CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

Petition No. 25/GT/2013

Coram:
Shri V.S.Verma, Chairperson
Shri M.Deena Dayalan, Member

Date of Hearing: 9.7.2013
Date of Order: 1.8.2013

In the matter of

Revision of tariff of Kawas Gas Power Station (656.20 MW) for the period from 1.4.2009 to 31.3.2014-Truing up of tariff determined by order dated 30.12.2011 in Petition No. 285/2009.

And

IN THE MATTER OF

NTPC Ltd, New Delhi **…Petitioner**

Vs

1. Madhya Pradesh Power Management Company Ltd., Jabalpur
2. Maharashtra State Electricity Distribution Co. Ltd, Mumbai
3. Gujarat Urja Vikas Nigam Ltd, Vadodara
4. Chhattisgarh State Power Distribution Company Ltd, Raipur
5. Electricity Department, Govt. of Goa, Panaji, Goa
6. Electricity Department, Administration of Daman & Diu, Daman
7. Electricity Department, Administration of Dadra and Nagar Haveli, Silvassa

…..**Respondents**

Parties present:

Shri Ajay Dua, NTPC
Shri Sachin Jain, NTPC
Shri Bhupender Kumar, NTPC
Shri Y.R Dhingra, NTPC
Shri S.K.Sharma, NTPC
Shri V.Ramesh, NTPC
Ms. Suchitra Maggon, NTPC
Shri Manoj Dubey, MPPMCL

ORDER

This petition has been filed by the petitioner, NTPC, for revision of tariff of Kawas Gas Power Station (656.20 MW) (hereinafter referred to as "the generating station") for the period from 1.4.2009 to 31.3.2014, in terms of the proviso to Regulation 6 (1) of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009 (hereinafter referred to as "the 2009 Tariff Regulations").

2. The generating station with a capacity of 656.20 MW comprises of four Gas Turbine (GT) units of 106 MW each and two Steam Turbine (ST) units of 116.10 MW each. The dates of commercial operation of different units of the generating station are as under:

Units	Date of commercial operation (COD)
Unit-I (GT)	1.6.1992
Unit-II (GT)	1.8.1992
Unit-III (GT)	1.9.1992
Unit-IV (GT)	1.11.1992
Unit-V (ST)/Generating Station	1.11.1993
Unit-VI (ST)	1.9.1993

3. Petition No. 285/2009 was filed by the petitioner for determination of tariff of the generating station for the period from 1.4.2009 to 31.3.2014 and the Commission by its order dated 30.12.2011 determined the annual fixed charges for the generating station. The capital cost considered by the Commission for the purpose of determination of annual fixed charges tariff for 2009-14 by order dated 30.12.2011 are as under:

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Opening Capital cost	153691.71	153793.01	153840.01	168018.86	176010.24
Additional capital expenditure	101.30	47.00	14178.86	7991.37	7077.04
Closing Capital cost	**153793.01**	**153840.01**	**168018.86**	**176010.24**	**183087.28**
Average Capital cost	**153742.36**	**153816.51**	**160929.44**	**172014.55**	**179548.76**

4. Based on the above, the annual fixed charges for the generating station for 2009-14 determined by order dated 30.12.2011 in Petition No. 285/2009 are as under:

(₹in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	27.14	25.52	494.90	2112.44	3166.98
Interest on Loan	0.00	0.35	842.35	2055.38	2680.95
Return on Equity	18068.44	18073.66	18574.72	19355.59	19886.32
Interest on Working Capital	7253.90	7292.35	7387.30	7488.44	7579.65
O&M Expenses	9711.76	10269.53	10853.55	11476.94	12133.14
Total	**35061.24**	**35661.41**	**38152.82**	**42488.79**	**45447.04**

5. Reply to the petition has been filed by the respondent no.1, MPPMCL and the petitioner has filed its rejoinder to the said reply of the respondent.

6. The matter was heard on 19.3.2013 and orders were reserved by the Commission. However, as the Chairperson of this Commission (formed part of the quorum) had demitted office before passing orders in the matter, the petition was again listed for hearing on 9.7.2013 and orders were reserved. Accordingly, the tariff of the generating station is determined by this order based on the submissions of the parties and the documents available on record.

7. The first proviso to 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."*

8. The annual fixed charges claimed by the petitioner for the period 2009-14 in this petition are as under:

(₹in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	48	43	46	477	3124
Interest on Loan	0	0	0	332	1311
Return on Equity	18069	17863	17660	17850	18462
Interest on Working Capital	7254	7288	7341	7387	7521
O&M Expenses	9712	10270	10854	11477	12133
Total	**35083**	**35464**	**35901**	**37523**	**42552**

Capital cost

9. Regulation 7(1) (a) of the 2009 Tariff Regulations provides as under:

> *"7. Capital Cost. (1) Capital cost for a project shall include: (a) the expenditure incurred or projected to be incurred, including interest during construction and financing charges, any gain or loss on account of foreign exchange risk variation during construction on the loan - (i) being equal to 70% of the funds deployed, in the event of the actual equity in excess of 30% of the funds deployed, by treating the excess equity as normative loan, or (ii) being equal to the actual amount of loan in the event of the actual equity less than 30% of the funds deployed, up to the date of commercial operation of the project, as admitted by the Commission, after prudence check;"*

10. The approved capital cost as on 1.4.2009 has been worked out as ₹153691.71 lakh after removal of un-discharged liabilities of ₹101.32 lakh (₹8.07 lakh pertaining to period prior to 1.4.2004 and ₹93.25 lakh pertaining to period 2004-09). Further, out of the un-discharged

liabilities deducted as on 1.4.2009, the petitioner has discharged ₹92.30 lakh (₹8.07 lakh pertaining to liabilities corresponding to assets capitalized prior to 1.4.2004 and ₹84.23 lakh pertaining to liabilities corresponding to assets capitalized during the period 2004-09) and has reversed an amount of ₹9.02 lakh (pertaining to liabilities corresponding to assets capitalized during the period 2004-09) during the year 2009-10. The discharge of liabilities amounting to ₹92.30 lakh has been allowed during the year 2009-10 in addition to the admitted additional capital expenditure.

Actual/ Projected Additional Capital Expenditure

11. Regulation 9 of the 2009 Tariff Regulations, as amended on 21.6.2011, 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) Undischarged liabilities;*
>
> *(ii) Works deferred for execution;*
>
> *(iii) Procurement of initial capital spares within the original scope of work, subject to the provisions of regulation 8;*
>
> *(iv) Liabilities to meet award of arbitration or for compliance of the order or decree of a court; and*
>
> *(v) Change in law:*
>
> *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-materialization 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."

12. The additional capital expenditure allowed for the generating station during the period 2009-14 by order dated 30.12.2011 in Petition No. 285/2009is summarized as under:

(₹ in lakh)

		Actual/Projected Capital expenditure				
		2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**
CEA Approved R&M package						
Gas Turbine Life Extension Package	9(2)(vi)	0.00	0.00	20591.00	11996.00	8940.00
De-capitalized amount		0.00	0.00	10067.00	5865.00	3704.00
Net additional capital expenditure		0.00	0.00	10524.00	6131.00	5236.00
C&I Control Systems for Gas Turbine	9(2)(vi)	0.00	0.00	354.00	178.00	176.00
De-Capitalized amount		0.00	0.00	474.00	238.00	236.00
Net additional capital expenditure		0.00	0.00	(-) 120.00	(-) 60.00	(-) 60.00
C&I Control Systems for Steam Turbines	9(2)(vi)	0.00	0.00	1339.00	0.00	1339.00
De-Capitalized amount		0.00	0.00	1088.00	0.00	1088.00
Net additional capital expenditure		0.00	0.00	251.00	0.00	251.00
Sub-Total on CEA approved R&M		0.00	0.00	10655.00	6071.00	5427.00
Other capital works						
Procurement of CCTV	9(2)(ii)	0.00	47.00	7.00	0.00	0.00
Township Metering System	9(2)(ii)	9.00	0.00	0.00	0.00	0.00
Sub-Total on Other capital works		9.00	47.00	7.00	0	0
Total Add-Cap prior to de-capitalization		9.00	47.00	22291.90	12172.88	10455.52
De-Capitalized amount		0.00	0.00	11629.42	6102.62	5027.96
Net Additional Capital expenditure allowed		**9.00**	**47.00**	**10662.48**	**6070.27**	**5427.56**

13. The net additional capital expenditure allowed for the purpose of tariff by order dated 30.12.2011 considering IDC, FC and adjustment of liabilities is as under:

(₹in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Projected Additional capital expenditure allowed (excluding IDC, FC & contingencies)	9.00	47.00	10662.48	6070.27	5427.56
Add: IDC, FC & contingencies	0.00	0.00	3516.38	1921.11	1649.48
Additional capital expenditure allowed	**9.00**	**47.00**	**14178.86**	**7991.37**	**7077.04**
Add: Liabilities Discharged	92.30	0.00	0.00	0.00	0.00
Net Additional capital expenditure allowed	**101.30**	**47.00**	**14178.86**	**7991.37**	**7077.04**

14. Based on the actual additional capital expenditure for the years 2009-10, 2010-11 and 2011-12 and the projected additional capital expenditure for the years 2012-13 & 2013-14, the petitioner in Form No. 9 of this petition has claimed expenditure (year-wise) as under:

(₹ in lakh)

Head of Work/Equipment		2009-10 (actual)	2010-11 (actual)	2011-12 (actual)	2012-13	2013-14	2014-15	Total
Gas Turbine Life Extension Package	9(2)(vi)	0.00	0.00	0.00	8534	17067	11198	36799
C&I control System for GT & ST	9(2)(ii)	0.00	0.00	0.00	350	3238	0.00	3588
Total Expenditure – year wise (Excl contingency & IDC) (1+2)		0.00	0.00	0.00	8884	20305	11198	40387
Total Expenditure – year wise (Including contingency & IDC @ 15.783%		**0.00**	**0.00**	**0.00**	**10286**	**23510**	**11198**	**44994**
On line compressor washing machine of GTs	9(2)(vi)	0.00	0.00	0.00	276	0.00	0.00	276
RO plant for DM water	9(2)(vi)	0.00	0.00	0.00	20	250	0.00	272
*Procurement of CCTV	9(2)(ii)	0.00	0.00	45	5	0.0	0.00	50
Township Metering System	9(2)(ii)	9	0.00	0.00	0.00	0.00	0.00	009
Sub-Total		**9**	**0.0**	**45**	**301**	**250**	**0.00**	**604**
Total		**9**	**0.0**	**45**	**10586**	**23760**	**11198**	**45598**
Discharge of un-discharged liabilities		92	0.00	0.00	0.00	0.00	0.00	92
Grand Total(10+11)		**101**	**0.00**	**45**	**10586**	**23760**	**11198**	**45690**

15. As indicated above, the petitioner in this petition has claimed expenditure of ₹45690 lakh during 2009-15 which includes an expenditure of ₹44994 lakh towards R&M package, inclusive of IDC, FC etc. and ₹696 lakh towards 'Other assets' like On-line compressor washing machine

of GTs, RO plant for DM water, procurement of CCTV and township metering system. We now examine the above claims in the subsequent paragraphs.

R&M package

16. In response to letter of the Commission dated 14.1.2013 seeking clarification as regards the non –incurring of the R&M expenditure as approved by the Commission in order dated 30.12.2011, the petitioner vide its affidavit dated 11.2.2013 has submitted as under:

> "The petitioner respectfully submits that subsequent to the CEA approval for Renovation & Modernization of Gas Turbine and C&I control system, the petitioner had contacted around 15 nos. leading Gas Turbines manufactures /Gas Turbine components manufacturers (including OEM) for R&M works of Kawas GPS. However, none of the parties except OEM was ready to carry out the work as stipulated by NTPC.
>
> As no manufacturer other than OEM gave response in the affirmative manner, it was ultimately decided to approach OEM (M/S General Electric) for carrying out R&M work. NTPC Board in the month of Feb-2010 had accorded approval for implementation of R&M of Gas Turbine (Hot Gas path component) through OEM on single tender negotiation basis.
>
> After the approval as accorded by NTPC Board, bidding document was issued to M/s GE, USA. M/s GE Energy expressed their difficulty and reservations for submitting the bids and informed that BHEL GE Gas Turbine Services (BGGTS) would be submitting bids on their behalf, as BGGTS are the sole and exclusive service providers including the execution of R&M projects. Further M/s GE also expressed their inability to offer output guarantee for gas turbine if C&I control system is sourced from third party and not from them Accordingly, partially modified board approval was obtained in July 2011 for GT Renovation and R&M of C&I control system packages for award to BGGTS .Bid for the above referred packages was opened and after extensive negotiations, the package was awarded on 23.03.2012 to BGGT. After award of the package, R&M of GT 1A was taken up for implementation and the work of GT-1A got completed in FY 12-13. R&M of two more GTs is planned during 2013-14 and the last GT will go under R&M in 2014-15."

17. Accordingly, the revised phasing of expenditure for R&M of Gas Turbines is as under:

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
R&M of GTs	0.00	0.00	0.00	10286	23510	11198

18. The respondent, MPPMCL has submitted that the tariff has been claimed by the petitioner as per projected additional capitalization during the years 2010-11 and 2011-12 and whereas as per Form-9, the actual capital expenditure for the said years is 'nil'. Accordingly, it has prayed that the Commission may not allow the projected additional capital expenditure for the years 2012-13 and 2013-14. In response, the petitioner has reiterated its submissions made in affidavit dated 14.1.2013.

19. We have examined the matter. It is observed that the petitioner has not incurred any expenditure towards R&M during the years 2009-10, 2010-11 and 2011-12 respectively. The proposed expenditure on R&M is to be incurred from the year 2012-13 onwards and would be completed during 2014-15 only. Since the complete benefits of R&M in the form of life extension and improvement in operational performance would be passed on to the respondents/ beneficiaries only after the completion of R&M of all the three GTs in 2014-15, we are of the considered view that the projected additional capital expenditure claimed for R&M of GTs could be considered only during the next tariff period (2014-19). Accordingly, the expenditure claimed by the petitioner on this count during the period 2012-13 and 2013-14 has not been allowed.

Additional capitalization of other assets

20. The additional capitalization in respect of other assets claimed by the petitioner during the period 2009-14 is discussed as under:

On Line Compressor Washing of GTs

21. The petitioner has claimed expenditure of ₹276 lakh during 2012-13 towards on-line compressor washing of GTs. The petitioner has stated that due to continuous running of GTs, the compressor blades get fouled with deposition of fine dust which affects the compressor performance resulting in reduced GT power output. It has also submitted that at present, the compressor is being washed off line only, whenever opportunity during shut down is available. The respondent, MPPMCL has submitted that the proposed additional capital expenditure on this asset may not be allowed as the same is not covered under Regulation 9(2)(vi) of the 2009 Tariff Regulations. In response, the petitioner has clarified that the expenditure on this asset is necessary for ensuring plant availability and maintaining the rated output and hence claimed under Regulation 9(2)(vi). We have examined the matter. As stated, the proposed expenditure on R&M is to be incurred from the year 2012-13 onwards and would be completed during 2014-15 only. Considering the submissions of the petitioner that the expenditure is necessary for ensuring plant availability and rated output from the generating station and since this work has been planned in the R&M package accordingly, we are of the view that the expenditure claimed

could only be considered during the next tariff period. Accordingly, the expenditure claimed by the petitioner on this count during the period 2012-13 has not been allowed.

RO plant for DM water

22. The petitioner has claimed projected expenditure of ₹20.00 lakh during 2012-13 and ₹250.00 lakh during 2013-14 for implementation of Reverse Osmosis plant (RO) for DM water. The petitioner has submitted that the expenditure is necessary due to considerable deterioration in the intake water from Tapti River which is the only source of water for the generating station. It has also submitted that the total dissolved solids (TDS) have increased to 425 ppm against the design value of 245 ppm and the Total Organic Carbon (TOC) have increased to more than 10 ppm from earlier levels of 2-3 ppm and due to this there is a tremendous increase in the ionic load resulting in decrease in production of DM water to almost half the rate i.e. 25 to 30 Cu. M / hr from 50 Cu. M/hr (designed capacity) from each stream. The net result of this is the Output between Regeneration (OBR) has reduced from designed quantity of 600 Cu.M to about 300 Cu.M. It has further submitted that the above reduction in output has also effected the supply of DM water to WHRB's which requires large make up due to drastic increase in frequent Start -up and Shut down of Gas turbine for last 2-3 years. Further, due to increase in organic content resulting in fouling of resins requires frequent treatment of Cation & Anion resins by double the strength of acid and brine solutions this, further increase the non availability DM water streams for DM production. The increase of Organic content is also affecting the boiler chemistry parameters as the conductivity in DM water has increased to more than 0.4 uS/ from the design conductivity of below 0.2 uS/cm (Design conductivity). The petitioner has submitted that the availability/provision of RO units in DM plant shall enhance the output and quality of DM water and improve the boiler chemistry parameters and is therefore necessary for successful operation of the plant. Accordingly the petitioner has prayed that the expenditure may be allowed under Regulation 9(2)(vi) of the 2009 Tariff Regulations. The respondent, MPPMCL has submitted that the proposed additional capital expenditure on this asset may not be allowed as the same is not covered under Regulation 9(2)(vi) of the 2009 Tariff Regulations. Considering

the submissions of the petitioner and keeping in view that the provision of RO units in DM plant shall enhance the output and quality of DM water and improve the boiler chemistry parameters, we allow the capitalization of this asset under Regulation 9(2)(vi) of the 2009 Tariff Regulations.

Procurement of CCTV Camera

23. The petitioner has claimed actual expenditure of ₹45.00 lakh during 2011-12 and ₹5.00 lakh during 2012-13 towards procurement of CCTV cameras for installation of closed circuit TV system at all vulnerable points to meet the threat perception under the prevailing security scenario. As the expenditure has been approved by order dated 30.12.2011 under Regulation 9(2)(ii) of the 2009 Tariff Regulations taking into account the documentary support in justification of the claim, the said expenditure is allowed.

Township Metering System

24. The petitioner has claimed actual expenditure of ₹9.00 lakh during 2009-10 towards installation of metering system in township. The Commission vide its order dated 31.12.2011 had allowed the capitalization of this asset under Regulation 9(2)(ii) of the 2009 Tariff Regulations, for the reasons stated there under. In view of this, capitalization of the expenditure is allowed.

Reconciliation of actual additional capital expenditure for the period 2009-10 to 2011-12 vis-a vis Books of Account.

25. The additional capital expenditure claimed for the period 2009-10 to 2011-12 (up to December, 2011) as per books of account for the purpose of tariff is as under:

(₹ in lakh)

	2009-10	2010-11	2011-12 *(up to December, 2011)*
Opening Gross Block of the year	163400.33	163283.78	164867.32
Closing Gross block of the year	163283.78	164867.32	168807.45
Additional capitalization as per the books	**(-) 116.55**	**1583.54**	**3940.13**
Exclusions for additional capitalization as per the Books of Accounts.	(-) 125.18	1583.54	3890.66
Additional Capital Expenditure including liability	8.62	0	49.47
Un-discharged liability for above	0.0	0.0	4.52
Additional Capital Expenditure claimed on cash basis for the purpose of tariff	8.62	0.0	44.95
Discharge of Un-discharged liability	92.3	0.0	0.0
Total additional capital expenditure claimed	**100.92**	**0.0**	**44.95**

26. The summary of exclusions claimed as per books of accounts is as under:

(₹ in lakh)

Sl. No.		2009-10	2010-11	2011-12	Total
1	Inter-Unit transfer	497.73	(-) 0.92	(-) 7.79	489.02
2	De-Capitalization of C&I control system	(-)14.96	(-)18.52	(-) 59.83	(-) 93.31
3	Capitalization of spares	465.60	2499.83	4025.21	6990.64
4	De-Capitalization of spares	(-) 1180.70	(-) 861.56	(-)167.07	(-) 2209.33
5	MBOA items	102.60	93.33	103.47	299.4
6	De-Capitalization of MBOA items	(-) 27.06	(-)128.61	(-)3.34	(-)159.01
7	Items Disallowed by the Commission vide order dated 30.12.2011	42.31	0.0	0.0	42.31
8	Reversal of liability	(-) 10.69	0.0	0.0	(-) 10.69
9	**Total Exclusions**	**(-) 125.17**	**1583.54**	**3890.65**	**5349.02**

27. The exclusions of capitalization and de-capitalization claimed for the purpose of tariff are examined as under:

(a) **Inter-unit transfers:** An amount of ₹497.73 lakh during 2009-10, (-) ₹0.92 lakh during 2010-11 and (-)₹7.79 lakh during 2011-12 has been excluded under this head on account of transfer of certain assets. These inter-unit transfers are indicated to be of temporary nature. The Commission while dealing with the applications for additional capitalization in respect of other generating stations of the petitioner, had decided in its various orders that both positive and negative entries arising out of inter-unit transfers of temporary nature shall be ignored for the purpose of tariff. In consideration of the same, the exclusions of ₹497.73 lakh during 2009-10, (-)₹0.92 lakh during 2010-11 and (-)₹7.79 lakh during 2011-12 on account of inter-unit transfer of equipment on temporary basis are in order and has been allowed.

(b) **De-capitalization of C&I control system**: The petitioner has de-capitalized certain items of C&I control system that were capitalized with Steam Turbine in the year of commercial operation. These items have become unserviceable and are beyond repair. Accordingly, the petitioner has de-capitalized an amount of (-) ₹14.96 lakh in 2009-10, (-) ₹18.52 lakh in 2010-11 and (-) ₹59.83 lakh in 2011-12 in books of accounts. The petitioner has stated that these C&I system were to be replaced during R&M of GTs and since the R&M work has got delayed, these assets may be kept as part of capital cost till the time the corresponding capitalization of these assets are made during R&M and accordingly has sought exclusion of these de-capitalized amounts for purpose of tariff. The submission of the petitioner is not acceptable as these de-capitalized assets of C&I system were part of capital cost which was allowed in tariff for the generating station. Since, these assets have now become un-serviceable and do not render any useful service, the same cannot be allowed to form part of the capital cost of the generating station and hence should be taken out for the purpose of tariff. In view of this, the exclusion of (-)₹14.96 lakh in 2009-10, (-)₹18.52 lakh in 2010-11 and (-) ₹59.83 lakh in 2011-12 has not been allowed.

(c) **Capitalization of spares:** The petitioner has procured spares amounting to ₹465.60 lakh during 2009-10, ₹2499.83 lakh during 2010-11and ₹4025.21 lakh during 2011-12 for maintaining stock of necessary spares. Since capitalization of spares over and above initial spares procured after cut-off-date are not allowed for the purpose of tariff, and they form part of O&M expenses when consumed, the petitioner has excluded the said amount. In view of this, the exclusion of the said amount under this head is in order and has been allowed.

(d) **De-Capitalization of spares:** The petitioner has de-capitalized capital spares amounting to (-) ₹1180.70 lakh during the year 2009-10, (-) ₹861.56 lakh during the year 2010-11 and (-) ₹167.07 lakh during the year 2011-12 in the in books of accounts on becoming these spares unserviceable. After examining the exclusions sought on de-capitalization of capital spares, it is noticed that amounts for ₹280.11 lakh in 2009-10, ₹70.14 lakh in 2010-11 and ₹2.31 lakh in 2011-12 pertains to spares which were part of the capital cost of the generating station for the purpose of tariff. Hence, exclusion on account of de-capitalization of these spares is not justified and has not been allowed for the purpose of tariff. The other de-capitalized capital spares amounting to ₹900.58 lakh in 2009-10, ₹791.42 lakh in 2010-11 and ₹164.76 lakh in 2011-12 do not form part of the capital cost and capitalization of the same had been disallowed by Commission's order dated 18.5.2004 and order dated 9.5.2006. In view of this, exclusion of de-capitalization of these spares is in order and has been allowed.

(e) De-Capitalization of Miscellaneous Bought Out Assets (MBOA): The petitioner has also excluded de-capitalized MBOA in books of accounts amounting to (-)₹27.06 lakh during 2009-10 (-)₹128.61 lakh during 2010-11 and (-)₹3.34 lakh during 2011-12 on it being rendered unserviceable. After examining the exclusions sought on de-capitalization of MBOA it is noticed that an amount of ₹7.20 lakh in 2009-10, (-)₹128.60 lakh in 2010-11 and ₹1.68 lakh in 2011-12 pertain to spares which were part of the capital cost of the generating station for the purpose of tariff. Hence, exclusions on account of de-capitalization of these spares is not justified and has not been allowed. Based on this, the exclusions allowed are ₹19.86 lakh in 2009-10 and ₹1.66 lakh in 2011-12.

(f) **Capitalization of Miscellaneous Bought Out Assets (MBOA):** The petitioner has capitalized MBOA items in books of accounts amounting to ₹102.60 lakh during 2009-10, ₹93.33 lakh during 2010-11and ₹103.47 lakh during 2011-12. Since the capitalization of minor assets is not allowed after the cut-off-date, the exclusion of ₹299.40 lakh is in order and has been allowed.

(g) **Items disallowed:** The petitioner has excluded an amount of ₹42.31 lakh in 2009-10 on account of capitalization of 20T EOT Crane which was disallowed by the Commission in its order dated 30.12.2011 in Petition No.285/2009. As such, the exclusion on this count is in order and is allowed**.**

(h) **Liability Reversal:** The petitioner has excluded an amount of (-) ₹10.69 lakh during 2009-10, on account of reversal of liability against the work awarded to M/s V. U. Seemon and which was capitalized during the year 2005-06. The exclusion of reversal of liability is in order and is therefore allowed.

28. The summary of exclusions allowed and disallowed is given overleaf:

(₹in lakh)

	2009-10	2010-11	2011-12	Total
(A) Exclusions allowed under different heads				
Inter-Unit transfer	497.73	(-) 0.92	(-)7.79	489.02
Capitalization of spares	465.60	2499.83	4025.21	6990.64
De-Capitalization of spares	(-) 900.58	(-) 791.42	(-) 164.76	(-) 1856.76
MBOA items	102.60	93.33	103.47	299.4
De-Capitalization of MBOA items	(-) 19.86	0.0	(-) 1.66	(-) 21.52
Items disallowed by order dated 30.12.2011	42.31	0.0	0.0	42.31
Reversal of liability	(-) 10.69	0.0	0.0	(-) 10.69
Total allowed	**177.11**	**1800.82**	**3954.47**	**5932.4**
(B) Exclusions not allowed under different heads				
De-Capitalization of C&I control system	(-) 14.96	(-)18.52	(-) 59.83	(-) 93.31
De-Capitalization of spares	(-) 280.12	(-) 70.14	(-) 2.31	(-) 352.89
De-Capitalization of MBOA items	(-) 7.20	(-) 128.60	(-) 1.68	(-) 76.62
Total exclusion not allowed	**(-) 302.28**	**(-) 217.26**	**(-) 63.82**	**(-) 583.36**
Grand Total exclusion allowed	**(-) 125.17**	**1583.54**	**3890.65**	**5349.02**

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

(₹in lakh)

Sl. No	Head of Work/Equipment	2009-10 (actual)	2010-11 (actual)	2011-12 (actual)	2012-13	2013-14
1	Gas Turbine Life Extension Package	0.00	0.00	0.00	0.00	0.00
2	C&I control System for GT & ST	0.00	0.00	0.00	0.00	0.00
3	On line compressor washing machine of GTs	0.00	0.00	0.00	0.00	0.00
4	RO plant for DM water	0.00	0.00	0.00	20.00	250.00
5	Procurement of CCTV	0.00	0.00	45.00	5.00	0.00
6	Township Metering System	9.00	0.00	0.00	0.00	0.00
7	Total (1 to 7)	**9.00**	0.00	**45.00**	**25.00**	**250.00**
8	Discharge of un-discharged liabilities	92.00	0.00	0.00	0.00	0.00
9	Total (7+8)	101.00	0.00	0.00	0.00	0.00
10	**Add : Exclusions not allowed**	**(-) 302.28**	**(-) 217.26**	**(-) 63.82**	**0.00**	**0.00**
11	**Net additional capitalization allowed**	**(-) 201.28**	**(-) 217.26**	**(-) 18.82**	**25.00**	**250.00**

30. The additional capital expenditure allowed after adjustment of liabilities is as under:

(₹in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14	Total
Additional capitalization allowed before discharges of liabilities	(-) 201.28	(-) 217.26	(-) 18.82	25.00	250.00	(-) 162.36
Add: Discharges of liabilities	**92.30**	**0.00**	**0.00**	**0.00**	**0.00**	**92.30**
Net additional capital Expenditure allowed	**(-) 108.98**	**(-) 217.26**	**(-) 18.82**	**25.00**	**250.00**	**(-) 70.06**

Balance useful life of the generating station

31. The Commission in paragraph 55 and 56 of the order dated 30.12.2011 in Petition No. 285/2009 had decided as under:

> **"Balance useful life of the generating station as on 1.4.2009 after R&M for the purpose of Depreciation**
>
> 55. The details of the date of commercial operation of the different units of the generating station, the period of operation up to 1.4.2009 and 1.4.2012 (completion of major R&M works) and the extended life after R&M of gas turbine and their weighted average period of operation on above dates and weighted average life are as under:

Description	Capacity MW	COD	Elapsed life up to 1.4.2009	Elapsed life as on 1.4.2012	Useful life after extension of life by 15 years for GTs
GT-I A	106	1.6.1992	16.83	20.83	35.83
GT-IB	106	1.8.1992	16.67	20.67	35.67
GT-2A	106	1.9.1992	16.58	20.58	35.58
GT-2B	106	1.11.1992	16.42	20.42	35.42
ST-I C	116.1	1.11.1993	15.42	19.42	25.00
ST-2C	116.1	1.9.1993	15.58	19.58	25.00
Total	**656.20**		**16.23**	**20.23**	**31.87**

> 56. The weighted average of the elapsed life (period of operation) of the generating station, as on 1.4.2009 works out to 16.23 years. The major expenditure on R&M of the GTs are allowed for enhancing the life of the generating station by 1,00,000 Equivalent Operating Hours (EOH) which translates into 15 years, considering the low PLF of the generating station. The major part of R&M works would be completed by 31.3.2012. The weighted average of the period of operation of the generating station as on 1.4.2013 works out to 20.23 years. Considering the life extension of GTs by more than 15 years from 1.4.2013, the weighted average life of the generating station after R&M of GTs works out to 31.87 years in relation to the date of commercial operation of the respective units of the generating station, as stated above. Accordingly, the balance useful life of the generating station works out to15.64 years as on 1.4.2009 and 11.64 years as on 1.4.2013"

32. Thus, the weighted average life of the generating station after R&M from the date of commercial operation (COD) of the generating station was calculated on the premise that the major part of R&M works would be completed by 31.3.2012 and considering the life extension of GTs by 15 years from 1.4.2012. The weighted average life of the generating station after R&M from the date of commercial operation (COD) was worked out to 31.87 years. The weighted average elapsed life of gas station was 16.23 years as on 31.3.2009 and 20.23 years as on 31.3.2012. Accordingly, the balance useful life gas based generating station after R&M was worked out to 15.64 years (31.87-16.23 years) as on 1.4.2009 and 11.64 years (31.87-20.23 years) as on 1.4.2012 respectively.

33. The petitioner in its additional submissions vide affidavit dated 26.3.2013 has submitted as under:

> "The petitioner respectfully submits that Hon'ble Commission vide its order dated 30.12.2011 in Petition No. 285/2009 while determining the tariff of the instant station has considered the life extension of 15 years for purpose of recovery of depreciation after the completion of major R&M from 1.4.2012 onwards. As submitted at para 3 above, the R&M work got shifted from 2011-14 to 2012-15 and the major R&M is scheduled to be completed in 2014-15 i.e after the control period which shall result in life extension of Gas Turbine. Therefore the recovery of depreciation amount shall be considered accordingly in the next tariff period. Further the Petitioner has considered the life extension by 10 years after the major R&M work which shall be completed in the FY 2014-15. Accordingly, the recovery of depreciation shall be done in the next control period on the basis of outcome of appeal No. 70/2012 as filed by the Petitioner on the life extension issue before the Hon'ble ATE."

34. We have in para 19 above of this order observed that the proposed expenditure on R&M for the generating station is to be incurred from the year 2012-13 onwards and would be completed during 2014-15 only. Based on this, it has been concluded that the projected additional capital expenditure claimed for R&M of GTs could be considered only during the next tariff period (2014-19), since the complete benefits of R&M in the form of life extension and improvement in operational performance would be passed on to the respondents/ beneficiaries only after the completion of R&M of all the three GTs in 2014-15. In this background and since major part of R&M on GTs would be undertaken and completed during the next tariff period by revising the phasing of expenditure, the issue of calculation of balance useful life of the generating station for the purpose of depreciation no longer survives. Considering the weighted average of elapsed life of 16.23 years as on 31.3.2009 and the life of the generating station as 25 years as per the 2009 Tariff Regulations, the residual life of the generating station as on 31.3.2009 is worked out as 8.77 years (25-16.23 years). Accordingly, the balance life of the generating station at the beginning of each year of the tariff period 2009-14 is worked out as under:

2009-10	2010-11	2011-12	2012-13	2013-14
8.77 years	7.77 years	6.77 years	5.77 years	4.77 years

Capital Cost

35. 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	153691.71	153582.73	153365.47	153346.65	153371.65
Additional capital expenditure	(-) 108.98	(-) 217.26	(-) 18.82	25.00	250.00
Closing Capital cost	**153582.73**	**153365.47**	**153346.65**	**153371.65**	**153621.65**
Average Capital cost	**153637.22**	**153474.10**	**153356.06**	**153359.15**	**153496.65**

Debt-Equity Ratio

36. 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.

37. Accordingly, gross loan and equity amounting to ₹76757.52 lakh and ₹76933.99 lakh respectively as on 1.4.2009, as considered in order dated 30.12.2011 in Petition No. 285/2009 has been considered as gross loan and equity as on 1.4.2009. Further, the admitted actual/ projected additional expenditure as above has been allocated in debt-equity ratio of 70:30. This is subject to truing-up in terms of Regulation 6 of the 2009 Tariff Regulations.

Return on Equity

38. 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 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."

39. Accordingly, return on equity has been worked out based on the grossing up of the base rate with respect to actual tax rate applicable to the petitioner, NTPC as a generating company for the years 2009-10, 2010-11 and 2011-12 and for the rest of the years, the rate of grossing up as applicable for the year 2011-12 has been considered on the normative equity after accounting for the admitted additional capital expenditure.

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Notional Equity- Opening	76933.99	76901.29	76836.12	76830.47	76837.97
Addition of Equity due to additional capital expenditure	(-) 32.69	(-) 65.18	(-) 5.65	7.50	75.00
Normative Equity-Closing	76901.29	76836.12	76830.47	76837.97	76912.97
Average Normative Equity	76917.64	76868.71	76833.29	76834.22	76875.47
Return on Equity (Base Rate)	15.500%	15.500%	15.500%	15.500%	15.500%
Tax Rate for the year 2008-09	33.990%	33.218%	32.445%	32.445%	32.445%
Rate of Return on Equity (Pre Tax)	23.481%	23.210%	22.944%	22.944%	22.944%
Return on Equity (Pre Tax)- (annualised)	**18061.03**	**17841.23**	**17628.63**	**17628.84**	**17638.31**

Interest on loan

40**.** Regulation 16 of the 2009 Tariff Regulations provides that:

"(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.

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

(a) The gross normative loan after adjusting un-discharged liabilities of ₹76757.72 lakh as on 1.4.2009 has been considered.

(b) Cumulative repayment as on 31.3.2009 amounting to ₹76757.72 lakh as considered in order dated 30.12.2011 in Petition No. 285/2009 has been considered as cumulative repayment as on 1.4.2009.

(c) Accordingly, the net normative opening loan as on 1.4.2009 works out to 'nil'.

(d) Addition to normative loan to the tune of 70% of additional capital expenditure approved above has been considered on year to year basis.

(e) Depreciation allowed, subject to availability of loan, has been considered as repayment of normative loan during the respective year of the period 2009-14. Further, proportionate adjustment has been made to the repayments on account of de-capitalization considered in the projected additional capital expenditure approved above as well as discharges/reversal of liabilities out of un-discharged liabilities deducted from capital cost as on 1.4.2009.

(f) The petitioner has indicated that there are no actual loans outstanding as on 1.4.2009 and as such considered the weighted average rate of interest in line with first proviso of Regulation 16 (5) i.e the last available weighted average rate of interest to be considered. GOI loans were refinanced with Bonds earlier. As such, these Bonds represent the actual loan portfolio as existing on 1.4.2009. Accordingly, in line with the provisions of the regulation 16 (5) stated above, weighted average rate of interest has been calculated considering the actual loan portfolio comprising of Bonds Series existing as on 1.4.2009.

42. The necessary calculation for interest on loan is as under:

(₹ in lakh)

	2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**
Gross opening loan	76757.72	76681.43	76529.35	76516.18	76533.68
Cumulative repayment of loan upto previous year	76757.72	76653.03	76529.35	76516.18	76533.68
Net Loan Opening	0.00	28.40	0.00	0.00	0.00
Addition due to Additional capitalisation	(-) 76.29	(-) 152.08	(-) 13.17	17.50	175.00
Repayment of loan during the year	37.59	28.41	31.50	17.50	88.31
Less: Repayment adjustment on account of de-capitalization	211.59	152.09	44.67	0.00	0.00
Add: Repayment adjustment on account of discharges / reversals corresponding to un-discharged liabilities deducted as on 01.04.2009	69.31	0.00	0.00	0.00	0.00
Net Repayment	(-) 104.69	(-) 123.68	(-) 13.17	17.50	88.31
Net Loan Closing	28.40	0.00	0.00	0.00	86.69
Average Loan	14.20	14.20	0.00	0.00	43.34
Weighted Average Rate of Interest on Loan	9.5800%	9.5800%	9.5800%	9.5800%	9.5800%
Interest on Loan	**1.36**	**1.36**	**0.00**	**0.00**	**4.15**

Depreciation

43. Regulation 17 of the 2009 Tariff Regulations provides that:

"(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."

44. The cumulative depreciation amounting to ₹137282.52 lakh as on 1.4.2009 as considered in order dated 30.12.2011 in Petition No. 285/2009 has been considered. Further, the value of freehold land as considered as on 31.3.2009 is ₹734.63 lakh. After considering the admitted additional capital expenditure for the year 2009-10 above, the balance depreciable value before providing depreciation for the year 2009-10 works out to ₹329.81 lakh as against ₹424.44 lakh. The weighted average life of the generating station as on 1.4.2009 is considered as 8.77 years from the effective COD of the generating station i.e. 8.1.1993 and the balance depreciable value for each year has been spread over the remaining useful life (8.77 years) of the generating station for the purpose of calculating depreciation for the respective years. Further, proportionate adjustment has been made to the cumulative depreciation on account of de-capitalization of assets considered for the purpose of tariff as well as discharges/reversal of liabilities out of un-discharged liabilities deducted from capital cost as on 1.4.2009. The necessary calculations in support of depreciation are given overleaf:

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Opening capital cost	153691.71	153582.73	153365.47	153346.65	153371.65
Closing capital cost	153582.73	153365.47	153346.65	153371.65	153621.65
Average capital cost	153637.22	153474.10	153356.06	153359.15	153496.65
Depreciable value @ 90%	137612.33	137465.52	137359.29	137362.07	137485.82
Remaining useful life at the beginning of the year	8.77	7.77	6.77	5.77	4.77
Balance depreciable value	329.81	326.78	351.91	360.17	421.53
Depreciation (annualized)	**37.59**	**42.04**	**51.96**	**62.39**	**88.31**
Cumulative depreciation at the end	137320.11	137180.78	137059.33	137064.28	137152.60
Less: Cumulative depreciation reduction due to de-capitalization	271.87	173.41	57.44	0.00	0.00
Less: Cumulative depreciation adjustment on account of discharges / reversal of liabilities out of liabilities deducted as on 1.4.2009	(-) 90.50	0.00	0.00	0.00	0.00
Cumulative depreciation after adjustment due to de-capitalization (at the end of the period)	137138.74	137007.38	137001.90	137064.28	137152.60

O&M Expenses

45. The Operation & Maintenance expenses allowed in order dated 30.12.2011 in Petition No. 285/2009 has been considered.

Interest on Working Capital

46. The fuel cost for one month and liquid fuel stock for 1/2 months as worked out in order dated 30.12.2011 in Petition No. 285/2009 has been considered.

47. Maintenance spares as allowed in order dated 30.12.2011 in Petition No. 285/2009 has been considered.

48**.** Receivables have been worked out on the basis of two months of fixed and energy charges as shown below:

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Variable Charges-2 months	30839.16	30839.16	30923.65	30839.16	30839.16
Fixed Charges- 2 months	5844.29	5907.00	5979.16	6089.18	6212.79
Total	**36683.45**	**36746.17**	**36902.81**	**36928.34**	**37051.96**

O&M Expenses

49. O&M expenses for 1 month for the purpose of working capital are allowed as under:

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
O& M Expenses for 1 month	809.31	855.79	904.46	956.41	1011.09

50. 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 given as under:

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Fuel stock (APM & RLNG) – 1 month	15419.58	15419.58	15461.83	15419.58	15419.58
Liquid fuel stock – 1/2 month	3390.40	3390.40	3399.69	3390.40	3390.40
Maintenance Spares	2913.53	3080.86	3256.06	3443.08	3639.94
O&M expenses – 1 month	809.31	855.79	904.46	956.41	1011.09
Receivables – 2 months	36683.45	36746.17	36902.81	36928.34	37051.96
Total working capital	**59216.28**	**59492.80**	**59924.85**	**60137.82**	**60512.98**
Rate of interest	12.2500%	12.2500%	12.2500%	12.2500%	12.2500%
Interest on working capital	**7253.99**	**7287.87**	**7340.79**	**7366.88**	**7412.84**

Annual Fixed charges for 2009-14

51. The annual fixed charges for the period 2009-14 in respect of the generating station are summarized as under:

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	37.59	42.04	51.96	62.39	88.31
Interest on Loan	1.36	1.36	0.00	0.00	4.15
Return on Equity	18061.03	17841.23	17628.63	17628.84	17638.31
Interest on Working Capital	7253.99	7287.87	7340.79	7366.88	7412.84
O&M Expenses	9711.76	10269.53	10853.55	11476.94	12133.14
Total	**35065.74**	**35442.02**	**35874.93**	**36535.05**	**37276.75**

52. The annual fixed charges allowed as above are subject to truing up as per Regulation 6 of the 2009 Tariff Regulations.

53. The Energy Charge Rate as worked out in order dated 30.12.2011 in Petition No. 285/2009 shall remain unchanged.

54. The difference in the annual fixed charges determined by order dated 30.12.2011 and those determined by this order shall be adjusted in accordance with the proviso to Regulation 5 (3) of the 2009 Tariff Regulations.

55. The annual fixed charges determined above is subject to the final outcome of the appeal pending before the Appellate Tribunal for Electricity.

56. This order disposes of Petition No. 25/GT/2013.

Sd/-	Sd/-
[M. Deena Dayalan]	**[V. S. Verma]**
Member	**Member**