

**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Petition No. 243/GT/2013**

**Coram:**

**Shri Gireesh B Pradhan, Chairperson  
Shri A.K. Singhal, Member**

**Date of Hearing: 01.07.2014  
Date of Order: 21.12.2015**

**In the matter of**

Revision of tariff of Talcher Super Thermal Power Station Stage-I (1000 MW) for the period from 1.4.2009 to 31.3.2014-Truing up of order dated 15.6.2012 in Petition No. 228/2009.

**And in the matter of**

NTPC Ltd  
NTPC Bhawan,  
Core-7, SCOPE Complex,  
7, Institutional Area, Lodhi Road,  
New Delhi-110003

...Petitioner

Vs

1. West Bengal State Electricity Distribution Co. Ltd.  
Vidyut Bhawan, Block – DJ, Sector-II, Salt Lake City  
Kolkatta - 700091
2. Bihar State Electricity Board,  
Vidyut Bhawan, Bailey Road,  
Patna – 800001
3. Jharkhand State Electricity Board, Ranchi  
Engineering Bhawan, Heavy Engineering Corporation  
Dhurwa, Ranchi – 834004
4. Grid Corporation of Orissa Ltd.,  
Vidyut Bhawan, Janpath  
Bhubaneshwar – 751007
5. Damodar Valley Corporation,  
DVC Towers, VIP Road  
Kolkata – 700054
6. Energy & Power Department, Govt. of Sikkim,  
Kazi Road, Gangtok  
Sikkim – 737101
7. Tamil Nadu Generation & Distribution Co. Ltd.  
NRKRP Maaligai, 800, Anna Salai, Chennai – 600002



8. Electricity Department, Union Territory of Pondicherry,  
137, Netaji Subhash Chandra Bose Salai  
Pondicherry – 605001
9. Uttar Pradesh Power Corporation Ltd,  
Shakti Bhawan,  
14, Ashoka Road,  
Lucknow – 226001
10. Power Development Department, Govt. of J&K,  
Mini Secretariat,  
Srinagar – 190009
11. Power Department, Union Territory of Chandigarh,  
Addl. Office Building  
Sector 9D, Chandigarh
12. Madhya Pradesh Power Trading Ltd  
Shakti Bhawan, Vidyut Bhawan  
Jabalpur – 482008
13. Maharashtra State Electricity Distribution Company Ltd.,  
'Prakashgad'  
Bandra (East), Mumbai – 400051
14. Gujarat Urja Vikas Nigam Limited,  
Sardar Patel Vidyut Bhawan,  
Race Course, Baroda – 390007
15. Electricity Department,  
Administration of Daman & Diu,  
Daman – 396210
16. Electricity Department,  
Administration of Dadra and Nagar Haveli,  
Silvassa, Vapi – 396320
17. BSES Rajdhani Power Limited, New Delhi  
2nd Floor, B Block, Nehru Place,  
New Delhi 110019
18. BSES Yamuna Power Limited, Delhi  
Shakti Kiran Building,  
Karkardooma, Delhi – 110092
19. Tata Power Delhi Distribution Ltd.,  
Grid Substation, Hudson Road  
Kingsway Camp, New Delhi – 110009

...Respondents

**Parties present:**

Shri Ajay Dua, NTPC  
Shri A.Basu Roy, NTPC



Shri Navneet Goel, NTPC  
Shri Bhupinder Kumar, NTPC  
Shri A.S.Pandey, NTPC  
Shri A.K.Srivastava, NTPC  
Shri R.B.Sharma, Advocate for BRPL & GRIDCO  
Ms. Megha Bajpeyi, BRPL

## ORDER

This petition has been filed by NTPC Ltd for revision of the annual fixed charges for Talcher Super Thermal Power Station Stage-I (1000 MW) ('the generating station') for the period from 1.4.2009 to 31.3.2014 in terms of the proviso to clause (1) of Regulation 6 of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009 ('the 2009 Tariff Regulations').

2. The generating station with a capacity of 1000 MW comprises of two units of 500 MW each and the said units were declared under commercial operation on 1.1.1997 and 1.7.1997 respectively.

3. The Commission vide order dated 15.6.2012 in Petition No. 228/2009 had approved the tariff of the generating station for the period 2009-14 considering the opening capital cost of ₹251595.54 lakh as on 1.4.2009 (after removal of un-discharged liabilities of ₹1469.52 lakh as on 1.4.2009). Aggrieved by the said order dated 15.6.2012, the petitioner filed review petition (RP. No. 23/2012) on the following issues, namely:

*(a) Adjustment of un-discharged liabilities of freehold land as on 31.3.2009 in cumulative depreciation recovered as on 1.4.2009 and revise the freehold land value considering liabilities for the purpose of tariff;*

*(b) Correction of ministerial error in calculation of adjustment of un-discharged liabilities pertaining to the period prior to 2004 in cumulative repayment; and*

*(c) Correction of ministerial error in adjustment of de-capitalized items in 2009-10 in depreciation calculation.*

4. The Commission by order dated 15.4.2013 allowed the review petition (R.P. No. 23/2012) on the ground raised at (a) above and accordingly revised the annual fixed charges of the generating station for 2009-14 as under:



(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	6212.89	6253.88	6289.12	6370.92	6486.55
Interest on Loan	542.52	133.19	0.00	0.00	0.00
Return on Equity	29537.27	29589.87	29635.66	29699.62	29780.98
Interest on Working Capital	4473.25	4508.32	4559.85	4603.51	4659.23
O&M Expenses	13000.00	13740.00	14530.00	15360.00	16240.00
Cost of secondary fuel Oil	1524.49	1524.49	1528.67	1524.49	1524.49
Compensation Allowance	150.00	150.00	150.00	250.00	350.00
Special Allowance	0.00	0.00	0.00	0.00	0.00
<b>Total</b>	<b>55440.42</b>	<b>55899.75</b>	<b>56693.30</b>	<b>57808.54</b>	<b>59041.24</b>

5. Clause (1) of Regulation 6 of the 2009 Tariff Regulations provides as under:

*"6. Truing up of Capital Expenditure and Tariff*

*(1) The Commission shall carry out truing up exercise along with the tariff petition filed for the next tariff period, with respect to the capital expenditure including additional capital expenditure incurred up to 31.3.2014, as admitted by the Commission after prudence check at the time of truing up.*

*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 petitioner has sought the revision of the annual fixed charges based on the actual additional capital expenditure incurred for the years 2009-10, 2010-11 and 2011-12 and projected additional capital expenditure for the years 2012-13 and 2013-14 in accordance with clause (1) of Regulation 6 of the 2009 Tariff Regulations. Accordingly, the capital cost and the annual fixed charges claimed by the petitioner in this petition are as under:

#### Capital Cost

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Opening Capital Cost	251595.53	252558.07	253310.84	254484.70	255610.70
Add: Additional capital expenditure	962.54	752.76	1173.86	1126.00	2320.00
Closing Capital Cost	252558.07	253310.84	254484.70	255610.70	257930.70
Average Capital Cost	252076.80	252934.46	253897.77	255047.70	256770.70

#### Annual Fixed Charges

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	6213.68	6264.67	6340.39	6442.21	6614.70
Interest on Loan	544.00	135.00	0.00	0.00	0.00
Return on Equity	29538.45	29256.70	28988.24	29067.39	29185.99
Interest on Working Capital	4478.64	4506.95	4552.74	4600.68	4661.90
O&M Expenses	13000.00	13740.00	14530.00	15360.00	16240.00
Cost of Secondary Fuel Oil	1524.49	1524.49	1528.67	1524.49	1524.49
Compensation Allowance	150.00	150.00	150.00	250.00	350.00
<b>Total</b>	<b>55449.26</b>	<b>55577.81</b>	<b>56090.04</b>	<b>57244.77</b>	<b>58577.08</b>



7. In compliance with the directions of the Commission, the petitioner has filed additional information and has served copies of the same on the respondents. The respondents MSEDCL, JSEB, GRIDCO and BRPL have filed replies in the matter and the petitioner has filed its rejoinder to the said replies. We now proceed to examine the claim of the petitioner, on prudence check, based on the submissions and the documents available on records, as stated in the subsequent paragraphs.

**Capital cost**

8. The last proviso to Regulation 7 of the 2009 Tariff Regulations, as amended on 21.6.2011, provides as under:

*“Provided also that in case of the existing projects, the capital cost admitted by the Commission prior to 1.4.2009 duly trued up by excluding un-discharged liability, if any, as on 1.4.2009 and the additional capital expenditure projected to be incurred for the respective year of the tariff period 2009-14, as may be admitted by the Commission, shall form the basis for determination of tariff.”*

9. The annual fixed charges claimed in the petition is based on opening capital cost of ₹251595.53 lakh, as on 1.4.2009 as determined by the Commission in order dated 15.6.2012 in Petition No.228/2009.

10. The petitioner vide affidavit dated 5.7.2013 has furnished the value of capital cost and liabilities as on 1.4.2009 as per books of accounts at Form-9A. The details of liabilities and capital cost have been reconciled with the information available with the records of the Commission as under:

	<i>(₹ in lakh)</i>	
	<b>As per Form-9A</b>	<b>As per records of Commission</b>
Capital cost as on 1.4.2009 as per books	257540.15	257540.15
Liabilities included in the above	1501.18	1501.18

11. It is evident from the above that there is no variation in the capital cost and liabilities position as on 1.4.2009. Further, out of the total liabilities amounting to ₹1501.18 lakh included in the gross block as on 1.4.2009, the approved capital cost of ₹251595.54 lakh is inclusive of un-



discharged liabilities of ₹1469.52 lakh (all pertaining to period 2004-09). The remaining liabilities for ₹31.66 lakh correspond to disallowed assets/works.

12. Accordingly, in terms of the proviso to Regulation 7 of the 2009 Tariff Regulations, the capital cost as on 1.4.2009, after removal of un-discharged liabilities amounting to ₹1469.52 lakh, works out to ₹251595.54 lakh, on cash basis. Further, out of the un-discharged liabilities of ₹1469.52 lakh deducted as on 1.4.2009, the petitioner has discharged amounts of ₹354.49 lakh, ₹38.48 lakh and ₹25.66 lakh during the years 2009-10, 2010-11 and 2011-12 respectively and has also reversed amounts of ₹35.07 lakh and ₹719.98 lakh during the years 2009-10 and 2010-11. The discharges of liabilities along with the discharges corresponding to assets admitted on cash basis, during the period 2009-14 has been allowed as additional capital expenditure during the respective years.

#### **Actual/ Projected Additional Capital Expenditure**

13. Clause (2) of Regulation 9 of the 2009 Tariff Regulations provides as under:

*“9. (2) The capital expenditure incurred or projected to be incurred on the following counts after the cut-off date may, in its discretion, be admitted by the Commission, subject to prudence check:*

- (i) Liabilities to meet award of arbitration or for compliance of the order or decree of a court;*
- (ii) Change in law;*
- (iii) Deferred works relating to ash pond or ash handling system in the original scope of work;*
- (iv) In case of hydro generating stations, any expenditure which has become necessary on account of damage caused by natural calamities (but not due to flooding of power house attributable to the negligence of the generating company) including due to geological reasons after adjusting for proceeds from any insurance scheme, and expenditure incurred due to any additional work which has become necessary for successful and efficient plant operation; and*
- (v) In case of transmission system any additional expenditure on items such as relays, control and instrumentation, computer system, power line carrier communication, DC batteries, replacement of switchyard equipment due to increase of fault level, emergency restoration system, insulators cleaning infrastructure, replacement of damaged equipment not covered by insurance and any other expenditure which has become necessary for successful and efficient operation of transmission system:*

*Provided that in respect sub-clauses (iv) and (v) above, any expenditure on acquiring the minor items or the assets like tools and tackles, furniture, air-conditioners, voltage stabilizers, refrigerators, coolers, fans, washing machines, heat convectors, mattresses, carpets etc. brought after the cut-off date shall not be considered for additional capitalization for determination of tariff w.e.f. 1.4.2009.*



(vi) In case of gas/liquid fuel based open/ combined cycle thermal generating stations, any expenditure which has become necessary on renovation of gas turbines after 15 year of operation from its COD and the expenditure necessary due to obsolescence or non-availability of spares for successful and efficient operation of the stations.

Provided that any expenditure included in the R&M on consumables and cost of components and spares which is generally covered in the O&M expenses during the major overhaul of gas turbine shall be suitably deducted after due prudence from the R&M expenditure to be allowed.

(vii) Any capital expenditure found justified after prudence check necessitated on account of modifications required or done in fuel receipt system arising due to non-materialisation of full coal linkage in respect of thermal generating station as result of circumstances not within the control of the generating station.

(viii) Any un-discharged liability towards final payment/withheld payment due to contractual exigencies for works executed within the cut-off date, after prudence check of the details of such deferred liability, total estimated cost of package, reason for such withholding of payment and release of such payments etc.

(ix) Expenditure on account of creation of infrastructure for supply of reliable power to rural households within a radius of five kilometers of the power station if, the generating company does not intend to meet such expenditure as part of its Corporate Social Responsibility."

14. The details of the actual/ projected additional capital expenditure allowed by the Commission in order dated 15.6.2012 in Petition No. 228/2009 for the period 2009-14 are as under:

(₹ in lakh)							
Sl. No		Regulations	Actual/Projected Capital Expenditure				
			2009-10	2010-11	2011-12	2012-13	2013-14
			Actual	Projected			
<b>A</b>	<b>Ash Dyke Works and associated works for Ash handling system</b>						
i.	Raising of Ash Dyke Lagoon	9(2)(iii)	615.85	619.00	490.00	700.00	870.00
ii.	Other Ash Dyke Jobs (Earthen bund)	9(2)(iii)	0.00	10.00	56.00	70.00	70.00
iii.	Installation of 4 <sup>th</sup> slurry pump in existing series	9(2)(iii)	0.00	0.00	200.00	300.00	300.00
<b>Total- Ash Handling System</b>			<b>615.85</b>	<b>629.00</b>	<b>746.00</b>	<b>1070.00</b>	<b>1240.00</b>
<b>B</b>	<b>Others</b>						
i.	De-capitalization of 15 nos. condemned wagons and procurement of wagon (24 nos) as replacement.		0.00	0.00	0.00	0.00	0.00
ii.	De-capitalization of unserviceable vehicles		(-) 5.24	(-)109.21	0.00	0.00	0.00
iii.	De-capitalization of construction equipments		(-) 2.55	0.00	0.00	0.00	0.00
<b>Total Others</b>			<b>(-) 7.79</b>	<b>(-) 109.21</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Grand Total</b>			<b>608.06</b>	<b>519.79</b>	<b>746.00</b>	<b>1070.00</b>	<b>1240.00</b>



15. The details of the actual additional capital expenditure claimed for the period 2009-14 in this petition are as under:

		(₹ in lakh)				
Sl. No.		2009-10	2010-11	2011-12	2012-13	2013-14
		Actual			Projected	
<b>A</b>	<b>Liabilities to meet award of Arbitration/compliance of order</b>					
i	Additional compensation to land oustees as per Court Order	0.00	2.43	0.00	0.00	0.00
ii	Completion of Permanent store building	0.00	0.79	0.00	0.00	0.00
	<b>Total (A)</b>	<b>0.00</b>	<b>3.22</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>B</b>	<b>Change in law</b>					
i	Payment to Govt. of Orissa for Mutation of land	0.00	0.00	31.65	0.00	0.00
ii	Procurement, erection & commissioning of Intelligent controllers for ESP of Stage-I and modification in Boiler ash evacuation system to achieve SPM level as prescribed by SPCB	0.00	0.00	0.00	376.00	170.00
	<b>Total (B)</b>	<b>0.00</b>	<b>0.00</b>	<b>31.65</b>	<b>376.00</b>	<b>170.00</b>
<b>C</b>	<b>Ash Dyke works and associated works for Ash Handling System</b>					
i	Raising of Ash Dyke Lagoon /Associated Ash slurry pipe works	615.85	715.78	1116.82	700.00	800.00
ii	Construction of Earthen Bund of Ash Dyke	0.00	0.00	0.00	134.56	53.53
iii	Installation of 4th Slurry pump in existing series	0.00	0.00	0.00	0.00	0.00
	<b>Total (C)</b>	<b>615.85</b>	<b>715.78</b>	<b>1116.82</b>	<b>834.56</b>	<b>853.53</b>
<b>D</b>	<b>Other Works</b>					
i	Completion of PTS boundary wall for safeguard of project property	0.00	1.62	0.00	0.00	0.00
	<b>Total (D)</b>	<b>0.00</b>	<b>1.62</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>E</b>	<b>Total Additional Capital Expenditure (A+B+C+D)</b>	<b>615.85</b>	<b>720.62</b>	<b>1148.47</b>	<b>1210.56</b>	<b>1023.53</b>
<b>F</b>	<b>De-capitalization</b>					
ii.	De-capitalization of unserviceable vehicles	(-) 5.24	(-) 2.15	(-) 0.26	0.00	0.00
iii	De-capitalization of Construction equipments	(-) 2.55	(-) 4.18	0.00	0.00	0.00
	<b>Total (F)</b>	<b>(-) 7.79</b>	<b>(-) 6.34</b>	<b>(-) 0.26</b>	<b>0.00</b>	<b>0.00</b>
<b>G</b>	<b>Capital claim for discharge of liabilities</b>					
i	Discharge of liabilities for already admitted works up to 1.4.2004	22.59	29.97	0.00	0.00	0.00
ii	Discharge of liabilities for already admitted works for 2004-09	331.90	5.12	6.49	0.00	0.00
iii	Discharge of liabilities created for works after 1.4.2009	0.00	3.39	19.17	0.00	0.00
	<b>Total (G)</b>	<b>354.49</b>	<b>38.48</b>	<b>25.66</b>	<b>0.00</b>	<b>0.00</b>
<b>H</b>	Electricity supply scheme within 5 km radius	0.00	0.00	0.00	50.00	1300.00
	<b>Total additional capitalization claimed (A to G)</b>	<b>962.55</b>	<b>752.77</b>	<b>1173.87</b>	<b>1260.56</b>	<b>2323.53</b>





16. It is noticed that as against the additional capital expenditure ₹4300.85 lakh allowed vide order dated 15.6.2012 in Petition No.228/2009, the petitioner has claimed additional capital expenditure for ₹4719.03 lakh in this petition. Thus, there is an increase of ₹418.18 lakh in the petitioner's claim for additional capitalization which is mainly on account of new claims of ₹582.49 lakh in 2010-11 which includes an amount of ₹3.22 lakh in 2010-11 against liabilities to meet award of arbitration / compliance of the order, ₹577.65 lakh (₹31.65 lakh in 2011-12, ₹376.00 lakh in 2012-13 and ₹170.00 lakh in 2013-14) towards Change-in-law and ₹1.62 lakh against the Construction of PTS boundary wall in 2010-11. Also, there is a less claim of ₹164.31 lakh against Ash Dyke works and associated works for Ash Handling System. The petitioner's claim for additional capital expenditure are discussed under.

**Liabilities to meet award of Arbitration/Compliance of Court order**

17. The petitioner has claimed total expenditure of ₹3.22 lakh in 2010-11 (₹2.43 lakh towards additional compensation to FH land oustees and ₹0.79 lakh towards Permanent Store building. In justification of the said claim, the petitioner has submitted that the payment of land compensation to affected persons is as per order of the Court in L.A Misc cases (10 nos) and the directions of the Special land Acquisition officer, Angul in letter dated 7.7.2010 for deposit of the said amount which was complied with by the petitioner on 15.9.2010. The expenditure of ₹0.79 lakh relates to the balance work of the store building which was withheld due to arbitration and was executed after the arbitration award dated 12.3.2010. The matter has been examined. Since the expenditure of ₹2.43 lakh and ₹0.79 lakh has been incurred by the petitioner based on the direction of the court and the Arbitration award as stated above, we allow the expenditure capitalization of the said expenditure under Regulation 9(2)(i) of the 2009 Tariff Regulations. Even though the petitioner has not capitalized any actual expenditure for construction of permanent store building in 2009-10, an amount of ₹12.19 lakh on accrual basis has been capitalized (excluding liability of ₹12.19 lakh) on account of liability. This has also been allowed under Regulation 9(2) (i) of the 2009 Tariff Regulations.



### **Change-in Law-Regulation 9(2)(ii)**

#### **Payment to Government of Orissa in respect of Mutation of land**

18. The petitioner has claimed actual expenditure of ₹31.65 lakh in 2011-12 towards Registration charges for Mutation of land in favour of NTPC. In justification of the same, the petitioner has submitted that the Stamp duty and Registration fees (including incidental fees and user charge) is paid to the State Revenue department for registration of the land acquired. The respondent, GRIDCO has submitted that there is no document indicating the occurrence of the event of change in law. We have examined the matter and it is noticed that the petitioner has submitted a copy of the demand note raised by the District Sub-Registrar, Angul vide its Proceedings No.87 dated 22.2.2012 which show that the said amount is towards the Stamp duty and Registration fees (including incidental fees and user charge) for the land acquired. In view of the submissions of the petitioner and the documentary evidence enclosed, the expenditure of ₹31.65 lakh in 2011-12 is allowed under Regulation 9(2)(ii) of the 2009 Tariff Regulations.

#### **Procurement, Erection & Commissioning of Intelligent controllers for ESP of Stage-I**

19. The petitioner has claimed total projected additional capital expenditure of ₹546.00 lakh (₹376.00 lakh in 2012-13 and ₹170.00 lakh in 2013-14) towards the Procurement, erection & Commissioning of intelligent controllers for ESP of Stage-I and modification in Boiler Ash evacuation system to achieve SPM level prescribed by the Orissa State Pollution Control Board under Regulation 9(2)(ii) of the 2009 Tariff Regulations. In justification, the petitioner has submitted that the condition stipulated in the Consent to operate letter issued by the State Pollution Control Board dated 12.7.2011 mandates that steps should be taken to maintain the emission of particulate matter within the prescribed standard of 100 mg/Nm<sup>3</sup> for all the ESP stacks and to take steps to achieve an emission standard of 50 mg/Nm<sup>3</sup> as per CEPI action plan. Accordingly, the petitioner has submitted that these works are required to be carried out.

20. The respondent, GRIDCO has submitted that no document has been enclosed indicating the occurrence of the event of change-in-law. It has also submitted that the document of the State Pollution Control Board, Orissa shows only improper upkeep in restoration of breach ash dyke



and also emission levels which too is in respect of 4 units of Stage-II and not in respect of the 2 units for which tariff is trued-up in this petition. In response, the petitioner vide rejoinder affidavit dated 6.5.2014 has submitted that the expenditure towards renovating ESPs has been done to comply with the CEPI action plan notified by the SPCB in 2012. It has also submitted that the CEPI action plan mandates to bring down the SPM level to 100/50 mg/Nm<sup>3</sup> for critically polluted industrial areas like Talcher which includes all power plants including both stages of Talcher STPS.

21. The Commission vide record of the proceedings held on 1.7.2014 had directed the petitioner to furnish additional information on the following:

*“A detailed note on the background of modification of ESP along with details of emission levels for which ESP was designed originally vis-à-vis actual emission levels and reasons for high emission levels from the generating station and the prevailing norms of the State Pollution Control Board”.*

22. In response, the petitioner vide affidavit dated 22.7.2014 has submitted as under:

*“.....The design SPM level of ESP level of ESP of TSTPS Stage-I 56.8 mg/Nm<sup>3</sup> corresponding to characteristics of coal available from linked mines of MCL coal fields to meet the then prevailing norms of 150 mg/Nm<sup>3</sup>.*

*However, subsequently the coal quality (GCV, Ash content etc) available deteriorated gradually. Against a design GCV of 3500 kcal/KG, the GCV of coal fired in the last few years is around 2875-3000 Kcal/Kg which is much lower than the design GCV. This has led to significantly higher coal consumption and substantially higher quantity of combustion air compared to the design value leading to high volume of inlet flue gases at ESP with high ash particle content and consequent higher temperature and higher velocity of flue gas in ESP. higher temperature of the flue gas (and consequently of ash particles) reduces the attractiveness of the ash particles to the electric field while higher velocity gives less time for ash collection in the ESP fields.*

*It is submitted that the collection in ESP's which depends on the electrostatic field strength and collection area of the plate electrodes, has remained roughly same. The maximum ability of ESP to collect ash is limited to its design values. Any increase in the ash content in the inlet flue gas (inlet ash burden) of the ESP over the design values gets through to the chimney. Therefore a small increase in the inlet ash content increases the SPM levels in chimney outlet substantially.*

*Consequently the changed inlet condition of ESP i.e high volume of inlet flue gas with substantially higher ash content and higher inlet temp of ESP has led to much higher SPM levels on actual basis, in the range of – 300 mg/Nm<sup>3</sup>. It may be noted here that over the years with ageing of units, the Turbine cycle heat rate has also deteriorated to a certain extent against the design value, which leads to somewhat higher heat consumption in turbine cycle and consequent more firing of coal in boiler to achieve the full load.*

*After the commissioning of TSTPS Stage-I, the Talcher Angul area has seen growth of multiple industries due to favorable infrastructure in the area including a number of larger power*



*plants, which has led to considerable deterioration in environmental quality of the area and the area has been classified under clusters of industries area wise which are critically polluted. In order to address this problem, the Central Pollution Control Board (CPCB) has developed Comprehensive Environmental Pollution Index (CEPI) for evaluating pollution level of industrial clusters, Angul-Talcher being one of them. The CEPI action plan prepared by CPCB mandates to bring down the SPM level to below 50 mg/Nm by all Thermal Power Plants in Talcher Angul area. The CPCB directed all stakeholders to take necessary steps for implementing the CEPI action. The Odisha State Pollution Control Board (SPCB) has issued directions to Talcher Station to implement an action plan for the same”.*

23. As regards the submission of the respondent that the direction of SPCB was applicable for Talcher STPS, Stage-II and not for Talcher STPS, Stage-I, the petitioner has clarified that the SPCB based on the directives of the CPCB in CEPI action plan, while granting consent for operation of Talcher Station has directed NTPC to maintain emission standards of 100 mg/Nm<sup>3</sup> for all units and take steps to achieve emission standard of 50 mg/Nm<sup>3</sup> as per CEPI plan. It has also submitted that based on the conditions prescribed by SPCB, action plan was made for both short term and long term for meeting the conditions prescribed. It has also pointed out that in short term the work of up-gradation of ESP controller of Stage-I was undertaken during 2012-14 and also separation of hoppers of the boiler economizer and air pre-heater is planned to be completed by 2014-15. The petitioner has further submitted that in order to meet stringent emission norms of below design level and that too with the present coal quality, NTPC has chalked out long term plan for ESP of Stage-I up-gradation and retrofitting involving (a) Replacement of existing ESP internals with modified ESP internals (b) using the existing dummy filed by filing it with new design ESP internals (c) Retrofitting of 2 new fields and (d) Modification of existing ESP outlet duct and duct supporting structure. The petitioner has added that these long term works will be carried out pass wise during overhauling/shut down to maximize unit availability, with each pass put to use after completion of the work. It has further stated that the capitalization is expected in stages in 2015-18 and has accordingly prayed that the same may be allowed in tariff upon capitalization.

24. We have examined the matter. It is noticed that that the short term work of up-gradation of ESP controller of Stage-I was undertaken by the petitioner during 2012-14 in order to comply with the CEPI action plan notified by SPCB Odisha in 2012 which mandates the bringing down the



level of emissions 100/50 mg/Nm<sup>3</sup> for all units and to take steps to achieve emission standard of 50 mg/Nm<sup>3</sup> as per CEPI action plan. Based on the above submissions and since the expenditure incurred is on account of compliance with the statutory guidelines of the Pollution Control Board, we allow the additional capital expenditure for ₹546.00 lakh on this count under Regulation 9(2)(ii) of the 2009 Tariff Regulations. However, the capitalization of the expenditure towards long term plan for ESP, Stage-I up gradation and retrofitting which are expected to be capitalized in stages during the period 2015-18 as submitted by the petitioner vide affidavit dated 22.7.2014 shall be considered in terms of the provisions of the 2014 Tariff Regulations.

#### **Ash Related works- Regulation 9(2)(iii)**

25. The petitioner has claimed expenditure of ₹3948.45 lakh towards "Raising of Ash Dyke Lagoon/Associated Ash slurry pipe works" as against the amount of ₹3294.85 lakh allowed in order dated 15.6.2012 in Petition No. 228/2009. As there is an increase in the expenditure claimed by the petitioner, the Commission vide ROP dated 1.7.2014 had directed the petitioner to submit information on the following:

*"An expenditure for ₹3948.45 lakh has been claimed for "Raising of Ash Dyke Lagoon/associated Ash slurry pipe works" against the expenditure of ₹3294.85 lakh allowed in order dated 15.6.2012 in Petition No. 228/2009. The reasons for the said increase along with proper justification for the claim shall be submitted. Also, the reason for not claiming any additional capital expenditure in respect of Installation of 4<sup>th</sup> slurry pump in existing series" during 2009-14 as against the approved expenditure of ₹800.00 lakh shall be clarified".*

26. In response, the petitioner vide affidavit dated 23.7.2014 has submitted as under:

*"It is submitted that the project capital expenditure were based on the past awarded contracts for similar work. Subsequently there has been major increase in input cost of Civil works in the various components escalation in price of sand and other construction material during the period. It may be mentioned here that there have been incidences of restrictions on sand mining and quarrying in recent past. The cost of diesel has also seen a substantial increase. Similar increase in cost of works of similar nature have been seen in other Eastern Region Project too, as submitted by the petitioner in Petition No. 135/GT/2013 in Kahalgaon-I and allowed by Hon'ble Commission vide order dated 13.05.2014. It is submitted that due to above reasons, the actual expenditure incurred is at variation from projections. It is prayed that Hon'ble Commission may allow the same".*

27. It is evident from the submissions of the petitioner that the capitalization projected earlier was based on estimates considering the past awarded contracts for works of similar nature and was based on the same. The capitalization value of Ash dyke raising work has however



increased on account of the escalation in price of sand, other construction material and the cost of diesel. The question of increase in the cost of Ash dyke works was considered in Petition No.135/GT/2013 and the Commission by order dated 13.5.2014 had allowed the additional capitalization of the expenditure incurred considering the similar justification submitted by the petitioner. Considering the above factors in totality and since these works relating to raising of ash dyke are normal activities done in phases depending upon the requirement with passage of time and the said works forms part of the original scope of work, the increase in the actual additional capital expenditure for the period 2009-12 and the projected additional capital expenditure for the period 2012-14 in respect of Ash dyke works and associated Ash handling system raising is justified and has been allowed under Regulation 9(2)(iii) of the 2009 Tariff Regulations.

28. As against the expenditure of ₹800.00 lakh allowed vide Commission's order dated 15.6.2012, the petitioner has not claimed any additional capital expenditure in respect of the Installation of 4<sup>th</sup> slurry pump during 2009-14. The petitioner has submitted that the job was necessary to accommodate the increased pumping head required with multiple raising of Ash dyke. The petitioner has submitted that the work included additional pump in existing series, with space creation for new pump in existing ash slurry pump house and relocation of pipelines. It has further submitted that the bidding process took time and now the contract has been awarded on 1.5.2013. It has added that the work has already started and is in progress and the same is expected to be capitalized in the year 2014-15. Accordingly, the petitioner has prayed that the said expenditure may be allowed upon capitalization during the period 2014-19. In view of the submissions of the petitioner, we grant liberty to the petitioner to claim the capitalization of this expenditure during the period 2014-19 and the same would be considered in terms of the 2014 Tariff Regulations.

### **Other Works**

29. An expenditure of ₹1.62 lakh in 2010-11 towards the completion of PTS boundary wall to safeguard the project property was not allowed by the Commission in order dated 15.6.2012. The



petitioner has claimed the said expenditure on the ground that the said package was awarded during the year 1999 and the completion of the said work was delayed due to opposition from the inhabitants. Considering the fact that the expenditure is minor in nature, the same shall be met from the Compensation Allowance granted to the petitioner. In view of this, the prayer of the petitioner for capitalization of this expenditure is rejected.

### **Scheme for supply of Electricity within 5 km radius**

30. The petitioner has claimed expenditure of ₹1350.00 lakh (₹50.00 lakh in 2012-13 and ₹1300.00 lakh in 2013-14) towards the scheme for creating infrastructure for reliable supply of electricity within the 5 KM area around the generating station under Regulation 9(2)(ix) of the 2009 Tariff Regulations. In justification, the petitioner has submitted that 90% of the work which was awarded on 5.12.2011 has been completed and the remaining work is to be completed during 2013-14. Accordingly, the estimated/projected expenditure based on actual work completion has been included in Form-9 of the petition. The respondents, GRIDCO, BRPL, JSEB have mainly submitted that the scheme has been withdrawn and that the claim of the said expenditure under Regulation 9(2) is within the discretionary powers of the Commission. They have also submitted that the funds may be met by the petitioner under CSR and accordingly the claim of the petitioner may be rejected. In its rejoinder to the said replies, the petitioner has clarified that after finalization of DPR, the scheme was awarded on 5.12.2011 and all the work of 57 villages except one 33 kV substation was completed and handed over. It has also submitted that the Ministry of Power, GOI vide order dated 5.3.2014 has directed the petitioner to complete the said scheme in 8 ongoing projects around NTPC stations including this generating station.

31. The matter has been examined. The scheme for supply of electricity within 5 KM radius around Central Power Plants was withdrawn vide Ministry of Power, Government of India notification dated 25.3.2013. However, it is noticed that the Ministry of Power, GOI by letter dated 8.3.2014 has granted exemption in respect of 8 ongoing projects around the generating stations of the petitioner, including this generating station, under the erstwhile scheme and has conveyed the approval for capitalization of expenditure for this generating station also as per provisions of



the said scheme, subject to orders of this Commission. Considering the fact that 90% of the work has been completed and the remaining work is to be completed, we grant liberty to the petitioner to claim the actual expenditure incurred after completion of all the works along with documentary evidence indicating that the assets/infrastructure had been handed over to the discom of the State and the same will be considered at the time of truing up of tariff of the generating station for 2009-14 in terms of Regulation 6 (1) of the 2009 Tariff Regulations. In view of this, the expenditure claimed under this head has not been considered in this order.

#### **De-capitalization of unserviceable vehicles**

32. The petitioner has de-capitalized unserviceable vehicles amounting to (-) ₹7.65 lakh (₹5.24 lakh in 2009-10, (-)₹2.15 lakh in 2010-11 and (-)₹0.26 lakh in 2012-13). The de-capitalization of unserviceable vehicles is in order and is allowed.

#### **De-capitalization of construction equipments**

33. The petitioner has de-capitalized Construction equipments amounting to ₹6.73 lakh (₹2.55 lakh in 2009-10 and ₹4.18 lakh in 2010-11). The de-capitalization of construction equipments is in order and is allowed.

34. The reconciliation of the actual additional capital expenditure for the period 2009-12 with books of accounts as submitted by the petitioner is as under:

		(₹ in lakh)		
		2009-10	2010-11	2011-12
a	Opening Balance	257540.15	257777.84	257595.64
b	Closing Balance	257777.84	257595.64	259521.92
c	Additional Capitalization as per balance sheet (b-a)	237.69	(-)182.20	1926.28
<b>Additional Capitalization/ De-capitalization</b>				
d	Capitalization Amount	647.21	756.90	2273.34
e	Liabilities in additional capitalization and outstanding	31.36	36.28	105.66
f	Additional Capitalization claimed for stage-I	615.84	720.62	2167.68
g	De-Capitalization claimed for stage-I	(-) 359.79	(-) 219.12	(-) 347.06
h	Inter-unit transfer	(-) 14.65	0.00	0.00
i	Net additional capitalization on cash basis (d-e-f)	241.40	501.50	1820.62
<b>Exclusion Items</b>				
	FERV	0.00	0.00	0.00
	Capitalization of spares	0.00	0.00	1019.22
	De -capitalization of spares	(-) 55.65	(-)21.44	(-) 7.77
	De -capitalization of MBOA items	(-) 83.38	(-)4.07	(-) 21.20
	Capitalization of MBOA items	0.00	0.00	0.00





	Inter-unit transfer	(-)14.66	0.00	0.00
	De -capitalization of wagons	(-) 212.97	(-) 82.62	(-) 317.82
	De -capitalization of assets not owned by company	0.00	(-) 104.66	0.00
b	Total Exclusions.	(-) 366.65	(-) 212.78	672.42
c	Adjustment of liability for allowed works (ERV adjustment)	(-) 35.07	(-) 302.15	0.00
d	Reversal of liabilities	0.00	(-) 417.83	0.00
	Additional Capitalization for Stages I & II (A+B+C+D)	237.69	(-) 182.20	1926.28

35. It is noticed from the above that the actual additional capital expenditure claimed by the petitioner is at variance with the additional capital expenditure as per books of accounts. This is on account of exclusion of certain expenditure and un-discharged liabilities for the purpose of tariff. The summary of exclusions claimed as per books of accounts is examined as under:

	(₹ in lakh)		
	2009-10	2010-11	2011-12
De-capitalization of unserviceable wagons.	0.00	(-) 82.62	(-) 317.82
Assets not owned by company (R&R works executed in surrounding area)	0.00	(-)104.66	0.00
Leasehold land of Bhubaneswar GH transferred to ER-II HQ	(-)14.66	0.00	0.00
Capitalization of capital spares	0.00	0.00	1019.22
De-capitalization of capital spares	(-) 55.65	(-) 21.44	(-) 7.77
De-capitalization MBOA items	(-) 83.38	(-) 4.07	(-) 21.20
De-capitalization of wagons	(-) 212.97	0.00	0.00
<b>Total Exclusions</b>	<b>(-) 366.66</b>	<b>(-) 212.78</b>	<b>672.43</b>

## **Exclusions**

### **Capitalization of Capital Spares**

36. The petitioner has procured spares amounting to ₹1019.22 lakh in 2011-12 for maintaining stock of necessary spares. Since capitalization of spares over and above initial spares procured after the cut-off date are not allowed for the purpose of tariff, as they form part of the O&M expenses, the aforesaid claim for exclusion is in order and is allowed.

### **De- capitalization of Capital Spares**

37. The petitioner has de-capitalized in books of accounts capital spares amounting to (-) ₹55.65 lakh in 2009-10, (-) ₹21.44 lakh in 2010-11 and (-) ₹7.77 lakh in 2011-12 on account of consumption of these spares. The exclusions sought on de-capitalization of spares has been examined and it is noticed that these spares form part of the capital cost of the generating station. Hence, exclusion of de-capitalization of these spares is not in order and is not allowed.



### **De-capitalization of MBOA items**

38. The petitioner has de-capitalized MBOA items in books of accounts amounting to (-) ₹83.38 lakh in 2009-10, (-) ₹4.07 lakh in 2010-11 and (-) ₹21.20 lakh in 2011-12 on account of these items becoming unserviceable. The exclusions sought on de-capitalization of MBOA has been examined and it is noticed that Out of (-) ₹83.38 lakh in 2009-10 (MBOA amounting to ₹71.60 lakh form part of the capital cost and MBOA amounting to ₹11.78 lakh do not form part of capital cost), Out of (-) ₹4.07 lakh in 2010-11 (MBOA amounting to (-) ₹1.22 lakh form part of the capital cost and MBOA amounting to (-) ₹2.85 lakh do not form part of the capital cost ) and MBOA amounting to (-) ₹21.20 lakh in 2011-12 form part of capital cost. Hence, exclusion of de-capitalization of assets amounting to ₹11.78 lakh in 2009-10 and (-) ₹2.85 lakh in 2010-11 which do not form part of capital cost is in order and is allowed.

### **De-capitalization of wagons**

39. The petitioner has excluded amounts for (-) ₹212.97 lakh in 2009-10, (-) ₹82.62 lakh in 2010-11 and (-) ₹317.82 lakh in 2011-12 on account of de-capitalization of un-serviceable wagons. Out of ₹212.97 lakh in 2009-10 an amount of ₹194.21 lakh pertain to Wagons which form part of the capital cost and ₹18.76 lakh pertain to wagons which are not part of capital cost. The petitioner has sought the exclusion of ₹194.21 lakh on de-capitalization of wagons and has submitted that exclusion of ₹194.21 lakh was allowed by the Commission vide order dated 15.6.2012 in Petition No. 228/2009. The submission of the petitioner has been examined. It is observed from the order dated 15.6.2012 that the the claim of ₹1091.00 lakh towards procurement of 24 Nos of new wagons was disallowed and simultaneously the corresponding de-capitalization of old wagons was also ignored by the Commission. In this regard, the Commission vide order dated 3.5.2013 in Petition No. 19/RP/2012 (tariff of Kahalgaon Stage-I of NTPC) had *suo motu* rectified the error of non consideration of corresponding de-capitalization against the disallowance of additional capital expenditure claimed for purchase of new wagons. In the said order, the Commission had observed as under:

*“The petitioner in its original petition had not indicated the specific provision of Regulation 9(2) of the 2009 Tariff Regulation under which the expenditure in respect of 10 nos wagons against*



replacement of damaged/condemned wagons were claimed. Moreover, no provision existed under Regulation 9(2) of the 2009 Tariff Regulations for Order in Petition No. 245-2009 capitalization of this asset after the cut-off date. Since the generating station was in operation for more than 10 years and was entitled for compensation allowance to meet the expenditure on this asset in terms of Regulation 19(e) of the 2009 Tariff Regulations, the capitalization of the expenditure claimed by the petitioner was not allowed by our order dated 23.5.2012. As the additional capital expenditure for procurement of new wagons was not considered, the corresponding de-capitalization was also ignored. It has been the consistent stand of the Commission in respect of the tariff orders pertaining to the generating stations of the petitioner that any assets which form part of the capital base and has outlived its useful life and does not render any service to the generating station shall be taken out from the capital base for the purpose of tariff. As the capitalization of the expenditure in respect of this new asset (wagons) was not allowed on account of compensation allowance allowed to the generating station, we are of the view that the de-capitalized value of Rs. 171.80 lakh for 9 Nos. old wagons which formed part of capital base and had become unserviceable and not rendering any useful service to the generating station should have been taken out of the capital cost of the generating station, while determining tariff by order dated 23.5.2012. The non consideration of the same in order dated 23.5.2012 is an error apparent on the face of the order which is required to be rectified suo motu in review. We order accordingly. In view of this, there is no justification for the exclusion of the negative entry of ₹19.18 lakh for the 10th wagon, which was disallowed by the Commission by its order dated 15.6.2010 in Petition No.126/2009 as prayed for by the petitioner in the review petition.”

40. In line with the above decision and since the wagons do not form part of the capital cost and does not render any useful service, the exclusion of (-) ₹194.21 lakh is not allowed as the said amount was ignored in the order dated 15.6.2012 in Petition No. 228/2009. Further, out of ₹82.62 lakh in 2010-11, an amount of ₹61.88 lakh pertains to Wagons which are part of capital cost and ₹20.74 lakh pertains to Wagons which are not part of capital cost. Out of ₹317.82 lakh in 2011-12, an amount of ₹258.58 lakh pertains to Wagons which form part of the capital cost and ₹59.24 lakh pertains to Wagons which do not form part of capital cost. Hence, the exclusion for ₹18.76 lakh in 2009-10, ₹20.74 lakh in 2010-11 and ₹59.24 lakh in 2011-12 towards Wagons which do not form part of capital cost is in order and is allowed.

#### **Leasehold land of Bhubaneswar GH transferred to ER-II HQ**

41. The petitioner has excluded (-) ₹14.66 lakh in 2009-10 on account of Inter-Unit transfer of GH land to ER- II HQ. The transfer of land which is an immovable property cannot be temporary in nature. Hence, the exclusion on this item is not allowed.



### Assets not owned by company(R&R work executed in the surrounding area

42. The petitioner has excluded (-) ₹104.66 lakh in 2010-11 and has submitted that the de-capitalization is on account of the accounting policy of the Petitioner Company based on the opinion of Advisory Committee of ICAI. It line with the decision of the Commission in order dated 29.12.2014 in Petition No. 18/RP/2014 (tariff of Kahalgaon STPS-I) allowing the exclusion of such expenditure, the exclusion of the amount in this case is allowed.

### ERV

43. The petitioner has sought the exclusion amounting to ₹302.15 lakh as liability and net additional capital expenditure on cash basis is 'nil' for the year 2010-11, against the adjustment of liability for work allowed earlier. The exclusion of adjustment of ₹302.15 lakh as liability under package ERV is in order and is allowed.

### Reversal of liability

44. The petitioner has sought the exclusion amounting to ₹417.83 lakh. Net additional capitalization during 2010-11 is 'nil' against reversal of liability. Considering the fact that tariff is on cash basis as per the 2009 Tariff Regulations, the reversal of liability has been allowed.

45. The details of exclusions claimed vis-à-vis allowed is as under:

	(₹ in lakh)		
	2009-10	2010-11	2011-12
Exclusion claimed	(-) 366.64	(-) 212.79	672.43
Exclusion allowed	(-) 30.52	(-) 126.62	959.98
Exclusion not allowed	(-) 336.12	(-) 86.17	(-) 287.55

46. Based on the above, the actual additional capital expenditure for the period 2009-12 and the projected additional capital expenditure for the period 2012-14 are allowed as detailed below:

Sl. No	Head of Works/ Equipment	(₹ in lakh)					Total (Y)
		2009-10	2010-11	2011-12	2012-13	2013-14	
<b>A. Liabilities to meet award of Arbitration/Compliance of order</b>							
i	Additional compensation to land oustees as per Court Order	0.00	2.43	0.00	0.00	0.00	2.43
ii	Completion of Permanent Store building	0.00	0.79	0.00	0.00	0.00	0.79
<b>Total (A)</b>		<b>0.00</b>	<b>3.22</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>3.22</b>



<b>B</b>	<b>Change in Law</b>						
i.	Payment to Govt. of Orissa for Mutation of Land	0.00	0.00	31.65	0.00	0.00	31.65
ii.	Procurement, erection & commissioning of Intelligent controllers for ESP of St.-I and modification in Boiler ash evacuation system to achieve SPM level prescribed by SPCB in Consent	0.00	0.00	0.00	376.00	170.00	546.00
<b>B1</b>	<b>Total (B)</b>	<b>0.00</b>	<b>0.00</b>	<b>31.65</b>	<b>376.00</b>	<b>170.00</b>	<b>577.65</b>
<b>C</b>							
i	Raising of Ash Dyke Lagoon/Associated ash slurry pipe works	615.85	715.78	1116.82	700.00	800.00	3948.45
ii	Construction of Earthen Bund of Ash Dyke	0.00	0.00	0.00	134.56	53.53	188.09
<b>C1</b>	<b>Total (C)</b>	<b>615.85</b>	<b>715.78</b>	<b>1116.82</b>	<b>834.56</b>	<b>853.53</b>	<b>4136.54</b>
<b>D</b>	<b>Total Capitalization (A+B+C+)</b>	<b>615.85</b>	<b>719.0</b>	<b>1148.47</b>	<b>1210.56</b>	<b>1023.53</b>	<b>4717.41</b>
<b>E</b>							
i.	De- capitalization of Unserviceable vehicles	(-)5.24	(-)2.15	(-) 0.26	0.00	0.00	(-)7.65
ii	De- capitalization of Construction Equipments	(-)2.55	(-)4.18	0.00	0.00	0.00	(-)6.73
<b>E1</b>	<b>Total (E)</b>	<b>(-) 7.79</b>	<b>(-) 6.34</b>	<b>(-) 0.26</b>	<b>0.00</b>	<b>0.00</b>	<b>(-) 208.60</b>
<b>F</b>	<b>Total additional capital expenditure (A to E)</b>	<b>608.06</b>	<b>712.66</b>	<b>1148.21</b>	<b>1210.56</b>	<b>1023.53</b>	<b>4508.81</b>
<b>G</b>	<b>Exclusions not allowed</b>	<b>(-) 336.12</b>	<b>(-) 86.17</b>	<b>(-) 287.55</b>	<b>0.00</b>	<b>0.00</b>	<b>(-) 695.18</b>
<b>H</b>	<b>Total additional capitalization allowed (F+G)</b>	<b>271.94</b>	<b>626.50</b>	<b>860.65</b>	<b>1210.56</b>	<b>1023.53</b>	<b>3813.63</b>

47. The additional capital expenditure after considering the discharge of liabilities is allowed as under:

	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Admitted additional capital expenditure allowed	271.94	626.50	860.65	1210.56	1023.53
Add: Discharges of liabilities	354.49	38.48	25.66	0.00	0.00
<b>Total additional capital expenditure allowed</b>	<b>626.43</b>	<b>664.98</b>	<b>886.31</b>	<b>1210.56</b>	<b>1023.53</b>

48. Accordingly, the capital cost considered for the purpose of tariff for the period 2009-14 is as under:

	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Opening Capital Cost	251595.54	252221.97	252886.95	253773.26	254983.82
Add: Additional capital expenditure	626.43	664.98	886.31	1210.56	1023.53
<b>Closing Capital Cost</b>	<b>252221.97</b>	<b>252886.95</b>	<b>253773.26</b>	<b>254983.82</b>	<b>256007.35</b>
<b>Average Capital Cost</b>	<b>251908.76</b>	<b>252554.46</b>	<b>253330.10</b>	<b>254378.54</b>	<b>255495.58</b>



## Debt-Equity Ratio

49. Regulation 12 of the 2009 Tariff Regulations provides that:

*“(a) 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.”*

50. Accordingly, gross loan and equity of ₹126899.83 lakh and ₹126165.23 lakh respectively as allowed in order dated 23.6.2011 in Review Petition No. 1/2011(in Petition No. 195/2009) has been considered as gross loan and equity as on 1.4.2009. However, un-discharged liabilities amounting to ₹1469.52 lakh is deducted from the capital cost as on 1.4.2009 and has been adjusted to debt and equity in the ratio of 50:50 for assets/works capitalized prior to 2004 and in the debt-equity ratio of 70:30. As such, the gross normative loan and equity as on 1.4.2009 is revised to ₹125944.26 lakh and ₹125651.29 lakh respectively. Further, the admitted additional expenditure has been allocated in the debt and equity ratio of 70:30.

## Return on Equity

51. Regulation 15 of the 2009 Tariff Regulations, as amended on 21.6.2011, provides as under:

*“(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 charges 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 tax rate applicable to the generating company or the transmission licensee, as the case may be, in line with the provisions of the relevant Finance Acts of the respective year during the tariff period shall be trued up in accordance with Regulation 6 of these regulations.”

52. The petitioner has considered pre tax ROE of @ 22.944%, However, in view of the fact that the pre-tax ROE works out to 23.481% considering the actual tax rate for 2013-14, the same has been considered. Accordingly, return on equity is worked out as under:

	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Notional Equity- Opening	125651.29	125839.21	126038.71	126304.60	126667.77
Addition of equity due to additional capital expenditure	187.93	199.49	265.89	363.17	307.06
Normative Equity-Closing	125839.21	126038.71	126304.60	126667.77	126974.83
Average Normative Equity	125745.25	125938.96	126171.65	126486.18	126821.30
Return on Equity (Base Rate)	15.500%	15.500%	15.500%	15.500%	15.500%
Tax Rate for the year	33.990%	33.990%	33.990%	33.990%	33.990%
Rate of Return on Equity (Pre Tax)	23.481%	23.210%	22.944%	22.944%	23.481%
<b>Return on Equity (Pre Tax) - Annualised</b>	<b>29526.24</b>	<b>29230.43</b>	<b>28948.82</b>	<b>29020.99</b>	<b>29778.91</b>



## Interest on loan

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

*“(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.*

54. Interest on loan has been worked out as under:

(a) Gross normative loan amounting to ₹125944.26 lakh has been considered as on 1.4.2009.

(b) Cumulative repayment amounting to ₹118184.98 lakh as on 31.3.2009 as considered in order dated 23.6.2011 in Review Petition No. 1/2011 (in Petition No.195/2009) has been





considered as cumulative repayment as on 1.4.2009. However, after taking into account the proportionate adjustment (duly taking into account the liability and debt position as on 1.4.2004 along with additions during the tariff period 2004-09, if any) to the cumulative repayment on account of un-discharged liabilities deducted from the capital cost as on 1.4.2009, the cumulative repayment as on 1.4.2009 is revised to ₹117398.65 lakh.

(c) Net normative opening loan as on 1.4.2009 works out to ₹8545.61 lakh.

(d) Addition to normative loan on account of additional capital expenditure approved above has been considered.

(e) Depreciation allowed has been considered as repayment of normative loan during the respective year of the tariff period 2009-14. Further, proportionate adjustment has been made to the repayments corresponding to discharges of liabilities considered during the respective years on account of cumulative repayment adjusted as on 1.4.2009.

55. The necessary calculations for interest on loan are given as under:

	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Gross loan opening	125944.26	126382.76	126848.24	127468.66	128316.05
Cumulative repayment of loan upto previous year	117398.65	123575.20	126848.24	127468.66	128316.05
Net Loan Opening	8545.61	2807.56	0.00	0.00	0.00
Addition due to additional capital expenditure	438.50	465.48	620.42	847.39	716.47
Repayment of loan during the year	6202.04	2946.49	818.27	847.39	716.47
Less: Repayment adjustment on account of de-capitalization	240.74	64.75	201.47	0.00	0.00
Add: Repayment adjustment on account of un-discharged liabilities deducted as on 1.4.2009	215.25	391.30	3.62	0.00	0.00
Net Repayment	6176.55	3273.04	620.42	847.39	716.47
Net Loan Closing	2807.56	0.00	0.00	0.00	0.00
Average Loan	5676.58	1403.78	0.00	0.00	0.00
Weighted Average Rate of Interest on Loan	9.58%	9.58%	9.58%	9.58%	9.58%
<b>Interest on Loan</b>	<b>543.82</b>	<b>134.48</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

## Depreciation

56. Regulation 17 of the 2009 Tariff Regulations provides as under:

*“(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 3[the cumulative depreciation including Advance against Depreciation] as admitted by the Commission upto 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.”

57. The cumulative depreciation as on 31.3.2009 as per order dated 23.6.2011 in Review Petition No.1/2011(in Petition No.195/2009) works out to ₹144080.15 lakh. Proportionate adjustment has been made to this cumulative depreciation on account of the un-discharged liabilities deducted as on 1.4.2009. Accordingly, the revised cumulative depreciation as on 1.4.2009 works out to ₹143814.42 lakh. The value of freehold land considered in order dated 15.4.2013 in Petition No. 23/RP/2012 in Petition No. 228/2009 is ₹3457.99 lakh (inclusive of liabilities of freehold land amounting to ₹1009.17 lakh) and subsequent discharges/reversal and the same has been considered for the purpose of calculating the depreciable value. The cumulative depreciation has been adjusted for de-capitalization, if any, considered during the period 2009-14. Necessary calculations in support of depreciation are as under:

	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Opening capital cost	251595.54	252221.97	252886.95	253773.26	254983.82
Add: Additional Capital Expenditure	626.43	664.98	886.31	1210.56	1023.53
Closing capital cost	252221.97	252886.95	253773.26	254983.82	256007.35
Average capital cost	251908.76	252554.46	253330.10	254378.54	255495.58
Average value of freehold land (cash basis)	2598.83	2750.05	2767.09	2782.91	2782.91
Depreciable value @ 90%	224378.93	224823.97	225506.71	226436.06	227441.41
Remaining useful life at the	12.99	11.99	10.99	9.99	8.99



beginning of the year					
Balance depreciable value	80564.51	74979.31	69266.96	64077.52	58668.69
<b>Depreciation</b>	<b>6202.04</b>	<b>6253.49</b>	<b>6302.73</b>	<b>6413.06</b>	<b>6525.99</b>
Cumulative depreciation at the end	150016.46	156098.15	162542.48	168782.69	175298.71
Less: Cumulative depreciation adjustment on account of discharges / reversal of liabilities out of liabilities deducted as on 1.4.2009	(-) 51.70	(-)199.66	(-)3.75	0.00	0.00
Less: Cumulative Depreciation Reduction due to de-capitalization	223.50	58.06	187.68	0.00	0.00
Cumulative Depreciation	149844.66	156239.75	162358.54	168772.71	175298.71

### O&M Expenses

58. O&M expenses as considered in order dated 15.6.2012 in Petition No.228/2009 has been allowed as under:

(₹ in lakh)				
2009-10	2010-11	2011-12	2012-13	2013-14
13000.00	13740.00	14530.00	15360.00	16240.00

### Normative Annual Plant Availability Factor (NAPAF)

59. The NAPAF of the generating station considered in order dated 15.6.2012 in Petition No.228/2009 as 85% is considered for 2009-14.

### Interest on Working Capital

60. Regulation 18(1)(a) of the 2009 Tariff Regulations provides that the working capital for coal based generating stations shall cover:

(i) Cost of coal for 1.5 months for pit-head generating stations and two months for non-pithead generating stations, for generation corresponding to the normative annual plant availability factor;

(ii) Cost of secondary fuel oil for two months for generation corresponding to the normative annual plant availability factor, and in case of use of more than one liquid fuel oil, cost of fuel oil stock for the main secondary fuel oil;

(iii) Maintenance spares @ 20% of operation and maintenance expenses specified in regulation 19.

(iv) Receivables equivalent to two months of capacity charge and energy charge for sale of electricity calculated on normative plant availability factor; and

(v) O&M expenses for one month.



61. Clause (3) of Regulation 18 of the 2009 Tariff Regulations, as amended on 21.6.2011 provides as under:

*"Rate of interest on working capital shall be on normative basis and shall be considered as follows:*

*(i) SBI short-term Prime Lending Rate as on 01.04.2009 or on 1<sup>st</sup> April of the year in which the generating station or unit thereof or the transmission system, as the case may be, is declared under commercial operation, whichever is later, for the unit or station whose date of commercial operation falls on or before 30.06.2010.*

*(ii) SBI Base Rate plus 350 basis points as on 01.07.2010 or as on 1<sup>st</sup> April of the year in which the generating station or a unit thereof or the transmission system, as the case may be, is declared under commercial operation, whichever is later, for the units or station whose date of commercial operation lies between the period 01.07.2010 to 31.03.2014.*

*Provided that in cases where tariff has already been determined on the date of issue of this notification, the above provisions shall be given effect to at the time of truing up.*

### **Fuel Components in working capital**

62. The cost of coal for two months and the cost of secondary fuel oil for two months as allowed in order dated 15.6.2012 in Petition No.228/2009 has been allowed as under:

	<i>(₹ in lakh)</i>				
	<b>2009-10</b>	<b>2010-11</b>	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>
Cost of Coal – two months	10002.38	10002.38	10029.79	10002.38	10002.38
Cost of secondary fuel oil – two months	254.08	254.08	254.78	254.08	254.08

### **Maintenance spares**

63. Maintenance spares as allowed in order dated 15.6.2012 as stated below, has been allowed.

	<i>(₹ in lakh)</i>				
	<b>2009-10</b>	<b>2010-11</b>	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>
	2600.00	2748.00	2906.00	3072.00	3248.00

### **Receivables**

64. Receivables have been worked out on the basis of two months of fixed and energy charges as under:

	<i>(₹ in lakh)</i>				
	<b>2009-10</b>	<b>2010-11</b>	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>
Variable Charges (two months)	13336.51	13336.51	13373.05	13336.51	13336.51
Fixed Charges (two months)	9236.57	9255.62	9334.34	9526.65	9846.57
<b>Total</b>	<b>22573.08</b>	<b>22592.13</b>	<b>22707.39</b>	<b>22863.17</b>	<b>23183.08</b>



## O&M Expenses

65. O&M expenses for 1 month as allowed in order dated 15.6.2012 has been allowed as under:

(₹ in lakh)				
2009-10	2010-11	2011-12	2012-13	2013-14
1083.33	1145.00	1210.83	1280.00	1353.33

66. SBI PLR of 12.25% has been considered in the computation of the interest on working capital. Necessary computations in support of calculation of interest on working capital are as under:

(₹ in lakh)					
	2009-10	2010-11	2011-12	2012-13	2013-14
Coal Stock- 2 months	10002.38	10002.38	10029.79	10002.38	10002.38
Oil stock-2 Months	254.08	254.08	254.78	254.08	254.08
O & M expenses- 1 Month	1083.33	1145.00	1210.83	1280.00	1353.33
Maintenance Spares	2600.00	2748.00	2906.00	3072.00	3248.00
Receivables- 2 Months	22573.08	22592.13	22707.39	22863.17	23183.08
<b>Total Working Capital</b>	<b>36512.88</b>	<b>36741.60</b>	<b>37108.79</b>	<b>37471.63</b>	<b>38040.88</b>
Rate of Interest	12.2500%	12.2500%	12.2500%	12.2500%	12.2500%
<b>Total Interest on Working capital</b>	<b>4472.83</b>	<b>4500.85</b>	<b>4545.83</b>	<b>4590.27</b>	<b>4660.01</b>

## Compensation Allowance

67. Compensation Allowance allowed vide order dated 15.6.2012 has been considered as shown below.

(₹ in lakh)				
2009-10	2010-11	2011-12	2012-13	2013-14
150.00	150.00	150.00	250.00	350.00

## Annual Fixed Charges

68. Accordingly, the annual fixed charges allowed for the period 2009-14 are summarized as under:

(₹ in lakh)					
	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	6202.04	6253.49	6302.73	6413.06	6525.99
Interest on Loan	543.82	134.48	0.00	0.00	0.00
Return on Equity	29526.24	29230.43	28948.82	29020.99	29778.91
Interest on Working Capital	4472.83	4500.85	4545.83	4590.27	4661.01
O&M Expenses	13000.00	13740.00	14530.00	15360.00	16240.00
Cost of Secondary fuel oil	1524.49	1524.49	1528.67	1524.49	1524.49
Compensation Allowance	150.00	150.00	150.00	250.00	350.00
<b>Total</b>	<b>55419.42</b>	<b>55533.74</b>	<b>56006.04</b>	<b>57159.92</b>	<b>59079.40</b>

**Note:** (1) All figures are on annualised basis. (2) All figures under each head have been rounded. The figure in total column in each year is also rounded. As such, the sum of individual items may not be equal to the arithmetic total of the column.



69. The annual fixed charges allowed as above are subject to revision based on truing-up exercise in accordance with Regulation 6(1) of the 2009 Tariff Regulations.

70. The difference in the annual fixed charges determined by order dated 15.6.2012 and those determined by this order shall be adjusted in accordance with Regulation 6 (6) of the 2009 Tariff Regulations.

71. Petition No. 243/GT/2013 is disposed of in terms of the above.

**-Sd/-**  
**(A.K. Singhal)**  
**Member**

**-Sd/-**  
**(Gireesh B Pradhan)**  
**Chairperson**

