

**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Petition No. 152/TT/2013**

**Coram:**

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

**Date of Hearing : 17.09.2013  
Date of Order : 18 .02.2014**

**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 revised transmission tariff for LILO of Kahalgaon-Patna 400 kV D/C (Quad) line at Barh S/S after approval of revised cost estimate under Transmission System associated with Barh Generation Project (3x660 MW) in Eastern Region from DOCO (1.11.2009) to 31.3.2014.

**And in the matter of:**

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

.....Petitioner

**Vs**

1. Bihar State Electricity Board  
Vidyut Bhawan, Bailey Road  
Patna-800 001.
2. West Bengal State Electricity Distribution Company Ltd.  
Bidyut Bhawan, Bidhan Nagar  
Block DJ, Sector-II, Salt Lake City  
Calcutta-700 091.
3. Grid Corporation of Orissa Ltd.  
Shahid Nagar, Bhubaneswar-751 007.
4. Damodar Valley Corporation  
DVC Tower, Maniktala  
Civic Centre, VIP Road  
Calcutta-700 054.



5. Power Department  
Govt. of Sikkim, Gangtok-737 101.
6. Jharkhand State Electricity Board  
In front of Main Secretariat  
Doranda, Ranchi-834 002.
7. NTPC Ltd.  
NTPC Bhawan, Scope Complex  
7, Institutional Area  
Lodhi Road  
New Delhi-110 003.

**....Respondents**

**For petitioner** : Shri S.S Raju, PGCIL  
Shri M.M. Mondal, PGCIL  
Shri B. K. Sahoo, PGCIL  
Shri B. C. Pant, PGCIL  
Shri Shailendra Singh, PGCIL  
Shri Ajay Dua, PGCIL

**For respondent** : Shri Rohit Chhabra, NTPC  
Shri Mohit Kumar Shah, Advocate, BSPHCL

**ORDER**

The petition has been filed by Power Grid Corporation of India Limited (PGCIL) seeking approval of the revised transmission tariff, from the date of commercial operation to 31.3.2014, for LILO of Kahalgaon-Patna 400 kV D/C (Quad) line at Barh Sub-station (transmission asset) after approval of revised cost estimate under Transmission System associated with Barh Generation Project (3x660 MW) in Eastern Region based on Regulation 6(1) of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009 (hereinafter referred to as "the 2009 Tariff Regulations").

2. The administrative approval and expenditure sanction to the



implementation of Transmission System associated with Barh Generation Project was accorded by the Government of India, Ministry of Power vide letter dated 12.12.2005 at an estimated cost of `377945 lakh including IDC of `17941 lakh (Based on 2<sup>nd</sup> Quarter, 2005 price level). The Revised Cost Estimate (RCE) for Barh Transmission system was approved by the Board of Directors of the petitioner, vide letter dated 23.1.2012, and it is `428259 lakh including the IDC of `41326 lakh (Based on 1<sup>st</sup> Quarter, 2011 price level) .

3. The scope of works covered under the scheme broadly includes:-

**Transmission Lines:**

- 1) LILO of Kahalgaon-Patna 400kV D/C (Quad) line at Barh (date of commercial operation- 1.11.2009)
- 2) Barh-Balia 400kV D/C (Quad) line
- 3) Balia-Bhiwadi 2500 MW, +/- 500 kV HVDC bipole line
- 4) Seoni-Bina 765kV S/C line (to be initially charged at 400kV)
- 5) Two nos. 66kV Earth Electrode lines (one each at Balia and Bhiwadi) (2conductors of Twin Moose for each line)

**Substations**

- 1) Balia 400kV Substation (S/S) Extension
- 2) Bhiwadi 400/220kV S/S Extension
- 3) Seoni 400kV S/S Extension
- 4) Bina 400kV Switching Station Extension
- 5) Balia and Bhiwadi Converter Stations including Earth Electrode Stations and Repeater Stations
- 6) Barh 400kV Switchyard extension (NTPC)-provision of power Line Carrier Communication

4. The petitioner had earlier filed Petition No. 252/2010 seeking determination of transmission tariff for the instant transmission assets for the period 2009-14. As the actual expenditure as on date of commercial operation exceeded the apportioned approved cost, the Commission, vide order dated 8.4.2011, restricted the capital cost to the apportioned approved cost of `10459.48 lakh against total estimated completed cost of `17790.35 lakh claimed by the petitioner. The relevant portion of the said order is under:-

"11. Against the apportioned approved cost of 104820.00 lakh, the petitioner has considered the capital cost of `17426.92 lakh as on date of commercial operation i.e. 1.11.2009 as per CA certificate dated 29.4.2010. As the actual expenditure as on date of commercial operation exceeds the apportioned approved Cost, capital cost as on date of commercial operation has been restricted upto apportioned approved Cost of `10482.00 lakh. Consequently, the transmission line cost and Power Line carrier Communication (PLCC) cost on date of commercial operation shall be 10459.65 lakh and 22.35 lakh respectively."

"13. The petitioner has claimed initial spares amounting to Rs. 173.00 lakh based on the estimated expenditure up to 31.03.2011 amounting to Rs. `17951.98 lakh. However, it works out `134.35 lakh only as per regulation 8 of the 2009 regulation. This excess amount of `.38.65 lakh corresponds to the cost up to 31.3.2011 excess amount corresponding to `10459.65 lakh works out to Rs.22.52 lakh which has been reduced from the cost.

14. Based on above, capital cost `10459.48 lakh has been considered for tariff calculation which has transmission portion of `10437.14 lakh and PLCC portion of `22.35 lakh."

5. This petition has been filed by the petitioner in accordance with the Regulation 6(1) of the 2009 Tariff Regulations, which stipulates that:-

"Provided that the generating company or the transmission licensee, as the case may be, may in its discretion make an application before the Commission one more time prior to 2013-14 for revision of tariff."

6. The instant petition covers determination of transmission tariff based on actual expenditure incurred up to the date of commercial operation, i.e.

31.8.2010, the actual additional capital expenditure from the date of commercial operation to 31.3.2012 and the estimated additional capital expenditure from 1.4.2012 to 31.3.2013. The expenditure is based on audited accounts of the petitioner up to 31.3.2012.

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

(` in lakh)

Revised apportioned approved cost as per the RCE	Actual cost incurred as on DOCO (1.11.2009)	Additional capital expenditure				Total estimated completion cost
		DOCO to 31.3.2010	2010-11	2011-12	2012-13	
18407.00	17426.92	291.43	69.22	318.52	16.00	18122.09

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

(` in lakh)

Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	386.76	937.76	948.00	956.83	957.25
Interest on Loan	475.43	1090.38	1014.18	935.46	845.79
Return on Equity	383.97	930.99	941.16	949.93	950.35
Interest on working capital	27.01	64.31	63.30	62.19	60.50
O & M Expenses	20.78	52.75	55.77	58.96	62.30
<b>Total</b>	<b>1293.95</b>	<b>3076.19</b>	<b>3022.41</b>	<b>2963.37</b>	<b>2876.19</b>

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

(` in lakh)

Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
-------------	---------	---------	---------	---------	---------



Maintenance Spares	7.48	7.91	8.37	8.84	9.35
O & M Expenses	4.16	4.40	4.65	4.91	5.19
Receivables	517.58	512.70	503.74	493.90	479.37
<b>Total</b>	<b>529.22</b>	<b>525.01</b>	<b>516.76</b>	<b>507.65</b>	<b>493.91</b>
Rate of Interest	12.25%	12.25%	12.25%	12.25%	12.25%
Interest	27.01	64.31	63.30	62.19	60.50

10. 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. The Respondent No. 6, Jharkahnd State Electricity Board (JSEB) has filed its reply vide affidavit dated 7.8.2013, Respondent No 7, National Thermal Power Corporation (NTPC) has filed its reply vide affidavit dated 27.8.2013. The petitioner has filed separate rejoinders to the replies filed by JSEB and NTPC, vide affidavits dated 11.9.2013. The objections raised by the respondents in their reply and the clarifications given by the petitioner in its rejoinder are addressed in the relevant paragraphs of this order.

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

### **Capital cost**

12. Regulation 7 of the 2009 Tariff Regulations provides as follows:-

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

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

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

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

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

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

13. Accordingly, capital cost of `17426.92 lakh, up to the date of commercial operation i.e.1.11.2009, of the transmission asset has been considered for the purpose of calculation of tariff for the period 1.11.2009 to 31.3.2014.

### **Cost over-run**

14. NTPC in its reply has submitted that the total cost of the Barh Transmission System (BTS) has been revised from `377945 lakh to `4282.59 lakh as per the RCE. The apportioned approved of the instant transmission asset has been revised from `10459 lakh to `18407 lakh and it was only 2.77% of the original apportioned approved cost, whereas it is 4.29% of the revised apportioned approved cost and the petitioner should be directed to provide the reasons for cost escalation alongwith the break-up of escalation of individual heads. JSEB has submitted that the estimated completion cost of the instant asset is lesser than the revised apportioned cost and that there is willful over-estimation in approval of RCE, which makes it difficult to determine the actual cost over-run.

15. In response to NTPC's objections, the petitioner has submitted the following reasons for the increase in the overall cost of the BTS-

(` in lakh)

S. No.	Variation on account of:	Variation
1	Price Variation*	
A	FR to LOA	-9935
B	As per LOA provision	17415
	<b>Sub-Total</b>	<b>7480</b>
2	Variation in Quantities of Approved Items	3030
3	Land & Compensation	3104
4	a) FERV on Loan revaluation	15197
	b) FERV of Contracts	12137
	<b>Sub-Total (FERV)</b>	<b>27334</b>
5	Other Reasons (IEDC & IDC)	
A	IEDC (Including Contingency)	-14020
B	IDC	23385
	<b>Sub-Total (Other Reasons)</b>	<b>9365</b>
	<b>Grand Total</b>	<b>50313</b>

As regards the increase in the cost of the instant transmission asset, the petitioner has clarified that it was jointly agreed between NTPC and the Petitioner to install Multi-circuit tower near Barh end and each location was decided in consultation with NTPC so that its construction plan would not be affected. Against FR quantity of 37 towers, altogether 45 numbers of angle towers are used in line out of which 12 numbers of Multi-circuit towers are due to corridor constraints. As there is variation of +43% in tower weight quantity over FR, the completion cost has increased by over 60% excluding IDC.

16. In response to JSEB's observations, the petitioner has clarified that the cost estimates was worked out on the basis of average unit rates of recently awarded contracts. He further submitted that the procurement was done through open



competitive bidding and the best competitive price may happen to be lower or higher than the cost estimate depending upon prevailing market conditions.

17. The total estimated completion cost of the instant transmission line is approved as it is with the apportioned revised cost. However, as observed by JSEB the total estimated completion cost is lesser than the apportioned approved cost of the transmission asset and it makes it difficult to understand the actual cost escalation. It is evident that the cost estimate of the petitioner is not realistic. Further, the cost estimates of the petitioner in other similar petitions are also not realistic. We direct the petitioner to adopt a prudent procedure to make cost estimates of different elements of the transmission projects more realistic.

### **Initial Spares**

18. JSEB and NTPC have submitted that the petitioner's claim of `173.00 lakh towards initial spares is higher than the norm of 0.75% of the cost of the transmission line specified in Regulation 8 of the 2009 Tariff Regulations and it should be restricted to the amount specified in the 2009 Tariff Regulations. The petitioner has clarified that this asset is a part of larger transmission scheme (Barh Transmission System) containing many such assets and that the spares indicated under this petition may not be seen in isolation and be seen in totality for the complete transmission scheme and the amount claimed towards the initial spares herein may be allowed.

19. The capital cost as on date of commercial operation is inclusive of initial spares amounting to `173.00 lakh corresponding to the transmission line. The

initial spares claimed by the petitioner are in excess of the norms specified in the 2009 Tariff Regulations and hence the excess claim is disallowed. Detailed calculations to arrive at excess initial spares are given below:-

(` in lakh)

Expenditure pertaining to transmission line upto cut-off date (31.3.2012) (a)	Initial spares claimed (b)	Ceiling limits as per Regulation 8 of the 2009 Tariff Regulations	Initial spares worked out (d)=[(a)-(b)]*(c)/[100%-(c)]	Excess initial spares claimed (e)=(b)-(d)
18067.72	173.00	0.75%	135.22	37.78

20. Accordingly, capital costs considered for the purpose of tariff calculation after disallowing the excess initial spares claimed is as follows-

(` in lakh)

Capital cost before adjustment of initial spares, if any, as on DOCO	Deduction in respect of excess initial spares	Capital cost considered for the purpose of tariff after scrutiny of IEDC/IDC & Initial Spares, as on DOCO
17426.92	37.78	17389.14

### **Projected additional capital expenditure**

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

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

- (i) Undischarged liabilities;
- (ii) Works deferred for execution;
- (iii) Procurement of initial capital Spares within the original scope of work, subject to the provisions of Regulation 8;

- (iv) Liabilities to meet award of arbitration or for compliance of the order or decree of a court; and
- (v) Change in Law.”

22. Clause (11) of Regulation 3 of the 2009 Tariff Regulations defines “cut-off”

date as under:-

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

23. As per the above definition, cut-off date in respect of the transmission asset covered in the instant petition is 31.3.2012.

24. The additional capital expenditure incurred in the instant transmission asset from date of commercial operation to 31.3.2010 and from 2010 to 2013 is on account of undischarged liabilities and Balance/Retention Payments on account of post date of commercial operation payment settlements against original scope of work.

25. The admissibility of additional capital expenditure incurred or proposed to be incurred after date of commercial operation during the tariff block is to be dealt in accordance with provision of Regulation 9(1) of 2009 Tariff Regulations. The additional capital expenditure claimed by the petitioner under Regulation 9 (1) of the 2009 Tariff Regulations is as follows:-

( ` in lakh)

Expenditure Up to DOCO (30.10.2009)	0.00	Land(Freehold)
	0.00	Building & Civil Works
	17389.77	T/L
	0.00	Sub-station
	37.15	PLCC
<b>TOTAL</b>	<b>17426.92</b>	
2009-10 (Balance/Retention)	0.00	Land(Freehold)
	0.00	Building & Civil Works

Payments)	290.21	T/L
	0.00	Sub-station
	1.22	PLCC
<b>TOTAL</b>	<b>291.43</b>	
2010-11 (Balance/Retention Payments)	0.00	Land(Freehold)
	0.00	Building & Civil Works
	69.22	T/L
	0.00	Sub-station
	0.00	PLCC
<b>TOTAL</b>	<b>69.22</b>	
2011-12 (Balance/Retention Payments)	0.00	Land(Freehold)
	0.00	Building & Civil Works
	318.52	T/L
	0.00	Sub-station
	0.00	PLCC
<b>TOTAL</b>	<b>318.52</b>	
2012-13 (Balance/Retention Payments)	0.00	Land(Freehold)
	0.00	Building & Civil Works
	16.00	T/L
	0.00	Sub-station
	0.00	PLCC
<b>TOTAL</b>	<b>16.00</b>	

### **Debt- equity ratio**

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

“12. Debt-Equity Ratio (1) For a project declared under commercial operation on or after 1.4.2009, if the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan:

Provided that where equity actually deployed is less than 30% of the capital cost, the actual equity shall be considered for determination of tariff:

Provided further that the equity invested in foreign currency shall be designated in Indian rupees on the date of each investment.

**Explanation-** The premium, if any, raised by the generating company or the transmission licensee, as the case may be, while issuing share capital and investment of internal resources created out of its free reserve, for the funding of the project, shall be reckoned as paid up capital for the purpose of computing return on equity, provided such premium amount and internal resources are actually utilised for meeting the capital expenditure of the generating station or the transmission system.

(2) In case of the generating station and the transmission system declared under commercial operation prior to 1.4.2009, debt-equity ratio allowed by the Commission for determination of tariff for the period ending 31.3.2009 shall be considered.

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

27. Details of debt-equity in respect of the assets as on date of commercial operation are given hereunder:-

( ` in lakh)

As on date of commercial operation i.e. 1.4.2012		
	Amount	%
Debt	12172.56	70.00
Equity	5216.59	30.00
<b>Total</b>	<b>17389.14</b>	<b>100.00</b>

28. Detail of debt-equity ratio of assets as on 31.3.2014 are as follows:-

( ` in lakh)

As on 31.3.2014		
	Amount	%
Debt	12659.18	70.00
Equity	5425.14	30.00
<b>Total</b>	<b>18084.31</b>	<b>100.00</b>

### Return on equity

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

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

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

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

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

(3) The rate of return on equity shall be computed by grossing up the base rate with the Minimum Alternate/Corporate Income Tax Rate for the year

2008-09, as per the Income Tax Act, 1961, as applicable to the concerned generating company or the transmission licensee, as the case may be:

(4) Rate of return on equity shall be rounded off to three decimal points and be computed as per the formula given below:

$$\text{Rate of pre-tax return on equity} = \text{Base rate} / (1-t)$$

Where t is the applicable tax rate in accordance with clause (3) of this regulation.

(5) The generating company or the transmission licensee as the case may be, shall recover the shortfall or refund the excess Annual Fixed charge on account of Return on Equity due to change in applicable Minimum Alternate/Corporate Income Tax Rate as per the Income Tax Act, 1961 (as amended from time to time) of the respective financial year directly without making any application before the Commission;

Provided further that Annual Fixed charge with respect to the tax rate applicable to the generating company or the transmission licensee, as the case may be, in line with the provisions of the relevant Finance Acts of the respective financial year during the tariff period shall be trued up in accordance with Regulation 6 of these regulations".

30. Based on the above, the return on equity has been considered are given hereunder:-

(` in lakh)

Particular	2009-10	2010-11	2011-12	2012-13	2013-14
Opening Equity	5216.59	5304.02	5324.78	5420.34	5425.14
Addition due to Additional Capitalisation	87.43	20.77	95.56	4.80	0.00
Closing Equity	5304.02	5324.78	5420.34	5425.14	5425.14
Average Equity	5260.30	5314.40	5372.56	5422.74	5425.14
Return on Equity (Base Rate )	15.50%	15.50%	15.50%	15.50%	15.50%
Tax rate for the year 2008-09 (MAT)	11.330%	11.330%	11.330%	11.330%	11.330%
Rate of Return on Equity (Pre Tax )	17.481%	17.481%	17.481%	17.481%	17.481%
<b>Return on Equity (Pre Tax)</b>	<b>383.15</b>	<b>929.01</b>	<b>939.18</b>	<b>947.95</b>	<b>948.37</b>

31. Return on equity has been calculated as per Regulation 15 of the 2009 Tariff Regulations with pre-tax return on equity of 17.481%. The petitioner's prayer for recovery of shortfall or refund the excess Annual Fixed Charges on account of return on equity due to change in Minimum Alternate/Corporate Income Tax rate as per the Income Tax Act, 1961 of the respective financial year

directly with the beneficiaries shall be settled in accordance with the provisions of Regulation 15 of 2009 Tariff Regulations.

### **Interest on loan**

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

(b) The yearly repayment for the tariff period 2009-14 shall be deemed to be equal to the depreciation allowed for that period.

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

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

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

(` in lakh)

Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Gross Normative Loan	12172.56	12376.56	12425.01	12647.98	12659.18
Cumulative Repayment upto previous year	0.00	385.93	1321.70	2267.70	3222.53
Net Loan-Opening	12172.56	11990.63	11103.32	10380.28	9436.65
Addition due to additional capital expenditure	204.00	48.45	222.96	11.20	0.00
Repayment during the year	385.93	935.76	946.00	954.83	955.25
Net Loan-Closing	11990.63	11103.32	10380.28	9436.65	8481.39
Average Loan	12081.59	11546.97	10741.80	9908.46	8959.02
Weighted Average Rate of Interest on Loan	9.4241%	9.4229%	9.4216%	9.4214%	9.4211%
<b>Interest</b>	474.41	1088.06	1012.05	933.51	844.04



## **Depreciation**

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

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

(2) The salvage value of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the capital cost of the asset.

Provided that in case of hydro generating stations, the salvage value shall be as provided in the agreement signed by the developers with the State Government for creation of the site;

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

(3) Land other than the land held under lease and the land for reservoir in case of hydro generating station shall not be a depreciable asset and its cost shall be excluded from the capital cost while computing depreciable value of the asset.

(4) Depreciation shall be calculated annually based on Straight Line Method and at rates specified in Appendix-III to these regulations for the assets of the generating station and transmission system:

Provided that, the remaining depreciable value as on 31st March of the year closing after a period of 12 years from date of commercial operation shall be spread over the balance useful life of the assets.

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

(6) Depreciation shall be chargeable from the first year of commercial operation. In case of commercial operation of the asset for part of the year, depreciation shall be charged on pro rata basis.”

37. The date of commercial operation of transmission asset is 1.4.2012 and accordingly 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 Regulation as given overleaf:-

(` in lakh)

Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Opening Gross Block	17389.14	17680.57	17749.79	18068.31	18084.31
Addition due to Projected Additional Capitalisation	291.43	69.22	318.52	16.00	0.00
Closing Gross Block	17680.57	17749.79	18068.31	18084.31	18084.31
Average Gross Block	17534.86	17715.18	17909.05	18076.31	18084.31
Rate of Depreciation	5.2823%	5.2823%	5.2822%	5.2822%	5.2822%
Depreciable Value	15781.37	15943.67	16118.15	16268.68	16275.88
Remaining Depreciable Value	15781.37	15557.73	14796.45	14000.99	13053.35
Depreciation	385.93	935.76	946.00	954.83	955.25
Cumulative Depreciation	385.93	1321.70	2267.70	3222.53	4177.78

### **Operation & maintenance expenses**

38. Clause (g) of Regulation 19 of the 2009 Tariff Regulations prescribes the norms for operation and maintenance expenses for the transmission system based on the type of sub-station and the transmission line. The allowable O&M expenses for the instant transmission asset are given hereunder:-

(` in lakh)

Name of the Asset	2009-10 (pro-rata)	2010-11	2011-12	2012-13	2013-14
LILO of Kahalgaon-Patna 400kV D/C (Quad) line at Barh (D/C portion)- 46.317 km	20.78	52.75	55.77	58.96	62.30
LILO of Kahalgaon-Patna 400kV D/C (Quad) line at Barh (Multi circuit portion)					
LILO of Kahalgaon-Patna 400kV D/C (Quad) line at Barh (Multi circuit portion)					

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

calculating the O&M charges for tariff period 2009-14. The petitioner has submitted that it would approach the Commission for suitable revision in the norms for O&M expenditure in case the impact of wage hike w.e.f 1.1.2007 is more than 50%.

40. We have already 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**

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

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

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

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



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

**(iii) O & M expenses**

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

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

In accordance with clause (3) of Regulation 18 of the 2009 Tariff Regulations, as amended, rate of interest on working capital shall be on normative basis and shall be equal to State Bank of India Base Rate of 10.00% plus 350 bps as on 1.4.2009 (12.25%). The interest on working capital for the assets covered in the petition has been worked out accordingly.

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

(` in lakh)

Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Maintenance Spares	7.48	7.91	8.37	8.84	9.35
O & M Expenses	4.16	4.40	4.65	4.91	5.19
Receivables	516.49	511.63	502.70	492.89	478.39
<b>Total</b>	<b>528.13</b>	<b>523.94</b>	<b>515.71</b>	<b>506.64</b>	<b>492.93</b>
Rate of Interest	12.25%	12.25%	12.25%	12.25%	12.25%

Interest	26.96	64.18	63.17	62.06	60.38
----------	-------	-------	-------	-------	-------

### **Transmission charges**

43. The transmission charges being allowed for the transmission asset are summarized below:-

(` in lakh)

Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	385.93	935.76	946.00	954.83	955.25
Interest on Loan	474.41	1088.06	1012.05	933.51	844.04
Return on Equity	383.15	929.01	939.18	947.95	948.37
Interest on Working Capital	26.96	64.18	63.17	62.06	60.38
O & M Expenses	20.78	52.75	55.77	58.96	62.30
<b>Total</b>	<b>1291.23</b>	<b>3069.77</b>	<b>3016.17</b>	<b>2957.32</b>	<b>2870.34</b>

### **Filing fee and the publication expenses**

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

45. 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.

46. JSEB 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**

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

### **Sharing of Transmission Charges**

48. The petitioner has submitted that the transmission tariff shall be recovered on monthly basis in accordance Regulation 23 of the 2009 Tariff Regulations and

shall be borne by NTPC till the commercial operation of the first unit at Barh as agreed in the 11th Commercial Committee meeting held on 16.1.2009 and 12th ERPC meeting held on 1.12.2009.

49. The transmission charges allowed shall be borne by NTPC till the commissioning of the first unit at Barh. Thereafter, it shall be recovered on monthly basis in accordance with Regulation 23 and shared by the beneficiaries in accordance with Regulation 33 of the 2009 Tariff 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 from time to time.

50. This order disposes of Petition No. 152/TT/2013.

sd/-

**(M. Deena Dayalan)**  
**Member**

sd/-

**(V. S. Verma)**  
**Member**

## Annexure

### CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN

(` in lakh)

	Details of Loan	2009-10	2010-11	2011-12	2012-13	2013-14
<b>1</b>	<b>Bond XXII</b>					
	Gross loan opening	234.00	<b>234.00</b>	<b>234.00</b>	<b>234.00</b>	<b>234.00</b>
	Cumulative Repayment upto DOCO/previous year	0.00	<b>0.00</b>	<b>19.50</b>	<b>39.00</b>	<b>58.50</b>
	Net Loan-Opening	234.00	234.00	214.50	195.00	175.50
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	19.50	19.50	19.50	19.50
	Net Loan-Closing	234.00	214.50	195.00	175.50	156.00
	Average Loan	234.00	224.25	204.75	185.25	165.75
	Rate of Interest	8.68%	8.68%	8.68%	8.68%	8.68%
	Interest	20.31	19.46	17.77	16.08	14.39
	Rep Schedule	12 annual installments from 07.12.2010				
<b>2</b>	<b>Bond XXVI</b>					
	Gross loan opening	9314.00	<b>9314.00</b>	<b>9314.00</b>	<b>9314.00</b>	<b>9314.00</b>
	Cumulative Repayment upto DOCO/previous year	0.00	<b>0.00</b>	<b>0.00</b>	<b>776.17</b>	<b>1552.33</b>
	Net Loan-Opening	9314.00	9314.00	9314.00	8537.83	7761.67
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	776.17	776.17	776.17
	Net Loan-Closing	9314.00	9314.00	8537.83	7761.67	6985.50
	Average Loan	9314.00	9314.00	8925.92	8149.75	7373.58
	Rate of Interest	9.30%	9.30%	9.30%	9.30%	9.30%
	Interest	866.20	866.20	830.11	757.93	685.74
	Rep Schedule	12 annual installments from 07.03.2012				
<b>3</b>	<b>Bond XX</b>					
	Gross loan opening	51.00	<b>51.00</b>	<b>51.00</b>	<b>51.00</b>	<b>51.00</b>
	Cumulative Repayment upto DOCO/previous year	0.00	<b>0.00</b>	<b>4.25</b>	<b>8.50</b>	<b>12.75</b>
	Net Loan-Opening	51.00	51.00	46.75	42.50	38.25
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	4.25	4.25	4.25	4.25
	Net Loan-Closing	51.00	46.75	42.50	38.25	34.00
	Average Loan	51.00	48.88	44.63	40.38	36.13
	Rate of Interest	8.93%	8.93%	8.93%	8.93%	8.93%
	Interest	4.55	4.36	3.99	3.61	3.23
	Rep Schedule	12 annual installments from 07.09.2010				
<b>4</b>	<b>Bond XXI</b>					
	Gross loan opening	100.00	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>
	Cumulative Repayment upto DOCO/previous year	0.00	<b>0.00</b>	<b>8.33</b>	<b>16.67</b>	<b>25.00</b>
	Net Loan-Opening	100.00	100.00	91.67	83.33	75.00
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	8.33	8.33	8.33	8.33
	Net Loan-Closing	100.00	91.67	83.33	75.00	66.67
	Average Loan	100.00	95.83	87.50	79.17	70.83
	Rate of Interest	8.73%	8.73%	8.73%	8.73%	8.73%





	Interest	8.73	8.37	7.64	6.91	6.18
	Rep Schedule	12 annual installments from 11.10.2010				
<b>5</b>	<b>Bond XXV</b>					
	Gross loan opening	1200.00	<b>1200.00</b>	<b>1200.00</b>	<b>1200.00</b>	<b>1200.00</b>
	Cumulative Repayment upto DOCO/previous year	0.00	<b>0.00</b>	<b>0.00</b>	<b>100.00</b>	<b>200.00</b>
	Net Loan-Opening	1200.00	1200.00	1200.00	1100.00	1000.00
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	100.00	100.00	100.00
	Net Loan-Closing	1200.00	1200.00	1100.00	1000.00	900.00
	Average Loan	1200.00	1200.00	1150.00	1050.00	950.00
	Rate of Interest	10.10%	10.10%	10.10%	10.10%	10.10%
	Interest	121.20	121.20	116.15	106.05	95.95
	Rep Schedule	12 annual installments from 12.06.2011				
<b>6</b>	<b>Bond XIX</b>					
	Gross loan opening	100.00	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>
	Cumulative Repayment upto DOCO/previous year	0.00	<b>0.00</b>	<b>8.33</b>	<b>16.67</b>	<b>25.00</b>
	Net Loan-Opening	100.00	100.00	91.67	83.33	75.00
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	8.33	8.33	8.33	8.33
	Net Loan-Closing	100.00	91.67	83.33	75.00	66.67
	Average Loan	100.00	95.83	87.50	79.17	70.83
	Rate of Interest	9.25%	9.25%	9.25%	9.25%	9.25%
	Interest	9.25	8.86	8.09	7.32	6.55
	Rep Schedule	12 annual installments from 24.07.2010				
<b>7</b>	<b>Bond XXIV</b>					
	Gross loan opening	1200.00	<b>1200.00</b>	<b>1200.00</b>	<b>1200.00</b>	<b>1200.00</b>
	Cumulative Repayment upto DOCO/previous year	0.00	<b>0.00</b>	<b>100.00</b>	<b>200.00</b>	<b>300.00</b>
	Net Loan-Opening	1200.00	1200.00	1100.00	1000.00	900.00
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	100.00	100.00	100.00	100.00
	Net Loan-Closing	1200.00	1100.00	1000.00	900.00	800.00
	Average Loan	1200.00	1150.00	1050.00	950.00	850.00
	Rate of Interest	9.95%	9.95%	9.95%	9.95%	9.95%
	Interest	119.40	114.43	104.48	94.53	84.58
	Rep Schedule	12 annual installments from 26.03.2011				
	<b>Total Loan</b>					
	Gross loan opening	12199.00	12199.00	12199.00	12199.00	12199.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	140.42	1157.00	2173.58
	Net Loan-Opening	12199.00	12199.00	12058.58	11042.00	10025.42
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	140.42	1016.58	1016.58	1016.58
	Net Loan-Closing	12199.00	12058.58	11042.00	10025.42	9008.83
	Average Loan	12199.00	12128.79	11550.29	10533.71	9517.13
	Rate of Interest	9.4241%	9.4229%	9.4216%	9.4214%	9.4211%
	<b>Interest</b>	<b>1149.65</b>	<b>1142.89</b>	<b>1088.23</b>	<b>992.42</b>	<b>896.62</b>