CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

Petition No.245/2009

Coram: 1. Dr. Pramod Deo, Chairperson
2. Shri S. Jayaraman, Member
3. Shri V.S. Verma, Member
4. Shri M. Deena Dayalan, Member

Date of Hearing: 13.12.2011 **Date of Order: 23.5.2012**

IN THE MATTER OF

Approval of tariff of Kahalgaon Super Thermal Power Station Stage-I (840 MW) for the period 1.4.2009 to 31.3.2014.

AND

IN THE MATTER OF

NTPC Ltd, New Delhi **…Petitioner**
Vs
1. West Bengal State Electricity Board, Kolkata
2. Bihar State Electricity Board, Patna
3. Jharkhand State Electricity Board, Ranchi
4. Grid Corporation of Orissa Ltd., Bhubaneshwar
5. Damodar Valley Corporation, Kolkata
6. Power Department, Government of Sikkim, Gangktok
7. Union Territory of Pondicherry, Electricity Department, Pondicherry
8. Tamil Nadu Electricity Board, Chennai
9. Uttar Pradesh Power Corporation Ltd, Lucknow
10. Power Development Department, Government of J&K, Srinagar
11. Power Department, Union Territory of Chandigarh, Chandigarh
12. Madhya Pradesh Power Trading Ltd., Jabalpur
13. Gujarat Urja Vikas Nigam Limited, Baroda
14. Electricity Department, Administration of Daman & Diu, Daman
15. Electricity Department, Administration of Dadra and Nagar Haveli, Silvassa
16. BSES Rajdhani Power Limited, New Delhi
17. BSES Yamuna Power Limited, Delhi
18. North Delhi Power Ltd, New Delhi
19. Maharashtra State Electricity Distribution Company Ltd., Mumbai. …**Respondents**

Present:
1. Shri C.K.Mondal, NTPC
2. Shri Ajay Dua, NTPC
3. Shri Rohit Chhabra, NTPC
4. Shri R.B.Sharma, Advocate, BSEB, JSEB and GRIDCO
5. Shri Manish Garg, UPPCL
6. Shri Sanjay Srivatsav, BRPL
7. Shri R.K.Shah, PFCCL
8. Shri Sanjay Rai, PFCCL
9. Shri Shwetebh Verma, PFCCL

ORDER

This petition has been filed by the petitioner, NTPC, for approval of tariff for Kahalgaon Super Thermal Power Station, Stage-I (840 MW) (hereinafter referred to as "the generating station") for the period from 1.4.2009 to 31.3.2014, based on the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009 (hereinafter referred to as "the 2009 Tariff Regulations").

2. The generating station with a capacity of 840 MW comprises of four units of 210 MW each and the dates of commercial operation (COD) of the different units of the generating station are as under:

	Date of commercial operation **(COD)**
Unit-I	1.1.1995
Unit-II	1.4.1995
Unit-III	1.2.1996
Unit-IV	1.8.1996

3. The tariff for the period 1.4.2004 to 31.3.2009 was determined by the Commission *vide* its order dated 23.11.2006 in Petition No.120/2005. Thereafter, the Commission by its orders dated 29.9.2008 and 11.12.2008 in Petition No.27/2007 revised the annual fixed charges of the generating station on account of additional capital expenditure incurred during the years 2004-05 and 2005-06. Subsequently, in Petition No.126/2009, the annual fixed charges for 2004-09 which was determined by order dated 15.6.2010 on account of additional capital expenditure incurred during the years 2006-09, were revised by Commission's order dated 12.10.2011, after considering the directions contained in judgment of the Appellate Tribunal for Electricity dated 13.6.2007 in Appeal Nos.139 to 142 etc., of 2006, 10, 11 and 23 of 2007 and the judgment dated 16.3.2009 in Appeal Nos. 133, 135, 136 and 148/2008, based on the capital cost of ₹204140.12 lakh as on 31.3.2009, subject to the outcome of the Civil Appeals (filed by Commission against these judgments) pending before the Hon'ble Supreme Court. The annual fixed charges determined by order dated 12.10.2011 in Petition No.126/2009 for the period from 2004-09 was as under:

(₹ in lakh)

	2004-05	2005-06	2006-07	2007-08	2008-09
Interest on Loan	1035.31	866.08	648.38	431.06	207.91
Interest on Working Capital	2725.38	2751.85	2778.56	2811.82	2837.04
Depreciation	7478.95	7496.43	7500.81	7506.66	7512.10
Advance against Depreciation	0.00	0.00	0.00	0.00	0.00
Return on Equity	14208.26	14228.21	14233.20	14239.88	14246.08
O & M Expenses	8736.00	9088.80	9450.00	9828.00	10222.80
Total	**34183.90**	**34431.37**	**34610.96**	**34817.42**	**35025.93**

4. Thereafter, the petitioner, in terms of the directions contained in the order of the Commission dated 29.6.2010, filed amended petition vide affidavit dated 14.9.2010 taking into consideration the revised figures as per order of the Commission dated 15.6.2010 in Petition No.126/2009. Thus, the annual fixed charges claimed by the petitioner for the period 2009-14 are as under:

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	3796	4063	4646	5079	5173
Interest on Loan	37	2	20	19	5
Return on Equity	23888	24084	24566	24890	24952
Interest on Working Capital	5485	5547	5635	5698	5759
O&M Expenses	15288	16162	17086	18068	19102
Cost of secondary fuel oil	1219	1219	1223	1219	1219
Compensation Allowance	126	210	252	294	294
Special Allowance	0	0	0	0	0
Total	**49839**	**51288**	**53428**	**55268**	**56504**

5. Reply to the petition has been filed by BSEB, JSEB and GRIDCO (respondent nos.2, 3 and 4), TNEB (respondent no.8), UPPCL (respondent no.9) and MSEDCL (respondent no.19) and the petitioner has filed its rejoinder to the said replies.

6. This petition was clubbed with Petition No.189/2010 filed by the petitioner [(for revision of Normative Annual Plant Availability Factor in respect of Farakka STPS (1600MW), Kahalgaon STPS, Stage-I (840MW) and Kahalgaon STPS, Stage-II (1500MW) on account of acute shortage of coal and non-availability of cooling water at Farakka STPS)] and the parties were heard on 13.12.2011 and orders reserved. Petition No.189/2010 has been disposed of the Commission by a separate order dated 25.4.2010. By this order, we proceed to determine the tariff of the generating station for 2009-14.

Capital Cost as on 1.4.2009

7. The capital cost as on 31.3.2009, approved vide order dated 12.10.2011 in Petition No.126/2009 is ₹204140.12 lakh. The annual fixed charges claimed by the petitioner for 2009-14 is based on the opening capital cost of ₹204140 lakh as on 1.4.2009. The petitioner *vide* its affidavit dated 13.6.2011 has furnished the value of capital cost and liabilities as on 1.4.2009 as per books of accounts in Form-9A. The details of the liabilities and capital cost have been reconciled with the information available with the records of the Commission as under:

(₹ in lakh)

	As per Form-9A	**As per records of the Commission**	**Difference**
Capital cost as on 1.4.2009, as per books	203736.47	203736.47	0.00
Liabilities included above	188.25	188.25	0.00

8. The total liabilities amounting to ₹188.25 lakh (corresponding to allowed assets/works capitalized during 2004-09) included in the gross block as on 1.4.2009 form part of the approved capital cost of ₹204140.12 lakh.

9. 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."*

10. Accordingly, the capital cost as on 1.4.2009, after removal of un-discharged liabilities amounting to ₹188.25 lakh works out to ₹203951.87 lakh, on cash basis. The discharge of un-discharged liabilities, if any, by the petitioner would be included in the capital base as additional capital expenditure, in the year of discharge.

11. The petitioner *vide* its affidavit dated 14.9.2011 has furnished the details of liabilities discharged and adjusted during 2009-11. Out of the un-discharged liabilities deducted as on 1.4.2009, the petitioner has discharged an amount of ₹0.67 lakh during 2009-10 (pertaining to liabilities corresponding to assets capitalized during the period 2004-09) and reversed on

amount of ₹4.42 lakh during 2010-11 (pertaining to liabilities corresponding to assets capitalized during the period from 2004-09). The liabilities discharged during 2009-10 and 2010-11 have been allowed during the respective years, as part of the additional capital expenditure allowed for the generating station.

Additional capital expenditure for the period 2009-14

12. Regulation 9 (1) of the 2009 Tariff Regulations provides as under:

> *"9. **Additional Capitalisation.** (1) The capital expenditure incurred or projected to be incurred, on the following counts within the original scope of work, after the date of commercial operation and up to the cut-off date may be admitted by the Commission, subject to prudence check:*
>
> *(i) Un-discharged liabilities;*
>
> *(ii) Works deferred for execution;*
>
> *(iii) Procurement of initial capital spares within the original scope of work, subject to the provisions of regulation 8;*
>
> *(iii) Liabilities to meet award of arbitration or for compliance of the order or decree of a court; and*
>
> *(v) Change in law:*
>
> *Provided that the details of works included in the original scope of work along with estimates of expenditure, un-discharged liabilities and the works deferred for execution shall be submitted along with the application for determination of tariff.*
>
> *(2) The capital expenditure 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."

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13. The actual /projected additional capital expenditure claimed by the petitioner is as under:

(₹in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14	Total
Additional capital expenditure	(-) 334.10	5913.80	7761.10	1430.10	341.00	**15111.90**

14. The actual expenses incurred for the year 2009-10 has been claimed by the petitioner and the total claim during the period 2009-14 is ₹15111.90 lakh. However, in the absence of balance sheet for 2009-10 and reconciliation of accounts amongst the stages of the generating station, only the items for additional capitalization have been examined on merits. The reconciliation of additional capital expenditure for 2009-10 with balance sheet shall be carried out at the time of truing up of capital cost.

15. The cut-off date for the generating station had expired. Hence, the petitioner's claim for additional capital expenditure is required to be considered in terms of Regulation 9 (2) of the 2009 Tariff Regulations. Accordingly, we examine the submissions of the petitioner as regards the admissibility of the additional capital expenditure claimed for 2009-14, in the subsequent paragraphs.

Submissions of the petitioner

16. In its petition, the petitioner has submitted that the estimated capital expenditure claims are of the following nature:

(i) The additional capital expenditure (as per Regulation 9 (1) and 9 (2) of the Tariff Regulations, 2009) as per the original scope of work of the generating station which has been put to use;

(ii) The other additional capital expenditure in respect of the existing generating stations which have to be done on on-going basis.

17. The petitioner has also submitted the following in support of its claim in the petition and in its affidavit dated 27.3.2010.

(a) In addition to the capital expenditure covered by Regulation 9 (1) and 9(2) and 19(e) of the 2009 regulations, there will be capital expenditure of different nature which would be necessary for the efficient operation of the generating station during its life time. Additional capital expenditure for this purpose had constantly been allowed by the Commission under the 2001 and 2004 tariff regulations. However, additional capital expenditure on this head has not been included in Regulation 9 of 2009 regulations. Accordingly, the petitioner has claimed additional capital expenditure on 'works considered necessary for the efficient operation of the generating station in addition to those specified under Regulation 9 (1) and (2) and Regulation 19 (e) of the 2009 regulations.

(b) The petitioner has further submitted that Regulation 3 (8) defines the capital cost to mean the capital cost as per Regulation 7. Regulation 7 deals with the capital cost of generating station which would come into operation between 1.4.2009 and 31.3.2014. Clause (b) of Regulation 7 (1) refers to the capitalized spares as specified in Regulation 8 and Clause (c) refers to additional capitalization as determined under Regulation 9. Regulations 7(1), 8 and 9 of the 2009 regulations pertain to the capital cost of new generating station commissioned after 1.4.2009 and do not cover the existing projects commissioned prior to 1.4.2009. The last proviso to Regulation 7 is an independent provision dealing with the existing projects and additional capitalization for the existing projects was comprehensively covered by the said provision. Moreover, the term 'additional capital expenditure' defined in Regulation 3 (3) was the additional capital expenditure incurred or projected to be incurred, after the date of commercial operation of the project and admitted by the Commission after prudence check, subject to Regulation 9. The scope and meaning of additional capitalization was not confined to Regulation 9 but subject to Regulation 9 which would mean that if additional capitalization was of the nature as referred to in Regulation 9, it would be read subject to the provisions of Regulation 9 and if the additional capitalization was not of the nature as referred to in Regulation 9, the provisions of Regulation 9 could not be applied. In respect of the existing projects, the additional capital expenditure projected to be incurred from 1.4.2009 till 31.3.2014 and admitted by the Commission after prudence check would qualify to be capitalized, notwithstanding the fact that this expenditure was not covered under Regulation 9 (1) and (2).

(c) As Regulation 19 (e) provides for a compensation allowance to meet the expenses of new assets of capital nature including in the nature of minor assets, the petitioner has submitted that the normative compensation allowance under Regulation 19 (e) has no relevance to the additional capitalization of a substantive nature incurred by the generating company from time to time. It has further submitted that as the Regulations 9 (1) and (2) and 19(e) do not exclude the additional capital expenditure of substantial nature in respect of the existing generating stations, the additional capital expenditure as projected by the petitioner, to be incurred during the tariff period 2009-14 for the existing generating stations, may be considered and allowed by the Commission.

18. The respondents in their replies have objected to the above submissions of the petitioner and have prayed that the additional capital expenditure incurred after the cut-off date may be considered in accordance with Regulations 9(2) of the 2009 Tariff Regulations.

19. Similar submissions of the petitioner have been considered and disposed of by the Commission by order dated 20.4.2012 in Petition No.239/2009 (NTPC-v-UPPCL & ors) and order dated 7.5.2012 in Petition No. 256/2009 (NTPC-v- APTRANSCO & ors) as under:

"16. We have considered the submissions of the petitioner. The following two issues arise for our consideration:

(a) Whether additional capitalization projected to be incurred after the cut-off date during period 2009-14 is admissible under Regulation 9(2) of the 2009 Tariff Regulations.

(b) Whether additional capital expenditure for successful and efficient operation of the thermal generating station including the gas power stations could be admissible under Regulation 9(2) of the 2009 Tariff Regulations.

"17. As regards the first issue, it is noticed that the last proviso to Regulation 7(2) of the 2009 Tariff Regulations provides that in case of existing projects, capital cost admitted by the Commission prior to 1.4.2009 duly trued up by excluding the un-discharged liability, if any, as on 1.4.2009 and the additional capital expenditure projected to be incurred for the respective year and the tariff period 2009-14, as may be admitted by the Commission, shall form the basis of determination of tariff.Thus, as per the last proviso projected additional capital expenditure to be incurred for the respective years of the tariff period 2009-14 shall be considered by the Commission while determining the tariff in respect of the existing project. The said proviso does not make any distinction between the additional capital expenditure projected to be incurred before the cut-off date and additional capital expenditure projected to be incurred after the cut-off date. It therefore follows that in case of existing projects, additional capital expenditure projected to be incurred after the cut-off date can be considered by the Commission for determination of tariff. Regulation 9 of the 2009 Tariff Regulations provides for the additional capital expenditure to be admissible during the year 2009-14. While Clause (1) of Regulation 9 deals with the expenditure incurred before the cut-off date, Clause (2) of the said regulation deals with the expenditure incurred after the cut-off date. However, Clause (2) of Regulation 9 provides that only expenditure incurred after the cut-off date shall be admissible. It thus emerges that while the additional capital expenditure can be claimed under last proviso to Regulation 7(2) on projection basis, the same is not admissible under Regulation 9(2), since the expenditure has not been incurred. It is a settled principle of law that the provisions of the Act or Regulations should be read harmoniously keeping in view the objective of the legislation. During the period 2004-09, the additional expenditure was being admitted after the same was incurred. However, the Commission decided to allow additional capital expenditure on projection basis during the period 2009-14. In this connection, reference is drawn to paragraphs 10.1.3 and 10.1.4 of the Statement of Reasons to the 2009 Tariff Regulations, wherein the concept of claiming additional capitalization on projection basis has been explained in the following terms:

> *"10.1.3 The Commission has carefully examined the issue again and is of the view that the generating companies/transmission licensees as well as the beneficiaries should appreciate the regulation in its proper perspective. Apart from meeting the intended objective of certainty of tariff and minimal retrospective adjustments, the procedure would have following additional advantages:*
>
> *(a) From beneficiaries' perspective, they would be aware of the intended additional capitalization in advance and be able to voice their concern before the Commission about the reasonableness and necessity of additional capitalization before the actual expenditure is made by the generating companies/transmission licensees. As regards their concern about the expected expenditure being considered in capital base without putting assets to use, the Commission would like to clarify that anticipated expenditure would be considered only after it is found justified and reasonable with the expectation that asset would be put to use. In the absence of expenditure actually made, the same would be taken out from the capital cost at the time of truing up exercise with appropriate refund/adjustment with interest. Further, if the expenditure indeed materializes, the actual retrospective adjustment is expected to be bare minimum as a result of truing up exercise.*

(b) From the prospective of the generating companies/transmission licensees, they would be assured of the expenditure to be admitted once accepted by the Commission in the capital cost before making the expenditure. Moreover, they would be more careful about the expenditure to be made as it would require to be justified before the Commission.

10.1.4 The Commission is of the view that the approach adopted with regard to consideration of the expenditure including additional capital expenditure projected to be incurred for the purpose of determination of capital cost is a win-win situation for all. The Commission has decided to retain the said provisions with regard to capital cost including projected additional capital expenditure in Regulations 7 and 9 of these regulations."

18. It thus emerges from the scheme of the 2009 Tariff Regulations that the additional capital expenditure projected to be incurred after the cut-off date can be admitted by the Commission after prudence check. Keeping in view the scheme of the 2009 Tariff Regulations and in order to remove the inconsistency between last proviso to Regulation 7(2) and Regulation 9(2), we have relaxed in our order dated 13.4.2012 in Petition No. 282 of 2009 the provisions of Regulation 9(2) of the 2009 Tariff Regulations in exercise of our power under Regulation 44 to allow additional capital expenditure projected to be incurred after the cut-off date. The said decision is applicable in the present case.

19. As regards the second issue, it is noticed that as per the scheme of the 2009 Tariff Regulations, additional capital expenditure incurred or projected to be incurred prior to the cut-off date and the additional capital expenditure incurred after the cut-off date is admissible under Regulation 9(1) and 9(2) of the 2009 Tariff Regulations. We have relaxed the provisions of the Regulation 9(2) to allow the expenditure on projected basis to be incurred after the cut-off date. Regulation 9(2) provides for the different provisions for admissibility of the additional capital expenditure. In respect of the hydro generating stations, Regulation 9(iv) provides for expenditure which has become necessary for successful and efficient operation of the hydro generating stations and similar provisions have been made under Regulation 9(v) in respect of the transmission systems. In case of the thermal generating stations, Regulation 19(e) provides for compensation allowance. Regulation 19(e) of 2009 Tariff Regulations is extracted as under:-

"(e) In case of coal-based or lignite-fired thermal generating station a separate compensation allowance unit-wise shall be admissible to meet expenses on new assets of capital nature including in the nature of minor assets, in the following manner from the year following the year of completion of 10, 15, or 20 years of useful life:

Years of operation	***Compensation Allowance (Rs lakh/MW/year)***
0-10	*Nil*
11-15	*0.15*
16-20	*0.35*
21-25	*0.65"*

20. It is evident from the provisions of Regulation 19(e) that the expenditure in case of coal based or lignite fired thermal generating stations is admissible to meet the expenses on new assets of capital nature including in the nature of minor assets. Correspondingly, no provision has been made to admit additional capital expenditure of capital nature for successful operation of the thermal generating station under Regulation 9(2) of the 2009 Tariff Regulations. On the other hand, clear provisions have been made for admitting the expenditure for efficient and successful operation of the hydro generating stations and transmission systems under certain conditions. The provisions of the Regulation 9(2) are clear and unambiguous in that the expenditure for successful and efficient operation of the thermal generating stations have not been provided since a normative compensation allowance has been provided under Regulation 19(e) of 2009 Tariff Regulations to meet the expenses on new assets of capital nature. In our view, last proviso to Regulation 7(2) cannot be considered as independent of Regulation 9 of 2009 Tariff Regulations. The "additional expenditure projected to be incurred for the respective year of the tariff period 2009-14 as may be admitted by the Commission" occurring in last proviso to Regulation 7(2) have to be considered and allowed in terms of provisions of Regulation 9(2) of 2009 Tariff Regulations. The Commission after taking into account the requirements of the gas based generating stations and coal based thermal generating stations has made specific provisions under Regulation 9(2)(vi) and (viii) through second amendment to the 2009 Tariff Regulations as under:

"(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-materialization of full coal linkage in respect of thermal generating station as result of circumstances not within the control of the generating station."

Thus the Commission has consciously provided for the expenditure of specific nature under Regulation 9(2)(vi) and (vii) which are considered necessary for the successful and efficient operation of the coal based thermal generating station and gas based stations. In other words, additional capital expenditure for successful and efficient operation of the generating stations for reasons other than those provided for under Regulation 9(2) of 2009 Tariff Regulations is not permissible."

20. In line with the above decision, the additional capital expenditure claimed by the petitioner for 2009-14 in this petition, has been considered under the provisions of Regulation 9(2) of the 2009 Tariff Regulations, as stated in the subsequent paragraphs.

21. The category-wise break-up of the additional capital expenditure claimed by the petitioner during 2009-14 is as under:

(₹ in lakh)

Sl. No	**Head of work/ Equipment**	**Regulations**	**Actual/Projected Capital Expenditure**				
			2009-10 (actual)	**2010-11**	**2011-12**	**2012-13**	**2013-14**
A	**Ash Handling System**						
i.	Ash dyke raising work	9(2)(iii)	203.80	267.90	523.50	500.00	301.00
ii.	Pipe line pedestal in Ash dyke	9(2)(iii)	0.00	10.00	15.00	0.00	0.00
iii	Ash slurry series P/Ps (3 nos.) 2 sets	9(2)(iii)	0.00	0.00	40.00	40.00	40.00
iv	CISF security post in Ash dyke	9(2)(iii)	0.00	13.00	0.00	0.00	0.00
v	Dredging in Ash dyke overflow lagoon/Ganga make up P/H	9(2)(iii)	0.00	200.00	100.00	0.00	0.00
vi	Tower light in Ash dyke & Ash brick plant	9(2)(iii)	0.00	0.00	120.00	0.00	0.00
	Total- Ash Handling System		**203.80**	**490.90**	**798.50**	**540.00**	**341.00**
B	**Environmental system**						
i.	Dry Ash extraction system for Units 3 & 4 including Silo	9(2)(ii)	0.00	0.00	974.00	0.00	0.00
ii.	AAQM	9(2)(ii)	95.90	0.00	0.00	0.00	0.00
	Total- Environmental System		**95.90**	**0.00**	**974.00**	**0.00**	**0.00**
C	**Other Capital Works**						
1	Wagon Tippler (M/s Elecon)	9(2)(ii)	0.00	3509.88	3509.88	0.00	0.00
1.1	Locomotives (3 Nos)	9(2)(ii)	0.00	736.00	1338.71	0.00	0.00
1.2	Augmentation of Railway siding	9(2)(ii)	0.00	800.00	1000.00	890.10	0.00

	work						
1.3	S&T and in-motion Weigh bridge	9(2)(ii)	0.00	10.00	15.00	0.00	0.00
2	Condenser on line tube cleaning systems		0.00	0.00	125.00	0.00	0.00
3	Procurement of wagon (10 nos) against replacement		(-) 171.80	367.00	0.00	0.00	0.00
	Total- Other Capital work		**(-) 171.80**	**5422.90**	**5988.60**	**890.10**	**0.00**
D	**Others**						
1	De-capitalization of construction equipment's		(-) 445.90	0.00	0.00	0.00	0.00
2	De-capitalization of vehicles		(-) 16.10	0.00	0.00	0.00	0.00
	Total- Others		**(-) 462.00**	**0.00**	**0.00**	**0.00**	**0.00**
	Grand Total (A+B+C+D)		**(-) 334.10**	**5913.80**	**7761.10**	**1430.10**	**341.00**

22. After examining the asset-wise details and justification for additional capitalization claimed by the petitioner under various categories, the submissions of the respondents and by applying prudence check, the admissibility of the additional capital expenditure is discussed in the subsequent paragraphs:

Deferred works relating to Ash pond or Ash handling system in the original scope of works - Regulation 9 (2)(iii)

23. The petitioner has claimed actual expenditure of ₹203.80 lakh during 2009-10, and projected expenditure of ₹490.90 lakh during 2010-11, ₹798.50 lakh during 2011-12, ₹540.00 lakh during 2012-13 and ₹341 lakh during 2013-14 for Ash dyke raising works and Ash handling system. The petitioner has submitted that the present ash slurry system has two pumps operating in series and additional pumping capacity is required due to increased length of ash piping for lagoon-III for raising of ash dykes. Additional pedestals are also required on account of raising of ash dykes and installation of new series pumps. Moreover, the installation of security post is required to protect ash dyke as well as piping against unlawful activity. Dredging in ash dyke is required to remove the deposited silt/ash from overflow lagoon accumulated over the years to enhance the capacity and to facilitate return water to ash water recirculation pump house. The tower light in ash dyke is required to improve security in ash dyke area as well as to facilitate the maintenance work at night times. These works relating to raising of Ash dykes and Ash disposal system are a normal practice and the said works forms part of the original scope of work and are normally taken up in stages as and when required. Since these are normal activities done in phases depending upon the requirement with the passage of time, during the

useful life of the plant and is covered under original scope of work, the expenditure claimed is allowed to be capitalized under this head.

Environmental System - (Regulation 9(2)(ii)

24. The petitioner has claimed expenditure of ₹974.00 lakh during 2011-12 for commissioning of Dry Ash Extraction System and transportation plant to be used for transporting fly ash from ESP hoppers of Units-III and IV to the silos. Ash will be extracted from ESP hoppers and collected in buffer hoppers and would then be transported from buffer hoppers to the silo with the help of transport air blowers. There will be 2 nos of silos each having a storage capacity of 350 MT and 2 nos. of transport blowers each for the Units-III and IV. The petitioner vide its affidavit dated 16.11.2010 has submitted that in order to achieve the target for 100% fly ash utilization by all coal based thermal power plants in terms of the Gazette Notification of the Ministry of Environment and Forests, Government of India dated 3.11.2009, installation of dry ash system for Units –III and IV including silo is a basic requirement, since ash is to be collected in dry form. Since the expenditure is required for compliance with the guidelines of the Ministry of Environment and Forests, Government of India notification dated 3.11.2009, the same is allowed to be capitalized.

25. The petitioner has claimed expenditure of ₹95.90 lakh during 2009-10 for installation Ambient Air Quality Management System (AAQMS). The petitioner vide its affidavit dated 16.11.2010 has submitted that the procurement of the said item was approved by CEA on 6.6.2003 in order to continuously monitor the quality of ambient air in and around the plant to keep various environmental related parameters within limits specified by various gazette notifications of the Government of India from time to time. It has also submitted that all the parameters are kept within the specified limits through continuous monitoring and controlled firing in the boiler with other technical measures, as per notification dated 18.11.2009 of Central Pollution Control Board specifying the National Ambient Air Quality Standards. The respondents, BSEB, JSEB and GRIDCO have objected to the capitalization of the said asset on the ground that the petitioner has not indicated the recent change in law. Since the expenditure

claimed by the petitioner is a statutory requirement under the notification dated 18.11.2009, as stated above, the same is allowed to be capitalized under Regulation 9(2)(ii) of the 2009 Tariff Regulations.

Other capital works-Regulation 9(2)(ii)

26. The expenditure claimed in respect of other capital works under this head is detailed as under:

(₹in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Wagon Tippler	0.00	3509.88	3509.88	0.00	0.00
Locomotives (3 Nos)	0.00	736.00	1338.71	0.00	0.00
Track work	0.00	800.00	1000.00	890.10	0.00
S&T and in-motion Weigh bridge	0.00	10.00	15.00	0.00	0.00
Condenser on-line tube cleaning systems	0.00	0.00	125.00	0.00	0.00
Procurement of wagon (10 nos)	(-) 171.80	367.00	0.00	0.00	0.00

Wagon Tippler, locomotives, weigh bridge etc.

27. The petitioner has submitted that this generating station and its coal linkage was envisaged with a Plant Load Factor (PLF) of 62.8%. However, with the change in the Target Availability (TA) and PLF from 62.8% to 80% by the Commission for the tariff periods 2001-04 and 2004-09 and with the deterioration of GCV of coal from 3050 kcal/kg to 2800 kcal/kg received from the linked mines, the increased coal consumption resulted in the need for procuring coal from other sources and transporting them to the generating station using the railway system to meet the target availability specified by the Commission. Thus the petitioner was required to arrange extra coal from other non-linked mines matching with 80% TA using the Railway system and in view of this, installation of Wagon Tippler became essential and was approved by CEA during 2005.The wagon tippler package was awarded to M/s Elecon Engg Ltd and the work was to be completed by July, 2008. However, after completion of works relating to the site identified for installation of wagon tippler, like the removal of coal reject boulder, diversion of some rail track of existing MGR line, deep excavation, the work for installation of Wagon Tippler started in October, 2008.

28. Since the coal supply from linked mines was inadequate to meet the daily coal requirement, the generating station began to receive coal through rakes of Indian railways which are in BOX-N type of wagons. In the absence of Wagon tippler, the rakes were unloaded manually in the track hopper. The average unloading time, manually, of railway rake in track hoppers is 7 hours (approx) and apart from the above, there is average shunting time of one hour for placement of loaded rakes and withdrawal of empty rakes. In view of this, the petitioner has submitted that the Installation of Wagon tippler & associated works are necessary to minimize the unloading time of railway rakes in the coal unloading system as the consumption of coal through railway system has gone up significantly to meet the target availability.

29. As regards expenditure towards locomotives (3 nos) considered for Wagon tippler, the petitioner has submitted that all of these shall be utilized for shunting, transportation of coal and unloading operation with wagon tippler. It has also submitted that while the two locomotives shall be utilized for each stream operating with wagon tippler, the third one shall be utilized for rake movement from the railway siding to wagon tippler. The petitioner has further submitted that there is only one in-motion weighbridge installed in the generating station at the entry of track hopper-I and this is exclusively used for wagon tippler only.

30. The respondents BSEB, JSEB and GRIDCO in their replies have objected to the additional capital expenditure claimed in respect of Wagon Tippler, locomotives etc and has submitted that change in norms related to NAPAF do not constitute change in law. The respondents, TNEB has submitted that capitalization of the items Wagon Tippler, locomotives etc based on works approved by CEA cannot constitute change in law. The respondents, UPPCL and MSEDCL have submitted that the additional capital expenditure in respect of these items indicated above, is not on account of change in law and hence may be rejected.

31. The submissions of the parties have been examined. It is noticed that substantial quantity of coal was being received through the railway system supplied in Box-N wagons. From the submissions made by the petitioner in Petition No.189/2010 *(as referred to in the tabular*

statement in Table-I under paragraph 7(b) of the order dated 25.4.2012), it is evident that this generating station was in operation with a Target Availability of 91-92% (approx) during the period 2005-06 to 2007-08 even without Wagon Tippler. However, considering the fact that installation of Wagon tippler would bring about reduction in unloading time of coal rakes and shall give flexibility in overall movement of rakes which would reduce the apprehension of diversion of wagons by the railways**,** the claim of the petitioner is justified. Also, if the petitioner is unable to arrange coal for generation up to the specified NAPAF of 85%, it would not be able to recover the full fixed charges which include the cost of Wagon tippler. This, according to us, would adequately take care of the concerns raised by the respondent beneficiaries. Moreover, the utilities are resorting to blending of imported coal taking into account the overall shortage of coal in the country. Considering the above factors in totality, we allow the expenditure claimed by the petitioner for Wagon Tippler and its associated works, under Regulation 9 (2) (vii) of the 2009 Tariff Regulations, as under:

(₹ in lakh)

	2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**
Wagon Tippler	0.00	3509.88	3509.88	0.00	0.00
Locomotives (3 Nos)	0.00	736.00	1338.71	0.00	0.00
Augmentation of railway siding work	0.00	800.00	1000.00	890.10	0.00
S&T and in-motion Weigh bridge	0.00	10.00	15.00	0.00	0.00
Total	**0.00**	**5055.88**	**5863.59**	**890.10**	**0.00**

Condenser on-line tube cleaning systems

32. The petitioner has claimed expenditure of ₹125.00 lakh during 2011-12 for installation of condenser on line tube cleaning system which is envisaged for cleaning of condenser tubes even when the units are in operation. The provision of Regulation 9(2) under which capitalization is sought for has not been mentioned. However, there is no provision under Regulation 9(2) of the 2009 Tariff Regulations for capitalization of this asset after the cut-off date. Since, compensation allowance is admissible to the generating station under Regulation 19(e) of the 2009 Tariff Regulations, the petitioner shall be able to meet the expenditure on this asset. Hence, capitalization of the expenditure claimed by the petitioner is not allowed.

Procurement of new wagons

33. The petitioner has claimed expenditure for ₹367.00 lakh during 2010-11 towards the procurement of 10 nos. of new wagons against replacement of damaged / condemned wagons. The provision of Regulation 9(2) under which capitalization is sought for has not been mentioned. However, there is no provision under Regulation 9 (2) of the 2009 Tariff Regulations for capitalization of this asset after the cut-off date. Since, compensation allowance is admissible to the generating station under Regulation 19(e) of the 2009 Tariff Regulations, the petitioner shall be able to meet the expenditure on this asset. Hence, capitalization of the expenditure claimed by the petitioner is not allowed. Since, additional capital expenditure for procurement of new wagons has not been considered, the corresponding de-capitalization has also been ignored.

Others (construction equipment, vehicles)

34. The petitioner has de-capitalized an amount of (-) ₹445.90 lakh towards construction equipment and (-) ₹16.10 lakh for vehicles from books of accounts during 2009-10 on the ground that these assets have become unserviceable. The petitioner has submitted these amounts indicate the gross value and the depreciation recovered was ₹401.30 lakh on construction equipment's and ₹14.47 lakh on vehicles. As these assets have become un-serviceable and render no useful service to the generating station, the de-capitalization of these amounts on the said assets has been allowed.

35. Based on the above discussions, the additional capital expenditure allowed for the period 2009-14 is as under:

(₹ in lakh)

Sl. No.	Head of work/ Equipment	Regulations	Actual/Projected Capitalization allowed				
			2009-10 (actual)	2010-11	2011-12	2012-13	2013-14
A	**Ash Handling System**						
i.	Ash dyke raising work	9(2)(iii)	203.80	267.90	523.50	500.00	301.00
ii.	Pipe line pedestal in Ash dyke	9(2)(iii)	0.00	10.00	15.00	0.00	0.00
iii	Ash Slurry series P/Ps (3 nos.) 2 sets	9(2)(iii)	0.00	0.00	40.00	40.00	40.00

iv	CISF security post in Ash dyke	9(2)(iii)	0.00	13.00	0.00	0.00	0.00
v	Dredging in Ash dyke overflow lagoon/Ganga Make up P/H	9(2)(iii)	0.00	200.00	100.00	0.00	0.00
vi	Tower light in Ash dyke & Ash brick plant	9(2)(iii)	0.00	0.00	120.00	0.00	0.00
	Total- Ash Handling System		**203.80**	**490.90**	**798.50**	**540.00**	**341.00**
B	**Environmental system**						
i.	Dry Ash system for Unit # 3 & 4 including Silo	9(2)(ii)	0.00	0.00	974.00	0.00	0.00
ii.	AAQM	9(2)(ii)	95.90	0.00	0.00	0.00	0.00
	Total- Environmental System		**95.90**	**0.00**	**974.00**	**0.00**	**0.00**
C	**Other Capital Works**						
1	Wagon Tippler (M/s Elecon Engg Ltd)	9(2)(ii)	0.00	3509.88	3509.88	0.00	0.00
1.1	Locomotives (3 Nos)	9(2)(ii)	0.00	736.00	1338.71	0.00	0.00
1.2	Track work	9(2)(ii)	0.00	800.00	1000.00	890.10	0.00
1.3	S&T and in-motion Weigh bridge	9(2)(ii)	0.00	10.00	15.00	0.00	0.00
2	Condenser on line tube cleaning systems		0.00	0.00	0.00	0.00	0.00
3	Procurement of wagon (10 nos) against replacement		0.00	0.00	0.00	0.00	0.00
	Total- Other Capital works		**0.00**	**5055.88**	**5863.59**	**890.10**	**0.00**
D	**Others**						
1	De-capitalization of construction equipment		(-) 445.90	0.00	0.00	0.00	0.00
2	De-capitalization of vehicles		(-)16.10	0.00	0.00	0.00	0.00
	Total- Others		**(-) 462.00**	**0.00**	**0.00**	**0.00**	**0.00**
	Grand Total (A+B+C+D)		**(-) 162.30**	**5546.78**	**7636.09**	**1430.10**	**341.00**

36. Taking into account the discharges of liabilities during 2009-10, the additional capital expenditure approved for the purpose of tariff, is as under:

(₹ in lakh)

	2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**	**Total**
Additional capital expenditure	(-) 162.30	5546.78	7636.09	1430.10	341.00	**14791.67**
Discharges of liabilities	0.67	0.00	0.00	0.00	0.00	**0.67**
Additional capital expenditure allowed	**(-) 161.63**	**5546.78**	**7636.09**	**1430.10**	**341.00**	**14792.34**

37. Based on the above, the capital cost considered for the purpose of tariff for 2009-14 is as under:

(₹ in lakh)

	2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**
Opening Capital cost	203951.87	203790.24	209337.02	216973.11	218403.21
Projected Additional capital expenditure	(-)161.63	5546.78	7636.09	1430.10	341.00
Closing Capital cost	**203790.24**	**209337.02**	**216973.11**	**218403.21**	**218744.21**
Average Capital cost	**203871.06**	**206563.63**	**213155.07**	**217688.16**	**218573.71**

Debt- Equity Ratio

38. Regulation 12 of the 2009 Tariff Regulations provides as under*:*

> *"(1) For a project declared under commercial operation on or after 1.4.2009, if the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan.*
>
> *Provided that where equity actually deployed is less than 30% of the capital cost, the actual equity shall be considered for determination of tariff.*
>
> *Provided further that the equity invested in foreign currency shall be designated in Indian rupees on the date of each investment*.
>
> *Explanation.- The premium, if any, raised by the generating company or the transmission licensee, as the case may be, while issuing share capital and investment of internal resources created out of its free reserve, for the funding of the project, shall be reckoned as paid up capital for the purpose of computing return on equity, provided such premium amount and internal resources are actually utilized 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 modernization expenditure for life extension shall be serviced in the manner specified in clause (1) of this regulation."*

39. The gross loan and equity amounting to ₹102357.20 lakh and ₹101782.92 lakh respectively, as on 31.3.2009 approved *vide* order dated 12.10.2011 in Petition No.126/2009 has been considered as gross loan and equity as on 1.4.2009. However, the un-discharged liabilities amounting to ₹188.25 lakh deducted from the capital cost as on 1.4.2009 has been adjusted to debt and equity ratio of 70:30 for liabilities pertaining to the period 2004-09. As such, the gross normative loan and equity as on 1.4.2009 is revised to ₹102225.43 lakh and ₹101726.44 lakh, respectively. Further, the admitted additional expenditure has been allocated in the debt-equity ratio of 70:30, and the same is subject to truing-up in terms of the provisions contained in Regulation 6 of the 2009 Tariff Regulations.

Return on Equity

40. Regulation 15 of the 2009 Tariff Regulations, as amended on 21.6.2011 provides that:

> *"(1) Return on equity shall be computed in rupee terms, on the equity base determined in accordance with regulation 12.*
>
> *(2) Return on equity shall be computed on pre-tax basis at the base rate of 15.5% to be grossed up as per clause (3) of this regulation.*

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

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

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

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

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

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

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

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

41. Accordingly, Return on Equity has been worked out @ 23.481% per annum on the normative equity after accounting for the projected additional capital expenditure as under:

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Notional Equity- Opening	101726.44	101677.96	103341.99	105632.82	106061.85
Addition of Equity due to Additional Capitalization	(-) 48.49	1664.03	2290.83	429.03	102.30
Normative Equity-Closing	101677.96	103341.99	105632.82	106061.85	106164.15
Average Normative Equity	101702.20	102509.97	104487.40	105847.33	106113.00
Return on Equity (Base Rate)	15.500%	15.500%	15.500%	15.500%	15.500%
Tax Rate for the year 2008-09	33.990%	33.990%	33.990%	33.990%	33.990%
Rate of Return on Equity (Pre Tax)	23.481%	23.481%	23.481%	23.481%	23.481%
Return on Equity (Pre Tax)-annualised	**23880.69**	**24070.37**	**24534.69**	**24854.01**	**24916.39**

Interest on loan

42. 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."

43. Interest on loan has been worked out as mentioned below:

(a) The gross normative loan of ₹102225.43 lakh as on1.4.2009 has been considered.

(b) Cumulative repayment of ₹101095.95 lakh as on 31.3.2009, as per order dated 12.10.2011 in Petition No.126/2009, has been considered as cumulative repayment as on 1.4.2009. However, after taking in to account the proportionate adjustment (duly taking into account the liability and debt position on 1.4.2004 along with additions during the period 2004-09) 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 ₹100982.93 lakh.

(c) Accordingly the net normative opening loan as on 1.4.2009 works out to ₹1242.50 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 liabilities discharged as well as adjustment of liabilities considered during the respective years on account of cumulative repayment adjusted as on 1.4.2009.

44. The calculations for weighted average rate of interest on loan is enclosed as Annexure –I to this order. Interest on loan is calculated as under:

(₹in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Gross opening loan	102225.43	102112.29	105995.03	111340.29	112341.36
Cumulative repayment of loan up to previous year	100982.93	102112.29	105995.03	110603.11	112341.36
Net Loan Opening	1242.50	0.00	0.00	737.19	0.00
Addition due to Additional capitalisation	(-)113.14	3882.75	5345.26	1001.07	238.70
Repayment of loan during the year	1452.34	3880.09	4608.07	1738.26	238.70
Add: Repayment adjustment on account of discharges corresponding to un-discharged liabilities deducted as on 1.4.2009	0.40	2.65	0.00	0.00	0.00
Less: Repayment adjustment on account of de-capitalization	323.38	0.00	0.00	0.00	0.00
Net Repayment	1129.36	3882.75	4608.07	1738.26	238.70
Net Loan Closing	0.00	0.00	737.19	0.00	0.00
Average Loan	621.25	0.00	368.59	368.59	0.00
Weighted Average Rate of Interest on Loan	6.6927%	6.2103%	5.1314%	4.2900%	4.2900%
Interest on Loan	**41.58**	**0.00**	**18.91**	**15.81**	**0.00**

Depreciation

45. 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 longterm power purchase agreement at regulated tariff.

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

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

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

(5) In case of the existing projects, the balance depreciable value as on 1.4.2009 shall be worked out by deducting the cumulative depreciation 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."

46. The cumulative depreciation as on 31.3.2009 as per order dated 12.10.2011 in Petition No.126/2009 is₹133263.71 lakh. Further, proportionate adjustment has been made to the cumulative depreciation on account of un-discharged liabilities deducted as on 1.4.2009. Accordingly, the revised cumulative depreciation as on 1.4.2009 works out to ₹133140.82 lakh. Further, the value of freehold land amounting to ₹2944.10 lakh as considered in order dated 12.10.2011 has been retained for the purpose of calculating depreciable value. Accordingly, the balance depreciable value (before providing depreciation) for the year 2009-10 works out to ₹47693.44 lakh. As on 1.4.2009, the generating station is more than 12 years old from the date of commercial operation i.e 24.9.1995. Hence, depreciation has been calculated by applying spreading over of the balance depreciable value. The balance useful life as on 1.4.2009, as per order dated 12.10.2011 in Petition No.126/2009 works out to 12.55 years. Further, proportionate adjustment has been made to the cumulative depreciation corresponding to discharge of liabilities considered during the respective years on account of cumulative depreciation adjusted as on 1.4.2009.

47. The necessary calculations in support of depreciation are as shown below:

(₹ in lakh)

	2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**
Opening capital cost	203951.87	203790.24	209337.02	216973.11	218403.21
Closing capital cost	203790.24	209337.02	216973.11	218403.21	218744.21
Average capital cost	203871.06	206563.63	213155.07	217688.16	218573.71
Depreciable value @ 90%	180834.26	183257.58	189189.87	193269.66	194066.65
Remaining useful life at the beginning of the year	12.55	11.55	10.55	9.55	8.55
Balance depreciable value	47693.44	46731.82	48615.19	48086.90	43848.61
Depreciation (annualized)	**3800.27**	**4046.05**	**4608.07**	**5035.28**	**5128.49**

Cumulative depreciation at the end	136941.10	140571.80	145182.76	150218.04	155346.53
Less: Cumulative depreciation reduction on account of discharges out of the un-discharged liabilities deducted as on 1.4.2009	(-) 0.44	(-) 2.89	0.00	0.00	0.00
Less: Cumulative depreciation adjustment on account of de-capitalization	415.78	0.00	0.00	0.00	0.00
Cumulative depreciation (at the end of the period)	136525.76	140574.69	145182.76	150218.04	155346.53

Operation & Maintenance Expenses

48. Clause (a) of Regulation 19 of Regulation of the 2009 Tariff Regulations provide the following O&M expense norms for Coal based and lignite fired generating stations:

(₹in lakh/MW)

	2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**
O&M expenses for 200 MW units	18.20	19.24	20.34	21.51	22.74

49. The petitioner has claimed the following O&M expenses for the generating station as under:

(₹in lakh)

	2000-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**
O&M expenses	15288	16162	17086	18068	19102

50. Accordingly, the O&M expenses allowed to the petitioner based on above norms are as follows:

(₹in lakh)

	2000-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**
O&M expenses	15288.00	16161.60	17085.60	18068.40	19101.60

Normative Annual Plant Availability Factor (NAPAF)

51. The NAPAF of the generating station is considered as 85% for the period 1.4.2009 to 31.3.2014.

Interest on Working Capital

52. 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.

53. 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 1st 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 1st 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.

54. Working capital has been calculated considering the following elements as under:

Fuel Component in working capital

55. The cost for fuel component in working capital, based on price and GCV of coal & secondary fuel oil (HFO) procured and burnt for the preceding three months of January, 2009 February, 2009 and March 2009 are as under:

(₹ in lakh)

	2009-10	**2010-11**	**2011-12** ***(leap year)***	**2012-13**	**2013-14**
Cost of coal for 1.5 months	13669	13669	13707	13669	13669
Cost of secondary fuel oil 2 months	203	203	204	203	203

56. Based on the above, the fuel component in the working capital considered for the purpose of tariff is as under:

(₹ in lakh)

	2009-10	2010-11	2011-12 (leap year)	2012-13	2013-14
Cost of coal for 1.5 months.	13669.36	13669.36	13706.81	13669.36	13669.36
Cost of secondary fuel oil 2 months	203.24	203.24	203.80	203.24	203.24

Maintenance Spares in working capital

57. The petitioner has claimed maintenance spare in the working capital, as under:

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Cost of maintenance spares	3083	3274	3468	3672	3879

58. The 2009 Tariff Regulations provide for maintenance spares @ 20% of the operation and maintenance expenses as specified in Regulation 19. Accordingly, the maintenance spares allowed for the purpose of tariff is as under:

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Cost of maintenance spares	3057.60	3232.32	3417.12	3613.68	3820.32

Receivables

59**.** Receivables have been worked out on the basis of two months of fixed and energy charges (based on primary fuel only) on normative annual plant availability factor as under:

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Variable Charges -2 months	18225.81	18225.81	18275.75	18225.81	18225.81
Fixed Charges - 2 months	8306.03	8541.12	8891.18	9195.43	9401.10
Total	**26531.84**	**26766.94**	**27166.93**	**27421.24**	**27626.92**

O&M Expenses

60. O & M expenses for 1 month claimed by the petitioner for the purpose of working capital is as under:

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
O & M for 1 month	1285	1364	1445	1530	1616

61. The petitioner has claimed O & M expenses for working capital by including one month expenditure of compensatory allowance. Regulation 19 (e) provides that "a separate compensation allowance, unit-wise, shall be admissible to meet the expenses on new assets of capital nature including in the nature of minor assets. Hence, the claim of petitioner is not

permissible. However, based on the O&M expense norms, the O&M expenses (1 month) considered for working capital is as under:

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
O & M for 1 month	1274.00	1346.80	1423.80	1505.70	1591.80

62. 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 as under:

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Cost of coal – 1.5 months	13669.36	13669.36	13706.81	13669.36	13669.36
Cost of secondary fuel oil – 2 month	203.24	203.24	203.80	203.24	203.24
O&M expenses – 1 month	1274.00	1346.80	1423.80	1505.70	1591.80
Maintenance Spares	3057.60	3232.32	3417.12	3613.68	3820.32
Receivables – 2 months	26531.84	26766.94	27166.93	27421.24	27626.92
Total working capital	**44736.04**	**45218.66**	**45918.46**	**46413.22**	**46911.64**
Rate of interest	12.2500%	12.2500%	12.2500%	12.2500%	12.2500%
Interest on working capital	**5480.17**	**5539.29**	**5625.01**	**5685.62**	**5746.68**

Compensation Allowance

63. Regulation 19 (e) of the 2009 Tariff Regulations provides for payment of Compensation allowance as under:

> *"19 (e) In case of coal-based or lignite-fired thermal generating station a separate compensation allowance unit-wise shall be admissible to meet expenses on new assets of capital nature including in the nature of minor assets, in the following manner from the year following the year of completion of 10, 15, or 20 years of useful life:*

Years of operation	Compensation Allowance (₹ in lakh/MW/year)
0-10	Nil
11-15	0.15
16-20	0.35
21-25	0.65

64. The petitioner has claimed Compensation Allowance (unit-wise) to meet the expenses on new assets of capital nature including in the nature of minor assets as follows:

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Compensation allowance	126	210	252	294	294

65. The compensation allowed in terms of the above regulations is as under:

(₹ in lakh)

Sl. no.		Unit 1	Unit 2	Unit 3	Unit 4	
1	Capacity (MW)	210	210	210	210	
2	Date of commercial operation	1.1.1995	1.4.1995	1.2.1996	1.8.1996	
	Useful life as on 1.4.2009	**14.25**	14.00	13.17	12.67	
3	**Actual useful life**					
	a) 10 years	1.1.2005	1.4.1995	1.2.1996	1.8.2006	
	b) 15 years	1.1.2010	1.4.2010	1.2.2011	1.8.2011	
	c) 20 years	1.1.2015	1.4.2015	1.2.2016	1.8.2016	
	d) 25 years	1.1.2020	1.4.2020	1.2.2021	1.8.2021	
						Total
	2009-10	31.50	31.50	31.50	31.50	126.00
	2010-11	73.50	73.50	31.50	31.50	210.00
	2011-12	73.50	73.50	73.50	31.50	252.00
	2012-13	73.50	73.50	73.50	73.50	294.00
	2013-14	73.50	73.50	73.50	73.50	294.00
	Total	**325.50**	**325.50**	**283.50**	**241.50**	**1176.00**

Annual Fixed charges for 2009-14

66. The annual fixed charges for the generating station for 2009-14 is summarized as under:

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	3800.27	4046.05	4608.07	5035.28	5128.49
Interest on Loan	41.58	0.00	18.91	15.81	0.00
Return on Equity	23880.69	24070.37	24534.69	24854.01	24916.39
Interest on Working Capital	5480.17	5539.29	5625.01	5685.62	5746.68
O&M Expenses	15288.00	16161.60	17085.60	18068.40	19101.60
Cost of Secondary fuel oil	1219.45	1219.45	1222.79	1219.45	1219.45
Compensation Allowance	126.00	210.00	252.00	294.00	294.00
Total	**49836.16**	**51246.74**	**53347.07**	**55172.57**	**56406.61**

Note: *(i) All figures are on annualized basis*
(ii) All the figures under each head have been rounded. (ii) The figure in total column in each year is also rounded. Because of rounding of each figure the total may not be arithmetic sum of individual items in columns.

67. The recovery of the annual fixed charges is subject to truing-up in terms of Regulation 6 of the 2009 Tariff Regulations.

Energy Charge Rate (ECR)

68. Sub-clause (b) of Clause (6) of Regulation 21 of the 2009 Tariff Regulations provides as under:

> *"Energy charge rate (ECR) in Rupees per kWh on ex-power plant basis shall be determined to three decimal places in accordance with the following formulae:*
>
> *ECR = GHR x LPPF x 100 / {CVPF X (100-AUX)}*
>
> ***Where,***
> *AUX = Normative auxiliary energy consumption in percentage.*
>
> *CVPF = Gross calorific value of primary fuel as fired, in kCal per kg, per litre or per standard cubic metre, as applicable.*

ECR = Energy charge rate, in Rupees per kWh sent out.

GHR = Gross station heat rate, in kCal per kWh.

LPPF = Weighted average landed price of primary fuel, in Rupees per kg, per litre or per standard cubic metre, as applicable, during the month.

69. The petitioner has claimed an Energy Charge Rate (ECR) of 192.130 Paisa/kWh considering the normative transit and handling losses of 0.2% for coal supplied through Merry Go Round (MGR) system and 0.8% for coal supplies through Railway system. The ECR of 192.130 paisa/kWh is based on the weighted average price, GCV of fuel procured and burnt for three months of January, 2009, February 2009 and March, 2009 and operational norms. The ECR of 192.130 paisa/kWh, claimed by the petitioner is found to be in order and allowed as under:

	Unit	2009-10, 2010-11, 2012-13 & 2013-14	2011-12 (for leap year)
Capacity	MW	840 MW (4 X 210)	
Gross Station Heat Rate	Kcal/kWh	2500	2500
Auxiliary Energy Consumption	%	9	9
Weighted average price of oil	₹/Kcal	19496.68	19496.68
Weighted average price of coal	₹/MT	2005.57	2005.57
Rate of energy charge (Ex-bus)	Paisa/kWh	**192.130**	**192.130**

70. The petitioner shall be entitled to compute and recover the annual fixed charges and energy charges in accordance with the formulae given under Regulation 21(6) of the 2009 Tariff Regulations.

Application fee and the publication expenses

71. The petitioner has sought approval for the reimbursement of fee of ₹16,80,000/- each for the years 2009-10, 2010-11 and 2011-12 towards filing the petition and towards expenses incurred for publication of notices in connection with the petition. The petitioner by its affidavit dated 29.4.2010 has submitted that a total expenditure of ₹986725 has been incurred by it for publication of notice in the newspapers.

72. In terms of Regulation 42 of the 2009 Tariff Regulations and based on the decision of the Commission in order dated 11.1.2010 in Petition No.109/2009 the filing fees in respect of main

petitions for determination of tariff and the expenses on publication of notices are to be reimbursed. Accordingly, the expenses as above incurred by the petitioner on application filing fees for the years 2009-10, 2010-11 and 2011-12 and the expenses incurred towards publication of notices, shall be directly recovered from the beneficiaries, on *pro rata* basis on production of documentary proof. The filing fees in respect of the balance years of the tariff period would be recoverable as and when paid by the petitioner in terms of the Central Electricity Regulatory Commission (Payment of Fees) Regulations, 2012.

73. In addition to the above, the petitioner is entitled to recover other taxes etc levied by statutory authorities in accordance with the 2009 Tariff Regulations, as applicable.

74. The petitioner is already billing the respondent on provisional basis in accordance with the Commission's order dated 6.7.2011. The provisional billing of tariff shall be adjusted in accordance with the proviso to Regulation 5 (3) of the 2009 Tariff Regulations.

75. This order disposes of Petition No. 245/2009.

Sd/-	***Sd/-***	***Sd/-***	***Sd/-***
[M. Deena Dayalan]	[V.S. Verma]	[S. Jayaraman]	[Dr. Pramod Deo]
Member	Member	Member	Chairperson

Annexure-I

Calculation of Weighted Average Rate of Interest on Loan

(₹ in lakh)

Sl. no.	Name of loan	Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
1	**UBI(T1,D1)**	Net opening loan	71.43	35.71	-	-	-
		Add: Addition during the period					
		Less: Repayment during the period	35.71	35.71	-	-	-
		Net Closing Loan	35.71	-	-	-	-
		Average Loan	53.57	17.86	-	-	-
		Rate of Interest	7.3560%	7.3560%	7.3560%	7.3560%	7.3560%
		Interest	3.94	1.31	-	-	-
2	**SBI- I(T1,D9)**	Net opening loan	42.86	28.57	14.29	-	-
		Add: Addition during the period					
		Less: Repayment during the period	14.29	14.29	14.29	-	-
		Net Closing Loan	28.57	14.29	-	-	-
		Average Loan	35.71	21.43	7.14	-	-
		Rate of Interest	11.6500%	11.6500%	11.6500%	11.6500%	11.6500%
		Interest	4.16	2.50	0.83	-	-
3	**UCO Bank(T1,D5)**	Net opening loan	28.57	14.29			
		Add: Addition during the period					
		Less: Repayment during the period	14.29	14.29	-	-	-
		Net Closing Loan	14.29	-	-	-	-
		Average Loan	21.43	7.14	-	-	-
		Rate of Interest	7.4000%	7.4000%	7.4000%	7.4000%	7.4000%
		Interest	1.59	0.53	-	-	-
4	**IBRD**	Net opening loan	103.94	85.63	65.93	44.74	21.95
	($2.3457 @ Rs.44.31/$)	Add: Addition during the period					
		Less: Repayment during the period	18.31	19.70	21.19	22.79	21.95
		Net Closing Loan	85.63	65.93	44.74	21.95	0.00
		Average Loan	94.79	75.78	55.34	33.35	10.98
		Rate of Interest	4.2900%	4.2900%	4.2900%	4.2900%	4.2900%
		Interest	4.07	3.25	2.37	1.43	0.47
	Gross Total	Net opening loan	246.80	164.20	80.22	44.74	21.95
		Add: Addition during the period	-	-	-	-	-
		Less: Repayment during the period	82.60	83.99	35.48	22.79	21.95
		Net Closing Loan	164.20	80.22	44.74	21.95	0.00
		Average Loan	205.50	122.21	62.48	33.35	10.98
		Rate of Interest	**6.6927%**	**6.2103%**	**5.1314%**	**4.2900%**	**4.2900%**
		Interest	13.75	7.59	3.21	1.43	0.47