

**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Petition No. 109/2010**

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

**DATE OF HEARING: 17.8.2010**

**DATE OF ORDER: 14.3.2011**

**IN THE MATTER OF**

Approval of generation tariff for Dhauliganga Hydroelectric Project, Stage-I (4 x 70 MW) for the period from 1.4.2009 to 31.3.2014.

**AND IN THE MATTER OF**

NHPC Ltd, Faridabad  
Vs

**..... Petitioner**

1. Punjab State Electricity Board, Patiala
2. Haryana Power Purchase Centre, Panchkula
3. BSES-Rajdhani Power Ltd, New Delhi
4. Uttar Pradesh Power Corporation Ltd, Lucknow
5. BSES-Yamuna Power Ltd, New Delhi
6. Rajasthan Rajya Vidyut Prasaran Nigam Ltd., Jaipur
7. North Delhi Power Ltd, Delhi
8. Jaipur Vidyut Vitaran Nigam Ltd., Jaipur
9. Jodhpur Vidyut Vitaran Nigam Ltd., Jodhpur
10. Uttarakhand Power Corporation of Ltd., Dehradun
11. Ajmer Vidyut Vitaran Nigam Ltd., Ajmer
12. Himachal Pradesh State Electricity Board, Shimla
13. Engineering Department, UT Secretariat, Chandigarh
14. Power Development Department, Govt. of J&K, Jammu

**....Respondents**

**The following were present:**

1. Shri Sachin Datta, Advocate, NHPC
2. Shri N.K.Chadha, NHPC
3. Shri Prashant Kaul, NHPC
4. Shri A.K.Tewari, NHPC
5. Shri S.K. Meena, NHPC
6. Shri Ansuman Ray, NHPC
7. Shri M.M.Mishra, NHPC
8. Shri K.K.Goel, NHPC
9. Ms. Reshma Hemrajan, NHPC
10. Ms. Niti Singh, NHPC
11. Shri Padamjit Singh, HPPC
12. Shri T.P.S.Bawa, HPPC



## ORDER

This petition has been filed by the petitioner, NHPC Ltd, for approval of generation tariff for Dhauliganga Hydroelectric Project, Stage-I (4 x 70 MW) (hereinafter referred to as “the generating station”) for the period from 1.4.2009 to 31.3.2014 based on the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009, (hereinafter referred to as “the 2009 regulations”).

2. The generating station comprises of 4 units of 70 MW each and the date of commercial operation of the generating station is 1.10.2005.

3. The tariff of the generating station for the period from 1.10.2005 to 31.3.2009 was approved by the Commission vide its order dated 13.12.2007 in Petition No.107/2006 which was subsequently revised by order dated 20.10.2008. Thereafter, the annual fixed charges for the period 2006-09 were revised by Commission’s order dated 11.2.2010 in Petition No.238/2009 after considering the impact of additional capitalization for the period 2006-09. However, by order dated 20.5.2010, the annual fixed charges for the year 2007-08 and 2008-09 were revised after taking into account the liabilities discharged for the years 2007-08 and 2008-09, based on the capital cost of ₹175341.02 lakh as on 31.3.2009, as under:

<i>(₹ in lakh)</i>		
<b>Particulars</b>	<b>2007-08</b>	<b>2008-09</b>
Depreciation	4000.43	4017.62
Interest on Loan	3982.43	3858.04
Return on Equity	6586.97	6618.46
Advance Against Depreciation	0.00	89.66
Interest on Working Capital	507.04	521.13
O & M Expenses	2646.78	2752.65
<b>TOTAL</b>	<b>17723.65</b>	<b>17857.56</b>

4. The respondent Nos.2, HPPC has filed its reply to the petition.



5. The annual fixed charges claimed by the petitioner for the period 2009-14 is as under:

	<i>(₹ in lakh)</i>				
<b>Annual Fixed Charges</b>	<b>2009-10</b>	<b>2010-11</b>	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>
Return on Equity	8878.94	8935.05	8947.61	8950.43	8951.88
Interest on Loan	3552.00	3246.44	2929.63	2606.39	2324.56
Depreciation	8975.13	9026.17	9037.59	9040.15	9041.47
Interest on Working Capital	714.40	725.61	735.73	746.25	758.56
O & M Expenses	5362.70	5669.45	5993.74	6336.58	6699.03
<b>Total</b>	<b>27483.17</b>	<b>27602.71</b>	<b>27644.30</b>	<b>27679.80</b>	<b>27775.50</b>

### **CAPITAL COST**

#### **(A) Capital Cost as on 1.4.2009**

6. 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.”*

7. As stated above, the Commission vide its order dated 20.5.2010 in Petition No. 238/2009 had approved the capital cost of ₹175341.02 lakh as on 31.3.2009, after taking into account the additional capital expenditure for the period 2006-09. Accordingly, in terms of the above proviso, the capital cost of ₹175341.02 lakh as on 31.3.2009, has been considered as the opening capital cost as on 1.4.2009.

#### **(B) Additional Capital Expenditure for 2009-14**

8. 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) Undischarged liabilities;*

*(ii) Works deferred for execution;*

*(iii) Procurement of initial capital spares within the original scope of work, subject to the provisions of regulation 8;*



(iv) Liabilities to meet award of arbitration or for compliance of the order or decree of a court; and

(v) Change in law:

Provided that the details of works included in the original scope of work along with estimates of expenditure, undischarged 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.

9. The additional capital expenditure for the period 2009-14 claimed by the petitioner is as stated under:

	<i>(₹ in lakh)</i>				
	<b>2009-10</b>	<b>2010-11</b>	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>
<b>Regulation 9(2)(i)</b>	543.77	0.00	0.00	0.00	0.00
<b>Regulation 9(2)(iv)</b>	350.10	96.00	100.00	37.00	32.00
<b>Total</b>	<b>893.87</b>	<b>96.00</b>	<b>100.00</b>	<b>37.00</b>	<b>32.00</b>
Deletions	1.00	5.73	20.60	15.90	1.47
<b>Additional Capital expenditure claimed</b>	<b>892.87</b>	<b>90.27</b>	<b>79.40</b>	<b>21.10</b>	<b>30.53</b>

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

**Liabilities to meet award of arbitration or for compliance of the order or decree of a court-Regulation 9(2)(i):**

11. The petitioner has claimed an amount of ₹543.77 lakh during the year 2009-10 under this regulation, which has been examined and our findings are as under:

(₹ in lakh)			
Year	Items/assets	Amount	Findings
2009-10	Payment made for settlement of contingent liabilities through arbitration	540.77	<b>Allowed</b> as the expenditure is towards payments for settlement in terms of arbitration and towards payments made in respect of work which had already been completed based on the work order.
	Payment made for construction of permanent 312 kVA DG room and panel rooms at Nigalpani in respect of works sanctioned in the Budget Estimate (BE) 2008-09	3.00	

**Expenditure necessary for successful and efficient plant operation-Regulation 9(2)(iv)**

12. The petitioner has claimed an amount of ₹350.10 lakh, ₹96.00 lakh and ₹100.00 lakh, ₹37.00 lakh, and ₹32.00 lakh during the years 2009-10, 2010-11, 2011-12, 2012-13 and 2013-14 respectively, under this regulation. The claim includes assets like buildings for power house and others, power tunnel and pipe lines, hydro mechanical works-dams and barrages, dozers, welding sets, telephone/telex machines, hospital equipments, oil filtration machine, water supply system, ambulance, ERP related equipments, satellite communication system, tailrace tunnel, inspection vehicle, solar lights, X-ray machines, pumps, bus, digital eco-sounder for dam and some other assets.



13. The claims for the respective years have been examined and our findings are as under:

(₹ in lakh)			
Year	Items/Assets	Amount	Findings
2009-10	Modernization of machine hall of power house	18.00	<b>Not allowed</b> as the petitioner has not submitted proper justification as to why these assets were required after completion of 5 years of operation of the generating station
	Green room and toilet at tapovan	3.00	
	Stage at Kendriya Vidyalaya (KV) at Nigalpani	10.00	
	Construction of sheds	11.00	
	False ceiling for arresting water leakage in main access tunnel	25.00	
	Side walling with steel panel in main access tunnel for power house	20.00	
	Solar lights	5.00	
	De-watering pumps and certain tools and tackles like miscellaneous handling equipments at dam site	14.00	<b>Not allowed</b> as the petitioner has not provided the segregated value of the different assets
	Equipments required during annual maintenance like bolt tensioner, slings, electric winch and boring machine	23.00	<b>Not allowed</b> being minor assets ( <i>assets are in the nature of tools and tackles</i> )
	Purchase of a heavy duty welding sets and some other portable welding sets	6.00	
Other assets	215.10	<b>Allowed</b> on prudence check, as the expenditure is necessary for efficient plant operation.	
2010-11	Balance work of the incomplete B-type quarter at Nigalpani	20.00	<b>Not allowed</b> as the work has been disputed and the expenditure is under arbitration. However, the petitioner may approach the Commission after completion of the arbitration proceedings, if so advised, which would be considered in accordance with law.
	Balance work of the incomplete water tank due to contractual obligation	6.00	<b>Not allowed</b> as the petitioner has not provided any details as to whether or not any action was/has been initiated against the contractors who were responsible.
	Oil filtration machine	15.00	<b>Not allowed</b> since the asset is in the nature of spares.
	Ambulance	6.00	<b>Not allowed</b> since the petitioner has not submitted proper justification regarding the useful life of the old asset.



	Other assets	49.00	<b>Allowed</b> on prudence check, as the expenditure is necessary for efficient plant operation.
<b>2011-12</b>	Provision for additional boulder trap above TT road / MAT portal in phases	20.00	<b>Not allowed</b> as the expenditure is on assets in the nature of replacement. Moreover, the gross value of the original assets has also not been furnished by the petitioner.
	Provision for replacement of ventilation equipment	5.00	
	Replacement of inspection vehicle	10.00	<b>Not allowed</b> since the petitioner has not submitted proper justification regarding the useful life of the old asset.
	Ambulance	10.00	
	Solar lights	5.00	<b>Not allowed</b> since benefits would accrue to the petitioner by way of reduction in auxiliary consumption and load on DG sets at power house and hence the costs incurred on this count should be borne by the petitioner.
	Other assets	50.00	<b>Allowed</b> on prudence check, as the expenditure is necessary for efficient plant operation.
<b>2012-13</b>	Bus	15.00	<b>Not allowed</b> since the petitioner has not submitted proper justification regarding the useful life of the old asset.
	Other assets	22.00	<b>Allowed</b> on prudence check, as the expenditure is necessary for efficient plant operation.
<b>2013-14</b>	Digital eco-sounder for dam	5.00	<b>Not allowed</b> since the petitioner has not submitted proper justification regarding the useful life of the old asset.
	Filtration machine for power house	10.00	<b>Not allowed</b> since the asset is in the nature of spares.
	Replacement of borewell pumps	5.00	<b>Not allowed</b> since the petitioner has not submitted the gross value of the old asset.
	Communication equipments	10.00	
	Other assets	2.00	<b>Allowed</b> on prudence check, as the expenditure is necessary for efficient plant operation.

14. Accordingly, based on prudence check, amounts of ₹215.10 lakh, ₹49.00 lakh, ₹50.00 lakh, ₹22.00 lakh and ₹2.00 lakh for the years 2009-10, 2010-11, 2011-12, 2012-13 and 2013-14 respectively, have been allowed to be capitalized as above.

15. In addition to the capitalization under the above category, the petitioner has de-capitalized an amount of ₹1.00 lakh, ₹5.73 lakh, ₹20.60 lakh, ₹15.90 lakh, and ₹1.47



lakh during the years 2009-10, 2010-11, 2011-12, 2012-13 and 2013-14 respectively, in respect of gross value of original assets which were not in use.

16. The first proviso to Regulation 7(1) of the 2009 regulations provides as under:

*Provided that the assets forming part of the project, but not in use shall be taken out of the capital cost."*

17. It is observed that some of the assets which are proposed for de-capitalization by the petitioner are linked to assets which are proposed to be replaced by new assets. In terms of Regulation 9(2)(iv) and after prudence check, the claim on some of these assets have not been considered. In view of this, the gross value of these original assets which have been proposed to be replaced has not been considered under deletions, for the respective years as stated overleaf:

- (a) **2010-11:** As some of the replaced assets like ambulance etc amounting to ₹6.00 lakh has been disallowed as above, the gross value of the original asset, amounting to ₹3.17 lakh, as claimed as deletion by the petitioner has not been considered.
- (b) **2011-12:** As some of the replaced assets like inspection vehicle and ambulance amounting to ₹10.00 lakh and ₹10.00 lakh respectively have been disallowed as above, the gross value of these original assets, amounting to ₹9.58 lakh and ₹7.27 lakh respectively, as claimed in deletion by the petitioner, has not been considered.
- (c) **2012-13:** As some of the replaced assets like bus amounting to ₹15.00 lakh, have been disallowed as above, the gross value of these original assets amounting to ₹9.17 lakh as claimed in deletion by the petitioner, has not been considered.
- (d) **2013-14:** As some of the replaced assets like Digital eco-sounder for dam amounting to ₹5.00 lakh, have been disallowed as above, the gross value of these original assets amounting to ₹0.47 lakh, as claimed in deletion by the petitioner, has not been considered.

18. Based on the above, on prudence check, amounts of ₹1.00 lakh, ₹2.56 lakh, ₹3.75 lakh, ₹6.73 lakh and ₹1.00 lakh during the years 2009-10, 2010-11, 2011-12, 2012-13 and 2013-14 respectively as deletions, has been allowed.





19. In respect of some new replaced assets the gross value of the original assets has not been deducted during the respective years of the claim. These details of such assets are as under:

<b>Asset</b>	<b>Value of Replacement</b> (₹ in lakh)	<b>Gross Value of Old Assets</b> (₹ in lakh)	<b>Year of replacement</b>	<b>Reference</b>
Telephone/ Telex Machine	20.00	19.36	2009-10	Sl. No.18, Annexure-I, page-27
Control Room for VSAT and LDST	7.00	19.36	2010-11	Sl. No.2, Annexure-II, page-29
ERP related Equipment	10.00	9.38	2010-11	Sl. No.12, Annexure-II, page-29
OFC & ERP related Equipment	10.00	8.48	2011-12	Sl. No.8, Annexure-III, page-31
Water Supply and Dewatering Pumps	2.00	1.29	2012-13	Sl. No.4, Annexure-IV, page-33
OFC & ERP related Equipments	10.00	9.21	2012-13	Sl. No.6, Annexure-IV, page-33

20. The gross value of assets amounting ₹19.36 lakh, ₹28.74 lakh, ₹8.48 lakh and ₹10.50 lakh not deducted by the petitioner during the years in which the assets were replaced have been considered as assumed deletions for the years 2009-10, 2010-11, 2011-12 and 2012-13 respectively, for the purpose of tariff. Accordingly, the adjustments made and the total amounts allowed as deletions are as under:

	(₹ in lakh)				
	<b>2009-10</b>	<b>2010-11</b>	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>
Deletions claimed	1.00	5.73	20.60	15.90	1.47
<b>Less:</b> Deletions disallowed	0.00	3.17	16.85	9.17	0.47
Deletions allowed	<b>1.00</b>	<b>2.56</b>	<b>3.75</b>	<b>6.73</b>	<b>1.00</b>
<b>Add:</b> Assumed Deletions	19.36	28.74	8.48	10.50	0.00
<b>Total Deletions</b>	<b>20.36</b>	<b>31.30</b>	<b>12.23</b>	<b>17.23</b>	<b>1.00</b>

#### **Additional capital expenditure**

21. Based on the above discussions, the additional capital expenditure allowed prior to the adjustment of un-discharged liabilities, is as stated overleaf:

	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
<b>Regulation 9(2)(i)</b>	543.77	0.00	0.00	0.00	0.00
<b>Regulation 9(2)(iv)</b>	215.10	49.00	50.00	22.00	2.00
Total	<b>758.87</b>	<b>49.00</b>	<b>50.00</b>	<b>22.00</b>	<b>2.00</b>
Deletions	20.36	31.30	12.23	17.23	1.00
<b>Total additional capitalization allowed</b>	<b>738.51</b>	<b>17.70</b>	<b>37.77</b>	<b>4.77</b>	<b>1.00</b>

#### **Un-discharged/discharged liabilities**

22. The petitioner vide its affidavit dated 31.3.2010, has submitted that the un-discharged liabilities of ₹741.52 lakh and ₹278.75 lakh as on the date of commercial operation of the generating station and for the period 2005-09 has been projected to be discharged during the years 2009-10 and 2010-11. In view of this, the discharge of un-discharged liabilities of ₹741.52 lakh and ₹ 278.75 lakh during the years 2009-10 and 2010-11 respectively has been allowed.

#### **Additional capital expenditure after adjustment of un-discharged/discharged liabilities:**

23. The un-discharged liabilities of ₹741.52 lakh and ₹278.75 lakh during the years 2009-10 and 2010-11 respectively proposed to be discharged during 2009-10 and 2010-11 have been considered and the additional capitalization allowed after adjustment of un-discharged liabilities, is as under:

	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Additional Capitalization allowed (prior to adjustment on account of un-discharged liabilities)	738.51	17.70	37.77	4.77	1.00
(+) Liabilities discharged	741.52	278.75	0.00	0.00	0.00
<b>Additional Capitalization allowed for the purpose of tariff</b>	<b>1480.03</b>	<b>296.45</b>	<b>37.77</b>	<b>4.77</b>	<b>1.00</b>

#### **Capital Cost**

24. As stated above, the Commission had considered the capital cost of Rs ₹175341.02 lakh as on 31.3.2009 in Petition No.238/2009. The same has been considered as the opening capital cost as on 1.4.2009 for the purpose of tariff for the period 2009-14. The capital cost approved for the period 2009-14 is as stated overleaf:



(₹ in lakh)

<b>Year</b>	<b>2009-10</b>	<b>2010-11</b>	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>
Opening Capital Cost	175341.02	176821.04	177117.49	177155.26	177160.03
Additional Capitalization allowed for tariff	1480.03	296.45	37.77	4.77	1.00
Capital Cost as on 31 <sup>st</sup> March of the financial year	<b>176821.04</b>	<b>177117.49</b>	<b>177155.26</b>	<b>177160.03</b>	<b>177161.03</b>

### **Debt-Equity Ratio**

25. Regulation 12 of the 2009 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.*

26. The petitioner has submitted that the additional capital expenditure has been financed through internal resources. In terms of the above said regulations, the debt-equity ratio of 70:30 has been considered on the additional capital expenditure allowed for the purpose of tariff.

### **Return on Equity**

27. Regulation 15 of the 2009 regulations 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 normal tax rate for the year 2008-09 applicable to the concerned generating company or the transmission licensee, as the case may be.

Provided that return on equity with respect to the actual 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 tried up separately for each year of the tariff period along with the tariff petition filed for the next tariff period.

(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.

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

29. In terms of the provisions of the above regulations, 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 under:

	(₹ in lakh)				
<b>Return on Equity</b>	<b>2009-10</b>	<b>2010-11</b>	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>
Gross Notional Equity	47301.89	47745.90	47834.83	47846.16	47847.59
Addition due to Additional capitalization	444.01	88.93	11.33	1.43	0.30
Closing Equity	47745.90	47834.83	47846.16	47847.59	47847.89
Average Equity	47523.89	47790.36	47840.50	47846.88	47847.74
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%
<b>Return on Equity</b>	<b>8307.44</b>	<b>8354.02</b>	<b>8362.78</b>	<b>8363.90</b>	<b>8364.05</b>



30. Any change in rate of return on equity due to changes in the tax rate would however be considered at the time of truing up.

### **Interest on loan**

31. 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.*

32. Interest on loan has been computed as under:

(a) The opening gross normative loan as on 1.4.2009 has been arrived at in accordance with the above regulations;

- (b) The weighted average rate of interest has been worked out on the basis of the actual loan portfolio of the respective year applicable to the generating station;
- (c) The repayment of loan for the respective years of the period 2009-14 has been considered equal to the depreciation allowed for that year;
- (d) The interest on loan has been calculated on the normative average loan of the year by applying the weighted average rate of interest.

33. Accordingly, interest on loan has been worked out as stated under:

	<i>(₹ in lakh)</i>				
<b>Interest on Loan</b>	<b>2009-10</b>	<b>2010-11</b>	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>
Gross Normative Loan	128039.13	129075.15	129282.66	129309.10	129312.44
Cumulative Repayment upto previous year	13704.41	22675.61	31692.06	40717.03	49743.08
Net Loan-Opening	114334.72	106399.54	97590.60	88592.07	79569.35
Repayment during the year	8971.20	9016.45	9024.97	9026.05	9026.20
Addition due to additional capitalization	1036.02	207.51	26.44	3.34	0.70
Net loan-closing	106399.54	97590.60	88592.07	79569.35	70543.85
Average Loan	110367.13	101995.07	93091.34	84080.71	75056.60
Weighted Average Rate of Interest on Loan	3.216%	3.179%	3.141%	3.093%	3.090%
<b>Interest on loan</b>	<b>3549.88</b>	<b>3242.03</b>	<b>2924.37</b>	<b>2601.00</b>	<b>2319.13</b>

### **Depreciation**

34. 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”.

35. The weighted average rate of depreciation of 5.0949%, calculated in terms of the provisions of the above regulations has been considered for the computation of depreciation. Assets amount of ₹20.36 lakh, ₹31.30 lakh, ₹12.23 lakh, ₹17.23 lakh and ₹1.00 lakh have been proposed for de-capitalization 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 below:

	(₹ in lakh)				
<b>Depreciation</b>	<b>2009-10</b>	<b>2010-11</b>	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>
Gross Block as on 31.3.2009	175341.02	176821.04	177117.49	177155.26	177160.03
Additional capital expenditure during 2009-14	1480.03	296.45	37.77	4.77	1.00
Closing gross block	176821.04	177117.49	177155.26	177160.03	177161.03
Average gross block	176081.03	176969.27	177136.38	177157.64	177160.53
Rate of Depreciation	5.0949%	5.0949%	5.0949%	5.0949%	5.0949%
Depreciable value @ 90%	157561.81	158361.23	158511.63	158530.77	158533.36
Balance useful life of the asset	31.6	30.6	29.6	28.6	27.6
Remaining depreciable value	143861.79	135692.61	126832.15	117829.13	108810.51
<b>Depreciation</b>	<b>8971.20</b>	<b>9016.45</b>	<b>9024.97</b>	<b>9026.05</b>	<b>9026.20</b>

### **O&M Expenses**

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

“(iv) In case of the hydro generating stations, which have not been in commercial operation for the period of five years as on 01.04.2009, operation and maintenance expenses shall be fixed at 2% of the original project cost (excluding cost of rehabilitation and resettlement works). Further, in such case, operation and maintenance expenses in first year of commercial operation shall be escalated @ 5.17% per annum up to the year 2007-08 and then averaged to arrive at the O & M expenses in respective year of the tariff period. [The impact of pay revision on employee cost for arriving at the operation and maintenance expenses for the year 2009-10 shall be considered in accordance with the procedure given in proviso to sub-clause (ii) of clause (f) of this regulation.]”

37. The petitioner has claimed the following O&M expenses for the period 2009-14 in terms of the above regulation based on the capital cost of ₹174926.91 lakh, after excluding the cost of Rehabilitation and Resettlement (R&R) works of ₹232.95 lakh from the original capital cost of ₹175159.86 lakh as on 31.3.2008 as per order dated 20.5.2010, and including the employee cost due to wage revision based on percentage of employee cost of O&M expenses of 60.56% during the base year 2007-08.

(₹ in lakh)					
Year	2009-10	2010-11	2011-12	2012-13	2013-14
O & M Expenses	5362.70	5669.45	5993.74	6336.58	6699.03

38. The actual O & M expenses for the year 2007-08 submitted by the petitioner are as under:

(₹ in lakh)		
S. No.	ITEMS	2007-08
(A)	<b>Break up of O&amp;M Expenses:</b>	
1	Consumption of Stores and Spares	2.54
2	Repair and Maintenance	327.50
3	Insurance	854.87
4	Security	1.41
5	<b>Administrative Expenses</b>	
	(a) Rent	52.02
	(b) Electricity Charges	95.84
	(c) Travelling and conveyance	40.74
	(d) Communication expenses	45.87
	(e) Advertising Expenses	24.08
	(f) Foundation laying and inauguration	0.00
	(g) Donation	0.00
	(h) Entertainment	0.48
	(i) Others (Filing fees)	-
	<b>Total Administrative Expenses</b>	<b>259.03</b>
6	<b>Employee Cost</b>	
(a)(i)	Salaries , Wages and allowances (Project)	1849.85
(a)(ii)	Salaries , Wages and allowances (Allocation of corporate office/Regional office)	304.61
(a)(iii)	Salaries , Wages and allowances (CISF/Kendriya Vidyalaya/Central Security Forces)	296.46





(b)	Staff Welfare Expenses	225.84
(c)	Productivity Linked Insurance	98.94
(d)	Expenditure on VRS	23.27
(e)	Ex-gratia	0.00
	<b>Total Employee cost</b>	<b>2798.98</b>
7	Loss of Stores	2.07
8	Provisions	146.52
9	(a)Corporate Office Expenses allocation	81.92
10	Others	<b>209.22</b>
11	<b>Total (1 to 10)</b>	<b>4684.07</b>
12	Revenue/Recoveries, if any	62.57
13	Net Expenses	<b>4621.51</b>
Employee expenses as percentage of Net O&M expenses = (2798.98/4621.51) x100		<b>60.56</b>

39. It is observed from the above table, that the petitioner has considered items such as (a) productivity linked incentive, (b) expenditure on VRS (c) loss of stores, provisions (d) loss on sale of assets, in its calculations for arriving at the percentage of the employee's cost in O&M expenses. The inclusion of these items in O & M expenses is not justified for the reasons stated under:

<b>Items</b>	<b>Reasons</b>
Loss of sale of assets	Should be borne by the petitioner and not to be charged on the beneficiaries
Ex-gratia	Incentive should be borne out of the profit of the petitioner company
VRS expenses	The expenses are not of a regular nature. Also, the likely pattern of expenses on this count during the period 2009-14 has not been indicated
Expenses on account of productivity-linked Incentive (under section 31 A of Payment of Bonus Act)	The expenses incurred are on account of incentive paid to the employees for maintaining high availability of the generating station to achieve higher generation from the generating station, for which incentive payment is made separately and claimed in the bill of the beneficiaries
Salaries, wages and allowances (allocation of corporate office/ Regional office)	Has been considered separately under corporate expenses.
Employee cost-Corporate office expenses and regional office expenses	These expenses after rationalization have been included to the employee expenses of the generating station in proportion to their allocation. The expense other than employee expenses in corporate & regional office has been considered separately.
Loss of stores	The provision made for specific purpose in a particular year may not be necessary for future years. Hence, loss of store may not be passed on to the beneficiaries as the same is maintained by the petitioner.

40. Based on the above, O & M expenses for 2007-08 considered for calculation of employee cost is as stated under:

		(₹ in lakh)
S. No.	ITEMS	2007-08
(A)	<b>Break up of O&amp;M Expenses:</b>	
1	Consumption of Stores and Spares	2.54
2	Repair and Maintenance	327.50
3	Insurance	854.87
4	Security	1.41
5	<b>Administrative Expenses</b>	<b>259.03</b>
6	<b>Employee Cost</b>	
(a)(i)	Salaries , Wages and allowances (Project)	1703.33
(a)(ii)	Salaries , Wages and allowances (Allocation of corporate office	149.93
(a)(iii)	Salaries , Wages and allowances (Allocation of Regional office	84.04
(a)(iv)	Salaries , Wages and allowances (CISF/Kendriya Vidyalaya/Central Security Forces	296.46
(b)	Staff Welfare Expenses	225.84
(c)	Productivity Linked Insurance	0.00
(d)	Expenditure on VRS	0.00
(e)	Ex-gratia	0.00
	<b>Total Employee cost</b>	<b>2459.61</b>
7	Loss of Stores	0.00
8	Provisions	0.00
9	(a)Corporate Office Expenses other then employee cost allocation #	44.98
	(b) Regional Office Expenses other then employee cost allocation #	47.20
10	<b>Others</b>	<b>209.22</b>
11	<b>Total (1 to 10)</b>	<b>4159.17</b>
12	Revenue/Recoveries, if any	62.57
13	Net expenses	<b>4096.60</b>
14	Employee expenses as percentage of net O&M expenses == $(2459.61/4096.60) \times 100$	<b>60.04</b>

# Only proportionate employee cost has been considered

41. In consideration of the original capital cost of ₹175159.86 lakh as on 31.3.2008 as per Commission's order dated 20.5.2010 and the exclusion of the cost of R&R works amounting to ₹232.95 lakh (i.e ₹174926.91 lakh) and the employee cost as percentage of O&M cost at 60.04%, the O&M expenses allowed for the period 2009-14 (including increase in employee cost by 50% due to wage revision) is as under:

						(₹ in lakh)
Year	2009-10	2010-11	2011-12	2012-13	2013-14	
O&M expenses claimed	5362.70	5669.45	5993.74	6336.58	6699.03	
O&M expenses approved	<b>5351.45</b>	<b>5657.55</b>	<b>5981.16</b>	<b>6323.28</b>	<b>6684.98</b>	



### Interest on Working Capital

42. 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.*

43. 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 1<sup>st</sup> 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.

44. 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:

Particulars	( <i>₹ in lakh</i> )				
	2009-10	2010-11	2011-12	2012-13	2013-14
Receivables	4480.29	4497.11	4502.64	4507.86	4523.36

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

Year	( <i>₹ in lakh</i> )				
	2009-10	2010-11	2011-12	2012-13	2013-14
Maintenance Spares	802.72	848.63	897.17	948.49	1002.75

(a) **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:

<i>(₹ in lakh)</i>					
<b>Particulars</b>	<b>2009-10</b>	<b>2010-11</b>	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>
<b>O &amp; M expenses</b>	445.99	471.46	498.43	526.94	557.08

45. 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.

46. Necessary computations in support of calculation of interest on working capital is as shown below:

<i>(₹ in lakh)</i>					
<b>Particulars</b>	<b>2009-10</b>	<b>2010-11</b>	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>
Maintenance Spares	802.72	848.63	897.17	948.49	1002.75
O & M expenses (1 month)	445.99	471.46	498.43	526.94	557.08
Receivables	4480.29	4497.11	4502.64	4507.86	4523.36
Total	5728.97	5817.20	5898.24	5983.29	6083.08
Rate of interest	12.25%	12.25%	12.25%	12.25%	12.25%
<b>Interest on working capital</b>	<b>701.80</b>	<b>712.61</b>	<b>722.53</b>	<b>732.95</b>	<b>745.18</b>

### **Annual Fixed Charges**

47. The annual fixed charges approved for the generating station for the period from 1.4.2009 to 31.3.2014 is as stated overleaf:

<i>(₹ in lakh)</i>					
<b>Particulars</b>	<b>2009-10</b>	<b>2010-11</b>	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>
Return on Equity	8307.44	8354.02	8362.78	8363.90	8364.05
Interest on Loan	3549.88	3242.03	2924.37	2601.00	2319.13
Depreciation	8971.20	9016.45	9024.97	9026.05	9026.20
Interest on Working Capital	701.80	712.61	722.53	732.95	745.18
O & M Expenses	5351.45	5657.55	5981.16	6323.28	6684.98
<b>Total</b>	<b>26881.76</b>	<b>26982.66</b>	<b>27015.81</b>	<b>27047.18</b>	<b>27139.53</b>

48. 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.

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

### **Design Energy**

50. The month-wise details of design energy in respect of the generating station is indicated in the following table:

<b>Month</b>	<b>Design Energy (MUs)</b>
April	56.08
May	91.26
June	144.33
July	208.32
August	208.32
September	160.00
October	94.40
November	52.48
December	31.69
January	31.62
February	25.89
March	30.30
<b>Total</b>	<b>1134.69</b>

51. 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**

52. 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.

53. 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.”*

54. The Commission in its order dated 11.1.2010 in Petition No.109/2009 (pertaining to approval of tariff for SUGEN power plant for the period from DOCO to 31.3.2014) had decided that filing fees in respect of main petitions for determination of tariff and the expenses on publication of notices are to be reimbursed.

55. Accordingly, the expenses incurred by the petitioner on application filing fees amounting to ₹5.60 lakh each for the years 2009-10 and 2010-11 in connection with the present petition, shall be directly recovered from the beneficiaries, on *pro rata* basis. The reimbursement of charges towards the publication of notices in newspapers shall also be recovered on *pro rata* basis on submission of documentary proof of the same.

56. Petition No.109/2010 is disposed of in terms of the above.

**Sd/-**  
**[M.DEENA DAYALAN]**  
**MEMBER**

**Sd/-**  
**[V.S.VERMA)**  
**MEMBER**

**Sd/-**  
**[S. JAYARAMAN]**  
**MEMBER**

**Sd/-**  
**[DR.PRAMOD DEO]**  
**CHAIRPERSON**

