

**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Petition No. 343/2010**

**Coram: Dr. Pramod Deo, Chairperson  
Shri V.S. Verma, Member  
Shri M. Deena Dayalan, Member**

**Date of Hearing: 28.11.2011**

**Date of Order: 30.8.2012**

**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 to 31.3.2014 for Asset-1: LILO of Ballabgarh- Bhiwadi 400 kV S/C line at Gurgaon and Asset-2: 315 MVA 400 kV/220 kV ICT-I at GIS Sub-station at Gurgaon (New) along with associated bays under Transmission System associated with Northern Region System Strengthening Scheme- VI (NRSS-VI), for tariff block 2009-14 in Northern Region

**And**

**In the matter of:**

Power Grid Corporation of India Ltd., Gurgaon

**.....Petitioner**

**Vs**

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



15. Uttarakhand Power Corporation Ltd., Dehradun  
16. North Central Railway, Allahabad  
17. New Delhi Municipal Council, New Delhi

.....Respondents

**The following were present:**

1. Shri S.S. Raju, PGCIL
2. Shri M.M. Mondal, PGCIL
3. Shri T.P.S. Bawa, PSPCL

**ORDER**

This petition has been filed by Power Grid Corporation of India Limited (PGCIL) seeking approval of transmission tariff for Asset-1: LILO of Ballabgarh-Bhiwadi 400 kV S/C line at Gurgaon and Asset-2: 315 MVA 400 kV/220 kV ICT-I at GIS Sub-station at Gurgaon (New) along with associated bays under Transmission System associated with Northern Region System Strengthening Scheme- VI (hereinafter referred to as "transmission assets") from date of commercial operation to 31.3.2014 under Regulation 86 of Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009 (hereinafter referred to as "2009 regulations") for tariff block 2009-14.

2. The administrative approval and expenditure sanction to the transmission project was accorded by the Board of Directors of PGCIL vide letter No. C/CP/NRSSS-VI, dated 22.1.2007 for ₹18695 lakh, including IDC of ₹1236 lakh, based on 2nd Quarter, 2006 price level. Subsequently, revised cost estimate for the transmission system was approved by the Board of Directors of PGCIL vide letter No. C/CP/RCE-NRSS-VI dated 16.8.2011 at an estimated cost of ₹26587 lakh including IDC of ₹1953 lakh at 3rd Quarter, 2010 price level.



3. The present petition covers determination of tariff based on actual expenditure incurred up to date of commercial operation and estimated additional capital expenditure projected to be incurred from the date of commercial operation to 31.3.2014. The details of capital expenditure as on the date of commercial operation and estimated additional capital expenditure projected to be incurred for the above mentioned assets are as follows:-

Name of Asset	Date of commercial operation	Capital expenditure incurred up to date of commercial operation*	Projected additional capital expenditure		Total estimated completion cost
			2010-11	2011-12	
Asset-1	1.7.2010	10477.41	1235.85	411.17	12124.43
Asset-2	1.7.2010	5488.67	1031.79	343.38	6863.84
<b>Total</b>		<b>15966.08</b>	<b>2267.64</b>	<b>754.55</b>	<b>18988.27</b>

\*Capital cost as on date of commercial operation is inclusive of initial spares of ₹321.86 lakh for Asset-1 and ₹221.23 lakh for Asset-2 pertaining to GIS Sub-station.

4. Details of the transmission charges claimed by the petitioner are as follows:-

Asset-1				
	2010- 11 (Pro-rata)	2011-12	2012-13	2013-14
Depreciation	427.34	609.60	619.54	619.54
Interest on Loan	513.89	690.44	647.46	590.98
Return on equity	436.43	625.09	635.87	635.87
Interest on Working Capital	32.29	45.18	45.13	44.40
O & M Expenses	99.60	140.41	148.44	156.91
<b>Total</b>	<b>1509.55</b>	<b>2110.72</b>	<b>2096.44</b>	<b>2047.70</b>

(₹ in lakh)

Asset-2				
	2010- 11 (Pro-rata)	2011-12	2012-13	2013-14
Depreciation	213.39	313.95	321.30	321.30
Interest on Loan	279.53	392.51	374.38	344.99
Return on equity	236.18	350.97	359.97	359.97
Interest on Working Capital	20.74	29.83	30.29	30.23
O & M Expenses	128.81	181.57	191.94	202.92
<b>Total</b>	<b>878.65</b>	<b>1268.83</b>	<b>1277.88</b>	<b>1259.41</b>

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

(₹ in lakh)

Asset-1				
	2010- 11 (Pro-rata)	2011-12	2012-13	2013-14
Maintenance Spares	19.92	21.06	22.27	23.54
O & M expenses	11.07	11.70	12.37	13.08
Receivables	335.46	351.79	349.41	341.28
<b>Total</b>	<b>366.45</b>	<b>384.55</b>	<b>384.05</b>	<b>377.90</b>
Interest	32.29	45.18	45.13	44.40
Rate of Interest	11.75%	11.75%	11.75%	11.75%

(₹ in lakh)

Asset-2				
	2010- 11 (Pro-rata)	2011-12	2012-13	2013-14
Maintenance Spares	25.76	27.24	28.79	30.44
O & M expenses	14.31	15.13	16.00	16.91
Receivables	195.26	211.47	212.98	209.90
<b>Total</b>	<b>235.33</b>	<b>253.84</b>	<b>257.77</b>	<b>257.25</b>
Interest	20.74	29.83	30.29	30.23
Rate of Interest	11.75%	11.75%	11.75%	11.75%



6. No comments or suggestions have been received from the general public in response to the notices published by the petitioner under section 64 of the Electricity Act, 2003. Replies to the petition have been filed by Punjab State Power Corporation Limited (PSPCL), Respondent No. 6 and Uttar Pradesh Power Corporation Limited (UPPCL), Respondent No. 9. PSPCL, in its reply vide affidavit dated 10.5.2011 have raised the issue of cost over-run. UPPCL, in its reply vide affidavit dated 16.11.2011 has raised objections regarding time and cost overrun, payment of licence fee, service tax, etc. They have also raised the issue of grossing up of base rate of return on equity with the applicable MAT rates for the relevant year. The petitioner has filed the rejoinder on 5.7.2012 to the reply filed by PSPCL. The objections raised by the respondents and the clarifications submitted by the petitioner have been dealt with in relevant paragraphs of this order.

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

#### **TIME AND COST OVER-RUN**

8. As per investment approval, accorded on 22.1.2007, the transmission project was to be commissioned within 30 months from the date of letter of award. The petitioner has submitted, in the petition, that there was 11 months delay in commissioning the project. The reasons given for delay are as follows:-



- a. Approval of route alignment of multi-circuit towers in HUDA controlled area was granted only in the last week of December 2008 by HUDA though the proposal was initiated in February 2008 itself.
  - b. Forest clearance proposal was initiated in the month of August 2008 and forest clearance was obtained in March 2010.
  - c. Shifting of 66 kV transmission line which were in the scope of HVPNL took long time and as a result construction of GIS building and control rooms was delayed.
9. The petitioner vide affidavit dated 1.6.2011 and 23.9.2011 has submitted the following reasons for time over-run:-
- a. Severe RoW problems were created by land owners because of huge land cost of fast developing Gurgaon.
  - b. Though proposal for forest clearance was initiated in the month of August, 2008, forest clearance was received only on 26.3.2010. After getting the forest clearance on 26.3.2010, 6 towers were erected and 2.594 km. of stringing was done. The petitioner has submitted that this delay was beyond their control and hence prayed that the delay may be condoned.
  - c. The Investment Approval was accorded on 22.1.2007, whereas the decision for constructing the multi-circuit portion (7 kms. in HUDA area) was taken in 25<sup>th</sup> Standing Committee Meeting of NRPC held on 17.7.2008.



- d. Site for sub-station was handed over to PGCIL by HVPNL on 18.9.2007. A 66 kV D/C transmission line of HVPNL was passing over the locations marked for control room building, 400 kV Hall, 220 kV Hall etc. This line was finally diverted by HVPNL on 9.1.2009.
- e. Locations no. 25A/0 (DB+0) and 25/2 (DA+0) were delayed due to stay order in a case filed by the land owner in High Court on 8.12.2008 which was cleared on 26.12.2008. Location no. 11/2 (DA+0) was delayed due to severe RoW problem, where PGCIL filed a case in court of SDM on 28.4.2009 which was cleared on 30.6.2009.
10. The estimated completion cost of the assets is ₹18988.27 lakh against the approved FR cost of ₹13482.84 lakh. The reasons given by the petitioner for cost over-run are as under:-
- a. Transmission line length increased from 27 Km. to 33.192 Km. out of which 7.2 Km. line is on multi-circuit towers. The construction of the portion of the line in multi-circuit towers was agreed by the constituents in the 25<sup>th</sup> Standing Committee meeting of NR on 17.7.2008. The line length increased from 27 km to 34 km due to line passing through developed urban area. Out of that 7 km stringing for multi circuit towers having additional quad bundle “moose” conductor.
- b. The land allotted by HUDA to HVPNL for construction of 400/220 kV sub-station in Gurgaon was transferred to PGCIL for construction of sub-

station. The actual cost of land was very high which resulted in increased cost. Total cost variation due to land was about ₹127 lakh.

11. PSPCL in its reply has submitted that cost escalation on the works pertaining to erection, stringing, control room, office buildings, outdoor lightning and cost of DG set has not been explained with justification. UPPCL has raised the issue that in case of Asset I, the increase in line length is only 23% whereas the cost of the line has increased by 137% and the reasons for increase has not been satisfactorily explained by the petitioner. UPPCL has also raised the issue of cost escalation of DG set, cost of land and switch gear. The petitioner in its rejoinder dated 4.7.2002 has clarified the objections of PSCL as explained in its affidavit dated 1.6.2011 and 23.9.2011.

12. The petitioner, vide affidavit dated 1.6.2011 and 23.9.11 and rejoinder dated 5.7.2012 to the reply of PSPCL has further submitted the following reasons for cost over-run:-

- a. As per LOA, the line was on D/C towers with 48 nos. of suspension towers and 35 nos. of tension towers, having a line length of 27 km. Due to RoW problem, the use of multi circuit towers, increase in route length, the final tower quantity came out to be double circuit suspension- 40 nos., multi circuit suspension-8 nos., double circuit tension-43 nos., multi circuit tension-16 nos. and single circuit tension-02 nos. Hence the towers, particularly tension towers have increased substantially (weight of double



circuit DD tower is 26 MT and weight of multi circuit QD tower is 110 MT).

The cost variation in tower steel was about ₹1570 lakh.

- b. The portion of line on multi circuit tower was having two circuits of twin 'moose' and two circuits of quad "moose" conductor. Hence, the additional hardware fittings and accessories suitable for quad "moose" were procured.
- c. Total impact of 7 km. double ckt. portion on the transmission line cost (₹63 lakh) was about ₹34 lakh.
- d. Variation (about ₹ 87 lakh) of cost of sub-station (about ₹ 686 lakh) is due to the higher supply rates awarded through competitive bidding plus price variation as per the contract.

13. The main reason for delay was forest clearance, which was received on 26.3.2010. The assets were commissioned within three months from the forest clearance. We are of the view that the delay is beyond the control of the petitioner and hence the time over-run is allowed.

14. Out of the total cost variation of about ₹5500 lakh, it is observed that major cost variation of ₹3400 lakh was due to addition of 7 km. multi ckt. portion of transmission line, cost variation of about ₹1300 lakh was due to high land cost and about ₹700 lakh was due to increase in cost of sub-station equipments and transformer. The reasons given by the petitioner for cost over-run appear to be justified and hence the increase in the cost is allowed.



## **TREATMENT OF INITIAL SPARES**

15. The petitioner has claimed initial spares of ₹321.86 lakh for Asset-1 and ₹221.23 lakh for Asset-2 pertaining to this Gas Insulated Sub-station (GIS) at Gurgaon. During the hearing on 28.11.2011, PGCIL prayed to allow the initial spares considering rate defined for HVDC Sub-station, i.e., 3.5%, as no rate has been specified for GIS Sub-station in the 2009 regulations. The petitioner, vide affidavit dated 28.12.2011, has submitted that all the series compensation devices and equipments in HVDC stations are highly specialized and costly equipments and much different from the equipments installed in conventional AC transmission sub-stations. It was also submitted that different parts of GIS system are modular and designed with respect to location of the installation and the assembling of this modular system is done only in the works. Unlike conventional AC system, these modular sections are location specific and hence, one single modular section, as spare may not be fitted in case replacement is required at some location. Thus, inter-changeability of the modular system is limited resulting in higher initial spares for GIS system as compared to conventional AC system. It was further submitted that generally the GIS equipments are different from one supplier to another and in case of any requirement for replacement, the equipment has to be replaced by similar design from the same manufacturer. In case sufficient spares are not kept, any failure of equipment would lead to longer outage as procurement of spare form offshore may stretch to one and half years. There are only a few manufacturers of GIS sub-stations worldwide and as such procurement of these bushings may require more time, upto around one year. For reliability, one set bushings of each type



and rating are to be kept as spares. The bushings are very costly in comparison to conventional bushings of same ratings. Operating a GIS sub-station without adequate spares shall render the system unreliable and may call for long outages. The petitioner has requested to allow initial spares of sub-station as claimed in the petition.

16. PGCIL's request for allowing higher initial spares for GIS sub-stations by making suitable provisions in the 2009 regulations is being considered by the Commission. In the instant petition initial spares for GIS sub-stations has been worked out as per Regulation 8 of the 2009 regulations at the rate of 2.5%. However, any changes to the existing provisions, pertaining to the initial spares shall be made applicable to the instant petition at the time of truing up. Accordingly, excess initial spares have been deducted from the cost of sub-station as on date of commercial operation of respective assets. The initial spares calculation is as under:-

(₹ in lakh)					
Description	Project cost pertaining to sub-station(inclusive of PLCC) as on cut-off date	Apportioned Initial spares claimed	Ceiling limits as per Regulation 8 2009 regulations	Initial spares worked out	Excess initial spares claimed
	(a)	(b)	(c)	$(d) = \frac{\{(a)-(b)*c\}}{\{100-c\}\%}$	$(e)=(b)-(d)$
Asset-1	3304.62	321.86	2.50%	76.48	(245.38)
Asset-2	4744.72	221.23	2.50%	115.99	(105.24)

## **CAPITAL COST**

17. As regards capital cost, Regulation 7(1) (a) of the 2009 regulations provides that:-

*“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.”*

18. The details of capital cost after deduction of excess initial spares claimed is as under:-

(₹ in lakh)			
Particulars	Capital cost claimed as on date of commercial operation	Excess initial spares disallowed	Capital cost considered as on date of commercial operation excluding excess initial spares
	(a)	(b)	(c)= (a)-(b)
Asset-1	10477.41	245.38	10232.03
Asset-2	5488.67	105.24	5383.41

## **ADDITIONAL CAPITAL EXPENDITURE**

19. As per Regulation 9 (1) of 2009 regulations-

*“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) XXX
- (iii) XXX
- (iv) XXX
- (v) XXX”



20. As per 2009 regulations,

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

Therefore, cut-off date for the above mentioned assets is 31.3.2013.

21. The details of additional capital expenditure claimed for both assets are given hereunder:-

(₹ in lakh)		
Year	Additional capital expenditure	Description
<b>Asset-1</b>		
2010-11 (Balance/Retention Payments)	0.82	Land
	283.57	Building & Civil works (Balance works)
	560.15	Transmission Line
	389.80	Sub-Station
	1.51	PLCC
<b>Total</b>	<b>1235.85</b>	
2011-12 (Balance/Retention Payments)	94.52	Building & Civil Works (Balance works)
	186.72	Transmission Line
	129.93	Sub-station
<b>Total</b>	<b>411.17</b>	
<b>Asset-2</b>		
2010-11 (Balance/Retention Payments)	1.64	Land
	530.19	Building & Civil works (Balance works)
	499.96	Sub-Station
<b>Total</b>	<b>1031.79</b>	
2011-12 (Balance/Retention Payments)	176.73	Building & Civil works (Balance works)
	166.65	Sub-station
<b>Total</b>	<b>343.38</b>	

## **DEBT- EQUITY RATIO**

22. Regulation 12 of the 2009 regulations provides that,

*"(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.*

(2) XXX.”

23. The details of debt-equity of asset considered for the purpose of tariff calculation as on the date of commercial operation is given below:-

(₹ in lakh)

<b>Asset-1</b>		
<b>Capital cost as on 1.7.2010</b>		
<b>Particulars</b>	<b>Amount</b>	<b>%</b>
Debt	7162.42	70
Equity	3069.61	30
<b>Total</b>	<b>10232.03</b>	<b>100</b>
<b>Asset-2</b>		
Debt	<b>3768.40</b>	70
Equity	<b>1615.03</b>	30
<b>Total</b>	<b>5383.43</b>	<b>100</b>

24. Details of debt- equity ratio as on 31.3.2014 are as follows:-

(₹ in lakh)

<b>Asset-1</b>		
<b>Capital cost as on 1.7.2010</b>		
<b>Particulars</b>	<b>Amount</b>	<b>%</b>
Debt	8315.34	70
Equity	3563.72	30
<b>Total</b>	<b>11879.05</b>	<b>100</b>
<b>Asset-2</b>		
Debt	<b>4731.02</b>	70
Equity	<b>2027.58</b>	30
<b>Total</b>	<b>6758.60</b>	<b>100</b>

25. Details of debt-equity ratio of projected additional capital expenditure are as given overleaf:-

(₹ in lakh)

Asset-1		
Additional capital expenditure for 2010-11		
Particulars	Amount	%
Debt	865.10	70.00
Equity	370.76	30.00
<b>Total</b>	<b>1235.85</b>	<b>100.00</b>
Additional capital expenditure for 2011-12		
Debt	287.82	70.00
Equity	123.35	30.00
<b>Total</b>	<b>411.17</b>	<b>100.00</b>
Asset-2		
Additional capital expenditure for 2011-12 (Normative)		
Debt	722.25	70.00
Equity	309.54	30.00
<b>Total</b>	<b>1031.79</b>	<b>100.00</b>
Additional capital expenditure for 2011-12 (Normative)		
Debt	240.37	70.00
Equity	103.01	30.00
<b>Total</b>	<b>343.38</b>	<b>100.00</b>

## **RETURN ON EQUITY**

26. Regulation 15 of the 2009 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% to be grossed up as per clause (3) of this regulation:*

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

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

*(3) The rate of return on equity shall be computed by grossing up the base rate with the Minimum Alternate/Corporate Income Tax Rate for the year 2008-09, as per the Income Tax Act, 1961, as applicable to the concerned generating company or the transmission licensee, as the case may be.*

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

*Rate of pre-tax return on equity = Base rate / (1-t)*

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



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

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

27. The petitioner has prayed to allow grossing up of base rate of return with the applicable base rate as per the Finance Act for the relevant year and direct settlement of tax liability between generating company/transmission licensee and the beneficiaries/long term transmission customers on year to year basis. The respondent, UPPCL has submitted that transmission tariff should be allowed by deleting the component of depreciation and the return on equity.

28. The petitioner's prayer to allow grossing up the base rate of return on equity based on tax rates viz., MAT, surcharge, any other cess, charges, levies etc., as per relevant Finance Act, shall be settled in accordance with the provisions of Regulation 15 of 2009 regulations.

29. The following amount of equity has been considered for calculation of return of equity:-

(₹ in lakh)				
<b>Asset-1</b>				
	<b>2010- 11 (Pro-rata)</b>	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>
Opening Equity	3069.61	3440.36	3563.72	3563.72
Addition due to additional capital expenditure	370.76	123.35	0.00	0.00
Closing Equity	3440.36	3563.72	3563.72	3563.72
Average Equity	3254.99	3502.04	3563.72	3563.72
Return on Equity (Base Rate )	15.50%	15.50%	15.50%	15.50%
Tax rate for the year 2008-09 (MAT)	11.33%	11.33%	11.33%	11.33%
Rate of Return on Equity (Pre Tax )	17.481%	17.481%	17.481%	17.481%
<b>Return on Equity (Pre Tax)</b>	<b>426.75</b>	<b>612.19</b>	<b>622.97</b>	<b>622.97</b>





Asset-2				
	2010-11 (Pro-rata)	2011-12	2012-13	2013-14
Opening Equity	1615.03	1924.57	2027.58	2027.58
Addition due to additional capital expenditure	309.54	103.01	0.00	0.00
Closing Equity	1924.57	2027.58	2027.58	2027.58
Average Equity	1769.80	1976.07	2027.58	2027.58
Return on Equity (Base Rate )	15.50%	15.50%	15.50%	15.50%
Tax rate for the year 2008-09 (MAT)	11.33%	11.33%	11.33%	11.33%
Rate of Return on Equity (Pre Tax )	17.481%	17.481%	17.481%	17.481%
<b>Return on Equity (Pre Tax)</b>	<b>232.03</b>	<b>345.44</b>	<b>354.44</b>	<b>354.44</b>

## **INTEREST ON LOAN**

30. Regulation 16 of the 2009 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."*

31. In these calculations, interest on loan has been worked out as under:-

- (i) 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.
- (ii) The repayment for the tariff period 2009-14 shall be deemed to be equal to the depreciation allowed for that period.
- (iii) 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.
- (iv) Weighted average rate of interest on actual loan worked out as above has been applied on the notional average loan during the year to arrive at the interest on loan.

32. The methodology followed for the calculation of weighted average rate of interest in case of floating interest loans in Petition 132/2010 has been adopted

in the instant petition. Accordingly, the interest on loan has been calculated on the basis of rate prevailing as on 1.4.2009/ date of commercial operation. Any change in rate of interest subsequent to 1.4.2009/ date of commercial operation will be considered at the time of truing up.

33. Detailed calculations of the weighted revised average rate of interest are given in Annexure I & II to this order.

34. Details of the interest on loan worked on the above basis are given hereunder:-

(₹ in lakh)				
<b>Asset-1</b>				
	<b>2010- 11 (Pro-rata)</b>	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>
Gross Normative Loan	7162.42	8027.52	8315.34	8315.34
Cumulative Repayment upto previous year	0.00	417.63	1014.27	1620.86
Net Loan-Opening	7162.42	7609.89	7301.06	6694.47
Addition due to Additional Capital Expenditure	865.10	287.82	0.00	0.00
Repayment during the year	417.63	596.65	606.59	606.59
Net Loan-Closing	7609.89	7301.06	6694.47	6087.89
Average Loan	7386.16	7455.48	6997.77	6391.18
Weighted Average Rate of Interest on Loan	9.0718%	9.0718%	9.0678%	9.0632%
Interest	502.54	676.35	634.54	579.25

(₹ in lakh)				
<b>Asset-2</b>				
	<b>2010- 11 (Pro-rata)</b>	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>
Gross Normative Loan	3768.40	4490.65	4731.02	4731.02
Cumulative Repayment upto Previous Year	0.00	209.22	517.61	833.36
Net Loan-Opening	3768.40	4281.43	4213.41	3897.66
Addition due to Additional Capital Expenditure	722.25	240.37	0.00	0.00
Repayment during the year	209.22	308.39	315.74	315.74
Net Loan-Closing	4281.43	4213.41	3897.66	3581.92
Average Loan	4024.92	4247.42	4055.53	3739.79
Weighted Average Rate of Interest on Loan	9.0983%	9.0983%	9.0944%	9.0899%
Interest	274.65	386.44	368.83	339.94



## **DEPRECIATION**

35. Regulation 17 (4) of the 2009 regulations provides as under:-

*"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 asset".*

36. Assets in the current petition were put under commercial operation as on 1.7.2010 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 2009 regulations.

37. Details of the depreciation worked out are given below:-

(₹ in lakh)				
<b>Asset-1</b>				
	<b>2010- 11 (Pro-rata)</b>	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>
Opening Gross Block	10232.03	11467.88	11879.05	11879.05
Addition during 2009-14 due to Projected Additional capital expenditure	1235.85	411.17	0.00	0.00
Closing Gross Block	11467.88	11879.05	11879.05	11879.05
<b>Average Gross Block</b>	<b>10849.96</b>	<b>11673.47</b>	<b>11879.05</b>	<b>11879.05</b>
Rate of Depreciation	5.1321%	5.1112%	5.1064%	5.1064%
Depreciable Value	9764.96	10506.12	10691.15	10691.15
Remaining Depreciable Value	9764.96	10088.49	9676.87	9070.29
<b>Depreciation</b>	<b>417.63</b>	<b>596.65</b>	606.59	606.59

(₹ in lakh)				
<b>Asset-2</b>				
	<b>2010- 11 (Pro-rata)</b>	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>
Opening Gross Block	5383.43	6415.22	6758.60	6758.60
Addition during 2009-14 due to Projected Additional Capital expenditure	1031.79	343.38	0.00	0.00
Closing Gross Block	6415.22	6758.60	6758.60	6758.60
<b>Average Gross Block</b>	<b>5899.32</b>	<b>6586.91</b>	<b>6758.60</b>	<b>6758.60</b>
Rate of Depreciation	4.7287%	4.6819%	4.6717%	4.6717%
Depreciable Value	5309.39	5928.22	6082.74	6082.74
Remaining Depreciable Value	5309.39	5719.00	5565.12	5249.38
<b>Depreciation</b>	<b>209.22</b>	<b>308.39</b>	<b>315.74</b>	<b>315.74</b>



## **OPERATION & MAINTENANCE EXPENSES**

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

39. The respondent PSPCL submitted that the O&M expenses should be allowed only as per existing norms and any claim in excess of 2009 regulations may not be considered.

40. Regulation 19(g) of the 2009 regulations prescribes the norms for O&M expenses based on the type of sub-station and line. The norms for the assets covered in this petition are given overleaf:-

<b>Element</b>	<b>2010-11</b>	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>
400 kV D/C, twin conductor T/L (₹ Lakh / km)	0.663	0.701	0.741	0.783
400 kV, bay (₹ Lakh / bay)	55.40	58.57	61.92	65.46
220 kV, bay(₹ Lakh / bay)	38.78	41.00	43.34	45.82

41. In accordance with above mentioned norms, the O & M expenses for the assets covered in this petition are allowed as given as under:-



(₹ in lakh)				
(Asset-1)	2010-11 (pro-rata for nine month)	2011-12	2012-13	2013-14
33.192 Kms., 400 kV D/C twin conductor T/L	16.50	23.27	24.60	25.99
2 nos., 400 kV, bays	83.10	117.14	123.84	130.92
<b>Total O&amp;M Expenditure</b>	<b>99.60</b>	<b>140.41</b>	<b>148.44</b>	<b>156.91</b>

(₹ in lakh)				
(Asset-2)	2010-11 (pro-rata for nine month)	2011-12	2012-13	2013-14
1 no., 400 kV, bay	41.55	58.57	61.92	65.46
3 nos., 220 kV, bays	87.26	123.00	130.02	137.46
<b>Total O&amp;M Expenditure</b>	<b>128.81</b>	<b>181.57</b>	<b>191.94</b>	<b>202.92</b>

### **INTEREST ON WORKING CAPITAL**

42. As per the 2009 regulations the components of the working capital and the interest thereon are discussed are given as under:-

**(i) Receivables:** As per Regulation 18(1) (c) (i) of the 2009 regulations, receivables will be equivalent to two months of fixed cost. In the tariff being allowed, receivables have been worked out on the basis of 2 months of annual transmission charges.

**(ii) Maintenance spares:** Regulation 18(1) (c) (ii) of the 2009 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 regulations provides for operation and maintenance expenses for one month of the recommended O & M expenses.

**(iv) Rate of interest on working capital:** In the calculations, as per Central Electricity Regulatory Commission (Terms and Conditions of Tariff) (Second Amendment) Regulations, 2011 dated 21.6.2011, SBI Base Rate (7.50%) Plus 350Bps i.e. 11.00% has been considered as the rate of interest on working capital.

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

(₹ in lakh)

<b>Asset-1</b>				
	<b>2010- 11 (Pro-rata)</b>	<b>2011- 12</b>	<b>2012-13</b>	<b>2013-14</b>
Maintenance Spares	19.92	21.06	22.27	23.54
O & M expenses	11.07	11.70	12.37	13.08
Receivables	328.03	344.52	342.33	334.42
<b>Total</b>	<b>359.02</b>	<b>377.28</b>	<b>376.97</b>	<b>371.03</b>
Interest	29.62	41.50	41.47	40.81

(₹ in lakh)

<b>Asset-2</b>				
	<b>2010- 11 (Pro-rata)</b>	<b>2011- 12</b>	<b>2012-13</b>	<b>2013-14</b>
Maintenance Spares	25.76	27.24	28.79	30.44
O & M expenses	14.31	15.13	16.00	16.91
Receivables	191.97	208.23	209.83	206.83
<b>Total</b>	<b>232.04</b>	<b>250.60</b>	<b>254.61</b>	<b>254.18</b>
Interest	19.14	27.57	28.01	27.96

## **TRANSMISSION CHARGES**

44. The transmission charges being allowed for the transmission lines are summarized hereunder:-

(₹ in lakh)

<b>Asset-1</b>				
	<b>2010-11 (Pro-rata)</b>	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>
Depreciation	417.63	596.65	606.59	606.59
Interest on Loan	502.54	676.35	634.54	579.25
Return on equity	426.75	612.19	622.97	622.97
Interest on Working Capital	29.62	41.50	41.47	40.81
O & M Expenses	99.60	140.41	148.44	156.91
<b>Total</b>	<b>1476.14</b>	<b>2067.10</b>	<b>2054.01</b>	<b>2006.53</b>

(₹ in lakh)

<b>Asset-2</b>				
	<b>2010-11 (Pro-rata)</b>	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>
Depreciation	209.22	308.39	315.74	315.74
Interest on Loan	274.65	386.44	368.83	339.94
Return on equity	232.03	345.44	354.44	354.44
Interest on Working Capital	19.14	27.57	28.01	27.96
O & M Expenses	128.81	181.57	191.94	202.92
<b>Total</b>	<b>863.86</b>	<b>1249.41</b>	<b>1258.96</b>	<b>1241.01</b>

## **FILING FEE AND THE PUBLICATION EXPENSES:-**

45. The petitioner has sought reimbursement of fee paid by it for filing the petition and publication expenses. 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 beneficiary on *pro-rata* basis.





### **LICENCE FEE**

46. The petitioner has submitted that they be allowed to bill and recover the licence fee separately from the respondents. The petitioner has further submitted that in the 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.

47. The respondent UPPCL 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's prayer for licence fee shall be dealt with in accordance with our order dated 25.10.2011 in Petition No. 21/2011 and 22/2011.

### **SERVICE TAX**

48. The petitioner has prayed that it 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 respondent UPPCL objected to levying of service tax on the beneficiaries and submitted that the petitioner's request for recovery of service tax is pre-mature. We consider the prayer of the petitioner pre-mature and accordingly it is rejected.

## **SHARING OF TRANSMISSION CHARGES**

49. PSPCL in its affidavit dated 5.7.2012 has raised the issue that since the multi circuit tower are to be used for D/C Gurgaon Manesar line in addition to LILO of Ballabgarh Bhiwadi (D/C) it would not be justified to load the entire capital cost of the multi circuit tower on the LILO of Ballabgarh Bhiwadi Line.

The petitioner in its affidavit dated 13.8.2012 has clarified as under:-

*"It is to submit that while calculating the PoC charges for each injection/drawal point, the total YTC of the ISTS is taken into account and this YTC is apportioned to 220kV/440kV transmission system based on the average "cost" of lines of various configuration. Accordingly, the tariff of particular line/element used by any beneficiary does not get captured while deriving the PoC for a particular beneficiary. The PoC for a particular zone is derived based on notional cost of each category of lines without giving any weights to its tariff/vintage. Accordingly, it can be seen that apprehension expressed by the respondent in part-2 regarding sharing of the total cost of tower steel by other two connection is not well founded, as it will not have any impact on the billing pattern of the respondent".*

We have considered the objection of PSPCL and the petitioner's clarification. Since under the POC regime, the cost of the lines get averaged on the basis of voltage level and conductor configuration for calculation of PoC charges, the effect of 7.2 km of LILO of 400 kV D/C line would be very minimal on the petitioner.

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



51. This order disposes of Petition No.343/2010.

sd/-

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

sd/-

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

sd/-

**(Dr. Pramod Deo)**  
**Chairperson**



## ANNEXURE I

CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN					
(` in lakh)					
	Details of Loan	2010-11	2011-12	2012-13	2013-14
<b>1</b>	<b>Bond XXIX</b>				
	Gross loan opening	2894.00	2894.00	2894.00	2894.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	241.17
	Net Loan-Opening	2894.00	2894.00	2894.00	2652.83
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	241.17	241.17
	Net Loan-Closing	2894.00	2894.00	2652.83	2411.67
	Average Loan	2894.00	2894.00	2773.42	2532.25
	Rate of Interest	9.20%	9.20%	9.20%	9.20%
	Interest	266.25	266.25	255.15	232.97
	Rep Schedule	12 Annual instalments from 12.03.2013			
<b>2</b>	<b>Bond XXVIII</b>				
	Gross loan opening	1235.00	1235.00	1235.00	1235.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	102.92
	Net Loan-Opening	1235.00	1235.00	1235.00	1132.08
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	102.92	102.92
	Net Loan-Closing	1235.00	1235.00	1132.08	1029.17
	Average Loan	1235.00	1235.00	1183.54	1080.63
	Rate of Interest	9.33%	9.33%	9.33%	9.33%
	Interest	115.23	115.23	110.42	100.82
	Rep Schedule	12 Annual instalments from 15.12.2012			
<b>3</b>	<b>Bond XXXI</b>				
	Gross loan opening	1812.00	1812.00	1812.00	1812.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00
	Net Loan-Opening	1812.00	1812.00	1812.00	1812.00
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	151.00
	Net Loan-Closing	1812.00	1812.00	1812.00	1661.00
	Average Loan	1812.00	1812.00	1812.00	1736.50
	Rate of Interest	8.90%	8.90%	8.90%	8.90%
	Interest	161.27	161.27	161.27	154.55
	Rep Schedule	12 Annual instalments from 25.02.2014			



<b>4</b>	<b>Bond XXX</b>				
	Gross loan opening	<b>1393.00</b>	<b>1393.00</b>	<b>1393.00</b>	<b>1393.00</b>
	Cumulative Repayment upto DOCO/previous year	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
	Net Loan-Opening	1393.00	1393.00	1393.00	1393.00
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	116.08
	Net Loan-Closing	1393.00	1393.00	1393.00	1276.92
	Average Loan	1393.00	1393.00	1393.00	1334.96
	Rate of Interest	8.80%	8.80%	8.80%	8.80%
	Interest	122.58	122.58	122.58	117.48
	Rep Schedule	12 Annual instalments from 29.09.2013			
	<b>Total Loan</b>				
	Gross loan opening	<b>7334.00</b>	<b>7334.00</b>	<b>7334.00</b>	<b>7334.00</b>
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	344.08
	Net Loan-Opening	7334.00	7334.00	7334.00	6989.92
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	344.08	611.17
	Net Loan-Closing	7334.00	7334.00	6989.92	6378.75
	Average Loan	7334.00	7334.00	7161.96	6684.33
	Rate of Interest	<b>9.0718%</b>	<b>9.0718%</b>	<b>9.0678%</b>	<b>9.0632%</b>
	<b>Interest</b>	665.33	665.33	649.43	605.81

## ANNEXURE II

CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN					
(` in lakh)					
	Details of Loan	2010-11	2011-12	2012-13	2013-14
<b>1</b>	<b>Bond XXIX</b>				
	Gross loan opening	1515.00	1515.00	1515.00	1515.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	126.25
	Net Loan-Opening	1515.00	1515.00	1515.00	1388.75
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	126.25	126.25
	Net Loan-Closing	1515.00	1515.00	1388.75	1262.50
	Average Loan	1515.00	1515.00	1451.88	1325.63
	Rate of Interest	9.20%	9.20%	9.20%	9.20%
	Interest	139.38	139.38	133.57	121.96
	Rep Schedule	12 Annual instalments from 12.03.2013			
<b>2</b>	<b>Bond XXVIII</b>				
	Gross loan opening	850.00	850.00	850.00	850.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	70.83
	Net Loan-Opening	850.00	850.00	850.00	779.17
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	70.83	70.83
	Net Loan-Closing	850.00	850.00	779.17	708.33
	Average Loan	850.00	850.00	814.58	743.75
	Rate of Interest	9.33%	9.33%	9.33%	9.33%
	Interest	79.31	79.31	76.00	69.39
	Rep Schedule	12 Annual instalments from 15.12.2012			
<b>3</b>	<b>Bond XXXI</b>				
	Gross loan opening	897.00	897.00	897.00	897.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00
	Net Loan-Opening	897.00	897.00	897.00	897.00
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	74.75
	Net Loan-Closing	897.00	897.00	897.00	822.25
	Average Loan	897.00	897.00	897.00	859.63
	Rate of Interest	8.90%	8.90%	8.90%	8.90%
	Interest	79.83	79.83	79.83	76.51
	Rep Schedule	12 Annual instalments from 25.02.2014			



<b>4</b>	<b>Bond XXX</b>				
	Gross loan opening	<b>580.00</b>	<b>580.00</b>	<b>580.00</b>	<b>580.00</b>
	Cumulative Repayment upto DOCO/previous year	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
	Net Loan-Opening	580.00	580.00	580.00	580.00
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	48.33
	Net Loan-Closing	580.00	580.00	580.00	531.67
	Average Loan	580.00	580.00	580.00	555.83
	Rate of Interest	8.80%	8.80%	8.80%	8.80%
	Interest	51.04	51.04	51.04	48.91
	Rep Schedule	12 Annual instalments from 29.09.2013			
	<b>Total Loan</b>				
	Gross loan opening	<b>3842.00</b>	<b>3842.00</b>	<b>3842.00</b>	<b>3842.00</b>
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	197.08
	Net Loan-Opening	3842.00	3842.00	3842.00	3644.92
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	197.08	320.17
	Net Loan-Closing	3842.00	3842.00	3644.92	3324.75
	Average Loan	3842.00	3842.00	3743.46	3484.83
	Rate of Interest	<b>9.0983%</b>	<b>9.0983%</b>	<b>9.0944%</b>	<b>9.0899%</b>
	<b>Interest</b>	349.56	349.56	340.45	316.77

