05.07.2012
Date of Order : 25.04.2013

In the matter of:

Approval 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, for determination of transmission tariff from 1.4.2009 to 31.3.2014 for 40% FSC on Allahabad-Mainpuri 400 kV D/C line at Mainpuri (anticipated date of commercial operation: 1.2.2011) under transmission system associated with Northern Region System Strengthening Scheme II in Northern Region .

And

In the matter of:

Power Grid Corporation of India Limited, Gurgaon ……**Petitioner**

Vs

1. Rajasthan Rajya Vidyut Prasaran Nigam Limited
2. Ajmer Vidyut Vitran Nigam Limited, Jaipur
3. Jaipur Vidyut Vitran Nigam Limited, Jaipur
4. Jodhpur Vidyut Vitran Nigam Limited, Jaipur
5. Himachal Pradesh State Electricity Board, Shimla
6. Punjab State Electricity Board, Patiala
7. Haryana Power Purchase Centre, Panchkula
8. Power Development Department, Jammu
9. Uttar Pradesh Power Corporation Ltd., Lucknow
10. Delhi Transco Limited, New Delhi
11. BSES Yamuna Power Limited, New Delhi

12. BSES Rajdhani Power limited, New Delhi
13. North Delhi Power Limited, New Delhi
14. Chandigarh Administration, Chandigarh
15. Uttarakhand Power Corporation Ltd., Dehradun
16. North Central Railway, Allahabad
17. New Delhi Municipal Council, New Delhi ……**Respondents**

The following were present:

1. Shri M.M. Mondal, PGCIL
2. Shri S.S Raju, PGCIL
3. Shri Shashi Bhushan, PGCIL
3. Shri A.V.S. Ramesh,PGCIL
2. Shri Mukesh Khanna, PGCIL
3. Shri V. Thiagarajan, PGCIL
4. Shri T.P.S. Bawa, PSPCL
5. Shri R.B. Sharma, Advocate, BRPL

ORDER

This petition has been filed by Power Grid Corporation of India Limited (PGCIL) seeking approval of transmission tariff for 40% FSC on Allahabad-Mainpuri 400 kV D/C line at Mainpuri (hereinafter referred to "as the transmission asset") under transmission system associated with Northern Region System Strengthening Scheme II (NRSS-II) in Northern Region for 2009-14 tariff period (anticipated date of commercial operation 1.2.2011) 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 for the project was accorded by Board of Directors of the petitioner vide Memorandum ref: C/CP/N69-00 dated 25.2.2004 at an estimated cost of `24778 lakh including interest during construction of `1501 lakh, at 4th Quarter, 2003 price level. Subsequently, the Revised Cost

Estimate for the subject project has been approved by Board of Directors of the petitioner vide the memorandum ref: C/CP/RCE-NRSS-II dated 7.12.2007 at an estimated cost of `29281 lakh including interest during construction of `1929 lakh, at 1st Quarter, 2007 price level.

3. The scope of work under the "Northern Region System Strengthening Scheme-II" includes the following transmission lines and sub-stations:-

Transmission Line

Agra- Jaipur 400 kV D/C line

Sub-Stations

(i) 40% Fixed Series Compensation on Allahabad- Mainpuri 400 kV D/C line at Mainpuri end

(ii) 3rd 400/220 kV , 315 MVA ICT at Wagoora

(iii) Agra 400 kV (PGCIL) sub-station (extension)

(iv) Jaipur 400/220 kV (PGCIL) sub-station (extension)

4. The assets covered in the instant petition are as under:-

S.No.	**400 kV sub-station:**	**Date of commercial operation**
	Mainpuri Sub-Station:	
1	400 kV FSC-I bay for Allahabad-I	1.5.2011
2	400 kV FSC-II bay for Allahabad-II	1.5.2011

5. The instant petition covers determination of tariff based on actual expenditure incurred up to date of commercial operation and estimated additional

capital expenditure projected to be incurred from date of commercial operation to 31.3.2012 and during 2012-13. The details of apportioned approved cost as on the date of commercial operation and additional capital expenditure projected to be incurred for the above mentioned asset as per the Management Certificate dated 6.3.2012, submitted by the petitioner vide affidavit dated 19.3.2012, are given hereunder:-

(` in lakh)

Apportioned approved cost as per RCE	Expenditure up to date of commercial operation (30.4.2011)	Projected additional capital expenditure from date of commercial operation to 31.3.2012	Projected additional capital expenditure from 1.4.2012 to 31.3.2013	Total expenditure
3672.95	2950.64	249.46	253.67	3453.77

6. Details of the transmission charges claimed by the petitioner are as under:-

(` in lakh)

Particulars	2010-11	2011-12	2012-13	2013-14
Depreciation	29.18	185.77	190.44	190.44
Interest on Loan	33.33	203.16	192.79	176.81
Return on equity	28.98	184.50	189.14	189.14
Interest on Working Capital	2.71	17.07	17.37	17.39
O & M Expenses	18.47	117.14	123.84	130.92
Total	**112.67**	**707.64**	**713.58**	**704.70**

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

(` in lakh)

Particulars	2010-11	2011-12	2012-13	2013-14
Maintenance Spares	16.62	17.57	18.58	19.64
O & M expenses	9.24	9.76	10.32	10.91
Receivables	112.67	117.94	118.93	117.45
Total	**138.53**	**145.27**	**147.83**	**148.00**
Interest	2.71	17.07	17.37	17.39
Rate of Interest	11.75%	11.75%	11.75%	11.75%

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, 2003. The reply has been filed by Respondent No. 6 Punjab State Power Corporation Limited (PSPCL) and Respondent No. 12 BSES Rajdhani Power Ltd. (BRPL). The petitioner has filed the rejoinder to both PSPCL and BRPL's reply. The objections raised by the respondents and the clarifications given by the petitioner are dealt in 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.

Capital cost

10. As regards the capital cost, Regulation 7 (1) of the 2009 Tariff Regulations provides as under:-

> "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."

11. The petitioner has claimed capital cost of ₹2950.64 lakh as per the Management Certificate dated 6.3.2012, which includes ₹145.61 lakh of initial spares pertaining to sub-stations.

Time overrun

12. As per the investment approval dated 25.2.2004, the scheduled date of commissioning of the transmission assets covered in the instant petition was within a period of 33 months from the date of letter of award for tower package. The date of letter of award for tower package was 25.2.2004 and accordingly, the scheduled completion works out to 25.11.2006 i.e. 1.12.2006, against which the actual date of commercial operation was 1.5.2011. Thus, there has been a delay of 4 years and 5 months i.e. 53 months.

13. The petitioner has submitted the following reasons, vide affidavit dated 3.11.2011, for the delay in commissioning of the FSC:-

(a) The LoA for FSC was placed on M/s BHEL on 17.3.2005. As per the LoA, the commissioning was to be completed in all respects by 16.6.2006. However, the work stopped on 25.2.2006 due to dispute between BHEL and the petitioner regarding approval of the sub-vendor. After resolving the matter, civil works resumed on 2.5.2006.

(b) The work was delayed due to a number of problems faced in execution of the work by BHEL, which are as follows:-

(i) Foundation works delayed due to obstruction of existing LA and CVT, which were shifted during the period 16.5.2007 to 25.6.2007. The balance work was awarded by the petitioner to another contractor on 13.8.2009 at the risk and cost of BHEL.

(ii) Civil works like major portion of cable trench, roads, drains and gravel filing and fencing were pending as the sub-vendor of BHEL left site in June, 2008.

(iii) Due to problem in pilot valve in FSC breaker of Ckt-1 B phase and Ckt-2 R phase, the commissioning tests were pending upto June, 2010.

(iv) CEA clearance was accorded in August, 2010 after attending to defects.

(v) Subsequently there were problems in the capacitors banks which were rectified and test charged by BHEL on 14.12.2010 but due to the problem in Y phase CB, the commissioning was not successful.

(vi) BHEL again reported on site on 17.1.2011 and replaced the transducers for both the circuits and FSC was finally commissioned in the month of April, 2011 and date of commercial operation declared on 1.5.2011.

14. BRPL has submitted in its reply, vide affidavit dated 27.6.2012, that the petitioner may not be allowed IDC and IEDC for the time over-run of 53 months. The petitioner has clarified in its rejoinder, dated 4.8.2012 that the delay is on account of technical problems which were beyond the control of the petitioner.

15. PSPCL, in its reply vide affidavit dated 27.5.2011, has submitted that the 40% FSC was necessary to increase the MW capacity of the line so that extra power could be transmitted on the East to West corridor of northern region. The time over-run has adversely affected NR constituents and the transmission was not available when it was really required. PSPCL has further submitted that the petitioner should inform the quantum of liquidated damages/penalty on BHEL for delay, and whether the same was reflected in reduction of capital cost. PSPCL has also requested to inform the percentage availability of FSC. The petitioner has submitted that the contract closing of the package is under process and the amount of liquidated damage is yet to be finalized and that the same shall be submitted after closing of contract. The petitioner further clarified that the series compensation is normally planned on long lines to improve their loadability so that they can be utilised closer to their designed limits. Planning of series compensation in a meshed network is done in a coordinated manner in such a way that lines are loaded to their capacity and there is no unbalanced loading or bottleneck. While planning new transmission lines in East-West corridor, the series compensation on Allahabad-Mainpuri was considered to be in place and their requirement emerged accordingly. The petitioner has also clarified that the series compensation is fully utilised and would continue to operate as part of the integrated grid.

16. The Appellate Tribunal for Electricity in its judgement dated 27.4.2011 in Appeal No. 72/2010 (MSPGCL Vs. MERC & Ors.) has laid down the following principles for prudence check of time over-run related cost:-

"7.4. The delay in execution of a generating project could occur due to following reasons:

i) due to factors entirely attributable to the generating company, e.g., imprudence in selecting the contractors/suppliers and in executing contractual agreements including terms and conditions of the contracts, delay in award of contracts, delay in providing inputs like making land available to the contractors, delay in payments to contractors/suppliers as per the terms of contract, mismanagement of finances, slackness in project management like improper co-ordination between the various contractors, etc.

ii) due to factors beyond the control of the generating company e.g. delay caused due to force majeure like natural calamity or any other reasons which clearly establish, beyond any doubt, that there has been no imprudence on the part of the generating company in executing the project.

iii) situation not covered by (i) & (ii) above.

In our opinion in the first case the entire cost due to time over run has to be borne by the generating company. However, the Liquidated Damages (LDs) and insurance proceeds on account of delay, if any, received by the generating company could be retained by the generating company. In the second case the generating company could be given benefit of the additional cost incurred due to time over-run. However, the consumers should get full benefit of the LDs recovered from the contractors/suppliers of the generating company and the insurance proceeds, if any, to reduce the capital cost. In the third case the additional cost due to time overrun including the LDs and insurance proceeds could be shared between the generating company and the consumer. It would also be prudent to consider the delay with respect to some benchmarks rather than depending on the provisions of the contract between the generating company and its contractors/suppliers. If the time schedule is taken as per the terms of the contract, this may result in imprudent time schedule not in accordance with good industry practices."

In the light of the above principles, the issue of time and cost over-run in respect of the subject asset has been considered. The petitioner selected BHEL to execute the project out of the four bidders who submitted the bid through a process of international competitive bidding. BHEL is a Central Public Sector Undertaking executing the electrical works in the country. Therefore, it cannot be said that the petitioner has committed any imprudence in selecting the contractor / suppliers. In the present case, it is noted that the commissioning of

FSC was delayed due to technical problems in the FSC and desertion of the sub-vendor of BHEL. However, due to technical problems, FSC could not be installed in time. Desertion of the sub-vendor of BHEL in the middle of the execution of the project also contributed to the delay. The petitioner took steps to appoint a sub-vendor to execute the work at the cost and risk of BHEL. In our view, delay in execution of the project cannot be entirely attributed to the petitioner. The delay is also not on account of any force majeure event. Therefore, the case falls under the third category as the execution of the work was delayed on account of BHEL. Clause 11.0 of the LoA dated 17.3.2005 deals with liquidated damages for delay under which BHEL is required to pay a sum equivalent to half per cent of contract price as liquidated damages subject to the limit of 5% of contract price. The representative of the petitioner during the hearing on 5.7.2012 submitted that the maximum liquidated damages of 5% of contract price would be imposed on BHEL and it would be adjusted in the capital cost. In our view, the petitioner cannot totally absolve itself of the responsibility for the delay as proper monitoring the works of the contractor and sub-vendor would have curtailed the delay in execution of work to a large extent. Accordingly, we are of the view that the petitioner should be equally held liable for the delay in execution of the asset. We direct that both the petitioner and the beneficiaries shall share the IDC and IEDC for the period 1.12.2006 to 1.5.2011 and the liquidated damages received from BHEL in equal proportion. Consequently, IDC and IEDC to the extent of 50% are capitalised. As regards liquidated damages, the petitioner has submitted that the amount of liquidated damages is yet to be finalised as contract of this package is not yet closed.

Proportionate sharing of liquidated damages between the petitioner and the beneficiaries shall be considered at the time of truing up, once the amount is finalised.

17. Accordingly, the IEDC and IDC amounting to `163.11 lakh up to date of commercial operation, claimed by the petitioner have been restricted. 50% of IEDC and IDC, i.e. ₹51.72 lakh, has been deducted for delay in commissioning of the transmission assets. The details of IEDC & IDC claimed by the petitioner and the IEDC & IDC disallowed are given hereunder:-

Particulars	IEDC	IDC	Total
IDC and IEDC Claimed (33+53=86 Months):			
Up to 31.3.2011 (85 Months)	35.60	118.11	153.71
From 1.4.2011 to 30.4.2011 (1 Month)	0.00	9.40	9.40
Total Claimed	**35.60**	**127.51**	**163.11**
IDC and IEDC for 53 months delay:			
Up to 31.3.2011 (52 Months)	21.78	72.26	94.03
From 1.4.2011 to 30.4.2011 (1 Month)	0.00	9.40	9.40
Total Disallowed	**21.78**	**81.66**	**103.43**
Disallowed IDCD and IEDC (50% of total IDC and IEDC for delay period)	**10.89**	**40.83**	**51.72**

(` in lakh)

18. Accordingly, the capital cost as on date of commercial operation, after restricting IEDC and IDC, for the purpose of tariff calculation is `2898.92 lakh.

Cost over-run

19. BRPL has submitted that the estimated cost of the scheme was `24778 lakh including IDC of `1501 lakh as per the investment approval of the petitioner's

Board of Directors. Subsequently, the cost estimates were revised by the petitioner to `29281 lakh including IDC of `1929 lakh in the meeting held on 31.10.2007. The apportioned approved cost of the transmission asset is `3673 lakh and the estimated completion cost of the assets is `3607 lakh resulting in large savings. There is over-estimation in the approval of the cost estimates of the project scheme and thus it is not possible to determine the cost overrun.

21. The petitioner in its rejoinder has clarified that 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 prices against tender are lower as compared to the cost estimate depending upon prevailing market conditions. The cost estimate is on the basis of 4th quarter, 2003 price level, where the contract date is 17.3.2005.

22. It is observed that the completion cost is lower than the revised apportioned cost inspite of time over-run. The cost estimates of the petitioner are not realistic not only in this petition but also in other similar petitions. The petitioner should adopt a prudent procedure to make cost estimates of different elements of the transmission projects more realistic.

Treatment of initial spares

23. The petitioner has claimed initial spares amounting to `145.61 lakh for sub-station, as on cut-off date, corresponding to the capital cost of `3453.77 lakh. As per Regulation (8) of the 2009 Tariff Regulations, ceiling limit for capitalisation of initial spares is specified as 1.50%. The initial spares deemed to be claimed by the petitioner as on cut-off date, after restriction of IDC/IEDC is as follows:-

(₹ in lakh)

Particulars	Capital cost claimed as on 31.03.2014 (cut-off date)	Initial spares claimed	Proportionate capital cost after deducting corresponding IDC and IEDC	Proportionate initial spares claimed
Capital cost	**3453.77**	**145.61**	**3402.05**	**143.43**
TL	-	-	-	-
S/S	3453.77	145.61	3402.05	143.43

24. Thus, the initial spares deemed to be claimed by the petitioner amounts to ₹143.43 lakh, as against the ceiling limit of ₹83.55 lakh. Therefore, there is an excess claim of ₹59.88 lakh.

24. BRPL has submitted that the capitalization of the initial spares in the capital cost should be limited to the ceiling norms prescribed in 2009 Tariff Regulations. The petitioner has clarified that 40% FSC is specialized electronic equipment, which is not replaceable with other pooled equipment in the power

system of PGCIL and hence essentially requires to hold specified number of initial spares in the interest of Power System Security and Reliability purpose.

25. The “Northern Region System Strengthening Scheme-II in Northern Region” was accorded investment approval by the Board of Directors of the petitioner, vide the Memorandum dated 25.02.2004, covering transmission lines and sub-stations as indicated under the scope. Some of the assets were commissioned during 2004-09 and the remaining one asset has been commissioned during 2009-14 as given hereunder:-

(` in lakh)

Assets	DOCO	Capital cost as on 31.03.2014 (Cut-off date for the whole Transmission System)	Reference
Asset-I : Agra-Basi Line	1.1.2007	21520.06	Order dated 11.1.2011 in Petition No.163/2010
Asset-II : ICT III at Wagoora	1.6.2007	1881.67	
Asset-III : Zainkot Bays	1.4.2008	618.67	
Asset –IV: 40% FSC on Allahabad-Mainpuri T/L	1.5.2011	3453.77	Instant Petition

26. The initial spares have been considered based on the ceiling limits specified for the respective tariff periods. Accordingly, the initial spares for the transmission assets, which were commissioned during 2004-09 have been determined as per the ceiling limit of 1.5%, specified in the 2004 Tariff Regulations. Initial spares for the transmission assets commissioned during 2009-14 have been determined as per the ceiling limits specified in the 2009 Tariff Regulations. Excess claims made in case of the asset commissioned

during 2009-14 tariff period are being set-off against the lesser amount claimed as per the ceiling limit specified in the 2004-09 Tariff Regulations for initial spares. The details of the initial spares claimed by the petitioner and the claim allowed by the Commission during 2004-09 and the adjustments made in the instant petition are given below:-

(` in lakh)

Calculation of Excess / (Shortfall) of Initial Spares allowed in respect of 2004-09 period					
Particulars	**Capital cost of Assets covered under Petition No. 274/2009 as on 31.3.2009 (cut-off date of the assets as per 2004 Tariff Regulations)**	**Initial spares claimed / allowed (bi-furcated pro-rata)**	**Ceiling limits as per Regulation 52 of 2004 Tariff Regulations**	**Initial spares worked out**	**Excess / (Shortfall) initial spares claimed**
Capital cost	**23363.57**	**90.7**		**354.41**	**(263.71)**
Transmission Line	17865.48	69.36	1.50%	271.01	(201.65)
Sub-station	5498.09	21.34	1.50%	83.40	(62.06)

(` in lakh)

Calculation of allowable Initial Spares in the instant petition after adjustment of the shortfall during 2004-09 period:						
Particulars	**Proportionate capital cost after deducting corresponding IDC and IEDC**	**Proportionate initial spares claimed**	**Ceiling limits as per Regulation 8 2009 Tariff Regulations**	**Initial spares worked out for Combined Assets**	**Excess claim of initial spares**	**Excess / (Shortfall) claim of initial spares after adjustment of shortfall during 2004-09 period**
Capital cost	3402.05	143.43		**83.55**	**59.88**	(203.83)
TransmissionLine	-	-	0.75%	-	-	(201.65)
Sub-station	3402.05	143.43	2.50%	83.55	59.88	(2.18)

28. Thus, excess initial spares of `59.88 lakh have been set-off against `(62.06) lakh. In view of considering the transmission system in totality and the above set-off, the proportionate initial spares amounting to `143.43 lakh is being allowed. In view of the foregoing, capital cost as on the date of commercial operation considered for tariff calculation is `2898.92 lakh.

Projected additional capital expenditure

31. With regard to additional capital expenditure, clause 9(1) of the 2009 Tariff Regulations provides as under:-

> "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;
> (i) Works deferred for execution;
> (ii) Procurement of initial capital spares within the original scope of work, subject to the provisions of Regulation 8;
> (iii) Liabilities to meet award of arbitration or for compliance of the order or decree of a court; and
> (iv) Change in Law:"

32. The 2009 Tariff Regulations further defines cut-off date as-

> "cut-off date means 31st march of the year closing after 2 years of the year of commercial operation of the project, and incase of the project is declared under commercial operation in the last quarter of the year, the cut-off date shall be 31st March of the year closing after 3 years of the year of commercial operation".

33. As per the above definition, cut-off date in respect of the transmission asset whose transmission tariff is being approved vide this order is 31.3.2014.

34. The petitioner has claimed additional capital expenditure of `249.46 lakh and `253.67 lakh for the year 2011-12 (DOCO to 31.03.2012) and 2012-13 respectively. The additional capital expenditure incurred is mainly on account of Balance & Retention payments and is within the cut-off date. Hence, the same has been considered for the purpose of tariff calculation.

Debt- equity ratio

35. Regulation 12 of the 2009 Tariff Regulations provides that:-

> "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."

36. Details of debt-equity in respect of the transmission assets as on the date of commercial operation are given as under:-

(` in lakh)

	Claimed		Admitted as on DOCO	
	Amount (`lakh)	**%**	**Amount (` lakh)**	**%**
Debt	2065.45	70.00	2029.25	70.00
Equity	885.19	30.00	869.68	30.00
Total	**2950.64**	**100.00**	**2898.92**	**100.00**

37. Debt-equity ratio for projected additional capital expenditure considered in the calculation is given hereunder:-

(` in lakh)

DOCO-2012	**Normative**	
Particulars	**Amount (`lakh)**	**%**
Debt	174.62	70.00
Equity	74.84	30.00
Total	**249.46**	**100.00**
2012-13		
Particulars	**Amount (`lakh)**	**%**
Debt	177.57	70.00
Equity	76.10	30.00
Total	**253.67**	**100.00**

38. Debt- equity ratio as on 31.3.2014 is as under:-

(` in lakh)

	Cost as on 31.3.2014	
Particulars	**Amount (`lakh)**	**%**
Debt	2381.44	70.00
Equity	1020.62	30.00
Total	**3402.05**	**100.00**

<u>Return on equity</u>

39. Regulation 15 of the 2009 Tariff Regulations provides that:-

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

40. The petitioner's prayer to allow grossing up the base rate of return with the applicable tax rate as per relevant Finance Act, shall be settled in accordance with the provisions of Regulation 15 of 2009 Tariff Regulations. Pre-tax Return on Equity of 17.481% has been considered.

41. Based on the above, the following return on equity has been allowed:-

(` in lakh)

Particulars	**2011-12**	**2012-13**	**2013-14**
Opening Equity	869.68	944.51	1020.62
Addition due to Additional Capitalisation	74.84	76.10	0.00
Closing Equity	944.51	1020.62	1020.62
Average Equity	907.10	982.57	1020.62
Return on Equity (Base Rate)	***15.50%***	***15.50%***	***15.50%***
Tax rate for the year 2008-09	11.33%	11.33%	11.33%
Rate of Return on Equity (Pre Tax)	17.481%	17.481%	17.481%
Return on Equity (Pre Tax)	**145.36**	**171.76**	**178.41**

<u>Interest on loan</u>

42. Regulation 16 of the 2009 Tariff Regulations provides that,-

> "16. (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."

43. In these calculations, interest on loan has been worked out as detailed hereunder:-

(a) Gross amount of loan, repayment of instalments and rate of interest on actual average loan have been considered as per the provisional funding certificate submitted with affidavit dated 19.3.2012.

(b) Tariff is worked out considering normative loan and normative repayments. Depreciation allowed has been taken as normative repayment for the tariff period 2009-14.

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

44. Detailed calculation of the weighted average rate of interest has been given in the Annexure to this order.

45. Details of the interest on loan worked on the above basis are as under:-

(` in lakh)

Particulars	2011-12	2012-13	2013-14
Gross Normative Loan	2029.25	2203.87	2381.44
Cumulative Repayment upto Previous Year	0.00	146.34	319.28
Net Loan-Opening	2029.25	2057.52	2062.16
Addition due to Additional Capitalisation	174.62	177.57	0.00
Repayment during the year	146.34	172.93	179.63
Net Loan-Closing	2057.52	2062.16	1882.53
Average Loan	2043.38	2059.84	1972.35
Weighted Average Rate of Interest on Loan	8.6285%	8.6543%	8.6854%
Interest	**161.62**	**178.26**	**171.31**

Depreciation

46. Regulation 17 of the 2009 Tariff Regulations provides for computation of depreciation in the following manner, namely:

"17. (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."

47. Accordingly, depreciation has been worked out on the basis of capital expenditure as on DOCO wherein depreciation for the first year has been calculated on pro-rata basis for the part of year. The depreciation is computed for the tariff period of 2009-14 as `146.34 Lakh for the period 2011-12 (DOCO to 31.03.2012), `172.93 Lakh for 2012-13 and `179.63 Lakh for 2013-14.

48. Details of the depreciation worked out are as under:-

(` in lakh)

Particulars	**2011-12**	**2012-13**	**2013-14**
As on date of commercial operation	2898.92	3148.38	3402.05
Addition during 2009-14 due to Projected additional capital expenditure	249.46	253.67	0.00
Gross Block	3148.38	3402.05	3402.05
Average Gross Block	3023.65	3275.22	3402.05

Rate of Depreciation	5.2800%	5.2800%	5.2800%
Depreciable Value	2721.29	2947.70	3061.85
Remaining Depreciable Value	2721.29	2801.35	2742.57
Depreciation	**146.34**	**172.93**	**179.63**

Operation & maintenance expenses

49. Clause (g) of Regulation 19 of the 2009 Tariff Regulations prescribes the norms for operation and maintenance expenses based on the type of sub-station and line. Norms prescribed in respect of the elements covered in the instant petition are as under:-

(` in lakh)

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

50. Based on the above norms, the petitioner has calculated the following operation and maintenance expenses which are allowed:-

(` in lakh)

Element	2011-12 (pro-rata for 11 months)	2012-13	2013-14
2 nos, 400 kV bays	107.38	123.84	130.92
Total O&M allowable	**107.38**	**123.84**	**130.92**

51. 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. 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%.

52. PSPCL has submitted that O&M expenses should be allowed as per existing norms only. BRPL has submitted that the Commission has already covered the increase in employee cost on account of pay revision of the employees of Public Service Undertakings in the O&M expenses for the year 2009-10 by rationalizing the O&M expenses by 50% increase for increase in employee cost. Any further increase in the employee cost should be taken care by the petitioner by improving its productivity levels and the beneficiaries are not unduly burdened over and above the provisions made in the 2009 Tariff Regulations. The petitioner has clarified that per Ckt Km and per bay O&M rates considered in the instant petition are base on 2009 Tariff Regulations. While framing the 2009 Tariff Regulations, the petitioner had furnished the actual O&M cost, line and bay details of its transmission system for the 5 years period i.e; 2003-04,2004-05, 2005-06, 2006-07 and 2007-08, without taking into account expected manpower cost implications on account of wage revision due with effect from 1.1.2007. The commission has considered 50% in the wage hike so as to stipulate the norms for 2009-10.

53. 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 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.

<u>Interest on working capital</u>

54. As per the 2009 Tariff Regulations the components of the working capital and the interest thereon are discussed hereunder:-

(i) Receivables

As per Regulation 18(1) (c) (i) of the 2009 Tariff Regulations, receivables 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 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 as a component of working capital. The petitioner has claimed O&M expenses for 1 month of the respective year as claimed in the petition. This has been considered in the working capital.

(iv) Rate of interest on working capital

Interest rate of 11.75% (SBI Base Rate 8.25% as on 01-04-2011 plus 350 bps) has been considered for calculating interest on working capital.

55. Details of interest on working capital allowed are appended herein below:-

(` in lakh)

Particulars	2011-12	2012-13	2013-14
Maintenance Spares	17.57	18.58	19.64
O & M expenses	9.76	10.32	10.91
Receivables	104.53	110.53	112.85
Total	131.86	139.43	143.40
Interest	**14.20**	**16.38**	**16.85**

<u>Transmission Charges</u>

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

(` in lakh)

Particulars	2011-12 (pro-rata)	2012-13	2013-14
Depreciation	146.34	172.93	179.63
Interest on Loan	161.62	178.26	171.31
Return on equity	145.36	171.76	178.41
Interest on Working Capital	14.20	16.38	16.85
O & M Expenses	107.38	123.84	130.92
Total	**574.90**	**663.18**	**677.12**

<u>Filing fee and the publication expenses</u>

57. The petitioner has sought reimbursement of fee paid by it for filing the petition and publication expenses. The BRPL submitted that the filing fee shall be governed as per the Commission's order. The petitioner has clarified that

reimbursement of expenditure has been claimed in terms of Regulation 42 of 2009 Tariff Regulations. In accordance with the Commission's order dated 11.1.2010 in Petition No. 109/2009, the petitioner shall be entitled to recover the filing fee directly from the beneficiaries on *pro-rata* basis. 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.

Licence fee

58. 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.

59. BRPL has submitted that the petitioner's request for reimbursement for licence fee should be rejected as license fee is the eligibility fee of a licence holder and it is the onus of the petitioner. The petitioner has clarified that the licence fee has been a new component of cost to the transmission licence under O&M stage of the project and has become incidental to the petitioner only from 2008-09. 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

60. 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 the prayer of the petitioner pre-mature and accordingly the petitioner's prayer is rejected.

Sharing of transmission charges

61. The transmission charges allowed shall be recovered on monthly basis in accordance with Regulation 23 and shared by the beneficiaries in accordance with Regulation 33 of the 2009 regulation up to 30.6.2011. With effect from 1.7.2011, the billing, collection & disbursement of the transmission charges shall be governed by the provision of Central Electricity Regulatory Commission (Sharing of inter-state transmission charges and losses) Regulations, 2010 as amended.

62. This order disposes of Petition No. 33/TT/2011.

sd/-	sd/-	sd/-	sd/-
(M. Deena Dayalan) **Member**	**(V. S. Verma)** **Member**	**(S. Jayaraman)** **Member**	**(Dr. Pramod Deo)** **Chairperson**

Annexure

CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN

(` in lakh)

	Details of Loan	2011-12	2012-13	2013-14
1	**Bond XXIII**			
	Gross loan opening	**212.00**	**212.00**	**212.00**
	Cumulative Repayment upto DOCO/previous year	**17.67**	**35.34**	**53.00**
	Net Loan-Opening	194.33	176.66	159.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	17.67	17.67	17.67
	Net Loan-Closing	176.66	159.00	141.33
	Average Loan	185.50	167.83	150.16
	Rate of Interest	9.25%	9.25%	9.25%
	Interest	17.16	15.52	13.89
	Rep Schedule	12 annual installments from 9.2.2011		
2	**Bond XXV**			
	Gross loan opening	**48.00**	**48.00**	**48.00**
	Cumulative Repayment upto DOCO/previous year	**0.00**	**4.00**	**8.00**
	Net Loan-Opening	48.00	44.00	40.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	4.00	4.00	4.00
	Net Loan-Closing	44.00	40.00	36.00
	Average Loan	46.00	42.00	38.00
	Rate of Interest	10.10%	10.10%	10.10%
	Interest	4.65	4.24	3.84
	Rep Schedule	12 annual installments from 12.6.2011		
3	**Bond XVII**			
	Gross loan opening	**873.00**	**873.00**	**873.00**
	Cumulative Repayment upto DOCO/previous year	**174.60**	**261.90**	**349.20**
	Net Loan-Opening	698.40	611.10	523.80
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	87.30	87.30	87.30

	Net Loan-Closing	611.10	523.80	436.50
	Average Loan	654.75	567.45	480.15
	Rate of Interest	7.39%	7.39%	7.39%
	Interest	48.39	41.93	35.48
	Rep Schedule	10 annual installments from 22.9.2009		
4	**Bond XV**			
	Gross loan opening	**21.00**	**21.00**	**21.00**
	Cumulative Repayment upto DOCO/previous year	**7.00**	**8.75**	**10.50**
	Net Loan-Opening	14.00	12.25	10.50
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	1.75	1.75	1.75
	Net Loan-Closing	12.25	10.50	8.75
	Average Loan	13.13	11.38	9.63
	Rate of Interest	6.68%	6.68%	6.68%
	Interest	0.88	0.76	0.64
	Rep Schedule	12 annual installments from 23.2.2008		
5	**Bond XXXI**			
	Gross loan opening	**152.45**	**152.45**	**152.45**
	Cumulative Repayment upto DOCO/previous year	**0.00**	**0.00**	**0.00**
	Net Loan-Opening	152.45	152.45	152.45
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	12.70
	Net Loan-Closing	152.45	152.45	139.75
	Average Loan	152.45	152.45	146.10
	Rate of Interest	8.90%	8.90%	8.90%
	Interest	13.57	13.57	13.00
	Rep Schedule	12 annual installments from 25.2.2014		
6	**Bond XXVII**			
	Gross loan opening	**759.00**	**759.00**	**759.00**
	Cumulative Repayment upto DOCO/previous year	**0.00**	**63.25**	**126.50**
	Net Loan-Opening	759.00	695.75	632.50
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	63.25	63.25	63.25
	Net Loan-Closing	695.75	632.50	569.25
	Average Loan	727.38	664.13	600.88
	Rate of Interest	9.47%	9.47%	9.47%
	Interest	68.88	62.89	56.90
	Rep Schedule	12 annual installments from 31.3.2012		

	Total Loan			
	Gross loan opening	2065.45	2065.45	2065.45
	Cumulative Repayment upto DOCO/previous year	199.27	373.24	547.20
	Net Loan-Opening	1866.18	1692.21	1518.25
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	173.97	173.97	186.67
	Net Loan-Closing	1692.21	1518.25	1331.58
	Average Loan	1779.20	1605.23	1424.91
	Rate of Interest	**8.63%**	**8.65%**	**8.69%**
	Interest	153.52	138.92	123.76