

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 249/GT/2016

Coram:

**Shri P.K.Pujari, Chairperson
Dr. M.K. Iyer, Member
Shri I.S.Jha, Member**

Date of Order: 9th January, 2020

In the matter of

Determination of tariff of Teesta III Hydro Electric Project (1200 MW) for the period from the actual COD (28.2.2017) to 31.3.2019

And

In the matter of

Teesta Urja Ltd
2nd Floor, Vijaya Building,
17, Barakhamba Road,
New Delhi-110001...**Petitioner**

vs

1. PTC India Limited
15, Bhikaji Cama Place,
New Delhi- 110066
2. Energy and Power Department
Government of Sikkim
Kazi Road, Gangtok- 737101
3. Punjab State Power Corporation Limited
The Mall, Patiala- 147001
4. Uttar Haryana Bijli Vitran Nigam Limited
Vidyut Sadan, Plot No. C16, Sector-6
Panchkula- 134109
5. Dakshin Haryana Bijli Vitran Nigam Limited
Vidyut Sadan, Vidyut Nagar,
Hisar- 125005
6. Haryana Power Purchase Centre
Shakti Bhawan, Sector-6,
Panchkula- 134109
7. Ajmer Vidyut Vitran Nigam Limited
Vidyut Bhawan, Panchsheel Nagar,
Makarwali Road, Ajmer- 305004



8. Jaipur Vidyut Vitran Nigam Limited
Vidyut Bhawan, Janpath,
Jaipur- 302005

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

10. Rajasthan Urja Vikas Nigam Limited
Vidyut Bhawan, Janpath
Jyoti Nagar, Jaipur- 302005

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

Parties Present:

Shri Jaideep Lakhtakia, TUL
Ms. Swati Jindal, TUL
Ms.Raveena Dhamija, Advocate, PTC
Ms.Ranjitha Ramachandran, Advocate, Rajasthan Discoms
Ms. Tanya Sareen, Advocate, Rajasthan Discoms
Shri Anand Ganesan, Advocate, PSPCL & HPPC
Ms.Parichitra Chowdhry, Advocate, PSPCL & HPPC
Shri Manish Garg, UPPCL
Shri AlokPareek, RUVNL

ORDER

This petition has been filed by the Petitioner, Teesta Urja Limited for approval of tariff of Teesta III Hydroelectric Project (1200 MW) ('the generating station/project') for the period from the anticipated date of commercial operation of the units till 31.3.2019 in accordance with the provisions of the Central Electricity Regulatory Commission (Terms & Conditions of Tariff) Regulations, 2014 ('the 2014 Tariff Regulations'). Thereafter, the Petitioner vide its affidavit dated 24.3.2017 submitted the actual COD of the units/ generating station as under:

Units- II, III & IV	23.2.2017
Units- I, V & VI (generating station)	28.2.2017



Background

2. The Government of Sikkim, as a part of national drive for 50000 MW Hydro Initiative of the country, awarded several hydro-electric projects to various Independent Power Producers (IPPs). The project was a part of overall development of the Teesta basin undertaken by the Govt. of Sikkim through six hydro projects having cumulative capacity of about 3000 MW. In February 2005, the Govt. of Sikkim issued a Letter of Intent to the Consortium led by M/s Athena Projects Pvt. Ltd. for implementation of the Project on a Build, Own, Operate and Transfer ('BOOT') basis in Joint venture with Govt. of Sikkim. Accordingly, on 18.7.2005, the Petitioner and the Govt. of Sikkim entered into an Implementation Agreement for implementation of the Project. Based on the provisions of the said agreement, the Govt. of Sikkim is entitled to free power at the rate of 12% for initial period of 15 years commencing from the date of commercial operation of the project and at the rate of 15% for the balance period of 20 years. On 12.5.2006, the Central Electricity Authority (CEA) accorded concurrence to the project at an estimated completion cost of ₹5705.55crore. The CEA vide its letter dated 14.6.2010 amended this concurrence to make changes in the project features due to difficulties encountered by the Petitioner in construction of the Spillway Arrangement as approved earlier. CEA in the original concurrence dated 12.5.2006 had approved Design Energy (DE) of 5183 MU. However, the DE was revised by CEA to 5213.82 MU in the Addendum to Concurrence dated 14.6.2010 due to changes in the Project features. Thereafter, the Petitioner entered into a Power Purchase Agreement (PPA) on 28.7.2006 with M/s. PTC India Ltd. for a period of 35 years from COD of the generating station for sale of entire power from the project, excluding auxiliary consumption, free power and the transmission issues incurred



upto the delivery point. Consequently, PTC entered into PSAs with the Respondent beneficiaries for sale of power on long term basis for 35 years. In compliance with the conditions envisaged under the PPA, PTC vide its letter dated 9.11.2016 submitted application to CTU for grant of LTOA to the project and CTU vide letter dated 26.5.2009 granted LTOA to the Petitioner. The detail of PSAs entered into between PTC and beneficiaries for sale of power are as under:

Name of beneficiaries	Date of PSA	Contracted capacity
PSPCL	15.9.2006	340 MW
HPPC	21.9.2006	200 MW
UPPCL	27.9.2006	200 MW
Rajasthan discoms	27.9.2006	100 MW

3. The Commission vide its order dated 23.5.2017 had allowed interim tariff for the period from 23.2.2017 to 31.3.2019, based on 85% of the capital cost as on COD of the units, as under:

	2016-17		2017-18	2018-19
	23.2.2017 to 27.2.2017	28.2.2017 to 31.3.2017		
Return on Equity	293.02	3750.62	42780.54	42780.54
Interest on Loan	643.40	8212.73	90450.19	84517.80
Depreciation	345.81	4426.38	50488.40	50488.40
Interest on Working Capital	0.52	42.81	5704.93	5666.39
O & M Expenses	171.62	2196.72	26720.13	28494.35
Total	1454.37	18629.27	216144.19	211947.48

(₹ in lakh)

4. The Commission in the said order had also observed the following:

“22. We also direct the Petitioner to approach the CEA for vetting of the expenditure of the generating station on payment basis. CEA is requested to take expeditious action and vet the completion cost of the generating station within a period of 3 months. The Petitioner is directed to submit the same prior to the determination of the tariff of the generating station.”

5. Thereafter, the Commission vide its order dated 25.3.2019 permitted the Petitioner to continue the said interim tariff beyond 31.3.2019, subject to adjustment after determination of final tariff of the generating station.



6. Thereafter, the Petitioner has amended this petition by revising the capital expenditure as on the actual COD of the units/generating station and based on the DIA report on vetting of capital cost of the project. In compliance with the directions of the Commission, the Petitioner vide affidavit dated 25.2.2019 has revised the liabilities discharged as on COD of the generating station along with the opening capital cost. Accordingly, the capital cost and annual fixed charges claimed by the Petitioner is as under:

(a) Capital cost

(₹ in lakh)

	2016-17		2017-18	2018-19
	23.2.2017 to 27.2.2017	28.2.2017 to 31.3.2017		
	Units- II, III & IV	Units- I to VI		
Opening Capital Cost	561860.21	1201578.58	1254047.37	1292037.45
Add: Addition during the year / period	38929.08	34.40	19679.17	13981.41
Less: De-capitalisation during the year / period	0.00	113.36	0.00	0.00
Add: Discharges during the year / period	0.00	52547.75	18310.91	48194.22
Closing Capital Cost	600789.29	1254047.37	1292037.45	1354213.08

(b) Annual fixed charges

(₹ in lakh)

	2016-17		2017-18	2018-19
	23.2.2017 to 27.2.2017	28.2.2017 to 31.3.2017		
	Units- II, III & IV	Units- I to VI		
Depreciation	737.21	9965.16	63282.16	66491.85
Interest on Loan	843.90	11163.59	124886.68	106076.02
Return on Equity	307.43	4155.60	48045.83	47337.04
Interest on Working Capital	53.29	706.35	7036.77	6806.58
O & M Expenses	231.75	2966.39	36082.08	38477.93
Total	2173.57	28957.09	279333.50	265189.42

7. The matter was heard on 14.2.2017 and the Commission after directing the Respondents to file their comments on DIA report, also directed the Petitioner to file additional information on the following:

a) Justification for allocation of capital cost on the basis of number of days, break- up of capital cost as on COD pertaining to Unit- I and cost related to common facilities;

b) Reason for claiming ROE for only one unit for the entire period



- c) Reconciliation as regards equity position as per balance sheet and Form 14 upto the actual date of expenditure i.e 30.9.2016;*
- d) Details of fund deployed in Form-14 upto actual expenditure date i.e 31.12.2016*
- e) Clarification as regards to the funding gap of Rs 480.63 lakh with regard to the total debt & equity projected cost of Rs 13,79,482.69 as against the capital cost of Rs 13,79,963.32 as on anticipated COD;*
- f) Delegation of powers along with Agenda note for approval of final RCE by Board of Directors of Petitioner company; and*
- g) Details of capital expenditure as on 31.12.2016 or date of commercial operation of unit/ generating station.*

8. In compliance with the above direction, the Petitioner has filed the additional information and has served copies on the Respondents. Reply to the petition has been filed by the Respondents, UPPCL, PSPCL, Haryana discoms (UHBVNL & DHBVNL) and Rajasthan discoms and the Petitioner has filed its rejoinder to the said replies. The Respondent PTC has filed its response to the replies filed by PSPCL and Rajasthan discoms. In addition, the Objector, All India Power Engineers Federation Limited has filed its objection in the matter and the Petitioner has filed its response to the said objection. It is observed that none of the Respondents and the Petitioner have submitted their comments on the DIA Report.

9. Thereafter, the matter was heard on 25.7.2017 and the Commission requested the CEA to expedite the vetting of capital cost of the project and submit the report within one month. However, CEA vide its letter dated 11.9.2017 has informed that the completion cost of the generating station cannot be determined, as it does not have any mechanism to examine/vet the fait-accomplis expenditure. Subsequently, the matter was heard on 6.2.2019 and the Commission after hearing the parties directed the parties to complete pleadings and the Petitioner to file certain additional information on the following:



- (a) Audited balance sheets as on both the CODs.
- (b) Revised form 14A, duly filled in exactly as per the format prescribed as per the 2014 Regulations.
- (c) Reconciliation of the capital expenditure on cash basis as per form 5b with that as per form 14A.
- (d) Reconciliation of the capital expenditure with the sources of funds.
- (e) Clarification regarding difference in amount of debt as per form-6 and form-14.
- (f) All the loan agreements and correspondences from the banks with respect to reset of rate of interest, if any.
- (g) Statement of asset-wise, party-wise details of the undischarged liabilities as on each COD duly certified by the Auditor.
- (h) Statement of and reconciliation of the undischarged liabilities with the balance sheet, duly certified by the Auditor.

Capital Cost

10. Clause (1) of Regulation 9 of the 2014 Tariff Regulations provides that the capital cost as determined by the Commission after prudence check in accordance with this regulation shall form the basis of determination of tariff for existing and new projects. Clause (2) of Regulation 9 provides as under:

“9(2) The Capital Cost of a new project shall include the following:

- (a) the expenditure incurred or projected to be incurred up to the date of commercial operation of the project;*
- (b) Interest during construction and financing charges, on the loans (i) being equal to 70% of the funds deployed, in the event of the actual equity in excess of 30% of the funds deployed, by treating the excess equity as normative loan, or (ii) being equal to the actual amount of loan in the event of the actual equity less than 30% of the funds deployed;*
- (c) Increase in cost in contract packages as approved by the Commission;*
- (d) Interest during construction and incidental expenditure during construction as computed in accordance with Regulation 11 of these regulations;*
- (e) capitalised Initial spares subject to the ceiling rates specified in Regulation 13 of these regulations;*
- (f) expenditure on account of additional capitalization and de-capitalisation determined in accordance with Regulation 14 of these regulations;*

11. As stated, the DPR of the project was submitted to CEA who accorded its concurrence on 12.5.2006 at an estimated completion cost of ₹5705.55 crore and commissioning schedule of 60 months from the effective zero date of start of



the project as October 2006. Accordingly, the SCOD of the project was envisaged to be 31.10.2011. Thereafter the Board of Directors of the Petitioner Company revised the cost of the project as ₹8581 crore which was further revised to ₹11382 crore on 28.2.2014. Subsequently, the Board vide resolution dated 5.8.2015 approved the revised cost of the project as ₹13965 crore which includes an amount of ₹148 crore towards working capital margin which was not considered as part of the capital cost by the Petitioner. The Petitioner has submitted that the capital cost of the project (including projections upto COD) is ₹1379963.32 lakh (after deduction of the margin money for working capital). Accordingly, the anticipated commercial operation date of the project was revised to 31.3.2017. Regulation 7 of the 2009 Tariff Regulations provides for vetting of capital cost of hydro power projects by an independent agency or expert, designated by the Commission. The Commission vide its order dated 2.8.2010 has also issued guidelines for vetting of the capital cost by Designated Independent Agencies (DIA) or experts. Accordingly, the Petitioner had engaged M/s AF Consult India Pvt. Ltd. for vetting of capital cost of the generating station.

Time Overrun

12. As stated, the scheduled COD of the project as per concurrence of CEA was 60 months from the start date of construction activities i.e. October, 2006. Accordingly, the SCOD of the project was envisaged as 31.10.2011. As the actual COD of the generating station is 28.2.2017, there is time overrun of 64 months from SCOD. The major reasons for time overrun as submitted by the Petitioner are as under:



(a) Delay in forest clearance by the Ministry of Environment & Forests, GOI

13. The Petitioner has submitted that it had applied for acquisition of land to Govt. of Sikkim which was forwarded to District Collector on 20.10.2005 and the joint inspection of project site was completed by the State Govt. on 21.12.2005. However, there was a delay in joint inspection of land due to disputes raised by some land owners regarding ownership of forest land. The Petitioner has also submitted that after resolution of disputes by the State Govt., the joint inspection was completed on 25.9.2006. The Petitioner has further submitted that since TEC of CEA and joint inspection report of State Govt. was pre-requisite for forest clearance, plotting and mapping for submission of forest clearance application was carried out. Accordingly, the Petitioner after completion of these activities, applied for forest clearance on 27.11.2006. Subsequently, the Ministry of Environment & Forests (MOEF) granted in-principle forest clearance on 12.10.2007. The Petitioner has added that the State Govt. conveyed the final approval of MOEF on 15.11.2007 and the possession of forest land was taken on 26.11.2007. Accordingly, the Petitioner has submitted that due to delay in grant of forest clearance, the commencement of construction activities were delayed by 391 days (13 months) from the original schedule of commencement of constructions activities and the same was beyond the control of the Petitioner.

(b) Earthquake

14. The Petitioner has submitted that an earthquake of magnitude 6.8 had hit north-eastern part of India and Nepal on 18.9.2011 along with several aftershocks. This earthquake had caused severe damage to the project as well as the entire State of Sikkim, thereby causing loss of life and damage to roads, machineries and other properties of the Contractors and sub-contractors



engaged in various project works and the construction work at project site came to halt. The Petitioner has further submitted that landslides had occurred on the right bank access road damaging the road and disrupting access to many locations of Head Race Tunnel, Surge shaft and Pressure shaft. The Petitioner has added that the work could not commence at any location for period of two months as the labour force stationed at site had left. Accordingly, the Petitioner has submitted that there was a total delay of 8 months (September 2011 to May 2012) in all project components due to damage caused by earthquake and slow progress after restoration of infrastructure works.

(c) Collapse of Rang Chang Khola (RCK) Bridge

15. The Petitioner has submitted that the RCK bridge connecting the project site to National Highway collapsed on 19.12.2011, thereby resulting in halting of consignment movement and movement of construction materials like cement, sand, reinforcement steel etc. The Petitioner also submitted that the Petitioner, at the request of Border Roads Organization (BRO) took up the reconstruction of the said bridge along with re-valuation of other bridges between Siliguri and the project site. Thus, the RCK bridge was rebuilt and put to use in the month of August 2013 and other bridges work were completed in October 2013. The Petitioner has accordingly submitted that the total delay of 14.5 months attributable to damage of RCK bridge and strengthening of other bridges were beyond the control of the Petitioner.

(d) Flash floods

16. The Petitioner has submitted that a flash floods occurred on 20.9.2012 resulting in significant damage to the roads at dam site, HRT access roads and Powerhouse access roads, including washing away of two steel bridges. The Petitioner has also submitted that the flood caused damage to the peripherals of



certain construction equipment, batching plant and structures at dam site. The restoration work, according to the Petitioner, took three months from September, 2012 to December 2012. The Petitioner has however submitted that the said period was overlapping with delay due to collapse of RCK bridge and accordingly the delay of 3 months has been deducted from the same.

(e) Collapse of Ritchu Nallah Bridge

17. The Petitioner has submitted that due to heavy rainfall and increased discharge in Teesta river, one of the bailey bridges over Ritchu Nallah and abutment of other bailey bridges were washed away on 17.5.2016. The Petitioner has also submitted that the bridge was restored and opened for movement of heavy vehicle on 14.6.2016 but due to landslide that happened on the same day, the road was further blocked till its restoration upto 27.6.2016. Accordingly, the Petitioner has submitted that there was stoppage of work for 41 days and this delay was beyond the control of the Petitioner.

(f) Change in Design and Construction Methodology due to poor geology- Addendum to TEC

18. The Petitioner has submitted that the original proposal in DPR was submitted to CEA on 26.7.2005 with concrete gravity dam, based on the conceptual design of DPR of CWC. The Petitioner has however submitted that CWC had recommended change from concrete gravity dam to Concrete Faced Rock-Fill Dam (CFRD). The revised DPR with CFRD was submitted to CEA on 21.2.2006 and TEC was awarded to the Petitioner on 12.5.2006. The Petitioner has added that there were certain geological reasons which led to change in design of spillway as the design approved in TEC was not techno-economically feasible. Accordingly, the Petitioner approached CEA with proposal for revised spillway arrangement. The above changes also resulted in increase in length of



diversion tunnel and change in de-silting chamber arrangement. Similarly, the center-line of the turbine of the project was also decided to be re-fixed which led to change in the layout of Power house in Tail Race Tunnel. The Petitioner submitted the revised proposal in August 2009 and the same was considered by CEA on 19.5.2010. Thus, addendum to TEC dated 12.5.2006 was concurred and was conveyed to the Petitioner by CEA on 14.6.2010. Accordingly, the Petitioner has submitted that there was a delay of 780 days on these grounds and the same was beyond the control of the Petitioner.

(g) Delay due to financial crunch

19. The Petitioner has submitted that due to several uncontrollable and unforeseeable events, the project had experienced time and cost overrun, causing severe financial crunch and calling for additional funding, both debt as well as equity. In this background, the Govt. of India and Govt. of Sikkim, at the request of stakeholders, stepped in to find ways for completing the project for salvaging the huge investments by the financial institutions, public sector banks and other stakeholders. The Petitioner has stated that the period from April 2015 to August 2015 pertains to detailed deliberations among GOI, Govt. of Sikkim and other stakeholders. Accordingly, the Petitioner has submitted that the said period of 5 months, when the project was stalled due to funding problem is a force majeure event and the same may be condoned.

20. The Petitioner has also submitted the component wise analysis of time overrun along with the bar chart indicating the schedule of each activity vis-à-vis the actual time. The Petitioner has further submitted that activity of constructing TRT was scheduled to be completed within 1218 days (1.10.2007 to 31.1.2011), but due to various reasons as mentioned above, the activity got



completed in 2713 days i.e. a delay of 1495 days. The Petitioner has submitted that the delay of the 1495 days in construction period and start-up delay of 391 days (due to forest clearance) in completing these activities were for reasons beyond the control of the Petitioner.

Reply of Respondents

UPPCL

21. The Respondent, UPPCL vide its reply affidavit dated 13.2.2017 has submitted that the Petitioner has not furnished reason for not getting RCE of ₹13965 crore approved and the Commission may approve tariff only on the capital cost which has been approved by DIA i.e. the 2nd cost overrun. As regards stalling of the project for 5 months, the Respondent has requested that the Petitioner may be directed to provide financing plan post 1st and 2nd cost overrun. It has submitted that it is required to assess when 1st and 2nd cost overrun was approved by bankers and plan to infuse additional equity. Accordingly, the Respondent has submitted that IDC & IEDC may not be passed on to beneficiaries.

Rajasthan discoms

22. The Respondents 7 to 10 (Rajasthan discoms) vide its reply affidavit dated 8.3.2017 have submitted that the implication of time & cost overrun may not be allowed to the Petitioner as part of tariff. The Respondent has also submitted that the Govt. of Sikkim may be directed to pay tariff for 12% of free power initially agreed, considering the fact that the cost of the project had escalated by 2.5%. The Respondents have added that the Petitioner, being a Govt. Company, it was for the Petitioner and the Govt. of Sikkim to actively pursue the matters relating to grant of forest clearance. They have further stated that



there is no mandatory compensation admissible for the delay on account of force majeure and in case of continuation of force majeure for a period of 12 months or more, there was an option available to the Petitioner to initiate termination of PPA. As the Petitioner chose to proceed with the implementation of the project, despite force majeure, it had elected to implement the project without any monetary compensation for the delay. These Respondents have pointed out that in order to satisfy the Commission on time overrun, the Petitioner is required to establish that the (i) events specified constitute force majeure, (ii) Petitioner took reasonable efforts to avoid force majeure events and acted in prudent manner and (iii) parties have stipulated the consequences by agreement and thereby agreeing that there will be no other monetary consequences arising out of force majeure. Accordingly, the Respondents have contended that delay in obtaining forest clearance, de-silting activities, collapse of bridge, financial crunch etc. cannot be considered as force majeure events and the Petitioner and its contractors should have anticipated these aspects at the time project was to be implemented. As regards earthquake and flash floods, the Respondents have submitted that the Petitioner has not given direct implication of these events on the project. The Respondents have stated that there cannot be any direction or mandate to Haryana discoms to necessarily purchase electricity. The Respondents have reiterated that they would schedule and purchase electricity from the project if and only when Rajasthan Electricity Regulatory Commission grants concurrence, based on the final tariff to be determined by this Commission.

PSPCL

23. Respondent No. 3 PSPCL vide its reply affidavit dated 27.4.2017 has submitted that with the time overrun of 64 months, the cost overrun sought for



is more than double the original project cost. The Respondent has submitted that it is not open to the Petitioner to complete the project with substantial delay in the year 2017 and then seek to enforce the obligations on the Respondent to purchase power. The Respondent has stated that in the absence of approval of PSA by Punjab State Electricity Commission, the question of the Respondent purchasing electricity or scheduling the same does not arise. The Respondent has added that its participation in the present proceeding is not to be considered as waiver or an agreement (express or implied) that the Respondent has agreed to purchase electricity or is under a binding obligation to purchase power from the project of the Petitioner at the tariff to be determined by this Commission.

Haryana discoms

24. The Respondents 4 & 5, Haryana discoms have submitted that the PSA executed with PTC on 21.9.2006 was approved by the Haryana State Electricity Commission (HERC) on a conditional basis on 18.6.2007 and the same is subject to tariff being determined and approved. The Respondents have also submitted that the project was to be completed within 60 months from the financial closure, which was to be completed in the year 2012. While pointing out that the actual COD is in the year 2017, these Respondents have stated that the time overrun is nearly 64 months and the cost overrun claimed is more than double the original project cost. Hence, all these need to be as considered afresh for the purpose of deciding on the purchase of electricity. In these circumstances, the Respondents have stated that there cannot be any direction or mandate to Haryana discoms to necessarily purchase electricity. The Respondents have reiterated that they would schedule and purchase electricity from the project if and only when the HERC grants concurrence, based on the final tariff to be



determined by this Commission.

Rejoinder of Petitioner

25. In response to the above replies, the Petitioner vide its rejoinders has submitted as under:

(a) There has been no omission on part of the Petitioner in approaching the DIA for vetting of the completed capital cost, considering that the project has been declared under commercial operation only on 28.2.2017.

(b) The project has witnessed numerous force majeure conditions and geological surprises during the course of construction of the project which are beyond the control of the Petitioner. The detailed justification of time and cost overrun has already been furnished in the petition.

(c) The financial institutions along with equity holders had enhanced their exposure substantially and had exhausted their resources to make further investments. Such enhancement in exposure limits was due to various uncontrollable and unforeseeable events as mentioned in the petition.

(d) Considering the project was on the verge on becoming a non-performing asset, the MoP, GOI and the Govt. of Sikkim intervened, whereby the Govt. of Sikkim enhanced its equity from 26% to 51% and accordingly the financial institutions/ banks enhanced the debt exposure in order to complete the project. Accordingly, for the period between April 2015 and August 2015, the project work got stalled on account of force majeure condition, which was beyond the control of the Petitioner.

(e) In respect of two long-term beneficiaries of the project, the respective State Commissions have approved the procurement of power from the project, subject to determination of tariff by this Commission. Accordingly, the Respondents cannot absolve of their obligations under the PPA/PSA for inaction on their part in obtaining the approval of the regulatory commissions for procurement of power immediately after signing the PSA. The terms and conditions of the PSA are binding on all the parties and the Respondents cannot refrain from meeting their obligations under the PSA and pass on the repercussions of the same on the Petitioner.

(f) The submissions of Respondents with regard to time overrun are denied as the project experienced time overrun due to various reasons which were beyond the control of the Petitioner.



(g) The DIA has already carried out the detailed audit and prudence check of the capital cost, duly considering the time & cost overrun of the project vide its reports dated 1.2.2013 & 19.8.2014 and is in the process of vetting the completion cost of the project, based on the actual COD.

(h) The Petitioner has made detailed submissions on various force majeure conditions that have resulted in time overrun. None of the events have continued for a continuous period of 12 months and as such Clause 10.7 or Clause 13.3.1 of the PSA cannot be invoked. Further, the justification of time overrun based on force majeure condition is subject to vetting by this Commission and once the same is admitted under the project cost, the tariff so determined shall be final and binding on the Respondents in terms of the provisions of the Tariff Regulations.

(i) The Petitioner and PTC are pursuing for off-take of the contracted capacity from the project by the Haryana discoms, Rajasthan discoms, UPPCL and PSPCL.

All India Power Engineers' Federation (AIPEF)- Objector

26. The Objector, AIPEF vide its affidavits dated 10.4.2017, 2.5.2017 & 24.5.2017 has submitted as under:

(a) In terms of the PSA between PTC and PSEB, in case of delay in commissioning of the project, the IDC is not allowed to be capitalized. Only in case of force majeure, there is an exception, but for claiming this exception, each item of force majeure is to be justified. Even if there is force majeure on account of geological surprises etc., the increase in capital cost is limited to 10% as per TEC of CEA.

(b) It was the negligence and failure of the Petitioner to have attempted to transport an overweight transformer, which caused the failure of the bridge. Before starting the process of transporting overweight components for the project, it was mandatory for the Petitioner to have obtained the consent and clearance of BRO. as this was not done, the failure of the bridge is not a force majeure event, but due to the negligence and lapse of the construction agency.

(c) The project developers failed to ensure the requisite funds for the project, which resulted in complete stoppage of work of 416 days at the project for about 1-2 years, and this factor directly resulted in increase of interest charges, escalated the capital cost of the project when the lapse / fault was on part of the project developer.



Response of Petitioner to Objector, AIPEF

27. The Petitioner vide its affidavit dated 28.3.2018 has filed its reply to the objections of AIPEF and has stated the following:

(a) Several of the submissions made by AIPEF are not related to the petition and are based on media reports etc., which cannot be relied upon in law.

(b) The project is located in North Sikkim district and access to the project site is through Gorkhaland area. The access was continuously affected during project implementation due to Gorkhaland agitation, which led to intermittent stoppage of work. Further, the site can only be accessed through the North Sikkim highway, which remained severely impacted due to constant landslides and heavy rainfall in the regions, thereby affecting the progress of the work.

(c) The project has suffered immensely on account of various force majeure events such as earthquake of 6.9 intensity hitting the State of Sikkim with epicenter close to project site, flash floods causing damage to project infrastructure and washing away of hydro-mechanical equipment, RCK bridge collapse on 19.12.2011, strengthening of existing bridges of the State by the developer on directions of BRO before commencement of transportation, frequent strikes called in the disturbed area of Darjeeling, restricting the only road link to Sikkim which severely impacted the pace of implementation of work.

(d) The period of delay of 416 days was considered by CAG in statutory audit for the year 2016-17 and the same has been cleared with 'nil' observation as per its certificate dated 22.12.2017 (Annexure-I of reply).

28. Accordingly, the Petitioner has submitted that the submissions of the Respondents and the Objector AIPEF may be rejected and the tariff of the generating station may be determined in terms of the provisions of the Tariff Regulations.

Vetting of capital cost by DIA

29. Regulation 10(2) of the 2014 Tariff Regulations inter alia provides that the Commission may issue guidelines for vetting of the capital cost of the hydroelectric 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 tariff. In terms of the above, the Commission has notified the guidelines for vetting of capital cost on 2.8.2010 as amended from time to time. Accordingly, the Petitioner had appointed AFC Consult India Private Limited (AFC) as DIA for vetting of capital cost in November 2011 and the DIA has submitted its report in 1.2.2013 verifying the completion cost of ₹8581 crore with SCOD as 31.12.2013. Subsequently, on account of time overrun and extra payments to contractors, the project cost had increased and the Petitioner again appointed AFC as DIA in May, 2014 for vetting of the revised capital cost of the project and DIA on 19.8.2014 had submitted its report. As the project work got stalled due to funding problems from April 2015 to August 2015 (i.e 5 months), the revised COD of the project was envisaged as 31.3.2017. Accordingly, the Petitioner engaged AFC as DIA to vet the updated capital cost and SCOD of the project. In continuation of the earlier reports of the DIA, the Petitioner vide its affidavit dated 24.7.2017 has filed the DIA report of July, 2017. We now examine the issue of time overrun, keeping in view the submissions of parties and DIA report as stated in the subsequent paragraphs.

DIA analysis on Time overrun

30. DIA in its report has submitted that the construction works of the project had started in January, 2008 with a targeted schedule of commercial operation of all units by September, 2012. However, due to various events/ reasons, the COD of the generating station was achieved in February, 2017. For proper understanding, DIA has analyzed time overrun in three phases as under:

- (A) Phase-I: Upto September 2011 i.e. before hitting of the strong earthquake leading to stoppage of work.
- (B) Phase-II : Post Earthquake upto June 2014
- (C) Phase-III: From June 2014 to March 2017



(A) Reasons for Time Overrun in Phase I

- a) Environment & Forest Clearance
- b) Requirement of Addendum to TEC for change in design of Dam and Spillway, De-silting Chamber and Lowering the Centre-line of Turbine.
- c) Change in Construction Methodology of Pressure Shaft.
- d) Geological Surprises

31. With regard to the first phase, DIA in its report has submitted that in spite of above mentioned aspects affecting the project, the work was progressing well and the desired progress was achieved. This is evident from the fact that ₹5353 crore was spent against the total revised hard cost of ₹5841 crore. The reasons and factors affecting the project progress were beyond the control of the Petitioner.

(B) Reasons for Time Overrun in Phase II

- a) Earthquake and restoration of Project facilities and approaches to different components of the Project
- b) Collapse of Rang Chang Khola (RCK) Bridge & delay in restoration
- c) Delay in transportation of critical Electro-Mechanical Equipment
- d) Flash Flood
- e) Delay in erection of E&M equipment
- f) Long lead time in ferrule erection of Pressure Shaft works
- g) Geological reason, inadequate provisions arising out of geological disposition
- h) Landslides and aftershocks of earthquake
- i) Inaccessibility of project components following the earthquake
- j) Gorkhaland agitation which caused serious hindrances for uninterrupted movement of equipment(s) and other construction materials
- k) Stoppage of works by the Contractor and mobilization/ demobilization at site
- l) Destruction caused by flash flood in September, 2012

32. As regards second phase, DIA has submitted that the progress was affected severely on account of Force Majeure condition of strong earthquake and its aftermath. The Project came to standstill and work could only start after



restoration of approaches and remobilization of labour force. The movement of heavy equipment also got stalled due to collapse of strategic bridge. The time overrun was mostly on account of Force majeure conditions and other mentioned reasons/factors and the same was beyond the control of the Petitioner. These conditions had impacted the project schedule and its cost. The impact on soft cost of the project was critical, as major expenditures of the hard cost were already incurred by the Petitioner.

(C) Reasons for Time Overrun in Phase III

- a) Fund related issues
- b) Collapse of Ritchu Nallah Bridge

33. With regard to the third phase, DIA has submitted that as per second revised project schedule submitted by the Lender's Engineers in February 2014, the Project was scheduled to be commissioned by 30.6.2015. However, the Project was affected on account of critical financial crunch, as higher component of equity had already been deployed as compared to the envisaged original amount. In addition, the lending institutions had also exceeded the debt disbursement than originally envisaged. Subsequently, with the intervention of the Government of India, the Govt. of Sikkim had deployed additional funds on the project. Consequent upon this, the COD was achieved as per the revised targets. Accordingly, time overrun was mainly on account of Force Majeure induced problems, which resulted in increase in hard cost, due to Price variations of materials and minimum wages of labour and also due to claims put by Contractors on account of extensions of Contracts, idle charges etc. This snowballing effect resulted in further time overrun due to financial crunch.



34. After detailed analysis of the above reasons of time overrun, DIA has summarized that there has been an appreciable time overrun after the incident of disturbances caused by the earthquake of 18.9.2011 and collapse of strategic RCK Bridge. Though DIA has summarized all the events causing delays and time impacted by that, keeping in view the earlier progress, the main reasons were Force Majeure condition created by the earthquake and collapse of Rang Chang Khola Bridge and their consequent impact on the finance of the Project.

DIA analysis on Cost Overrun

35. The Petitioner has submitted that the DPR was submitted to CEA and the estimated completed cost of ₹5705.55 crore (hard cost of ₹5101.82 crore and the soft cost of ₹603.73 crore) was concurred by CEA on 12.5.2006 with the commissioning schedule of 60 months from the effective zero date of start of the project. The Board of Directors of the Petitioner Company had approved the project cost as per CEA estimated completed cost on 28.6.2006. Subsequently, the project achieved its financial closure on 28.9.2007. Thereafter, the Board of Directors had revised the cost of the project to ₹8581 crore (RCE-I) which was further revised to ₹11382 crore (RCE-II) on 28.2.2014. Thereafter, the Board of Directors of the Petitioner Company vide Resolution dated 5.8.2015 approved the revised cost of the project to ₹13965 crore (RCE-III), including an amount of ₹140 crore towards working capital margin. There is a cost overrun of ₹8259 crore between the capital cost approved by CEA/IA and RCE-III approved by Board of Directors. The breakup is as under:

(₹ in crore)				
Sl. No.	Break Down	Original Cost as approved by Authority/ IA	Capital Cost approved by Authority/ IA upto RCE-III	Variation
1.0	Infrastructure Works			
1.1	Preliminary including Development	197	7	(190)
1.2	Land	125	58	(67)



1.3	R&R expenditure		23	23
1.4	Buildings	77	77	0
1.5	Township			
1.6	Maintenance	30	11	(19)
1.7	Tools & Plants	15		(15)
1.8	Communication	152	230	78
1.9	Environment & Ecology	203	111	(93)
1.10	Losses on stock	3	1	(2)
1.11	Receipt & Recoveries	(11)		11
1.12	Total (Infrastructure works)	792	518	(274)
2.0	Major Civil Works			
2.1	Dam, Intake & De-Silting Chambers	972	2078	1106
2.2	HRT, TRT, Surge Shaft & Pressure shafts	1173	1790	616
2.3	Power Plant civil works	375	560	185
2.4	Other civil works (to be specified)		-	-
2.5	Total (Major Civil Works)	2521	4428	1907
3.0	Hydro Mechanical equipment	280	484	204
4.0	Plant & Equipment		1459	1459
4.1	Initial spares of Plant & Equipment		37	37
4.2	Total (Plant & Equipment)	1026	1497	471
5.0	Taxes and Duties			
5.1	Custom Duty			
5.2	Other taxes & Duties	173		(173)
5.3	Total Taxes & Duties	173		(173)
6.0	Construction & Pre-commissioning expenses			
6.1	Erection, testing & commissioning	86	-	(86)
6.2	Construction Insurance		153	153
6.3	Site supervision		-	-
6.4	Total (Const. & Pre-commissioning)	86	153	68
7.0	Overheads			
7.1	Establishment	138	311	173
7.2	Design & Engineering	31	322	291
7.3	Audit & Accounts	49	2	(47)
7.4	Contingency	8	70	62
7.5	Rehabilitation & Resettlement			
7.6	Total (Overheads)	226	705	479
8.0	Capital Cost without IDC, FC, FERV & Hedging Cost	5102	7784	2682
9.0	IDC, FC, FERV & Hedging Cost			
9.1	Interest During Construction (IDC) ²	562	6092	5531
9.2	Financing Charges (FC)	42	88	47
9.3	Foreign Exchange Rate Variation (FERV)			
9.4	Hedging Cost			



9.5	Total of IDC, FC, FERV & Hedging Cost	604	6181	5577
10.0	Capital cost including IDC, FC, FERV & Hedging Cost	5706	13965	8259

36. The Petitioner has submitted that as per the initial financial package appraised by the lenders, the total original cost considered for the project was ₹5705.55 crore (Hard cost of ₹5101.82 crore and soft cost of ₹603.73 crore). As such, the Petitioner has stated that there is cost overrun of ₹8265 crore between the original cost of ₹5705.55 crore and RCE-III of ₹13965 crore. Accordingly, the Petitioner has submitted that DIA has examined the cost overrun based on the cost of ₹5705.55 crore.

37. The major reasons affecting the hard cost of the project as furnished by the Petitioner are as under:

- a) Change in design of spillways due to statutory provisions by CEA.
- b) Change in design due to adverse geological conditions.
- c) Inadequate provisions arising out of geological disposition i.e. increase in quantities due to geological reasons which were not anticipated at the tender stage.
- d) Increase in Bill of quantities due to change in layout of HRT.
- e) Increase in BOQ due to design changes.
- f) Change in construction methodology.
- g) Change/increase in Scope of Work.
- h) Geological surprises in the underground works.
- i) Arbitration award to the Contractor on account of increase in minimum wages in Sikkim and changes in price adjustment provisions.
- j) Claims of Contractors on account of stoppage of work (Idle charges of man power and machinery).
- k) Foreign Exchange fluctuation.
- l) Price Adjustment Provisions.
- m) Increase in cost due to change in taxes/duties/levies.
- n) Increase in cost of project Insurance and Administration expenses due to time overrun caused due to the reasons beyond the control of the Petitioner.



- o) Increase in Rate of Interest on Term loan etc.
- p) Increase in IDC and IEDC due to delay in the Project execution due to various reasons beyond the control of the Petitioner as explained in line with time overrun.

38. Based on the above reasons, the DIA in its report has recommended the capital cost of the project. The comparison of the original capital cost, RCE-III and the capital cost as recommended by DIA is summarized as under:

(₹ in crore)

Sl. No	Head	Original Cost	Revised cost as per amended contract	Revised cost as per OE & PMC of Petitioner	Cost vetted by AFC			Difference in cost from Original cost
					Based on 3 rd COR report of OE & PMC	Potential cost found admissible for completion of works	Contingent	
1	Civil Works	2821	4597	4597	4363	45	189	1542
2	Hydro-Mechanical Works	269	464	464	445	9	10	176
3	Electro-Mechanical Works	1100	1419	1419	1419	0	0	319
4	Design & Engineering Works	165	323	323	323	0	44	158
5	Non EPC Works	570	616	616	403		64	(-)167
6	Project Insurance	0	109	109	104		5	104
7	Change of Law	0	108	108	41		66	41
8	Incentive for site staff	0	16	16	0			0
9	Contingencies	16	95	95	0			(-)16
Total Hard Cost		4941	7745	7745	7099	54	378	2158
Infirm Power					(-)24			
Final Hard Cost		4941	7745	7745	7506			2133
Soft Cost		759		5994	5994			5235
Total Project cost		5700	7745	13739	13500	0	0	7368

39. DIA in its report has submitted that the variation of soft cost (IDC) when compared to the original soft cost of ₹759 crore is due to time overrun and considerable increase in rate of interest over the period. The basic reason for delay as submitted by the Petitioner is the Force Majeure conditions and consequent fund crunch for a bigger project, where high IDC had already impacted further requirements of the funds. The DIA in its report, after examining the cost & time overrun involved in the project has stated that the



completion cost of ₹1350000 lakh is reasonable, keeping in view that time overrun, which had resulted in cost overrun of the project, are mainly due to factors beyond the control of the Petitioner.

Analysis and Decision on Time & Cost Overrun

40. The Petitioner has submitted that TEC was granted by CEA on 12.5.2006 and accordingly, the project was scheduled to be commissioned in 60 months from the effective date of start of the project. As per petition period from 01.08.2005 to 31.10.2006 has been indicated for completing the activity of EPC award, financial closure, statutory clearance etc. The effective start date of the project has been indicated as 01.11.2006 for starting the mobilization and infrastructure development. As such, the scheduled completion date of the project works out to 31.10.2011 after considering commissioning period of 60 months. However, the project has achieved COD on 28.2.2017 and thus, there is a time overrun of about 64 months from the effective start date i.e. 01.11.2006. The Petitioner has stated that the project experienced time overrun due to various reasons beyond the control of the Petitioner namely, delay in grant of statutory clearances by the competent authority, addendum to TEC, geological surprises, earthquake hitting the State of Sikkim with epicentre close to the project site, flash flood causing damage to project infrastructure and washing away of hydro-mechanical equipment, RCK bridge collapse on 19.12.2011, strengthening of existing bridges of the State by the Petitioner on direction of BRO before commencement of transportation after collapse of RCK bridge, frequent strikes called in the disturbed area of Darjeeling restricting the only road link to Sikkim. The Respondent UPPCL has objected to time overrun of the project and stated that earthquake and flash floods are common occurrences in the region and hence cannot be considered as force majeure event. The



objector AIPEF has stated that the delay is on account of project developer and hence the cost escalation is not to be allowed or included in the capital cost.

41. As stated, DIA has carried out detailed prudence check of the capital cost, duly considering the time & cost overrun witnessed by the project vide its reports dated 1.2.2013, 19.8.2014 and July, 2017. The DIA has also studied the construction schedule as per DPR, actual time line for completion of various activities, reasons for delays such as delay in forest clearance, earthquake, geological surprises, change in design and construction methodology due to poor geology, etc. to work out total time overrun. Also, detailed analysis of the capital cost, under various heads has been made to work out the overall completion cost including cost overrun. Neither the Respondents nor the objector have furnished their comments on DIA reports served on them by the Petitioner.

42. The Petitioner had applied for acquisition of land to the Govt. of Sikkim, simultaneous to the application for TEC to CEA. The Petitioner has submitted that simultaneous to the application for TEC to CEA the Petitioner applied for acquisition of land to the Govt. of Sikkim (GOS). The Application of the Petitioner was forwarded by GOS to District Collector, North District on 20.10.2005. The joint inspection of land at Mangan sub-division (Powerhouse site) was completed by State Govt. on 21.12.2005. However, there was delay in joint inspection of land at Chungthang sub-division (Dam site) due to disputes raised by some land owners regarding ownership of forest land. After resolution of disputes by State Govt., the joint inspection of Chungthang sub-division was completed on 25.09.2006. Thus, it took about 11 months in completing the joint inspection of Chungthang sub-division.



43. The TEC of CEA and joint inspection reports of the State Govt. was a pre-requisite for applying for Forest Clearance. After completion of the above activities, the plotting and mapping required for submission of the Forest Clearance Application was carried out.

44. It is noticed that the Petitioner had applied for forest clearance to the State Govt. on 26.11.2006 and the complete proposal was forwarded by State Govt. to MOEF, GOI on 13.12.2006. Meanwhile, during the month of September 2006, the Hon'ble Supreme Court had suspended the functioning of 'Forest Advisory Committee' (FAC), but by an interim arrangement order dated 27.4.2007, the Hon'ble Court allowed the functioning of FAC, subject to clearances being placed before the Court for approval and thereafter before the Central Govt. for disposal in accordance with law. Subsequently, FAC had considered the proposal for diversion of 83.04 Ha of land for setting up of the project and FAC had later cleared the proposal. Based on the Central Empowered Committee (CEC) report, the Hon'ble Court on 4.10.2007 directed the MOEF to examine if there is any violation and pass appropriate orders. Based on this, MOEF, GOI had granted in-principle forest clearance on 12.10.2007 and after compliance of the conditions laid down in the said clearance, MOEF conveyed its clearance to State Govt. on 2.11.2007 and thereafter State Govt. conveyed the final approval of MOEF on 15.11.2007. The possession of forest land was taken over on 26.11.2007. Hence, the delay is only on account of legal disputes based on which in-principle forest clearance was accorded in October 2007 and final forest clearance was accorded to the project in November 2007. This aspect has also been considered by DIA in its report, wherein it has observed as under:

“However, the handing over of encumbrance free site further got delayed due to procedural issues at state forest level and the final handing over the site could only be completed by December 2007. The contractor could physically start the main infrastructure works in January 2008 implying that the total effect of delay



in forest clearance and handing over of site to the contractor was 8.5 months from the date of order to commence.

However, as the initial three months period was already extended from the LOA timelines to sign contract, the total effect of delay in forest clearance and handing over was five months on all the critical activities.”

45. It is observed from the above report of the DIA that the delay in getting the forest clearance and acquisition of land has been recognised as delay caused due to procedural issues. We are also in agreement with above observation of DIA that delay has been caused due to procedural issues like delay in joint inspection of land and suspended functioning of FAC as per order of the Hon'ble Supreme Court and the Petitioner cannot be held responsible for the same. DIA has mapped this delay as 5 months with respect to the date of letter of award. However, it is observed that delay in getting forest clearance and possession of land till 26.11.2007 due to procedural delays works out to 391 days (i.e. from scheduled completion of the activity of “EPC award, financial closure, statutory clearance” i.e. 31.10.2006 to actual completion of the activity i.e. 26.11.2007).

46. As regards the delay due to addendum to TEC, the Petitioner has submitted that the modified spillway arrangement was technically cleared by CWC in August 2009, with changes namely Chute spillway on the left bank, Tunnel spillway on the left bank, diversion tunnel converted into spillway tunnel on the left bank and flushing cum spillway tunnel on the right bank adjacent to power intake. According to the Petitioner, the above changes resulted in increase in length of diversion tunnel from 660 m to 952 m and change in de-silting chamber arrangement. It is noticed that CWC approved the proposal and the same was submitted by the Petitioner to CEA in August 2009 and addendum to TEC was concurred and conveyed to the Petitioner by CEA on 14.6.2010. Similarly, there was modification of the original TEC for three de-silting chambers to two



chambers which resulted in the delay in commencement of construction of de-silting chambers. Similarly, the new centre line of turbine was examined and revised by CWC and accordingly, CEA had conveyed its approval for addendum to TEC on 14.6.2010. The scheduled start date for “power house and EM erection” was 1.4.2007. As such considering the initial delay of 391 days due to forest clearance, the revised start date of this activity works out to 26.4.2008. Due to the outcome of addendum to TEC as above, the start date of construction of “power house and EM erection” had shifted to 14.6.2010, thereby causing a delay of 780 days (from 26.4.2008 to 14.6.2010). In this regard, DIA in its report has observed as under:

“The above design changes delayed the construction activities at dam site for spillway arrangement, CFRD and de-silting complex and the works could finally be taken up only after the clearance of CEA in June 2010. Due to change in the design parameters insisted by CEA the works of spillway tunnels and concrete face rockfill dam were suspended.”

47. Based on the submissions of the Petitioner and report of DIA, we are of the view that this delay of 780 days due to change in design of pressure shaft, Dam & Spillway, De-silting Chamber and lowering the centre line of the turbine and subsequent approval of CEA as Addendum to TEC was beyond the control of the Petitioner and is accordingly condoned.

48. As regards delay due to Earthquake, the Petitioner has submitted that a strong earthquake of 6.8 on the Richter scale had hit the North-Eastern part of India and Nepal on 18.9.2011 with several aftershocks. The Petitioner has annexed the detailed reports and photographs showing damage due to earthquake and has submitted that the earthquake had caused loss of life and widespread damage to roads, buildings etc., including the properties of contractors and sub-contractors engaged in project work, thereby leading to stoppage of work for several months. It is also noticed from the submissions that



the work could not be re-started on many of the locations for a period of two months as the labour stationed at the site had left the project and some of the important equipment were damaged beyond repair. Further, with limited manpower and mobility, complete resumption of work was not possible. Hence, a total delay of 8 months (September 2011 to May 2012) had occurred in all project components due to damages caused by earthquake and slow progress after restoration of infrastructure works due to subsequent aftershocks. This issue has also been deliberated by DIA in its report, which has observed as under:

“A strong earthquake of magnitude 6.8 on Richter scale hit the North-eastern part of India and Nepal on 18th September 2011 at 6:12 PM with several aftershocks after the main earth quake. The epicenter being at 60 km from Mangan (the Tehsil of the Teesta Ill's Power House) had caused severe damages to the project as well as entire state of Sikkim. The Earthquake caused loss of life and widespread damages to the roads, dwellings, office establishments, machineries and other properties of the Contractors and Sub-Contractors engaged in various Project works and subsequent stoppage of works for several months.

.....
With limited manpower and mobility to carry out the restoration works, TUL could (i) restore the main link road between Chugthang and Tung Forest Check Post (near Adit II), (ii) got removed most of the debris at Dam site (iii) Restore works in damaged colonies, office buildings; establishment's etc. progressively except Adit - IV and V locations.

The works on the Power House cavern and Equipment erection could not be resumed immediately as there was blanket ban on transporting any heavy consignments.

Though TUL could restore the damaged roads, within 6 to 7 months, the subsequent aftershocks and continuous landslides made the working environment difficult and there has been intermittent stoppage of works due to landslides which hampered the continuous progress of work at site. It is estimated that total delay of 8 months (Sept 2011 to May 2012) was caused in all project components due to damages caused by Earthquake and slow progress after restoration of infrastructure works due to subsequent aftershocks.

Hence, due to the reason explained above which was beyond the control of the TUL, there is a distinct delay of eight (8) months in all of the project components.”

49. Based on the submissions of the Petitioner and report of DIA, we are of the view that this delay of 8 months due to earthquake and after effects of the



earthquake was beyond the control of the Petitioner and is accordingly condoned.

50. As regards collapse of RCK bridge, the Petitioner has submitted that the said bridge of BRO connecting the project site to NH-31A collapsed on 19.12.2011 resulting in halting of consignments including the movement of construction materials like cement, sand, reinforcement steel and high grade steel for pressure shaft steel liner etc. From the submissions of the Petitioner, it is evident that from the period from December 2011 to October 2013, there was restriction on movement of heavy material for electro-mechanical and hydro-mechanical works leading to complete stoppage of work. Also, restriction of load to 6T on all bridges from Siliguri to project site affected the progress of the project works. The scope of work also underwent changes due to specific site conditions and also due to instructions from BRO to design the bridge as per Zone-V specifications. The bridge was completed only by August 2013 and traffic was allowed from October 2013. Thus, there has been a delay in execution of the project during the period from 19.12.2011 to 31.10.2013. It is however noticed that the period of delay from December 2011 to May 2012 is already subsumed in the delay attributable to earthquake. As such, total delay attributable to the damage of RCK bridge and strengthening of other bridges is 18 months (14.5 months in construction of Electromechanical works and Pressure shaft works and 3.5 month in all other project components).

51. In this regard, DIA in its report has observed as under:

“Collapse of Rang Chang Khola (RCK) Bridge & Delays in Restoration

Rangchang Khola Bridge forms a part of NH-31 high way in between Dhikchu and Mangan and it had collapsed on 19th Dec 2011, i.e. three months after the earthquake which struck North Sikkim in the month of September 2011. The responsibility for reconstruction works was that of Border Road Organization. Keeping in view the criticality of availability of this bridge for transportation of



heavy equipment to Teesta - III HEP, TUL with the permission of BRO took up the construction in the month of January 2012 for reconstruction and awarded the works to BRO approved contractor in the month of March 2012 with the schedule to complete it by August 2012. Due to procedural delay in analyzing the reasons for collapse of this bridge including police investigations, etc. the permission for removal of debris of the collapsed bridge super-structure was received in end August 2012. In addition to the startup delay in the erection of bridge, the scope of work also underwent changes due to the site specific conditions and also due to the instructions from BRO to design the bridge as per Zone V specifications instead of Zone IV and with a width of 85m. Finally the bridge could be completed only by August 2013, i.e. with more than one year delay from the original schedule and traffic was allowed from October 2013.

Delay in Transportation of critical Electro-Mechanical Equipment

Though at the start of the project activities, the company obtained necessary permission for transportation of heavy equipment from BRO, but after the twin incidence of Sep-11 earthquake and collapse of Rangchang Khola Bridge, BRO notified the company to carry out inspection of all bridge en-route to Teesta-III project site, by which 36 numbers of the bridges from Sevoke to Mangan (Teesta - III Power House) are required to be inspected and strengthening measures, wherever required, are to be done for heavy load bearing capacities through BRO approved consultants and contractors. TUL appointed MORTH approved consultant M/s Gifford for carrying out inspection of the bridges

As this involved elaborate exercise including original drawing reviews, and actual physical load tests, etc., these activities could be completed progressively only by September 2013 and the Sikkim National Transport Authority/BRO could able to give permission for transportation only in October 2013.”

52. Based on the submissions of the Petitioner and report of DIA, we are of the view that this delay of 18 months due to the damage of RCK bridge consequent to the earthquake of September, 2011 and strengthening of other bridges was beyond the control of the Petitioner and is accordingly condoned.

53. As regards flash floods, the Petitioner has submitted that flash floods in September 2012 resulted in significant damage to the road at dam site, HRT access roads and powerhouse access roads. It has stated that two critical steel bridges were washed away at dam site including certain construction equipment and batching plant. It had also caused damages to the peripherals of certain structure. Accordingly, the restoration works took about three months from September 2012 to December 2012. It is noticed that the delay on this count has been subsumed in the delay due to RCK bridge collapse.



54. As regards delay due to fund related issues, the Petitioner has submitted that as a result of uncontrollable and unforeseeable events, the project experienced time & cost overrun causing severe financial crunch and calling for additional funding, both debt as well as equity. The Petitioner has submitted that the period from April 2015 to August 2015 pertains to addressing of issues relating to sanction of debt by consortium of lenders led by REC limited to the Petitioner and sanction of term loan for financing of Govt. of Sikkim equity in the Petitioner Company by PFC. In the absence of firm commitments from PFC and REC, the Govt. of Sikkim had no other financial means but to take over the agreed 51% shareholding to become a majority shareholder in the Petitioner Company. The Petitioner has submitted that during this period, the work, including electro-mechanical works was totally stopped due to the project not getting any funding either through equity or debt. The issue of fund got resolved after intervention of Govt. of Sikkim in August 2015 and the project works could pick up by 1.10.2015 and the COD of the project was achieved in February 2017. Thus, the Petitioner has submitted that the period of 5 months when the project work was stalled due to funding problems is a force majeure event warranting the delay to be condoned.

55. In this regard, DIA in its report has observed as under:

“7.4.1.1 Fund related issues

The Teesta-III HEP has been considered as a Project of tremendous national importance not only because it is among the largest hydroelectric projects, but also due to the strategic need for developing the border state of Sikkim.

As a result of uncontrollable and unforeseeable events, the Project experienced time and cost overruns causing severe financial crunch and calling for additional funding, both debt as well as equity.

By November 2014, more than 90% of the Project physical progress had been achieved. The Promoters had already incurred Rs. 1979.67 crores Equity, i.e much higher than the originally envisaged Equity of Rs. 1140 crores on account of the uncontrollable time and cost overruns, thereby exhausting their resources. Financial Institutions had also significantly enhanced their debt exposure from Rs. 4650 crore to Rs. 7173.71 Cr. Under these circumstances, the Project was on the verge of becoming NPA.



A meeting was conducted in the Ministry of Power under the chairmanship of Hon'ble Minister of State (IC) for Power, Coal and NRE in November 2014 wherein both the Central Government and the State Govt, of Sikkim (GoS) took stock of the status of the Project and the fund deployed. Due to the grim financial situation arising out of the aforementioned Force Majeure events, the Rs. 9,100 Cr deployed in the Project till that period was likely to be a dead and the project will not fructify. The lending to the Project had been done by REC Ltd. and various public sector banks and the equity for GoS was being funded through a loan extended by Power Finance Corporation Ltd. and in the event of the Project works getting stalled, all this public money would have got sunk. It is with this background that the Government of India (Ministry of Power) and Govt, of Sikkim, at the request of all the stakeholders i.e. equity shareholders and lenders, stepped in to find ways and means for completing this important project of the State of Sikkim for salvaging the huge investments made by the Financial Institutions, the Public Sector Banks and other stakeholders and also adding 1200 MW to the hydro thermal mix.

The Government of India and Govt, of Sikkim, after detailed deliberations with the stakeholders, facilitated revival of this otherwise stranded project by facilitating increase of the State Government's Equity from 26% to 51% through loans extended by PFC, and the Financial Institutions also agreed to enhance their debt exposure in order to complete the Project. Raising of the equity stake of the State Government from 26% to 51% in TUL has come through a mix of fresh equity infusion into the Company and purchase of equity shares from other existing shareholders.

The one main prerequisite for taking over of the Project by the Govt, of Sikkim was firm assurance from Central Sector financial institutions viz. PFC for extending loan to GoS/SPICL for equity funding and lenders led by REC Ltd. for balance debt funding in TUL as Sikkim being a small state, was not in a position to fund the equity requirement through its budgetary resources.

The period from April 2015 to August 2015 pertains to addressing of issues pertaining to sanction of debt by consortium of lenders led by REC Ltd. to TUL and sanction of term loan for financing of GoS equity in TUL by Power Finance Corporation (PFC). In the absence of requisite firm commitments from both, PFC & REC, the GoS had no other financial means to take over the agreed 51% shareholding to become majority shareholder in TUL. GoS approached both the financial institutions for firm commitments for equity of GoS and debt of TUL.

Only after a series of comprehensive negotiations and deliberations by GoS authorities with PFC, REC and Union Ministry of Power, the issues pertaining to commitment by REC and PFC for continued loan funding for debt for the Project to TUL and equity infusion by GoS in TUL respectively were resolved and finalized by end of June 2015 and the Share Purchase Agreement was eventually executed amongst the shareholders of TUL on 6th August, 2015 paving the way for Government of Sikkim/Sikkim Power Investment Corporation Ltd. to increase the State's shareholding to 51% in TUL.

During this period (April 2015 to August 2015), the work was totally stopped including Electro Mechanical works due to the Project did not get any funding either from equity or debt as GoS had no other financial means to take over the Project in the absence of firm commitment from both PFC and REC for equity and debt funding of the Project and satisfaction of Union Ministry of Power on the allied issues.

The issues of fund problems were resolved after intervention of Government of Sikkim in August 2015. The Contractors were asked to mobilize the manpower, equipment and materials immediately thereafter and the Project works could pick up in full pace by 1-10-2015. Since October 2015, and the COD of the Project was achieved in February 2017.

Hence, the time taken from April 2015 to August 2015 of about 5 months when the Project works got stalled due to funding problems (equity as well as debt), is a Force Majeure considering that the lack of additional funds arose due to the uncontrollable events as detailed in the previous paras."



56. Based on the submissions of the Petitioner and report of DIA, we are of the view that the project witnessed delay due to uncontrollable and unforeseeable events like delay in getting forest clearance, change in design due to site conditions, earthquake, collapse of Rang Chang Khola (RCK) bridge, etc. These delays caused severe financial crunch and required additional funding. The matter could be resolved after intervention of Ministry of Power (MOP), Government of India and Government of Sikkim. As such, considering the fact that the Petitioner was actively pursuing the issue with MOP, Government of India and Government of Sikkim, the delay of 5 months in resolving the financial crunch cannot be attributed to the Petitioner and is accordingly condoned

57. The Petitioner has submitted that due to heavy rainfall and increased discharge in Teesta river with peak discharge of 585 cumec on 17.5.2016, one of the bailey bridges over Ritchu Nallah was washed away and abutment of other bailey bridges at the same location was also washed away. The Petitioner has submitted that BRO took up the restoration work and bridge was restored and opened for movement of heavy vehicle on 14.6.2016. However, due to landslide on the same day, the road was blocked again till its restoration on 27.6.2016. Accordingly, the Petitioner has stated that there has been stoppage of work for 41 days which was beyond the control of the Petitioner.

58. In this regard, DIA in its report has observed as under:

“7.4.1.1 Collapse of Ritchu Nallah Bridge

Due to heavy rainfall and increased discharge in Teesta river with peak discharge of 585 cumec on 17.05.16 one of the bailey bridges over Ritchu Nallah was washed away and abutment of the other bailey bridge at the same location was also washed away. The upkeep and maintenance of this road is under Border Road Organisation (BRO) and they have taken up the restoration work and re-launch of the bridge. The bridge was restored and opened for movement of the heavy vehicle on 14.06.16 but due to a landslide happened on the same day and the road was further blocked till its restoration up to 27.06.16. As this is the only connecting road between



Mangan and Chungthan the material movement to the project site had been suspended from 17.05.16 to 26.06.16. Hence there is a stoppage of work for 41 days.”

59. Based on the submissions of the Petitioner and report of DIA, we observe that heavy rainfall on 17.5.2016 damaged bailey bridges over Ritchu Nallah due to which the movement of construction materials and movement of heavy vehicle were restricted. In our view, this delay of 41 days (1.4 months) due to the damage of caused by heavy rain was beyond the control of the Petitioner and is accordingly condoned.

60. Based on the above discussion related to time overrun, the time overrun condoned is as under:

	Start Date	End Date	Months (rounded off)
Forest Clearance	1.11.2006	26.11.2007	13
Requirement of Addendum To TEC	26.4.2008	14.6.2010	26
Earthquake	19.9.2011	18.5.2012	8
Collapse Of Rang Chang Khola (Rck) Bridge	19.12.2011	31.10.2013	23
Financial Crunch	1.4.2015	31.8.2015	5
Ritchu Nallah Bridge	17.5.2016	26.6.2016	1
Total			76

61. Against the delay of 76 months condoned due to various reasons as above, Petitioner has claimed total time overrun of 64 months. As such, the Petitioner has been able to squeeze the construction schedule and bring down the effective delay to 64 months. In view of the above, we condone the time over run of 64 months in achieving the COD of the project.

62. The DIA, in its report, on cost overrun had concluded as under:

“The Project was constructed in the tough geologically conditions prevailing in the Himalayan region. In the first four years, the desired progress was achieved inspite of all aspects of changed drawings suitable to site conditions and geological features for different component and other local problems. This is usual with most of the Hydro Project in Himalayan region thereby impacting time overrun and cost overrun. The basic impact on cost and time overrun of the project was the strong earthquake of 18- 09-2011 and collapse of strategic bridge required for transportation of heavy equipment. Stoppage of works



resulted in extension of the contracts resulting to claims and these extra claims and heavy dose of IDC led to severe fund crunch. All stake holders and lenders were already overstretched for funds. Government of India/Sikkim had to take the lead role to complete the vital project.”

63. It is noticed that there is an increase of ₹2133 crore in hard cost for the reasons mentioned aforesaid and consequent upon this, there is an increase of ₹5235 crore in soft cost. Based on the above analysis of DIA and considering the fact that the above mentioned reasons such as Geological Surprises, Earthquake, Flash Flood, agitation by local people, etc. are force majeure events leading to delay in construction of the project, we accept the recommendations of the DIA in its report as stated hereinbefore. Accordingly, on prudence check, we hold that the delay in completion of the project resulting in time overrun of 64 months and the consequent cost overrun of ₹7368 crore (₹2133 crore in hard cost and ₹5235 crore in soft cost) is for reasons beyond the control of the Petitioner.

Interest during Construction (IDC)

64. The Petitioner vide form 5B has claimed IDC amounting to ₹544448.10 lakh and ₹584216.15 lakh as on each COD, which includes normative IDC of ₹492.68 lakh. Accordingly, IDC on actual loans claimed by the Petitioner has been worked out as under:

	<i>(₹ in lakh)</i>	
	23.2.2017	28.2.2017
IDC as per form 5B	544448.10	584216.15
Normative IDC	(-)492.68	(-)492.68
IDC on actual loan	543955.42	583723.47

65. It is pertinent to mention that the Petitioner has availed commercial loans from consortium of various banks and financial institutions, namely, Punjab National Bank, Canara Bank, Bank of Baroda, United Bank of India, Oriental Bank of Commerce, Dena Bank, Punjab & Sind Bank, LIC, IIFCL, IREDA, REC. In this



regard, the Petitioner vide affidavits dated 5.9.2016 & 19.3.2019 has submitted the respective loan agreements and amendments thereof. The Commission vide ROP dated 6.2.2019, directed the Petitioner to submit details regarding loan draws, rate of interests and resets, if any, along with the relevant correspondences from the lenders. In response, the Petitioner vide its affidavit dated 19.3.2019 has furnished the statements from the respective banks/ FIs depicting the details of loan draws, the rate of interests and the amount of interests charged, along with a summarised statement showing the rate of interest levied by the banks during various periods. It is noticed from the statements furnished by the Petitioner that the banks have charged penal interest and the same has been included by the Petitioner in the claimed IDC amounts. In view of this, IDC has been calculated on the basis of the details pertaining to the loan disbursement and the rate of interest and the IDC thus calculated, which does not include penal charges, has been considered for the purpose of tariff. The calculated IDC has been allocated on the basis of the capitalisation as reflected in the balance sheet of the respective dates. Thus, IDC allowed for the purpose of tariff on the unit-wise COD is as under:

<i>(₹ in lakh)</i>	
23.2.2017	28.2.2017
539677.59	580194.75

66. The IDC allowed as above is however subject to truing-up. Accordingly, the Petitioner is directed to submit detailed calculation of IDC and the reconciliation thereof, with IDC as per Form-14, indicating the details of the period-wise penal interests charged by the lender, along with the documentary proof, duly certified by the Auditor, at the time of truing-up exercise.

Financing Charges

67. The Petitioner has claimed following financing charges.



<i>(₹ in lakh)</i>	
23.2.2017	28.2.2017
5570.62	5971.21

68. It is observed that the claim for financing charges vide Form 9E and 5B is duly certified by the Auditor. The same has been allowed for the purpose of tariff, subject to submission of detailed item-wise calculation at the time of truing-up, duly certified by the Auditor.

Normative IDC

69. The Petitioner has claimed ₹492.68 lakh towards normative IDC which has been included in IDC, as per Form 5B. The Petitioner has submitted statement of calculation duly certified by the Auditor, wherein normative IDC has been calculated on the equity portion more than 30% of the total funds for the period from 2nd quarter of 2007-08 to 1st quarter of 2008-09. It is further noticed that prior to the said period, there has not been any drawl of actual loan by the Petitioner and being a stand-alone project company, no rate of interest was available for the Company as a whole. Similarly, there has been no equity infusion in excess of 30% after 1st quarter of 2008-09. The Petitioner has furnished the balance sheets as on 31.3.2007, 31.3.2008 and 31.3.2009, which pertain to the period for which normative IDC has been claimed. On the basis of these balance sheets as stated above, debt-equity position has been worked out based on the project expenditure incurred. The debt-equity ratio thus computed is based on the expenditure incurred, which indicates that the equity position during the said period was less than 30% of the project expenditure. In view of this, we are not inclined to allow the normative IDC. However, the Petitioner is granted liberty to submit quarter-wise balance sheet, duly certified, in support of the claim for normative IDC, at the time of truing-up exercise.



Un-discharged liabilities

70. The Petitioner vide Form 5B has claimed un-discharged liabilities as on each of the COD as under:

<i>(₹ in lakh)</i>	
23.2.2017	28.2.2017
68296.05	73895.38

71. The un-discharged liabilities as per Form 16 is as under:

<i>(₹ in lakh)</i>		
28.2.2017	31.3.2017	31.3.2018
73895.38	21451.73	48998.77

72. The Commission had directed the Petitioner to furnish statement of asset-wise, party-wise details of the un-discharged liabilities along with the reconciliation thereof with the balance sheet. In compliance with the same, the Petitioner vide its affidavit dated 6.2.2019 has submitted that the liabilities considered in Forms 5B& 16 did not adjust some capital advances. Accordingly, the Petitioner has revised the amounts of un-discharged liabilities as on the CODs to ₹71940.00 lakh and ₹73188.00 lakh respectively. The Petitioner has furnished the reconciliation statement duly certified by the Auditor. Based on the submission and the Auditor's certificate, the revised amounts of un-discharged liabilities have been considered for the purpose of tariff. Further, the un-discharged liabilities as on 31.3.2017 and 31.3.2018 have been considered as per Form-16, which is duly certified by the Auditor. The un-discharged liabilities considered as above shall be subject to truing-up, based on the details of the actual un-discharged liabilities for each year duly certified by the Auditor to be furnished by the Petitioner.



Incidental Expenditure during Construction (IEDC)

73. The Petitioner vide Form-13D has claimed IEDC of ₹68156.18 lakh and ₹72024.84 lakh. We have, in this order, condoned the time and cost overrun, hence no deduction has to be made in IEDC on account of time overrun. It is observed from the reconciliation of gross block as per balance sheet with the capital cost claimed for tariff vide Form 5B, that the Petitioner has not deducted the amount of other income (₹3662 lakh and ₹3929 lakh as on each COD respectively). The same has been deducted from the IEDC claimed by the Petitioner. However, the same shall be reviewed at the time of truing-up on the basis of reconciliation of the capital cost as per Form- 5B with the gross block as per balance sheet to be filed by the Petitioner, duly certified by the Auditor, at the time of truing-up. Accordingly, the IEDC allowed is as under:

	<i>(₹ in lakh)</i>	
	23.2.2017	28.2.2017
IEDC claimed	68156.18	72024.84
Less: Other Income	3662.00	3929.00
IEDC allowed	64494.18	68095.84

74. Further, on the basis of comparison of the capital cost as per Form- 5B with the balance sheet of the Petitioner Company, it is observed that the capital cost includes ₹9516 lakh on account of Regulatory Deferral Account (RDA) balance. In this regard, it is noticed that the Petitioner has neither furnished any detail pertaining to RDA nor discussed the same in the petition. Since no justification for inclusion of RDA in the claim is available in the petition, though forms part of Form-5B as evident from the comparison, we are not inclined to consider the same for the purpose of tariff at this stage. The Petitioner is however granted liberty to submit details of RDA at the time of truing-up exercise and the same shall be dealt with in accordance with law.



Discharge of liabilities

75. The Petitioner has submitted the amount of liabilities discharged as under:

	(₹ in lakh)		
	28.2.2017 to 31.3.2017	1.4.2017 to 31.3.2018	1.4.2018 to 31.3.2019
Add: Discharges during the year / period	52547.75	18310.91	48194.22

76. It is noticed that the amounts of discharge of liability claimed as above have been duly certified by the Auditor. Accordingly, the same is allowed for the purpose of tariff. This is however subject to truing-up based on the details of actual liability discharged.

Sale of Infirm Power

77. It is noticed that the revenue of ₹24.49 lakh earned by the Petitioner by sale from infirm power has been adjusted in the capital cost by DIA as on COD of the generating station. Considering the fact that the adjustment of revenue generated from sale of infirm power in capital cost is a requirement in terms of the 2014 Tariff Regulations, which has been given effect to, there is no need of further adjustment of capital cost.

Initial Spares

78. Regulation 13 (c) of the 2014 Tariff Regulations provides as under:

“13. Initial spares shall be capitalised as a percentage of the Plant and Machinery cost upto cut-off date, subject to following ceiling norms:

(c) Hydro generating stations including pumped storage hydro generating station - 4.0%”

79. The Petitioner in Form 5(B) has claimed initial spares for ₹3710.48 lakh (including un-discharged liabilities of ₹218.49 lakh) as on COD of Units- II, III & IV (23.2.2017) and Plant & Equipment cost of ₹12598.68 lakh as on Station COD (28.2.2017). In terms of the above regulation, the permissible amount for initial spares works out to ₹5023.95 lakh. The claim of initial spare by the Petitioner is



within the ceiling norm in terms of the 2014 Tariff Regulations. Hence, the same is considered.

Reasonableness of hard cost

80. The hard cost of the generating station works out to ₹7506 crore i.e ₹6.25 crore/MW. As stated, the generating station is a Run of River with pondage type hydro station. As such, the hard cost allowed by the Commission for other similar generating stations commissioned during the period 2014-19 is as under:

Generating Stations	Company	COD	Completion Cost Considered by the Commission (excluding Soft Cost) (Rs. in Crore)	MW	Cost (in crore /MW)
Parbati	NHPC	6.6.2014	2181.13	520	4.19
Koldam	NTPC	18.7.2015	5351.80	800	6.69
Rampur	SJVN	16.12.2014	3614.17	420	8.61

81. In light of the above, the completion cost (excluding soft cost) of ₹7506 crore (₹6.25 crore/MW) appears reasonable when compared to other hydro projects, which have suffered time and cost overrun due to various geological surprises. Accordingly, the completion cost of ₹13500 core including hard cost of ₹7506 crore and soft cost of ₹5994 crore as recommended by DIA is allowed.

Capital cost as on COD

82. Based on the above, the capital cost allowed as on each COD of Units/ Station for the purpose of tariff is as under:

	23.2.2017 (Units-II, III & IV)	28.2.2017 (Units-I, V & VI/ station)
Capital Cost excluding IDC, FC	641997.74	685286.60
Add: IDC allowed	539677.59	580194.75
Add: FC allowed	5570.62	5971.21
Add: Notional IDC allowed	-	-
Less: Excess Initial Spares	-	-
Less: Other income included in the IEDC	3662.00	3929.00
Less: RDA balance	9516.00	9516.00
Less: Un-discharged liabilities	71940.00	73188.00
Capital cost as on COD	1102127.95	1184819.56



Additional Capital Expenditure

83. Clause (3) of Regulation 7 of the 2014 Tariff Regulations provides that the application for determination of tariff shall be based on admitted capital cost including any additional capital expenditure already admitted upto 31.3.2014 (either based on actual or projected additional capital expenditure) and estimated additional capital expenditure for the respective years of the tariff period 2014-19.

84. Regulation 14 of the 2014 Tariff Regulations provides as under:

“14 (1) The capital expenditure in respect of the new project or an existing project incurred or projected to be incurred, on the following counts within the original scope of work, after the date of commercial operation and up to the cut-off date may be admitted by the Commission, subject to prudence check:

(i) Un-discharged liabilities recognized to be payable at a future date;

(ii) Works deferred for execution;

(iii) Procurement of initial capital spares within the original scope of work, in accordance with the provisions of Regulation 13;

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

(v) Change in law or compliance of any existing law:

14(2) The capital expenditure incurred or projected to be incurred in respect of the new project on the following counts within the original scope of work after the cut-off date may 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 of law;

(ii) Change in law or compliance of any existing law;;

(iii) Deferred works related to ash pond or ash handling system in the original scope of work; and

(iv) Any liability for works executed prior executed prior to the cut off date, after prudence check of the details of such undischarged liability, total estimated cost of package, reasons for such withholding of payment and release of such payments etc.

85. The year-wise breakup of the actual/projected additional capital expenditure, including discharge of liabilities claimed by the Petitioner for the period 2014-19 is as under:



(₹ in lakh)

	2016-17		2017-18	2018-19
	23.2.2017 to 27.2.2017	28.2.2017 to 31.3.2017		
	Units- II, III & IV	Units- I to VI		
Add: Addition during the year / period	38929.11	34.40	19679.17	13981.41
Less: De-capitalization during the year / period	0.00	113.36	0.00	0.00
Add: Discharges during the year / period	0.00	52547.75	18310.91	48194.22
Net Additional Capital Expenditure	38929.11	52468.79	37990.08	62175.63

Inter-unit Additional capital expenditure

86. The Petitioner has claimed additional capital expenditure of ₹8929.08 lakh for the period from 23.2.2017 to 27.2.2017 for Units- II, III & IV. It is noticed that the said expenditure has been incurred during the period between 23.2.2017 and 28.2.2017 and as such shall be capitalized on 28.2.2017, along with IDC on the loan portion of such expenditure till 28.2.2017. In view of this, the additional capital expenditure of ₹38929.08 lakh has not been allowed for the period from 23.2.2017 to 27.2.2017. Accordingly, the additional capital expenditure for the period from 28.2.2019 to 31.3.2019 has been considered as under:

(₹ in lakh)

	28.2.2017 to 31.3.2017	2017-18	2018-19	Total
Additional capital expenditure under original scope within the cut-off date	34.40	19679.17	13981.41	33694.98
Discharge of liabilities	52547.75	18310.91	48194.22	119052.88
Total Additions claimed during the period/year	52582.15	37990.08	62175.63	152747.86

87. DIA has recommended the ceiling of the capital cost to ₹1350000.00 lakh. As on COD of the generating station (28.2.2017), the capital cost of ₹1184819.56 lakh has been considered with disallowance of ₹16266.34 lakh from the claimed capital cost. As such, the ceiling capital cost of ₹1350000.00 lakh has also been



reduced by an amount of ₹16266.34 lakh. Accordingly, the completion cost of the project has been restricted to ₹1333733.66 lakh. The cut-off date of the project is 31.3.2019. Accordingly, the additional capital expenditure which can be allowed from the COD of the generating station up to the cut-off date with respect to the balance works/ assets under the original scope of work of the project works out to ₹148914.10 lakh (1333733.66-1184819.56). In view of this, the additional capital expenditure claimed by the Petitioner has been restricted to the above amount of ₹148914.10 lakh for assets/ works under the original scope of the project. Based on this, the claim of the Petitioner for additional capital expenditure has been examined as under:

From 28.2.2017 to 31.3.2017

88. The additional capital expenditure of ₹52582.15 lakh claimed by the Petitioner for the period 28.2.2017 to 31.3.2017 includes an amount of ₹34.40 lakh towards works deferred for execution within the original scope of work and ₹52547.75 lakh for discharges during the said period.

Addition during the year / period for works/assets under original scope

89. The Petitioner has claimed an additional capital expenditure of ₹34.40 lakh towards assets/works such as Roads & Bridges, Dam, Intake & De-Silting Chambers, Dam, Intake & De-Silt and HRT, TRT, Surge Shaft & Pressure shafts, Power plant and Electro-Mechanical Plant & Equipment. Since the said expenditure form part of assets/works under original scope of work and is within the cut-of date, the same is allowed under Regulation 14(1)(ii) of the 2014 Tariff Regulations for the purpose of tariff.



Discharges during the year / period

90. The Petitioner has claimed an amount of ₹52547.75 lakhs for discharge of liabilities and the same is allowed in terms of the 2014 Tariff Regulations.

91. Based on the above, the total additional capital expenditure allowed for the period 28.2.2017 to 31.3.2017 works out to ₹52582.15 lakh (34.40+52547.75). Accordingly, the balance limit of admitted completion cost of the project is ₹96331.95 lakh (148914.10-52582.15).

2017-18

92. The Petitioner has claimed additional capital expenditure of ₹37990.08 lakh in the year 2017-18, which includes ₹19679.17 lakh towards works deferred for execution within the original scope of works and ₹18310.91 lakh for discharges during the year / period.

Addition during the year / period for works/assets under original scope

93. The additional capital expenditure of ₹19679.17 lakh claimed under this head is towards assets/works such as Roads & Bridges, Dam, Intake & De-Silting Chambers, Dam, Intake & De-Silt and HRT, TRT, Surge Shaft & Pressure shafts, Power plant, Electro-Mechanical Plant & Equipment and Building PHC. Since the said expenditure is towards assets/works of original scope of work and is within the cut-of date, the same is allowed under Regulation 14 (1)(ii) of the 2014 Tariff Regulations for the purpose of tariff.

Discharges during the year / period

94. The Petitioner has claimed an amount of ₹18310.91 lakh towards discharge of liabilities and the same is allowed in terms of the 2014 Tariff Regulations.



95. Based on the above, the total additional capital expenditure allowed for the year 2017-18 is ₹37990.08 lakh (19679.17+18310.91). Accordingly, the balance limit of admitted completion cost of the project works out to be ₹58341.87 lakh (96331.95-37990.08).

2018-19

96. The Petitioner has claimed an additional capital expenditure of ₹62175.63 lakh in the year 2018-19, which includes addition of ₹13981.41 lakh towards works deferred for execution within the original scope of works and ₹48194.22 lakh for discharges during the year / period.

Addition during the year / period for works/assets under original scope

97. The additional capital expenditure of ₹13981.41 lakh claimed under this head pertains to assets/works such as Roads & Bridges, Dam, Intake & De-Silting Chambers, Dam, Intake & De-Silt and HRT, TRT, Surge Shaft & Pressure shafts, Power plant, Electro-Mechanical Plant & Equipment and Building PHC. Since the said expenditure is towards assets/works of original scope of work and is within the cut-off date, the same is allowed for the purpose of tariff.

Discharges during the year / period

98. The Petitioner has claimed an amount of ₹48194.22 lakh for discharge of liabilities. The same are allowed, subject to review at the time of truing up based on the actual discharge of liabilities to be furnished by the Petitioner. However, keeping in view the ceiling capital cost as discussed in para 87 above, the amount which can be allowed in the year 2018-19 is ₹58341.87 lakh. Since the total addition claimed by the Petitioner for the year 2018- 19 is ₹62175.63 lakh, which is more than the available limit, the total addition allowed for the year 2018-19 has been restricted to ₹58341.87 lakh.



Deletions

99. The Petitioner has claimed de-capitalisation of ₹113.36 lakh for assets/works under the heads such as Major Civil Works/ H&M Works/ Infrastructure Works and Electromechanical Works during the period from 28.2.2017 to 31.3.2017. Since the assets/works are not in use, the claim of the Petitioner for de-capitalisation of ₹113.36 lakh is allowed in terms of Regulation 14 (4) of the 2014 Tariff Regulations.

100. It is pertinent to mention that the Petitioner, while claiming the capital cost as on 23.2.2017 vide form 1(i) has considered 50% of the actual capital cost with respect to Units-II, III & IV (i.e. 50% of the capital cost as on 23.2.2017 as per Form-5B). Accordingly, the capital cost allowed for tariff as on 23.2.2017 has been considered as 50% of the allowable capital cost.

101. Based on the discussion in the foregoing paragraphs, the following capital cost for the period from 23.2.2017 to 31.3.2019 has been allowed:

	(₹ in lakh)			
	23.2.2017 to 27.2.2017	28.2.2017 to 31.3.2017	1.4.2017 to 31.3.2018	1.4.2018 to 31.3.2019
Opening Capital cost	551063.98	1184819.56	1237288.35	1275278.43
Additional capital expenditure	0.00	34.40	19679.17	13981.41
De-capitalization (-)	0.00	113.36	0.00	0.00
Discharge of liabilities	0.00	52547.75	18310.91	48194.22
Net addition subject to ceiling limit of ₹1333733.66 lakh	0.00	52468.79	37990.08	58341.87
Closing Capital Cost	551063.98	1237288.35	1275278.43	1333620.30

Debt-Equity Ratio

102. Regulation 19 of the 2014 Tariff Regulations provides as under:

“19(1) For a project declared under commercial operation on or after 1.4.2014, the debt-equity ratio would be considered as 70:30 as on COD. 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:



- i. where equity actually deployed is less than 30% of the capital cost, actual equity shall be considered for determination of tariff:
- ii. the equity invested in foreign currency shall be designated in Indian rupees on the date of each investment:
- iii. any grant obtained for the execution of the project shall not be considered as a part of capital structure for the purpose of debt : equity ratio.”

103. The debt- equity ratio as per Forms-6 and 14 is as under:

	As per form-6		As per Form-14	
Debt	961590.00	76.60%	1019538.16	77.64%
Equity	293705.86	23.40%	293705.86	22.36%
Total fund	1255295.86	100.00%	1313244.02	100.00%

104. It is noticed that the Petitioner, for calculating return on equity, has applied debt-equity ratio as per Form-6 i.e. 76.60:23.40. The same has been re-worked, considering the capital expenditure incurred as per the balance sheet. Accordingly, the debt-equity ratio considered for the purpose of tariff is as under:

	23.2.2017	28.2.2017
Debt	79.43%	79.61%
Equity	20.57%	20.39%
Total fund	100%	100%

Return on Equity

105. Regulation 24 of the 2014 Tariff Regulations provides as under:

“24. Return on Equity: (1) Return on equity shall be computed in rupee terms, on the equity base determined in accordance with regulation 19.

(2) Return on equity shall be computed at the base rate of 15.50% for thermal generating stations, transmission system including communication system and run of the river hydro generating station, and at the base rate of 16.50% for the storage type hydro generating stations including pumped storage hydro generating stations and run of river generating station with pondage:

Provided that

i) in case of projects commissioned on or after 1st April, 2014, an additional return of 0.50 % shall be allowed, if such projects are completed within the timeline specified in Appendix-I:

ii) the additional return of 0.5% shall not be admissible if the project is not completed within the timeline specified above for reasons whatsoever:

iii) additional RoE of 0.50% may be allowed if any element of the transmission project is completed within the specified timeline and it is certified by the Regional Power Committee/National Power Committee that commissioning of the



particular element will benefit the system operation in the regional/national grid:

iv) the rate of return of a new project shall be reduced by 1% for such period as may be decided by the Commission, if the generating station or transmission system is found to be declared under commercial operation without commissioning of any of the Restricted Governor Mode Operation (RGMO)/ Free Governor Mode Operation (FGMO), data telemetry, communication system up to load dispatch centre or protection system:

v) as and when any of the above requirements are found lacking in a generating station based on the report submitted by the respective RLDC, RoE shall be reduced by 1% for the period for which the deficiency continues.

vi) additional RoE shall not be admissible for transmission line having length of less than 50 kilometers.

106. Regulation 25 of the 2014 Tariff Regulations provides as under:

“Tax on Return on Equity

(1) The base rate of return on equity as allowed by the Commission under Regulation 24 shall be grossed up with the effective tax rate of the respective financial year. For this purpose, the effective tax rate shall be considered on the basis of actual tax paid in the respect of the financial year in line with the provisions of the relevant Finance Acts by the concerned generating company or the transmission licensee, as the case may be. The actual tax income on other income stream (i.e., income of non-generation or non-transmission business, as the case may be) shall not be considered for the calculation of “effective tax rate”.

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

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

Where “t” is the effective tax rate in accordance with Clause (1) of this regulation and shall be calculated at the beginning of every financial year based on the estimated profit and tax to be paid estimated in line with the provisions of the relevant Finance Act applicable for that financial year to the company on pro-rata basis by excluding the income of non-generation or non-transmission business, as the case may be, and the corresponding tax thereon. In case of generating company or transmission licensee paying Minimum Alternate Tax (MAT), “t” shall be considered as MAT rate including surcharge and cess.

(3) The generating company or the transmission licensee, as the case may be, shall true up the grossed up rate of return on equity at the end of every financial year based on actual tax paid together with any additional tax demand including interest thereon, duly adjusted for any refund of tax including interest received from the income tax authorities pertaining to the tariff period 2014-15 to 2018-19 on actual gross income of any financial year. However, penalty, if any, arising on account of delay in deposit or short deposit of tax amount shall not be claimed by the generating company or the transmission licensee as the case may be. Any under-recovery or over-recovery of grossed up rate on return on equity after truing up, shall be recovered or refunded to beneficiaries or the long term transmission customers/DICs as the case may be on year to year basis.”



107. The Petitioner has submitted that the tax rate considered for grossing up of ROE is 'nil', considering that the Petitioner has not paid and shall not pay any tax due to loss/ brought forward adjustable loss and depreciation. Accordingly, the Petitioner has considered rate of ROE @ 16.50% for the period 2016-19 and the same has been considered for the purpose of tariff. Accordingly, return on equity has been worked out as under:

	(₹ in lakh)			
	23.2.2017 to 27.2.2017	28.2.2017 to 31.3.2017	1.4.2017 to 31.3.2018	1.4.2018 to 31.3.2019
Gross notional equity	113359.66	241641.98	252342.90	260090.91
Addition due to additional capitalization	0.00	10700.92	7748.01	11898.73
Closing equity	113359.66	252342.90	260090.91	271989.64
Average equity	113359.66	246992.44	256216.91	266040.28
Return on Equity (base rate)	16.500%	16.500%	16.500%	16.500%
Tax rate for the year	0.000%	0.000%	0.000%	0.000%
Rate of return on Equity (pre-tax)	16.500%	16.500%	16.500%	16.500%
Return on Equity (pro-rata)	256.22	3572.93	42275.79	43896.65

Interest on loan

108. Regulation 26 of the 2014 Tariff Regulations provides as under:

“26. Interest on loan capital: (1) *The loans arrived at in the manner indicated in regulation 19 shall be considered as gross normative loan for calculation of interest on loan.*

(2) *The normative loan outstanding as on 1.4.2014 shall be worked out by deducting the cumulative repayment as admitted by the Commission up to 31.3.2014 from the gross normative loan.*

(3) *The repayment for each of the year of the tariff period 2014-19 shall be deemed to be equal to the depreciation allowed for the corresponding year/period. In case of de-capitalization of assets, the repayment shall be adjusted by taking into account cumulative repayment on a pro rata basis and the adjustment should not exceed cumulative depreciation recovered up to the date of de-capitalization of such asset*

(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 depreciation allowed for the year or part of the year.*

(5) *The rate of interest shall be the weighted average rate of interest calculated on the basis of the actual loan portfolio after providing appropriate accounting adjustment for interest capitalized: 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 refinancing.

(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 beneficiaries or the long term transmission customers /DICs 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.”

109. The salient features of computation of interest on loan allowed in tariff are summarized as under:

(a) The opening gross normative loan as on COD of each unit has been arrived at in accordance with Regulation 26 of the 2014 Tariff Regulations.

(b) 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.

(c) The repayment for the years of the period 2014-19 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.

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

	(₹ in lakh)			
	23.2.2017 to 27.2.2017	28.2.2017 to 31.3.2017	1.4.2017 to 31.3.2018	1.4.2018 to 31.3.2019
Gross notional loan	437704.32	943177.59	984945.45	1015187.52
Cumulative repayment of loan upto previous year	0.00	698.83	10527.97	72370.87
Net opening loan	437704.32	942478.75	974417.49	942816.65
Addition due to additional	0.00	41767.87	30242.07	46443.14



capitalization				
Repayment	698.83	9829.14	61842.90	64213.96
Net closing loan	437005.49	974417.49	942816.65	925045.82
Average loan	437354.90	958448.12	958617.07	933931.24
Weighted average rate of interest on loan	13.83%	13.84%	13.51%	11.92%
Interest on loan (Pro-rata)	828.79	11632.70	129553.76	111335.66

Depreciation

111. Regulation 27 of the 2014 Tariff Regulations provides as under:

“27. Depreciation:

(1) Depreciation shall be computed from the date of commercial operation of a generating station or unit thereof or a transmission system including communication system or element thereof. In case of the tariff of all the units of a generating station or all elements of a transmission system including communication system for which a single tariff needs to be determined, the depreciation shall be computed from the effective date of commercial operation of the generating station or the transmission system taking into consideration the depreciation of individual units or elements thereof.

Provided that effective date of commercial operation shall be worked out by considering the actual date of commercial operation and installed capacity of all the units of the generating station or capital cost of all elements of the transmission system, for which single tariff needs to be determined.

(2) The value base for the purpose of depreciation shall be the capital cost of the asset admitted by the Commission. In case of multiple units of a generating station or multiple elements of transmission system, weighted average life for the generating station of the transmission system shall be applied. 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.

(3) 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 station, the salvage value shall be as provided in the agreement signed by the developers with the State Government for development of the Plant:

Provided further that the capital cost of the assets of the hydro generating station for the purpose of computation of depreciated value shall correspond to the percentage of sale of electricity under long-term power purchase agreement at regulated tariff: Provided also that any depreciation disallowed on account of lower availability of the generating station or generating unit or transmission system as the case may be, shall not be allowed to be recovered at a later stage during the useful life and the extended life.

(4) 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.

(5) Depreciation shall be calculated annually based on Straight Line Method and at rates specified in Appendix-II 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 the effective date of commercial operation of the station shall be spread over the balance useful life of the assets.

(6) In case of the existing projects, the balance depreciable value as on 1.4.2014 shall be worked out by deducting the cumulative depreciation as admitted by the Commission up to 31.3.2014 from the gross depreciable value of the assets.

(7) The generating company or the transmission licensee, as the case may be, shall submit the details of proposed capital expenditure during the fag end of the project (five years before the useful life) along with justification and proposed life extension. The Commission based on prudence check of such submissions shall approve the depreciation on capital expenditure during the fag end of the project.

(8) In case of de-capitalization of assets in respect of generating station or unit thereof or transmission system or element thereof, the cumulative depreciation shall be adjusted by taking into account the depreciation recovered in tariff by the de-capitalized asset during its useful services.”

Depreciable value

112. The Petitioner has claimed depreciable value as 100% for the purpose of calculating depreciation. Accordingly, the Petitioner has submitted the following:

“.....the Implementation Agreement dated 18.07.2005 entered into between Government of Sikkim (GoS) and Teesta Urja Limited for a period of 35 years from the COD of the Project provides that upon completion of the 35 year period (unless extended further), the Project shall stand transferred to the Government of Sikkim. Hence while calculating the depreciation in Form -12 the depreciable value has been considered as per the second proviso to Regulation 27 (3) of the Tariff Regulations, 2014 which is reproduced as below:

“Provided that in case of hydro generating station, the salvage value shall be as provided in the agreement signed by the developers with the State Government for development of the Plant:”

That Regulation 6(5) of the Tariff Regulations provides that in case where generating plant has the part Power Purchase Agreement (PPA) with the beneficiaries the Tariff is determined with reference to the capital cost of the entire project. The said Regulation is reproduced below:

“(5) Where only a part of the generation capacity of a generating station is tied up for supplying power to the beneficiaries through long term power purchase agreement and the balance part of the generation capacity have not been tied up for supplying power to the beneficiaries, the tariff of the generating station shall be determined with reference to the capital cost of the entire project, but the tariff so determined shall be applicable corresponding to the capacity contracted for supply to the beneficiaries.”

In the case of Part long term PPA, the AFC is recovered only to the extent of PPA tied with beneficiaries.

In the view submissions made above under paras 7 and 8, the depreciable value has been considered as 100% and not 70% as provided in proviso 27(3) of the CERC Tariff Regulation 2014 which states that the depreciated value shall correspond to the percentage of sale of electricity under long-term power purchase



agreement at regulated tariff. It is pertinent to mention that while raising the invoices pursuant to the provisions of Regulations 31 of the CERC Tariff Regulations 2014, the recovery of AFC is made pro-rata to the share of an individual beneficiary in any Project. Accordingly, all the components of AFC are correspondingly considered/ reduced and as such the Depreciation need not be reduced again to the total share of all long term beneficiaries.”

113. It is pertinent to mention that Regulation 6(5) of the 2014 Tariff Regulations provides that the calculation of annual fixed charges in case of the generating stations wherein, part of the capacity is contracted through long term PPA, shall be done on the basis of the entire capital cost and shall be prorated for the contracted capacity. The said regulation is as under:

“6. Tariff determination

(5) Where only a part of the generation capacity of a generating station is tied up for supplying power to the beneficiaries through long term power purchase agreement and the balance part of the generation capacity have not been tied up for supplying power to the beneficiaries, the tariff of the generating station shall be determined with reference to the capital cost of the entire project, but the tariff so determined shall be applicable corresponding to the capacity contracted for supply to the beneficiaries.”

114. A concurrent reading of both the above regulations implies double prorating of the depreciation; firstly, while calculating the depreciable value and secondly, while applying the annual fixed charges to the contracted capacity. In order to avoid double factoring of the contracted capacity, the depreciable value has been allowed as 90%.

115. The Petitioner in Form-11 has furnished the weighted average rate of depreciation and the same has been considered for the calculation of the depreciation. Accordingly, the depreciation has been calculated as under:

	(₹ in lakh)			
	23.2.2017 to 27.2.2017	28.2.2017 to 31.3.2017	1.4.2017 to 31.3.2018	1.4.2018 to 31.3.2019
Opening capital cost	551063.98	1184819.56	1237288.35	1275278.43
Addition due to projected additional capitalisation	0.00	52468.79	37990.08	58341.87
Closing capital cost	551063.98	1237288.35	1275278.43	133620.30
Average capital cost	551063.98	1211053.96	1256283.39	1304449.37
Value of freehold land	0.00	0.00	0.00	0.00



included in capital cost				
Rate of depreciation	9.26%	9.26%	4.92%	4.92%
Depreciable value including amortisation of lease land in 25 years (90%)	495957.58	1089948.56	1130655.05	1174004.43
Remaining depreciable value	495957.58	1089249.73	1120127.09	1101633.56
Depreciation (Pro-rata)	698.83	9829.14	61842.90	64213.96

Operation and Maintenance Expenses

116. Regulation 29 (3) (d) of the 2014 Tariff Regulations provides as under:

a. xxxxx

b. xxxxx

c. xxxx

d. *In case of the hydro generating stations declared under commercial operation on or after 1.4.2014, operation and maintenance expenses shall be fixed at 4% and 2.50% of the original project cost (excluding cost of rehabilitation & resettlement works) for first year of commercial operation for stations less than 200 MW projects and for stations more than 200 MW respectively and shall be subject to annual escalation of 6.64% per annum for the subsequent years.*

117. The Petitioner has claimed O&M expenses for the period 2014-19 as under:

		(₹ in lakh)	
2016-17		2017-18	2018-19
23.2.2017-27.2.2017 (Units-II, III & IV)	28.2.2017-31.3.2017 (all units)		
231.75	2966.39	36082.08	38477.93

118. The COD of the generating station is 28.2.2017. The project cost as on cut-off date of the generating station (31.3.2019) allowed as above is ₹133620.30 lakh. The Petitioner has indicated an amount of ₹1751.41 lakh towards Rehabilitation and Resettlement cost and the same is considered for calculation of the admissible O&M expenses. Based on the above, the admissible O&M expenses are worked out as under:

		(₹ in lakh)	
2016-17		2017-18	2018-19
23.2.2017 to 27.2.2017	28.2.2017 to 31.3.2017		
188.42	2919.16	35507.62	37865.33



Interest on working capital

119. Sub-section (c) of Clause (1) of Regulation 28 of the 2014 Tariff Regulations provides as under:

“28. Interest on Working Capital:

(1) The working capital shall cover

(c) Hydro generating station including pumped storage hydro electric generating Station and transmission system including communication system:

(i) Receivables equivalent to two months of fixed cost;

(ii) Maintenance spares @ 15% of operation and maintenance expense specified in regulation 29; and

(iii) Operation and maintenance expenses for one month.”

120. Accordingly, considering two months of fixed cost, receivables are worked out and allowed as under:

(₹ in lakh)

23.2.2017 to 27.2.2017	28.2.2017 to 31.3.2017	1.4.2017 to 31.3.2018	1.4.2018 to 31.3.2019
336.84	4775.39	46021.90	44012.69

121. Maintenance spares @ 15% of O&M expenses are worked out and allowed as under:

(₹ in lakh)

23.2.2017 to 27.2.2017	28.2.2017 to 31.3.2017	1.4.2017 to 31.3.2018	1.4.2018 to 31.3.2019
28.26	437.87	5326.14	5679.80

122. O&M Expenses for one month are allowed as under:

(₹ in lakh)

23.2.2017 to 27.2.2017	28.2.2017 to 31.3.2017	1.4.2017 to 31.3.2018	1.4.2018 to 31.3.2019
15.70	243.26	2958.97	3155.44

Rate of interest on working capital

123. Clause (3) of Regulation 28 of the 2014 Tariff Regulations provides as under:



“Rate of interest on working capital shall be on normative basis and shall be considered as the bank rate as on 1.4.2014 or as on 1st April of the year during the tariff period 2014-15 to 2018-19 in which the generating station or a unit thereof or the transmission system including communication system or element thereof, as the case may be, is declared under commercial operation, whichever is later.”

124. In terms of the above regulations, the Bank Rate of 12.80% (Base Rate as on 1.4.2016+ 350 Basis Points) has been considered by the Petitioner and the same has been considered in the calculations for the purpose of tariff. Accordingly, necessary computations in support of interest on working capital are as under:

	(₹ in lakh)			
	23.2.2017 to 27.2.2017	28.2.2017 to 31.3.2017	1.4.2017 to 31.3.2018	1.4.2018 to 31.3.2019
O&M expenses - 1 month	15.70	243.26	2958.97	3155.44
Maintenance spares	28.26	437.87	5326.14	5679.80
Receivables -2 months	336.84	4775.39	46021.90	44012.69
Total	380.80	5456.53	54307.01	52847.93
Rate of Interest	12.80%	12.80%	12.80%	12.80%
Interest on Working Capital	48.74	698.44	6951.30	6764.54

Annual Fixed Charges

125. Based on the above, the annual fixed charges approved for the generating station for the period 2017-19 is summarized as under:

	(₹ in lakh)			
	23.2.2017 to 27.2.2017	28.2.2017 to 31.3.2017	1.4.2017 to 31.3.2018	1.4.2018 to 31.3.2019
Return on Equity	256.22	3572.93	42275.79	43896.65
Interest on Loan	828.79	11632.70	129553.76	111335.66
Depreciation	698.83	9829.14	61842.90	64213.96
Interest on Working Capital	48.74	698.44	6951.30	6764.54
O&M Expenses	188.42	2919.16	35507.62	37865.33
Total	2021.01	28652.37	276131.37	264076.13

Normative Annual Plant Availability Factor (NAPAF)

126. The Commission vide its order dated 23.5.2017 had allowed NAPAF of 85% for the generating station. Accordingly, the same has been considered in this order.



Design Energy

127. CEA vide letter dated 14.6.2010 has approved annual Design Energy (DE) as 5213.82 MU. Accordingly, the same has been considered for the generating station as detailed under:

Months	10 days monthly DE	DE (MUs)
April	I	84.42
	II	109.91
	III	89.42
May	I	93.92
	II	115.75
	III	130.55
June	I	196.25
	II	273.60
	III	273.60
July	I	273.60
	II	273.60
	III	300.96
August	I	273.60
	II	273.60
	III	267.75
September	I	273.60
	II	241.33
	III	204.49
October	I	173.48
	II	165.30
	III	166.68
November	I	101.45
	II	82.46
	III	71.48
December	I	65.77
	II	57.83
	III	65.68
January	I	57.51
	II	52.58
	III	55.44
February	I	51.65
	II	49.17
	III	42.62
March	I	54.58
	II	62.76
	III	87.43
Total		5213.82

Application Fee and Publication Expenses

128. The Petitioner has sought reimbursement of filing fee and also the expenses incurred towards publication of notices for application of tariff for the



period 2016-19. The Petitioner has deposited the filing fees for the period 2016-19 in terms of the provisions of the Central Electricity Regulatory Commission (Payment of Fees) Regulations, 2012. The Petitioner has also incurred charges towards publication of the tariff petition in the newspapers. Accordingly, in terms of Regulation 52 of the 2014 Tariff Regulations, the Petitioner is entitled to recover the filing fees and the expenses incurred on publication of notices for the period 2016-19 directly from the Respondents. Accordingly, the expenses incurred by the Petitioner towards tariff application filing fees and publication of notices in connection with the present petition shall be directly recovered from the Respondent beneficiaries, on pro rata basis. Excess fees, if any, paid by the Petitioner shall be adjusted against the petition to be filed in future before this Commission.

129. Similarly, RLDC Fees & charges paid by the Petitioner in terms of the Central Electricity Regulatory Commission (Fees and Charges of Regional Load Despatch Centre and other related matters) Regulations, 2015, shall be recovered from the beneficiaries.

130. The annual fixed charges approved for the period 2016-19 as above are subject to revision based on truing-up exercise in terms of Regulation 8 of the 2014 Tariff Regulations.

131. Petition No. 249/GT/2016 is disposed of in terms of the above.

Sd/-
(I.S.Jha)
Member

Sd/-
(Dr M.K.Iyer)
Member

Sd/-
(P.K.Pujari)
Chairperson

