

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 297/2009

**Coram: Shri S. Jayaraman, Member
Shri M.Deena Dayalan, Member**

DATE OF HEARING: 28.10.2010

DATE OF ORDER: 30.9.2011

IN THE MATTER OF

Fixation of tariff in respect of sale of power from Khandong Power Station (2 x 25 MW) of Kopili Hydroelectric Project of North Eastern Electric Power Corporation Ltd, Shillong for the period from 1.4.2009 to 31.3.2014.

AND IN THE MATTER OF

North Eastern Electric Power Corporation Ltd, Shillong

..... Petitioner

Vs

1. Assam State Electricity Board, Guwahati
2. Meghalaya State Electricity Board, Shillong
3. Department of Power, Government of Tripura, Agartala
4. Power and Electricity Department, Government of Mizoram, Aizawl
5. Electricity Department, Government of Manipur, Imphal
6. Department of Power, Government of Arunachal Pradesh, Itanagar
7. Department of Power, Government of Nagaland, Kohima
8. North Eastern Regional Power Committee, Shillong
9. North Eastern Regional Load Despatch Centre, Shillong

.....Respondents

The following were present:

1. Shri P. K. Borah, NEEPCO
2. Shri Rana Bose, NEEPCO
3. Ms. Debjani Dey, NEEPCO
4. Shri A.C.Sarmoh, NEEPCO
5. Shri H.M.Sharma, ASEB
6. Shri K.Goswami, ASEB
7. Shri R.Kapoor, ASEB
8. Shri A.Kharpan, MeECL
9. Shri T.Passah, MeECL
10. Shri A.Gan Choudhury, TSECL
11. Shri A.Das, TSECL



ORDER

The petitioner has filed this petition for fixation of tariff in respect of Khandong Power Station (2 x 25 MW) of Kopili Hydroelectric Project (hereinafter referred to as “the generating station”) of North Eastern Electric Power Corporation Ltd, for the period from 1.4.2009 to 31.3.2014 in accordance with the provisions of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009 (hereinafter referred to as “the 2009 regulations”).

2. The tariff for the generating station for the period from 1.4.2004 to 31.3.2009 was determined by the Commission vide its order dated 14.1.2008 in Petition No.26/2007. The annual fixed charges approved by the Commission vide order dated 14.1.2008 is as under:

(₹ in lakh)

	2004-05	2005-06	2006-07	2007-08	2008-09
Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Loan	74.68	77.65	80.79	84.10	87.60
Return on Equity	273.76	273.76	273.76	273.76	273.76
Advance Against Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	853.58	853.58	853.58	853.58	853.58
O & M Expenses	639.68	665.27	691.88	719.55	748.34
Total	1841.70	1870.26	1900.01	1930.99	1963.28

3. The annual fixed charges claimed by the petitioner for the period 2009-14 vide affidavit dated 21.4.2011 is as under:

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Return on Equity	1150.98	1319.83	1612.77	1765.70	1795.71
Interest on Loan	0.00	147.35	392.70	429.12	299.05
Depreciation	521.04	565.03	1187.53	1807.59	1894.41
Interest on Working Capital	92.84	103.66	131.36	151.94	155.58
O & M Expenses	1159.32	1225.63	1295.74	1369.86	1448.22
Total	2924.18	3361.50	4620.10	5524.21	5592.97

4. Reply to the petition has been filed by Assam Power Distribution Company Ltd (APDCL), *erstwhile* ASEB, the respondent No.1 herein.

5. During the hearing on 28.10.2010, the respondent No.1, ASEB raised preliminary issue and submitted that revision of tariff of the generating station for 2009-14 by the petitioner after considering the approved additional capital expenditure for the year 2006-09 cannot be considered since the petitioner has not effected the publication of the amended application in terms of Clause (2) of Section 64 of the Electricity Act, 2003 (Act). The respondent No.1 also submitted that the petitioner was required to file details of the annual revenue requirement (ARR) as per Sections 62(5) of the Act and paragraph 5.3 (h) (3) of the Tariff Policy. Similar arguments have also been put forth by the respondent No. 3, Tripura State Electricity Corporation Limited (TSECL), the *erstwhile* Department of Power, Government of Tripura.

6. Clause (2) of Section 64 of the Electricity Act, 2003 provides as under:

“Every applicant shall publish the application, in such abridged form and manner, as may be specified by the appropriate Commission”

7. In line with the above provision, the Commission has notified the Central Electricity Regulatory Commission (Procedure for making of application for determination of tariff, publication of the application and other related matters) Regulations, 2004, wherein Clause (6) of Regulation 3 provides as under:

“The applicant shall, within 7 days after making the application, publish a notice of his application in at least two daily newspapers, one in English language and one in vernacular language, having circulation in each of the State/Union Territory where the beneficiaries are situate in the same language as of the daily newspaper in which the notice of the application is published, as per the specimen given in the schedule to these regulations”

8. It is clear from the above that the notice of the application for determination of tariff needs to be published by the petitioner as per specimen provided in the schedule to the said regulations. The petitioner, in compliance with the above had effected publication of notice of the application for determination of tariff for 2009-

14 after posting the same in its web-site and after service of copy of the complete application on each of the beneficiary.

9. During the proceedings held on 17.8.2010, the Commission directed the petitioner to file the adjustment statement of the capital cost, as admitted by the Commission as on 31.3.2009 for the generating stations after taking into consideration the tariff orders of the Commission for the period 2004-09 with copy to the respondents, including the consumer respondent.

10. The petitioner, in terms of the above directions had amended its tariff application by revising the tariff forms of the generating station after taking into consideration the tariff orders of the Commission for the period 2004-09 and after serving copies of the same to all the respondents including the consumer respondent. Since compliance made by the petitioner was as per directions of the Commission, we are of the view that there is no need for the petitioner to again publish notice of the amended application. Moreover, the expense involved in publication of notice of application is required to borne by the respondents. In view of these, the submission of the respondents on this count is liable to be rejected.

11. On the issue of filing details of 'annual revenue requirement', the petitioner has submitted that determination of tariff is governed by the 2009 regulations and there is no provision in the said regulations for filing of annual revenue requirement as part of the tariff petition. As regards compliance with paragraph 5.3 (h)(3) of the Tariff policy, the petitioner has submitted that the same could not be read in isolation and that the Act and the Tariff policy lay out the principles for the Commission to formulate and issue tariff regulations. The 2009 regulations are deemed to have thus fulfilled the requirements of the Act and the tariff policy. The

petitioner has thus prayed for rejection of the submissions made by the respondent Nos. 1 and 3 on these counts.

12. The generating companies or the transmission licensees (as the case may be) are permitted to charge tariff on the basis of the provisions of the tariff regulations specified by the Commission. The 2009 regulations for the control period 2009-14 provide for detailed procedures for calculation of different elements of tariff. The generating companies and transmission licensees are required to file tariff petitions containing the detailed calculation of different elements of tariff in accordance with the provisions of the regulations. The Commission in the course of proceedings also calls for any further information including revised calculations as is considered necessary for determination of tariff. Such data/information is utilized by the Commission for prudence check while determining the tariff of the generating companies and transmission licensees falling within its jurisdiction. Also, in terms of clause (1) of Regulation 6 of the 2009 regulations, the Commission shall carry out truing up, exercise along with the tariff petition filed for the next period with respect to the capital expenditure including additional capital expenditure incurred upto 31.3.2014 as admitted by the Commission after prudence check at the time of truing up and accordingly, in terms of clause (3) of the said regulations, the generating company/transmission licensee (as the case may be) shall submit for the purpose of truing up details of the capital expenditure and additional capital expenditure incurred for the period from 1.4.2009 to 31.3.2014 duly audited and certified by auditors.

13. The Commission in terms of the powers conferred Section 62(5) of the Act has notified on 16.4.2010, the Central Electricity Regulatory Commission (Procedures for calculating the expected revenue from tariffs and charges) Regulations, 2010

wherein a generating company or a transmission licensee, who has made an application for determination of tariff under the regulations, shall submit information in the formats in respect of expected revenue from tariffs and charges determined by the Commission from time to time. In compliance with the said regulations, the petitioner has submitted the information to the Commission on 30.11.2010. As regards filing of ARR, the Appellate Tribunal for Electricity in its judgment dated 24.5.2011 in Appeal Nos. 100, 103 of 2009 & 146, 151 of 2010 (UPPCL-v- CERC, NTPC & ors) has held as under:

“11.3. The existing regulations of the Central Commission provide for a normative tariff and there is no provision to file ARR as suggested by the appellants. Thus the filing of ARR is not according to the scheme of things as existing in the tariff Regulations. Accordingly, this issue is also decided against the appellant.”

14. In view of the above, the submissions of the respondents, APDCL and TSECL is not acceptable. Accordingly, we now proceed with the determination of tariff of the generating station for 2009-14.

CAPITAL COST

(A) Capital Cost as on 1.4.2009

15. The last proviso of Clause 2 of Regulation 7 of the 2009 Regulations, provides as under:

“Provided also that in case of the existing projects, the capital cost admitted by the Commission prior to 1.4.2009 and the additional capital expenditure 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.”

16. The Commission vide its order dated 16.8.2005 in Petition No. 36/2003 had considered the capital cost of ₹12194.00 lakh for the period 2001-04. Since no additional capital expenditure was claimed by the petitioner for 2001-04, the same capital cost was considered as opening capital cost as on 1.4.2004 while determining tariff for the period 2004-09 by order dated 14.1.2008 in Petition No. 26/2007. Since no additional capital expenditure for the period 2004-09 was

claimed by the petitioner, the same capital cost of ₹12194.00 lakh has been considered as the opening capital cost as on 1.4.2009.

Additional Capital Expenditure for 2009-14

17. Regulation 9 of the 2009 regulations provides as under:

“9. Additional Capitalization. (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;*
- (iv) Liabilities to meet award of arbitration or for compliance of the order or decree of a court; and*
- (v) Change in law:*

Provided that the details of works included in the original scope of work along with estimates of expenditure, un-discharged liabilities and the works deferred for execution shall be submitted along with the application for determination of tariff.

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

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

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

18. The petitioner has claimed additional capital expenditure under Regulation 9 (2)(iv) of the 2009 regulations as follows:

	<i>(₹ in lakh)</i>				
	2009-10	2010-11	2011-12	2012-13	2013-14
Expenditure incurred due to any additional work necessary for successful and efficient plant operation - Regulation 9(2)(iv)	443.45	5584.53	4873.63	585.98	485.40

19. After examining the asset-wise details and justification for additional capitalization claimed by the petitioner under various categories, the reply of the respondent, ASEB and by applying prudence check, the admissibility of additional capitalization is discussed in the subsequent paragraphs.

Expenditure incurred due to any additional work necessary for successful and efficient plant operation-Regulation 9(2)(iv)

20. As stated above, the petitioner has claimed expenditure of ₹443.45 lakh, ₹5584.53 lakh, ₹4873.63 lakh, ₹585.98 lakh and ₹485.40 lakh during 2009-10, 2010-11, 2011-12, 2012-13 and 2013-14 respectively, under this head.

22. The assets projected to be capitalized under this head include Circulating Water Pipelines, advance payment for underwater parts, cooler tubes, guide vanes, stator assembly, rotor overhauling pivot ring, top cover, bush housing, runner, botex pipes, under water parts like spiral casing etc, restoration and re-commissioning, lever and strap dowel pin, CTs and PTs, MOCBs, Spares for Isolators, Hydraulic control panel for MIV, Instrumentation, Implementation of recommendations for protecting hydraulic structures from acidic inflow etc. and some other assets.

23. We now examine the claim of the petitioner for replacement of assets damaged due to acidic nature of water. It is observed that most of the items/assets which have been damaged and replaced or repaired due to acidic nature of water (pH

value 3.36 to 5.44 instead of the normal pH value of 6.5 to 8.5) are sought to be replaced. The quality of the water became evident during the period after June, 2006, when the same was tested by the Geological Survey of India, North Eastern Region, Shillong, the Meghalaya State Pollution Control Board and the Centre for Soil and Material Research Station (CSMRS), New Delhi. The expert committee comprising of the CEA, CWC and the CSMRS had also visited the project site during the period from 27.2.2009 to 3.3.2009 and has suggested for routine testing of water in the area, concrete core drilling at specified locations in Khandong Dam, test of silt & slush, monitoring of seepage etc., Repair and replacement of corroded machine components, replacement of guide vanes with stainless steel materials, replacement of cooling pipes and tubes with suitable materials with epoxy coating. The expert committee had also recommended various short-term and long-term measures to be taken up. In the light of the recommendations of the expert committee, the petitioner has sought the replacement of assets/repair of assets and procurement of new assets, on account of damage caused due to the acidic nature of water. Taking into consideration the recommendations of the expert committee and since these assets are necessary for the efficient operation of the generating station, we are of the view that the expenditure to be incurred for replacement of the assets/repair of the assets and the procurement of new assets on account of the damage caused due to the acidic nature of water should be allowed in terms of Regulation 9(2)(iv) of the 2009 regulations. We proceed accordingly. However, it is expected that the expenditure towards treatment of the assets in order to encounter the acidic nature of water should not frequent (within a year or two) and should be for a longer period (more than five years), failing which, the expenses cannot be capitalized and would fall under the category of O & M expenses for which the petitioner may be required to approach the Commission separately with a detailed

project report for carrying out the renovation works, which would be considered in accordance with law.

24. Based on the above, on prudence check, the additional capital expenditure allowed/disallowed for the respective years for the period 2009-14 under Regulation 9(2)(iv) has been tabulated under the following heads:

- (a) Assets (towards replacement, repairs and new assets) on account of acidic nature of water;
- (b) Assets (towards replacement, repairs and new assets) other than due to acidic nature of water; and
- (c) Assets disallowed.

(a) Assets allowed (as replacement, repairs and new assets) due to acidic nature of water:

Year	Assets	Amount (₹ in lakh)
2009-10	REPLACEMENT	
	10% advance payment made against different orders placed with M/s BHEL	90.43
	Procurement of set of guide vanes made of Stainless Steel (SS), along with other turbine spares for Unit-I of the generating station	115.00
	NEW ASSETS	
	Procurement of gate valves	15.00
	Total	220.43
2010-11	REPLACEMENT	
	Procurement of Cu:Ni (70:30) cooler tubes for different coolers.	25.00
	REPAIRS	
	Treatment of underwater parts like spiral casing, draft tube, embedded pipes and cones for protection from corrosion due to acidic nature of water.	50.00
	NEW ASSETS	
	Procurement of Stainless Steel (SS) Top cover for Unit-I of generating station	88.00
Total	163.00	
2011-12	REPLACEMENT	
	Procurement of pivot ring made of Stainless Steel (SS)	44.30
	Procurement of set of guide vanes made of Stainless Steel (SS), along with associated auxiliaries.	182.40
	Procurement of Stainless Steel (SS) Top cover	88.00
	Procurement of Stainless Steel (SS) runner cones for both Units.	15.00
	Procurement of Stainless Steel (SS) bush housings	91.33
Procurement of Cu:Ni (70:30) cooler tubes for different coolers.	25.00	

	REPAIRS	
	Treatment of underwater parts like spiral casing, draft tube, embedded pipes and cones for protection from corrosion due to acidic nature of water.	50.00
	NEW ASSETS	
	Assets disallowed during the year 2010-11 which has been allowed this year	4318.30
	Total	4814.33
2012-13	NEW ASSETS	
	Implementation of recommendations for protecting Hydraulic Structures from acidic inflow and study & treatment of the cause of acidity: Study of other factors besides PH, which may contribute to corrosion: Charge for testing of samples (625 nos.)	20.00
	Charges for experts/institutions for consultancy etc (LS)	23.50
	Assets disallowed during the year 2011-12 which has been allowed this year	4104.90
	Total	4148.40
2013-14	REPLACEMENT	
	Procurement of MIV	50.00
	REPAIRS	
	Implementation of recommendations for protecting Hydraulic Structures from acidic inflow and study & treatment of the cause of acidity: Study of other factors besides PH, which may contribute to corrosion: •charge for testing of samples (625 nos.)	20.00
	• Charges for experts/institutions for consultancy etc (LS)	23.50
	Total	93.50

(b) Additional capitalization of assets (towards replacement, repairs and new assets) other than acidic nature of water:

Year	Assets	Amount (₹ in lakh)
2009-10	REPLACEMENT	
	Procurement of UAT for Unit-I of the generating station	8.50
	NEW ASSETS	
	Modification of cooling water system with PRV & Motorized gate valve.	8.50
	REPAIRS	
	Repair of guide vanes of both the Units of generating station through outsourcing	90.00
	Total	107.00
2010-11	REPLACEMENT	
	Procurement of new stator assembly including replacement of all vapour seals, temperature detection devices for unit – I of the generating station	604.55
	Procurement of Stainless Steel (SS) bush housings (One set for Unit – I of the generating station)	91.33
	Procurement of self lubricating bushes for guide vanes for unit – I of the generating station	19.35
	Procurement of CTs & PTs for replacement of old ones.	25.00
	Replacement of 2 nos 132KV MOCBs with SF6 CBs.	20.00
	Replacement of all 36KV class MOCBs with SF6 CBs (3 Nos)	15.00

	Procurement & retrofitting of MiCOM distance protection scheme in 132KV Khandong- Kopili & Khd- Khle feeders	16.00
	REPAIRS	
	Repairing of runner.	56.50
	NEW ASSETS	
	Replacement of vortex pipes attached with upper cone with SS pipes	9.00
	Procurement & installation of submersible pumps at the generating station	10.00
	Total	866.73
2011-12	REPLACEMENT	
	Replacement of 2 nos 132KV MOCBs with SF6 CBs.	20.00
	REPAIRS	
	Repairing of runner	56.50
	Total	76.50
2012-13	REPLACEMENT	
	Hydraulic control panel for MIV	91.00
	Electrical control & indication panel for MIV	26.40
	Replacement of all electro-magnetic type relays for protection of generators with new version of numerical relays with 100% redundancy.	50.00
	Procurement of pivot ring made of Stainless Steel (SS)	44.30
	Replacement of electro-magnetic type relays for protection of feeders with new version of numerical relays. (4 Nos)	25.00
	Replacement of relays of unit control panels of both units.	10.00
	Replacement of all existing PTs with higher burden rating (4Nos).	10.00
	Procurement of Stainless Steel (SS) Top cover	88.00
	Procurement of Stainless Steel (SS) runner cone	10.00
	Procurement of Stainless Steel (SS) bush housings with self lubricating bushes	110.68
	Total	465.38
2013-14	REPLACEMENT	
	Conversion of existing open loop CW system to closed loop system of all the units or Replacement of all types of cooling water pipes with Stainless Steel (SS) pipes.	200.00
	Procurement and replacement of all existing valves of cast steel with valves made of Stainless Steel (SS).	50.00
	Replacement of battery bank and associated charger panel	20.00
	Conversion of existing open loop CW system to closed loop system of all the units. Or Replacement of all types of cooling water pipes with SS pipes.	50.00
	Procurement and replacement of all existing valves of cast steel with valves made of SS.	25.00
	Total	345.00

25. Based on the above, the additional capital expenditure allowed for the period 2009-14 as replacement, repair and new assets on account of acidic nature of water and other than for acidic nature of water, is summarized as under:

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Additional capital expenditure allowed on assets on account of acidic nature of water	220.43	163.00	4814.33	4148.40	93.50
Additional capital expenditure allowed on other than for acidic nature of water	107.00	866.73	76.50	465.38	345.00
Total	327.43	1029.73	4890.83	4613.78	438.50

26. Assets disallowed for the period 2009-14 are as under:

(₹ in lakh)

Year	Assets	Amount	Justification
2009-10	Procurement of transformer oil for Unit - I generator transformer oil replacement.	10.00	Expenditure is in the nature of O&M expenses
	Partial replacement of CW pipe lines of Units of generating station.	20.00	
	Procurement of Cu:Ni (70:30) cooler tubes for different coolers	50.00	
	Procurement of lever, strap and dowel pins for Unit I guide vanes	20.02	
	Procurement of one set of thrust pad	16.00	Asset is in the nature of spares.
	Total	116.02	
2010-11	Procurement of spares required for rotor overhauling from the OEM, i.e. BHEL for Unit-I of the generating station	22.20	Expenditure on assets in the nature of spares
	Procurement of spares for isolators and earth switches	20.00	
	Procurement of pivot ring made of Stainless Steel (SS) for Unit-I of the generating station	44.30	Expenditure is in the nature of O&M expenses
	Replacement of turbine guide pads	10.00	
	Execution of all the replacement activities and restoration/re-commissioning the Unit.	100.00	
	Procurement of CW pipes	20.00	
	Procurement of gate valves	20.00	These assets have been considered and allowed in the year 2011-12
	Hydro Mechanical Works (New Works & Repair and Re-commissioning of existing works) for Khandong Surge Shaft, Kopili HE Plant, NC Hills, Umrongso, Assam	265.40	
	Instrumentation in Khandong Dam & Dyke	45.00	
	Implementation of recommendations for protecting Hydraulic Structures from acidic inflow and study & treatment of the cause of acidity	0.00	

	Khandong DAM: Treatment of the Khandong Dam upstream face by providing geo-composite with the help of under water service (10600 sqm)	2000.00	
	Khandong WCS: Polymer based treatment of the Khandong Tunnel Concrete Linings (38100 sqm)	356.00	
	Khandong WCS: Treatment of Khandong HP Tunnel Steel lining & Penstock by sandblasting, metal deposition by gas welding at excessively pitted locations, applying selected epoxy based or other suitable coating and replacing excessively pitted ferrules/expansion joints of the penstock (5500 sqm)	206.00	
	Khandong WCS: Polymer based treatment of the Khandong Surge Shaft Concrete Linings (6400 sqm)	60.00	
	Khandong Power Station: Polymer based treatment of the Concrete Linings of Khandong Tail Poo, DT, T.R.T cut & cover (13826 sqm)	128.00	
	DAM Spillways: Epoxy based treatment of the Khandong Dam spill way, bucket & piers (900 MT)	1125.00	
	Charge for Satellite/remote sensing service & ddata interpretation (1256 sq.km.)	5.00	
	Charge for testing of samples (625 nos.)	20.00	
	Expenses in sample collection, procurement of field equipment, minor field construction etc (LS)	13.50	
	Expenses in tour (LS)	13.40	
	Charges for experts/institutions for consultancy etc (LS)	23.50	
	Expenses in petty office materials, stationery & Printings LS)	2.50	
	Pilot Project (1200 cum lime stone)	9.00	
	Installation of anodic/Cathodic protection for the submerged Gate Guides, associated linings, trash racks etc (6 no Gates).	6.00	
	Study of other factors besides PH, which may contribute to corrosion: Expenses in arranging meeting, seminar	0.00	
	Increase of reservoir capacity:	15.00	
	Survey & Investigation	25.00	
	Total	4554.80	
2011-12	Procurement of spares required for rotor overhauling from the OEM, i.e. BHEL for Khandong Unit-II	22.20	Expenditure on assets in the nature of spares
	Procurement of spares required for stator overhauling from the OEM, i.e. BHEL for Khandong Unit II	50.00	
	Replacement of vortex pipes attached with upper cone with Stainless Steel (SS) pipes	9.00	Expenditure in the nature of O&M expenses
	Execution of all the replacement activities and restoration/ re-commissioning the Unit.	100.00	
	Procurement of CW pipes	15.00	

	Implementation of recommendations for protecting Hydraulic Structures from acidic inflow and study & treatment of the cause of acidity:	0.00	These assets have been considered and allowed in the year 2012-13
	Khandong DAM: Treatment of the Khandong Dam upstream face by providing geo-composite with the help of under water service (10600 sqm)	2090.00	
	Khandong WCS: Polymer based treatment of the Khandong Tunnel Concrete Linings (38100 sqm)	357.00	
	Khandong WCS: Treatment of Khandong HP Tunnel Steel lining & Penstock by sandblasting, metal deposition by gas welding at excessively pitted locations, applying selected epoxy based or other suitable coating and replacing excessively pitted ferrules/expansion joints of the penstock (5500 sqm)	207.00	
	Khandong WCS: Polymer based treatment of the Khandong Surge Shaft Concrete Linings (6400 sqm)	60.00	
	Khandong Power Station: Polymer based treatment of the Concrete Linings of Khandong Tail Poo, DT, T.R.T cut & cover (13826 sqm)	128.00	
	DAM Spillways: Epoxy based treatment of the Khandong Dam spill way, bucket & piers (900 MT)	1125.00	
	Charge for Satellite/remote sensing service & ddata interpretation (1256 sq.km.)	5.00	
	Charge for testing of samples (625 nos.)	20.00	
	Expenses in sample collection, procurement of field equipment, minor field construction etc (LS)	13.50	
	Expenses in tour (LS)	13.40	
	Charges for experts/institutions for consultancy etc (LS)	23.50	
	Expenses in petty office materials, stationery & Printings LS)	2.50	
	Pilot Project (1200 cum lime stone)	9.00	
	Treatment of the Khandong Dam sluice gate & its guides etc. by placing emergency sluice/temporary barriers (2 nos.)	20.00	
	Installation of anodic/Cathodic protection for the submerged Gate Guides, associated linings, trash racks etc (6 no Gates).	6.00	
	Increase of reservoir capacity: •Survey & Investigation• DPR preparation	25.00	
	Total	4301.10	
2012-13	Limit switches for shear pin failure detection	4.80	

	Turbine discharge measuring equipment (Winter Kennedy type)	20.00	Existing assets are not in working condition and needs replacement.
	Dial type thermometers (3 Nos)	4.00	
	Resistance Temperature Detectors (7 Nos)	1.50	
	Thermostats (2 Nos)	2.50	
	Electromagnetic Flow Relays (2 Nos)	8.30	
	Pressure Gauges (20 Nos)	4.10	
	• Expenses in sample collection, procurement of field equipment, minor field construction etc (LS)	13.50	
	• Expenses in tour (LS)	13.40	
	• Expenses in petty office materials, stationery & Printings (LS)	2.50	
	• DPR Preparation	2.50	
	Total	77.10	
2013-14	Expenses in sample collection, procurement of field equipment, minor field construction etc (LS)	13.50	Expenditure in the nature of O&M expenses
	Expenses in tour (LS)	13.40	
	Expenses in petty office materials, stationery & Printings (LS)	2.50	
	Expenses in arranging meeting, seminar	15.00	
	DPR Preparation	2.50	
	Total	46.90	

27. In regards to some of the new replaced assets, the gross value of the original asset, are not proposed to be deducted by the petitioner during the year respective years of the claim. The assets are as under:

(₹ in lakh)

Assets	Value of Replacement	Gross Value of Old Assets	Year of replacement
Advance payment	90.43	18.06	2009-10
Set of guide vanes	115.00	22.97	2009-10
UAT	8.50	1.70	2009-10
Total	213.93	42.73	2009-10
New stator assembly	604.55	120.75	2010-11
Stainless Steel	91.33	18.24	2010-11
CTs & PTs	25.00	4.99	2010-11
132KV MOCBs with SF6 CBs	20.00	3.99	2010-11
36KV class MOCBs with SF6 CBs	15.00	3.00	2010-11
MiCOM distance protection scheme	16.00	3.20	2010-11
Cu:Ni (70:30) cooler tubes	25.00	4.99	2010-11
Total	796.88	159.16	2010-11
Pivot ring made of Stainless Steel	44.30	8.85	2011-12
Set of guide vanes made of Stainless Steel	182.40	36.43	2011-12
Stainless Steel Top cover	88.00	17.58	2011-12
Stainless Steel runner cones	15.00	3.00	2011-12
Stainless Steel bush housings	91.33	18.24	2011-12
132KV MOCBs with SF6 CBs.	20.00	3.99	2011-12
Cu:Ni (70:30) cooler tubes	25.00	4.99	2011-12
Total	466.03	93.08	2011-12

Hydraulic control panel	91.00	18.18	2012-13
Electrical control & indication panel	26.40	5.27	2012-13
Electro-magnetic type relays	50.00	9.99	2012-13
Electro-magnetic type relays	25.00	4.99	2012-13
Relays of unit control panels	10.00	2.00	2012-13
PTs with higher burden rating	10.00	2.00	2012-13
Pivot ring	44.30	8.85	2012-13
Stainless Steel Top cover	88.00	17.58	2012-13
Stainless Steel runner cone	10.00	2.00	2012-13
Stainless Steel bush housings	110.68	22.11	2012-13
Total	465.38	92.97	2012-13
Cooling water pipes with Stainless Steel	200.00	39.95	2013-14
Valves of cast steel	50.00	9.99	2013-14
Procurement of MIV	50.00	9.99	2013-14
Battery bank	20.00	3.99	2013-14
Cooling water pipes with SS pipes	50.00	9.99	2013-14
Valves of cast steel	25.00	4.99	2013-14
Total	395.00	78.90	2013-14

28. The gross values of original assets amounting ₹42.73 lakh, ₹159.16 lakh, ₹93.08 lakh, ₹92.97 lakh and ₹78.90 lakh for the years 2009-10, 2010-11, 2011-12, 2012-13 and 2013-14 respectively, are considered as 'deletions' for the year in which these assets have been replaced, for the purpose of tariff.

Additional capital expenditure for 2009-14

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

	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Regulation 9(2)(iv)	327.43	1029.73	4890.83	4613.78	438.50
Assumed deletions	42.73	159.16	93.08	92.97	78.90
Total additional capital expenditure allowed	284.70	870.57	4797.75	4520.81	359.60

Capital Cost for 2009-14

30. In view of the above discussions, the Capital cost considered for 2009-14 is as stated overleaf:

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Opening Capital cost as on 1 st April of the financial year	12194.00	12478.70	13349.27	18147.02	22667.83
Additional Capital expenditure allowed	284.70	870.57	4797.75	4520.81	359.60
Capital Cost as on 31st March of the financial year	12478.70	13349.27	18147.02	22667.83	23027.43

Debt-Equity Ratio

31. Regulation 12 of the 2009 regulations provides as under:

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

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

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

Explanation.- The premium, if any, raised by the generating company or the transmission licensee, as the case may be, while issuing share capital and investment of internal resources created out of its free reserve, for the funding of the project, shall be reckoned as paid up capital for the purpose of computing return on equity, provided such premium amount and internal resources are actually 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”

32. The petitioner has submitted that the additional capital expenditure has been financed through internal resources and others. In terms of the above said regulation, the debt-equity ratio of 70:30 has been considered on the additional capital expenditure after adjustment of un-discharged liability, for the purpose of tariff.

Return on Equity

33. Regulation 15 of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) (Second Amendment) Regulations, 2011 provides as under:

“(1) Return on equity shall be computed in rupee terms, on the equity base determined in accordance with regulation 12.

(2) Return on equity shall be computed on pre-tax basis at the base rate of 15.5% to be grossed up as per clause (3) of this regulation.

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

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

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

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

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

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

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

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

34. The petitioner has considered the rate of Return on Equity @ 18.674%, based on the prevailing MAT rate (Basic rate of 15%+10% surcharge+3% education Cess = 16.995%) for 2009-10.

34. In this order, Return on equity has been worked out @17.481% per annum on the normative equity, after accounting for the additional capital expenditure, considering the base rate of 15.5% and MAT rate of 11.33%. Return on equity has been worked out as stated overleaf:

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Gross Notional Equity	6097.00	6182.41	6443.58	7882.90	9239.15
Addition due to Additional capitalization	85.41	261.17	1439.32	1356.24	107.88
Closing Equity	6182.41	6443.58	7882.90	9239.15	9347.03
Average Equity	6139.71	6313.00	7163.24	8561.03	9293.09
Return on Equity (Base Rate)	15.500%	15.500%	15.500%	15.500%	15.500%
Min Alt. Tax rate for the year 2008-09	11.330%	11.330%	11.330%	11.330%	11.330%
Rate of Return on Equity	17.481%	17.481%	17.481%	17.481%	17.481%
Return on Equity	1073.25	1103.55	1252.17	1496.51	1624.48

35. The petitioner's prayer for grossing up the base rate of Return on Equity based on the tax rates viz, MAT, surcharge, any other cess, charges, levies etc as per the relevant Finance Act, will be guided by the provisions of Regulation 15 as extracted above.

Interest on loan

36. Regulation 16 of the 2009 regulations provides as under:

(1) The loans arrived at in the manner indicated in regulation 12 shall be considered as gross normative loan for calculation of interest on loan.

(2) The normative loan outstanding as on 1.4.2009 shall be worked out by deducting the cumulative repayment as admitted by the Commission up to 31.3.2009 from the gross normative loan.

(3) The repayment for the year of the tariff period 2009-14 shall be deemed to be equal to the depreciation allowed for that year.

(4) Notwithstanding any moratorium period availed by the generating company or the transmission licensee, as the case may be the repayment of loan shall be considered from the first year of commercial operation of the project and shall be equal to the annual depreciation allowed.

(5) The rate of interest shall be the weighted average rate of interest calculated on the basis of the actual loan portfolio at the beginning of each year applicable to the project.

Provided that if there is no actual loan for a particular year but normative loan is still outstanding, the last available weighted average rate of interest shall be considered.

Provided further that if the generating station or the transmission system, as the case may be, does not have actual loan, then the weighted average rate of interest of the generating company or the transmission licensee as a whole shall be considered.

(6) The interest on loan shall be calculated on the normative average loan of the year by applying the weighted average rate of interest.

(7) The generating company or the transmission licensee, as the case may be, shall make every effort to re-finance the loan as long as it results in net savings on interest and in that event the costs associated with such re-financing shall be borne by the beneficiaries and the net savings shall be shared between the beneficiaries and the generating company or the transmission licensee, as the case may be, in the ratio of 2:1.

(8) The changes to the terms and conditions of the loans shall be reflected from the date of such re-financing.

(9) In case of dispute, any of the parties may make an application in accordance with the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999, as amended from time to time, including statutory re-enactment thereof for settlement of the dispute.

Provided that the beneficiary or the transmission customers shall not withhold any payment on account of the interest claimed by the generating company or the transmission licensee during the pendency of any dispute arising out of re-financing of loan.

37. The interest on loan has been computed as stated overleaf:

- (a) The opening gross normative loan as on 1.4.2009 of each unit of the generating station has been arrived at in accordance with the provisions of the above regulations.
- (b) The repayment of loan for the respective years of the period 2009-14 has been considered equal to the depreciation allowed for that year.
- (c) The petitioner has submitted the statement of actual interest rate incurred on the Syndicate loan carrying a floating rate of interest for the period 2008-09 to arrive at the rate of interest at 8.813% as on 1.4.2009. However, as regards syndicate loan, the rate of interest of 7.94% has been considered as on 1.4.2009 (i.e the carried over rate of interest existing as on 31.3.2009) for the years 2009-10 and 2010-11. Accordingly, the Weighted Average Rate of Interest on total loan has been recalculated as 7.94% for the years 2009-10 and 2010-11.
- (d) Since the actual loan is repaid in the year 2010-11, the weighted average rate of interest on loan for the year 2010-11 has been considered for the years 2011-12, 2012-13 and 2013-14.

38. The calculation for weighted average rate of interest on loans is annexed to this order. Based on the above, the interest on loan for the purpose of tariff is worked out as under:

	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Gross Normative loan	6097.00	6296.29	6905.69	10264.11	13428.68
Cumulative Repayment upto Previous Year	6097.00	6296.29	6872.97	7775.11	9274.86
Net Loan-Opening	0.00	0.00	32.72	2489.00	4153.82
Repayment during the year	199.29	576.68	902.14	1499.75	1867.03
Additions due to Additional Capitalisation	199.29	609.40	3358.42	3164.57	251.72
Net Loan-closing	0.00	32.72	2489.00	4153.82	2538.51
Average Loan	0.00	16.36	1260.86	3321.41	3346.16
Weighted Average Rate of Interest on loan	7.94%	7.94%	7.94%	7.94%	7.94%
Interest on Loan	0.00	1.30	100.11	263.72	265.69

Depreciation

39. Regulation 17 of the 2009 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”.

40. The date of commercial operation of the generating station is 4.5.1984. Since the generating station has completed 12 years of commercial operation as on 4.5.1996, the remaining depreciable value has been spread over the balance useful life of the assets for the period 2009-14. Assets amount of Rs.42.73 lakh, Rs.159.16 lakh, Rs.93.08 lakh, Rs.92.97 lakh and Rs.78.90 lakh have been de-capitalized during the years 2009-10, 2010-11, 2011-12, 2012-13 and 2013-14 respectively. The amount of cumulative depreciation allowed in tariff against these de-capitalized assets has been calculated on *pro rata* basis and the same has been adjusted from the cumulative depreciation of the year of de-capitalization. Accordingly, depreciation has been worked out as under:

	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Gross block as on 31.3.2009	12194.00	12478.70	13349.27	18147.02	22667.83
Additional capital expenditure during 2009-14	284.70	870.57	4797.75	4520.81	359.60
Closing gross block	12478.70	13349.27	18147.02	22667.83	23027.43
Average gross block	12336.35	12913.99	15748.14	20407.42	22847.63
Rate of Depreciation	90%	90%	90%	90%	90%
Depreciable value @ 90%	10944.32	11464.19	14014.93	18208.28	20404.46
Balance useful life of the asset	10.1	9.1	8.1	7.1	6.1
Remaining Depreciable value	5218.67	5242.96	7299.79	10635.76	11373.33
Depreciation	517.13	576.68	902.14	1499.75	1867.03

Operation & Maintenance Expenses

41. Clause (f) of Regulation 19 of the 2009 regulations provides for normative operation and maintenance expenses for hydro generating stations as under:

“(i) Operation and maintenance expenses, for the existing generating stations which have been in operation for 5 years or more in the base year of 2007-08, shall be derived on the basis of actual operation and maintenance expenses for the years 2003-04 to 2007-08, based on the audited balance sheets, excluding abnormal operation and maintenance expenses, if any, after prudence check by the Commission.

“(ii) The normalized operation and maintenance expenses after prudence check, for the years 2003-04 to 2007-08, shall be escalated at the rate of 5.17% to arrive at the normalized operation and maintenance expenses at the 2007-08 price level respectively and then averaged to arrive at normalized average operation and maintenance expenses for the 2003-04 to 2007-08 at 2007-08 price level. The average normalized operation and maintenance expenses at 2007-08 price level shall be escalated at the rate of 5.72% to arrive at the operation and maintenance expenses for year 2009-10:

Provided that operation and maintenance expenses for the year 2009-10 shall be further rationalized considering 50% increase in employee cost on account of pay revision of the employees of the Public Sector Undertakings to arrive at the permissible operation and maintenance expenses for the year 2009-10.

“(iii) The operation and maintenance expenses for the year 2009-10 shall be escalated further at the rate of 5.72% per annum to arrive at permissible operation and maintenance expenses for the subsequent years of the tariff period.

43. The petitioner has claimed the following O&M expenses for the period 2009-14 as per provisions of the 2009 regulations.

	(Rs in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
O&M Expenses	1159.32	1225.63	1295.74	1369.86	1448.22

44. The year-wise break-up of actual O&M expenses for the years 2003-08 furnished by the petitioner based on which O&M expenses for the period 2009-14 have been claimed are as follows:

(₹ in lakh)						
Sl	Items	2003-04	2004-05	2005-06	2006-07	2007-08
(A)	Breakup of O&M expenses					
1	Consumption of Stores and Spares	0.00	0.00	0.00	0.00	0.00
2	Repair and Maintenance	65.77	68.03	69.79	99.81	63.29
3	Insurance	22.50	27.42	26.20	20.31	9.69
4	Security	14.22	19.39	17.83	19.83	24.57
5	Administrative Expenses	7.22	9.70	9.59	9.73	10.27
6	Employee Cost	258.18	252.18	263.48	397.18	479.22
7	Loss of store	0.00	2.41	0.05	1.42	0.05
8	Provisions	2.49	0.00	5.69	1.41	1.29
9	Corporate office expenses allocation	170.16	123.48	137.81	174.17	188.87
10	Others (Specific items)	141.12	138.94	129.48	108.95	211.01
11	Total (1 to 10)	681.66	641.55	659.92	832.81	988.26
12	Revenue/ Recoveries, if any	0.00	0.00	0.00	0.00	0.00
13	Net Expenses	681.66	641.55	659.92	832.81	988.26

45. The actual O&M expenses in different years have been examined for any abnormal increase for the purpose of normalization duly considering the justifications furnished by the petitioner and the same are discussed in subsequent paragraphs:

Repairs & maintenance Expenses

46. The petitioner has submitted the repair & maintenance expenses during 2003-08 as under:

(₹ in lakh)					
	2003-04	2004-05	2005-06	2006-07	2007-08
Repair & Maintenance	65.77	68.03	69.79	99.81	63.29

47. It is observed that the expenditure on Repairs & maintenance (R&M) has increased significantly during the year 2006-07 on account of the petitioner undertaking repair of the Guide vanes/apparatus after considering the damage which may be caused by the acidic nature of water. Hence, the expenditure incurred for repairing of Guide vanes & Guide apparatus may be considered for

normalization purpose. As the expenses for other years are found reasonable, the total R&M expenses for 2003-08 have been considered for normalization for 2009-14.

Insurance

48. Insurance charges at actuals for 2003-08 claimed by the petitioner is in order and has been allowed as under:

	(₹ in lakh)				
	2003-04	2004-05	2005-06	2006-07	2007-08
Insurance charges	22.50	29.42	26.20	20.31	9.69

Security charges

49. The Security charges claimed by the petitioner for 2003-08 for computation of O&M expenses for 2009-14, are in order and have been allowed as under:

	(₹ in lakh)				
	2003-04	2004-05	2005-06	2006-07	2007-08
Security charges	14.22	19.39	17.83	19.83	24.57

Administrative Expenses

50. The details of the administrative expenses incurred and claimed by the petitioner are given below:

	(₹ in lakh)				
	2003-04	2004-05	2005-06	2006-07	2007-08
Administrative Expenses	7.22	9.70	9.59	9.73	10.27

51. Administrative expense mainly includes expenditure on account of rent, electricity charges, Travelling and Conveyance, Communication expenses and Entertainment charges etc. On scrutiny, it is observed that the expenditures incurred under the head 'administration expenses' is in order except a donation of an amount of ₹2.0 lakh during 2004-05, which has not been allowed. Accordingly, the normalized administrative expenses, considered for the purpose of O&M is as under:

	(₹ in lakh)				
	2003-04	2004-05	2005-06	2006-07	2007-08
Administrative Expenses	7.22	7.70	9.59	9.73	10.27

Employee cost

52. The petitioner has claimed the following project specific expenses under employee cost:

	(₹ in lakh)				
	2003-04	2004-05	2005-06	2006-07	2007-08
Employee Cost	258.18	252.18	263.48	397.18	479.22

53. The petitioner has stated that there was a considerable increase in expenditure under the head "Salary, wages & allowances" during the year 2006-07 in comparison to the year 2005-06. This increase was on account of the final pay revision effected from 1.1.1997 for the regular employees of the petitioner corporation and revision of salary for the muster roll employees. The petitioner has submitted that ₹1166.74 lakh has been paid as Salary & Wages to the employees during 2006-07 and ₹171.64 lakh was paid as arrears of the previous period and Rs. 490.24 lakh pertains to other allowances paid to the employees during the said year. The petitioner has also submitted that the Salary, Wages & allowances of the generating station also includes other generating stations namely, Kopili HEP (200 MW) and Kopili Stage II (25 MW). Hence, in order to calculate the Salary, Wages & Allowances for each of the generating stations, the amounts have been apportioned in accordance to the installed capacity of these generating stations i.e 8:1:2 for Kopili HEP (200 MW), Kopili Stage II (25 MW) and Khandong HEP [(50 MW-(the generating station))] respectively. Based on the above methodology, the 10 year arrears works out as ₹31.21 lakh. In view of this, the additional amount of ₹3.12 lakh per annum towards salary account has been considered for 2003-08, for the purpose of normalization.

54. Further, on account of merger of 50% of Dearness Allowance with Basic Pay of the employees of the petitioner corporation, following the IDA pay pattern with

effect from 1.1.2007, an amount of ₹555.45 lakh during 2007-08 has been considered for te three generating station namely, Kopili HEP (200 MW), Kopili Stage II (25 MW) and Khandong HEP [(50 MW-(the generating station)]. Since, the increase on account of revision of pay is considered separately under the 2009 regulations, the amount apportioned in accordance to the installed capacity of these generating stations i.e 8:1:2 which works out to ₹100.99 lakh for the generating station (Khandong) has not been considered under this head as provision for pay revision.

55. The Staff welfare expenses were ₹15.30 lakh during 2005-06 and ₹64.71 lakh during 2006-07. No reason has been submitted by the petitioner for such a increase in the staff welfare expenses. In view of this, the expenses for 2006-07 have been restricted to a increase of 20% over the expenses during 2005-06 i.e ₹18.36 lakh. Similarly, for the other years also the Staff welfare expenses have been restricted to 20 % over the previous year expenses for normalization.

56. It is noticed that productive linked incentive has been included in the employee cost. It is not being considered as the incentives are to be paid out of the incentive being earned and beneficiaries cannot be burdened on this account. Similarly, the cost incurred on VRS or ex gratia of the employees also will be borne by the petitioner out of incentive being assumed.

57. Based on the above, the employee cost for the generating station considered for normalization is worked out as under:

(₹ in lakh)

	2003-04	2004-05	2005-06	2006-07	2007-08
Employee Cost –claimed	258.18	252.18	263.48	397.18	479.22
Employee Cost- Allowed	261.30	249.66	264.35	322.74	345.99

Others

58. The details of Other expenses (specific items) claimed are as under:

	(₹ in lakh)				
	2003-04	2004-05	2005-06	2006-07	2007-08
Others (Specific items)	141.12	138.94	129.48	108.95	211.01

59. It is observed that the expenditure includes Deferred Revenue Expenditure (DRE) and write-off charges. Other major expenditure under this head includes UI charges, petition filing fees, interest on overdrafts, social welfare and transmission charges. The expenses on these counts have not been considered for purpose of normalization.

60. The petitioner has submitted that Social welfare expenses mainly consist of expenditure related to the educational facilities (Vivekananda Kendra Vidyalaya) of the project. Hence, this expenditure has been considered for normalization. Other expenses are petty in nature and some are restricted to an increase of 20% over the expenses of the previous year. Thus, the following Other expenses (specific items) during the period 2003-04 to 2007-08 have been considered for calculation of O&M cost:

	(₹ in lakh)				
	2003-04	2004-05	2005-06	2006-07	2007-08
Other expenses claimed	141.12	138.94	129.48	108.95	211.01
Other expenses allowed	49.06	97.38	90.75	88.57	89.11

Corporate Office Expenses

61. The year-wise details of the total Corporate Office expenses incurred and its apportionment to the running generating stations, construction projects and other activities of the petitioner and proportionate corporate expenses charged to the generating station are as stated overleaf:

(₹in lakh)

	Items	2003-04	2004-05	2005-06	2006-07	2007-08
1	Employee expenses					
a	Salaries, wages and allowances	2453.93	2431.43	2463.6	3481.27	4513.94
b	Staff welfare expenses	308.84	350.35	296.34	594.68	518.84
c	Productivity linked incentive	0	77.33	69.97	202.72	139.1
d	Expenditure on VRS	0	0	0	0	0
e	Ex-gratia	0	0	0	0	0
	Sub - Total (Employee expenses)	2762.77	2859.11	2829.91	4278.67	5171.88
2	Administrative Expenses					
a	Repair and maintenance	53.23	70.71	47.19	58.87	84.54
b	Training and Recruitment	3.52	2.37	3.48	8.81	12.19
c	Communication	57.43	74.5	80.68	74.04	81.79
d	Travelling & Conveyance	199.88	184.53	199.9	213.5	209.76
e	Rent	64.43	36.27	47.73	31.4	17.75
f	Others (Specify items)	2406.14	1691.33	1467.42	986.08	970.17
	Sub - Total (Administrative Expenses)	2784.63	2059.71	1846.4	1372.7	1376.2
3	Security	9.38	63	140.88	69.65	79.18
4	Donations	0	0	0	0	0
5	Provisions	0	0	0	0	0
6	Others (specify items)	0	0	0	0	0
7	Total (1 to 6)	5556.78	4981.82	4817.19	5721.02	6627.26
8	Less: recoveries (if any)	675.17	1118.33	1311.99	547.26	1357.54
9	Net Corporate Expenses (Aggregate)	4881.61	3863.49	3505.2	5173.76	5269.72

62. The petitioner has submitted that as per the accounting policy of the petitioner corporation, the allocation of total Corporate Office expenses to Commissioned projects and the projects under construction have been done in proportion to sales to capital outlay during the year and further re-allocations of the allocated Corporate office expenses for commissioned projects during the respective financial years.

63. The petitioner has also submitted stated that due to significant increase in the generation during 2007-08 (1540.013 MU) in comparison to 2006-07 (157.715 MU), the allocation of corporate office expenditure during 2007-08 was more when compared to 2006-07. It has also been submitted that the enhancement in

corporate office expenditure under the head Salary & wages, Staff welfare & Productivity Linked Incentive are due to the implementation of pay revision for regular employees of the petitioner company during the financial year 2006-07 and on revision of salary for the muster roll employees. No further details of the payment made on account of such revision have been submitted by the petitioner.

64. It is noticed that the Salaries, wages and allowances & Staff welfare expenses during 2006-07 and 2007-08 claimed by the petitioner are higher than the expenses incurred for the previous years. It appears that the same is on account of provisions for pay revision expenses with effect from 1.1.2007. Since the impact of pay revision is being considered separately, the expenditure towards Salaries, wages and allowances & Staff welfare expenses during 2006-07 has been restricted to an increase of 20 % over the expenses for the previous year. The same amount has been considered for 2007-08 also. The expenses towards Productivity linked incentive has not been allowed since the same is required to be borne by the petitioner.

65. The expense on rent (under administrative head) during 2003-04 is ₹64.43 lakh, which is higher than the other years, on this count. Hence, the same has been restricted ₹36.27 lakh as incurred during 2004-05. Similarly, the expense on security (under administrative head) is ₹144.88 lakh during 2005-06 and the same has been restricted to an increase of 20% over the expenses for 2004-05, since no proper justification has been submitted by the petitioner for the abnormal increase. Based on the above, the normalized Corporate Office expenses allowed towards O&M expenses of the generating station for the period 2003-08 is as under:

(A) Break-up of corporate expenses (aggregate at company level)						
1	Employee Expenses	(₹ in lakh)				
		2003-04	2004-05	2005-06	2006-07	2007-08
a	Salaries, Wages and allowances	2453.93	2431.43	2463.60	2956.32	2956.32
b	Staff Welfare Expenses	308.84	350.35	296.34	355.61	355.61
c	Productivity Linked incentive	0.00	0.00	0.00	0.00	0.00
d	Expenditure on VRS	0.00	0.00	0.00	0.00	0.00
e	Ex-gratia	0.00	0.00	0.00	0.00	0.00
	Sub-total	2762.77	2781.78	2759.94	3311.93	3311.93
2	Administrative Expenses					
a	Repair & Maintenance	53.23	63.88	47.19	58.87	70.64
b	Training & Recruitment	3.52	2.37	3.48	8.81	12.19
c	Communication	57.43	74.50	80.68	74.04	81.79
d	Travelling & Conveyance	199.88	184.53	199.90	213.50	209.76
e	Rent	36.27	36.27	43.52	31.40	17.75
f	Others (specify items)	630.54	707.66	1071.92	944.33	813.83
	Sub-total	980.87	1069.20	1446.70	1330.95	1205.96
1	Security	9.38	63.00	75.60	69.65	79.18
2	Donations	0.00	0.00	0.00	0.00	0.00
3	Provisions	0.00	0.00	0.00	0.00	0.00
4	Others (specify items)	0.00	0.00	0.00	0.00	0.00
	Total	3753.02	3913.98	4282.24	4712.53	4597.07
1	Less: Recoveries, if any	675.17	1118.33	1311.99	547.26	1357.54
2	Net Corporate Expenses (aggregate)	3077.85	2795.65	2970.25	4165.27	3239.53
3	Percentage (%) allocation to generating	3.49	3.20	3.93	3.37	3.58
4	Corporate office expenses allocated to the generating station	107.29	89.35	116.78	140.22	116.11

O&M expenses for 2003-08

66. Based on the above discussions and after prudence check, the following O&M expenses have been considered for the period 2003-08 for calculation of O&M expenses for the period 2009-14.

(₹ in lakh)

Sl.		2003-04	2004-05	2005-06	2006-07	2007-08
(A)	Breakup of O&M expenses					
1	Consumption of Stores and Spares	0.00	0.00	0.00	0.00	0.00
2	Repair and Maintenance	65.77	68.03	69.79	99.81	63.29
3	Insurance	22.50	29.42	26.20	20.31	9.69
4	Security	14.22	19.39	17.83	19.83	24.57
5	Administrative Expenses	7.22	7.70	9.59	9.73	10.27
6	Employee Cost	261.30	249.66	264.35	322.74	345.99
7	Loss of store	0.00	0.00	0.00	0.00	0.00
8	Provisions	0.00	0.00	0.00	0.00	0.00
9	Corporate office expenses allocation	107.29	89.35	116.78	140.22	116.11
10	Others (Specify items)	49.06	97.38	90.75	88.57	89.11
11	Revenue/ Recoveries, if any	0.00	0.00	0.00	0.00	0.00
12	Net O&M Expenses	527.36	558.93	595.29	701.21	659.03

67. The average O&M charges for the base year 2007-08, has been escalated @ 5.17 % as per Regulation 19(f) (ii) of the 2009 regulations. Accordingly, the year-wise O&M expenses for the generating station after applying escalation @ 5.72% from 2008-09 and 50% increase of employee cost by considering the percentage of employee cost in the year 2009-10, for the tariff period 2009-14 in terms of the provision of Regulation 19 (f) of the 2009 regulations is as under:

(₹ in lakh)

	2003-04	2004-05	2005-06	2006-07	2007-08	Average normalized at 2007-08 price level
Employee cost (Considered)	261.30	249.66	264.35	322.74	345.99	
Average normalized Employee cost at 2007-08 price level	319.67	290.42	292.39	339.43	345.99	317.58
O&M Expense Considered	527.36	558.93	595.29	701.21	659.03	
Average normalized O&M at 2007-08 price level	645.17	650.18	658.43	737.46	659.03	670.05
Percentage of employee cost ($317.58/670.05 * 100$)						47.4%

O&M Expenses for 2009-14

68. Accordingly, the O&M expenses approved for the period 2009-14 is as under:

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
O&M Expenses	926.39	979.38	1035.40	1094.62	1157.23

Interest on Working Capital

69. In accordance with sub-clause (c) of clause (1) of Regulation 18 of the 2009 regulations, working capital in case of hydro generating stations shall cover:

- (i) *Receivables equivalent to two months of fixed cost;*
- (ii) *Maintenance spares @ 15% of operation and maintenance expenses specified in regulation 19;*
- (iii) *Operation and maintenance expenses for one month.*

70. Clauses (3) and (4) of Regulation 18 of the 2009 regulations, the rate of interest on working capital shall be equal to the short-term Prime Lending Rate of State Bank of India as on 1.4.2009 or on 1st April of the year in which the generating station or a unit thereof is declared under commercial operation, whichever is later. Interest on working capital shall be payable on normative basis notwithstanding that the generating company has not taken working capital loan from any outside agency.

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

- (a) **Receivables:** In terms of the provisions of the above regulations, receivables equivalent to two months of fixed cost, considered for the purpose of tariff, is as under:

	2009-10	2010-11	2011-12	2012-13	2013-14
Receivables	432.71	457.49	564.77	746.22	841.77

- (b) **Maintenance Spares:** In terms of the provisions of the above regulations, maintenance spares considered for the purpose of tariff, is as stated below:

	2009-10	2010-11	2011-12	2012-13	2013-14
Maintenance Spares	138.96	146.91	155.31	164.19	173.58

(c) **O&M Expenses:** In terms of the provisions of the above regulations Operation and maintenance expenses for one month considered for the purpose of tariff, is as under:

	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
O & M expenses	77.20	81.62	86.28	91.22	96.44

72. In terms of Clauses (3) and (4) of Regulation 18 of the 2009 regulations, the SBI PLR as on 1.4.2009 was 12.25%. This has been considered by the petitioner. The same interest rate has been considered in the calculations, for the purpose of tariff.

73. Necessary computations in support of calculation of interest on working capital is as under:

	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Maintenance Spares	138.96	146.91	155.31	164.19	173.58
O & M expenses	77.20	81.62	86.28	91.22	96.44
Receivables	432.71	457.49	564.77	746.22	841.77
Total	648.87	686.01	806.36	1,001.63	1,111.79
Rate of interest	12.25%	12.25%	12.25%	12.25%	12.25%
Interest on Working Capital	79.49	84.04	98.78	122.70	136.19

Annual Fixed Charges

74. The annual fixed charges approved for the generating station for the period from 1.4.2009 to 31.3.2014 is as under:

	(₹ in lakh)				
Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Return on Equity	1073.25	1103.55	1252.17	1496.51	1624.48
Interest on Loan	0.00	1.30	100.11	263.72	265.69
Depreciation	517.13	576.68	902.14	1499.75	1867.03
Interest on Working Capital	79.49	84.04	98.78	122.70	136.19
O & M Expenses	926.39	979.38	1035.40	1094.62	1157.23
Total	2596.26	2744.95	3388.60	4477.31	5050.62

75. The petitioner shall be entitled to compute and recover the annual fixed charges and energy charges in accordance with Regulation 22 of the 2009 regulations.

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

Design Energy

77. The month-wise details of design energy in respect of the generating station is indicated in the table as under:

Month	Design Energy (MUs)
April	10.08
May	37.21
June	36.00
July	37.20
August	37.20
September	36.00
October	33.23
November	10.03
December	10.42
January	10.42
February	9.40
March	10.42
Total	277.61

78. Monthly energy charges shall be computed in terms of the provisions contained in Regulation 22 of the 2009 regulations.

Application fee and the publication expenses

79. The petitioner has sought approval for the reimbursement of fee paid by it for filing the petition for determination of tariff for the generating station. However, the details of the actual expenditure incurred for publication of notice in the newspapers, has not been submitted by the petitioner.

80. Regulation 42 of the 2009 regulations provides as under:

“The application filing fee and the expenses incurred on publication of notices in the application for approval of tariff, may in the discretion of the Commission, be allowed to be recovered by the generating company or the transmission licensee, as the case may be, directly from the beneficiaries or the transmission customers, as the case may be.”

81. In terms of our decision in order dated 11.1.2010 in Petition No.109/2009 the filing fees in respect of main petitions for determination of tariff and the expenses

on publication of notices are to be reimbursed to the petitioner. Accordingly, the expenses towards application filing fees amounting to ₹1.00 lakh each for the respective years of the period 2009-14, in connection with the present petition shall be directly recovered from the beneficiaries, on *pro rata* basis. Also, the reimbursement of charges towards publication of notices in newspapers in respect of this petition shall be recovered on *pro rata* basis, on submission of documentary proof of the same.

82. The difference between the provisional annual fixed charges already recovered by the petitioner and the annual fixed charges determined by this order shall be liquidated by the respondents in terms of our order dated 26.8.2011 in Petition No. 175/2011 (*suo motu*).

83. Petition No.297/2009 is disposed of in terms of the above.

Sd/-
[M.DEENA DAYALAN]
MEMBER

Sd/-
[S. JAYARAMAN]
MEMBER

Annexure

Calculation of Weighted Average Rate of Interest on Actual Loans

Sl.	Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
1	MHA Loan					
	Gross loan - Opening	5224.43	5224.43	5224.43	5224.43	5224.43
	Cumulative repayments of Loans upto previous year	5224.43	5224.43	5224.43	5224.43	5224.43
	Net loan - Opening	0.00	0.00	0.00	0.00	0.00
	Add: Drawal(s) during the Year	0.00	0.00	0.00	0.00	0.00
	Less: Repayment (s) of Loans during the year	0.00	0.00	0.00	0.00	0.00
	Net loan - Closing	0.00	0.00	0.00	0.00	0.00
	Average Net Loan	0.00	0.00	0.00	0.00	0.00
	Rate of Interest on Loan					
	Interest on loan	0.00	0.00	0.00	0.00	0.00
2	MOP Loan					
	Gross loan - Opening	6724.00	6724.00	6724.00	6724.00	6724.00
	Cumulative repayments of Loans upto previous year	6724.00	6724.00	6724.00	6724.00	6724.00
	Net loan - Opening	0.00	0.00	0.00	0.00	0.00
	Add: Drawal(s) during the Year	0.00	0.00	0.00	0.00	0.00
	Less: Repayment (s) of Loans during the year	0.00	0.00	0.00	0.00	0.00
	Net loan - Closing	0.00	0.00	0.00	0.00	0.00
	Average Net Loan	0.00	0.00	0.00	0.00	0.00
	Rate of Interest on Loan					
	Interest on loan	0.00	0.00	0.00	0.00	0.00
3	LIC Loan					
	Gross loan - Opening	4457.00	4457.00	4457.00	4457.00	4457.00
	Cumulative repayments of Loans upto previous year	4457.00	4457.00	4457.00	4457.00	4457.00
	Net loan - Opening	0.00	0.00	0.00	0.00	0.00
	Add: Drawal(s) during the Year	0.00	0.00	0.00	0.00	0.00
	Less: Repayment (s) of Loans during the year	0.00	0.00	0.00	0.00	0.00
	Net loan - Closing	0.00	0.00	0.00	0.00	0.00
	Average Net Loan	0.00	0.00	0.00	0.00	0.00
	Rate of Interest on Loan					
	Interest on loan	0.00	0.00	0.00	0.00	0.00
4	HUDCO Loan					
	Gross loan - Opening	5544.95	5544.95	5544.95	5544.95	5544.95
	Cumulative repayments of Loans upto previous year	5544.95	5544.95	5544.95	5544.95	5544.95
	Net loan - Opening	0.00	0.00	0.00	0.00	0.00
	Add: Drawal(s) during the Year	0.00	0.00	0.00	0.00	0.00
	Less: Repayment (s) of Loans during the year	0.00	0.00	0.00	0.00	0.00
	Net loan - Closing	0.00	0.00	0.00	0.00	0.00
	Average Net Loan	0.00	0.00	0.00	0.00	0.00
	Rate of Interest on Loan					
	Interest on loan	0.00	0.00	0.00	0.00	0.00

5	PSU-8th Series Tax free redeemable on 7.1.2010					
	Gross loan - Opening	325.00	325.00	325.00	325.00	325.00
	Cumulative repayments of Loans upto previous year	0.00	325.00	325.00	325.00	325.00
	Net loan - Opening	325.00	0.00	0.00	0.00	0.00
	Add: Drawal (s) during the Year	0.00	0.00	0.00	0.00	0.00
	Less: Repayment (s) of Loans during the year	325.00	0.00	0.00	0.00	0.00
	Net loan - Closing	0.00	0.00	0.00	0.00	0.00
	Average Net Loan	162.50	0.00	0.00	0.00	0.00
	Rate of Interest on Loan	7.93%				
	Interest on loan	12.89	0.00	0.00	0.00	0.00
6	Syndicated Loan					
	Gross loan - Opening	6259.32	6259.32	6259.32	6259.32	6259.32
	Cumulative repayments of Loans upto previous year	4623.93	5861.57	6259.32	6259.32	6259.32
	Net loan - Opening	1635.39	397.75	0.00	0.00	0.00
	Add: Drawal(s) during the Year	0.00	0.00	0.00	0.00	0.00
	Less: Repayment (s) of Loans during the year	1237.64	397.75	0.00	0.00	0.00
	Net loan - Closing	397.75	0.00	0.00	0.00	0.00
	Average Net Loan	1016.57	198.87	0.00	0.00	0.00
	Rate of Interest on Loan	7.940%	7.940%			
	Interest on loan	80.72	15.79	0.00	0.00	0.00
7	Total Loan					
	Gross loan - Opening	28534.70	28534.70	28534.70	28534.70	28534.70
	Cumulative repayments of Loans upto previous year	26574.31	28136.95	28534.70	28534.70	28534.70
	Net loan - Opening	1960.39	397.75	0.00	0.00	0.00
	Add: Drawal(s) during the Year	0.00	0.00	0.00	0.00	0.00
	Less: Repayment (s) of Loans during the year	1562.64	397.75	0.00	0.00	0.00
	Net loan - Closing	397.75	0.00	0.00	0.00	0.00
	Average Net Loan	1179.07	198.88	0.00	0.00	0.00
	Interest on loan	93.61	15.79	0.00	0.00	0.00
	Weighted average Rate of Interest on Loans	7.94%	7.94%	-	-	-