CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

Petition No.165/GT/2017

Coram:

Shri P.K.Pujari, Chairperson
Shri A.K. Singhal, Member
Dr. M.K.Iyer, Member

Date of Order: 5th September, 2018

In the matter of

Approval of tariff of Koteshwar Hydroelectric project (400 MW) for the period from 1.4.2011 to 31.3.2014

And

In the matter of

THDC India Limited,
(A Joint Venture of Govt. of India & Govt. of U.P),
Pragatipuram, Bypass Road,
Rishikesh -110003 (Uttrakhand) **…..Petitioner**

Vs

1. Punjab State Power Corporation Limited
The Mall, Patiala-147 001

2. Haryana Power Utilities (DHBVNL & UHBVNL)
Shakti Bhawan, Sector-VI, Panchkula, Haryana-134109

3. Uttar Pradesh Power Corporation Limited
Shakti Bhawan, 14 Ashok Marg, Lucknow-226001,

4. BSES Rajdhani Power Ltd
BSES Bhawan, Nehru Place, New Delhi- 110019

5. BSES Yamuna Power Ltd
Shakti Kiran Building, Karkardooma, Delhi- 110092

6. Tata Power Delhi Distribution Ltd
33 kV Substation, Hudson Line,
Kingsway Camp, Delhi-110009

7. Engineering Department
Chandigarh Administration, Ist Floor, UT Secretariat,
Sector 9-D, Chandigarh-160009

8. Uttrakhand Power Corporation Ltd.,
Urja Bhawan, Kanwali Road, Dehradun -248 001

9. Himachal Pradesh State Electricity Board,
Vidyut Bhawan, Kumar House Complex Building II,
Shimla-171004

10. Jaipur Vidyut Vitran Nigam Ltd
Vidyut Bhawan, Janpath, Joytinagar,
Jaipur- 302005

11. Ajmer Vidyut Vitran Nigam Ltd
Old Power House, Hathi Bhata, Jaipur Road,
Ajmer- 305001

12. Jodhpur Vidyut Vitran Nigam Ltd
New Power House, Industrial Area, Jodhpur-342003

13. Power Development Department,
Govt. of Jammu and Kashmir,
Civil Secretariat, Jammu- 180001 **.....Respondents**

Parties present:

Shri M.G.Ramachandran, Advocate, THDC
Ms. Anushree Bardhan, Advocate, THDC
Ms. Poorva Saigal, Advocate, THDC
Shri Mukesh Kumar Verma, THDC
Shri Sarosh M. Siddiqui, THDC
Shri Ajay K. Malhui, THDC
Shri Abhishek Upadhyay, Advocate, TPDDL
Shri Varun Shankar, Advocate, TPDDL
Shri R.B. Sharma, Advocate, BRPL
Ms. Megha Bajpeyi, BRPL

ORDER

This Petition has been filed by Petitioner, THDC for approval of tariff of Koteshwar Hydroelectric Power Project (4 x 100 MW) (hereinafter 'the generating station') for the period from 1.4.2011 (COD of Unit -I) to 31.3.2014 in terms of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009 (hereinafter referred to as "the 2009 Tariff Regulations").

2. The petitioner is a joint venture company of Government of India and Government of Uttar Pradesh, with GOI holding majority and controlling shares. The generating station is a part of Tehri Hydro Power Complex, which comprises of Tehri HPP Stage-I (1000 MW), Tehri Pumped Storage Plant (1000 MW) and downstream power station Koteshwar Hydroelectric Project (400 MW) in Tehri Garhwal in the State of Uttarakhand. The entire Tehri Power Complex is scheduled to have an aggregate capacity of 2400 MW. The Koteshwar reservoir will function as lower reservoir for Tehri Pumped Storage Plant and regulate the water releases from main Tehri reservoir for irrigation & drinking water requirements purpose.

3. The generating station comprises of four units with a capacity of 100 MW each. The dates of commercial operation of these units of the generating station are as under:

Unit	COD
I	1.4.2011
II	26.10.2011
III	13.2.2012
IV	1.4.2012

4. The petitioner has entered into Power Purchase Agreements with the respondents for the capacity generated from the project. The power allocation from the generating station had been notified on 8.8.2007 by the Ministry of Power, Govt. of India.

5. The project was originally approved by MOP, GOI on 10.4.2000 at an estimated cost of ₹1301.56 crore including IDC of ₹190.04 crore at the October, 1999 price level with the completion period of 5 years i.e, up to March, 2005. The Commission vide order dated 15.5.2014 in Petition No. 116/GT/2013 had granted provisional tariff for the generating station for the period from 1.4.2011

to 31.3.2014 in terms of the 2009 Tariff Regulations, based on 85% of the actual capital expenditure of ₹236405.71 lakh incurred as per audited balance sheet as on 31.3.2012. The tariff so granted was subject to submission of approved Revised Cost Estimate (RCE) by the Central Government and adjustment after determination of final tariff. The relevant portion of the order dated 15.5.2014 is extracted hereunder:

> *"20…… As against the RCE of ₹255879 lakh submitted by the petitioner for approval of Ministry of Power, Govt. of India, the RCE amount of ₹238641 lakh as on COD of the generating station has been recommended by CEA to the Govt. of India. Even if the original approved cost is considered for determination of tariff, the same would result in the recovery of huge amounts as arrears, causing burden on the beneficiaries, after final tariff of the generating station is determined based on RCE approved by the Central Government. Besides, there may not be sufficient cash available with the generator to service the debt obligation. It is observed that RCE of ₹238641 lakh as on COD of the generating station as recommended by CEA to the Govt. of India, is lower in comparison to the RCE amount of ₹255879 lakh submitted by the petitioner for the approval of Ministry of Power, Govt. of India. Considering the above factors in totality and in the absence of final approval of RCE by Central Government, we propose to grant provisional tariff for the generating station based on 85% of the actual capital expenditure incurred as per audited balance sheet amounting to ₹236405.71 lakh as on 31.3.2012, which is less than the CEA approved cost of ₹238641 lakh. We order accordingly."*

6. Accordingly, the provisional fixed charges granted by order dated 15.5.2014 are as under:

(₹in lakh)

	2011-12			2012-13	2013-14
	1.4.2011 to 20.10.2011	**26.10.2011 to 12.2.2012**	**13.2.2012 to 31.3.2012**	**1.4.2012 to 31.3.2013**	
	(Unit - I)	**(Units - I & II)**	**(Units-I to III)**	**(Units- I to IV)**	**(all Units)**
Return on Equity	1159.85	1226.76	802.97	8163.55	8163.55
Interest on loan	2405.14	2519.99	1647.27	16276.71	15190.91
Depreciation	1346.20	1423.86	931.98	9650.24	9791.22
Interest on Working Capital	125.01	131.74	86.19	1002.95	993.69
O & M Expenses	561.33	593.72	388.61	3950.91	4176.90
Total	**5597.52**	**5896.08**	**3857.03**	**39044.37**	**38316.27**

7. Against the order dated 15.5.2014, the petitioner filed Review Petition No. 22/RP/2014 on certain issues and the Commission vide order dated 17.12.2014 disposed of the said review petition as withdrawn, based on the submissions of

the petitioner. Thereafter, the petitioner filed Petition No. 49/GT/2015 for revision of tariff for the generating station for the period 2011-14, based on truing-up exercise, considering the actual additional capital expenditure incurred during the period 2011-14 in accordance with Regulation 6(1) of the 2009 Tariff Regulations. The petitioner also filed Petition No. 47/GT/2015 for determination of tariff of the generating station for the period 2014-19. During the hearing of Petition Nos. 116/GT/2013 & 49/GT/2015, the petitioner had prayed for withdrawal of these petitions with liberty to file fresh petition as and when the RCE was approved by the Central Government. In terms of this, the Commission vide order dated 7.3.2016 disposed of the said petitions (Petition Nos. 116/GT/2013 & 49/GT/2015) as under:

> *"8. The submissions have been considered. Admittedly, in the present case, RCE is yet to be approved by the Central Government. The petitioner submitted that approved RCE is likely to be available by June, 2016 and accordingly sought time till 30.6.2016. The petitioner has now sought to withdraw the petition with liberty to make fresh petition after the RCE is received. Keeping in view that there will be revision of the capital cost of the generating station after approval of RCE by the Central Government, we find no reason to keep these petitions pending. Hence, we are inclined to dispose of these petitions, with liberty to the petitioner to approach the Commission with fresh tariff petition in respect of the generating station after approval of RCE by the Central Government. We direct accordingly.*
>
> *9. We also direct that the provisional tariff granted by order dated 15.5.2014 shall continue to be in operation till the tariff of the generating station is determined based on the approved RCE. The filling fees deposited by the petitioner shall however be adjusted against the fresh petition to be filed in terms of the liberty granted above."*

8. Similarly, Petition No. 47/GT/2015 (for 2014-19) was disposed of as withdrawn vide order dated 15.7.2016 with liberty to the petitioner to file fresh petition based on approved RCE by the Central government. However, the provisional tariff granted vide order dated 15.5.2014 was permitted to continue till final tariff of the generating station was determined based on approved RCE.

9. Subsequently, vide letter dated 31.3.2017 the Ministry of Power, GOI conveyed to the petitioner the approval of RCE by the Cabinet Committee on Economic Affairs (CCEA). Pursuant to the approval of RCE, the petitioner, in terms of the liberty granted by Commission's order dated 7.3.2016, has filed the present petition for determination of tariff of the generating station for the period from COD of Unit-I till 31.3.2014. Accordingly, the annual fixed charges claimed by the petitioner in this petition are as under:

(₹in lakh)

	2011-12	2012-13	2013-14
Depreciation	9803.24	11719.55	12197.93
Interest on Loan	16851.67	20566.36	19431.81
Return on Equity	8601.23	12492.73	15393.63
Interest on Working Capital	897.25	1315.93	1382.25
O & M Expenses	4026.46	5162.99	5428.17
Total	**40179.85**	**51257.55**	**53833.78**

10. Replies to the petition have been filed by the respondent, BRPL (vide affidavit dated 13.9.2017) and the respondent, TPDDL (vide affidavit dated 26.3.2018). The petitioner has filed its rejoinder to the said replies, vide its affidavit dated 21.5.2018 & 30.3.2018 respectively. We now proceed to determine the final tariff of the generating station for the period 2011-14 as stated in the subsequent paragraphs.

Time and Cost Overrun

11. The project had been accorded Investment Clearance by MOP, GOI on 10.4.2000 at an estimated cost of ₹130156 lakh including IDC of ₹19004 lakh at October, 1999 price level (with debt-equity ratio of 3:1) with a completion period of five years. As per TEC, the last unit of the project was scheduled to be commissioned in March, 2005. However, the last unit (Unit-IV) of the project was declared under commercial operation on 1.4.2012. Accordingly, there is time overrun of 84 months in the completion of the project.

12. Regulation 7(2) of the 2009 Tariff Regulations inter alia provides that the Commission may issue guidelines for vetting of the capital cost of the hydro-electric projects by an independent agency or experts and in that event, the capital cost as vetted by the said agency or expert may be considered by the Commission while determining the tariff. In pursuance of the above, the Commission has notified the guidelines for vetting of capital cost on 2.8.2010 as amended from time to time. Though the petitioner was directed to submit the recommendations of the DIA on the capital cost, the same has not been filed by the petitioner in terms of the guidelines of the Commission. In justification of the same, the petitioner has submitted the following:

> *"Revised Cost Estimate has been approved by the highest level in the Government, namely, the Cabinet Committee on Economic Affairs, after the recommendation of the Government of India's Standing Committee on Time & Cost Overrun comprising of Additional Secretary, Ministry of Power, Joint Secretary (Hydro), Ministry of Power, JS & FA (Incharge), Ministry of Power, Advisory (Cost), Ministry of Finance, Advisor (Energy), Niti Ayog, Director, Ministry of Statistic & Programme Implementation, officers from CEA & CWC; the verification of the capital cost by the designated agency or experts will be a duplication of the worm and also will lead to confusion. This is particularly as the Cabinet Committee on Economic Affairs has duly considered various aspects relating to the time and cost overrun taking into account the reports of the Central Vigilance Commission, the recommendation of the Central Electricity Authority and a Committee of the Experts from the Central Electricity Authority appointed for the purpose.*
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> *Revised Cost Estimate (RCE) as approved by the Cabinet Committee on Economic Affairs, Government of India stands at an estimated completed cost of Rs.2717.35 crores inclusive of IDC and Finance charges etc. The cost overrun has also been considered and approved by the Cabinet Committee on Economic Affairs. In the circumstances mentioned herein above and as the Revised Cost Estimate has been approved at the highest level of the Government of India i.e. Cabinet Committee on Economic Affairs. In the circumstances there will be no purpose of engaging a designated Independent Agency to assist the Hon'ble Commission in the review of the capital cost. The capital cost has undergone a detailed review at the highest level with due involvement of the CEA for the Hon'ble Commission to proceed in the matter. In a similar situation of vetting of cost by an independent agency in the case of NTPC Generating station in petition 8 of 2005 vide order dated 3.3.2005 the Hon'ble Commission has taken a clear view which squarely applies in the present case."*

13. The Respondent, BRPL in its reply affidavit dated 13.9.2017 has submitted that the petitioner may be directed to submit the appraisal report on the capital

cost by the DIA along with its recommendations. Similar submissions have been made by the Respondent, TPDDL vide its reply affidavit dated 26.3.2018. The Respondent, Rajasthan discoms in its reply dated 8.8.2018 has submitted that the petitioner may be directed to file the report of DIA for vetting of capital cost. The petitioner in its rejoinder dated 5.10.2017 has clarified that the guidelines issued by the Commission to get the capital cost vetted through DIA was not mandatory in nature and the Commission itself can proceed to verify the capital cost and other aspects without the same being undertaken by the DIA or experts. It has further submitted the CCEA has duly considered various aspects relating to time and cost overrun taking into account various reports and recommendations of the CEA and a Committee of experts from CEA and CWC appointed for the purpose. Accordingly, it has stated that RCE has been approved by the highest level in the government, namely CCEA and the verification of the capital cost by the DIA will be a duplication of the work and will also lead to confusion.

14. We have examined the matter. As stated, the provisions of Regulation 7 of the 2009 Tariff Regulations and the guidelines for vetting of capital cost issued by the Commission provide that the Commission may consider the capital cost as vetted by the DIA, while determining the tariff of the hydro generating companies. However, in the present case, it is noticed that the RCE was examined in detail and vetted by MOP, GOI through its nodal agency i.e the CEA in association with CWC and thereafter, the RCE has been approved by the CCEA, based on the recommendations of the Standing committee on time and cost overrun, GOI which comprises of Senior officials of the Ministry of Power, GOI, the Ministry of Finance, GOI, Niti Aayog and the officers of CEA and CWC. In

other words, the CCEA after having considered the various aspects relating to time and cost overrun and taking into account various reports and recommendations of CEA and CWC had approved the RCE. The RCE having undergone such process and been approved after a detailed review at the highest level, the verification of the said capital cost by DIA/ experts at this stage would, in our view, be duplication of the work and apart from being time consuming, would result in confusion. In this background, we, in relaxation of the guidelines dated 2.8.2010, as amended from time to time, proceed to consider the recommendations of the Standing Committee on time and cost overrun, based on which the RCE has been approved, for determination of tariff of the generating station for the period 2011-14.

15. In compliance with the directions of the Commission vide ROP of the hearing dated 20.2.2018, the petitioner has furnished detailed reasons for the time overrun of 84 months and the same has been tabulated by the petitioner under the following heads:

Reasons	Months
Land acquisition for Rehabilitation & Resettlement of Pendaras village on main dam site and non-vacation of borrow areas, Contract award process (civil works)	46
Geological reasons & restriction on excavation of Power house	22
Rock ledge failure in u/s of Power House above the penstock	4
Extra time due to increase in volume of work	8
Flooding of Koteshwar project due to heavy rains on 21.9.2010	4
Total	**84**

Time overrun

Land acquisition for Rehabilitation & Resettlement of Pendaras village on main dam site and non-vacation of borrow areas, Contract award process (civil works)

16. The petitioner has submitted that after the award of contract for main Civil Works in August, 2002, initial delay was in acquisition of land. The village

Pendaras, where the main project was located and other villages could be evacuated by Government of Uttarakhand in 2005, 2006 & 2007. The excavations activities were taken up partly for dam pit, spillway and powerhouse in April, 2003 due to non-availability of entire land. Substantial possession of land was obtained in 2005 & 2006 in Panderas & Mulani respectively, after which the construction activities could be advanced. There was stoppage of work for 152 days on account of agitation by land oustees. In order to ensure smooth progress of work, the petitioner had approached the District Court which imposed temporary injunction against disruption of project works.

Geological & geo-technical reasons

17. The petitioner has submitted that poor geo-mechanical properties of the rock have led to frequent rock slides, hampering the progress of works. Similarly, massive slide took place at rock ledge in March, 2008 resulting in change in design of upstream wall of the power house into more robust anchor wall to check slide. Due to such poor rock conditions and repeated slides, the volume of excavation and stabilization requirements increased, delaying the progress of other critical activities such as excavation of dam area, pen stocks and power house pit. The same is evident from CWC Report submitted to MOP, GOI on the geological failure and design changes were necessitated due to encountering of adverse geology.

Increase in volume of various works

18. The petitioner has submitted that there was an increase of about 35.12 lac/cum against the original quantity of excavation of 56.24 lac/cum. Similarly, the total quantity of reinforcement steel increased from 9800 MT to 43400 MT. The scope of work of consolidation and curtain grouting had increased due to

geological features in the dam abutments and the foundation.

Contractual problems

19. The petitioner has submitted that contract for civil work was awarded on 31.8.2002 with scheduled completion by 31.5.2006. However, due to delay in land acquisition and repeated geological failures etc, work was delayed substantially beyond the completion period. Consequently, the civil works contractors had to face cash flow problems, thereby causing contractual difficulties and other problems. As a result, the petitioner had to take over the entire construction activities.

Flooding of project

20. The petitioner has submitted that while the construction activities were in final stage, the Project got flooded on 21.9.2010 owing to incessant and unprecedented rain. Though there was no major damage to civil structure and hydro mechanical equipment but there was damage to electro mechanical works of the generating station. The project was further affected by another geological event on 17.12.2010, when the only diversion tunnel got blocked. Tehri power station had to be shut down for 37 days so as to avoid inundation of the project again. Balance works of civil & HM were completed and the project was back into operation on 27.1.2011.

Cost overrun

21. As regards cost overrun, the petitioner vide affidavit dated 9.3.2018 has submitted that there is an increase of ₹1415.78 crore over the sanctioned cost of ₹1301.57 crore. The petitioner has also furnished the abstract of the original sanctioned cost vis-à-vis the revised completion cost of the generating station as tabulated under:

(₹in crore)

Description	Original sanctioned cost October,1999 price level	Revised completion cost	Variation w.r.t approved cost
Preliminary	21.78	28.16	6.38
Land	32.05	51.37	19.32
Works i) Diversion arrangements ii) Civil works of dams and spillways	325.62	660.53	334.91
Civil works of power house	206.71	477.05	270.34
Building	19.07	67.35	48.28
Misc.	22.80	97.04	74.24
Maintenance, losses in stock	7.96	25.61	17.65
Spl. T & P	9.90	2.38	(-) 7.52
Communication	37.98	32.98	(-) 5.00
Power plant	305.52	417.22	111.70
Environment & ecology, plantation	19.10	15.17	(-) 3.93
Sub-total-I works	**1008.50**	**1874.87**	**866.37**
Establishment & audit & accounts	99.13	351.71	252.58
T & P, receipt and recoveries, capitalized abetment of land	3.89	(-) 29.25	(-) 33.14
Total	**1111.52**	**2197.32**	**1085.80**
Interest during construction	190.04	383.88	193.84
Grand total	1301.56	2581.21	1279.64
Expenditure towards balance works in progress (as recommended by PIB)	-	136.14	136.14
Estimated completion cost	**-**	**2717.35**	**1415.78**

Submissions of Respondents

BRPL

22. As regards Time and Cost Overrun, the respondent, BRPL has mainly submitted as under:

(i) The investment approval is at an estimated cost of ₹1301.56 crore and the approval by CCEA is at estimated completion cost of ₹2717.35 crore. Thus, the cost overrun of the project is around 109% which is a very high figure.

(ii) The issue of flooding of the project has not been brought out by the petitioner. The flooding of the project has been examined by the CVO, THDC and the CVC and a complaint against top officials of the petitioner was referred to CEA. The claim of the petitioner that it was a natural calamity that occurred due to geological subsidence in the underground diversion tunnel at Koteshwar has been nullified by the said report.

(iii) The petitioner, while furnishing the break-up of unit wise cost, has considered the assets like land, dam, spillways etc., under Unit-I and not apportioned the capital cost unit wise. The petitioner is required to submit the capital expenditure till the COD of the respective units of the generating station for determination of tariff unit wise.

(iv) As regards time overrun, the petitioner is required to indicate the schedule of completion of the project starting from investment decision i.e. the zero date, time to be taken in the financial closure of the project and scheduled date of completion supported by PERT / CPM network identifying the critical path and milestones.

23. The respondent, TPDDL vide reply affidavit has submitted that the petitioner has claimed actual capital expenditure under several heads which are far in excess of what has been approved by CCEA. It has also submitted that the variation between the actual expenditure claimed by the petitioner under the heads (tunnels, powerhouse & other works, overheads, FC & IDC) as against those approved under RCE are in excess of ₹311.65 crore and no justification has been submitted by the petitioner. It has further submitted that the capital cost of the petitioner as on 31.3.2012 should be limited to ₹2077.42 crore (₹2389.07 crore – ₹311.65 crore) or as worked out by the Commission for the purpose of tariff.

24. We have considered the matter. The observations of the Standing Committee on time and cost overrun are reproduced here as under:

"16.Observations of the Standing Committee

16.1 The project has been fully commissioned in March, 2012. It has generated 5323.40 MUs worth ₹1796.68 crore till 31st October 2015.

16.2 The Revised Cost Estimate of Koteshwar HEP (400 MW) at Jun'12 PL worked out to ₹2581.21 Cr including IDC and FC of ₹383.88 Cr. As against the Approved Cost Estimate of ₹1301.56 Cr. At Oct' 99 PL. Thus there is in increase of `1279.64 Cr., which is 98.31% over Approved Cost. In addition, contingent liabilities of about ₹459.71 Cr. Plus pendientlite interest and interest from the date of award as per outcome of ongoing litigation may devolve.

16.3 The RCE amount of ₹2581.21 Cr. Does not include Contigent/ assets/ claims recoverable on account of expenditure of `124.72 Cr. As on March 2015 incurred by THDC at Risk & Cost of the Contractor plus interest thereon. The expenditure at Risk and Cost shall be offset against claim of the Contractor consequent to the decision of Hon'ble High Court.

16.4 The issue of contingent liabilities amounting ₹864.42 Cr. As on 31.03.15 (which includes awarded amount of ₹459.74 Cr., Pendentelite interest of ₹79.69 Cr. And Accrued interest w.r.t. date of award of `324.99 Cr.) and not incuded in the RCE-I of the Project shall be flagged for PIB.

16.5 The increase in cost on account of Time Overrun is ₹489.99 Cr. (38.29%) due to increase in escalation, IDC & FC & taxes etc. The increase on account of cost overrun is ₹789.64 Cr. (61.71%) as elaborated at Para 7.7 above.

16.6 Out of increase of ₹193.84 Cr. (14.89%) on account of IDC & FC, an amount of ₹19.38 Cr. (about 1.49% over approved cost) is an account of increase due to time overrun and balance `174.46 Cr. (13.40%) due to increase in capital cost.

16.7 The increase of ₹151.58 Cr. (11.64%) on account of Scope/Design Change is mainly due to poor geological conditions thereby resulting in increase in quantity of excavation and reinforcement steel, rock bolting and shortcreting. Due the change in design the length of the Penstock steel liner increased from 24 m (as per DPR) to 145m.

16.8 The increase of `37.67 Cr. i.e. 2.89% due to under/over provision is mainly due to Consultancy charges, Land acquisition, Compensation for other properties like houses, wells, trees etc., lease rent of land, Buildings, Power Arrangement including 33 KV S/S, Equipment of lighting works, Power supply, Ancillary camp facilities, Water supply scheme, Sewerage Disposal Scheme, Maintenance of Water Supply, Sewage system and Drainage. Drilling and Grouting in intakes, power house, concreting etc. and re-construction of coffer dam and dyke in d/s portion of the project, fire-fighting shall etc. necessitated due to flooding.

16.9 There is an increase of ₹173.74 Cr. (13.35%) in cost due to additional items/deletions. There is addition due to new borrow areas, road from Chaka to Dam site, Drilling and Grouting, reinforcement and structural steel, rock bolting and shotcreting, other misc. items and additional items of admixtures etc. Further there is reduction in items of Open excavation & common excavation, Hydro Mechanical works, Earth moving equipment, Road dressing and construction equipment etc. Haul roads connecting Power House, borrow *areas, river crossing arrangements, hot mixing, Tehri-Koteshwar road, Catchment Area Treatment etc.*

16.10. In electrical works, there is increase due to additional items such as hiring of crawler crane which pre-poned the commissioning of Power House by 13 months approx.., Supply & installation of 10 T EOT Crane, VFT modems and Procurement of additional relays etc.

16.11 There is increase in cost due to additional items such as removal of slush, removal of scrap, debris, conc. Lumps, rock pieces, slush, cleaning etc necessitate due to flooding.

16.12 The increase of ₹252.21 Cr. (19.38%) is mainly due to other reasons like increase in establishment cost due to re-scheduling of the project, maintenance of vehicles and expenditure incurred towards residential and non-residential buildings at Rishikesh, Extension of Performance BGs by BHEL beyond original contract period and Reimbursement of Insurance charges at actual for extended period beyond scheduled completion i.e. April'2007 etc.

16.13 As brought out at Sl. No. 7 above, the time overrun of 84 months is mainly on account of Land acquisition & Rehabilitation of Pendaras Village (Main dam site), Non vacation of borrow areas and Contract award process (46 months), Geological reasons (26 months) increase in volume of work (8 months) and flooding (4 months) THDCIL has submitted details of the efforts done for expediting the possession of land, which includes correspondence with the Rehabilitation Directorate, appraisal to MOP and THDCIL Board.

16.14 On examining the reasons of cost and time overrun, the Committee is of the opinion that the reasons for time and cost overrun were adequately explained by THDCIL. Keeping in view the dependence on State Govt. for land acquisition and Rehabilitation & Resettlement, unforeseeable geological surprises and flooding of the project, the reasons for time and cost overrun are justified and beyond the control of THDCIL. No individual can be held responsible for the same."

25. After analyzing the reasons for time and cost overrun, the Standing Committee has made the following recommendations:

"17.0 Recommendations:

17.1 In view of above deliberations, Standing Committee recommends the Revised cost of Koteshwar HEP (4x100 MW) amounting to ₹ 2581.21 Cr, (including IDC & FC amounting to ₹383.88 crore at June 2012 P.L. with Time overrun of 84 months for consideration of the PIB.

17.2 The issue of contingent liabilities amounting ₹864.42 cr. as on 31.03.15 (which includes awarded amount of ₹459.74 cr., Pendentelite interest of ₹79.69 cr. and Accrued interest w.r.t. date of award of ₹324.99 cr.) and not included in the RCE-I of the Project to be flagged for PIB.

17.3 The Committee is of the opinion that the reasons for time and cost overrun were adequately explained by THDCIL Keeping in view the dependence on State Govt for land acquisition and Rehabilitation & Resettlement, unforeseeable geological surprises and flooding of the project, the reasons for *time and cost overrun are justified and beyond the control of THDCIL. No individual can be held responsible for the same.*

The Committee recommends that the Revised Cost Estimate of the project along with contingent liabilities and assets be put up for consideration of the PIB"

26. We have examined the submissions of the parties along with the observations and recommendations of the Standing Committee on time and cost overrun. We notice that the Standing committee, after detailed analysis of the submissions of the petitioner have brought out the various factors responsible for time and cost overrun like delay in acquisition of land due to R&R problems, flooding of power station, steps taken by the petitioner to mitigate the crisis, increase in scope of work, geological surprises encountered during commissioning, dependence on state government for approvals, mobilization of resources etc. and has based its recommendations on the same. Accordingly, after detailed scrutiny of report of the Standing Committee, we accept the recommendations of the Standing Committee that the time overrun of 84 months and the cost overrun on account of the same cannot be attributed to the petitioner. It is further observed that MOP, GOI has conveyed the RCE approval by CCEA, GOI vide letter No. 11/20/2015-H-I (Vol.III) dated 31.3.2017, which has been placed on record by the Petitioner vide affidavit dated 21.7.2017. In view of this, we allow the RCE completion cost of ₹271735 lakh as approved by the CCEA, GOI as the ceiling cost for the purpose of tariff.

Capital Cost

27. As stated, the project was originally approved by MOP, GOI at an estimated cost of ₹130156 lakh, including IDC of ₹19004 lakh, at October, 1999 price level with completion period of 5 years. Also, MOP, GOI has conveyed approval of RCE-I for ₹271735 lakh (which includes expenditure of ₹258121 lakh including IDC of ₹38388 lakh & ₹13614 lakh towards cost of balance work under

progress, but excluding contingent liability of ₹86442 lakh) at June, 2012 price level.

Capital Cost for the purpose of tariff

28. Clause (1) of Regulation 7 of the 2009 Tariff Regulations, so far as relevant for the present purpose, provides as under:

"(1) Capital cost for a project shall include:-

(a) The expenditure incurred or projected to be incurred, including interest during construction and financing charges, any gain or loss on account of foreign exchange risk variation during construction on the loan – (i) being equal to 70% of the funds deployed, in the event of the actual equity in excess of 30% of the funds deployed, by treating the excess equity as normative loan, or (ii)being equal to the actual amount of loan in the event of the actual equity less than 30% of the fund deployed, - up to the date of commercial operation of the project, as admitted by the Commission, after prudence check.

(b) capitalised initial spares subject to the ceiling rates specified in regulation 8; and

(c) additional capital expenditure determined under regulation 9:

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

(2) The capital cost admitted by the Commission after prudence check shall form the basis for determination of tariff:
……………………………………………………………………………………

Provided also that the Commission may issue guidelines for vetting of capital cost of hydro-electric projects by independent agency or expert and in that event the capital cost as vetted by such agency or expert may be considered by the Commission while determining the tariff for the hydro generating station:

Provided also that the Commission may issue guidelines for scrutiny and commissioning schedule of the hydro-electric projects in accordance with the tariff policy issued by the Central Government under section 3 of the Act from time to time.
Provided also that in case the site of a hydro generating station is awarded to a developer (not being a State controlled or owned company), by a State Government by following a two stage transparent process of bidding, any expenditure incurred or committed to be incurred by the project developer for getting the project site allotted shall not be included in the capital cost:

Provided also that the capital cost in case of such hydro generating station shall include:

(a) cost of approved rehabilitation and resettlement (R&R) plan of the project in conformity with National R&R Policy and R&R package as approved; and

(b) cost of the developer's 10% contribution towards Rajiv Gandhi Grameen VidyutikaranYojana (RGGVY) project in the affected area:

Provided also that the capital cost of the generating station shall include the cost for creating infrastructure for supply of power to the rural households located within a radius of five kilometers of the power station if the generating company does not intend to meet such expenditure as part of its Corporate Social Responsibility.

Provided also that where the power purchase agreement entered into between the generating company and the beneficiaries or the implementation agreement and the transmission service agreement entered into between the transmission licensee and the long-term transmission customer, as the case may be, provide for ceiling of actual expenditure, the capital expenditure admitted by the Commission shall take into consideration such ceiling for determination of tariff."

29. The capital cost (as on COD of each unit to 31.3.2014) and additional capital expenditure claimed by the petitioner in the petition are as under:

(₹in lakh)

	Unit-I (1.4.2011)	Unit-II (26.10.2011)	Unit-III (13.2.2012)	Unit-IV/ station COD (2012-13)	2013-14
Opening capital cost	196533.93	210908.86	225058.79	238907.46	250523.46
Additional capital expenditure after COD of station				11616.00	10291.00
Closing capital cost	**196533.93**	**210908.86**	**225058.79**	**250523.46**	**260814.46**

30. The unit wise break up of capital cost as claimed by the petitioner is as under:

(₹in lakh)

Head of Work	Unit wise Capital cost				
	Unit-I (1.4.2011)	Unit-II (26.10.2011)	Unit-III (13.2.2012)	Unit-IV (1.4.2012)	Total as on COD of station (all 4 units) 1.4.2012
Infrastructure Works	6116.95	0.00	0.00	0.00	6116.95
Major Civil Works including Hydro Mechinical Equipment's	87506.92	829.20	829.20	829.20	89994.50
Plant & Equipment	16870.35	6211.02	5970.32	5955.57	35007.25
Taxes and Duties	1352.05	512.70	512.23	400.25	2777.23

Erection, testing , commissioning & Construction Insurance	1005.11	381.14	380.79	297.54	2064.58
Site supervision	382.65	145.10	144.97	113.28	786.01
Overheads	52300.07	3601.34	3619.08	4053.99	63574.48
Hard Cost (Capital Cost without IDC & FC)	165534.09	11680.51	11456.58	11649.82	200321.00
IDC&FC	30999.84	2694.42	2693.36	2198.85	38586.47
Capital Cost with IDC & FC	196533.93	14374.93	14149.93	13848.67	238907.47

31. As stated above, the RCE-I completion cost of ₹271735 lakh as approved by CCEA has been allowed as the ceiling cost for the purpose of tariff. The capital cost claimed by the petitioner as on COD of units/station is within the RCE approved cost and hence the claim of the petitioner is allowed for the purpose of tariff.

Apportionment of capital cost

32. The Commission in order dated 16.4.2013 in Petition No. 250/2010 (approval of tariff of Tehri Hydroelectric Project Stage-I for the period 22.9.2006 to 31.3.2009) had allowed the capital cost as on the COD of the respective units of the generating station, after restriction of IDC to ₹112699 lakh and apportionment of expenditure under all heads as on COD of the generating station, equally between all units based on installed capacity of the units, except for expenditure under the head 'Plant and equipment'. Against this order, the petitioner had filed Review Petition No. 7/RP/2013 and the Commission by order dated 7.1.2014 rejected the prayer of the petitioner on this issue and decided as under:

> *"20. The cost of common facilities was apportioned equally between the four units of the generating station in view of the specific provision of clause (2) of Regulation 4 of the tariff regulations, extracted hereunder:*
>
> > *"(2) For the purpose of tariff, the capital cost of the project shall be broken up into stages and by distinct units forming part of the project.*

Where the stage-wise, unit-wise, line-wise or sub-station-wise breakup of the capital cost of the project is not available and in case of on-going projects, the common facilities shall be apportioned on the basis of the installed capacity of the units and lines or sub-stations. In relation to multipurpose hydroelectric projects, with irrigation, flood control and power components, the capital cost chargeable to the power component of the project only shall be considered for determination of tariff."

33. Against this order, the petitioner had filed Appeal No. 103/2014 before the Tribunal and the Tribunal vide its judgment dated 29.5.2015 had affirmed the order of the Commission. The relevant portion of the said judgment is extracted hereunder:

"11.2 The contention of the Appellant that the generation of 1st unit (unit IV) can be started only after completion of the common work such as dam, spillway, power house and switch yard etc and hence this common cost has to be taken into consideration while approving the tariff of first unit (Unit IV). The Commission did not consider the total common cost after the 1st unit (unit IV) along with the capital cost instead the Central Commission apportioned equally among the four units. The action of the Central Commission is reasonable because the total common cost is taken into consideration for only one unit (Unit IV) then the generation cost of the power produced by the respective unit will be more and thereby the consumers will be burdened with higher power purchase cost and it will lead to higher tariff. Hence as per Regulation 4 of the Regulations, 2004, the common cost to be apportioned equally among the four units. The action of the Central Commission in this regard is justifiable."

34. The petitioner has filed appeal against the above judgment of the Tribunal and the same is pending before the Supreme Court.

35. In addition to the above, the Petitioner in Review petition No. 7/RP/2013 had raised the issue of upward revision of IDC on common facilities on the date of commercial operation of Unit- I and the same was disallowed by the Commission and the same was confirmed by the Tribunal on appeal by the petitioner.

36. In line with the above decisions, the capital cost has been apportioned equally among all the four units of the generating station.

IDC

37. The petitioner in the present petition has furnished the details of amount, date of drawl, rate of interest etc. in respect of loans from REC and PFC. Based on the said details, IDC has been calculated up to COD of the generating station. Due to re-apportionment of cost, IDC has been revised to ₹39879.73 lakh as on COD of the generating station i.e. 1.4.2012.

Additional Capital Expenditure

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

> *"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, Un-discharged liabilities and the works deferred for execution shall be submitted along with application for determination of tariff."*

39. The COD of the generating station is 1.4.2012 and hence the cut-off date of the generating station is 31.3.2015. We now proceed to consider the claims of the petitioner for capitalization in the subsequent paragraphs.

Additional Capital Expenditure from 1.4.2012 to 31.3.2013

40. The additional capital expenditure claimed by the petitioner in respect of assets/works within the original scope of work and actually incurred after the COD and upto the cut-off date of the generating station are as under:

(₹ in lakh)

Sl. No.	Work/Equipments added after COD upto Cut-off date/ Beyond Cut-off date	Amount Capitalised / De-capitalised (+/-)
1	Capitalisation of Rehab Expenses	68.13
2	De-capitalisation in Administrative Building.	(-) 0.98
3	Power House Building.	2294.10
4	Electro Mechanical & Hydro Mechanical Store.	3.03
5	24 No. Room Field Hostel For O&M Staff.	12.00
6	41 No. Qtrs for CISF staff	1.90
7	Pendars Road	90.84
8	Submersible Pumps	3.00
9	Submersible Pumps	7.62
10	DG Set, Transformer, Elect & Mech Workshop, Crane& other	274.89
11	Bus Duct, Transformer, Switch yard, Gear, Grounding system	287.71
12	Control System, Protection Sys, Control Cable, Illumination System, Communication & Fire Fighting	388.24
13	Cooling water Sys, Drainage Sys & A.C.Ventilation System	54.53
14	6- 220 V & 48 V DC Battery System	34.15
15	Dam & Barrage	4094.44
16	Penstocks	144.99
17	Tailrace Works	51.43
18	1 No. Almirah Big	0.07
19	4 No. Dining Table	0.77
20	4 No. Washing Machines.	0.40
21	Computer	0.38
22	Printer	0.39
23	UPS	0.14
24	Laptop HP4420	0.50
25	Laptop HP	0.50
26	Laptop HP	0.50
27	Laptop & Computers	-0.81
28	1 No. X-Ray Machine.	5.11
29	14 No.A/c	4.18
30	1 No. Water Purifier 60/80 UV based	0.86
31	2 No. Refrigerator.	0.56
32	Fan	0.16
33	Heater	0.05
34	First Aid Box	0.04
35	First Aid Box	0.04
36	Add Liability as 31.03.2012 - Discharged Subsequently	6279.71
37	Less Creation of Liability after COD	2488.08
	Total	11615.51

Additional Capital Expenditure from 1.4.2013 to 31.3.2014

41. The additional capital expenditure claimed by the petitioner in respect of assets/works within the original scope of work and actually incurred after the COD and upto the cut-off date of the generating station are as under:

(₹in lakh)

Sl. No.	Work/Equipment added after COD upto Cut off Date/Beyond Cut of Date	Amount Capitalised / Decapitalised (+/-)
1	Capitalisation of Rehab Expenses	282.25
2	Building for Generation P&M	4003.45
3	24 No. Room Field Hostel For O&M Staff.	19.21
4	Pendars Road	48.68
5	Submersible Pumps	9.34
6	HP Pumps (Mono Block)	0.09
7	Cons. Plant & Machinery (JCB Backhoe Loader)	20.57
8	Main Generation Equipment	(-) 1923.57
9	Dam- Civil Work	7012.16
10	Penn Stock-H/M Civil Work	244.25
11	Tailrace Civil Work	89.75
12	DG Set with Control Panel for Sub-Station	41.29
13	Extension of 33 KV Transmission Line	56.79
14	Boat	0.15
15	Boat	73.71
16	2 No. Steel Box	0.14
17	2 No. Almirah Big	0.17
18	2 No. Almirah Big	0.23
19	1 No. Bed	0.38
20	1 No. Dining Table	0.44
21	1 No. Dressing Table	0.12
22	1 No. Sofa	0.77
23	3 No. Table (1 No. Centre & 2 No. Side Table)	0.30
24	Furniture	0.08
25	2 No. Computer	1.07
26	7 No. Printer	2.51
27	Scanner	0.11
28	12 No. Laptop	6.00
29	Laptops	(-) 3.19
30	Laptop & Computers	7.74
31	5 No. Photo Copier Machine	5.92
32	Fax Machine	0.23
33	Communication Equipment	(-) 1.35
34	Aqua Guard Pure Chill R.O.	0.86
35	1 No. Bench Press	0.16

36	Gym Equipments Road, Dumble, Weight Plates etc.	0.36
37	2 No. Motorized Treadmill	2.57
38	1 No. RO Water Filter	0.18
39	1 No. Refrigerator	0.26
40	Aqua Guard Pure Chill R.O.	1.08
41	Aqua Guard Pure Chill R.O.	1.08
42	Water Purifier	0.20
43	2 No. Water Purifier	1.95
44	4 No. Geyser	0.39
45	1 No. Digital Still Camera	0.20
46	22 No. AC	2.16
47	1 No. Water Purifier	0.17
48	Water Level Sounder Instrument with Tape Length 150 Meter	0.25
49	2 No. Oil Radiant Heat Piller	0.18
50	Bio Metric Attendance System	8.44
51	Other Misc Equipment	0.14
52	3 No. Almirah Small	0.09
53	4 No. Table	0.07
54	Capital Expenditure on Assets not Owned by the Company	(-) 290.27
55	Add Liability as 31.03.2012 - Discharged Subsequently	406.27
56	Less Creation of Liability after COD	(-) 280.13
57	Add Creation of Liability after COD- Discharged subsequently	434.24
	Total	**10290.69**

42. The petitioner has claimed additional capital expenditure for the period 2012-14 under Regulation 9 (1) (ii) of the 2009 Tariff Regulations i.e. works deferred for execution. The Commission vide ROP of the hearing dated 20.2.2018 had directed the petitioner to certify that the additional capital expenditure claimed under Regulation 9(1) (ii) during the period 2012-14 are deferred works and form part of the original scope of work. In response, the petitioner has furnished certificate dated 6.3.2018 indicating that the additional capital expenditure claimed under Regulation 9 (1)(ii) during 2012-14 are deferred works which form part of original scope of work of the generating station. Based on the justification of the petitioner and after prudence check of the claims, the additional capital expenditure claimed in respect of the said

assets/works for the period 2012-14 is allowed under Regulation 9(1)(ii) of the 2009 Tariff Regulations.

43. After apportionment of the common cost equally among the four units of the generating station and after taking into account the additional capital expenditure allowed for the period 2012-14, the capital cost considered for the purpose of tariff for the period 2011-14 is summarized as under:

(₹in lakh)

		Unit-I (1.4.2011 to 25.10.2011)	**Unit-I & II (26.10.2011 to 12.2.2012)**	**Unit-I, II & III (13.2.2012 to 31.3.2012)**	**2012-13 (all 4 units)**	**2013-14**
Capital Cost claimed	238907.46	-	-	-	-	-
IDC claimed	38586.47	-	-	-	-	-
Hard Cost claimed/allowed	200320.99	50080.25	100160.50	150240.74	200320.99	-
IDC allowed	-	6929.91	16630.50	27910.52	39879.73	-
Opening capital cost	**-**	**57010.16**	**116791.00**	**178151.26**	**240200.72**	**251816.72**
Additional capital expenditure	-	-	-	-	11616.00	10291.00
Closing capital cost	**-**	**57010.16**	**116791.00**	**178151.26**	**251816.72**	**262107.72**

Debt-Equity Ratio

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

"12. Debt-Equity Ratio (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 modernization expenditure for life extension shall be serviced in the manner specified in clause (1) of this regulation."

45. The petitioner has submitted that the debt- equity ratio is 78.30:21.70. Since the equity is less than 30% of the capital cost, the actual debt equity ratio of 78.30:21.70 has been considered in terms of the 2009 Tariff Regulations. However, the debt equity ratio for the purpose of additional capitalization has been considered as 70:30.

Return on Equity

46. Regulation 15 of the 2009 Tariff Regulations provides as under:

"15. Return on Equity. (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% for thermal generating stations, transmission system and run of the river generating station, and 16.5% for the storage type generating stations including pumped storage hydro generating stations and run of river generating station with pondage and shall 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.

47. The petitioner has considered the rate of return on equity as under:

	2011-12	**2012-13**	**2013-14**
Base Rate	15.500%	*15.750%	16.500%
Applicable Tax Rate	20.008%	20.008%	20.961%
Rate of ROE (pre-tax)	19.377%	19.689%	20.876%

**Base rate for April- December, 2012 @ 15.5% and for January-March, 2013 @16.5%*

48. Accordingly, the above rates have been considered for the purpose of tariff ROE has been worked out as under:

(₹ in lakh)

	Unit-I (1.4.2011 to 25.10.2011)	**Unit-I & II (26.10.2011 to 12.2.2012)**	**Unit-I, II & III (13.2.2012 to 31.3.2012)**	**2012-13 (all 4 units)**	**2013-14**
Gross Notional Equity	12371.20	25343.65	38658.82	52123.56	55608.36
Addition due to Additional Capitalization	0.00	0.00	0.00	3484.80	3087.30
Closing Equity	12371.20	25343.65	38658.82	55608.36	58695.66
Average Equity	12371.20	25343.65	38658.82	53865.96	57152.01
Return on Equity (Base Rate)	15.500%	15.500%	15.500%	15.750%	16.500%
Tax rate for the period	20.008%	20.008%	20.008%	20.008%	20.961%
Rate of Return on Equity	19.377%	19.377%	19.377%	19.689%	20.876%
Return on Equity	**1362.33**	**1475.94**	**982.42**	**10605.67**	**11931.05**

Interest on loan

49. Regulation 16 of the 2009 Tariff Regulations provides as under:

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

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

(3) The repayment for the year of the tariff period 2009-14 shall be deemed to be equal to the depreciation allowed for that year.
(4) Notwithstanding any moratorium period availed by the generating company or the transmission licensee, as the case may be the repayment of loan shall be considered from the first year of commercial operation of the project and shall be equal to the annual depreciation allowed.

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

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

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

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

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

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

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

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

50. In terms of the above regulations, interest on loan has been calculated as under:

i) The opening gross normative loan as on COD has been arrived at in accordance with Regulation 16 of the 2009 Tariff Regulations.

ii) The weighted average rate of interest has been worked out on the basis of the actual loan portfolio of respective year applicable to the project.

iii) The repayment for the year of the tariff period 2009-14 has been considered equal to the depreciation allowed for that year.

iv) The interest on loan has been calculated on the normative average loan of the year by applying the weighted average rate of interest.

51. Accordingly, interest on loan for the purpose of tariff is as under:

(₹ in lakh)

	Unit-I (1.4.2011 to 25.10.2011)	Unit-I & II (26.10.2011 to 12.2.2012)	Unit-I, II & III (13.2.2012 to 31.3.2012)	2012-13 (all 4 units)	2013-14
Gross Normative Loan	44638.95	91447.35	139492.43	188077.16	196208.36
Cumulative Repayment	0.00	1527.72	3182.84	4284.53	16098.93
Net Loan-Opening	44638.95	89919.63	136309.59	183792.63	180109.44
Repayment during the year	1527.72	1655.12	1101.69	11814.40	12520.71
Addition due to Additional Capitalization	0.00	0.00	0.00	8131.20	7203.70
Net Loan-Closing	43111.23	88264.51	135207.91	180109.44	174792.43
Average Loan	43875.09	89092.07	135758.75	181951.04	177450.93
Weighted Average Rate of Interest	11.54%	11.54%	11.54%	12.00%	12.19%
Interest on Loan	**2877.88**	**3090.46**	**2054.95**	**21830.99**	**21625.24**

Depreciation

52. Regulation 17 of the 2009 Tariff Regulations provides as under:

"(1) The value base for the purpose of depreciation shall be the capital cost of the asset admitted by the Commission.

(2)The salvage value of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the capital cost of the asset.

Provided that in case of hydro generating stations, the salvage value shall be as provided in the agreement signed by the developers with the State Government for creation of the site:

Provided further that the capital cost of the assets of the hydro generating station for the purpose of computation of depreciable value shall correspond to the percentage of sale of electricity under 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 the cumulative depreciation including Advance against Depreciation as admitted by the Commission up to 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."

53. The weighted average rate of depreciation of 4.72%, 4.80% and 4.87% for the years 2011-12, 2012-13 and 2013-14 respectively has been considered for the calculation of depreciation. Accordingly, depreciation has been worked out and allowed as under:

(₹ in lakh)

	Unit-I (1.4.2011 to 25.10.2011)	**Unit-I & II (26.10.2011 to 12.2.2012)**	**Unit-I, II & III (13.2.2012 to 31.3.2012)**	**2012-13 (all 4 units)**	**2013-14**
Opening Gross Block	57010.16	116791.00	178151.26	240200.72	251816.72
Additional capital expenditure during the period	0.00	0.00	0.00	11616.00	10291.00
Closing gross block	57010.16	116791.00	178151.26	251816.72	262107.72
Average gross block	57010.16	116791.00	178151.26	246008.72	256962.22
Rate of Depreciation	4.72%	4.72%	4.72%	4.80%	4.87%
Depreciable Value	51205.24	104904.09	160024.43	220992.24	230850.39
Remaining Depreciable Value	51205.24	103376.38	156841.59	216707.71	214751.47
Depreciation	**1527.72**	**1655.12**	**1101.69**	**11814.40**	**12520.71**

Operation & Maintenance expenses

54. Regulation 19 (f) (v) of the 2009 Tariff Regulations provides as under:

"In case of hydro generating station declared under commercial operation on or after 1.4.2009, operation and maintenance expenses shall be fixed at 2% of the original project cost (excluding rehabilitation & resettlement works) and shall be subject to annual escalation of 5.72% per annum for subsequent years."

55. The petitioner has claimed O & M expenses for the period 2011-14 as under:

(₹in lakh)

2011-12	2012-13	2013-14
4026.46	5162.99	5428.17

56. As per Regulation 3 (29) of the 2009 Tariff Regulation, the 'original project cost' is defined as under:

> *"original project cost' means the capital expenditure incurred by the generating company or the transmission licensee, as the case may be, within the original scope of the project up to the cut-off date as admitted by the Commission."*

57. The original project cost of the generating station has been defined as cost approved by the Commission as on cut-off date i.e. 31.3.2015 in the present case. The petitioner has also filed Petition No. 117/GT/2018 for determination of tariff for the period 2014-19 based on the capital expenditure and the expenditure on R&R till 31.3.2015 for ₹265207.70 lakh and ₹4344.56 lakh respectively. Accordingly, the annualized O & M Expenses have been allowed @ 2% of the opening capital cost as on COD of the individual units and @ 2% of original project cost for the first year of operation of the generating station (all units) beginning from 1.4.2012 till 31.3.2013. For the year 2013-14, the annualized O&M expenses have been calculated after escalating the annualized O&M expenses for the year 2012-13 by 5.72% in terms of the above regulation. Accordingly, based on the re-apportionment of the capital cost, the O & M Expenses have been worked out and allowed as under:

(₹in lakh)

Unit-I (1.4.2011 to 25.10.2011)	Unit-I & II (26.10.2011 to 12.2.2012)	Unit-I, II & III (13.2.2012 to 31.3.2012)	2012-13 (all 4 units)	2013-14
633.51	686.71	457.26	5217.26	5515.69

Interest on Working Capital

58. Regulation 18(1)(c) of the 2009 Tariff Regulations provides that the working capital for hydro based generating stations shall cover:

"(i) Cost of coal for 1.5 months for pit-head generating stations and two months for non-pithead generating stations, for generation corresponding to the normative annual plant availability factor;

(ii) Cost of secondary fuel oil for two months for generation corresponding to the normative annual plant availability factor, and in case of use of more than one liquid fuel oil, cost of fuel oil stock for the main secondary fuel oil;

(iii) Maintenance spares @ 20% of operation and maintenance expenses specified in regulation 19.

(iv) Receivables equivalent to two months of capacity charge and energy charge for sale of electricity calculated on normative plant availability factor; and

(v) O&M expenses for one month."

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

"Rate of interest on working capital shall be on normative basis and shall be considered as follows: (i) SBI short-term Prime Lending Rate as on 01.04.2009 or on 1st April of the year in which the generating station or unit thereof or the transmission system, as the case may be, is declared under commercial operation, whichever is later, for the unit or station whose date of commercial operation falls on or before 30.06.2010.

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

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

60. In terms of the above, interest on working capital has been worked out as under:

Receivables

(₹ in lakh)

Unit-I (1.4.2011 to 25.10.2011)	Unit-I & II (26.10.2011 to 12.2.2012)	Unit-I, II & III (13.2.2012 to 31.3.2012)	2012-13 (all 4 units)	2013-14
1091.17	1177.57	783.48	8462.52	8826.33

Maintenance Spares

(₹ in lakh)

Unit-I (1.4.2011 to 25.10.2011)	Unit-I & II (26.10.2011 to 12.2.2012)	Unit-I, II & III (13.2.2012 to 31.3.2012)	2012-13 (all 4 units)	2013-14
95.03	103.01	68.59	782.59	827.35

O&M Expenses

(₹ in lakh)

Unit-I (1.4.2011 to 25.10.2011)	Unit-I & II (26.10.2011 to 12.2.2012)	Unit-I, II & III (13.2.2012 to 31.3.2012)	2012-13 (all 4 units)	2013-14
52.79	57.23	38.10	434.77	459.64

Rate of interest on working capital

Rate of interest on working capital of 11.75% for the year 2011-12 and 13.50% for the years 2012-13 and 2013-14 has been considered for the purpose of tariff.

Interest on Working Capital

61. Necessary computations in support of calculation of interest on working capital are as under:

(₹ in lakh)

	Unit-I (1.4.2011 to 25.10.2011)	Unit-I & II (26.10.2011 to 12.2.2012)	Unit-I, II & III (13.2.2012to 31.3.2012)	2012-13 (all 4 units)	2013-14
Maintenance Spares	95.03	103.01	68.59	782.59	827.35
O & M expenses	52.79	57.23	38.10	434.77	459.64
Receivables	1091.17	1177.57	783.48	8462.52	8826.33
Total	1238.99	1337.80	890.18	9679.88	10113.33
Rate of IWC	11.75%	11.75%	11.75%	13.50%	13.50%
Interest on Working Capital	**145.58**	**157.19**	**104.60**	**1306.78**	**1365.30**

Fixed Charges

62. The fixed charges allowed for the purpose of tariff for the period from 1.4.2011- 31.3.2014 is summarized as under:

(₹in lakh)

	Unit-I (1.4.2011 to 25.10.2011)	Unit-I & II (26.10.2011 to 12.2.2012)	Unit-I, II & III (13.2.2012 to 31.3.2012)	2012-13 (all 4 units)	2013-14
Return on Equity	1362.33	1475.94	982.42	10605.67	11931.05
Interest on Loan	2877.88	3090.46	2054.95	21830.99	21625.24
Depreciation	1527.72	1655.12	1101.69	11814.40	12520.71
Interest on Working Capital	145.58	157.19	104.60	1306.78	1365.30
O & M Expenses	633.51	686.71	457.26	5217.26	5515.69
Total	**6547.02**	**7065.42**	**4700.91**	**50775.10**	**52957.99**

63. The fixed charges determined by this order shall be adjusted against the tariff determined vide order dated 15.5.2014 in Petition No. 116/GT/2013.

NAPAF

64. NAPAF of 67% as allowed by the Commission vide its order dated 15.5.2014 in Petition No. 116/GT/2013 has been allowed.

Design Energy

65. The Design Energy of 1154.82 MUs as approved by the Commission vide order dated 15.5.2014 is allowed.

Application fee and the publication expenses

66. The petitioner has sought reimbursement of filing fee and the publication expenses. The petitioner shall be entitled for reimbursement of fee directly from the respondent in accordance with Regulation 42 of the 2009 Tariff Regulations. The petitioner shall also be entitled to recover other statutory expenses in accordance with the 2009 Tariff Regulations. Accordingly, the expenses towards application filing fees 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.

67. Petition No. 165/GT/2017 is disposed of in terms of the above.

Sd/-	***Sd/-***	***Sd/-***
(Dr. M.K. Iyer)	**(A.K.Singhal)**	**(P.K.Pujari)**
Member	**Member**	**Chairperson**