Before

UTTARAKHAND ELECTRICITY REGULATORY COMMISSION

In the Matter of:

Petition seeking determination of project specific tariff for 10.5 MW Small Hydro Power Project under Section 62 and 86 of the Electricity Act, 2003 read with Regulation 13 of Uttarakhand Electricity Regulatory Commission (Tariff and Other Terms for Supply of Electricity from Nonconventional and Renewable Energy Sources) Regulations, 2013.

In the matter of:

Uttar Bharat Hydro Power Pvt. Ltd. …Petitioner

AND

In the matter of:

Uttarakhand Power Corporation Ltd. …Respondent

CORAM

Shri Subhash Kumar Chairman

Date of Order: March 16, 2017

This Order relates to the Petition dated 16.01.2015 filed by M/s Uttar Bharat Hydro Power Limited (hereinafter referred to as "the Petitioner" or "the generator") seeking determination of project specific tariff for its 10.5 MW Small Hydro Power Project on Sarju River at Kapkot, Bageshwar District, Uttarakhand under Section 62 and 86 of the Electricity Act, 2003 read with Regulation 13 of UERC (Tariff and Other Terms for Supply of Electricity from Non-conventional and Renewable Energy Sources) Regulations, 2013 (hereinafter referred to as "RE Regulations, 2013").

1. Background and Procedural History

1.1 A Petition dated 16.01.2015 was filed by the Petitioner under Section 62 and Section 86 of the Electricity Act, 2003 read with Regulation 13 of RE Regulations, 2013 seeking determination of project specific tariff for sale of energy generated by its 10.5 MW Small Hydro Power Project (hereinafter referred to as "the Project/Plant") to Uttarakhand Power Corporation Limited (hereinafter referred to as "UPCL").

1.2 The Petitioner has setup a project having an installed capacity of 10.5 MW in the name of Sarju III SHP. Prior to commencement of works, the cost of the Project as appraised by the financial institutions providing term loans to the Petitioner was estimated at Rs. 89.55 Crore. As stated by the Petitioner, due to reasons beyond its control like delays in obtaining permissions from statutory authorities, delay in transfer of land for laying down the transmission line and natural disasters, implementation of the Project got delayed and the Project Cost increased to Rs. 125.92 Crore.

1.3 On 30.06.2014, the Petitioner issued a letter to UPCL submitting that the testing of the substation at Kapkot was carried out by Electrical Inspector, Uttarakhand and approval of energisation of the same was granted. Accordingly, the Petitioner requested UPCL to complete the metering at the Plant. The meter was installed by UPCL on 11.07.2014 and the Petitioner declared CoD of the plant on the same day.

1.4 The Commission vide its Order dated 29.05.2015 disposed off the Petition citing reference to the PPA signed between the parties and for the reasons detailed in the aforesaid order, directing the Petitioner to sell the power at the generic tariff specified in the RE Regulations, 2013. The relevant extracts of the aforesaid order is reproduced hereunder:

> *"2.8 From the facts of the petition, the reply and the Rejoinder it is evident that the project was commissioned on 11.07.2014, i.e. after the notification of RE Regulations 2013. Therefore, in accordance with the provisions of the RE Regulations 2013, this project gets covered by the relevant provisions of the RE Regulations, 2013. Keeping in view the submissions made by the Petitioner and the Respondent, the provisions of the RE Regulations, 2010, RE Regulations, 2013 and the PPA executed between the two parties the Commission decides to provide generic tariff to the Petitioner under the provisions of the RE Regulations, 2013. The Commission has already clarified in the previous paras that because the Petitioner had already exercised its option in the PPA and accepted to sell 10.5 MW of power to the Respondent on generic tariff specified by the Commission under the RE Regulations, 2010, the Petitioner cannot now seek project specific tariff at this stage. Accordingly, the Commission directs the Petitioner to sell power under the provisions of the same PPA but at the generic tariff specified in the RE Regulations, 2013 as the project was commissioned after the said Regulations came into force.*
>
> *2.9 As already discussed in the previous Paras, since the Petitioner's plant is not eligible for granting project specific tariff, hence, the Commission is not going into the merits of the capital cost claimed by the Petitioner."*

1.5 Aggrieved by the Order dated 29.05.2015 of the Commission, the Petitioner preferred an

Appeal No. 179 of 2015 before the Hon'ble Appellate Tribunal praying for relief as reproduced below:

"a) That this tribunal may be pleased to admit the present Appeal and set aside the impugned order dated 29.05.2015.

b) That this Tribunal may be please to issue appropriate directions to the Ld. Commission to determine the "Project Specific Tariff" of the Appellant's project in terms of RE Regulations, 2013.

c) Any other just and equitable relief in favour of the Appellant as deem fit by the Tribunal."

1.6 The Hon'ble Appellate Tribunal vide its Order dated 25.05.2016 allowed the aforesaid appeal of the Petitioner setting aside the impugned order dated 29.05.2015 passed by the Commission, directing the Commission as follows:

"11.19 In view of the above discussions, we direct the State Commission to allow the option exercised by the Appellant/Petitioner towards determination of Project Specific Tariff and taking into consideration the actual project cost as per the Auditors' Report, comparing with relevant documents and after prudence check."

1.7 The Commission vide its letter dated June 02, 2016 asked UPCL, the sole Respondent in the present matter to file its comments, if any, on the tariff Petition latest by June 13, 2016. UPCL vide its letter dated 06.01.2017 filed its comments and the same was forwarded to the Petitioner for its reply. In response, the Petitioner vide its letter dated 15.01.2017 submitted its rejoinder on the same. UPCL filed its reply almost after 7 months from the time given to it without seeking any time extension. The Commission during this proceedings has considered UPCL's response, however, UPCL is cautioned to submit the replies, if any, within the stipulated time frame failing which the same may not be considered in future proceedings. The submissions of UPCL and the Petitioner have been dealt with at appropriate places in the order.

1.8 The Original Petition file by the Petitioner had some deficiencies which were communicated to it vide Commission's letter dated 02.06.2016. The Petitioner submitted its reply vide letter dated 29.06.2016. Subsequently, additional deficiencies/shortcomings in the replies filed by the Petitioner were communicated to it from time to time.

1.9 The Commission has considered the replies/information submitted by the Petitioner as well as contentions raised by the Respondent and the same has been discussed at appropriate places in the Order alongwith the Commission's views on the same.

2. Petitioner's Submissions

2.1 Capital Cost & Financing thereof

The Petitioner submitted that as per the DPR for the month of November, 2010, the estimated cost of the Project (alongwith escalation and interest during construction) was Rs. 89.55 Crore (i.e. Rs. 8.53 Crore per MW). However, due to delay in achieving CoD there has been cost overruns during the construction period and the final Capital Cost incurred by the Petitioner for setting up the Project is Rs. 125.92 Crore for 10.5 MW, which works out to Rs. 11.99 Crore per MW. The Petitioner in support of the capital cost of the Sarju-III SHP as on the date of commissioning of the project submitted a certificate dated November 27, 2014 issued by Chartered Accountant firm. The CA certificate shows the following details:

Table 2.1: Capital Cost Claimed for Sarju-III Project (Rs. in Lakh)

S. No.	Particulars	Expenses Incurred upto 30.06.2014
1	Civil Works	6595
2	Electro Mechanical Works	1403
3	Hydro Mechanical Works	262
4	Transmission Line	83
5	Other Purchase	35
6	Land	113
7	Power Fuels	45
8	Village Development	49
9	Project Consultancy Charges	67
10	Bank Interest	3026
11	Preoperative Expenses	781
12	Fixed Assets	67
13	Uttarakhand Govt. (Energy Dep.)	33
14	Service Tax, donation, consumable	214
15	Less : Insurance Claim	(182)
	Total	**12,592**

2.1.1 The Petitioner submitted that, equity of Rs. 8132 Lakh has been deployed to finance the Capital Cost as on CoD. Hence, the actual equity deployed by the Petitioner is 65% of the Capital Cost. Based on the RE Regulations, the equity in excess of 30%, i.e. Rs. 4355 Lakh has been treated as normative loan. The debt and equity components of the Capital Cost for determination of tariff for the Petitioner's Project has been worked out accordingly and provided hereunder:

Table 2.2: Financing of Capital Cost Claimed (Rs. in Lakh)

Type of Fund	Total	% of Cost
Debt	Rs. 8814 Lakh	70%
Equity	Rs. 3778 Lakh	30%
Total	**Rs. 12592 Lakh**	**100%**

The Petitioner submitted the following reasons for delay in commissioning of the Project and increase in the claimed Capital Cost vis-à-vis cost as per DPR:

(A) Causes for delay during construction of the Project – Time Overrun

(a) Agitation by villagers: Although the GOU had executed a Lease Deed on 06.09.2007 transferring forest land having an area of 4.041 Hectares for construction of the Project, the Petitioner was prevented from carrying out any construction activities due to various agitations, including, but not limited to, indefinite hunger strikes by the villagers. On 14.01.2008, an agreement was reached and an agreement was executed amongst the Petitioner, the District Magistrate of Bageshwar and the Tahsildar, Kapkote to bring to an end the hunger strikes and agitations that had commenced on 07.12.2007 protesting against the Project. It was only after the execution of this agreement the Petitioner was allowed to start construction work at the Project site. The said agitation by villagers delayed the start of the construction works for the Project by a period of approximately 5 months.

(b) Transfer of land for setting-up Transmission Lines: As per the PPA dated 13.10.2011 and 16.12.2002, the Petitioner was required to lay down a transmission line from the Project switch yard upto the UPCL's 33/11 kV Sub-Station at Kapkote, District – Bageshwar, Uttarakhand. Accordingly, the Petitioner had applied to the forest department for transfer of forest land for the said transmission line vide its letter dated 16.09.2008. However, the permission from the forest department in this regard was received only on 14.08.2012, thereby delaying the Project by almost 12 months. Thereafter, the work for setting up the Transmission Line commenced and was completed on 26.03.2014. The Electrical Engineer granted energization approval for the Transmission Line on 09.05.2014.

(c) Permission for setting up stone crushers:

(i) On 16.07.2009, Hon'ble High Court of Uttarakhand passed an interim order in Writ Petition (P.I.L) No. 799 of 2008 titled Himalayan Yuva Gramin Vikas Sanstha v State of Uttarakhand directing that no new stone crushers shall be set-up or established in the State of Uttarakhand unless a new comprehensive policy which provided safeguards was formulated and approved by the Hon'ble High Court of Uttarakhand.

(ii) On 24.08.2009, the Hon'ble High Court constituted an apex committee to formulate the policy on stone crunchers.

(iii) On 08.02.2010, the said Committee submitted its report on stone crushers before the Hon'ble High Court. In response to the said report, the private and captive users of stone crushers filed objections. Due to the implementation of this policy, all stone crushing activities came to a standstill which created an acute shortage of aggregate. This aggregate being a major component for construction activities lead to a further delay in the construction activities.

(iv) In view thereof an interim relief application (CLMA) No. 928 of 2010 was moved by the Petitioner wherein, the Petitioner sought for the quashing of the Government Order dated 03.07.2008 regarding stone crushers.

The Petitioner, vide its Interim Application, submitted as under:

1) It is engaged in the construction of the Project under an agreement with the GOU.

2) It had obtained the requisite clearances from the Environment Protection and the Pollution Control Board for setting up the Project.

3) The stone crushing activities were not commercial in nature and was required by the Petitioner for constructing the Project.

4) The Project under construction was located away from towns or the "abadi" area.

5) With regards the loss to forests, it was submitted that the Petitioner was obligated under the agreement entered into with GOU for the implementation of the Project to compensate the GOU for afforestation.

(v) The Hon'ble High Court of Uttarakhand in 2010, after considering the submissions of the Petitioner, clarified that Order dated 16.07.2009 does not cover the activities of power projects which are under an agreement with GOU and have the necessary clearances, provided that the stone crushing activities are not being carried out for commercial purposes and are being used for the construction of the projects.

(vi) On 03.05.2010 after obtaining the Order, the Petitioner applied to the District Magistrate, Bageshwar for permission to set-up a non-commercial stone crusher for the Project. The permission to set up the stone crusher was given by GoU only on 21.12.2011, due to which the Project was delayed by approximately 24 months.

(d) Cloud burst and heavy rains in the Project vicinity:

(i) The Petitioner submitted that on July 2011, 12.09.2012 and July, 2013 due to a repeated cloud burst and extra-ordinary heavy rainfall in the vicinity of the Project, the Sarju River was flooded which caused heavy loss to the Project.

(ii) Flooding in the year 2010 was declared as the State calamity by GOU.

(iii) The flooding caused due to cloud bursts in July 2013 was declared by GOU and the Government of India as a national calamity.

(iv) Due to flooding the Project equipment was submerged in the Sarju River, the diversion weir of the Project was completely destroyed and the tunnel near the diversion weir was completely submerged and was filled with water and sand.

The aforementioned damages due to flooding caused the Project severe financial losses and delayed the completion of the Project by approximately 12 months. Copies of newspaper reports of the cloud burst as well as photographic evidence of the damage caused were also annexed in support of the claims made by the Petitioner.

(B) Causes for increase in Capital Cost the Project – Cost Overrun

The Petitioner submitted that the cost overrun on the Project was on account of the two factors:

(i) The steep rise in the cost of material.

(ii) Increase in the material used for construction of the Project.

The Petitioner submitted the following justifications in support of the above:

(a) Steep rise in the cost of material viz. cement and steel resulted in much higher cost than anticipated at the time of preparation of the DPR. The WPI of steel and cement increased by 10.08 % and 9.45% and CPI of steel and cement increased by 23.30% from November, 2010.

(b) **Tunnel and Adits:** The Petitioner submitted that during the tunnel excavation, the Petitioner encountered geological surprises due to which the extra strengthening work had to be undertaken resulting into an increase in the cost from Rs. 3498.85 Lakh envisaged in DPR issued in November 2010 to Rs. 3697.55 Lakh. The increase in cost under this head was Rs. 198.70 Lakhs.

(c) Weir Site:

(i) The Petitioner submitted that the DPR prepared in November, 2010 envisaged the construction of a diversion weir and intake to handle heavy discharge of water in the Sarju River. The diversion weir site located down-stream of Sarju-II project consisted of rocks exposed on the left abutment, whereas the right abutment terrace consisted of loose pebbles forming a matrix of sand, silt and clay.

(ii) The Petitioner in order to avoid any bank erosion constructed a protection wall for the protection of the right bank of the river and enlarged the diversion weir area in order to make the flow of the river smoother. Further, a 9 meter raised weir was constructed from the existing river bed to handle the heavy discharge during the monsoon period.

(iii) However, as per the consultant's drawings the construction of a under sluice with raised spillway was required to handle the heavy discharge of the Sarju River.

(iv) At the time of preparation of the DRP in November 2010, 959 cumecs were considered as the overall water discharge in the river at the weir site of the Project. However, during the floods in 2011, approximately 1300 cumecs of water was discharged in the river at the weir site of the Project.

(v) Accordingly, the Petitioner carried out a complete structure re-design to handle the heavy discharge of water. The complete re-design of the diversion weir was carried out in order to handle the heavy discharge of water lead to a 3 fold increase in cost of construction of the diversion weir.

(vi) Increase in cost was also attributable to the cloud burst and flooding which took place in the region on July 2011, 12.09.20112 and July 2013. The construction of the under sluice with raised spillway resulted in total cost of Rs. 921.34 Lakh against Rs 324.44 Lakh envisaged in the DPR prepared in November 2010. The overall increase in cost due to the construction of the under sluice with raised spillway was approximately Rs. 596.90 Lakh.

As per the DPR, the cost of communication (Roads) was estimated as Rs. 150 Lakh. The cost of construction of roads have been submitted for the Commission's consideration under the head of Weir Site as during the construction of the Weir Site the roads were repeatedly damaged due to flooding and heavy discharge of the Sarju River during the rainy season.

(d) De-silting Tank:

(i) The Petitioner submitted that due to high silt in the catchment area, the Petitioner increased the size of the De-silting Tank from 26 meters in length to 110 meters in length to ensure and meet the requirement of proper de-siltation and discharge.

(ii) The bed area of the De-silting Tank was a mix of silt and partial rock. Therefore, approximately, 70 meters of silt was deeply excavated and filled again with pebbles to make a strong bed for the De-silting Tank to ensure long life of the tank. Further, a geo textile was used to safeguard the structure resulting in further cost increase.

(iii) The total envisaged cost of the De-silting Tank as per the DPR issued in November 2010 was Rs. 208.1 Lakh against which Rs. 574.21 Lakh was incurred by the Petitioner due to the aforementioned reasons resulting in an increase of Rs. 366.11 Lakh in the overall cost. The Petitioner submitted that the increase in cost of the Construction of the De-silting Tank was also attributable to the cloud burst and flooding which took place in the region on July 2011, 12.09.2012 and July 2013.

(e) Power House:

(i) The excavation cost of the powerhouse was estimated at Rs. 8.00 Lakh as per the DPR whereas the actual cost incurred by the Petitioner was Rs. 82.81 Lakh.

(ii) The reasons for increase in cost was due to increase in quantity of material to be excavated. The Petitioner submitted that due to the repeated floods in the area due to the cloud bursts on July 2011, 12.09.2012 and July 2013, the Power House was submerged in water and sand/slush which required repeated excavation. Therefore, the actual expense incurred in the construction of the Power House was much higher than the estimated amount as provided in the DPR.

(iii) Furthermore, as per the DPR, the Steel Reinforcement for the Power House was estimated at 91 metric tonnes whereas the actual reinforcement as per Consultant's drawings was 390 metric tonnes.

(iv) The actual cost of the Power House includes cost of civil works of the Power Plant and the required accessories of approximately Rs. 100 Lakh. The Petitioner submitted that the amount of Rs. 100 Lakh was reduced from the head of Power Plant and Accessories. Further, the Petitioner has included the cost of building construction of Rs. 50 Lakh as shown in the DPR under the Head of Power House.

(f) Dewatering:

(i) The Petitioner encountered unexpected and continuous flow of water into different areas of the Project, such as the tunnel, diversion weir and power house, which required continuous dewatering, which was not envisaged at the time of preparation of the DPR.

(ii) This problem was further aggravated due to the cloud burst and subsequent flooding on July 2011, 12.09.2012 and July 2013. It was submitted that the Petitioner incurred a sum of Rs. 399.24 Lakh towards continuous dewatering of the Project area.

(g) Surge Shaft:

(i) As per the DPR, the cost of construction of surge tank was estimated at Rs. 183.59 Lakh. However, due to site conditions and geological reasons, it was not possible for the Petitioner to construct a surge tank.

(ii) Therefore, it was decided that a surge shaft be constructed instead of a surge tank. The actual cost of construction of the surge shaft was Rs. 257.28 Lakh. This lead to an increase in cost of approximately Rs. 73.69 Lakh.

(h) Hydro Mechanical Works:

(i) In the DPR, under the Heads "S/F Trash Rack", "S/F Gates" and "S/F Stop Log Gates", a cost of Rs. 95.14 Lakh was estimated.

(ii) However, due to heavy discharge of water in the Sarju River caused by heavy rains, the following changes were made to the aforementioned components of the Project:

(1) In-take Gates.

(2) Redesign of S/F Valve and replacement of the same with Gates.

(3) Gate with operating system for the surge shaft.

(4) Draft Tube Gates were constructed to prevent entry of flood water into the Power House.

(iii) The Petitioner submitted that it had incurred a total cost of Rs. 262.15 Lakh for the construction of the aforementioned items under the head of Hydro Mechanical Works.

(i) Cloud burst and heavy rains: In July 2011, 12.09.2012 and July, 2013, repeated cloud burst and extra-ordinary heavy rainfall in the Project area caused the Sarju River to flood, due to which there was heavy loss to the Project. The Project equipment was submerged in the river and the diversion weir of the Project was completely destroyed. The tunnel near the diversion weir was completely submerged and filled with sand and water. The aforementioned natural disaster caused the delay in completion of the Project and severe financial losses.

The Petitioner further submitted that the reasons for delay in commissioning of the Project and increase in Capital Cost of the Project were due to the reasons beyond the control of the Petitioner. Geological surprises and natural and social phenomena have been the prime reasons for delay in commissioning of the Project and consequential increase in Capital Cost as detailed in the preceding paragraphs. In view of the above, the Petitioner submitted that the Capital Cost up to the date of commissioning of the Project being Rs. 12592 Lakh be kindly considered and allowed for determination of tariff by the Commission.

2.2 Design Energy

The Petitioner submitted that in respect of determining the saleable energy required for determination of tariff for its project with an installed capacity of 10.5 MW, it has taken into consideration the CUF of 44%. The net saleable energy based on CUF of 44% after providing for auxiliary consumption @ 1% worked out to 40.26 MUs as calculated in DPR.

2.3 AFC and Tariff Claimed

Based on the Capital Cost of Rs. 12592 Lakh, claimed by the Petitioner, it has submitted the details of financing referring to Regulation 15(2) of RE Regulations, 2013 which is given hereunder:

Table 2.3: Financing Claimed (Rs. in Lakh)

Debt (70%)	Equity (30%)	Total Capital Cost
8814	3778	12592

The various components of Annual Fixed Charges (AFC) as claimed by the Petitioner are as follows:

2.3.1 Return on Equity (RoE)

The Petitioner has submitted that the computation of RoE @ 20% upto the first 10 years of the operation and @ 24% from 11th years onwards has been made by it in accordance with Regulation 18(2) of the RE Regulations, 2013.

2.3.2 Depreciation

The Petitioner has submitted that based on Regulation 17(2) of RE Regulation 2013 the rate of depreciation for the first 12years of the Tariff Period has been considered as 5.83% per annum and 1% depreciation rate for the remaining useful life of the Project from 13th year onwards.

2.3.3 Interest on Loan Capital

The Petitioner has submitted that interest on loan capital computed on the basis of Regulation 16 of RE Regulation, 2013 works out to 13% per annum. The Petitioner further submitted that, the volatile market conditions and small market capitalisation of the Petitioner, has made it not only difficult but also impossible for securing the loans at a cheaper rate than 14.50%. The Petitioner submitted that, the rate of interest of 14.50% is a competitive market based rate that is currently available to other developer of projects of a similar nature in the State of Uttarakhand. As such, the Petitioner has considered interest on loan capital at the rate of 14.50% (i.e., the actual rate of interest) for determination of Tariff. The Petitioner further requested the Commission to invoke the 'power to relax' as provided under Regulation 50 of the RE Regulations, 2013 read with Regulation 77 of the UERC (Conduct of Business) Regulations, 2004 (i.e. "Power to dispense with the requirement of the Regulation") qua issue of interest on loan capital and consider the actual interest rate (i.e. 14.50%) vis-à-vis 13% as provided under Regulation 16 of the RE Regulations for determination of tariff.

2.3.4 **Operation & Maintenance Expenses**

The Petitioner has submitted that O&M expenses have been claimed in accordance with Regulation 20 of the RE Regulations, 2013, i.e. the O&M expenses for the year of commissioning shall be Rs. 22.73 Lakh/MW with an annual escalation of 5.72% for subsequent years.

2.3.5 **Interest on Working Capital**

The Petitioner has submitted that the Working Capital requirement and interest thereon has been computed taking into account Operation & Maintenance expenses for one month, receivables equivalent to 2 months of energy charges for sale of electricity calculated based on the Capacity Utilization Factor("CUF") envisaged in the approved DPR or the normative CUF specified in accordance with the RE Regulations, 2013.

2.3.6 **Subsidy or incentive by the Central/State Government**

The Petitioner submitted that it has not availed of any Generation Based Incentive Scheme, nor has the Central Government or the State Government notified any Generation Based Incentive Scheme for small Hydro Power Projects. However, on the Commission's query regarding the Capital Subsidy received from MNRE, the Petitioner in its reply submitted a letter wherein it had applied for such Capital Subsidy under the scheme laid down by the MNRE.

Based on the above, the Petitioner initially claimed the levellised tariff of Rs. 6.18/unit considering the discounting factor as the weighted average cost of capital. The Petitioner while computing the Saleable Energy, considered "free energy to home state @ 12%" from 16th year onward. The Commission asked the Petitioner, to provide the basis for considering "free energy to home state @ 12%" from 16th year onwards, in response to which the Petitioner re-ascertained its tariff calculations taking into consideration the "free energy to home state @ 10%" as per the IA signed by it with the GoU. The revised levelised tariff claimed by the Petitioner was Rs. 6.15/unit. The AFC & levellised tariff claimed by the Petitioner is summarized in the table below:

Table 2.6: AFC & Levellised Tariff Claimed (Rs. in Crore)

Year	ROE	O&M Charges	Interest on WC	Interest on Debt	Dep	Total	Net Saleable Energy (MU)	Tariff (Rs./kWh)	Discount Factor %	Discounted Tariff
1	8.31	2.45	0.85	12.25	7.34	31.20	40.26	7.75	1.00	7.75
2	8.31	2.59	0.83	11.18	7.34	30.25	40.26	7.51	0.91	6.87
3	8.31	2.74	0.81	10.12	7.34	29.32	40.26	7.28	0.84	6.09
4	8.31	2.90	0.79	9.05	7.34	28.40	40.26	7.05	0.76	5.39
5	8.31	3.07	0.78	7.99	7.34	27.48	40.26	6.83	0.70	4.77
6	8.31	3.24	0.76	6.93	7.34	26.58	40.26	6.60	0.64	4.22
7	8.31	3.43	0.75	5.86	7.34	25.68	40.26	6.38	0.58	3.73
8	8.31	3.62	0.73	4.80	7.34	24.80	40.26	6.16	0.53	3.29
9	8.31	3.83	0.72	3.73	7.34	23.93	40.26	5.94	0.49	2.90
10	8.31	4.05	0.71	2.67	7.34	23.07	40.26	5.73	0.45	2.56
11	8.31	4.28	0.69	1.60	7.34	22.23	40.26	5.52	0.41	2.25
12	8.31	4.53	0.68	0.54	7.34	21.40	40.26	5.31	0.37	1.98
13	8.31	4.78	0.54	0.00	1.51	15.15	40.26	3.76	0.34	1.28
14	8.31	5.06	0.56	-	1.51	15.44	40.26	3.83	0.31	1.20
15	8.31	5.35	0.57	-	1.51	15.74	40.26	3.91	0.29	1.11
16	8.31	5.65	0.59	-	1.51	16.07	36.23	4.43	0.26	1.16
17	8.31	5.98	0.61	-	1.51	16.41	36.23	4.53	0.24	1.08
18	8.31	6.32	0.63	-	1.51	16.77	36.23	4.63	0.22	1.01
19	8.31	6.68	0.66	-	1.51	17.16	36.23	4.74	0.20	0.94
20	8.31	7.06	0.68	-	1.51	17.56	36.23	4.85	0.18	0.88
21	8.31	7.47	0.70	-	1.51	17.99	36.23	4.97	0.17	0.83
22	8.31	7.89	0.73	-	1.51	18.45	36.23	5.09	0.15	0.77
23	8.31	8.34	0.76	-	1.51	18.92	36.23	5.22	0.14	0.73
24	8.31	8.82	0.79	-	1.51	19.43	36.23	5.36	0.13	0.68
25	8.31	9.33	0.82	-	1.51	19.97	36.23	5.51	0.12	0.64
26	8.31	9.86	0.85	-	1.51	20.53	36.23	5.67	0.11	0.60
27	8.31	10.42	0.89	-	1.51	21.13	36.23	5.83	0.10	0.57
28	8.31	11.02	0.92	-	1.51	21.77	36.23	6.01	0.09	0.53
29	8.31	11.65	0.95	-	1.03	21.93	36.23	6.05	0.08	0.49
30	8.31	12.32	0.96	-	-	21.59	36.23	5.96	0.07	0.44
31	8.31	13.02	1.01	-	-	22.34	36.23	6.17	0.07	0.42
32	8.31	13.77	1.05	-	-	23.13	36.23	6.38	0.06	0.40
33	8.31	14.55	1.10	-	-	23.97	36.23	6.61	0.06	0.38
34	8.31	15.39	1.15	-	-	24.85	36.23	6.86	0.05	0.36
35	8.31	16.27	1.21	-	-	25.78	36.23	7.12	0.05	0.34
Levellised Tariff (per unit)										**6.15**

3. Commission's Approach & Analysis

3.1 Statutory Requirements

3.1.1 The Commission had specified the RE Regulations, 2013 under Section 61 of the Electricity Act, 2003. For the purposes of this Order, the Commission has been guided by the said Regulations.

3.1.2 In accordance with sub-Regulation (2) of Regulation 10 of RE Regulations, 2013, the RE based generating stations may opt for the generic tariff or may file a petition before the Commission for determination of "Project Specific Tariff". Relevant part of the aforesaid Regulation is reproduced hereunder:

"The RE Based Generating Stations and Co-generating Stations, except those mentioned under Proviso 2 to sub- Regulation (1) of Regulation 2, may opt for the generic tariff, as determined based on norms specified in these Regulations for different technologies, or may file a petition before the Commission for determination of "Project Specific Tariff". For this purpose RE Based Generating Stations and Co-generating Stations shall give its option to the distribution licensee at least 3 months in advance of date of commissioning of the project or commissioning of the Ist unit, in case of multiple units or one month after the date of issuance of these Regulations, whichever is later. This option once exercised shall not be allowed to be changed during the validity period of the PPA."

In view of the above-mentioned regulations and the Judgment dated 25.05.2016 of Hon'ble Appellate Tribunal of Electricity as discussed at Para 1.5 & 1.6 above, the Petitioner is entitled for "Project Specific Tariff" in accordance with the sub-Regulation (2) of Regulation 10 of RE Regulations, 2013.

3.2 Design Energy

3.2.1 As per the calculation submitted by the Petitioner in line with the DPR for the month of November, 2010, the PLF of the plant is around 44%. The Commission while going into merits of the submission made by the Petitioner, examined the copy of DPR submitted by the Petitioner with the Urja Cell of GoU, wherein, the Petitioner had projected the PLF as 55%.

3.2.2 The Commission vide its letter dated 04.08.2016 asked the Petitioner to submit justification of claiming the CUF as 44% while filing the tariff Petition before the Commission whereas the same has been projected as 55% in the DPR submitted with the Urja Cell of GoU. In response, the Petitioner vide its letter dated 19.08.2016 and further vide its letter dated

10.10.2016 submitted that the average PLF of the Sarju-III plant is 44% based on its revised DPR. The Petitioner in support of its claim, submitted a letter from its lead banker wherein, it is stated that the financials of the company have been evaluated considering PLF of 44%. Further the Urja Cell of the GoU vide its letter dated 25.11.2016, submitted the revised DPR of the Petitioner's project to the Commission wherein, the CUF was projected at 44%.

3.2.3 Regulation 10(3) of RE Regulations, 2013 specifies as under:

"Project Specific Tariff, on case to case basis, shall be determined by the Commission in the following cases:

(a) For projects opting to have their tariffs determined on the basis of actual capital cost instead of normative capital cost as specified for different technologies under Chapter 5, the CUF (generation) for recovery of fixed charges shall be taken as that envisaged in the approved DPR or the normative CUF specified under Chapter 5 for the relevant technology, whichever is higher;..."

3.2.4 The Commission examined the DPR of the Petitioner's SHP which contains the projected generation for 90% dependable year as 40.67 MUs. The RE Regulations, 2013 does not specify whether the design PLF would be based on 90% dependable year. In this regard, reliance is placed on Regulation 3(25) of UERC (Terms and Conditions for Determination of Tariff) Regulations, 2011 that defines design energy as under:

"Design Energy" means the quantum of energy which can be generated in a 90% dependable year with 95% installed capacity of the hydro generating station;"

Accordingly, the Commission has relied upon the generation in the 90% dependable year as calculated in DPR which is 40.67 MUs which has also been claimed by the Petitioner and which is in accordance with the Regulations. This in turns translates to a CUF of 44% which is lower than the normative CUF of 45% specified in the RE Regulations, 2013. Hence, the CUF of 45% in accordance with the Regulations has been considered as the CUF for recovery of AFC of the Petitioner's plant. The gross energy at a CUF of 45% for plant having capacity of 10.5 MW translates to 41.39 MUs.

3.2.5 Further, in accordance with the RE Regulations, 2013 normative auxiliary consumption including transformation losses of 1%, has been reduced from the normative design generation of 41.39 MUs to work out the saleable energy of the said SHP which works out to 40.98 MUs as against the Petitioner's claim of 40.26 MUs.

3.2.6 Para 4.2 of the Implementation Agreement dated 18.04.2004 executed between GoU and the Petitioner requires that a royalty of 10% will be applicable after 15 (fifteen) year of CoD in all cases of sale of power. Hence, saleable energy for the purpose of computation of tariff has been further reduced by 10% w.e.f. 16th year onwards. Approved saleable energy for 35 years is shown in **Appendix-I.**

3.3 Capital Cost

3.3.1 Regulation 13 of RE Regulations, 2013 stipulates that:

"13. Petition and proceedings for determination of Project Specific Tariff

(1) The RE Based Generating Stations and non-fossil fuel based Co-generating Stations may make an application for fixation of Project Specific Tariff based on actual Capital Cost in respect of the completed units of the RE Based Generating Stations and Co-generating Stations in such formats and along with such information as the Commission may require from time to time.

Provided that for Project Specific Tariff determination, the RE Based Generating Stations and Co-generating Stations shall submit the break-up of Capital Cost items along with its petition.

(2) Till fixation of final tariffs a RE Based Generating Stations or Co-generating Stations may either accept the generic tariff as provisional tariff or make an application for determination of provisional tariff in advance of the anticipated date of completion of project based on the capital expenditure actually incurred up to the date of making the application or a date prior to making of the application, duly audited and certified by the statutory auditors. The provisional tariff as may be determined by the Commission may be charged from the Commercial Operation Date (CoD) of the respective unit of the generating station.

Provided that the RE Based Generating Stations and Co-generating Stations shall be required to make a fresh application for determination of final tariff based on actual capital expenditure incurred up to the date of commercial operation or commissioning of the generating station, with duly audited and certified copies of accounts by the statutory auditors within 18 months from the CoD.

(3) The generating company shall file application for determination of tariff for as many years for which it wants the tariff to be fixed.

(4) A petition for determination of tariff shall be accompanied by such fee as specified in the UERC (Fee and Fines) Regulations, 2002, as amended from time to time, and shall be accompanied by:

(a) information in forms 1.1, 1.2, 2.1 and 2.2 as the case may be, and as appended in these regulations;

(b) Detailed project report outlining technical and operational details, site specific aspects, premise for capital cost and financing plan etc.

(c) A Statement of all applicable terms and conditions and expected expenditure for the period for which tariff is to be determined.

(d) A statement containing full details of calculation of any subsidy and incentive received, due or assumed to be due from the Central Government and/or State Government. This statement shall also separately include the proposed tariff calculated with and without consideration of the subsidy and incentive.

(e) Any other information that the Commission requires the Petitioner to submit."

3.3.2 The Petitioner in its Petition dated 12.01.2015 submitted the break-up of Capital Cost alongwith the reasons for delay during construction of the project broadly segregating the same into time overrun and cost overrun. The Respondent in respect of cost escalation of the project contended that the statistics of WPI and CPI indices for Cement and Steel furnished by the Petitioner were misleading and baseless as the steep rise in WPI and CPI shown as per July, 2014 data has nothing to do with the construction of the project as the project was commissioned in July, 2014 and most of the Civil and Steel structure works were completed much prior to that, infact, the purchases regarding the same would have been done even before. Further, the DPR which was prepared in November, 2010 must have considered some inflation for future and hence the claim of the Petitioner is not justified.

The Commission notes the submissions made by the Respondent and clarifies that for the purpose of approval of capital cost of the project, the Commission considers the actual expenditure incurred after carrying out the prudent analysis of cost escalations, if any, with reference to the cost estimated in the DPR, based on the justification for cost overrun and time overrun as furnished by the Petitioner. Hence, submission of the Petitioner regarding steep rise in WPI and CPI indices have not been considered in toto in support of its claims for cost escalation. However, submissions of the Petitioner have been analyzed and further information were sought on the replies submitted by the Petitioner on various dates before arriving at the Capital Cost allowable to the Petitioner as discussed in the subsequent paras.

3.3.3 The Commission vide its letter dated 06.06.2016 asked the Petitioner to submit its reply on certain deficiencies/shortcomings observed in the Petition filed before the Commission including the details with respect to LoI issued to successful bidders of Civil Works, Electro-Mechanical, Hydro-Mechanical for the project alongwith the Award Price and Actual Price paid. The Petitioner vide its reply dated 29.06.2016 submitted the requisite information. The aforesaid reply of the Petitioner alongwith the replies submitted subsequently on the additional queries raised by the Commission at various point of time, were analyzed by the Commission. It was observed that the costs on the basis of the Contract value fell short of the Actual Capital claimed by the Petitioner and the Petitioner was asked to provide the justification for the same. The Petitioner in its reply referred to the submissions made in the Petition with respect to the justification regarding the time and cost overrun of the project further providing the additional details with respect to the price escalation and quantity variation clauses in the contracts entered into by it for the works related to the project. The Commission in order to establish the claims of the Petitioner and to have a more realistic approach to analyze the claimed cost, asked the Petitioner vide its letter dated 13.07.2016 to provide copies of all the invoices exceeding Rs. 2.50 Lakh alongwith the other information. The Commission subsequently also sought details of expenses below Rs. 2.50 Lakh from the Petitioner.

3.3.4 The Petitioner submitted the copies of the invoices which were examined by the Commission. The Petitioner's submissions, observations by the Commission alongwith the Commissions views on the same are discussed in the subsequent paras.

3.3.5 The invoices submitted by the Petitioner were segregated into various expenses heads as claimed by the Petitioner and matched with the value of the contracts entered into by the Petitioner & the actual claims made by it as summarized in the Table below:

Table 3.1: Details of Capital Expenditure (Hard Cost) (Rs. in Lakh)

S. No.	Work Detail	Contractor Name	DPR Cost (Nov 2010)	Cost Claimed by the Petitioner	Contract Value	Actual Bills / Details submitted by the Petitioner
1	Land	N.A.	125.00	113.36	N.A.	101.29
2	Power Plant & Accessories	Kirloskar Brothers Ltd.	1,500.00	1,403.38	1,225.00 *(Order Value Pre Tax)*	*Pre Tax:* 1,224.07 *Post tax:*1,373.52
3	Transmission Line	Miscellaneous	126.00	83.32	N.A.	83.32
4	Hydro Mechanical Works	PES Engineers	-	262.15	203.31	255.49
5	Civil Works & Others	Akasva Infrastructures Pvt. Ltd.	5,796.09	7,703.65	2,124.49	4,279.23
		Other Material & Misc works			N.A.	3,501.43
	Total		**7547.09**	**9565.86**		**9594.28**

3.3.6 As regards the Land Cost, since the actual contracts/details submitted by the Petitioner are within the DPR Cost, hence, the Commission has allowed the same based on the actual details submitted by the Petitioner.

3.3.7 The contract for Power Plant & Accessories was awarded to M/s Kirloskar Brothers Ltd. As per the contract details submitted by the Petitioner, the Petitioner accepted a bid by M/s Kirloskar Brother Pvt. Ltd. for supply of goods as per the bidding document for the sum of Rs. 1,091.42 Lakh. However, the final value for the work undertaken as per the contract was Rs. 1225 Lakh exclusive of tax & duties with a condition that tax & duties shall be reimbursed on actual basis. Against the same, the Petitioner submitted the bills amounting to Rs. 1,224.07 Lakh (excluding taxes) before the Commission which appeared to be in order, therefore, the Commission has allowed Rs. 1,373.52 Lakh (including taxes) under this head.

3.3.8 The works of transmission line was done by the Petitioner through various suppliers/ contractors for which bills/details amounting to Rs. 83.32 Lakh were submitted against the cost claimed of similar amount, which were also within the DPR Cost. Hence, the same has been allowed in full by the Commission.

3.3.9 The contract for Hydro Mechanical works was given to M/s PES Engineers Pvt. Ltd. through work order for various works as detailed below:

Table 3.2: Capital expenditure under hydro mechanical works (Rs. in Lakh)

Work Description	Work order date	Amount (Rs. in Lakh)
Supply of various components of H & M Package	January 24, 2008	119.00
H & M Package (Draft Tube Gate)	October 5, 2009	30.33
H & M Package (Surge Shaft Gate)	February 3, 2010	26.48
Supply of Silt Flushing Gates & Hoist	December 5, 2013	22.50
Erection Flushing & Silt Flushing Gate Screw Hoist	January 12, 2015	5.00
TOTAL		**203.31**

The actual bills submitted by the Petitioner against the above-mentioned contracts totalled to Rs. 260.49 Lakh. The Petitioner was asked to provide the reasons for variation for the billed amount vis-à-vis the contract amount. The Petitioner in its reply provided the reconciliation stating that Rs. 43.47 Lakh was on account of price escalation and balance amount related to extra work done as per the Petitioner's requirement. The Commission taking into account the justifications provided by the Petitioner, which appears reasonable and beyond the control of the Petitioner, has allowed Rs. 255.49 Lakh under the Hydro

Mechanical Works. In this regard, a work of Rs. 5 Lakh for "erection flushing & silt flushing gate screw hoist" since the same has been carried out after commissioning of the project as the work order date for the same was 12.01.2015 which was 6 months beyond the date of commissioning of the project and the bill date falls beyond the COD period. Hence, the same cannot be treated as part of original capital cost of the project, as the Petitioner's plant was already in operation for almost a period of six months without this work being carried out and no justified ground is available before the Commission to allow the additional capitalization on account of the same.

3.3.10 The cost of civil works & other expenditure as projected in the DPR was Rs. 5796.09 Lakh, against which the actual expenditure claimed by the Petitioner was Rs. 7703.65 Lakh after deducting the recoveries from the insurance claims, amounting to Rs. 181.91 Lakh. UPCL submitted that cost escalation on account of geological surprises and corresponding excavation of tunnel has not been explained by the Petitioner. Further, the design of weir was changed on account of 1300 cumecs discharge observed during the flood occurred in 2011, however, UPCL submitted that no evidence in its support has been provided by the Petitioner. UPCL contended that the PWD department carried out most of the construction works related to road, hence repeated damages to road due to flooding should not be considered. UPCL also submitted that the irrational increase in length of de-silting tank from 26 meters to 110 meters has no justification as during the flood situation the expected silt will be much more than in the normal rainy season and there is least possibility of running a plant during such situation and hence de-silting tank should be designed with normal rainy season in consideration rather than for abnormal situation. Hence the extra cost incurred upto 2.5 times of the cost considered in DPR does not have any basis and need not to be considered. UPCL further submitted that the requirement of surge shaft instead of surge tank was not supported with proper reasons and study reports, infact the Petitioner has just written the site conditions and geological reasons as the basis without even bothering to explain the same. UPCL also submitted that the heavy expenditure amounting to Rs. 4.00 Crore have been claimed against the continuous dewatering exercise which was not measureable and not even provisioned in the original DPR.

In this regard, the Commission noted that the Petitioner had provided news paper cuttings for the year 2010, 2011 & 2013 corroborating incidents of heavy rain fall/flood occurred at or in the vicinity of the project site of the Petitioner. Further, the Petitioner has also furnished the photographs of the roads and project sites depicting damages caused due to such heavy rainfall and flooding in the related area. Hence, change in design of the project components, as a measure of safety to ensure uninterrupted operation of the SHP based on the incidents such as flood/heavy rainfall and discharge experienced during the construction of the project, cannot be disallowed only based on fact that the same was not considered in the project's DPR. Further, project and surrounding area had witnessed the damages caused by natural calamity during three consecutive years of project construction as discussed above. Hence, occurrences of such calamities during the operation of the project cannot be ruled out. Accordingly, additional cost related to change in design of the project components, extra cost on account of excavation and repair/rectification and reinforcement is being considered as uncontrollable factor and the same has been examined in the following paras. Moreover, the Respondent in its submissions has not submitted any evidence contrary to the claim of the Petitioner. Merely making any submission without substantiating the same is unjustified. UPCL with all its machinery and its field offices in the vicinity of the project, should have corroborated its submissions with proper justifications and evidences rather than blatantly objecting or denying the Petitioner's claims.

With regard to the expenditure incurred on dewatering in project site the Commission observed that provision of expenses for dewatering was made in the DPR of the project, however, the same does not find mention in the summary table of the capital cost provided in the DPR. Further, the Commission has also noted that the expenses have also been actually incurred from time to time as per requirement of site conditions under this head.

3.3.11 Since the Petitioner has been allowed project specific tariff, hence, neither the normative benchmark cost as provided in the Regulations nor the references from the other project cost, particularly cost related to civil works, can be made in the present case. Accordingly, to arrive at the project cost invoices of the various contractors raised on the Petitioner vis-a-vis contract agreement have been examined. Further, in relation to cost escalation due to time overrun the Commission has also taken cognizance of the justifications segregating into controllable and uncontrollable factors. However, hard cost of the project has been considered based on the bills/details provided by the Petitioner. Details of major works of Rs. 7780.66 Lakh in totality have been discussed and classified under the following heads:

(i) Main components under Civil Works namely construction of spill way, under sluice, de-silting basin and power channel, construction of tunnel, adit, surge shaft, pressure shaft, power house, tail race switch yard etc. under the contract entered into by the Petitioner with M/s Akasva Infrastructure Pvt. Ltd. including flood protection and rectification works amounting to Rs. 4279.23 Lakh;

(ii) Expenditure on reinforcement Steel & Cement provided to the contractor for accomplishment of civil works including miscellaneous material consumed during the construction phase of the project amounting to Rs. 1777.46 Lakh;

(iii) Miscellaneous construction works undertaken by the Petitioner during the tenure of the project amounting to Rs. 1489.14 Lakh.

(iv) Other miscellaneous expenses including pre-operative expenses amounting to Rs. 234.84 Lakh, summarized under the following heads:

Table 3.3: Miscellaneous expenditure (Rs. in Lakh)

Particulars	Amount
Construction related	21.15
Electrical Equipment	6.04
Furniture & Fixtures	4.70
Insurance Expenses	3.88
Land related	23.96
Office Equipment	8.64
Professional Charges	82.40
R&M and Miscellaneous	20.93
Salary & Wages	7.04
Steel	5.86
Vehicle	1.00
Advertisement Expenses	3.37
Transportation Charges	25.08
Spares and Other	5.41
Explosives (consumables)	15.39
Total	**234.84**

3.3.12 The Petitioner had entered into an agreement with M/s Akasva Infrastructure Pvt. Ltd. for Civil works wherein, the contract value was Rs. 2124.49 Lakh thereagainst, the Petitioner submitted bills raised by the contractor amounting to Rs. 3748.93 Lakh. In addition certain additional works were also carried out by the Petitioner related to "flood protection & rectification works" through M/s Akasva Infrastructure Pvt. Ltd. during the period starting from 01.08.2010 upto 31.03.2011. The additional expense on this account amounted to Rs. 530.30 Lakh as per the bills raised by the contractor.

3.3.13 In order to establish the merits of reasons/justification submitted by the Petitioner with respect to time and cost-overrun pertaining to the Sarju-III project, and to discuss other related issues, a meeting was held at Commission's office on 26.10.2016 to discuss the "extent of financial loss caused due to cloud burst and heavy rainfall in the year 2010, July 2011, September 2012 & July 2013 near Sarju III SHP" and "variation in actual cost incurred vis-à-vis DPR cost mainly with respect to various components of civil works". The submissions made by the Petitioner were analyzed and taken into consideration while arriving at the allowable Capital Cost of the project. Further, based on the submissions made by the Petitioner during the meeting, the Petitioner was asked to provide the component wise detail of changes in design quantifying the increase in project cost in financial terms as well as additional time taken to complete such activities that ultimately lead to time and cost overruns.

3.3.14 The overall expenses under "Civil Works & Other Expenditure" based on the bills/details submitted by the Petitioner was Rs. 7780.66 Lakh (including works undertaken by other miscellaneous contractors), which exceeded the cost envisaged in the DPR of November, 2010 by Rs. 1984.57 Lakh. As discussed earlier under the Petitioner's submission, the main reasons for cost overrun were "steep rise in the cost of the material" and "increase in the quantity of material used for construction of the project". The Petitioner in its reply dated 11.11.2016 submitted that due to design changes in some of the components of the project, it had to incur additional cost in the form of extra material & works used for the completion of the project. Further, additional time consumed to materialize such changes lead to delay in completion of the project. As submitted by the Petitioner the additional cost due to design changes is as summarized below:

Table 3.3: Details of additional cost due to design changes (Rs. in Lakh)

S. No.	Particulars	Cost Envisaged as per DPR of Nov 2010	Actual cost as per Petitioner's submission	Increase in cost
1	Tunnels & Adits	3498.85	3697.55	198.70
2	Weir	324.44	921.34	596.90
3	De-Silting Tank	208.10	574.21	366.11
4	Power House (excavation cost)	7.94	82.81	74.87
5	Dewatering	-	399.24	399.24
6	Surge Shaft	183.59	257.28	73.69
7	Hydro Mechanical Works (S/F Trash Rack, S/F Gates, S/F Stop Log Gates)	95.14	262.15	167.01
TOTAL		**4318.06**	**6194.58**	**1876.52**

In response to the Commission's query regarding the rise in WPI & CPI Index as mentioned in the Petition, the Petitioner vide its above-mentioned response submitted that indexation was provided in the Petition for illustrative purposes only, and it had claimed only the actual cost incurred in completion of the project.

3.3.15 The Petitioner in support of the capital cost of the Sarju-III SHP as on the date of commissioning of the project produced the certificate dated November 27, 2014 issued by Chartered Accountant firm wherein it had showed the recoveries from insurance companies amounting to Rs. 181.91 Lakh. The same was again re-affirmed by the Petitioner in its reply dated 11.11.2016.

3.3.16 As discussed above overall increase under "Civil works & other expenditure" as compared to DPR cost is Rs. 1984.57 Lakh. Further, after adjustment of recoveries from insurance of Rs. 181.91 Lakh, as provided by the Petitioner, net increase in expenses under the same head works out to Rs. 1802.66 Lakh. However, based on the details/invoices alongwith the contract agreements as discussed above, the Commission is of the view that the cost under the head "Civil works & other expenditure" be allowed on the basis of actual bills/ details submitted by the Petitioner after reducing the recoveries from insurance claims made by the Petitioner as the same were uncontrollable in nature and were necessitated by floods and related protection works. Hence, the Commission allows an amount of Rs. 7598.75 Lakh under "Civil works & other expenditure".

3.3.17 Accordingly, based on the analysis as dealt in the preceding Paras, the hard cost of the project works out to Rs. 9412.36 Lakh as against Rs. 9565.86 Lakh claimed by the Petitioner.

3.3.18 The Petitioner submitted that it had incurred an amount of Rs. 3025.84 Lakh as Interest During Construction (IDC) against the IDC of Rs. 1408.26 Lakh as projected in the DPR. The Petitioner submitted the bank statement/supporting documents in support of the IDC claimed by it wherein, the total interest charged by the financial institutions during the period July, 2007 to July, 2014 was Rs. 3024.65 Lakh after deducting the penal interest Rs. 4.26 Lakh levied by the bank. The IDC being a time linked factor, hence the Petitioner vide its Petition and further through various submissions made before the Commission provided the reason/justification for the time overruns which were analyzed by the Commission and following view has been taken on the same:

(i) Based on the Supplementary Implementation Agreement and permission for capacity enhancement granted by GoU the Petitioner was required to achieve commissioning of its project within 15 months from the date 10.02.2010, i.e., by May 2011. However, the same has been completed and put to commercial use w.e.f. July, 2014. Hence, there is substantial delay of more than 36 months in achieving commissioning of the project.

(ii) Further, with regard to treatment of the impact of cost escalations caused by time overrun, the Commission has decided to take references of the judgment pronounced by Hon'ble APTEL. In this regard, it would be relevant to refer to the judgment April 27, 2011 in Appeal No. 72/2010 of Hon'ble APTEL. Relevant part of the same is reproduced as under:

> *"7.4. The delay in execution of a generating project could occur due to following reasons:*
>
> *i) due to factors entirely attributable to the generating company, e.g., imprudence in selecting the contractors/suppliers and in executing contractual agreements including terms and conditions of the contracts, delay in award of contracts, delay in providing inputs like making land available to the contractors, delay in payments to contractors/suppliers as per the terms of contract, mismanagement of finances, slackness in project management like improper co-ordination between the various contractors, etc.*
>
> *ii) due to factors beyond the control of the generating company e.g. delay caused due to force majeure like natural calamity or any other reasons which clearly establish, beyond any doubt, that there has been no imprudence on the part of the generating company in executing the project.*
>
> *iii) situation not covered by (i) & (ii) above.*
>
> *In our opinion in the first case the entire cost due to time over run has to be borne by the generating company. However, the Liquidated Damages (LDs) and insurance proceeds on account of delay, if any, received by the generating company could be retained by the generating company. In the second case the generating company could be given benefit of the additional cost incurred due to time over-run. However, the consumers should get full benefit of the LDs recovered from the contractors/ suppliers of the generating company and the insurance proceeds, if any, to reduce the capital cost. In the third case the additional cost due to time overrun including the LDs and insurance proceeds could be shared between the generating company and the consumer..."*

(iii) So as to establish that the delay in commissioning of the project was on account of controllable factor or uncontrollable factor the Commission has also analysed the PERT Chart provided by the Petitioner with respect to the construction of the project, as summarized below:

Table 3.4: Details of schedule vis-à-vis actual duration

S. No.	Description of work	Scheduled			Actual		
		Start Date	**Completion Date**	**Duration (Days)**	**Start Date**	**Completion Date**	**Duration (Days)**
1	**HRT**						
	U/G Excavation	Dec-08	Oct-11	1035	Dec-08	Jul-13	1674
	Concrete Lining & Grouting	Aug-09	Aug-11	731	Jan-11	Jun-11	152
					Jan-12	Jul-12	183
					Oct-12	Jan-14	458
							793
	Cleaning & Plugging	-	-		Dec-13	Mar-14	91
2	**Surge Gallery**						
	Excavation	Jan-11	Jul-11	182	Jul-11	Oct-13	824
	Civil Work	Feb-11	Jul-11	151	Jul-13	Mar-14	244
3	**Penstock Excavation & Erection**						
	Excavation	Sep-10	Sep-11	366	Aug-11	May-13	640
	Erection of Pipe & Concreting	Oct-10	Sep-11	336	Jun-13	Mar-14	274
4	**Power House**						
	Civil Work	Nov-08	Sep-11	1035	Nov-08	May-12	1278
					Sep-12	Sep-13	366
							1644
	Electro-Mechanical	Sep-10	Sep-11	366	Apr-13	Mar-14	335
5	**Weir and D-Tank**						
	Civil Work	Dec-08	Apr-11	852	Jan-10	Dec-13	1431
	Hydro-Mechanical	Nov-10	Sep-11	305	Sep-13	Feb-14	154
6	**Commissioning & Trial Run**	Aug-11	Sep-11	32	Apr-14	Jul-14	92
7	**Transmission Line**	Sep-10	Jul-11	304	Jan-13	Dec-13	335
	Total Time Taken			**1064**			**2068**

(iv) The Petitioner claimed that due to agitation by villagers it was prevented from carrying out any construction activities, inspite of executing the lease deed with the GOU on 16.09.2007. Only after the execution of Samjhota Patra on 14.01.2008 by the Petitioner, it was able to start mobilisation work at the project site thus delaying the project by 5 months. The Petitioner further submitted that Uttarakhand Environment Protection and Pollution Control Board (UEPPCB) granted consent to establish the project on 21.04.2008 and it was only after this clearance from the UEPPCB it was in a position to start the actual construction activities. The Respondent submitted that the Petitioner's claim regarding time over run due to agitation by the villagers is not justified and wrongly represented as a factor contributing delay, as the agitation did not last even a month and was way back in the year 2007-08 when the plan of 10.5

MW SHP was not even conceived. The Commission vide its letter dated 17.08.2016 asked the Petitioner to submit a PERT chart in respect of the project depicting all the major activities and milestones, to which the Petitioner vide its reply dated 25.10.2016 provided the PERT chart of scheduled activities and actual activities with respect to the Project. Through the PERT chart, the Petitioner submitted that its schedule and actual date of start of activities related to project was November 2008, wherein the civil works related to power house was commenced. From the aforesaid submission of the Petitioner it can be seen that since the consent to establish was received from UEPPCB on 21.04.2008, hence, the Petitioner couldn't had started the construction activity prior to that date. However, it is also pertinent to mention that prior to commencement of the construction activity, activities related to procurement of land and setting of offices, advance payment to the contractors, etc. has to be made. On perusal of the balance sheet of the Petitioner for FY 2007-08, it has been observed that an expenditure of Rs. 17.46 Crore had been incurred towards the said activities against a loan drawal of Rs. 11.93 Crore. Hence, no disallowance of IDC can be made on this ground.

(v) The Petitioner further submitted that the Hon'ble High Court of Uttarakhand passed an order on 16.07.2009, stating that no new stone crushers shall be set-up or established in the state of Uttarakhand. This led to an acute shortage of the aggregate due to which the project of the Petitioner was delayed. The Petitioner further submitted that only after the permission was granted by GoU on 21.12.2011 for setting up the stone crushers, the project work could be regained back to normal pace thus delaying the overall project work by 24 months. The Respondent submitted that the delay in obtaining the permission of setting up a non-commercial stone crusher from District Magistrate, Bageshwar is simply due to the lackadaisical approach of the Petitioner as the Petitioner himself has submitted that Hon'ble High Court had allowed the same way back in June, 2010. Moreover, the Respondent submitted that, the implementation agreement regarding 10.5 MW capacity was executed with GoU only on 03.06.2011, and that only upon the execution of implementation agreement any work for the enhanced capacity should have been taken up and till the end of year 2010, the Petitioner was involved only in enhancing the capacity of the plant and preparing the DPR. The claim of the Petitioner was examined based on the bills submitted by the Petitioner, wherein it was observed that Civil works were being carried out continuously by it during the period July 2009 to December 2011 as is evident from the running bill no. 8th to 37th raised by M/s Akasva Infrastructure Pvt. Ltd. as submitted by the Petitioner. Further as can be observed from the above table that all the works related to major civil components of the SHP viz. HRT, Penstock, Surge Shaft, Weir Tank and Power House commenced and were under progress during the alleged ban of stone crusher period.

Hence, the claim of the Petitioner that the project got delayed due to shortage of aggregate is not tenable. Further, during the period August 2009 to November 2011, the aggregate disbursement received by the Petitioner from its banker was Rs. 1,522.59 Lakh. The Petitioner was asked to provide the details of activities undertaken during the said period from the disbursements as mentioned above, to which the Petitioner submitted its reply vide letter dated 06.02.2017. The Commission examined that during the said period works related to civil construction were under progress and the justification for delay in carrying out project related activities as well as corresponding cost implication provided by the Petitioner cannot be held as attributable to fully uncontrollable factors. Accordingly, the Petitioner's claim that the project got delayed due to the stay by Hon'ble High Court of Uttarakhand on crushing activities during the period July, 2009 to December, 2011 is not justified.

Hence, in accordance with the principles laid down in the Hon'ble ATE's above referred Order and in the absence of satisfactory response as discussed above, the Commission disallows 50% of the average interest cost for 29 months, i.e. from August, 2009 to December, 2011, that amounts to Rs. 522.11 Lakh.

(i) The Petitioner had submitted cloud burst and heavy rains in the project vicinity in the year 2010, July 2011, September 2012 and July 2013 as one of the reasons for time overrun, which had severely affected the project causing heavy loss to the project. Due to repeated cloud burst and extra-ordinary rainfall, the Sarju river got flooded due to which the project equipment were submerged, the diversion weir was destroyed and the tunnel near the diversion weir was filled with water & sand thus delaying the project by 12 months (appx). The Petitioner further submitted that flooding in the year 2010 was declared by the GoU as the State calamity and flooding caused due to cloud burst in July 2013 was declared by the GoU and the Government of India as a national calamity. The Commission, in order to establish the claims of the Petitioner and to examine the extent of damage caused to the Petitioners project due to the aforesaid events, vide its letter dated 26.07.2016 wrote to DM Bageshwar, UREDA & UJVN Ltd. to provide information alongwith supporting documentary evidence, if any, regarding the natural calamity caused due to cloud burst & extra-ordinary heavy rainfall citing out the nature & extent of damage caused to areas situated at or around 10.5 MW Sarju III SHP, during the aforesaid years. Further, as discussed above, documents related to damages caused by heavy rainfall/flood have also been furnished by the Petitioner. The Commission based on the submissions of the Petitioner through various replies submitted by it and further information received by the Commission, is of the view that the claim of the Petitioner can be categorized into uncontrollable factor, thus allowing the time overrun to the Petitioner occurred due to reasons as discussed.

(ii) With regard to delay in setting up transmission system in respect of its project, the Petitioner submitted that permission from the forest department in this regard was received only on 14.08.2012, thereby delaying the Project by almost 12 months. The Respondent submitted that construction of Transmission line is a parallel activity and cannot contribute in the delay of the plant. Moreover, the interconnection point was same as before when the project capacity was 2.2 MW and hence any delay, if at all, actually pertains to the Petitioner themselves. In this regard, the Commission noted that the works related to transmission system had been completed in December, 2013 prior to completion of major civil works as evident from the above referred summary table of PERT Chart. Further, actual duration in completion of transmission system is comparable to the scheduled time of completion considering impact of natural calamities in June 2013. Further, impact of the delay of 24 months in commissioning of project has already been adjusted from IDC as discussed in Para related to delay on account of ban on stone crushing, i.e. delay in achieving CoD due to civil work, and hence, no further impact is being carrying out for adjustment of time overrun and corresponding cost overrun on account of transmission system.

3.3.19 The Petitioner submitted its financial statements from FY 2007-08 to FY 2014-15. The same was examined by the Commission and it was seen that during the said period the Petitioner has shown “Other Income” amounting to total of Rs. 25.11 Lakh derived from interest on deposits amounting to Rs. 20.73 Lakh & profit on sale of assets amounting to Rs. 4.38 Lakh. The Commission is of the view that since the said income pertains to the period of construction of the project, hence, based on the accounting principles, the same should be reduced from the capital cost of the project.

3.3.20 The IDC arrived at after reducing the penal interest and interest disallowed for the period July 2007 to October 2008, has been prorated in the ratio between the "actual capital cost allowed (Hard Cost)" and "the capital cost claimed by the Petitioner (Hard Cost)"

3.3.21 The Commission in view of the above allows the IDC to the Petitioner as detailed below:

Table 3.5 : Interest During Construction allowed by the Commission (Rs. in Lakh)

Particulars	Punjab National Bank	Punjab & Sind Bank	Karvy Financial Services Ltd.	Total
Interest Booked	1,605.87	1,291.10	131.95	3,028.92
Less: Penal Interest included in above	-2.19	-2.07	-	-4.27
Less: Interest disallowed				
Net Interest for approx 84 Months (July 2007 to July 2014)	1,603.68	1,289.03	131.95	3,024.65
Interest Cost Prorated on the allowed capital cost				2976.11
Less: 50% of Average Interest for 29 Months disallowed				-522.11
Net Interest Cost Allowed				**2454.00**

3.3.22 In view of the above discussion, the total cost allowed to the Petitioner as on CoD is as summarized below:

Table 3.6 : Capital Cost allowed by the Commission (Rs. In Lakh)

S. No.	Particulars	Amount (Rs. In Lakh)
1	Land	101.29
2	Transmission System / Transmission Line	83.32
3	Power Plant & Accessories	1373.52
4	Hydro Mechanical Works	255.49
5	Civil Works & Other Expenditure	7780.66
6	Less: Recoveries from Insurance Company	-181.91
7	Net Hard Cost Allowed	9412.37
6	Interest During Construction	2454.00
7	Less: Other Income	-25.11
Total		**11841.25**

3.4 MNRE Grant

3.4.1 Regulation 24 of RE Regulations, 2013 specifies as under:

"The Commission shall take into consideration any incentive or subsidy offered by the Central or State Government, including accelerated depreciation benefit if availed by the generating company,

for the renewable energy power plants while determining the tariff under these Regulations.

Provided that only 75% of the capital subsidy for the financial year of commissioning as per applicable scheme of MNRE shall be considered for tariff determination.

...”

3.4.2 The Commission in this regard, had asked the Petitioner to submit a statement containing full details of calculation of any subsidy and incentive received, due or assumed to be due from the Central Government and/or State Government. The Petitioner vide its reply dated 11.11.2016 submitted a correspondence with the MNRE wherein it was submitted that it had applied with MNRE for grant of capital subsidy but no subsidy had been received by it till date as it was unable to fulfil the conditions of grant of subsidy which required furnishing of Bank Guarantee & performance test by nodal agency. The Petitioner vide the aforesaid letter further submitted that it was unable to undertake the performance test due to capacity restriction by the UPCL and also requested for waiver of the condition of Bank Guarantee. The Petitioner also submitted that as per Govt. guidelines the subsidy eligible for its project works out to Rs. 485 Lakh and the same has been considered by the Commission for the purposes of tariff determination in accordance with the Regulations.

3.5 **Debt-Equity Ratio**

3.5.1 Regulation 15 of RE Regulations, 2013 specifies as under:

“(2) Debt-Equity Ratio

The debt-equity ratio for generic and project specific tariff shall be as follows:

(a) For generic tariff debt–equity ratio shall be 70:30.

(b) For project specific tariff, the following provisions shall apply:

If the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan.

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

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

(3) Subsidy available from MNRE, to the extent specified under Regulation24, shall be considered to have been utilized towards pre-payment of debt leaving balance loan and 30% equity to be considered for determination of tariff.

Provided further that it shall be assumed that the original repayments shall not be affected by this prepayment.

(4) The amount of subsidy shall be considered for each renewable source as per the applicable policy of MNRE. If the amount of subsidy is increased or reduced by MNRE, then necessary corrections in tariffs would be carried out by the Commission provided the reduction in subsidy amount is not due to the inefficiency of the generating company."

3.5.2 As per the Petitioner's submission, the actual equity of Rs. 8,132 Lakh has been deployed to finance the capital cost as on CoD. The Commission has worked out the capital cost on CoD as Rs. 11,841.25 Lakh. The proportion of equity in the approved cost works out to 68.68% which is in excess of 30%. Accordingly, in accordance with the Regulations, equity is capped to 30% of the capital cost and equity in excess of 30% is treated as normative loan having terms similar to the actual loan portfolio.

3.5.3 Accordingly, financing of the capital cost as on CoD has been considered to be met out from Rs. 3,552.38 Lakh as equity and loan of Rs. 8,288.87 Lakh.

3.6 Depreciation

3.6.1 For the purpose of computation of depreciation, Regulation 17 of RE Regulations, 2013 specifies as under:

"(1) For the purpose of tariff, depreciation shall be computed in the following manner, namely:

(a) The value base for the purpose of depreciation shall be the capital cost of the project as admitted by the Commission.

(b) 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.

(c) Depreciation per annum shall be based on 'Differential Depreciation Approach' over loan tenure and period beyond loan tenure over useful life computed on 'Straight Line Method'. For generic tariff the depreciation rate for the first 12 years of the Tariff Period shall be 5.83% per annum and the remaining depreciation shall be spread over the remaining useful life of the project from 13th year onwards.

(d) Depreciation shall be chargeable from the first year of commercial operation.

Provided that in case of commercial operation of the asset for part of the year, depreciation shall be charged on pro rata basis for computation of project specific tariff.

(2) 75% of the Capital subsidy received by the generator shall be reduced from the capital cost for depreciation purposes."

3.6.2 In accordance with the above referred Regulations, depreciation for the first 12 years of the tariff period has been computed @ 5.83% per annum of the approved Capital Cost of Rs

11,841.25 Lakh, further reduced by 75% of the capital subsidy of Rs. 485.00 Lakh. The balance depreciation has been spread over the remaining useful life of the project. Depreciation as approved by the Commission has been shown in enclosed **Appendix-I.**

3.7 **Return on Equity (RoE)**

With regard to computation of RoE, Regulation 18 of RE Regulation, 2013 specifies as under:

"(1) The value base for the equity shall be as determined under Regulation 15(2).

(2) The Return on Equity shall be:

(a) Pre-tax 20% per annum for the first 10 years.

(b) Pre-tax 24% per annum 11th year onwards."

Accordingly, return on equity on the equity deployed in the capital cost have been computed in accordance with the Regulations. The approved RoE is shown in enclosed **Appendix-I**.

3.8 **Interest on Loan**

3.8.1 The amount of Loan including normative loan has been worked out towards the approved project cost in accordance with Regulation 15 of the RE Regulations, 2013 as already discussed in Para 3.5.3 above.

3.8.2 Further, Regulation 15(3) of RE Regulations, 2013 specifies as under:

"Subsidy available from MNRE, to the extent specified under Regulation 24, *shall be considered to have been utilized towards pre-payment of debt leaving balance loan and 30% equity to be considered for determination of tariff.*

Provided further that it shall be assumed that the original repayments shall not be affected by this prepayment."

3.8.3 Accordingly, from the loan amount worked out in Para 3.5.3 above, 75% of the capital subsidy of Rs. 485.00 Lakh has been considered as utilized towards pre-payment of debt in accordance with the Regulations.

3.8.4 However, as discussed in Para 3.4.2 above, the Petitioner has submitted that it has not received any subsidy for the project. The same may be reviewed in accordance with Regulation 15(4) of RE Regulations, 2013 which is reproduced hereunder:

"The amount of subsidy shall be considered for each renewable source as per the applicable policy of MNRE. If the amount of subsidy is increased or reduced by MNRE, then necessary corrections in tariffs would be carried out by the Commission provided the reduction in subsidy amount is not due

to the inefficiency of the generating company."

3.8.5 Interest on Loan has been worked out in accordance with Regulation 16 of RE Regulations, 2013 which is reproduced hereunder:

"17. Interest on loan capital

(1) The loans arrived at in the manner indicated in Regulation 0 shall be considered as gross normative loan for calculation of interest on loan. The normative loan outstanding as on 1st April of every year shall be worked out by deducting the cumulative repayment up to 31st March of previous year from the gross normative loan.

(2) For the purpose of computation of generic tariff, the normative interest rate shall be considered as average State Bank of India (SBI) Base Rate prevalent during the first six months of the previous year plus 300 basis points.

For the purpose of computation of project specific tariff, interest rate shall be considered as lower of the actual interest payable to the financial institutions or the average State Bank of India (SBI) Base Rate prevalent during the first six months of the previous year plus 300 basis points

(3) Notwithstanding any moratorium period availed by the generating company, the repayment of loan is being considered from the first year of commercial operation of the project and shall be equal to the annual depreciation allowed.

While calculating project specific tariff, notwithstanding any moratorium period availed by the generating company, the repayment of loan shall be considered from the first year of commercial operation of the project and shall be equal to the annual depreciation allowed or actual repayment made, whichever is higher.

(4) Normative period of loan repayment shall be taken as 12 years."

3.8.6 The Commission has worked out the rate of interest in accordance with Regulation 16(2) of RE Regulations 2013, which works out to 12.71%. As per the Petitioner's submission made in the Petition the actual rate of interest levied by its lead banker, i.e. PNB is 14.50%. The Respondent submitted that the claim of the Petitioner with regard to the higher interest rate and the request for relaxation in existing regulations is arbitrary and not acceptable as the laid down principles are uniform and similar for all the generators. The Respondent further submitted that in the present case it is to be seen that around 35% of the project amount is diverted from equity to loan component, on which no liability of interest actually exists and hence the diverted amount should even be considered for much lower interest than the one proposed in the regulations. The Commission takes note of the submission of the Respondent. Since the normative rate of interest is lower than the actual rate payable to the financial institution, therefore, the Commission has allowed interest on loan from the date of commissioning of the project at the rate of 12.71% per annum. Further, loan repayment has been considered as annual depreciation allowed or actual repayment schedule of the loan, whichever is higher, as per above referred regulations.

3.8.7 The approved interest on loan for the tariff period is shown in the enclosed **Appendix-I**.

3.9 Operation & Maintenance (O&M) Expenses

3.9.1 For projecting the O&M expenses, relevant provisions of RE Regulations, 2013 are as under:

> ***"20. Operation and Maintenance expenses***
>
> *(1) Operation and maintenance expenses for the year of commissioning shall be determined based on normative O&M expenses specified by the Commission under Chapter 5 for different technologies for the first Year of Control Period, i.e. for FY 2013-14. These expenses shall be escalated @ 5.72% p.a. to arrive at O&M expenses for the ensuing years.*
>
> *(2) Normative O&M expenses allowed for the year of commissioning shall be escalated at the rate of 5.72% p.a. to determine the O&M expenses for the different years of the Tariff Period."*

3.9.2 Further, Regulation 28 of RE Regulations, 2013 specifies O&M expenses @ Rs 22.73 Lakh/MW for the SHPs commissioned on or after April 01, 2013 having capacity in the range of 5 MW to 15 MW. In accordance with the above referred Regulations O&M expenses as approved by the Commission for the tariff period of the project is shown in enclosed **Appendix-I**.

3.10 Interest on Working Capital

3.10.1 Regulation 19 of RE Regulations, 2013 specifies as under:

> ***19. Interest on Working Capital***
>
> *(1) The Working Capital requirement in respect of wind energy projects, small hydro power, Solar PV, Canal Bank and Canal Top Solar PV, Solar thermal and grid interactive roof top and small solar PV power projects shall be computed in accordance with the following:*
>
> *(a) Operation & Maintenance expenses for one month;*
>
> *(b) Receivables equivalent to 2 (Two) months of energy charges for sale of electricity calculated on the normative CUF;*
>
> *Provided for determination of project specific tariff sale of electricity will be calculated based on the CUF envisaged in the approved DPR or the normative CUF specified for the relevant technology under Chapter 5, whichever is higher.*

(c) Maintenance spare @ 15% of operation and maintenance expenses

……

3) Interest on Working Capital shall be at interest rate equivalent to the average State Bank of India Base Rate prevalent during the first six months of the previous year plus 350 basis points.

3.10.2 In accordance with the above mentioned Regulations, components of working capital for each financial year during tariff period have been computed. Further, as specified in above mentioned Regulation, the rate of interest as computed based on the aforesaid regulation works out to 13.21%, which has been considered for working out the interest on working capital. Interest on Working Capital (IWC) as approved by the Commission is given in enclosed **Appendix-I**.

3.10.3 Based on the analysis and computation of Annual Fixed Charges (AFC) as described above for the Tariff Period of 35 years, yearly AFC as approved by the Commission is as shown in enclosed **Appendix-I**.

3.11 Annual Tariff

Based on the AFC and saleable energy as approved by the Commission, annual tariff for the period of 35 years has been determined as shown in enclosed **Appendix-I**.

3.12 Discounting Factor

3.12.1 The Petitioner has submitted that the post Tax Return on Equity may be taken as per prevailing rate of Minimum Alternate Tax. The Petitioner itself worked out the discounting factor as 14.97%.

3.12.2 UPCL in its response had submitted that as per the Regulations, the discount factor equivalent to the weighted average cost of capital has to be considered. UPCL also submitted that the discounting factor claimed by the Petitioner does not match with the discounting factor based on the Regulations and had accordingly, requested the Commission to take note of the same.

3.12.3 Regulation 14 of the RE Regulations, 2013 specifies as under:

"...

(6) For the purpose of levelised tariff computation, the discount factor equivalent to weighted average cost of capital shall be considered. For determination of weighted average cost of capital, the pre-tax return on equity would be adjusted for tax at the applicable rates.

…"

3.12.1 Based on the above referred Regulation, the Discounting Factor for 35 years has been worked out for each year based on the post tax weighted average cost of capital (WACC) of each year during the life of the project and the same has been shown in enclosed **Appendix-I**.

3.13 **Levelised Tariff**

In light of the above discussions & computation made for Annual Fixed Charges (AFC), Annual Tariff & Discounting Factors, levelised tariff for the entire life of the project has been computed which comes out to Rs. 5.52 per unit against the proposed levelised tariff of Rs 6.15 per unit.

3.14 **Date of applicability of tariff**

The tariff so determined will be applicable w.e.f 11.07.2014 being the date of COD of the project, and shall be valid for a period of 35 years from this date.

3.15 **Payment of arrears**

3.15.1 The difference in the project specific levelised tariff determined by this Order and the generic tariff being paid to the Petitioner till date is hereby allowed to be recovered by the Petitioner from UPCL as arrears for the past period who shall pay the same in six equal instalments commencing from first energy bill of the respective SHP after the date of issuance of this Order.

3.16 **Incentive for generation beyond normative PLF**

3.16.1 As per Regulations, the tariff for generation beyond normative PLF shall be allowed to be recovered at the project specific tariff determined by the Commission in this Order.

4. The Petition is disposed off accordingly.

(Subhash Kumar)
Chairman

Appendix-I

Particulars	Unit	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Year		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Installed Capacity	MW	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5
Net Generation	MU	40.98	40.977	40.977	40.977	40.977	40.977	40.977	40.977	40.977	40.977	40.977	40.977	40.977	40.977	40.977	36.879	36.879
AFC																		
O&M Expenses	Rs. Lakh	239	252	267	282	298	315	333	352	372	394	416	440	465	492	520	550	581
Depreciation	Rs. Lakh	670	670	670	670	670	670	670	670	670	670	670	670	100	100	100	100	100
Interest on Term Loan	Rs. Lakh	964	879	794	709	624	539	452	362	272	184	99	28	0	0	0	0	0
Interest on Working Capital	Rs. Lakh	66	64	63	62	61	60	59	58	57	56	59	59	47	48	50	51	53
Return on Equity	Rs. Lakh	710	710	710	710	710	710	710	710	710	710	853	853	853	853	853	853	853
Total Fixed Cost	**Rs. Lakh**	**2649**	**2576**	**2504**	**2434**	**2364**	**2295**	**2224**	**2152**	**2082**	**2015**	**2097**	**2049**	**1464**	**1492**	**1522**	**1553**	**1586**
Per Unit Tariff Components																		
PU O&M Expenses	Rs. p.u.	5.82	6.16	6.51	6.88	7.28	7.69	8.13	8.60	9.09	9.61	10.16	10.74	11.35	12.00	12.69	13.42	14.18
PU Depreciation	Rs. p.u.	16.34	16.34	16.34	16.34	16.34	16.34	16.34	16.34	16.34	16.34	16.34	16.34	2.44	2.44	2.44	2.44	2.44
PU Interest on Term Loan	Rs. p.u.	23.54	21.46	19.38	17.31	15.23	13.16	11.02	8.83	6.64	4.50	2.43	0.69	0.00	0.00	0.00	0.00	0.00
PU Interest on Working Capital	Rs. p.u.	1.60	1.57	1.55	1.52	1.49	1.47	1.45	1.42	1.40	1.38	1.44	1.43	1.14	1.17	1.21	1.25	1.29
PU Return on Equity	Rs. p.u.	17.34	17.34	17.34	17.34	17.34	17.34	17.34	17.34	17.34	17.34	20.81	20.81	20.81	20.81	20.81	20.81	20.81
Total Fixed PU Components	**Rs. p.u.**	**64.64**	**62.87**	**61.12**	**59.39**	**57.68**	**56.00**	**54.28**	**52.52**	**50.80**	**49.17**	**51.17**	**50.01**	**35.73**	**36.42**	**37.14**	**37.90**	**38.71**
Levellised Tariff																		
WACC (%)		11.88%	12.00%	12.13%	12.29%	12.46%	12.67%	12.92%	13.24%	13.64%	14.14%	14.50%	15.40%	15.84%	15.84%	15.84%	15.84%	15.84%
Discounting Factor	Rs./kWh	1.00	0.89	0.80	0.71	0.63	0.56	0.50	0.44	0.39	0.34	0.29	0.26	0.22	0.19	0.16	0.14	0.12
Discounted Tariff		6.46	6.29	6.11	5.94	5.77	5.60	5.43	5.25	5.08	4.92	5.12	5.00	3.57	3.64	3.71	4.21	4.30
Levellised Tariff	Rs./kWh	**5.52**																

Particulars	Unit	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049
Year		18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
Installed Capacity	MW	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5
Net Generation	MU	36.88	36.88	36.88	36.88	36.88	36.88	36.88	36.88	36.88	36.88	36.88	36.88	36.88	36.88	36.88	36.88	36.88	36.88
AFC																			
O&M Expenses	Rs. Lakh	614	650	687	726	768	811	858	907	959	1014	1072	1133	1198	1266	1339	1415	1496	1582
Depreciation	Rs. Lakh	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Interest on Term Loan	Rs. Lakh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Interest on Working Capital	Rs. Lakh	55	57	59	61	63	65	68	70	73	76	79	83	86	90	94	98	102	107
Return on Equity	Rs. Lakh	853	853	853	853	853	853	853	853	853	853	853	853	853	853	853	853	853	853
Total Fixed Cost	**Rs. Lakh**	**1621**	**1658**	**1698**	**1739**	**1783**	**1829**	**1878**	**1930**	**1984**	**2042**	**2103**	**2168**	**2236**	**2308**	**2385**	**2465**	**2551**	**2641**
Per Unit Tariff Components																			
PU O&M Expenses	Rs. p.u.	16.66	17.61	18.62	19.69	20.81	22.00	23.26	24.59	26.00	27.48	29.06	30.72	32.48	34.33	36.30	38.37	40.57	42.89
PU Depreciation	Rs. p.u.	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71
PU Interest on Term Loan	Rs. p.u.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PU Interest on Working Capital	Rs. p.u.	1.48	1.53	1.59	1.64	1.71	1.77	1.84	1.91	1.99	2.07	2.15	2.24	2.34	2.44	2.54	2.65	2.77	2.90
PU Return on Equity	Rs. p.u.	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12
Total Fixed PU Components	**Rs. p.u.**	**43.97**	**44.97**	**46.03**	**47.15**	**48.34**	**49.60**	**50.92**	**52.32**	**53.81**	**55.37**	**57.03**	**58.78**	**60.64**	**62.59**	**64.66**	**66.85**	**69.17**	**71.61**
Levellised Tariff																			
WACC (%)		15.84%	15.84%	15.84%	15.84%	15.84%	15.84%	15.84%	15.84%	15.84%	15.84%	15.84%	15.84%	15.84%	15.84%	15.84%	15.84%	15.84%	15.84%
Discounting Factor	Rs./kWh	0.11	0.09	0.08	0.07	0.06	0.05	0.04	0.04	0.03	0.03	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.01
Discounted Tariff		4.40	4.50	4.60	4.72	4.83	4.96	5.09	5.23	5.38	5.54	5.70	5.88	6.06	6.26	6.47	6.69	6.92	7.16
Levellised Tariff	Rs./kWh																		