CENTRAL ELECTRICITY REGULATORY COMMISSION

NEW DELHI

<u>Petition No. 73/TT/2011</u>

Coram:

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

Date of hearing : 20.6.2013
Date of order : 24.6.2013

In the matter of: Approval under Regulation 86 of Central Electricity Regulatory Commission (Conduct of Business) Regulations' 1999 and Central Electricity Regulatory Commission (Terms & Conditions of tariff) Regulations' 2009 for determination of transmission tariff for LILO of Alamathy - Sriperumbudur 400 kV D/C line at North Chennai TPS switchyard under Transmission System associated with Chennai NTPC –TNEB JV TPS from date of commercial operation to 31.03.2014 in Southern Region for tariff block 2009-14.

And

In the matter of:

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

Vs

1. Karnataka Power Transmission Corporation, Ltd. Bangalore
2. Transmission Corporation of Andhra Pradesh Ltd. Hyderabad
3. Kerala State Electricity Board, Thiruvananthapuram
4. Tamil Nadu Electricity Board, Chennai …
5. Electricity Department, Govt. of Goa, Panaji
6. Electricity Department, Govt. of Pondicherry, Pondicherry
7. Eastern Power Distribution Company of Andhra Pradesh Ltd., Visakhapatnam
8. Southern Power Distribution Company of Andhra Pradesh Ltd., Tirupati
9. Central Power Distribution Company of Andhra Pradesh Ltd., Hyderabad
10. Northern Power Distribution Company of Andhra Pradesh Ltd., Warangal
11. Bangalore Electricity Supply Company Ltd., Bangalore
12. Gulbarga Electricity Supply Company Ltd., Gulbarga

13. Hubli Electricity Supply Company Ltd., Hubli
14. Mangalore Electricity Supply Company Ltd., Mangalore
15. Chamundeswari Electricity Supply Company Ltd., Mysore
16. NTECL, JVC of NTPC and TNEB, Chennai

Respondents

The following were present:

Shri S.S Raju, PGCIL
Shri M M Mondal, PGCIL
Shri R V Madan Mohan Rao, PGCIL
Shri Vallinayagam, Advocate, TANGEDCO
Shri Balaguru, TANGEDCO

ORDER

This petition has been filed by Power Grid Corporation of India Limited (PGCIL) seeking approval of transmission tariff in respect of LILO of Alamathy - Sriperumbudur 400 kV D/C line at North Chennai TPS switchyard under Transmission System associated with Chennai NTPC–TNEB JV TPS in Southern Region (hereinafter referred to as "the transmission assets") from date of commercial operation to 31.3.2014 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 the petitioner's Board of Directors, vide letter dated 16.5.2008, at an estimated cost of ₹9026 lakh including Interest During Construction of ₹580 lakh (Based on 1st Quarter, 2008 price level). Further, it was revised vide letter dated 11.3.2011 to an estimated cost of ₹15036 lakh including Interest During Construction of ₹1402 lakh (based on 3rd Quarter 2010 price level).

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

Transmission Lines

LILO of Alamathy-Sriperumbudur 400 kV D/C line at North Chennai TPS Switchyard.

Sub-stations

NIL

Only PLCC equipments for LILO of Alamathy-Sriperumbudur 400 kV D/C line at North Chennai TPS switchyard.

4. Initially, the petitioner claimed transmission charges on the basis of anticipated date of commercial operation i.e. 1.4.2011. However, vide affidavit dated 8.2.2012, the petitioner has submitted revised Management Certificate of the cost, based on the actual date of commercial operation of the transmission asset as 1.8.2011.

5. The transmission tariff has been worked out based on actual expenditure incurred up to date of commercial operation and projected additional capital expenditure to be incurred from date of commercial operation to 31.3.2012.

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

(₹ in lakh)

Particulars	**2011-12**	**2012-13**	**2013-14**
Depreciation	779.13	788.34	788.34
Interest on Loan	887.08	827.76	757.04
Return on Equity	773.83	782.97	782.97
Interest on Working Capital	56.48	55.71	54.29
O & M Expenses	45.97	48.59	51.35
Total	**2542.49**	**2503.37**	**2433.99**

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

(₹ in lakh)

	2011-12	2012-13	2013-14
Maintenance Spares	6.90	7.29	7.70
O & M expenses	3.83	4.05	4.28
Receivables	423.75	417.23	405.67
Total	**434.48**	**428.57**	**417.65**
Interest	56.48	55.71	54.29
Rate of Interest	13.00%	13.00%	13.00%

8. Reply to the petition has been filed by Respondent No. 4, TANGEDCO, (erstwhile TNEB), vide affidavits dated 12.5.2011, 5.12.2011, 25.9.2012, 7.12.2012 and 27.2.2013. The petitioner has filed its rejoinder to the reply filed by TANGEDCO, vide two affidavits dated 3.9.2012 and an affidavit dated 20.11.2012.

9. The matter was heard on 19.2.2013 and order was reserved. As two of the Members of the Commission demitted the office, the matter was heard again on 20.6.2013. During the hearing, the representative of the petitioner submitted since the parties have already made their submissions, the Commission may proceed to issue the order in the matter. None was present on behalf of the respondents. Having heard the representatives of the parties and perused the material on records, we proceed to dispose of the petition.

10. The main issue raised by TANGEDCO in all these affidavits and during the hearing is regarding the need for Supplementary Transmission System for the third unit of Vallur TPS. We would like to deal with this issue before we go into the main issue of determination of the transmission charges for the

subject transmission assets. TANGEDCO has submitted that the Investment Approval (IA) for the subject transmission assets was granted in the month of May 2008 by the petitioner's Board. The petitioner was well aware before the IA that the capacity of Vallur TPS has been enhanced from 2X500 MW to 3X500 MW as per the decision taken in the meeting of the 25th Standing Committee on Power System Southern Region (SCPSSR) held on 28.3.2008. According to TANGEDCO, there is no need for the Supplementary Transmission System for the third unit of Vallur TPS and the beneficiaries should not be additionally burdened with the charges pertaining to the Supplementary Transmission System. TANGEDCO has also submitted that the issue of start-up power was discussed and it was decided that Vallur TPS could draw start-up power from Nellore via Alamathy, using the second Nellore-Almathy-Sriperumbudur circuit. TANGEDCO has further prayed to direct the petitioner to claim transmission tariff strictly in accordance with the approved scheme and not to pass additional financial burden on the beneficiaries on account of the deviation in the scheme.

11. The petitioner has clarified that the work related to the subject transmission assets was already initiated as per the 5th Southern Region Power Committee (SRPC) meeting held on 25.8.2007, according to which the evacuation scheme for Vallur TPS is 2x500 MW and accordingly Feasibility Report (FR) for 2X500 MW was approved on 9.4.2008 and notified on 16.5.2008. The capacity of the Vallur TPS was enhanced from 2X500 MW to 3X500 MW in the 25th SCPSSR. At the same time the petitioner was asked to expedite the work to meet the start-up power requirement of 2X500 MW and

NTPC agreed to bear the transmission charges for LILO of both circuits from the date of commercial operation of the subject transmission assets to the date of commercial operation of the 2X500 MW units of Vallur TPS. The petitioner has also submitted that in the 26th SRPC held on 15.7.2008, it was agreed that a transmission system would be evolved by CEA in respect to 3X500 units of Vallur TPS to meet the increased generation evacuation through system study. The system study was carried out on 27-29th May, 2008 and by then the petitioner had already initiated action for implementation of the Scheme as per the approval for 2X500 MW evacuation scheme. As such, the petitioner had to go ahead with the implementation of the transmission scheme associated with Vallur TPS in two phases. The evacuation scheme for the third unit of 500 MW has been taken up as a Supplementary Scheme. It was discussed and agreed in the 35th SCMSR held on 4.1.2012 that the transmission system associated with Vallur TPS would be taken in two phases. The first phase was discussed and agreed in 22nd, 23rd and 24th Standing Committee meetings. A Supplementary Scheme was evolved due to increase in capacity of Vallur TPS to 3X500 MW, which was discussed and agreed in the 27th SCPSSR meeting. Accordingly, it has gone ahead with the implementation of the transmission scheme associated with Vallur TPS in two phases.

12. We have considered the submissions of the petitioner and TANGEDCO. The basic contention of TANGEDCO is that the petitioner was aware of the enhancement of the capacity of the Vallur TPS from 2X500 MW to 3X500 MW at the time of IA of the subject transmission assets and hence

the petitioner should have implemented a combined evacuation system for Vallur TPS and there is no need for a separate Supplementary Transmission System for the third unit of Vallur TPS. It is observed that the petitioner had already initiated action for implementation of evacuation system for the 2X500 MW when the requirement for additional evacuation system to take care of the third unit of Vallur TPS arose and it would not have been possible for the petitioner to go back on the action already taken and the expenditure already incurred. It is further observed that the decision to a have Supplementary Transmission System for the third unit of Vallur TPS has been arrived at after having been discussed in various SRPC meetings, where TANGEDCO was a party to those meetings. As such, we are of the view that the decisions taken in the various SRPC meetings, which were with the knowledge of CEA, cannot be undone at this stage. Accordingly, the evacuation system for the Vallur TPS can be implemented in two phases as is being done by the petitioner. We would like to further clarify that NTPC would bear the transmission charges for LILO of both circuits from the date of commercial operation of the subject transmission assets to the date of commercial operation of the 2X500 MW units of Vallur TPS.

<u>CAPITAL COST</u>

13. 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:
>
> 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."

14. The details of apportioned approved cost, the admitted cost as on the date of commercial operation and details of estimated additional capital expenditure projected to be incurred for the assets covered in the petition are given hereunder:-

(₹ in lakh)

Apportioned / Approved cost (FR)	**Apportioned / Approved cost (RCE)**	**Expenditure as on DOCO / Notional DOCO**	**2011-12**	**Total expenditure**
9026.00	15036.00	13333.99	1339.94	14673.93

Cost variation

15. The revised total estimated completion cost of ₹14673.93 lakh is within the revised approved cost of ₹15036.00 lakh and as such there is no cost over-run. However, there was cost escalation in certain items as per Form 5B of the petition. As such, the petitioner was asked to clarify the following:-

(a) The increase in the number of towers by 79.17% while the length of the transmission increased by only 20.75%.

(b) Reasons for increase of cost by ₹1207 lakh under the head "Other Reasons".

(c) Justification of cost for "Supply of PLCC System" and "Erecting of PLCC System" in Form 5 C as there was only one eligible bidder for the "Supply of PLCC System", "Erecting of PLCC System" and as per information there are no. of eligible bidder for "Supervision dismantling & reinstallation of BPL Panels".

16. The petitioner, vide affidavit dated 5.5.2011, has clarified as under:-

(a) Out of the total increase in number of towers by 79.1%, increase of 20.8% (15 nos.) of towers is due to increase in line length and the remaining increase of 58.3% (42 nos.) of towers is due to RoW problems.

(b) The “Other reasons" mainly cover IDC and IEDC as mentioned in the petition. The increase in IDC and IEDC has been estimated based on anticipated completion in June 2011 as per the RCE approval dated 11.3.2011.

(c) That award was placed on M/s. ABB for supply and erection of panels at Sriperumbudur and Chennai TPS for Sriperumbudur Chennai TPS portion of the line under open tendering. Thus, the cost of these panels is reasonable. Whereas, the existing panels at Sriperumbudur were shifted to Chennai TPS - Alamathy line and were commissioned by M/s. BPL on single tender basis as these panels were originally supplied by M/s, BPL (proprietary works). Thus, the cost of erection for these panels is also justified.

17. As regards the increase of ₹1207 lakh under the head "Other Reasons", the petitioner has further submitted, vide affidavit dated 17.1.2013, that this is the difference between RCE and FR. The increase of ₹327 lakh

under IEDC and ₹822 lakh under IDC totaling to ₹1149 lakh and balance amount of ₹56 lakh was on account of taxes and duties etc.

18. TANGEDCO has requested not to approve item wise cost over-run in execution of the project. During the hearing on 19.2.2013, the petitioner has submitted that the total completion cost is within the revised approved cost of ₹15000 lakh and there is no cost over-run.

19. Though there is no cost over-run, there is a substantial cost variation in some of the elements. The cost variation is allowed. However, the cost estimates of the petitioner are not realistic not only in this petition but also in similar other similar petitions. We are of the view that petitioner should adopt a prudent procedure to make cost estimates of different elements of the transmission projects more realistic.

Treatment of initial spares

20. The capital cost as on the date of commercial operation is inclusive of initial spares amounting to ₹67.70 lakh. The initial spares claimed is within the ceiling limit specified in Regulation 8 of the 2009 Tariff Regulations and therefore it is allowed.

Time over-run

21. As per the investment approval dated 16.5.2008, the LILO of Alamathy-Sriperumbudur 400 kV D/C Line at North Chennai TPS switchyard was scheduled to be commissioned within 26 months from the date of investment approval i.e. by 15.7.2010 (say 1.8.2010). However, during execution of work

certain problems like ROW, etc., were encountered, due to which the route and tower design had to be changed. Accordingly, revised approval of the scheme was accorded by the petitioner's Board of Directors in its 248th meeting held on 8.2.2011 with Revised Cost Estimates and completion schedule of June 2011. However, the asset has been put under commercial operation on 1.8.2011. Accordingly, there has been a delay of 12 months from the original investment approval and 1 month from revised commissioning schedule.

22. The petitioner has submitted the following reasons for the time over-run:-

(a) North Chennai Thermal Power Station and Almathy Power Station are in vicinity of Chennai Metropolitan Area and it is fast developing on account of development of infrastructure like power station, port facilities, road network, industrial and residential establishments. During the execution of this project there were severe right of way (<u>RoW</u>) problems. Because of these developments, the length of the line went up from 28 kms. (24 kms. multi ckts. + 4 kms. D/C) to 33.81 kms. (31.78 kms. multi ckts + 2.05 kms. D/C),

(b) That the LILO point of the Alamathy & Sriperumbudur 400 kV D/C line had to be shifted owing to site constraints.

(c) Due to the above changes/ issues, etc., the work could not be commenced promptly and about six months were lost initially. Further, due to severe ROW problems the work could not be executed as planned.

23. The petitioner, vide affidavit dated 5.5.2011, has submitted that originally the survey was carried out in 2006 for preparation of BoQ for FR. The approval of the project was obtained in 2008. During these two years gap there were major developments along the route alignment. Though some developments could be anticipated, the exact nature and level of developments could be seen only during execution. In this case, the developments were beyond expectations.

24. The petitioner, vide affidavit dated 18.10.2011, has explained that delay is mainly due to court cases, clearances from Collector and delay in shut down from SRPC. It is observed that the petitioner initiated the land acquisition process in 2009, but the same was challenged and finally disposed of on 4.2.2011. The petitioner has also submitted that shutdown was sought for in Location No. AP01 to AP06 during June 2011 and after repeated requests final shut down was cleared on 27.6.2011 and 30.6.2011 and finally the lines were commissioned on 1.8.2011. From the foregoing, it appears that the time over-run of 8 months was due to court cases and 4 months was due to RoW problems and one month was due to shutdown. We are convinced with the justification submitted by the petitioner and accordingly we condone the delay of 12 months from the original investment approval and 1 month from revised commissioning schedule. Therefore, the IDC amounting to ₹1234.34 lakh and IEDC amounting to ₹1301.80 lakh, claimed by the petitioner have been allowed to be capitalised.

25. As regards LD to be paid by the contractor on account of delay, the petitioner has submitted, vide affidavit dated 14.10.2011 that the issue is under process and it is expected to take some more time. The petitioner has also submitted that the same will be factored while arriving at the final cost. We would like to clarify that the LD claimed by the petitioner from the contractor shall be adjusted at the time of truing up.

26. Accordingly, capital cost of ₹13333.99 lakh, as on the date of commercial operation has been considered for the purpose of tariff calculation.

<u>Projected additional capital expenditure</u>

27. 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:"

28. 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".

29. As per the above definition, cut-off date in respect of all the transmission assets covered in the instant petition is 31.3.2014. The petitioner has claimed additional capital expenditure of ₹1339.94 lakh and it is allowed as it falls within the within the cut-off date.

Debt- equity ratio

30. 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."

31. The detail of Debt-Equity as on dates of commercial operation/Notional dates of commercial operation of assets are as follows:-

	Capital cost as on date of commercial operation	
Particulars	**Amount (₹ in lakh)**	**%**
Debt	9333.79	70.00
Equity	4000.20	30.00
Total	**13333.99**	**100.00**

32. Details of Debt – Equity as on 31.3.2014 are as under:-

	Capital cost as on 31.3.2014	
Particulars	**Amount (₹ in lakh)**	**%**
Debt	10271.75	70.00
Equity	4402.18	30.00
Total	**14673.93**	**100.00**

Return on Equity

33. Regulation 15 of the 2009 Tariff Regulations, as amended, 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."

34. 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	**4000.20**	**4402.18**	**4402.18**
Addition due to additional capital expenditure	**401.98**	**0.00**	**0.00**
Closing equity	**4402.18**	**4402.18**	**4402.18**
Average equity	**4201.19**	**4402.18**	**4402.18**
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)	**489.61**	**769.54**	**769.54**

Interest on loan

35. 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."

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

(a) Gross amount of loan, repayment of instalments and rate of interest on actual loans have been considered as per the details submitted vide affidavit dated 8.2.2012.

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

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

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

38. Details of the interest on loan worked on the above basis is as under:-

(₹ in lakh)

Particulars	**2011-12 (Pro-rata)**	2012-13	2013-14
Gross normative loan	9333.79	10271.75	10271.75
Cumulative repayment upto previous year	0.00	493.29	1268.66
Net loan-opening	9333.79	9778.46	9003.09
Addition due to additional capital expenditure	937.96	0.00	0.00
Repayment during the year	493.29	775.36	775.36
Net loan-closing	9778.46	9003.09	8227.73
Average loan	9556.12	9390.77	8615.41
Weighted average rate of Interest on oan	8.9447%	8.9419%	8.9377%
Interest	**569.85**	**839.71**	**770.02**

DEPRECIATION

39. 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.

(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."

40. The petitioner has claimed actual depreciation as a component of Annual Fixed Charges. However, depreciation has been calculated as per Regulation 17 (4) of the 2009 Tariff Regulations extracted hereinabove. The transmission asset in the instant petition was put on commercial operation on 1.8.2011. Accordingly, it will complete 12 years beyond 2013-14 and thus depreciation has been calculated annually based on Straight Line Method and at rates specified in Appendix-III to the 2009 Tariff Regulations.

41. Accordingly, depreciation has been worked out on the basis of capital expenditure as on date of commercial operation, wherein the depreciation for the first year has been calculated on pro-rata basis for part of the year.

42. Details of the depreciation worked out are given hereunder:-

(₹ in lakh)

Particulars	**2011-12 (Pro-rata)**	**2012-13**	**2013-14**
As per previous tariff order	13333.99	14673.93	14673.93
Addition during 2009-14 due to projected additional capital expenditure	1339.94	0.00	0.00
Gross block	14673.93	14673.93	14673.93
Average gross block	14003.96	14673.93	14673.93
Rate of depreciation	5.2838%	5.2840%	5.2840%
Depreciable value	12603.56	13206.54	13206.54
Remaining depreciable value	12603.56	12713.24	11937.88
Depreciation	**493.29**	**775.36**	**775.36**

OPERATION & MAINTENANCE EXPENSES

43. 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:-

Element	**2009-10**	**2010-11**	**2011-12**	**2012-13**	**2013-14**
400 kV D/C twin conductor T/L (₹ in lakh per km)	0.627	0.663	0.701	0.741	0.783

44. Based on the above norms, O&M Charges for the assets covered in the instant petition have been calculated as under:-

(₹ in lakh)

Element	2011-12 (Pro-rata)	2012-13	2013-14
31.782+31782+2.051= 65 575 km 400 Kv D/C twin conductor T/L	30.65	48.59	51.35

45. 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%.

46. We have 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

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

(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

The SBI Base Rate Plus 350 bps as on 1.4.2011 (i.e.11.75%) has been considered, as per the 2009 Tariff Regulations, as the rate of interest on working capital for the transmission asset covered in the instant petition.

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

(₹ in lakh)

Particulars	**2011-12 (Pro-rata)**	**2012-13**	**2013-14**
Maintenance Spares	6.90	7.29	7.70
O & M expenses	3.83	4.05	4.28
Receivables	403.97	413.86	402.50
Total	414.70	425.20	414.48
Interest	**32.48**	**49.96**	**48.70**
Rate of Interest	11.75%	11.75%	11.75%

TRANSMISSION CHARGES

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

(₹ in lakh)

Particulars	**2011-12 (Pro-rata)**	**2012-13**	**2013-14**
Depreciation	493.29	775.36	775.36
Interest on Loan	569.85	839.71	770.02
Return on equity	489.61	769.54	769.54
Interest on Working Capital	32.48	49.96	48.70
O & M Expenses	30.65	48.59	51.35
Total	**1615.88**	**2483.17**	**2414.98**

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

50. The petitioner has sought reimbursement of fee paid by it for filing the petition and expenses related to publication of notices. 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.

Service tax

51. The petitioner has made a specific prayer to be allowed to bill and recover the Service tax on Transmission charges separately from the respondents if the exemption granted to it is withdrawn and transmission of power is made a taxable service. We consider the prayer pre-mature and accordingly it is rejected.

Licence fee

52. The petitioner has submitted that in O&M norms for tariff block 2009-14 the cost associated with license fees had not been captured and the license fee may be allowed to be recovered separately from the respondents. The petitioner shall be entitled for reimbursement of licence fee in accordance with Regulation 42A (1)(b) of the 2009 Tariff Regulations.

53. The billing collection and disbursement of transmission charges shall be governed by provision of the Central Electricity Regulatory Commission (Sharing of inter-state transmission charges and losses) Regulations, 2010.

54. This order disposes of Petition No. 73/TT/2011.

sd/- sd/-

(M. Deena Dayalan)
Member

(V. S. Verma)
Member

Annexure

CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN

(₹ in lakh)

	Details of Loan	**2011-12**	**2012-13**	**2013-14**
1	**BOND XXVIII**			
	Gross loan opening	**525.00**	**525.00**	**525.00**
	Cumulative Repayment upto DOCO/previous year	**0.00**	**0.00**	**43.75**
	Net Loan-Opening	525.00	525.00	481.25
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	43.75	43.75
	Net Loan-Closing	525.00	481.25	437.50
	Average Loan	525.00	503.13	459.38
	Rate of Interest	9.33%	9.33%	9.33%
	Interest	48.98	46.94	42.86
	Rep Schedule	12 equal annual Instalments from 15.12.2012		
2	**Bond XXIX**			
	Gross loan opening	**1660.00**	**1660.00**	**1660.00**
	Cumulative Repayment upto DOCO/previous year	**0.00**	**0.00**	**138.33**
	Net Loan-Opening	1660.00	1660.00	1521.67
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	138.33	138.33
	Net Loan-Closing	1660.00	1521.67	1383.33
	Average Loan	1660.00	1590.83	1452.50
	Rate of Interest	9.20%	9.20%	9.20%
	Interest	**152.72**	**146.36**	**133.63**
	Rep Schedule	12 equal Annual Installment from 12.03.2013		
3	**Bond XXX**			
	Gross loan opening	**2147.00**	**2147.00**	**2147.00**
	Cumulative Repayment upto DOCO/previous year	**0.00**	**0.00**	**0.00**
	Net Loan-Opening	2147.00	2147.00	2147.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	178.92
	Net Loan-Closing	2147.00	2147.00	1968.08
	Average Loan	2147.00	2147.00	2057.54
	Rate of Interest	8.80%	8.80%	8.80%
	Interest	188.94	188.94	181.06
	Rep Schedule	12 annual installments from 29.09.2013		
4	**Bond XXXI**			
	Gross loan opening	**1617.00**	**1617.00**	**1617.00**
	Cumulative Repayment upto DOCO/previous year	**0.00**	**0.00**	**0.00**
	Net Loan-Opening	1617.00	1617.00	1617.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	134.75
	Net Loan-Closing	1617.00	1617.00	1482.25
	Average Loan	1617.00	1617.00	1549.63

	Rate of Interest	8.90%	8.90%	8.90%
	Interest	143.91	143.91	137.92
	Rep Schedule	12 annual installments from 25.02.2014		
5	**Bond XXXIII**			
	Gross loan opening	**1250.00**	**1250.00**	**1250.00**
	Cumulative Repayment upto DOCO/previous year	**0.00**	**0.00**	**0.00**
	Net Loan-Opening	1250.00	1250.00	1250.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	1250.00	1250.00	1250.00
	Average Loan	1250.00	1250.00	1250.00
	Rate of Interest	8.64%	8.64%	8.64%
	Interest	108.00	108.00	108.00
	Rep Schedule	12 annual installments from 08.07.2014		
6	**Bond XXXIV**			
	Gross loan opening	**1454.00**	**1454.00**	**1454.00**
	Cumulative Repayment upto DOCO/previous year	**0.00**	**0.00**	**0.00**
	Net Loan-Opening	1454.00	1454.00	1454.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	1454.00	1454.00	1454.00
	Average Loan	1454.00	1454.00	1454.00
	Rate of Interest	8.84%	8.84%	8.84%
	Interest	128.53	128.53	128.53
	Rep Schedule	12 annual installments from 21.10.2014		
7	**Bond XXXV**			
	Gross loan opening	**69.00**	**69.00**	**69.00**
	Cumulative Repayment upto DOCO/previous year	**0.00**	**0.00**	**0.00**
	Net Loan-Opening	69.00	69.00	69.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	69.00	69.00	69.00
	Average Loan	69.00	69.00	69.00
	Rate of Interest	9.64%	9.64%	9.64%
	Interest	6.65	6.65	6.65
	Rep Schedule	12 annual installments from 31.05.2015.		
8	**Bond XXXVI**			
	Gross loan opening	**553.00**	**553.00**	**553.00**
	Cumulative Repayment upto DOCO/previous year	**0.00**	**0.00**	**0.00**
	Net Loan-Opening	553.00	553.00	553.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	553.00	553.00	553.00
	Average Loan	553.00	553.00	553.00
	Rate of Interest	9.35%	9.35%	9.35%

	Interest	51.71	51.71	51.71
	Rep Schedule	15 annual installments from 29.08.2016.		
9	**Bond XXXVII**			
	Gross loan opening	**58.80**	**58.80**	**58.80**
	Cumulative Repayment upto DOCO/previous year	**0.00**	**0.00**	**0.00**
	Net Loan-Opening	58.80	58.80	58.80
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	58.80	58.80	58.80
	Average Loan	58.80	58.80	58.80
	Rate of Interest	9.25%	9.25%	9.25%
	Interest	5.44	5.44	5.44
	Rep Schedule	12 annual installments from 26.12.2015.		
	Total Loan			
	Gross loan opening	9333.80	9333.80	9333.80
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	182.08
	Net Loan-Opening	9333.80	9333.80	9151.72
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	182.08	495.75
	Net Loan-Closing	9333.80	9151.72	8655.97
	Average Loan	9333.80	9242.76	8903.84
	Rate of Interest	**8.9447%**	**8.9419%**	**8.9377%**
	Interest	834.88	826.48	795.80