

**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Petition No.276/GT/2012**

**Coram:**

**Shri V.S.Verma, Member**

**Shri M.Deena Dayalan, Member**

**Date of Hearing: 2.4.2013**

**Date of Order: 7.8.2013**

**In the matter of**

Determination of generation tariff of Durgapur Thermal Power Station, Units III and IV (350 MW) for the period from 1.4.2009 to 31.3.2014.

**And in the matter of**

Damodar Valley Corporation, Kolkata

.....**Petitioner**

Vs

1. West Bengal State Electricity Distribution Company Ltd, Kolkata
2. Jharkhand State Electricity Board, Ranchi

....**Respondents**

**Parties present:**

Shri M.G.Ramachandran, Advocate, DVC

Ms. Swagatika Sahoo, Advocate, DVC

Shri P.Jena, DVC

Shri D.K.Aich, DVC

Shri P.Bhattacharya, DVC

Shri A. Biswas, DVC

Shri R.B.Sharma, Advocate, JSEB

Ms. Sugandha Somani, Advocate, Jai Balaji Industries Ltd

Shri Rajiv Shankar Dwivedi, Advocate, SAIL-BSL

Ms. Tulika Mukherji, Advocate, SAIL-BSL

Shri Sunil Kumar, Sr. Advocate, Impex Ferro Alloys Ltd

Shri Sagar Bandhopadhyay, Advocate

Shri Tapas Saha, Advocate

Shri Hiren Dasan, Advocate

Shri M.Prahladka, BSAL

**ORDER**

This petition has been filed by the petitioner, Damodar Valley Corporation (DVC) for determination of generation tariff in respect of Durgapur Thermal Power Station, Units III and IV (350 MW) (hereinafter called 'the generating station') for the period 1.4.2009 to 31.3.2014 in



compliance with the directions contained in the order of the Commission dated 23.6.2011 in Petition No.240/2009 and based on the provisions of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009 ('the 2009 Tariff Regulations').

2. The petitioner is a statutory body established by the Central Government under the Damodar Valley Corporation Act, 1948 (hereinafter referred to as the 'DVC Act') for the development of the Damodar Valley, with three participating Governments, namely, the Central Government, the Government of West Bengal and the Government of Jharkhand.

3. The date of commercial operation (COD) of the different units of the generating station is which comprise of one unit each of 140 MW and 210 MW respectively is as under:

Unit -III	December, 1966
Unit -IV	September, 1982

### **Background**

4. Petition No. 66/2005 was filed by the petitioner for approval of the revenue requirements and for determining the tariff for electricity related activities, that is, the generation, transmission and distribution of electricity, undertaken by it for the period from 1.4.2004 to 31.3.2009. The Commission by its order dated 3.10.2006 determined tariff in respect of the generating stations and inter-state transmission systems of the petitioner, after allowing a special dispensation to the petitioner to continue with the prevailing tariff till 31.3.2006.

5. Against the Commission's order dated 3.10.2006, the petitioner filed Appeal No.273/2006 before the Appellate Tribunal for Electricity (hereinafter referred to as "the Tribunal") on various issues. Similarly, appeals were also filed before the Tribunal by some of the objectors / consumers, namely, Maithon Alloys Ltd and others (Appeal No.271/2006), Bhaskhar Shrachi Alloys Ltd and others (Appeal No 272/2006), State of Jharkhand (Appeal No.275/2006) and the West Bengal State Electricity Regulatory Commission (Appeal No.8/2007) challenging the order of the Commission dated 3.10.2006 on various grounds. The Tribunal by its judgment dated 23.11.2007 disposed of the said appeals by remanding the matter to the Commission for *de*

*novo* consideration of the tariff order dated October 3, 2006 in terms of the findings and observations made therein and in accordance with law.

6. Against the judgment dated 23.11.2007, some of the parties namely, the Central Commission (Civil Appeal No.4289/2008), West Bengal State Electricity Regulatory Commission (Civil Appeal No.804/2008), M/s Bhaskhar Shrachi Alloys Ltd & ors (Civil Appeal No 971-973/2008), State of Jharkhand (Civil Appeal No.4504-4508/2008) and the State of West Bengal (Civil Appeal No.1914/2008) filed Civil Appeals before the Hon'ble Supreme Court, and the same are pending for consideration of the Court. Thereafter, in terms of the directions contained in the judgment of the Tribunal dated 23.11.2007 in Appeal No.273/2006 and other connected appeals, Petition No. 66/2005 (with I.A. Nos. 19/2009 and 23/2009) was heard and tariff for the generating stations and inter-state transmission systems of the petitioner for the period 2006-09 were re-determined by Commission's order dated 6.8.2009, subject to the final outcome of the said Civil Appeals pending before the Hon'ble Supreme Court. Against the Commission's order dated 6.8.2009, the petitioner filed Appeal No.146/2009 before the Tribunal on various issues, including the question of non-consideration of the different elements for tariff.

7. While so, the petitioner filed Petition No. 240/2009 during October, 2009 for determination of tariff for generating stations and inter-state transmission systems of the petitioner for the period 1.4.2009 to 31.3.2014, without considering the additional capital expenditure during 2009-14. Thereafter, by affidavit dated 12.2.2010, the petitioner revised the tariff filing forms taking into consideration the proposed additional capital expenditure for the period 2009-14. The petitioner had also published the tariff petition in accordance with Regulation 3(6) of the Central Electricity Regulatory Commission (Procedure for making of application for determination of tariff, publication of application and other related matters) Regulations, 2004 and also served copies of the tariff petition on the respondents/HT consumers.

8. Thereafter, the Tribunal by its judgment dated 10.5.2010 in Appeal No.146/2009 rejected the prayers of the petitioner and upheld the order of the Commission dated 6.8.2009 in Petition

No. 66/2005. Against the judgment of the Tribunal dated 10.5.2010, the petitioner filed appeal (Civil Appeal No.4881/2010) before the Hon'ble Supreme Court and the Court by its interim order dated 9.7.2010 has stayed the directions of the Tribunal for refund of excess amount billed, until further orders. The Civil Appeals filed by the parties against the judgments of the Tribunal dated 23.11.2007 and 10.5.2010 has been admitted by the Hon'ble Supreme Court and is pending for consideration of the Court.

9. Pursuant to the above, the petitioner filed Petition No. 272/2010 for determination of deferred elements of tariff for generating stations and inter-State transmission systems for the period 1.4.2006 to 31.3.2009 (excepting Mejia TPS, Unit Nos. V and VI), in terms of the provisions of the '2004 Tariff Regulations' and the judgment dated 23.11.2007 of the Tribunal. Similarly, a separate petition (Petition No.279/2010) for determination of tariff in respect of Mejia TPS, Unit. No IV for the period from 13.2.2005 (COD) to 31.3.2009 was also filed by the petitioner.

10. While so, in Petition No. 240/2009 filed by the petitioner for approval of tariff for 2009-14 in respect of the generating stations and transmission systems/other assets of the petitioner (except for Mejia TPS, Unit Nos. V and VI), the Commission by its order dated 23.6.2011 granted provisional tariff for the period 2009-14 pending determination of final tariff in exercise of its power under Clause 4 of Regulation 5 of the 2009 Tariff Regulations. Against the order dated 23.6.2011, some of the HT consumers of the petitioner in the States of West Bengal and Jharkhand, filed several Writ Petitions before the Hon'ble High Court of Calcutta (W. P. No.15077 (W) of 2011 [(Jai Balaji Industries Ltd-v-UOI & ors) with 46 connected petitions][ and Hon'ble High Court of Jharkhand [(W.P (C) No. 4097 of 2011 (Gautam Ferro Alloys-v-UOI & ors) with 48 connected petitions)], challenging amongst others, the constitutional validity of Regulation 5(4) of the 2009 Tariff Regulations and the provisional tariff order dated 23.6.2011.

11. During the pendency of the above writ petitions before the High Courts of Calcutta and Jharkhand, the petitioner, in terms of the directions contained in the order of the Commission

dated 23.6.2011 in Petition No. 240/2009, filed separate petitions for determination of tariff in respect of its generation stations and inter-state transmission systems for the period 2009-14 (except for Mejia TPS, Unit Nos V and VI), including the tariff petition in respect of this generating station.

12. Thereafter, the High Court of Jharkhand by its judgment dated 23.3.2012 in W.P. 4097/2011 upheld the Constitutional validity of Regulation 5(4) of the 2009 Tariff Regulations and the provisional tariff order dated 23.6.2011. However, the High Court of Calcutta by its judgment dated 7.12.2012 in W.P. No.15077/2011 and others, declared Regulation 5(4) of the 2009 Tariff Regulations as *ultra vires* the Constitution and the Electricity Act, 2003 and set aside the same along with the provisional tariff order dated 23.6.2011. Against the judgment of the High Court of Jharkhand, some of the HT Consumers/objectors have filed SLPs [(SLP (c) 10945/2012 (GFL-v-UOI & ors) and other connected petitions] before the Hon'ble Supreme Court of India. Similarly, against the judgment of the High Court of Calcutta, SLPs have been filed by this Commission in SLP(c) No. 12929-12961/2013 (CERC-v-BSAL & ors) and the petitioner, DVC in SLP (C) No 13167-13212/2013 before the Hon'ble Supreme Court and the same are pending.

13. Thereafter, the Commission by its order dated 8.5.2013 in Petition No.272/2010, determined the deferred elements of tariff for generation and inter-State transmission systems of the petitioner, which included the instant generating station for the period 1.4.2006 to 31.3.2009. The annual fixed charges determined by the Commission for this generating station for the period 2006-09 by the said order is as under:

	(₹ in lakh)		
	2006-07	2007-08	2008-09
Depreciation	288.95	0.00	103.31
Interest on Loan	0.00	0.00	11.08
Return on Equity	1364.55	1345.66	1331.68
Interest on Working Capital	1002.19	984.47	1123.60
O & M Expenses	12010.00	10886.00	14880.00
<b>Sub-Total</b>	<b>14665.69</b>	<b>13216.13</b>	<b>17449.68</b>
Additional Charges on account of ROE, IOL, Depreciation of Direction/Central/other offices and subsidiary activities	61.99	58.79	56.33
<b>Grand Total</b>	<b>14727.68</b>	<b>13274.92</b>	<b>17506.01</b>

14. The Energy Charges as allowed in order dated 3.10.2006/6.8.2009 in Petition No. 66/2005 was considered.

15. The annual fixed charges claimed by the petitioner for the period 2009-14 in respect of this generating station based on the capital cost of ₹28137.04 lakh as on 1.4.2009 is as under:

	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	1562.79	1970.04	2611.59	3289.79	3954.27
Interest on Loan	661.25	932.66	1480.99	1872.84	886.06
Return on Equity	1900.42	2294.97	2809.50	3351.06	3881.65
Interest on working capital	2465.18	2529.38	2611.55	2659.72	2718.63
O & M expenses	10972.50	11287.50	11609.50	11942.00	12281.50
Secondary Fuel Oil Cost	2422.02	2422.02	2422.02	2422.02	2422.02
Compensation Allowance	227.50	227.50	227.50	227.50	227.50
<b>Total</b>	<b>20211.67</b>	<b>21664.06</b>	<b>23772.65</b>	<b>25764.93</b>	<b>26371.64</b>
Share of Other office expenditure	107.49	129.27	160.64	172.29	141.78
Share of Additional Claims	12200.17	13335.09	14672.43	14462.69	16194.93
<b>Total</b>	<b>32519.32</b>	<b>35128.42</b>	<b>38605.72</b>	<b>40399.90</b>	<b>42708.35</b>

16. The petitioner vide its affidavits dated 25.4.2012, 22.2.2013 and 19.4.2013 respectively has filed additional submissions in compliance with the directions of the Commission. The petitioner has also served copies of the additional submissions on the respondents/HT consumers. The instant petition along with the tariff petitions in respect of other generating stations and transmission systems of the petitioner for 2009-14 were clubbed and heard by the Commission on 5.2.2013, 21.3.2013 and 2.4.2013 respectively and orders were reserved.

17. Reply to the petition has been filed by the Respondent, JSEB. Objections have also been filed by the Objectors, namely, M/s SAIL-BSL, Maithon Alloys Ltd, Jai Balaji Industries, Impex Ferro Tech Ltd, Bhaskar Shrachi Alloys Ltd, K.B. Sponge & Iron Ltd, BRGD Inputs Pvt. Ltd, Shree Waris Piya Steel Co Pvt. Ltd, Mark Steel Ltd, Maan Steel & Power Ltd, Rattan Ispat Pvt. Ltd, BDG Metal & Power Ltd, Impex Steel Ltd, Hira Concast Ltd, Alishan Steel Pvt. Ltd, VSP Udyog Pvt. Ltd, SRC Vyapaar Pvt. Ltd and Association of DVC HT Consumers of Jharkhand. The petitioner has also filed its rejoinder to the above replies. During the hearing on 21.3.2013, the submissions of the objector, Maithon Alloys Ltd were adopted by other objectors namely, Jai Balaji Industries Ltd and BSAL.

18. Taking into consideration the submissions of the parties and the documents available on record including the submissions made in Petition No.240/2009, we now proceed to consider the claims of the petitioner and determine the annual fixed charges in respect of this generating station for the period 2009-14, subject to the final outcome of the SLPs pending before the Hon'ble Supreme Court, as discussed in the subsequent paragraphs.

### **Capital Cost**

19. 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;"*

20. 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."*

21. The Commission in its order dated 8.5.2013 in Petition No. 272/2010 has approved the closing capital cost of ₹19501.48 lakh as on 31.3.2009. The same is considered as the opening capital cost as on 1.4.2009. Accordingly, the capital cost as on 1.4.2009, after removal of un-discharged liabilities of ₹98.22 lakh, works out to ₹19403.26 lakh on cash basis. Discharges against these liabilities deducted, if any, made by the petitioner will be considered for tariff as additional capital expenditure in the year of discharge.

22. The petitioner vide Annexure-III of its affidavit dated 25.4.2012 has furnished the details of discharges during the period 2009-11. Out of the un-discharged liabilities deducted as on 1.4.2009, the petitioner has discharged ₹98.22 lakh during 2009-10. Accordingly, in line with the above provision, this discharge of liabilities has been allowed during the year 2009-10 in addition to the admitted additional capital expenditure.

## **Additional Capital expenditure during 2009-14**

23. Regulation 9 of the 2009 Tariff Regulations, as amended on 21.6.2011 and 31.12.2012, 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 or projected to be incurred on the following counts after the cut-off date may, in its discretion, be admitted by the Commission, subject to prudence check:*

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

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

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



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

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

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

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

24. The petitioner vide its affidavit dated 14.10.2011 had claimed the following additional capital expenditure for the period 2009-14:

	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Plants works	700.50	1185.85	2607.55	7015.50	6666.50
Committed Liability	213.00	4,616.00	6.00	11.00	36.00
Works related to compliance of directives of CEA, Pollution Control Board, Ash utilization & Development of green belt etc.	1827.50	2645.00	6564.00	2427.36	2098.00
<b>Total</b>	<b>2741.00</b>	<b>8446.85</b>	<b>9177.55</b>	<b>9453.86</b>	<b>8800.50</b>

25. Thereafter, the petitioner vide its affidavit dated 19.4.2013 furnished the actual additional capital expenditure for the period 2009-10 to 2011-12 duly certified by statutory auditor and the projected additional capital expenditure for the period 2012-13 to 2013-14 as under;

(₹ in lakh)				
Actual/projected additional expenditure claimed				
2009-10	2010-11	2011-12	2012-13	2013-14
1807.72	1176.43	3555.49	9453.86	8800.50

26. The petitioner has categorized the proposed additional capital expenditure as under:

(i) Replacement of failure prone equipments to improve availability and other performance parameters to achieve the CERC benchmark;

(ii) Investments including committed liability, towards pollution control for safe and sustainable generation from the plants and reduction of forced outages;

(iii) Compliance of directives of the Pollution Control Board, MoEF, Govt. of India, CEA etc. which include the installation of Dry Fly Ash System, Ash disposal system, Ash water recovery system including zero discharge, Augmentation of ESPs and Development of green belt.

## **Submissions of petitioner**

27. In justification of its claim, the petitioner vide its affidavit dated 19.4.2013 has submitted that in the absence of regulatory tariff, the petitioner had to incur additional capital expenditure in a conservative manner and as a result, the target of incurring additional capital expenditure, proposed during the period 2009-14 to the tune of ₹386.20 crore for this generating station could not be achieved. The petitioner has also submitted that the spillover of this additional capital expenditure beyond the tariff period 2009-14 may be allowed by the Commission for proposed life of the existing projects for 8 to 10 years after incurring the proposed additional capital expenditure. The petitioner has further submitted that orders for major items as proposed with respect to above generating stations have already been placed and expenditure on those account have also been commenced. Accordingly, the petitioner has craved leave to submit the same at the time of truing up for the tariff period 2009-14, if completed, before the end of this tariff period. The petitioner has further submitted that the old and vintage thermal generating units of this generating station (Durgapur TPS) which was commissioned during 1960s and 1980s have already completed their useful lives. It has also submitted that the PLFs of the old and vintage generating station are on a lower side ranging from 24% to 55% up to 2005-06 and with significant and continuous efforts through short-term and mid-term action plan under "Partnership in Excellence" (PIE) Programme vide MoP, Govt. of India order dated 8.4.2005, the PLF of these old generating units had been achieved to the extent of 60% to 74%. It has also submitted that there has been no significant capital investment in the past in the age old units of the generating station till the commencement of long-term investments under the PIE programme. Also, major capital investment was envisaged under the long term action of PIE programme during the period 2004-09, where provisions for additional capitalization was available in Regulation No.18 (2) (iv) of the 2004 Tariff Regulations and consequently, long term investment plan is still under implementation on 'put to use' basis during the period 2009-14 in view of high lead time for procurement and the delay in delivery of critical equipments. The petitioner has further submitted that the proposal for additional capitalization have been made with the aim to bring those units at par with the benchmarks operational norms specified by the

Commission and for consideration of life extension of the old units of this generating station keeping in view the history of equipment failure, recommendations of the OEM, advice of CEA, recommendations of NTPC–PIE group and based on the engineering judgments of the concerned generating stations. It has been further submitted that the main essence of the additional capital investment plan is towards modular replacement/augmentation of failure-prone equipment/system envisaged through failure history, under performance identified through engineering judgment and actual clocking hours with that of recommended clocking hours for Boiler tubes. Thus, the main objective of this additional capitalization is for target reduction of forced outages as a key tool to improve availability, reduce Auxiliary Power Consumption and Secondary Oil Consumption with judicious planning of implementing the additional capital investment plan with capital & annual overhauling schedule of the respective units.

28. The respondent, JSEB has submitted that the generating station is a very old station which had already completed its useful life of 25 years long back. It has also submitted that this generating station is operating at sub-optimum level with the operating norms as under:

Sl. No.		Norms of operation for other generating stations of 210 MW	Norms of operation for Durgapur TPS (this generating station)
1	NAPAF	85%	74%
2	Gross Station Heat rate	2500 Kcal/kWh	2820 Kcal/kWh
3	Auxiliary Energy Consumption	8.5%	10.50%
4	Specific Fuel Oil Consumption	1.0 ml/kWh	2.4 ml/kWh
5	O&M Expenses (2009-10)	18.20 lakh/MW	31.35 lakh/MW

29. The respondent, JSEB has further submitted that the table above indicates that the beneficiaries are paying for inefficient operation of the generating station. It also submitted that in order to operate the generating station efficiently, it is necessary that R&M activity be undertaken on this generating station which would take care of the additional investment to improve the operating norms as well as the life extension of the generating station beyond its useful life. It has further been submitted that the R&M activity can be undertaken by the petitioner after complying the provisions of Regulation 10 of the Tariff Regulations, 2009. The objectors have also pointed out that a major part of the expenses are towards the replacement assets and should be considered as R&M expenses. Unless these assets are replaced after

RLA study and are put to use and benefit is conferred to the consumers, the said expenses cannot be included in ARR.

### Analysis

30. The submissions of the parties have been examined. The PLF of the generating station up to the year 2004-05 was in the range of 30% to 50% which were much below the average All India performance PLF of 74%. The main reason for the low performance was that these units are very old and are nearing the completion of their useful life, and were required to go for R&M with or without life extension. The actual operating performance of the generating station for the year 2004-05 was as under:

	Unit	
Plant Load Factor	%	54.00
Station Heat Rate	kCal/kWh	3551
Auxiliary Energy Consumption	%	11.30
Secondary Fuel Consumption	ml/kWh	9.60

31. Keeping in view the serious concern of the petitioner that the performance cannot be improved overnight without R&M of the old and vintage units of the generating station and based on the proposal of the petitioner for a trajectory improvement in norms accompanied by R&M, the Commission had allowed relaxed norms for gradual improvement in the performance of the generating station for the period 2006-09 as under:

#### Durgapur TPS (1x140 MW)

Operational target	2006-07	2007-08	2008-09
Target Availability (%)	65	70	70.2
Target PLF (%)	65	70	70.2
SHR (kCal/kWh)	3100	3000	3000
AEC (%)	11.50	11.00	11.00
SFC (ml/kWh)	3.5	3.0	3.0

#### Durgapur TPS (1x 210 MW)

Operational target	2006-07	2007-08	2008-09
Target Availability (%)	57.5	60	65
Target PLF (%)	57.5	60	65
SHR (kCal/kWh)	3100	3000	3000
AEC (%)	11.50	11.00	11.00
SFC (ml/kWh)	5	4	4

32. It was expected that the petitioner would take appropriate action to undertake and complete the R&M of these units in order to achieve the operational norms/performance improvement as specified by the Commission. The petitioner despite having planned the R&M

during 2004-09, could not undertake comprehensive R&M and has instead undertaken Short-term & Medium term investment plan under the PIE programme required to bring about improvement in PLF by 20% to 30% (approx) in the immediate time frame as directed by Ministry of Power, Govt. of India. Though there has been improvement in the PLF under the short-term and medium-term PIE programme, yet the petitioner had fallen short of achieving the operational /performance norms specified by the Commission. Further, the norms of operation for the generating station were further tightened by the Commission under the 2009 Tariff Regulations applicable for the period 2009-14 which is as under:

	<b>2009-10</b>	<b>2010-11</b>	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>
Target Availability (%)	74.0	74.0	74.0	74.0	74.0
SHR (kCal/kWh)	2820.00	2820.00	2820.00	2820.00	2820.00
AEC (%)	10.50	10.50	10.50	10.50	10.50
SFC (ml/kWh)	2.40	2.40	2.40	2.40	2.40

It was not possible for the petitioner to achieve the norms specified by the Commission without R&M of the old & vintage units of this generating station.

33. It is observed that Unit-III (140 MW) of this generating station is in operation for 43 to 46 years (approx) and most of the equipments/systems have become obsolete. As per R&M policy of the Ministry of Power, Govt. of India dated 12.1.2004 and the subsequent clarification dated 3.2.2004 which was revised further in October, 2009, units with such low capacity of 100 MW or less do not qualify for RLA based R&M programme for life extension as these units have very low design efficiencies. Further, due to ageing & technological obsolescence, these units are performing at a further lower efficiency than their design value and such units are required to be retired in a phased manner. Under this scenario, it would only be prudent for the petitioner to run this unit of the generating station at an optimum level by undertaking selective replacement of failure prone equipment's/systems and also to chalk out a plan for gradual phasing out of the said unit. Unit-IV of 210 MW is stated to be first generation units of LMZ class and the poor performance of 210 MW units at this generating station is attributable to design deficiencies leading to frequent breakdowns and frequent tube leakages. Unit-IV has completed its useful life of 25 years. Hence, this unit can be refurbished with the replacement of old components/

systems which either frequently failed or are under performing due to design deficiencies, obsolescence, etc. Thus, the comprehensive renovation of the Unit-IV could extend its life of the generating station to a further period of 20 to 25 years. The petitioner has been incurring additional capital expenditure for renovation and modernization of the old units in order to achieve the benchmark norms specified by the Commission. The additional capital expenditure incurred/proposed to be incurred may be recovered over a period of 20 years from the terminal year of this tariff period. We however, make in clear that in case of any improvement in the actual operating performance beyond the norms specified by the Commission after completion of R&M, the benefit of better performance would be passed on to the respondents/beneficiaries during the next tariff period in the form of improved norms. In the above background, we now consider the claims of the petitioner for additional capital expenditure on this count in relaxation under Regulation 44 of the 2009 Tariff Regulations, as stated in the subsequent paragraphs.

34. After examining the asset-wise details and justification submitted by the petitioner, the replies and rejoinders filed by the parties, on prudence check, the admissibility of the additional capital expenditure claimed by the petitioner under various categories is discussed as under

#### **Actual Additional Capital Expenditure for the period 2009-10 to 2011-12**

35. The petitioner vide its affidavit dated 19.4.2013 has submitted details of the actual capital expenditure for the year 2009-10, 2010-11 and 2011-12 duly certified by auditor. From the details of actual expenditure incurred it is observed that the assets capitalized fall under the following categories:

- (i) Power House, Plant & Machinery;
- (ii) Buildings, Roads, Culverts & Railway siding etc; and
- (iii) Other assets

#### **Plant & Machineries**

36. It is noticed that major expenditure of additional capital expenditure has been incurred by the petitioner towards Plant & Machineries. The petitioner has claimed actual capital expenditure

of ₹1472.37 lakh during 2009-10, ₹1153.53 lakh during 2010-11 and ₹3545.50 lakh during 2011-12 towards Power House, Plant & Machinery. The assets capitalized towards replacement of Boiler & accessories equipment such as Bunker level measurement system, Stack SPM Analyser, Economiser fine coil & protective sleeve, Air Motor complete assembly along with coupling for APH, supply & erection of ID fan, cold end basket & hot end basket; Boiler Feed Pump such as Total Vibration Monitoring System for FD & PA Fans and BFP, Two way splitter for PF line, coal burner nozzle tip for inter tube burner, Platen Super Heater & secondary super heater bends for boiler, boiler straight tubes & panel attachments etc., Turbo Generator & accessories such as Turbo-supervisory system complete with Hardware software for C&I, plate Type heat exchanger, Erection of HP-LP bypass control system , condenser tubes, Solid state excitation system, 36 KV Vacuum circuit breaker, LT 415 V distribution switchgear, erection, testing & commissioning of SF6 circuit breakers, Chartless Recorder; Transformers, Coal handling plant, Ash handling equipments, Replacement of outlived battery bank, erection & commissioning of CW pumps, procurement of Miscellaneous power plant equipment etc. Against the replacement of these assets, the gross value of old assets has also been furnished by the petitioner. Keeping in view the need to consider the additional capital expenditure for this generating station as discussed in paras 30 to 33 above, the expenditure claimed is examined and considered for the respective years as under:

### **2009-10**

37. After prudence check, and keeping in view the need to consider the additional capital expenditure for this generating station as discussed in paras 30 to 33 above, an expenditure of ₹1264.41 lakh during 2009-10 has been considered for capitalisation for replacement of old assets along with the corresponding de-capitalisation value of ₹207.97 lakh and for capitalisation of new assets. The petitioner has claimed total actual expenditure of ₹301.07 lakh towards Renovation of residential buildings (₹204.03 lakh) and Roads, Culverts & Railway siding (₹97.04 lakh). Considering the fact that residential buildings are more than 40 years old, the expenditure of ₹204.03 lakh for the same has been allowed. The expenditure for ₹97.04 lakh on Roads,

Culverts and Railway siding is for augmentation of approach road to Ash pond, required for Ash evacuation. As the approach road is required for Ash handling system, this expenditure has been allowed under Regulation 9(2)(iii) of the 2009 Tariff Regulations.

38. The claim for an expenditure of ₹34.28 lakh in respect of "Other Assets" which includes Office furniture (steel & wooden), Fans, hospital equipments, air conditioners, Aquaguard, Personal Computers, refrigerator for hospitals, telephone instruments, Scientific instruments, Books & Maps, digital camera, assets for stores etc., have not been allowed to be capitalized as these assets are in the nature of minor assets and hence not permissible under Regulation 9(2) of Tariff Regulations, 2009.

### **2010-11**

39. Expenditure of ₹936.18 lakh has been allowed towards Plant & Machinery along with the corresponding de-capitalisation value of ₹217.34 lakh and for capitalisation of new assets. An expenditure of ₹14.09 lakh claimed under head 'building for development of greenery in the park under the township master plan of employee welfare scheme' has not been allowed as the same is not justified to form part of R&M scheme.

40. The claim for an expenditure of ₹8.81 lakh in respect of "Other Assets" which includes Office furniture (steel & wooden), Fans, hospital equipments, air conditioners, Aquaguard, Personal Computers, refrigerator for hospitals, telephone instruments, Scientific instruments, Books & Maps, digital camera, assets for stores etc., have not been allowed to be capitalized as these assets are in the nature of minor assets and hence not permissible under Regulation 9(2) of Tariff Regulations, 2009.

### **2011-12**

41. Expenditure of ₹2989.70 lakh has been allowed towards the capitalisation on Plant & Machinery along with the corresponding de-capitalisation value of ₹555.80 and for capitalisation of new assets. This includes a reversal of provision of ₹1.20 lakh for 2010-11 on miscellaneous power plant equipment which has been allowed in 2010-11. Further, an expenditure of ₹170.00



lakh and ₹4.37 lakh for Bulldozers has been disallowed for capitalization as these are inter-unit transfer from Mejia TPS (another generating station of the petitioner), based on the consistent methodology adopted by the Commission in its various tariff order to ignore the capitalization and de-capitalization due to inter-unit transfers.

42. The claim for an expenditure of ₹9.98 lakh in respect of "Other Assets" which includes Office furniture (steel & wooden), Fans, hospital equipments, air conditioners, Aquaguard, Personal Computers, refrigerator for hospitals, telephone instruments, Scientific instruments, Books & Maps, digital camera, assets for stores etc., have not been allowed to be capitalized as these assets are in the nature of minor assets and hence not permissible under Regulation 9(2) of Tariff Regulations, 2009

43. Based on the above discussions, the actual expenditure for the period 2009-12 is allowed as under:

	<i>(₹ in lakh)</i>		
	<b>2009-10</b>	<b>2010-11</b>	<b>2011-12</b>
Additional Capital Expenditure claimed	1807.72	1176.43	3555.49
De-Capitalization	207.96	217.34	555.80
<b>Amount Disallowed</b>	34.28	22.90	9.98
<b>Net additional capitalization allowed</b>	<b>1565.48</b>	<b>936.18</b>	<b>2989.70</b>

#### **Projected additional capital expenditure for 2012-14**

44. The petitioner vide its affidavit dated 14.10.2011 has claimed projected additional capital expenditure for the years 2012-13 and 2013-14 as under:

<i>(₹ in lakh)</i>	
<b>2012-13</b>	<b>2013-14</b>
9453.86	8800.50

45. It is observed that the projected additional capital expenditure claimed for ₹9453.86 lakh during 2012-13 and ₹8800.50 lakh during 2013-14 include works for refurbishment of turbo generators, BFP, Replacement of HP heaters, Diaphragms of HP turbine, Replacement & refurbishment of LP heater, Refurbishment of LP Rotor, etc. Boiler & Auxiliaries viz. replacement of super heaters coil, water wall panel, replacement of BFP Cartridge assembly, Hanger & support for critical piping. ID fan impeller, SWAS and replacement of breakers, HT motors such

as PA fan, ID fan, CW system, Replacement of old FSSS & other C&I sys, Up-gradation of ESPs, Replacement of old ATRs, Replacement of 220 KV and 132 KV MOCBs, Isolators, Replacement of age old electromagnetic static relays etc. Schemes as per the requirement of Pollution Control Board such as Ash water re-circulation scheme, raising of ash dyke, Ash utilization etc. have also been claimed as projected additional capital expenditure. The respondent, JSEB has submitted that the claim of the petitioner cannot be permitted under Regulation 9(2) of the 2009 Tariff Regulations. The objector/HT consumers have also submitted that the capitalization of expenditure beyond the provisions of the 2009 Tariff Regulations cannot be permitted. In response, the petitioner has submitted that the additional capitalization under Regulation 9 also includes additional capitalization. It has also submitted that the claim for additional capitalization during the period 2009-14 is as per the 2009 Tariff Regulations and the details regarding actual capital expenditure claimed during 2009-12 is as per accounts duly audited by C&AG.

46. We have examined the matter. From the justification submitted by the petitioner, it is observed that most of these components are in service since inception and due to prolonged operation, these assets have been affected due to thermal stress, erosion, material deformity, etc., Further some of the equipment's/systems have also become obsolete and spares are also not available. As a result, these old assets have become prone to frequent failures and due to underperformance, these assets are proposed to be replaced by the petitioner on the advice of M/s BHEL or under the PIE programme. The petitioner has furnished the gross value of the old assets to be replaced. In the backdrop of our discussions in paras 30 and 33 above as regards the requirement for capitalisation of expenditure by the petitioner to achieve the operational norms specified by the Commission, and on prudence check, we allow the net additional capital expenditure of ₹8412.97 lakh during 2012-13 and ₹8131.86 lakh during 2013-14, after considering the de-capitalization value of the old assets. Out of this expenditure, an expenditure of ₹1624.00 lakh during 2012-13 and ₹2098.00 lakh during 2013-14 have been proposed to be incurred on schemes such as Ash water re-circulation scheme, raising of ash dyke, ash

utilization etc. in compliance with the directions of Pollution Control Board. After deduction of these expenditures, the projected additional capital expenditure allowed towards Plant & Machinery is ₹6788.17 lakh and ₹6033.16 lakh for the years 2012-13 and 2013-14 respectively.

47. Regulation 9(2)(iv) of the 2009 Tariff Regulations provides for consideration of expenditure incurred due to any additional work which has become necessary for successful and efficient plant operation for hydro projects only. Considering the fact that these assets are required for required for successful operation of the generating station and in order to achieve the operational norms specified by the Commission, we, as a special case, and in exercise of the power under Regulation 44 of the 2009 Tariff Regulations, relax the provision under Regulation 9(2)(iv) of the 2009 Tariff Regulations and allow the capitalization of the said expenditure towards "Power House, Plant & Machinery" as stated above.

#### **Change in law**

48. As stated, the petitioner has claimed expenditure of ₹1624.00 lakh during 2012-13 and 2098.00 lakh during 2013-14 have been proposed to be incurred on schemes such as Ash water re-circulation scheme, raising of ash dyke, ash utilization etc. in compliance with the directions of Pollution Control Board. The Objectors have submitted that that fly ash expenses should not be allowed being contrary to the Notification of Ministry of Environment & Forests, Govt. of India and on the contrary, the value of fly ash generated, which is a saleable item, should be reduced from the ARR. In response, the petitioner has denied that it had opportunity to sell the fly ash to earn significant income. It has also submitted that it is required to make arrangements for disposal of fly ash including at various times by incurring expenses. We have examined the submissions of the parties. Regulation 9(2)(ii) provides for consideration of expenditure under Change-in-law. It is found from the CEA report on ash generation and utilization during 2010-11, the reference of which has been cited by the objector, Maithon Alloys Ltd in its objection dated 4.2.2013 that in 2010-11, whatever ash was generated in the generating station, the same was utilized for mine filling. The said objector has not placed any conclusive proof in support of its claim that the petitioner is earning revenue by sale of ash from the generating station. The

notification of the Ministry of Environment & Forest, Govt. of India does facilitate 100% utilization of ash by thermal power stations (coal/lignite based) thereby making ash utilization a statutory obligation. In this background and considering the fact that Ash evacuation is necessary for meeting the environment and pollution control norms as specified by the statutory authority and since the works related to Ash pond/Ash handling system are taken up in stages during the life of the generating station, the capitalization of the expenditure under this head is allowed.

49. Based on the above discussions, the additional capital expenditure allowed for the period 2009-14 after considering the de-capitalization is summarized as under:

	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Additional Capital Expenditure claimed	1807.72	1176.43	3555.49	9453.86	8800.50
De-capitalization	207.96	217.34	555.80	1040.89	668.64
Expenditure disallowed	34.28	22.90	9.98	0.00	0.00
<b>Net Additional Capital Expenditure allowed</b>	<b>1565.48</b>	<b>936.18</b>	<b>2989.70</b>	<b>8412.97</b>	<b>8131.86</b>

50. The year-wise additional capital expenditure allowed for the period 2009-14 after adjustment of liabilities, are as under:

	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Net Additional capital Expenditure allowed	1565.48	936.18	2989.70	8412.97	8131.86
Less : Liabilities included in additional capital expenditure	4.37	6.67	0.00	0.00	0.00
Add: Discharge of liabilities	98.22	0.00	0.00	0.00	0.00
<b>Total Additional capital expenditure allowed</b>	<b>1659.33</b>	<b>929.51</b>	<b>2989.70</b>	<b>8412.97</b>	<b>8131.86</b>

#### Capital Cost for 2009-14

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

	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Opening Capital cost	19403.26	21062.59	21992.10	24981.80	33394.77
Additional Capital Expenditure	1659.33	929.51	2989.70	8412.97	8131.86
<b>Closing Capital cost</b>	<b>21062.59</b>	<b>21992.10</b>	<b>24981.80</b>	<b>33394.77</b>	<b>41526.63</b>
<b>Average Capital cost</b>	<b>20232.92</b>	<b>21527.34</b>	<b>23486.95</b>	<b>29188.29</b>	<b>37460.70</b>

## Debt-Equity Ratio

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

*“(1) For a project declared under commercial operation on or after 1.4.2009, if the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan.*

*Provided that where equity actually deployed is less than 30% of the capital cost, the actual equity shall be considered for determination of tariff.*

*Provided further that the equity invested in foreign currency shall be designated in Indian rupees on the date of each investment.*

*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.*

53. Accordingly, gross loan and equity amounting to ₹9914.07 lakh and ₹9587.41 lakh respectively as approved vide order dated 8.5.2013 in Petition No.272/2010 has been considered as the gross loan and equity as on 1.4.2009. However, un-discharged liabilities of ₹98.22 lakh included in the capital cost as on 31.3.2009 has been adjusted to debt and equity in the ratio of 70:30 as these liabilities pertain to the period 2004-09. As such, the gross normative loan and equity as on 1.4.2009 is revised to ₹9845.31 lakh and ₹9557.94 lakh respectively. Further, the additional expenditure approved as above has been allocated in debt-equity ratio of 70:30 and the same is subject to truing-up in line with Regulation 6 of the 2009 Tariff Regulations.

## Return on Equity

54. 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:

$$\text{Rate of pre-tax return on equity} = \text{Base rate} / (1-t)$$

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.

55. Accordingly, Return on Equity has been worked out after accounting for the approved additional capital expenditure, as under:

	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Notional Equity- Opening	9557.94	10055.74	10334.60	11231.51	13755.40
Addition of Equity due to Additional Capital Expenditure	497.80	278.85	896.91	2523.89	2439.56
Normative Equity-Closing	10055.74	10334.60	11231.51	13755.40	16194.96
Average Normative Equity	9806.84	10195.17	10783.05	12493.45	14975.18
Return on Equity (Base Rate)	15.500%	15.500%	15.500%	15.500%	15.500%
Tax Rate for the year 2008-09	16.995%	19.931%	20.008%	20.008%	20.008%
Rate of Return on Equity (Pre Tax)	18.674%	19.358%	19.377%	19.377%	19.377%
<b>Return on Equity (Pre Tax)- (annualised)</b>	<b>1831.33</b>	<b>1973.58</b>	<b>2089.43</b>	<b>2420.86</b>	<b>2901.74</b>

### Interest on Loan

56. 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.

57. The interest on loan has been worked out as under:

(a) As stated above, the gross normative loan of ₹9845.31 lakh has been considered as on 1.4.2009.

(b) Cumulative repayment as on 31.3.2009 works out to ₹9665.59 lakh as per order dated 8.5.2013 in Petition No.272/2010. The same has been considered as cumulative repayment as on 1.4.2009. However, the same is adjusted by an amount equal to adjustment in the cumulative depreciation on account of removal of un-discharged liabilities from the capital cost as on 1.4.2009. As such, the cumulative repayment as on 1.4.2009 is revised to ₹9598.56 lakh.

(c) Accordingly, the net normative opening loan as on 1.4.2009 works out to ₹246.76 lakh.

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

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

proportionate adjustment has been made to the repayments on account of de-capitalization considered in the projected additional capital expenditure approved above.

(c) The rate of interest has been calculated considering the actual loan portfolio.

58. 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	9845.31	11006.84	11657.50	13750.29	19639.37
Cumulative repayment of loan up to previous year	9598.56	10612.02	11657.50	12968.85	14353.41
Net Loan Opening	246.76	394.83	0.00	781.44	5285.97
Addition due to Additional capitalisation	1161.53	650.66	2092.79	5889.08	5692.30
Repayment of loan during the year	1092.00	1197.63	1700.41	2113.18	2712.08
Less: Repayment adjustment on account of de-capitalization	145.57	152.14	389.06	728.62	468.05
Add: Repayment adjustment on account of discharges of liabilities	67.03	0.00	0.00	0.00	0.00
Net Repayment	1013.46	1045.49	1311.35	1384.55	2244.04
Net Loan Closing	394.83	0.00	781.44	5285.97	8734.23
Average Loan	320.79	197.41	390.72	3033.70	7010.10
Weighted Average Rate of Interest on Loan	8.8451%	8.8202%	8.6980%	8.6720%	8.7430%
<b>Interest on Loan</b>	<b>28.37</b>	<b>17.41</b>	<b>33.98</b>	<b>263.08</b>	<b>612.89</b>

## Depreciation

59. 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.”

60. The cumulative depreciation of ₹17133.27 lakh as on 31.3.2009 as per order dated 8.5.2013 in Petition No.272/2010 has been considered. Further, proportionate adjustment has been made to this 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 ₹17046.98 lakh. Accordingly, the balance depreciable value (before providing depreciation) for the year 2009-10 works out to ₹1092.00 lakh. The rate of depreciation has been arrived by taking the weighted average of depreciation computed on the gross value of asset as on 31.3.2009 at the rates approved by C&AG and the same works out to 7.2398%. Proportionate adjustment has been made towards the de-capitalization of assets during the period. The necessary calculations for depreciation are as under:

	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Opening capital cost	19403.26	21062.59	21992.10	24981.80	33394.77
Closing capital cost	21062.59	21992.10	24981.80	33394.77	41526.63
Average capital cost	20232.92	21527.34	23486.95	29188.29	37460.70
Depreciable value @ 90%	18138.98	19303.95	21067.60	26198.80	33643.98
Balance depreciable value	1092.00	1249.29	1928.99	5858.10	12126.90
<b>Depreciation (annualized)</b>	<b>1092.00</b>	<b>1249.29</b>	<b>1700.41</b>	<b>2113.18</b>	<b>2712.08</b>
Cumulative depreciation at the end of the year	18138.98	19303.95	20839.03	22453.87	24229.16
Less: Cumulative depreciation adjustment on account of discharges of liabilities	(-) 86.29	0.00	0.00	0.00	0.00
Less: Cumulative depreciation adjustment on account of de-capitalization	170.61	165.34	498.33	936.80	601.78
Cumulative depreciation (at the end of the period)	18054.66	19138.61	20340.70	21517.07	23627.38

### Operation & Maintenance expenses

61. Clause (b) of Regulation 19 of Regulation of the 2009 Tariff Regulations provide the following O&M expense norms for this generating station as under:

	(₹ in lakh/MW)				
	2009-10	2010-11	2011-12	2012-13	2013-14
<b>O&amp;M expenses for 350MW units</b>	31.35	32.25	33.17	34.12	35.09

62. Based on the above norms, the O&M expenses allowed for the generating station are as under:

(₹ in lakh)					
	2009-10	2010-11	2011-12	2012-13	2013-14
<b>O&amp;M expenses</b>	10972.50	11287.50	11442.60	12097.80	12788.10

63. In addition, the petitioner has claimed additional O&M expenses on Ash evacuation, Mega insurance, Amortization, CISF Security, share of Subsidiary Activity and for Escalation Factor as given under. The petitioner has submitted that these O&M expenses were not part of the base amount included in the determination of O&M cost while specifying the normative O&M expenses by the Commission under the 2009 Tariff Regulations.

(₹ in lakh)					
	2009-10	2010-11	2011-12	2012-13	2013-14
(i) Ash Evacuation	392.22	414.66	438.37	463.45	489.96
(ii) Mega Insurance	100.99	106.77	112.88	119.34	126.16
(iii) Amortization	2233.80	2233.80	2233.80	852.73	0.00
(iv) CISF Security	533.00	563.49	595.72	629.79	665.82
(v) Share of Subsidiary activity	354.16	374.42	395.84	418.48	442.42
(vi) Escalation Factor	4996.45	5281.25	5582.28	5900.47	6236.79
<b>Total</b>	<b>8610.63</b>	<b>8974.38</b>	<b>9358.89</b>	<b>8384.26</b>	<b>7961.15</b>

#### **Ash Evacuation**

64. In Petition No. 272/2010 (which was disposed of on 8.5.2013), the Commission had sought information from the Petitioner as regards (i) the details of Ash Handling Systems in respect of the generating stations of the petitioner, including this generating station and (ii) the justification for the necessity of Ash evacuation from Ash pond with reference to the present system of ash handling system available to the generating stations. The petitioner vide its affidavit dated 14.10.2011 had furnished the required information.

65. The respondent, JSEB and the objectors have opposed the relaxation of O&M norms and have submitted that any claim of the petitioner beyond the 2009 Tariff Regulations may not be permitted. The objectors have submitted that the petitioner should take steps to sell the fly ash and the sale proceeds should be reduced from the ARR. In response, the petitioner has denied that it had opportunity to sell the fly ash to earn significant income. It has also submitted that it is

required to make arrangements for disposal of fly ash including at various times by incurring expenses.

66. The matter has been examined. In respect of this generating station, it has been submitted that at present there is only wet slurry Ash disposal system. It has also submitted that in absence of dry fly ash system and the capacity of ash pond, if existing ash ponds are not evacuated on regular basis, the ash slurry would overflow to the low lying area/river causing river bed pollution. Accordingly, the petitioner has submitted that Ash evacuation was required during 2006-09 for compliance of pollution norms and the expenditure on ash evacuation pertains to evacuation of ash from the already filled up ash ponds in case of old stations like this generating station. The petitioner has further submitted that the Commission had allowed additional O&M expenses after being satisfied that the Ash evacuation was necessary for meeting the environment and pollution control norms as specified and also since the expenditure relating to ash evacuation in abandoned mines was not part of the normal O&M expense norms specified by the Commission. Considering the fact that Ash evacuation is still being carried out in the absence of any dry fly ash system and keeping in view that the normative O&M expenses allowed to this generating station for the period 2009-14 do not include expenditure on this count, we allow the additional O&M on Ash evacuation system as prayed for by the petitioner in relaxation of the provisions of the 2009 Tariff Regulations.

### **Mega Insurance**

67. The respondent, JSEB and the Objectors have objected to the claim of the petitioner for additional O&M expenses towards Mega Insurance. The Commission in its order dated 8.5.2013 in Petition No. 272/2010 had allowed additional O&M expenses for the period 2006-09 taking into consideration the location of the generating stations of the petitioner, the security for the generating station against any acts of sabotage/terrorism and keeping in view that the normative O&M expenses allowed to the generating station in terms of the 2004 Tariff Regulations, do not include expenses on insurance. In line with the said order dated 8.5.2013, the Mega Insurance

claimed by the petitioner for the period 2009-14, is allowed as additional O&M expenses in relaxation of the provisions of the 2009 Tariff Regulations.

### **Amortization of Capital Spares**

68. The respondent, JSEB and the Objectors have objected to the claim of the petitioner for additional O&M expenses under this head. The normative O&M expenses allowed to the generating station for the period 2009-14 includes the expenses towards consumption of stores and capital spares. In view of this, we find no justification to allow the amortization of capital spares separately. Hence, the same has not been considered.

### **CISF Security**

69. The petitioner vide its affidavit dated 19.4.2013 has submitted that all its Thermal and Hydro generating stations viz., Bokaro TPS, Chandrapura TPS, Mejia TPS, Durgapur TPS, Maithon HEP, Panchet HEP and Tilayia HEP are located in high alert security zones. In the support of this, the petitioner has submitted documentary evidences such as correspondence from the Ministry of Power, Govt. of India wherein direction to take appropriate security arrangements at hydrogenating stations, dams etc., and instructions for strengthening the physical security of the various generating stations and for tightening the personal security were given. It has also submitted that IB inspections were undertaken and recommendations were issued from time to time for improvement of the security arrangements in the generating stations. The respondent, JSEB and the Objectors have objected to the claim of the petitioner for additional O&M expenses under this head. The matter has been considered. Based on the documentary evidence and considering the location and significant threat perception to the generating station and the personnel employed there, we consider the matter favorably and allow the claim of the petitioner for additional O&M on this count in relaxation of the provisions of the 2009 Tariff Regulations. However, the petitioner is directed to furnish the generating station-wise CISF personnel deployed/employed in its generating station during the period 2008-09 to 2013-14 at the time of truing up exercise to be undertaken in terms of Regulation 6 of the 2009 Tariff Regulations.

### Share of subsidiary activities

70. The petitioner has claimed the projected expenditure towards the share of subsidiary activities for the period 2009-10 to 2013-14 as additional O&M expenses as given below:

	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Share of Subsidiary activities	354.16	374.42	395.84	418.48	442.42

71. The respondent, JSEB and the Objectors have objected to the claim of the petitioner for additional O&M expenses under this head. The matter has been examined. In our order dated 3.10.2006 in Petition No. 66/2005, expenditure towards allocation of share of subsidiary activity for 2006-09 other than soil conservation has not been allowed. In line with said order and as the normative O&M allowed to the generating station during 2009-14 do not include revenue expenses on subsidiary activities, the additional O&M expenses for share of subsidiary activities has been considered and has been limited to the expenditure required for soil conservation. The Operating expenses of subsidiary activities for the years 2009-10, 2010-11 and 2011-12 have been verified/checked from the balance sheet of the petitioner company for the respective years in order to ensure that the expenses for the activities relating to soil conservation have only been accounted for in the computation of subsidiary expenses. However, in absence of the balance sheet for the years 2012-13 and 2013-14, these expenses have been arrived at by escalating the expenses of 2011-12 and 2013-14 by 5.72% as per methodology specified under the 2009-14 Tariff Regulations relating to escalation of O&M expense norms. Accordingly, the following expenditure has been allowed for the period 2009-14 as additional O&M expense towards subsidiary activities:

	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Share of subsidiary activities	172.17	138.07	196.18	231.81	273.91

72. The subsidiary expenses allowed as above for the years 2012-13 and 2013-14 are subject to truing-up based on the audited balance sheet to be submitted by the petitioner for the said years.

## Escalation Factor

73. The normative O&M expense norms under the 2009 Tariff Regulations provides for normal escalation to off-set the year to year inflation in the O&M expenses. Further, the petitioner has not provided any justification with details for such an abnormal increase due to escalation factor. Hence, additional claim for escalation factor has not been allowed.

74. Based on the above discussions, the additional O&M expenses is allowed as under:

	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
<b>Additional O&amp;M allowed</b>					
a. Ash evacuation	392.22	414.66	438.37	463.45	489.96
b. Mega Insurance	100.99	106.77	112.88	119.34	126.16
c. Amortisation of spares	0.00	0.00	0.00	0.00	0.00
d. CISF Security	533.00	563.49	595.72	629.79	665.82
e. Share of Subsidiary activity	172.17	138.07	196.18	231.81	273.91
f. Escalation factor	0.00	0.00	0.00	0.00	0.00
<b>TOTAL</b>	<b>1198.38</b>	<b>1222.99</b>	<b>1343.15</b>	<b>1444.39</b>	<b>1555.85</b>

## Interest on Working Capital

75. 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.

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

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

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

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

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

77. Working capital has been calculated considering the following elements:

#### Fuel Components in working capital

78. The petitioner has claimed the following cost for fuel component in working capital in based on price and GCV of coal & secondary fuel oil procured and burnt for the preceding three months of January, 2009, February, 2009 and March, 2009.

	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Cost of coal for 2 months	5600.09	5600.09	5615.43	5600.09	5600.09
Cost of secondary fuel oil 2 months	403.44	403.44	404.54	403.44	403.44

79. Accordingly, the claim of the petitioner as above has been found to be in order and has been allowed.

#### Maintenance spares

80. The petitioner has claimed the following maintenance spares in the working capital:

	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
	2194.50	2257.50	2321.90	2388.40	2456.30

81. The expenses for maintenance spares claimed as above is allowed in terms of the provisions of the regulations.

#### Receivables

82. Receivables equivalent to two months of capacity charge and energy charge for sale of electricity has been calculated on normative plant availability factor. Accordingly, receivables have been worked out on the basis of two months of fixed and energy charges (based on primary fuel only) as shown below:

	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Variable Charges -2 months	5600.09	5600.09	5615.43	5600.09	5600.09
Fixed Charges - 2 months	3087.56	3192.11	3349.87	3572.21	3875.21
<b>Total</b>	<b>8687.65</b>	<b>8792.20</b>	<b>8965.30</b>	<b>9172.30</b>	<b>9475.30</b>

### O&M expenses for 1 month

83. O & M expenses for 1 month as claimed by the petitioner for the purpose of working capital are allowed as under:

	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
O & M for 1 month	914.38	940.63	967.46	995.17	1023.46

84. 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
Fuel Cost – 2 months	5600.09	5600.09	5615.43	5600.09	5600.09
Liquid fuel stock – 2 months	403.44	403.44	404.54	403.44	403.44
O&M Expenses – 1 month	914.38	940.63	967.46	995.17	1023.46
Maintenance Spares	2194.50	2257.50	2321.90	2388.40	2456.30
Receivables – 2 months	8687.65	8792.20	8965.30	9172.30	9475.30
<b>Total working capital</b>	<b>17800.05</b>	<b>17993.85</b>	<b>18274.64</b>	<b>18559.39</b>	<b>18958.59</b>
Rate of interest	12.2500%	12.2500%	12.2500%	12.2500%	12.2500%
<b>Interest on working capital</b>	<b>2180.51</b>	<b>2204.25</b>	<b>2238.64</b>	<b>2273.53</b>	<b>2322.43</b>

### Other Elements of tariff

85. In addition, the petitioner has claimed expenditure towards Pension & Gratuity contribution, Interest on Government capital as per Section 38 of the DVC Act, 1948, Contribution to the Sinking fund created for redemption of bond and Cost of Common Offices. We now discuss and decide these elements as detailed below:

### Pension & Gratuity Contribution

86. The petitioner has submitted the actuarial valuation of ₹3140.94 crore as on 31.3.2009 duly certified by the Actuary, towards Pension & Gratuity (P&G) liability for existing pensioners and existing employees. The leave encashment liability of ₹90.06 crore for existing employees as on as on 31.3.2009 has not been considered in the actuarial liability of ₹3140.94 crore. The details of Pension & Gratuity liability as on 31.3.2009 are as given under:



Statement of Pension & Gratuity liability as on 31.3.2009

Actuarial liabilities as on 31.3.2009	₹ in crore
Pension	
Existing Employees	1222.46
Existing Pensioners	1770.35
Gratuity	
Existing Employees	148.13
Leave	
Existing Employees	90.06
<b>Total</b>	<b>3231.00</b>
Pension & Gratuity liability excluding Leave	3140.94
Annual liability for 2009-10	60.00
<b>Total liability</b>	<b>3200.94</b>

87. The P&G liability of ₹3200.94 crore also include annual liability of ₹60.00 crore for the year 2009-10. However, as certified by the Actuary, P&G liability as on 31.3.2009 excluding ₹90.06 crore towards leave encashment works out to ₹3140.94 crore. The Commission while determining the tariff of the generating & transmission systems of the petitioner in its order dated 3.10.2006 in Petition No. 66/2005 had allocated an amount of ₹14952 lakh towards the pension and gratuity contribution of Mejia, TPS, Unit-IV of the petitioner out of the total admitted claim of ₹169015 lakh allocated towards 'power business'. Subsequently, in order dated 6.8.2009 in Petition No. 66/2005, the Commission had allowed the petitioner to recover 60% of the admitted liability of ₹153449.00 lakh during the period 2006-09 and the balance 40% of liability during the period 2009-14 in compliance of the directions contained in the judgment of the Tribunal. In line with this, the Commission vide its order dated 8.5.2013 in Petition No. 272/2010 had allowed the recovery of an amount of ₹92069.40 lakh, being 60% of ₹153449.00 lakh towards Pension and Gratuity Fund for all its generating stations along with the tariff for the period and 2006-09 and ₹61379.60 lakh, being the balance 40% amount in five equal yearly instalments along with the tariff for the period 2009-14. The details are as under:

(₹ in lakh)	
	Amount
<b>Petition No: 66/2005 order dated 3.10.2006 and 6.8.2009</b>	
<b>Actuarial Valuation as on 31.3.2006</b>	170900.00
Amount allocated to power business	169015.00
Liability pertains to Distribution System	614.00
Liability pertains to Mejia TPS, Unit IV	14952.00

Net Amount	153449.00
Recoverable in 2006-09 (60%)	92069.40
Recoverable in 2009-14 (40%)	61379.60
<b>Mejia TPS, Unit-IV (Petition No: 279/2010)</b>	
Total admitted claim	14952.00
Recoverable in 2006-09 (60%)	8971.20
Recoverable in 2009-14 (40%)	5980.80

88. The petitioner, in this petition, has claimed ₹116710.68 lakh towards Pension & Gratuity liability for all its generating stations, excluding Mejia, TPS, Unit-IV based on the actuarial valuation as on 31.3.2009. The respondent, JSEB has submitted that no provisions for claiming such type of expenses exist under the 2009 Tariff Regulations and hence the claim is liable to be rejected. The objector, Jai Balaji Inds and MAL have submitted that the claim towards P&G contributions are already covered under the normative O&M expenses specified by the Commission under the 2009 Tariff Regulations and hence further claim is not admissible. The objector's have also submitted that the petitioner should deduct the interest earned on P&G fund from the ARR. The petitioner has clarified that the Fund is invested by a trust constituted for its administration in the approved securities and the income accrued is used on the welfare activities of the employees. The clarification of the petitioner merits acceptance and accordingly, the submissions of the objectors is rejected. After considering the documents available on record and the previous orders of the Commission, the P&G liability of the generating stations of the petitioner for the period 2009-14 has been worked out as detailed below.

	(₹ in lakh)
	<b>Amount</b>
Liability as per Actuarial Valuation as on 31.3.2009	314093.69
Liability as per Actuarial Valuation as on 31.3.2006	169015.00
Difference	145078.69
Recoverable in 2009-14 (40%)	<b>58031.48</b>
Share of Mejia TPS, Unit-IV in the proportion allowed earlier	5133.78
<b>Share of Other generating stations &amp; transmission system</b>	<b>52897.69</b>

89. The Commission in its order dated 8.5.2013 in Petition No.272/2010 had decided the P&G liability and accordingly directed that the petitioner would recover 40% of the said liability which was staggered for the period 2009-14 along with the 40% of the liability due to pay revision. The relevant portion of the said order is extracted as under:

*"Accordingly, in line with the judgment of the Tribunal, the prayer of the petitioner for adjustment of 40% of the pension and gratuity fund to be recovered from additional capitalization for the period 2006-09 is not accepted and the same is recoverable during 2009-14. Similarly, the impact of P&G contribution on account of revision of employee cost due to pay revision during the period 2006-09 (1.1.2006 to 31.3.2009) is recoverable by the petitioner to the extent of 60% during 2006-09 and the balance 40% is recoverable during the period 2009-14 along with the P&G liability to be recovered during the period 2009-14, in line with the decision of the Tribunal."*

Thus, the amount towards P&G liability is recoverable by the petitioner in five annual equal installments during the period 2009-14 in addition to the staggered P&G contribution allowed by the Commission for the period 2006-09. Based on the approved capital cost as on 31.3.2009 vide order dated 8.5.2013 in Petition No. 272/2010, the total P&G liability has been apportioned among all the generating stations of the petitioner. Accordingly, the year-wise P&G liability for this generating station, which is subject to true-up in terms of the 2009 Tariff Regulations is worked out and allowed as under:

<i>(₹ in lakh)</i>						
	<b>Total</b>	<b>2009-10</b>	<b>2010-11</b>	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>
P&G contribution staggered from previous tariff period	61379.60	12275.92	12275.92	12275.92	12275.92	12275.92
P&G contribution allowed as per actuarial valuation as on 31.3.2009	52897.69	10579.54	10579.54	10579.54	10579.54	10579.54
<b>Total</b>	<b>114277.29</b>	<b>22855.46</b>	<b>22855.46</b>	<b>22855.46</b>	<b>22855.46</b>	<b>22855.46</b>
<b>Share of Durgapur TPS, Units III &amp; IV</b>	<b>6099.22</b>	<b>1219.84</b>	<b>1219.84</b>	<b>1219.84</b>	<b>1219.84</b>	<b>1219.84</b>

### **Contribution to sinking fund**

90. The respondent, JSEB has submitted that no provisions for claiming such type of expenses exist under the 2009 Tariff Regulations and hence the claim is liable to be rejected. The objectors, MAL and Jai Balaji Inds have submitted that the computations and validity of such claims clearly need a detailed investigation before any provision for sinking fund is allowed by the Commission. As per judgment of the Tribunal dated 23.11.2007, sinking fund, established with the approval of Comptroller and Accountant General of India vide letter dated December 29, 1992 under the provision of Section 40 of the DVC Act, 1948 is to be taken as an item of expenditure to be recovered through tariff. Accordingly, the contribution towards sinking fund created for redemption of bond is allowed. The total contribution allowed is allocated among all

the generating stations of the petitioner based on the proportion of capital cost allowed as on 31.3.2009 in orders dated 8.5.2013 and 22.4.2013 in Petition Nos. 272/2010 and 279/2010 respectively and the amount considered for this generating station (Durgapur TPS, Units III & IV) is as under:

	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Contribution to Sinking fund	440.76	465.41	1200.74	1284.79	1374.73

91. Regulation 43 of the 2009 Tariff Regulations deals with the "Special Provisions relating to Damodar Valley Corporation" as under:

"(1) Subject to clause (2), these regulations shall apply to determination of tariff of the projects owned by Damodar Valley Corporation (DVC).

(2) The following special provisions shall apply for determination of tariff of the projects owned by DVC:

(i) Capital Cost: The expenditure allocated to the object 'power', in terms of sections 32 and 33 of the Damodar Valley Corporation Act, 1948, to the extent of its apportionment to generation and inter-state transmission, shall form the basis of capital cost for the purpose of determination of tariff:

Provided that the capital expenditure incurred on head office, regional offices, administrative and technical centres of DVC, after due prudence check, shall also form part of the capital cost.

(ii) Debt Equity Ratio: The debt equity ratio of all projects of DVC commissioned prior to 01.01.1992 shall be 50:50 and that of the projects commissioned thereafter shall be 70:30.

(iii) Depreciation: The depreciation rate stipulated by the Comptroller and Auditor General of India in terms of section 40 of the Damodar Valley Corporation Act, 1948 shall be applied for computation of depreciation of projects of DVC.

(iv) Funds under section 40 of the Damodar Valley Corporation Act, 1948: The Fund(s) established in terms of section 40 of the Damodar Valley Corporation Act, 1948 shall be considered as items of expenditure to be recovered through tariff.

(3) The provisions in clause (2) of this regulation shall be subject to the decision of the Hon'ble Supreme Court in Civil Appeal No 4289 of 2008 and other related appeals pending in the Hon'ble Court and shall stand modified to the extent they are inconsistent with the decision.

### **Interest on Capital as per Section 38 of DVC Act**

92. The petitioner has claimed interest on capital in terms of the judgment of the Tribunal dated 23.11.2007. The Commission in its order dated 6.8.2009 had rejected this claim of the petitioner based on the judgment of the Tribunal dated 23.11.2007, the relevant portion of which is extracted as under:

*"E.13 As regards the liability arising under section 38 of the DVC Act on account of interest on capital provided by each of the participating Governments, we have to keep in mind that the total capital to be serviced has to be equal to the value of operating assets when they are first put to commercial use. Subsequently, the loan component gets reduced on account of repayments*

*while equity amount remain static. As per the scheme of the determination of tariff as per Tariff Regulations 2004, the recovery is in two forms; either by way of ROE or by way of interest on loans. We direct the Central Commission to ensure that capital deployed in financing operating assets is getting fully serviced either through Return on Equity or interest on loan (including on the equity portion not covered as part of equity eligible for Return of Equity."*

93. The respondent, JSEB has submitted that since nothing has been mentioned in the petition if any capital was provided by the participating Governments in this generating station, the claim of interest on capital and additional interest on notional loan may not be permitted. As per the provisions of the 2009 Tariff Regulations, the interest on Government capital is not allowable. Also, the Tribunal in its judgment dated 10.5.2010 in Appeal No. 146/2009 (against Commission's order dated 6.8.2009) had confirmed that the interest on Government capital is not to be allowed separately, if the capital deployed is getting fully serviced either through return on equity or interest on loan. The relevant portion of the judgment is extracted as under:

*"(7) In regard to the issue relating to the aspect of Revenues to be allowed under section 38 of the DVC Act, 1948, the Tribunal in the Remand order directed the Central Commission to ensure that the capital deployed in financing operating assets is getting fully serviced either through Return on Equity or interest on loan. **In compliance with the said order, the Central Commission allowed Debt Equity Ratio on the total capital employed and provided return @ of 14% on normative equity capital and also provided interest on loan of the normative type.** The revised Debt Equity Ratio and depreciation was considered in line with the direction of the Tribunal. The Appellant itself had admitted in the earlier appeal that the Appellant is required to pay interest on the amount of capital under section 38 of the DVC Act, but the same was retained by the Appellant in view of the obligation of participating Governments and as such the retained interest is ploughed back as capital to the creation of capital assets relating to power. Thus, the Appellant enjoyed the perpetual moratorium on it and never repaid the loans. So the question of adjustment of depreciation for the loan does not arise."*

94. Accordingly, this interest on Government capital has not been considered for the computation of tariff.

#### **Additional interest on notional loan at Government notification rate of 9.5%**

95. The petitioner has based its claim under this head by submitting the additional interest on notional loan is the "differential rate, equivalent to Govt. of India notification rate of 9.75% minus the interest rate allowed as per the 2009 Tariff Regulations. The respondents and the objectors have objected to the said claim. The matter has been examined and we are of the view that the provisions of Regulation 16 of the 2009 Tariff Regulations (as quoted in para 56 above) lay emphasis on the interest rate to be worked out on the basis of the actual loan portfolio and the

Government of India notified rate has no relevance. Accordingly, the claim of the petitioner has not been allowed in terms of the 2009 Tariff Regulations.

### Cost of Common Offices

96. The petitioner has claimed expenses pertain to Common offices such as Direction office, Central office, R&D, IT centre, Subsidiary activities, Other offices etc. catering services in respect of each of the generating stations as well as the Transmission & Distribution systems. The petitioner has computed the Return on Equity, Interest on Loan and Depreciation on the Common Assets for the period 2009-14 based on the opening capital cost as on 1.4.2009 for different offices and has apportioned them to each of the productive generating stations/T&D systems in proportion to the capital cost based on the opening capital cost as on 1.4.2009. The annual fixed charges claimed towards Common Assets are as under:

	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Direction office	97.14007431	100.1817411	103.3977873	100.2624944	71.32147857
Subsidiary activities	1167.992611	1187.261132	1207.110904	899.6573171	454.2926313
Other offices	67.11021245	69.23305468	71.32526325	69.28959589	50.4989169
R&D	350.8629241	731.6206126	1296.920848	1799.508049	1750.02557
IT	24.50192967	89.80658005	183.9040484	269.0223588	270.3194891
Central office	691.4021894	707.0766878	722.6266689	707.4940516	567.8090716
<b>Total expenditure</b>	<b>2399.009941</b>	<b>2885.179808</b>	<b>3585.28552</b>	<b>3845.233867</b>	<b>3164.267157</b>

97. The apportioned expenditure claimed by the petitioner in respect of its generating stations/T&D system is as under:

	(₹ in lakh)					
	Capital cost as on 1.4.2009	2009-10	2010-11	2011-12	2012-13	2013-14
Bokaro TPS	59008	315.6119589	379.572104	471.67749	505.8761	416.288628
Chandrapura TPS	28137	150.4944023	180.992752	224.9117	241.218747	198.500426
<b>Durgapur TPS (III &amp; IV)</b>	<b>20096.43</b>	<b>107.4883684</b>	<b>129.271357</b>	<b>160.63981</b>	<b>172.28687</b>	<b>141.77595</b>
Mejia TPS Units I, II & III	161070	861.5038338	1036.09136	1287.505	1380.85452	1136.31388
Mejia TPS, Unit-IV	72403	387.2568578	465.736155	578.74975	620.711552	510.787444
Maithon HS	6684	35.75024291	42.9951861	53.428219	57.3019905	47.1541687
Panchet HS	5077	27.1549945	32.658073	40.582745	43.5251654	35.8171326
Tilaiya HS	289	1.54575407	1.8590079	2.310107	2.47759953	2.03883225
T&D	95763.50	512.2035288	616.003816	765.48074	820.981323	675.590699
<b>TOTAL</b>	<b>448527.93</b>	<b>2399.009941</b>	<b>2885.17981</b>	<b>3585.2855</b>	<b>3845.23387</b>	<b>3164.267</b>

98. The respondent, JSEB has sought clarification from the petitioner as to the offices which can be classified under the category of head office, regional office, administrative and technical centres whose expenses can be allocated to the object 'power' from the six offices mentioned. It

has also submitted that the subsidiary activities office cannot be the center whose expenses can be legitimately be allocated to the object 'power'. The objector, M/s Jai Balaji Industries as submitted that the petitioner has taken into account the capital cost allegedly as per its accounts whereas the same should be considered at the levels considered in the last tariff order. Accordingly, it has been submitted that the difference in the allowable share of other office expenditure may be scaled down. In response, the petitioner has clarified that the details of other offices are well defined in the annual accounts of the petitioner company duly audited by the C&AG. It has also submitted that the expenditure on other offices/common offices are to be serviced through tariff as per decision of the Tribunal dated 23.11.2007.

99. We have examined the matter. We notice that the claim of the petitioner is in accordance with the Commission order dated 6.8.2009 in Petition No. 66/2005 which was based on the judgment of the Tribunal dated 23.11.2007. Accordingly, the annual fixed cost for common offices has been worked out by taking the capital cost admitted by the Commission as on 31.3.2009 as the opening capital cost as on 1.4.2009. The annual fixed charges of Common offices so computed are then apportioned to each of the productive generating stations/T&D system of the petitioner in proportion to the capital cost of generating stations/ T&D systems as admitted by the Commission as on 31.3.2009 in order dated 8.5.2013 in the Petition No. 272/2010. In the common office expenditure, the petitioner has claimed expenses for another two offices viz. R&D Centre and Information Technology (IT) for the period 2009-14 in addition to Direction Office, Central Office, Other Offices and for Subsidiary activities. Since no justification has been submitted by the petitioner for inclusion of expenditure of these new offices (IT and R&D) in the common office expenditure, the expenditure on IT and R&D have not been considered at this stage. However, the same would be considered at the time of truing up, subject to prudence check based on the justification of such expenditure. Further, no justification has been submitted by the petitioner for additional capitalization on different offices during 2009-14 and the same will be considered at the time of truing up, subject to prudence check based on

the justification of such expenditure. Accordingly, the annual fixed charges of common offices (excluding IT and R&D) are worked out as under:

		(₹ in lakh)				
<b>Central Office</b>		<b>2009-10</b>	<b>2010-11</b>	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>
1	Depreciation	205.00	205.00	205.00	205.00	205.00
2	Interest on Loan	50.27	50.13	49.44	49.29	49.69
3	Return on Equity	247.55	256.62	256.87	256.87	256.87
	<b>Total</b>	<b>502.82</b>	<b>511.75</b>	<b>511.30</b>	<b>511.16</b>	<b>511.56</b>
<b>Direction Office</b>						
1	Depreciation	0.00	0.00	0.00	0.00	0.00
2	Interest on Loan	0.00	0.00	0.00	0.00	0.00
3	Return on Equity	32.53	33.72	33.76	33.76	33.76
	<b>Total</b>	<b>32.53</b>	<b>33.72</b>	<b>33.76</b>	<b>33.76</b>	<b>33.76</b>
<b>Other Office</b>						
1	Depreciation	0.01	0.00	0.00	0.00	0.00
2	Interest on Loan	0.00	0.00	0.00	0.00	0.00
3	Return on Equity	34.62	35.89	35.92	35.92	35.92
	<b>Total</b>	<b>34.62</b>	<b>35.89</b>	<b>35.92</b>	<b>35.92</b>	<b>35.92</b>
<b>Subsidiary Activity</b>						
1	Depreciation	401.80	312.90	0.00	0.00	0.00
2	Interest on Loan	0.00	0.00	0.00	0.00	0.00
3	Return on Equity	247.00	256.05	256.30	256.30	256.30
	<b>Total</b>	<b>648.80</b>	<b>568.94</b>	<b>256.30</b>	<b>256.30</b>	<b>256.30</b>
<b>Total</b>						
1	Depreciation	606.81	517.90	205.00	205.00	205.00
2	Interest on Loan	50.27	50.13	49.44	49.29	49.69
3	Return on Equity	561.70	582.27	582.84	582.84	582.84
	<b>Total</b>	<b>1218.78</b>	<b>1150.30</b>	<b>837.28</b>	<b>837.13</b>	<b>837.53</b>

100. The capital cost as on 31.3.2009 allowed in respect of this generating station as per order dated 8.5.2013 in Petition No. 272/2010 is ₹19501.48 lakh. Based on this capital cost, the cost of common offices apportioned to this generating station for 2009-14 is as under:

(₹ in lakh)				
<b>2009-10</b>	<b>2010-11</b>	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>
54.29	51.24	37.30	37.29	37.31

101. The respondents and the objectors have submitted that the petitioner is exporting power from its newly commissioned generating stations at lesser tariff at the cost of the beneficiaries/consumers of the DVC command area. Accordingly, they have submitted that the petitioner should be directed to apportion the total cost of Common Assets, expenses towards subsidiaries activities and contribution to sinking fund and apportionment thereof to all the units including the units meant for export on the basis of installed capacity in MW, namely:

- (i) Chandrapura TPS- Unit Nos. 7&8
- (ii) Chandrapura TPS – Extension unit nos.1&2



- (iii) Mejia TPS Phase-II- Unit Nos. 1 & 2
- (iv) Koderma TPS – Unit Nos. 1&2
- (v) Durgapur Steel TPS – Unit Nos. 1 & 2

102. We agree with submissions of the respondents/objectors that the expenses on Common Assets are required to be apportioned to all the operating units/ generating stations of the petitioner. In this view, we direct that the Common Office expenditure as allowed by this order would be subject to truing-up in terms of Regulation 6 of the 2009 Tariff Regulations and would be apportioned to all the units/generating stations and Transmission & Distribution systems of the petitioner which would be in operation during 2009-14. This according to us would address the concerns of the respondents/objectors.

### **Contribution to subsidiary fund**

103. The petitioner has claimed the following amounts for Contribution to Subsidiary Fund.

	<i>(₹ in lakh)</i>				
	2009-10	2010-11	2011-12	2012-13	2013-14
<b>Contribution to Subsidiary Fund</b>	10205	11317	12841	13548	14182

104. The petitioner has submitted that it has been undertaking subsidiary activities in the Damodar Valley area for the last many years and in many respects, the need for increasing the subsidiary activities has now arisen, particularly, in the context of the urgent need in regard to soil erosion, cultivation of reservoirs, check dam, flood control, afforestation etc. because of the increasing impact on environment. In addition, it has also submitted that there is also a need to increase social integration activities by establishing hospitals, schools, drinking water supply, sanitation, public health, training scheme, roads etc. In this connection, it has appointed SBI Capital Market to undertake a study in consultation with experts from IIT Kharagpur and Prof. Pradeep Kakkar. Accordingly, the petitioner has submitted that the expenditure on the subsidiary activities may be allowed.

105. The respondent, JSEB has submitted that the claim of the petitioner as other additional claims or miscellaneous claims are not maintainable under the 2009 Tariff Regulations. The objector, Maithon Alloys Ltd and M/s Jai Balaji Industries have submitted that since the

Commission had allowed the same in terms of the judgment of the Tribunal dated 23.11.2007, the petitioner is stopped from claiming the same as a tariff item as it would amount to double charging. In response, the petitioner has submitted that in terms of the provisions of the DVC Act, 1948, the actual cash contribution is to be allowed. It has also submitted that the common assets created for subsidiary activities are also to be serviced and that Regulation 43 of the 2009 Tariff Regulations provides for such contribution to subsidiary fund.

106. The submissions have been considered. As stated by the respondent/objectors, the petitioner has been allowed Return on Equity, Interest on loan and Depreciation as per the claim made under head 'Common office expenditure' which includes expenditure for subsidiary activities, in addition to other office expenditure such as Direction Office, Central office, Other offices, R&D etc. Further, the O&M expenses for subsidiary activities, limited to the expenditure required for soil conservation has also been allowed. Accordingly, the cost components of subsidiary activities are already being recovered through tariff by the petitioner. In view of this, we are not inclined to allow the Contribution to Subsidiary fund separately.

### Expenses on Secondary Fuel Oil

107. Clause (1) of Regulation 20 of the 2009 Tariff Regulations provides as under:

*“20. Expenses on secondary fuel oil consumption for coal-based and lignite-fired generating station. (1) Expenses on secondary fuel oil in Rupees shall be computed corresponding to normative secondary fuel oil consumption (SFC) specified in clause (iii) of regulation 26, in accordance with the following formula:*

$$SFC - \text{Normative Specific Fuel Oil consumption in ml/kWh} \\ = SFC \times LPSFi \times NAPAF \times 24 \times NDY \times IC \times 10$$

Where,

*LPSFi – Weighted Average Landed Price of Secondary Fuel in ₹/ml considered initially.*

*NAPAF – Normative Annual Plant Availability Factor in percentage*

*NDY – Number of days in a year*

*IC - Installed Capacity in MW.*

108. The petitioner has claimed cost of secondary fuel oil as under:

	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Cost of Secondary Fuel Oil	2422.02	2422.02	2422.02	2422.02	2422.02

109. Accordingly, the cost of secondary fuel considered for the purpose of tariff as under:

	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Cost of secondary fuel oil	2420.62	2420.62	2427.25	2420.62	2420.62

## Compensation Allowance

110. Regulation 19(e) of 2009 Tariff Regulations provides as under:

*"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, 20 years of useful life."*

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

111. The petitioner has claimed Compensation allowance for the period 2009-14 as under:

		(₹ in lakh)				
	COD	2009-10	2010-11	2011-12	2012-13	2013-14
Unit I	December, 1966	91.00	91.00	91.00	91.00	91.00
Unit II	September, 1982	136.50	136.50	136.50	136.50	136.50
<b>Total</b>		<b>227.50</b>	<b>227.50</b>	<b>227.50</b>	<b>227.50</b>	<b>227.50</b>

112. As the two units of the generating station have completed more than 25 years of useful life, the generating station is not entitled for any Compensation Allowance in terms of Regulation 19(e) of the 2009 Tariff Regulations. Hence, Compensation Allowance has not been allowed.

## Annual Fixed Charges

113. 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	1092.00	1249.29	1700.41	2113.18	2712.08
Interest on Loan	28.37	17.41	33.98	263.08	612.89
Return on Equity	1831.33	1973.58	2089.43	2420.86	2901.74
Interest on Working Capital	2180.51	2204.25	2238.64	2273.53	2322.43
O&M Expenses	10972.50	11287.50	11609.50	11942.00	12281.50
Cost of secondary fuel oil	2420.62	2420.62	2427.25	2420.62	2420.62
<b>Sub Total</b>	<b>18525.33</b>	<b>19152.66</b>	<b>20099.23</b>	<b>21433.26</b>	<b>23251.26</b>
Pension & Gratuity Contribution	1219.84	1219.84	1219.84	1219.84	1219.84
Sinking fund Contribution	440.76	465.41	1200.74	1284.79	1374.73
Common office expenditure	54.29	51.24	37.30	37.29	37.31
Additional O&M	1198.38	1222.99	1343.15	1444.39	1555.85
<b>Total</b>	<b>21438.61</b>	<b>22112.14</b>	<b>23900.26</b>	<b>25419.58</b>	<b>27439.00</b>

**Note:** (i) All figures are on annualized basis. (ii) All the figures under each head have been rounded. (iii) 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.

114. The recovery of the annual fixed charges shall be subject to truing up, in terms of Regulation 6 of the 2009 Tariff Regulations.

### Energy Charge Rate (ECR)

115. Sub-clause (b) of clause (6) of Regulation 21 of the 2009 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:*

$$ECR = GHR \times LPPF \times 100 / \{CVPF \times (100 - AUX)\}$$

**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.*

116. The petitioner has claimed an Energy Charge Rate (ECR) of 165.34 paise/kWh based on the weighted average price, GCV of fuel procured and burnt for the preceding three months of January, 2009 to March, 2009. Accordingly, the base energy charge of 165.47 paise/kWh has been determined based on the price and GCV of fuel for the preceding three months (January, 2009 to March, 2009) and calculated in accordance with the 2009 Tariff Regulations as under:

Description	Unit	2009-14
Capacity	MW	350 MW
Gross Station Heat Rate	Kcal/kWh	2820
Weighted avg. Aux. Energy Consumption	%	10.50
Weighted average GCV of oil	kCal/ltr	9890.0
Weighted average GCV of coal	kCal/kg	4668.67
Weighted average price of oil	Rs/Kl	44454.12
Weighted average price of coal	Rs/MT	2472.62
Rate of Energy Charge ex-bus	Paise/kWh	<b>165.47</b>

117. The petitioner shall be entitled to compute and recover the annual fixed charges and energy charges in accordance with Regulation 21 of the 2009 regulations.

### Application fee and the publication expenses

118. In terms of our decision contained in order dated 11.1.2010 in Petition No.109/2009, the expenses towards filing of tariff application and the expenses incurred on publication of notices

are to be reimbursed. Accordingly, the expenses incurred by the petitioner for petition filing fees for the period 2009-14 in connection with the present petition and the publication expenses incurred shall be directly recovered from the beneficiaries, on *pro rata* basis.

119. The difference between the tariff determined by this order and the tariff already recovered from the respondents/consumers shall be adjusted in accordance with the proviso to Regulation 5(3) of the 2009 Tariff Regulations.

120. The tariff approved above is subject to truing up and is also subject to the outcome of the Civil Appeals pending before the Hon'ble Supreme Court relating to the determination of tariff of the generating stations of the petitioner for 2006-09 as stated in the relevant paragraphs of this order.

121. This order disposes of Petition No.276/GT/2012.

*Sd/-*  
**[M.Deena Dayalan]**  
**Member**

*Sd/-*  
**[V.S.Verma]**  
**Member**