CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

Petition No. 63/TT/2012

Coram:

Shri V.S. Verma, Member
Shri Deena Dayalan, Member

Date of Hearing: 20.6.2013
Date of Order : 30.9.2013

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 date of commercial operation, i.e. 1.3.2012 to 31.3.2014 for Tuticorin JV –Madurai 400 kV D/C (Quad Conductor) Line and extension of 400/220 kV Madurai sub-station under ATS of Tuticorin JV TPS in Southern Region.

And

In the matter of:

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

Vs

1. Karnataka Power Transmission Corporation Limited, Bangalore
2. Transmission Corporation of Andhra Pradesh Limited, Hyderabad
3. Kerala State Electricity Board, Thiruvananthapuram
4. Tamil Nadu Generation and Distribution Corporation, Chennai
5. Electricity Department, Government of Goa, Goa
6. Electricity Department, Government of Pondicherry, Pondicherry
7. Eastern Power Distribution Company of Andhra Pradesh Ltd., Vishakhapatnam, Andhra Pradesh
8. Southern Power Distribution Company of Andhra Pradesh Ltd., Tirupati, Andhra Pradesh
9. Central Power Distribution Company of Andhra Pradesh Ltd., Hyderabad, Andhra Pradesh
10. Northern Power Distribution Company of Andhra Pradesh Ltd., Warangal, Andhra Pradesh

11. Bangalore Electricity Supply Company Limited, Bangalore, Karnataka
12. Gulbarga Electricity Supply Company Limited, Gulbarga, Karnataka
13. Hubli Electricity Supply Company Limited, Karnataka
14. MESCOM Corporate office, Mangalore, Karnataka
15. Chamundeswari Electricity Supply Company Limited, Karnataka
16. NLC-Tamilnadu Power Limited, Chennai, Tamil Nadu

….Respondents

The following were present:-

1. Shri S.S Raju, PGCIL
2. Shri Upendra Pandey, PGCIL

ORDER

This petition has been filed by Power Grid Corporation of India Limited (PGCIL) seeking approval of transmission tariff for Tuticorin JV –Madurai 400 kV D/C (Quad Conductor) Line and extension of 400/220 kV Madurai Sub-station ATS of Tuticorin JV TPS (hereinafter referred as to “transmission assets”) from the anticipated date of commercial operation, i.e.1.3.2012 to 31.3.2014 under Southern Region, for tariff block 2009-14 period, under Regulation 86 of Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009 (hereinafter referred to as "2009 Tariff Regulations").

2. The investment approval for the transmission project “Transmission system associated with Tuticorin JV TPS” was accorded by the Board of Directors of the petitioner, vide Memorandum Ref:-C/CP/Tuticorin JV TPS/ dated 20.2.2009, at an estimated cost of `35357 lakh including an IDC of `2763 lakh based on 4th Quarter, 2008 price level.

3. The scope of work covered under the project is as follows:-

Transmission Line

Tuticorin JV – Madurai 400 kV D/C (Quad Conductor) line-158 Km.

Substation

Extension of Madurai 400/220 kV substation (PGCIL).

4. The petitioner has claimed transmission tariff for the transmission assets from the anticipated date of commercial operation as 1.3.2012, based on the estimated capital expenditure incurred up to anticipated date of commercial operation and estimated additional capital expenditure projected to be incurred from anticipated date of commercial operation to 31.3.2014. The petitioner, vide affidavit dated 6.7.2012, has submitted that the asset was put under commercial operation on 1.2.2012 and accordingly the actual date of commercial operation of assets stands revised. The petitioner has also submitted a copy of the notification issued by it regarding the date of commercial operation, revised capital expenditure and additional capital expenditure, management certificate as per actual date of commercial operation and funding pattern.

5. Provisional tariff in respect of the above mentioned assets was approved by the Commission vide its order dated 29.3.2012. This was subject to adjustment as per Regulation 5 (4) of the 2009 Tariff Regulations.

6. Details of the transmission charges claimed by the petitioner are given overleaf:-

(` in lakh)

Particulars	2011-12 (Pro-rata)	2012-13	2013-14
Depreciation	109.12	1337.88	1359.19
Interest on Loan	128.23	1510.02	1416.02
Return on equity	108.43	1331.17	1352.92
Interest on Working Capital	8.01	97.52	97.30
O & M Expenses	23.09	292.90	309.56
Total	**376.88**	**4569.49**	**4534.99**

7. 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	41.56	43.94	46.43
O & M expenses	23.09	24.41	25.80
Receivables	753.76	761.58	755.83
Total	818.41	829.93	828.06
Interest	8.01	97.52	97.30
Rate of Interest	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. 4, Tamil Nadu Generation and Distribution Corporation Limited (TANGEDCO), vide affidavit dated 22.2.2012. TANGEDCO has further made additional submissions on 7.12.2012. The petitioner has filed its rejoinders to the reply filed and additional submissions filed by TANGEDCO. The objections raised by the respondent and the clarifications given by the petitioner are dealt in relevant paragraphs of this order.

9. TANGEDCO has raised the issue of date of commercial operation of the transmission asset and we would like to deal with that issue before we proceed further with the order. As per the investment approval dated 20.2.2009, the transmission scheme was scheduled to be commissioned in 36 months from the date of investment approval. Accordingly, the assets were to be commissioned on 20.2.2012, i.e.1.3.2012. However, the asset was actually commissioned on 1.2.2012.

10. TANGEDCO has made the following submissions in its replies:-

(i) The schedule date of commercial operation may be considered as per Appendix-II of 2009 Tariff Regulations and accordingly IDC and capital cost may be restricted;

(ii) The transmission line is erected for evacuation of power from Tuticorin JV TPS. As per the Indemnification Agreement (IA) signed between NLC- Tamil Nadu Power Limited and the petitioner, the Unit–I of Tuticorin JV TPS was scheduled to be commissioned during March, 2012 and Unit-II during August, 2012. Accordingly, the zero date for the Tuticorin JV – Madurai 400 kV D/C (quad conductor) line and extension of 400/220 kV Madurai S/S was fixed as 31.3.2012. The Tuticorin JV TPS has not been commissioned and the Tuticorin JV – Madurai 400 kV D/C (quad) line cannot be put into regular use even if the date of commercial operation is declared on 1.2.2012;

(iii) The Appellate Tribunal for Electricity (hereinafter referred to as "the Tribunal") in its Judgement dated 2.7.2012 in Appeal No. 123 of 2011 held that various steps specified in Regulation 3(12)(c) of the 2009 Tariff Regulations for declaring the date of commercial operation were not followed by PGCIL in case of 400 kV Barh-Balia double circuit transmission line. TANGEDCO has further submitted that the above judgement has been reiterated by the Tribunal in Review Petition No. 9 of 2012 in Appeal no. 123 of 2011 filed by the petitioner before the Tribunal. The above judgment of the Tribunal is applicable in the instant case as the Tuticorin JV TPS works are not completed and the power station is yet to be commissioned. Since the above line is constructed exclusively for evacuation of power from Tuticorin JV TPS, it cannot be put in regular use. In view of the judgement in Appeal No. 123/2011 by the Tribunal, the date of commercial operation is required to be revised with consequential tariff determination;

(iv) The petitioner has to obtain prior approval of the Commission for declaration of date of commercial operation as prescribed in Regulation 3 (12) (c) of the 2099 Tariff Regulations. As the petitioner has not obtained prior approval of the Commission, the declaration of the date of commercial operation by the petitioner should be rejected.

11. During the hearing on 26.7.2012, TANGEDCO has submitted that Appendix–II of the 2009 Tariff Regulations provides for a timeline of only 32

months, whereas the petitioner's Board has granted a time schedule of 36 months. The respondent has further submitted that the generating station has not yet come but the evacuation system has been commissioned. The transmission charges should be borne by the generating company as there is no utilization of the asset by the beneficiaries. If such transmission charges are paid by the generating company, then these charges should not be allowed by the Commission while approving the tariff of the generating station.

12. The petitioner, in its rejoinder dated 8.4.2013 has clarified that AC transmission elements are such that once successfully test charged, the elements are immediately available for transmission of power at 100% of its rated capacity. Power flow through any AC element is dependent on grid condition and demand and supply situation of the grid which is beyond the control of petitioner. In transmission system generally transmission elements are static while in service and no rotating is involved. Unlike generating stations where one unit is connected with the grid at a certain load and with further additional input, the load is increased to its rated capacity, whereas in case of AC transmission elements, no additional input is required for transmission of power at rated capacity. All the relevant test /checks are carried out before charging and once successfully test charged the transmission elements are available for regular service @ 100% of its rated capacity. Since trial run is not defined in case of transmission element in the 2009 Tariff Regulations, successful test charging is considered as completion of trial run. The petitioner has further clarified that the Appendix-II deals with time line for completion of projects for allowance of additional ROE. The timeline given

in Appendix II of the 2009 Tariff Regulations cannot be linked to the timeline provided in the Investment Approval of the petitioner's Board. As per Investment Approval, the transmission scheme was scheduled to be commissioned in 36 months from the date of investment approval. The date of investment approval was 20.2.2009. Hence, the commissioning schedule works out to 19.2.2012 and there is no time overrun. The petitioner has further submitted, in its affidavit dated 9.4.2013, that the lines covered under subject assets are ready for its intended use, but the petitioner is unable to provide intended service because of non-readiness of generation project not attributable to the petitioner.

13. We have considered the contention of the parties. The objections of TANGEDCO are twofold. Firstly, timeline given in Appendix II of the 2009 Tariff Regulations should be considered for deciding the timeline for completion of the project for the purpose of deciding the time over-run and cost over-run. Secondly, the petitioner has not followed the various steps specified in Regulation 3(12)(c) of the 2009 Tariff Regulations for declaring the date of commercial operation.

14. As regards the first issue as to whether the timeline given in Appendix II should be considered for deciding the IDC/IEDC, the same has been decided by the Tribunal in its order dated 12.1.2012 in Appeal No.104/2012, wherein it has been held that the timeline in Appendix II is for the purpose of additional return on equity only and cannot be considered for the purpose of time over-run and cost over-run. Relevant extract of the judgement is reproduced as under-

"16. ....The provisions of Regulation 15 which deal with the incentives for early completion cannot be applied to the calculation of the capital expenditure. The appropriate Regulation would be Regulation 7 of the Tariff Regulations 2009 which has to be applied in the present case for calculation of the capital expenditure and Interest During Construction."

In the light of the said judgement, we hold that the timeline for completion of the project for the purpose of deciding the capital cost including the issue of time over-run and cost over-run shall be considered in accordance with the timeline decided in the Investment Approval.

15. The second issue is the prior approval of the Commission for deciding the date of commercial operation in the absence of commissioning of corresponding generation. Regulation 3 (12)(c) of the 2009 Tariff Regulations provides as follows:-

"(c) in relation to the transmission system, the date declared by the transmission licensee from 0000 hour of which an element of the transmission system is in regular service after successful charging and trial operation:

Provided that the date shall be the first day of a calendar month and transmission charge for the element shall be payable and its availability shall be accounted for, from the date:

Provided further that in case an element of the transmission system is ready for regular service but is prevented from providing such service for reasons not attributable to the transmission licensee, its suppliers or contractors, the Commission may approve the date of commercial operation prior to the element coming into regular service."

16. As per the second proviso to sub-clause (c) of clause (12) of Regulation 3 of the 2009 Tariff Regulations, the petitioner is required to obtain prior approval of the Commission before declaring the commercial operation of the subject transmission asset in the absence of corresponding generation. The petitioner

has declared the commercial operation of the asset without obtaining prior approval of the Commission. Subsequently, the petitioner, vide its affidavit dated 9.4.2013 amended the prayer of the petitioner and prayed for approval of the date of commercial operation of the transmission asset with effect from 1.2.2012 in accordance with the provisions of Regulation 3(12)(c) of the 2009 Tariff Regulations. The respondents have not filed any reply to the affidavit of the petitioner.

17. We have considered the submissions of both TANGEDCO and the petitioner. The petitioner has test charged the transmission line. As regards the trail run, the petitioner has submitted that the same has not been defined in the 2009 Tariff Regulations, therefore, the petitioner has considered successful test charging as trial operation. This issue has been dealt with by the Commission in order dated 10.4.2013 in Petition No.96/TT/2011, the relevant paragraph of which is extracted below:-

> "38. We have considered the submissions of both PSPCL and the petitioner. As submitted by the petitioner, the 2009 Tariff Regulations do not define the trial operation in case of transmission elements and the successful test charging is considered as trial operation. The explanation of the petitioner is found to be satisfactory and accordingly, successful test charging by the petitioner is considered as completion of trial operation. However, we direct the RPCs to discuss the issue of trial operation of transmission elements and submit the proposals to CEA who in turn shall submit a consolidated proposal regarding trial operation of transmission elements to the Commission. The staff of the Commission shall study the proposal made by CEA and make suitable changes to the existing Regulations to deal with all such cases in future."

In view of the above, it is decided that since the transmission line has been test charged before putting into operation, the condition of Regulation 3(12)(c) is satisfied.

Capital cost

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

> "(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;"

19. The details of original/ revised apportioned approved cost, capital cost as on the date of commercial operation and estimated additional capital expenditure projected to be incurred for the asset covered in this petition are summarized below:-

(` in lakh)

Apportioned approved cost as per FR	**Actual cost incurred as on date of commercial operation***	**Projected additional capital expenditure**			**Total estimated completion cost**
		2011-12	**2012-13**	**2013-14**	
35357.00	23514.22	447.84	1546.29	135.00	25643.35

***** Inclusive of initial spares amounting to ` 56.73 lakh pertaining to Sub-station

Cost overrun

20. The estimated completion cost is lower by 26.85% than the apportioned approved cost. The petitioner submitted that reduction in cost is due to reduction in line length from 158 km to 152.167 km (3.69%) and reduction in tower material weight from 11,298 MT to 9,722 MT (13.95%) and change in price levels of awarded contracts through competitive bidding.

21. TANGEDCO has submitted that as per the Investment Approval the line length of the 400 kV D/C line is 158 km, however the actual length of the line is only 152.167. As such, the project cost should be restricted to the actual length of the lines and the tariff may be awarded accordingly. TANGEDCO has further submitted that the actual estimated completed cost of the project is `25865 lakh while the FR cost is `35357 lakh which is clear indication of highly inflated FR costs.

22. The petitioner in its rejoinder has clarified that best efforts are made to keep the cost as minimum as possible in the best interest of beneficiaries. It has been further submitted that the petitioner optimized the route during actual execution of the project resulting decrease in line length from 158 km in FR to 152.167 km. in actual. The cost estimates are prepared by the petitioner 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.

23. We would like to clarify that the cost is restricted to the actual line length of 152.167 km as claimed by the petitioner. It is observed that the cost estimates of the petitioner are not realistic not only in this petition but also in similar other petitions. The petitioner is directed to adopt a prudent procedure while estimating the cost of different elements of the transmission projects more realistic.

Treatment of initial spares

24. The petitioner has claimed initial spares amounting to `56.73 lakh pertaining to the sub-station and no initial spares has been claimed for transmission line. The petitioner's claim of initial spares exceeds the ceiling limit specified in the 2009 Tariff Regulations by `18.88 lakh.

25. TANGEDCO has submitted, in its reply, that higher initial spares would only enrich the petitioner without any benefits to the consumers and the initial spares should be restricted as provided in Regulation 8 of 2009 Tariff Regulations.

26. The petitioner in its rejoinder dated 23.7.2012 has clarified that the asset in sub-station under the instant project is extension of an existing sub-station. It has been further submitted that normally a large number of bays and other sub-station equipments like ICTs, reactors, other sub-station structures/establishment/ facilities and various auxiliaries, etc are commissioned in the green field sub-station resulting into higher capital costs but in this case,

only two nos. of 400 kV bays are to be commissioned at Madurai Sub-station, which is an extension of existing sub-station. Even though similar type of spares have been procured for this system as is normally done for green field sub-station, the percentage of initial spares w.r.t. to the capital cost of the instant sub-station expansion project is higher because of less capital cost due to less population of equipments and other facilities as compared to projects having large asset in green field sub-stations. The petitioner has requested to allow higher initial spares than provided in Regulation 8 of the 2009 Tariff Regulations by invoking the power to relax provided under Regulation 44 of the 2009 Tariff Regulations. The petitioner has further submitted that the norms specified for initial spares are for green field projects and not for small extensions work. If the spares of small value beyond the applicable norms are not allowed for projects having extension of existing sub-station, it may have substantial impact during successful operation of the project.

27. The norms specified in the 2009 Tariff Regulations for initial spares for transmission line or sub-station of a project as a percentage of capital cost. The regulations do not distinguish between the projects having more number of equipments or less number of equipments for the purpose of initial spares. Further, while computing the norms for initial spares for tariff period 2009-14 period, the date submitted by the petitioner was considered for all types of sub-stations and at that time no distinction was made between green field projects and new extensions. The ceiling norms were arrived considering all the assets of the petitioner. Further, the extension of bays is not specialized works which

require higher initial spares. There is no justification for allowing initial spares over and above the norms just because the project has less number of equipments. Therefore, the petitioner's prayer for allowing higher initial spares by invoking the power to relax provided under Regulation 44 of the 2009 Tariff Regulations is rejected. Accordingly, the petitioner's claim for initial spares has been restricted to the admissible amount based on the ceiling norms specified for sub-station i.e. 2.50% under Regulation 8 of the 2009 Tariff Regulations. Hence, the excess initial spares amounting to `18.88 lakh is not allowed.

28. Details of initial spares allowed are given hereunder:-

(` in lakh)

Capital cost upto cut-off date	Initial spares claimed	Ceiling limits as per Regulation 8 of 2009 Tariff Regulations	Initial spares worked out	Excess initial spares
1532.94	56.73	2.50%	37.85	18.88

29. The petitioner has claimed capital cost of `23514.22 lakh as on the date of commercial operation. The capital cost considered for the purpose of tariff calculation after deducting the excess initial spares claimed by petitioner is as follows :-

(` in lakh)

Capital cost claimed as on date of commercial operation by petitioner	Excess initial spares	Capital cost considered as on date of commercial operation for the purpose of tariff
23514.22	(18.88)	23495.34

30. The petitioner has submitted that the work was to be completed by 20.9.2011 but the sub-station package was completed on 31.1.2012. The petitioner also submitted that transmission line package was completed within time and hence no Liquidated Damages (LD) has been levied. However, levy of LD, if any, in respect of sub-station package is under review and would be done at the time of contract closing and release of final retention payments. LD, if any, levied on the contractor shall be considered at the time of truing-up.

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 covered under the instant petition is 31.3.2014.

34. The petitioner has claimed projected additional capital expenditure as given hereunder:-

(` in lakh)

Year	Work proposed to be added after COD upto cut-off date	Amount to be capitalized /proposed to be capitalized	Justification
DOCO to 31.3.2012	Building & civil works	90.25	Balance /Retention Payments
	Transmission Line	256.24	
	Sub station	75.85	
	PLCC	25.50	
	Sub Total	**447.84**	
1.4.2012 to 31.3.2013	Building & civil works	112.78	
	Transmission Line	1097.91	
	Sub station	310.58	
	PLCC	25.02	
	Sub Total	**1546.29**	
1.4.2013 to 31.3.2014	Building & civil works	0.00	
	Transmission Line	100.00	
	Sub station	35.00	
	Sub Total	**135.00**	

35. The additional capital expenditure claimed the petitioner falls within the cut-off and hence same has been considered for the purpose of tariff calculation.

Debt- equity ratio

36. 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."

37. Details of debt-equity in respect of the transmission assets as on the date of commercial operation are as follows:-

(` in lakh)

Capital cost as on 1.2.2012		
Particulars	**Amount**	**%**
Debt	16446.74	70.00
Equity	7048.60	30.00
Total	**23495.34**	**100.00**

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

(` in lakh)

Cost as on 31.3.2014		
Particulars	**Amount**	**%**
Debt	17937.13	70.00
Equity	7687.34	30.00
Total	**25624.47**	**100.00**

39. Debt-equity ratio for projected additional capital expenditure considered in the calculation is given as under:-

(` in lakh)

2011-12	**Normative**	
Particulars	**Amount**	**%**
Debt	313.49	70.00
Equity	134.35	30.00
Total	**447.84**	**100.00**
2012-13	**Normative**	
Particulars	**Amount**	**%**
Debt	1082.40	70.00
Equity	463.89	30.00
Total	**1546.29**	**100.00**
2013-14	**Normative**	
Particulars	**Amount**	**%**
Debt	94.50	70.00
Equity	40.50	30.00
Total	**135.00**	**100.00**

Return on equity

40. 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."

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

(` in lakh)

Particulars	**2011-12 (Pro-rata)**	**2012-13**	**2013-14**
Opening Equity	7048.60	7182.95	7646.84
Addition due to Additional Capitalisation	134.35	463.89	40.50
Closing Equity	7182.95	7646.84	7687.34
Average Equity	7115.78	7414.90	7667.09
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)	**207.32**	**1296.20**	**1340.28**

42. 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.

Interest on loan

43. 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."

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

(a) Gross amount of loan, repayment of instalments & 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) Notwithstanding moratorium period availed by the transmission licensee, the repayment of the loan shall be considered from the first year of commercial operation of the project and shall be equal to the annual depreciation allowed and

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

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

46. Details of the interest on loan worked on the above basis are given below:-

(` in lakh)

Particulars	2011-12 (Pro-rata)	2012-13	2013-14
Gross Normative Loan	16446.74	16760.23	17842.63
Cumulative Repayment upto Previous Year	0.00	208.69	1511.76
Net Loan-Opening	16446.74	16551.54	16330.87
Addition due to Additional Capitalisation	313.49	1082.40	94.50
Repayment during the year	208.69	1303.07	1346.49
Net Loan-Closing	16551.54	16330.87	15078.88
Average Loan	16499.14	16441.20	15704.87
Weighted Average Rate of Interest on Loan	**8.8463%**	**8.8573%**	**8.8571%**
Interest	**243.26**	**1456.25**	**1390.99**

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

Depreciation

48. 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."

49. The transmission asset was put under commercial operation as on 1.2.2012 and accordingly asset will complete 12 years beyond 2013-14. Thus depreciation has been calculated annually based on Straight Line Method and at rates specified in Appendix-III of 2009 Tariff Regulations as under:-

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

(` in lakh)

Particulars	**2011-12 (Pro-rata)**	**2012-13**	**2013-14**
As on date of commercial operation	23495.34	23943.18	25489.47
Addition during 2009-14 due to Projected additional capital expenditure	447.84	1546.29	135.00
Gross Block	23943.18	25489.47	25624.47
Average Gross Block	23719.26	24716.33	25556.97
Rate of Depreciation	5.2790%	5.2721%	5.2686%
Depreciable Value	21347.34	22244.69	23001.27
Remaining Depreciable Value	21347.34	22036.01	21489.51
Depreciation	**208.69**	**1303.07**	**1346.49**

Operation & maintenance expenses

51. 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 Quad conductor D/C T/L (` lakh / km)	0.940	0.994	1.051	1.111	1.174
400 kV bays (` lakh / bay)	52.40	55.40	58.57	61.92	65.46

52. 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)	2012-13	2013-14
152.167 km, 400 kV quad conductor T/L	26.65	169.06	178.64
2 No, 400 kV bays	19.52	123.84	130.92
Total O&M allowable	**46.17**	**292.90**	**309.56**

53. 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%.

54. 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.

Interest on working capital

55. 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.

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

(` in lakh)

Particulars	**2011-12 (Pro-rata)**	**2012-13**	**2013-14**
Maintenance Spares	41.55	43.94	46.43
O & M expenses	23.09	24.41	25.80
Receivables	720.82	740.58	747.27
Total	785.46	808.92	819.50
Interest	**15.38**	**95.05**	**96.29**

Transmission Charges

57. The transmission charges allowed for the transmission assets are summarized overleaf:-

(` in lakh)

Particulars	2011-12 (pro-rata)	2012-13	2013-14
Depreciation	208.69	1303.07	1346.49
Interest on Loan	243.26	1456.25	1390.99
Return on equity	207.32	1296.20	1340.28
Interest on Working Capital	15.38	95.05	96.29
O & M Expenses	46.17	292.90	309.56
Total	**720.82**	**4443.47**	**4483.62**

Filing fee and the publication expenses

58. The petitioner has sought reimbursement of fee paid by it for filing the petition and publication expenses. 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

59. 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 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 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. 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. 63/TT/2012.

sd/-	sd/-
(M. Deena Dayalan)	**(V.S. Verma)**
Member	**Member**

Annexure

	CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN			
				(` in lakh)
	Details of Loan	**2011-12**	**2012-13**	**2013-14**
1	**Bond XXX**			
	Gross loan opening	**2080.00**	**2080.00**	**2080.00**
	Cumulative Repayment upto date of commercial operation/previous year	**0.00**	**0.00**	**0.00**
	Net Loan-Opening	2080.00	2080.00	2080.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	173.33
	Net Loan-Closing	2080.00	2080.00	1906.67
	Average Loan	2080.00	2080.00	1993.33
	Rate of Interest	8.80%	8.80%	8.80%
	Interest	183.04	183.04	175.41
	Rep Schedule	12 annual installments from 29.09.2013		
2	**Bond XXXI**			
	Gross loan opening	**4837.00**	**4837.00**	**4837.00**
	Cumulative Repayment upto date of commercial operation/previous year	**0.00**	**0.00**	**0.00**
	Net Loan-Opening	4837.00	4837.00	4837.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	403.08
	Net Loan-Closing	4837.00	4837.00	4433.92
	Average Loan	4837.00	4837.00	4635.46
	Rate of Interest	8.90%	8.90%	8.90%
	Interest	430.49	430.49	412.56
	Rep Schedule	12 annual installments from 25.02.2014		
3	**Bond XXXIII**			
	Gross loan opening	**4500.00**	**4500.00**	**4500.00**
	Cumulative Repayment upto date of commercial operation/previous year	**0.00**	**0.00**	**0.00**
	Net Loan-Opening	4500.00	4500.00	4500.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	4500.00	4500.00	4500.00
	Average Loan	4500.00	4500.00	4500.00
	Rate of Interest	8.64%	8.64%	8.64%
	Interest	388.80	388.80	388.80
	Rep Schedule	12 annual installments from 08.07.2014		
4	**Bond XXXIV**			
	Gross loan opening	**2887.00**	**2887.00**	**2887.00**
	Cumulative Repayment upto date of commercial operation/previous year	**0.00**	**0.00**	**0.00**

	Net Loan-Opening	2887.00	2887.00	2887.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	2887.00	2887.00	2887.00
	Average Loan	2887.00	2887.00	2887.00
	Rate of Interest	8.84%	8.84%	8.84%
	Interest	255.21	255.21	255.21
	Rep Schedule	12 annual installments from 21.10.2014		
5	**Bond XXXV**			
	Gross loan opening	**105.00**	**105.00**	**105.00**
	Cumulative Repayment upto date of commercial operation/previous year	**0.00**	**0.00**	**0.00**
	Net Loan-Opening	105.00	105.00	105.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	105.00	105.00	105.00
	Average Loan	105.00	105.00	105.00
	Rate of Interest	9.64%	9.64%	9.64%
	Interest	10.12	10.12	10.12
	Rep Schedule	12 annual installments from 31.05.2015		
6	**Bond XXXVI**			
	Gross loan opening	**529.00**	**529.00**	**529.00**
	Cumulative Repayment upto date of commercial operation/previous year	**0.00**	**0.00**	**0.00**
	Net Loan-Opening	529.00	529.00	529.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	529.00	529.00	529.00
	Average Loan	529.00	529.00	529.00
	Rate of Interest	9.35%	9.35%	9.35%
	Interest	49.46	49.46	49.46
	Rep Schedule	12 annual installments from 29.08.2015		
7	**Bond XXXVII**			
	Gross loan opening	**625.00**	**625.00**	**625.00**
	Cumulative Repayment upto date of commercial operation/previous year	**0.00**	**0.00**	**0.00**
	Net Loan-Opening	625.00	625.00	625.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	625.00	625.00	625.00
	Average Loan	625.00	625.00	625.00
	Rate of Interest	9.25%	9.25%	9.25%
	Interest	57.81	57.81	57.81
	Rep Schedule	12 annual installments from 26.12.2015		
7	**Bond XXXVIII**			

	Gross loan opening	**0.00**	**896.95**	**896.95**
	Cumulative Repayment upto date of commercial operation/previous year	**0.00**	**0.00**	**0.00**
	Net Loan-Opening	0.00	896.95	896.95
	Additions during the year	896.95	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	896.95	896.95	896.95
	Average Loan	448.48	896.95	896.95
	Rate of Interest	9.25%	9.25%	9.25%
	Interest	41.48	82.97	82.97
	Rep Schedule	Bullet payment as on 8.3.2027		
	Total Loan			
	Gross loan opening	15563.00	16459.95	16459.95
	Cumulative Repayment upto date of commercial operation/previous year	0.00	0.00	0.00
	Net Loan-Opening	15563.00	16459.95	16459.95
	Additions during the year	896.95	0.00	0.00
	Repayment during the year	0.00	0.00	576.42
	Net Loan-Closing	16459.95	16459.95	15883.53
	Average Loan	16011.48	16459.95	16171.74
	Rate of Interest	**8.8463%**	**8.8573%**	**8.8571%**
	Interest	1416.42	1457.91	1432.34