

**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Petition No. 25/TT/2011**

**&  
I.A. 23/2013**

**Coram:**

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

**Date of Hearing: 01.10.2013  
Date of Order : 22.02.2014**

**In the matter of:**

Petition under Section 62(1)(c) of the Electricity Act, 2003 for determination of wheeling charges in respect of Transmission System of Orissa Power Transmission Corporation Ltd. (OPTCL) comprising the 220 kV D/C Rourkela-Tarkera-Budhipadar-Korba (Odisha Portion) line and associated substation bays with effect from 1.4.2004 to 31.3.2009 for transmission of surplus power from NTPC power stations in Eastern Region (ER) to Western Region (WR).

**And in the matter of:**

Orissa Power Transmission Corporation Limited,  
Janpath, Bhubaneswar

**...Petitioner**

**Vs**

1. Madhya Pradesh Power Transmission Corporation Ltd.  
Shakti Bhawan, Vidyut Nagar  
Jabalpur-482 008.

2. Gujarat Urja Vikas Nigam Ltd.,  
Sardar Patel Vidyut Bhawan,  
Race Course Road, Vadodara-390 007.

**Respondents**

3. Chhattisgarh State Electricity Power Distribution Co. Ltd.  
Dangania, Raipur  
Chhattisgarh

4. Maharashtra State Electricity Board  
5th floor, Prakkashgad, Plot No. G-9  
Bandra (East), Mumbai.

5. Electricity Department, Government of Goa,  
Vidyut Bhawan, Panaji,



Division-II, Goa.

6. Electricity Department,  
Administration of Daman and Diu,  
Daman.

**For petitioner** : Shri R K Mehta, Advocate, OPTCL  
Shri A. Upadhyay, Advocate, OPTCL  
Shri P K Panda, OPTCL  
Shri M.R. Das

**For respondents** : Shri Anand K Ganesan, Advocate, GUVNL  
Shri P J Jani, GUVNL  
Shri G Umapathy, Advocate, MPPMCL  
Shri Dilip Singh, MPPMCL

### **ORDER**

This petition has been filed seeking approval for determination of wheeling charges in respect of Transmission System of Orissa Power Transmission Corporation Limited (OPTCL) comprising the 220 kV D/C Rourkela – Tarkera – Budhipadar -Korba (Odisha Portion) Line and associated substation bays (hereinafter referred to as “the transmission asset”) for the period from 1.4.2004 to 31.3.2009 for transmission of surplus power from NTPC power stations in Eastern Region (ER) to Western Region (WR) based on the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2004, (hereinafter referred to as “the 2004 Tariff Regulations”).

2. The surplus power from NTPC power stations in Eastern Region (ER) to the constituents of Western Region (WR) is transmitted through the

Transmission System of Orissa Power Transmission Corporation Limited (OPTCL) comprising the 220 kV D/C Rourkela-Tarkera-Budhipadar-Korba (Odisha Portion) line and associated eight number substation bays with effect from May,1997.

3. Details of the assets for which tariff is being determined in this order are as under:-

**Transmission Lines**

- (a) 220 kV Rourkela-Tarkera D/C (15.34km)
- (b) 220 kV Tarkera-Budhipadar (110.21 km) D/C Line including two outgoing bays at Tarkera
- (c) 220 kV Budipadar-Korba (Odisha Portion – 60 km) D/C Line.

**Substation**

- (d) 4 nos. of bays (2 nos. incoming and 2 nos. outgoing) bays at Budipadar

4. For the period 2001-04, the petitioner had filed Petition No.6/2004 for determination of charges in respect of Transmission System of GRIDCO for wheeling of power from NTPC stations in Eastern Region (ER) through their system to MPSEB. The Commission directed EREB to calculate wheeling charges in accordance with the principles contained in the notification dated 26.3.2001 (The terms and conditions of tariff for the period 1.4.2001 to 31.3.2004). Based on the calculation submitted by the Member Secretary, EREB, the Commission passed order dated 23.3.2007 according to which the

wheeling charges for 2001-02, 2002-03 and 2003-04 were ₹ 773.58 lakh, ₹776.77 lakh and ₹787.32 lakh, respectively.

5. As per the Report dated 30.09.2005 on “Fixation of Wheeling Charges in respect of Transmission System of GRIDCO for wheeling of power from NTPC stations in ER through their system to MPSEB with effect from 01.04.2001”, submitted to the Commission by Member Secretary, Eastern Region Electricity Board, date of commercial operation and the capital cost of different assets covered in the petition are as below:-

<b>Assets</b>	<b>Date of commercial operation</b>	<b>Cost as on DOCO (₹ in lakh)</b>
<b>Asset-1:</b> 220 kV Rourkela-Tarkera D/C line including two incoming bays at Tarkera.	15-12-1993	758.18
<b>Asset-2:</b> 220 kV D/C Tarkera-Budhipadar line including two outgoing bays.	29.03.1994	1705.70
<b>Asset-3:</b> 2 no. 220 kV D/C incoming and 2 no. outgoing bays at Budhipadar S/S.	29.03.1994	800.56
<b>Asset-4:</b> 220 kV D/C Budhipadar-Korba line (Odisha portion).	Assumed to be prior to 1991	720.00

6. The above Table indicates the dates of commercial operation of the four assets covered in this petition. On the basis of maintenance spares awarded during 2001-04 and those claimed in the current tariff petition, it emerges that the base date for the dates of commercial operation of all the assets has been considered as 1.4.2004. The above criterion is applicable for Asset-4 as well, for which the date of commercial operation has been assumed to be prior to 1991 in the Report submitted by Member Secretary, EREB. Thus, the notional dates of commercial operation considered for working out the tariff are as follows:-

<b>Assets</b>	<b>Notional DOCO</b>
<b>Asset-1:</b> 220 kV Rourkela-Tarkera D/C line including two incoming bays at Tarkera.	1.4.1994
<b>Asset-2:</b> 220 kV D/C Tarkera-Budhipadar line including two outgoing bays.	1.4.1994
<b>Asset-3:</b> 2 no. 220 kV D/C incoming and 2 no. outgoing bays at Budhipadar S/S.	1.4.1994
<b>Asset-4:</b> 220 kV D/C Budhipadar-Korba line .	1.4.1991

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

(₹ in lakh)

<b>Asset - 1, 2, 3 and 4</b>					
	<b>2004-05</b>	<b>2005-06</b>	<b>2006-07</b>	<b>2007-08</b>	<b>2008-09</b>
Depreciation	107.00	107.00	107.00	107.00	107.00
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on equity	278.91	278.91	278.91	278.91	278.91
Interest on Working Capital	22.47	23.61	24.08	24.94	25.86
O & M Expenses	309.20	321.58	334.65	347.67	361.91
<b>Total</b>	<b>717.58</b>	<b>731.10</b>	<b>744.64</b>	<b>758.52</b>	<b>773.68</b>

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

(₹ in lakh)

<b>Asset - 1</b>					
	<b>2004-05</b>	<b>2005-06</b>	<b>2006-07</b>	<b>2007-08</b>	<b>2008-09</b>
Maintenance Spares	73.83	78.25	82.95	87.92	93.19
O & M expenses	25.77	26.80	27.89	28.97	30.16
Receivables	119.60	125.30	124.11	126.42	128.95
<b>Total</b>	<b>219.20</b>	<b>230.35</b>	<b>234.95</b>	<b>243.31</b>	<b>252.30</b>
Interest	22.47	23.61	24.08	24.94	25.86
Rate of Interest	10.25%	10.25%	10.25%	10.25%	10.25%

9. Reply to the petition has been filed only by Madhya Pradesh Power Management Company Limited (MPPCL) and Gujarat Urja Vikas Nigam Limited (GUVNL).

10. The petitioner has made the following prayers:-

"(a) Determine the Wheeling charges/transmission loss in respect of Transmission System of Orissa Power Transmissin Corporatin Limited (OPTCL) comprising the 220 kV D/C Rourkela=Tarkera-Budhipadar-Korba (Odisha Portion) line and associated substation bays with effect from 1.4.2004 to 31.3.2009 for transmission of surplus power from NTPC power stations in Eastern Region (ER) to Western Region (WR).

(b) Direct Member Secretary, ERPC to allocate the Wheeling charges to the beneficiaries of Western Region in the ratio of duration and quantum of contracted power in line with Para 40 of order dated 23.03.2007 passed by this Hon'ble Commission."

11. MPPMCL has in its reply raised a preliminary objection that the Eastern Region beneficiaries have also to share 50% of the fixed charges of two numbers incoming and two numbers outgoing bays at Budhipadar and 220 kV Budhipadar-Korba D/C (Orissa portion) during the period from 1.4.2004 to 31.5.2006 when Regulation 59 of the 2004 Tariff Regulations was amended.

12. In response to the above objection, the petitioner has vide its rejoinder dated 5.3.2013 has clarified that as per the REA issued by WRPC/ERPC, only WR constituents have availed the power through lines/bays and therefore only Western Region beneficiaries have been implead as respondents.

13. Further, both the above stated respondents have pointed out that the petitioner is required to provide the credit of Short Term charges to its long term customers as per provisions under Regulations 59 of the Terms and Conditions of Tariff Regulations, 2004

14. In response to the above objection, the petitioner has clarified, vide its rejoinder dated 5.3.2013 that it had requested ERPC, WRPC and PGCIL to furnish month-wise credit of Short Term charges collected from Open Access Customers and disbursed to OPTCL. However, no reply or information has

been received. The petitioner has further submitted that the recovery of such cost would be made as determined by the Commission.

15. In our opinion, the issue of adjustment of STOA will arise only after the determination of tariff for the petitioner's line and then subsequent determination of wheeling charges. At present tariff can be determined and adjustment of STOA, if any, can be made later.

16. Other objections raised by the above named respondents and the response of the petitioner thereto are being addressed in the respective paragraphs herein below.

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

### **Capital Cost**

18. As regards the capital cost, Regulation 52 (1) of the 2004 Tariff Regulations provides as under:-

“Subject to prudence check by the Commission, the actual expenditure incurred on completion of the project shall form the basis for determination of final tariff. The final tariff shall be determined based on the admitted capital expenditure actually incurred up to the date of commercial operation of the transmission system and shall include capitalised initial spares subject to a ceiling norm as 1.5% of original project cost.

Provided that where the implementation agreement or the transmission service agreement entered into between the transmission licensee and the long-term transmission customers provides a ceiling of actual expenditure, the capital expenditure shall not exceed such ceiling for determination of tariff.”

19. The Commission, vide its order dated 23.03.2007 in Petition No. 6/2004 admitted ₹3984.44 lakh towards capital expenditure for determining the wheeling charges. Accordingly, based on the above order of the Commission, gross block / capital expenditure of ₹3984.44 lakh as on 1.4.2004 has been considered in the present petition for the purpose of tariff determination.

### **Additional capital expenditure**

20. The petitioner has not claimed any additional capital expenditure during the period 2004-09.

### **Debt- equity ratio**

21. As regards debt-equity ratio, Regulation 54 of the 2004 Tariff Regulations, as amended on 3.9.2004 and 1.6.2006, provides as under:-

(1) In case of the existing projects, debt–equity ratio Considered by the Commission for fixation of tariff for the period ending 31.3.2004 shall be considered for determination of tariff with effect from 01.04.2004.

Provided that in cases where the tariff for the period ending 31.3.2004 has not been determined by the Commission, debt-equity ratio shall be as may be decided by the Commission.

Provided further that in case of the existing projects where additional capitalisation has been completed on or after 1.4.2004 and admitted by the Commission under Regulation 53, equity in the additional capitalisation to be considered shall be :-

- (a) 30% of the additional capital expenditure admitted by the Commission, or
- (b) equity approved by the competent authority in the financial package, for additional capitalisation, or
- (c) actual equity employed,

whichever is the least.



Provided further that in case of additional expenditure admitted under the second proviso, the Commission may considered equity of more than 30% if the transmission licensee is able to satisfy the Commission that deployment of such equity of more than 30% was in the interest of general public.

(2) In case of the transmission systems for which investment approval was accorded prior to 1.4.2004 and which are likely to be declared under commercial operation during the period 1.4.2004 to 31.3.2009, debt-equity in the ratio of 70:30 shall be considered:

Provided that where deployment of equity employed to finance the project is less than 30%, the actual debt and equity shall be considered for the purpose of determination of tariff.

Provided further that the Commission may in appropriate cases consider equity higher than 30% for determination of tariff, where the transmission licensee is able to establish to the satisfaction of the Commission that deployment of equity higher than 30% was in the interest of general public;

(3) In case of the transmission systems for which investment approval is accorded on or after 1.4.2004, debt-equity in the ratio of 70:30 shall be considered for determination of tariff:

Proved that where equity actually employed is more than 30%, the equity in excess of 30% shall be treated as notional loan.

Provided that where deployment of equity is less than 30%, the actual debt and equity shall be considered for determination of tariff.

(4) The debt and equity amount arrived at in accordance with above sub-clause (1), (2) or (3), as the case may be, shall be used for calculation of interest on loan, return on equity, advance against depreciation and foreign exchange rate variation.”

22. The Debt-Equity ratio considered for Fixation of Wheeling Charges for 2001-04 period was 50:50. Therefore, in line with clause (1) above, Debt-Equity ratio of 50:50 has been considered in the tariff calculations for 2004-09 period. The details of Debt-Equity as on the date of commercial operation of the assets are as follows. The same Debt-Equity ratio is applicable for 1.4.2004 and 31.3.2009.

23. The details of Debt-Equity of the transmission assets as on the date of commercial operation are as follows:-

(₹ in lakh)

Asset - 1		
Particulars	Amount	%
Debt	379.09	50.00
Equity	379.09	50.00
<b>Total</b>	<b>758.18</b>	<b>100.00</b>

  

Asset – 2		
Particulars	Amount	%
Debt	852.85	50.00
Equity	852.85	50.00
<b>Total</b>	<b>1705.70</b>	<b>100.00</b>

  

Asset – 3		
Particulars	Amount	%
Debt	400.28	50.00
Equity	400.28	50.00
<b>Total</b>	<b>800.56</b>	<b>100.00</b>

  

Asset - 4		
Particulars	Amount	%
Debt	360.00	50.00
Equity	360.00	50.00
<b>Total</b>	<b>720.00</b>	<b>100.00</b>

### **Return on Equity**

24. As per Regulation 56(3) of the 2004 Tariff Regulations, return on equity shall be computed on the equity base determined in accordance with Regulation 54 and shall be @ 14% per annum subject to the following:-

“Provided that equity invested in foreign currency shall be allowed a return up to the prescribed limit in the same currency and the payment on this account shall be made in Indian Rupees based on the exchange rate prevailing on the due date of billing.

### **Explanation**

The premium raised by the transmission licensee while issuing share capital and investment of internal resources created out of free reserve of the existing transmission licensee, if any, for the funding of the project, shall also be reckoned as paid up capital for the purpose of computing return on equity, provided that such premium amount and internal resources are actually utilised for meeting the capital expenditure of the project and forms part of the approved financial package.”

25. The petitioner has claimed return on the basis of equity as on 1.4.2004.

There is no additional capital expenditure during 2004-09, as mentioned earlier.

26. Details of the return on equity allowed are as under:-

(₹ in lakh)

<b>Asset - 1</b>					
	<b>2004-05</b>	<b>2005-06</b>	<b>2006-07</b>	<b>2007-08</b>	<b>2008-09</b>
Opening Equity	379.09	379.09	379.09	379.09	379.09
Addition due to Additional Capitalisation	0.00	0.00	0.00	0.00	0.00
Equity	379.09	379.09	379.09	379.09	379.09
Average Equity	379.09	379.09	379.09	379.09	379.09
Return on Equity	53.07	53.07	53.07	53.07	53.07

<b>Asset - 2</b>					
	<b>2004-05</b>	<b>2005-06</b>	<b>2006-07</b>	<b>2007-08</b>	<b>2008-09</b>
Opening Equity	852.85	852.85	852.85	852.85	852.85
Addition due to Additional Capitalisation	0.00	0.00	0.00	0.00	0.00
Equity	852.85	852.85	852.85	852.85	852.85
Average Equity	852.85	852.85	852.85	852.85	852.85
Return on Equity	119.40	119.40	119.40	119.40	119.40

<b>Asset - 3</b>					
	<b>2004-05</b>	<b>2005-06</b>	<b>2006-07</b>	<b>2007-08</b>	<b>2008-09</b>
Opening Equity	400.28	400.28	400.28	400.28	400.28
Addition due to Additional Capitalisation	0.00	0.00	0.00	0.00	0.00
Equity	400.28	400.28	400.28	400.28	400.28
Average Equity	400.28	400.28	400.28	400.28	400.28
Return on Equity	56.04	56.04	56.04	56.04	56.04

<b>Asset - 4</b>					
	<b>2004-05</b>	<b>2005-06</b>	<b>2006-07</b>	<b>2007-08</b>	<b>2008-09</b>
Opening Equity	360.00	360.00	360.00	360.00	360.00
Addition due to Additional Capitalisation	0.00	0.00	0.00	0.00	0.00
Equity	360.00	360.00	360.00	360.00	360.00
Average Equity	360.00	360.00	360.00	360.00	360.00
Return on Equity	50.40	50.40	50.40	50.40	50.40

### **Interest on loan**

27. As per the petition, loan has already been repaid, hence, Interest on Loan component is NIL.

### **Depreciation**

28. As regards depreciation, sub clause (ii) of clause (a) of regulation 56 of the 2004 Tariff Regulations provides that depreciation shall be computed in the following manner, namely:-

- (i) The value base for the purpose of depreciation shall be the historical cost of the asset.
- (ii) Depreciation shall be calculated annually based on straight line method over the useful life of the asset and at the rates prescribed in Appendix II to these regulations. The residual life of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the historical capital cost of the asset. Land is not a depreciable asset and its cost shall be excluded from the capital cost while computing 90% of the historical cost of the asset. The historical capital cost of the asset shall include additional capitalisation on account of Foreign Exchange Rate Variation up to 31.3.2004 already allowed by the Central Government/Commission.
- (iii) On repayment of entire loan, the remaining depreciable value shall be spread over the balance useful life of the asset.
- (iv) Depreciation shall be chargeable from the first year of operation. In case of operation of the asset for part of the year, depreciation shall be charged on pro rata basis.

29. GUVNL has submitted that petitioner has considered depreciation @ 2.57 % for lines and 3.60% for bays. The petitioner has computed annual depreciation amount from 1.4.2004 onwards by applying aforesaid rates on 90% of historical cost of lines and bays, without accounting for the depreciation already accumulated from the date of commercial operation of the lines and bays till 31.3 2004 and treatment of depreciation on

repayment of entire loan. Regulation 56 (ii)(a) (iii) of the 2004 Tariff Regulations provides that "On repayment of entire loan, the remaining depreciable value shall be spread over the balance useful life of the asset". The entire repayment of loan has occurred in respect of various transmission elements. It has also been pointed out that the petitioner is getting higher depreciation due to application of cost per bay at Budhipadar in to the cost of two incoming & outgoing bays at Tarkera due to non-availability of bays cost at Tarkera. GUVNL also raised certain issues on the depreciation considered as 5.27% in Order dated 23.03.2007 in Petition 6/2004.

30. In response to the above, the petitioner vide its rejoinder dated 5.3.2013 has clarified that the rate of depreciation for bays and lines have been changed (w.e.f. 1.4.2004) from 5.27% to 3.60% for bays and 2.57% for lines. Due to non-availability of bays cost at Tarkera, the cost of two incoming and outgoing bays cost at Budhipadar is considered in accordance with the Order dated 23.3.2007 of the Commission and depreciation has been calculated accordingly.

31. As regards, GUVNL objection on the depreciation considered as 5.27% in the Commission's Order dated 23.03.2007 in Petition No. 6/2004, we feel that this issue is not relevant in the instant case of tariff for 2004-09. If GUVNL has any issue on earlier Order of Commission, it may raise the same through a separate petition.

32. We have worked out yearly depreciation by spreading the balance depreciable value of the asset over its balance useful life in line with the above quoted Regulation.

33. For working out the life of assets, notional dates of commercial operation mentioned in para 6 above, have been considered and concept of 'Weighted Average Useful Life', wherever applicable, has been applied.

34. Further, the petitioner has claimed Cumulative Depreciation/Advanced Against Depreciation of the Assets as on 31.3.2004, as below:-

(₹ in lakh)

Assets	Cumulative /Advance Depreciation as on 31.03.2004	Depreciation Against as on
Asset-1	399.60	
Asset-2	898.90	
Asset-3	421.90	
Asset-4	493.22	

35. Details of the depreciation worked out are as follows:-

(₹ in lakh)

	Asset – 1				
	2004-05	2005-06	2006-07	2007-08	2008-09
As on Date of commercial operation	758.18	758.18	758.18	758.18	758.18
Addition due to Additional Capitalisation	0.00	0.00	0.00	0.00	0.00
Gross Block	758.18	758.18	758.18	758.18	758.18
Rate of Depreciation	3.1138%	3.1138%	3.1138%	3.1138%	3.1138%
Depreciable Value	682.36	682.36	682.36	682.36	682.36
Balance Useful life of the asset	20	19	18	17	16
Remaining Depreciable Value	282.76	268.62	254.49	240.35	226.21
Depreciation	14.14	14.14	14.14	14.14	14.14
Cumulative Depreciation/ Advance against Depreciation	413.74	427.88	442.01	456.15	470.29

<b>Asset – 2</b>					
	<b>2004-05</b>	<b>2005-06</b>	<b>2006-07</b>	<b>2007-08</b>	<b>2008-09</b>
As on Date of commercial operation	1705.70	1705.70	1705.70	1705.70	1705.70
Addition due to Additional Capitalisation	0.00	0.00	0.00	0.00	0.00
Gross Block	1705.70	1705.70	1705.70	1705.70	1705.70
Rate of Depreciation	2.8117%	2.8117%	2.8117%	2.8117%	2.8117%
Depreciable Value	1535.13	1535.13	1535.13	1535.13	1535.13
Balance Useful life of the asset	23	22	21	20	19
Remaining Depreciable Value	636.23	608.57	580.91	553.24	525.58
Depreciation	27.66	27.66	27.66	27.66	27.66
Cumulative Depreciation/ Advance against Depreciation	926.56	954.22	981.89	1009.55	1037.21

<b>Asset - 3</b>					
	<b>2004-05</b>	<b>2005-06</b>	<b>2006-07</b>	<b>2007-08</b>	<b>2008-09</b>
As on Date of commercial operation	800.56	800.56	800.56	800.56	800.56
Addition due to Additional Capitalisation	0.00	0.00	0.00	0.00	0.00
Gross Block	800.56	800.56	800.56	800.56	800.56
Rate of Depreciation	3.6000%	3.6000%	3.6000%	3.6000%	3.6000%
Depreciable Value	720.50	720.50	720.50	720.50	720.50
Balance Useful life of the asset	15	14	13	12	11
Remaining Depreciable Value	298.60	278.70	258.79	238.88	218.98
Depreciation	19.91	19.91	19.91	19.91	19.91
Cumulative Depreciation/ Advance against Depreciation	441.81	461.71	481.62	501.53	521.43

<b>Asset - 4</b>					
	<b>2004-05</b>	<b>2005-06</b>	<b>2006-07</b>	<b>2007-08</b>	<b>2008-09</b>
As on Date of commercial operation	720.00	720.00	720.00	720.00	720.00
Addition due to Additional Capitalisation	0.00	0.00	0.00	0.00	0.00
Gross Block	720.00	720.00	720.00	720.00	720.00
Rate of Depreciation	2.5700%	2.5700%	2.5700%	2.5700%	2.5700%
Depreciable Value	648.00	648.00	648.00	648.00	648.00
Balance Useful life of the asset	25	24	23	22	21
Remaining Depreciable Value	154.78	148.59	142.40	136.21	130.02
Depreciation	6.19	6.19	6.19	6.19	6.19
Cumulative Depreciation/ Advance against Depreciation	499.41	505.60	511.79	517.98	524.18

### **Advance Against Depreciation**

36. Regulation 56(ii) (b) of the 2004 Tariff Regulations provides that, in addition to allowable depreciation, the transmission licensee shall be entitled to Advance Against Depreciation.

37. AAD works out to NIL for all the Assets for the tariff block 2004-09.

38. Details of the calculation in respect of Advance Against Depreciation

are as follows:-

(₹ in lakh)

<b>Asset – 1</b>					
	<b>2004-05</b>	<b>2005-06</b>	<b>2006-07</b>	<b>2007-08</b>	<b>2008-09</b>
1/10th of Gross Loan(s)	37.91	37.91	37.91	37.91	37.91
Repayment of the Loan	0.00	0.00	0.00	0.00	0.00
Minimum of the above	0.00	0.00	0.00	0.00	0.00
Depreciation during the year	14.14	14.14	14.14	14.14	14.14
(A) Difference	-14.14	-14.14	-14.14	-14.14	-14.14
Cumulative Repayment of the Loan	379.09	379.09	379.09	379.09	379.09
Cumulative Depreciation/ Advance against Depreciation	413.74	427.88	442.01	456.15	470.29
(B) Difference	-34.65	-48.79	-62.92	-77.06	-91.20
Advance against Depreciation Minimum of (A) and (B)	0.00	0.00	0.00	0.00	0.00

<b>Asset – 2</b>					
	<b>2004-05</b>	<b>2005-06</b>	<b>2006-07</b>	<b>2007-08</b>	<b>2008-09</b>
1/10th of Gross Loan(s)	85.29	85.29	85.29	85.29	85.29
Repayment of the Loan	0.00	0.00	0.00	0.00	0.00
Minimum of the above	0.00	0.00	0.00	0.00	0.00
Depreciation during the year	27.66	27.66	27.66	27.66	27.66
(A) Difference	-27.66	-27.66	-27.66	-27.66	-27.66
Cumulative Repayment of the Loan	852.85	852.85	852.85	852.85	852.85
Cumulative Depreciation/ Advance against Depreciation	926.56	954.22	981.89	1009.55	1037.21
(B) Difference	-73.71	-101.37	-129.04	-156.70	-184.36
Advance against Depreciation Minimum of (A) and (B)	0.00	0.00	0.00	0.00	0.00

<b>Asset - 3</b>					
	<b>2004-05</b>	<b>2005-06</b>	<b>2006-07</b>	<b>2007-08</b>	<b>2008-09</b>
1/10th of Gross Loan(s)	40.03	40.03	40.03	40.03	40.03
Repayment of the Loan	0.00	0.00	0.00	0.00	0.00
Minimum of the above	0.00	0.00	0.00	0.00	0.00
Depreciation during the year	19.91	19.91	19.91	19.91	19.91
(A) Difference	-19.91	-19.91	-19.91	-19.91	-19.91
Cumulative Repayment of the Loan	400.28	400.28	400.28	400.28	400.28
Cumulative Depreciation/ Advance against Depreciation	441.81	461.71	481.62	501.53	521.43
(B) Difference	-41.53	-61.43	-81.34	-101.25	-121.15
Advance against Depreciation Minimum of (A) and (B)	0.00	0.00	0.00	0.00	0.00



<b>Asset – 4</b>					
	<b>2004-05</b>	<b>2005-06</b>	<b>2006-07</b>	<b>2007-08</b>	<b>2008-09</b>
1/10th of Gross Loan(s)	36.00	36.00	36.00	36.00	36.00
Repayment of the Loan	0.00	0.00	0.00	0.00	0.00
Minimum of the above	0.00	0.00	0.00	0.00	0.00
Depreciation during the year	6.19	6.19	6.19	6.19	6.19
(A) Difference	-6.19	-6.19	-6.19	-6.19	-6.19
Cumulative Repayment of the Loan	360.00	360.00	360.00	360.00	360.00
Cumulative Depreciation/ Advance against Depreciation	499.41	505.60	511.79	517.98	524.18
(B) Difference	-139.41	-145.60	-151.79	-157.98	-164.18
Advance against Depreciation	0.00	0.00	0.00	0.00	0.00
Minimum of (A) and (B)					

### **Operation & maintenance expenses**

39. Clause (iv) of Regulation 56 of the 2004 Tariff Regulations, prescribes the following norms for O & M expenses:-

(₹ in lakh)

Element	2004-05	2005-06	2006-07	2007-08	2008-09
D/C Transmission line (₹ lakh / ckt-km)	0.227	0.236	0.246	0.255	0.266
220 kV bay (₹ lakh / bay)	28.12	29.25	30.42	31.63	32.90

40. GUVNL has objected to the O&M charges claimed by petitioner pointing out that the petitioner had multiplied the circuit km length of line by two for double circuit line. The petitioner in its rejoinder has invited attention to the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009 in support of his claim. The submission of GUVNL has been considered.

41. On a reference to the earlier order dated 23.3.2007 of the Commission in Petition No. 6/2004, it is observed that a report of Eastern Regional Electricity Board in the matter was annexed with the aforementioned order.

The physical line length of 220 kV Rourkela- Tarkera D/C, Tarkera-Budhipadar afore D/C line and Budipadar- Korba (Odisha portion) are 15.24 km, 110.21 km and 60 km respectively. For converting it into ckt km for a D/C line this has been multiplied by two (2). We are convinced that the O&M charges claimed are in accordance with the 2004 Tariff Regulations. However, for the purpose of clarity, O&M charges allowed for line and bays are being shown in the present order separately.

42. Based on the above norms, year-wise O & M expenses for 185.55 km of transmission line and eight bays have been worked out from 2004-05 to 2008-09 and the details are summarized below:-

(₹ in lakh)						
SL No.	Element	2004-05	2005-06	2006-07	2007-08	2008-09
A	15.34 km (2x15,34=30.68 ckt-km) 220kV Rourkela-Tarkera D/C line	6.96	7.24	7.55	7.82	8.16
	2 nos, 220 kV bays (in-comomig) at Tarkera	56.24	58.50	60.84	63.26	65.80
B	110.21 km (2x110.21= 220.42 ckt-km) 220 kV Tarkera - Budhipadar D/C line	50.04	52.02	54.22	56.21	58.63
	2 nos 220 kV bays at Tarkera (outgoing)	56.24	58.50	60.84	63.26	65.80
C	4 nos 220kV bays Budhipadar	112.48	117.00	121.68	126.52	131.60
D	60.00 km (2x60.0=120 ckt-km) 220kV Budhipadar-Korba D/C line (Odisha portion)	27.24	28.32	29.52	30.60	31.92
<b>Total O&amp;M Expenses of line and bay (A+B+C+D)</b>		<b>309.20</b>	<b>321.58</b>	<b>334.65</b>	<b>347.67</b>	<b>361.91</b>

### **Interest on working capital**

43. As per the 2004 Tariff Regulations the components of the working capital and the interest thereon are discussed hereunder:-

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

As per Regulation 56(v) (1) (c) of the 2004 Tariff Regulations, receivables will be equivalent to two months average billing calculated on target availability level. Accordingly, in the calculation, the receivables have been worked out on the basis 2 months' of annual transmission charges as worked out above.

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

Regulation 56(v)(1)(b) of the 2004 Tariff Regulations provides for maintenance spares @ 1% of the historical cost escalated @6% per annum from the date of Commercial Operation. Accordingly, maintenance spares are worked out based on the historical cost and providing the escalation from respective notional Dates of commercial operation.

#### **(iii) O & M expenses**

As per Regulation 56(v) (1) (a) of the 2004 Tariff Regulations provides for operation and maintenance expenses for one month. Accordingly, O&M expenses have been considered for one month of the recommended O&M expenses as calculated herein above.

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

As per Regulation 56(v) (2) of the 2004 Tariff Regulations, rate of interest on working capital shall be on normative basis and shall be equal to the short-term Prime Lending Rate of State Bank of India as on 1.4.2004 or on 1st April of the year in which the project or part thereof (as the case may be) is declared under commercial operation, whichever is later. The interest on working capital shall be payable on normative basis notwithstanding that the transmission licensee has not taken working capital loan from any outside agency. Accordingly, in the calculation, the SBI PLR as on 1.4.2004 (i.e.10.25%) is considered as the rate of interest on working capital.

44. Necessary computations in support of interest on working capital are appended herein below:-

(₹ in lakh)

<b>Asset -1</b>					
	<b>2004-05</b>	<b>2005-06</b>	<b>2006-07</b>	<b>2007-08</b>	<b>2008-09</b>
Maintenance Spares	13.58	14.39	15.26	16.17	17.14
O & M expenses	5.27	5.48	5.70	5.92	6.16
Receivables	22.44	22.89	23.36	23.83	24.34
<b>Total</b>	<b>41.28</b>	<b>42.76</b>	<b>44.31</b>	<b>45.93</b>	<b>47.65</b>
Rate of Interest	10.25%	10.25%	10.25%	10.25%	10.25%
Interest	<b>4.23</b>	<b>4.38</b>	<b>4.54</b>	<b>4.71</b>	<b>4.88</b>

<b>Asset - 2</b>					
	<b>2004-05</b>	<b>2005-06</b>	<b>2006-07</b>	<b>2007-08</b>	<b>2008-09</b>
Maintenance Spares	30.55	32.38	34.32	36.38	38.56
O & M expenses	8.86	9.21	9.59	9.96	10.37
Receivables	43.64	44.40	45.21	46.00	46.89
<b>Total</b>	<b>83.05</b>	<b>85.99</b>	<b>89.12</b>	<b>92.34</b>	<b>95.82</b>
Rate of Interest	10.25%	10.25%	10.25%	10.25%	10.25%
Interest	<b>8.51</b>	<b>8.81</b>	<b>9.13</b>	<b>9.46</b>	<b>9.82</b>

<b>Asset - 3</b>					
	<b>2004-05</b>	<b>2005-06</b>	<b>2006-07</b>	<b>2007-08</b>	<b>2008-09</b>
Maintenance Spares	14.34	15.20	16.11	17.08	18.10
O & M expenses	9.37	9.75	10.14	10.54	10.97
Receivables	32.36	33.15	33.97	34.81	35.70
<b>Total</b>	<b>56.07</b>	<b>58.10</b>	<b>60.22</b>	<b>62.43</b>	<b>64.76</b>
Rate of Interest	10.25%	10.25%	10.25%	10.25%	10.25%
Interest	<b>5.75</b>	<b>5.95</b>	<b>6.17</b>	<b>6.40</b>	<b>6.64</b>

<b>Asset - 4</b>					
	<b>2004-05</b>	<b>2005-06</b>	<b>2006-07</b>	<b>2007-08</b>	<b>2008-09</b>
Maintenance Spares	15.36	16.28	17.26	18.29	19.39
O & M expenses	2.27	2.36	2.46	2.55	2.66
Receivables	14.52	14.72	14.94	15.15	15.39
<b>Total</b>	<b>32.15</b>	<b>33.36</b>	<b>34.66</b>	<b>35.99</b>	<b>37.44</b>
Rate of Interest	10.25%	10.25%	10.25%	10.25%	10.25%
Interest	<b>3.30</b>	<b>3.42</b>	<b>3.55</b>	<b>3.69</b>	<b>3.84</b>

### Transmission charges

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

(₹ in lakh)

<b>Asset - 1</b>					
	<b>2004-05</b>	<b>2005-06</b>	<b>2006-07</b>	<b>2007-08</b>	<b>2008-09</b>
Depreciation	14.14	14.14	14.14	14.14	14.14
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	53.07	53.07	53.07	53.07	53.07
Advance against Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	4.23	4.38	4.54	4.71	4.88
O & M Expenses	63.20	65.74	68.39	71.08	73.96
<b>Total</b>	<b>134.64</b>	<b>137.33</b>	<b>140.14</b>	<b>143.00</b>	<b>146.05</b>

<b>Asset - 2</b>					
	<b>2004-05</b>	<b>2005-06</b>	<b>2006-07</b>	<b>2007-08</b>	<b>2008-09</b>
Depreciation	27.66	27.66	27.66	27.66	27.66
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	119.40	119.40	119.40	119.40	119.40
Advance against Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	8.51	8.81	9.13	9.46	9.82
O & M Expenses	106.28	110.52	115.06	119.47	124.43
<b>Total</b>	<b>261.85</b>	<b>266.39</b>	<b>271.26</b>	<b>276.00</b>	<b>281.31</b>

<b>Asset - 3</b>					
	<b>2004-05</b>	<b>2005-06</b>	<b>2006-07</b>	<b>2007-08</b>	<b>2008-09</b>
Depreciation	19.91	19.91	19.91	19.91	19.91
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	56.04	56.04	56.04	56.04	56.04
Advance against Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	5.75	5.95	6.17	6.40	6.64
O & M Expenses	112.48	117.00	121.68	126.52	131.60
<b>Total</b>	<b>194.17</b>	<b>198.90</b>	<b>203.80</b>	<b>208.87</b>	<b>214.18</b>

<b>Asset -4</b>					
	<b>2004-05</b>	<b>2005-06</b>	<b>2006-07</b>	<b>2007-08</b>	<b>2008-09</b>
Depreciation	6.19	6.19	6.19	6.19	6.19
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	50.40	50.40	50.40	50.40	50.40
Advance against Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	3.30	3.42	3.55	3.69	3.84
O & M Expenses	27.24	28.32	29.52	30.60	31.92
<b>Total</b>	<b>87.13</b>	<b>88.33</b>	<b>89.66</b>	<b>90.88</b>	<b>92.35</b>

46. With regard to the prayer of the petitioner for determination of wheeling charges/transmission losses, the same will be governed by the transmission charges decided in this order. As regards the prayer for allocation of wheeling charges to the beneficiaries of Western Region, we direct the Member Secretary, ERPC to apportion the wheeling charges based on the tariff determined in this order in proportion to the duration and quantum of power wheeled to the constituents of the Western Region and issue the REA for the period 1.4.2004 to 31.3.2009 accordingly.

### **I.A. No.23/2013**

47. During the pendency of the petition, the petitioner had filed an IA on 18.7.2013 with the following prayers:-

- (a) Direct Member Secretary, ERPC to allocate the Wheeling Charges to the beneficiaries of Western Region in the ratio of energy scheduled as per REA w.e.f 1.4.2004;
- (b) Direct the beneficiaries / constituents to make payment of the outstanding dues as per Revised Statement within four weeks pending the final orders of the Commission.

48. Since the wheeling charges of the transmission lines have been finally determined, the I.A. has become infructuous.

49. This order disposes of Petition No. 25/TT/2011 and I.A. No.23/2013.

sd/-  
**(M. Deena Dayalan)**  
Member

sd/-  
**(V. S. Verma)**  
Member