

**Multi Year Tariff Order
For 4th MYT Control Period (FY20-FY24)
&
True-up of 2nd Control Period (FY 2011-12
to FY 2013-14)
for
Generation Business of Himachal Pradesh
State Electricity Board Limited (HPSEBL)**



**Himachal Pradesh Electricity Regulatory
Commission**

November 11, 2021

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Before the Himachal Pradesh Electricity Regulatory Commission**At Shimla****Case No. 96/2020**

CORAM

DEVENDRA KUMAR SHARMA**BHANU PRATAP SINGH****In the matter of:**

Petition for ARR for fourth MYT Control Period (FY2019-20 to FY 2023-24) and True-up for second MYT Control Period (FY 2011-12 to FY 2013-14) for Generation Business of Himachal Pradesh State Electricity Board Limited (HPSEBL) under Section 62, 64 and 86 of the Electricity Act, 2003

And

In the matter of:

Himachal Pradesh State Electricity Board Limited (HPSEBL).....Petitioner

ORDER

Himachal Pradesh State Electricity Board Limited (hereinafter called 'HPSEBL' or 'The Board' or 'The Petitioner') has filed a Petition with the Himachal Pradesh Electricity Regulatory Commission (hereinafter referred to as 'the Commission' or the 'HPERC') for approval of its Aggregate Revenue Requirement (ARR) and determination of Generation Tariff for its own generating stations for the fourth MYT Control Period (FY2019-20 to FY2023-24) and True-up for second MYT Control Period (FY 2011-12 to FY 2013-14) for Generation Business under Sections 62, 64 and 86 of the Electricity Act, 2003 (hereinafter referred to as 'the Act'), read with the HPERC (Terms and Conditions for Determination of Hydro Generation Supply Tariff) Regulations, 2011, HPERC (Terms and Conditions for Determination of Hydro Generation Supply Tariff) (first amendment) Regulations, 2011 and HPERC (Terms and Conditions for Determination of Hydro Generation Supply Tariff) (second amendment) Regulations, 2013.

The Commission scheduled a public hearing on 27.03.2021 through video conferencing at Shimla, had interactions with the officers of HPSEBL and considered the documents available on record in the following Tariff Order.

The Commission in this order has determined the ARR and fixed charge of each of the generating station owned by the HPSEBL (except for which generic levelized generation tariff was already provided in the Commission's order Dated 15th January 2014) for each year of the fourth Control Period (FY 2019-20 to FY 2023-24), under the Multi Year Tariff (MYT) regime and approved True-up for second MYT Control Period (FY 2011-12 to FY 2013-14).

The Commission, in exercise of the powers vested in it under Section 62 of the Act, Orders that the approved Tariffs for the generating stations shall come into force with effect from 1st April 2019 and would remain applicable during the Control period FY 2019-20 to FY 2023-24.

The Commission further directs the publication of the tariff in two leading newspapers, one in Hindi and the other in English, having wide circulation in the State within 7 days of the issuance of this Tariff Order. The publication shall include a general description of the tariff changes and its effect on consumers.

Sd/-

Sd/-

(BHANU PRATAP SINGH)

(DEVENDRA KUMAR SHARMA)

Member

Chairman

Shimla

Dated: 11th November 2021

1. INTRODUCTION

1.1. Himachal Pradesh Electricity Regulatory Commission

1.1.1. The Himachal Pradesh electricity regulatory commission (hereinafter referred to as 'HPERC' or 'the Commission') constituted under the Electricity Regulatory Commission Act, 1998 came into being in December 2000 and started functioning with effect from 6th January, 2001. After the enactment of the Electricity Act, 2003 on 26th May, 2003, the HPERC has been functioning as statutory body with a quasi-judicial and legislative role.

1.2. Functions of HPERC

1.2.1. As per Section 86 of the Electricity Act, 2003, the State Commission shall discharge the following functions, namely

- a) Determine the tariff for generation, supply, transmission and wheeling of electricity, wholesale, bulk or retail, as the case may be, within the State: Provided that where open access has been permitted to a category of consumers under section 42, the State Commission shall determine only the wheeling charges and surcharge thereon, if any, for the said category of consumers;
- b) regulate electricity purchase and procurement process of distribution licensees including the price at which electricity shall be procured from the generating companies or licensees or from other sources through agreements for purchase of power for distribution and supply within the State;
- c) facilitate intra-state transmission and wheeling of electricity;
- d) issue license to persons seeking to act as transmission licensees, distribution licensees and electricity traders with respect to their operations within the State;
- e) promote co-generation and generation of electricity from renewable sources of energy by providing suitable measures for connectivity with the grid and sale of electricity to any person, and also specify, for purchase of electricity from such sources, a percentage of the total consumption of electricity in the area of a distribution license;
- f) adjudicate upon the disputes between the licensees, and generating companies and to refer any dispute for arbitration;
- g) levy fee for the purposes of this Act;
- h) specify State Grid Code consistent with the Indian Electricity Grid Code specified with regard to grid standards;
- i) specify or enforce standards with respect to quality, continuity and reliability of service by licensees;

- j) fix the trading margin in the intra-state trading of electricity, if considered, necessary; and
- k) Discharge such other functions as may be assigned to it under this act.

1.2.2. The State Commission shall advise the State Government on all or any of the following matters, namely

- a) promotion of competition, efficiency and economy in activities of the electricity industry;
- b) promotion of investment in electricity industry;
- c) reorganization and restructuring of electricity industry in the State;
- d) Matters concerning generation, transmission, distribution and trading of electricity or any other matter referred to the State Commission by State Government.

1.3. Himachal Pradesh State Electricity Board Ltd. – Generation Function

1.3.1 The Himachal Pradesh State Electricity Board was constituted on 1stSeptember, 1971 in accordance with the provisions of Electricity Supply Act (1948). It functioned as Distribution, Generation as well as Transmission licensee for the state of Himachal Pradesh up to 10th June, 2010, when the Government of Himachal Pradesh, in exercise of the power conferred to it, by Section 131 (2), 132, 133 and other applicable provisions of the Electricity Act 2003, vide the 'Himachal Pradesh Power Sector Reforms Transfer Scheme, 2010' entrusted the functions of generation, distribution and trading of electricity to Himachal Pradesh State Electricity Board Limited (HPSEBL). HPSEBL at present is engaged in electricity generation, distribution and related activities in the state of Himachal Pradesh.

1.3.2 The generation function of the HPSEBL is responsible for generation and supply of electricity through its hydroelectric plants situated in different parts of the State of Himachal Pradesh, which also includes several difficult and sometimes inaccessible terrains.

1.4. Multi Year Tariff Framework

1.4.1. The Commission follows the principles of Multi Year Tariff (MYT) determination, in line with the provision of Section 61 of the Act.

1.4.2. The MYT framework is also designed to provide predictability and reduce regulatory risk. This can be achieved by approval of a detailed capital investment plan for the Petitioner, considering the expected plant expansions and other major capital works during the Control Period. The longer time span enables the Petitioner to propose its investment plan in detail, with the possible sources of financing and the corresponding capitalization schedule for each investment.

1.4.3. The Commission had specified the terms and conditions for the determination of tariff in the year 2004, based on the principles as laid down under Section 61 of the Electricity Act 2003.

1.4.4. Thereafter, the Commission notified the HPERC (Terms and Conditions for Determination of Hydro Generation Tariff) Regulations in the year 2011. The MYT

regulations notified in the year 2011 were amended as HPERC (Terms and Conditions for Determination of Hydro Generation Tariff) (First Amendment) Regulations, 2011 on 30th July 2011, HPERC (Terms and Conditions for Determination of Hydro Generation Tariff) (Second Amendment) Regulations, 2013 on 1st November 2013 and HPERC (Terms and Conditions for Determination of Hydro Generation Tariff) (Third Amendment) Regulations, 2018 on 22nd November 2018.

- 1.4.5. The Commission issued the Multi-Year Tariff (MYT) Order for HPSEBL- Generation function for the 1st Control period (FY 2008-09 to FY 2010-11) on 30.05.2008, for 2nd Control Period (FY 2011-12 to FY 2013-14) on 19.07.2011 and for 3rd Control Period (FY 2014-15 to FY 2018-19) on 10.06.2014. The MYT period for generation tariff is aligned with MYT period for distribution tariff and therefore next MYT Control Period shall be for 5 years (FY 2019-20 to FY 2023-24).

1.5. Filing of Tariff Petition for 4th MYT Control Period and True-Up of 2nd MYT Control Period

- 1.5.1. HPSEBL has filed Petition for hydro generation plants owned and operated by it, for approval of the Aggregate Revenue Requirement (ARR) and determination of Fixed Charges for the fourth Control Period (FY 2019-20 to FY 2023-24), and True-up for the Second Control Period (FY 2011-12 to FY 2013-14).
- 1.5.2. The Petitioner filed a petition vide 117/2019 on 17.05.2019 covering only MYT petition for 4th Control Period. The Commission directed the Petitioner to submit a revised petition covering True-Up for 2nd MYT Control Period also vide its letter HPERC/Generation Petition/HPSEBL/2019-20/831 dated 09.07.2019 and HPERC/F(1)-9/2019-1620 dated 21.10.2019 A revised petition vide 1/2020 was filed with the Commission on 06.01.2020 covering True-up of ARR for 2nd Control Period and MYT petition for 4th Control Period for various generating stations. Based on preliminary scrutiny of the revised petition, the Commission admitted the Petition vide the Interim Order dated 15.12.2020.
- 1.5.3. HPSEBL has 22 hydro generation plants. Out of these 21 were operational during 2nd Control Period (FY 2011-12 to FY 2013-14). Subsequently, Ghanvi-II (2 x 5 MW) was commissioned in the year 2014. While Uhl-III HEP is under construction and is yet to be commissioned.
- 1.5.4. Further, for 8 small hydro plants, levelized tariff has already been fixed by the Commission as per the order dated 15th January 2014 in Petition No. 54/2013/2013-14/2967-84 at Rs 2.25/unit. Accordingly, the Petitioner has filed for tariff determination of remaining 13 hydro generating plants in this petition.
- 1.5.5. HPSEBL has informed that they are in the process of compiling accounts for Ghanvi-II project, commissioned in 2014. Accordingly, out of the 14 operational plants during the 4th Control Period (after removing 8 small hydro plants for which levelized tariff has already been fixed by the Commission), HPSEBL has now submitted petition for tariff determination of 13 hydro generation plants for 4th Control Period in its Petition.

1.6. Interaction with the Petitioner

- 1.6.1 Since the submission of the Petition, there have been a series of interactions between the Petitioner and the Commission, both written and oral, wherein the Commission sought additional information/clarifications and justifications on various issues, critical for the analysis of the Petition.
- 1.6.2 The Commission asked the Petitioner to remove various discrepancies in the petition and file additional information/clarification on the queries raised and subsequently HPSEBL filed its reply, as follows:

Table 1: Date of queries by Commission and responses by Petitioner

Sl.	Date of queries raised by the Commission	Date of response by Petitioner
1.	HPERC-F(1)-9/2019-2893 dated 31.01.2020	MA no. 104/2020 dated 30.06.2020
2.	HPERC-F(1)-9/2019-3284 dated 22.02.2020	
3.	HPERC-F(1)-9/2019-1027/08 dated 25.07.2020 and HPERC-F(1)-9/2019-1267-68 dated 24.08.2020	MA no. 173/2020 dated 20.11.2020
4.	HPERC-F(1)-9/2019-1773-74 dated 15.10.2020	
5.	HPERC-F(1)-9/2020-2246 dated 07.12.2020	MA no. 24/2021 dated 19.02.2021
6.	HPERC-F(1)-9/2020-1-2 dated 01.04.2021	MA no. 150/2021 dated 27.07.2021

- 1.6.3 The staff of the Commission conducted Technical Validation Sessions (TVS) in its office on 20.02.2020 during which the discrepancies and additional information requirements were highlighted to the Petitioner.

1.7. Public Hearings

- 1.6.4 The Commission issued Interim Order dated 15.12.2020 which inter alia included direction to the Petitioner to publish the application in an abridged form and manner as per the “disclosure format” attached with the interim order for the information of all the stakeholders in the State. As per the direction, the Petitioner published the public notice in the following newspapers:

Table 2: Newspapers in which salient features published

Sl.	Name of News Paper	Date of Publication
1.	The Tribune	04.02.2021
2.	Amar Jwala	04.02.2021
3.	The Indian Express	06.02.2021
4.	Punjab Kesari	06.02.2021

- 1.6.5 The Commission published a public notice inviting suggestions and objections from the public on the tariff petition filed by the Petitioner in accordance with Section 64(3) of the Act. The Commission also informed stakeholders about the public hearing to be held on 27.03.2021 at 11:30 AM through video conferencing, notice for which was published in the following newspapers:

Table 3: Newspaper in which Notice inviting objections published

Sl.	Name of News Paper	Date of Publication
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1.	Times of India	10.02.2021
2.	Divya Himachal	10.02.2021

1.6.6 The last date for receipt of suggestions/ objections from stakeholders was given as 10.03.2021 by the Commission. The Petitioner was required to file the response to suggestions/ objections received by 17.03.2021. Last date for filing rejoinder on Petitioner's response was kept as 24.03.2021. The Commission did not receive any comments/ suggestions from the stakeholders by the due date.

2. SUMMARY OF THE TRUE-UP PETITION FOR THE CONTROL PERIOD

2.1. Background

- 2.1.1. The Commission vide its Order dated July 19, 2011 had determined the Aggregate Revenue Requirement and Annual fixed Charges of Generating Stations owned and operated by HPSEBL for the FY 2011-12, FY 2012-13 and FY 2013-14 constituting the 2nd MYT Control Period based on Himachal Pradesh Electricity Regulatory Commission (Terms and Conditions for Determination of Hydro Generation Tariff) Regulations, 2011 (hereinafter referred to as the HPERC Generation Regulations, 2011 or Generation Regulations).
- 2.1.2. The Commission had undertaken the exercise despite limited availability of data to encourage the Utility to treat each of its generating plant as a profit center and revenue generation source.
- 2.1.3. The Commission, for determination of Annual Fixed charges for the stations owned and operated by the Petitioner, had followed the methodology adopted in the tariff order dated May 30, 2008 for the first Control Period, barring the determination of AFC for Larji HEP, which was separately determined in the Order dated July 7, 2011. The ARR/AFC so determined for the projects by Commission was combined to arrive at the ARR/ AFC for the Generation business of the HPSEBL.
- 2.1.4. HPSEBL has 22 hydro generation plants. Out of these 21 were operational during 2nd Control Period (FY 2011-12 to FY 2013-14). The details of all the plants operated by the Petitioner during the 2nd Control Period has been provided as follows:

Table 4: Details of HPSEBL Hydro Electric Stations

Sl.	Hydro Electric Plant	Year of Commission	Units	Installed Capacity	Design Energy
				(MW)	(MU)
1	Andhra	1987	3 x 5.65 MW	16.95	87.3
2	Aug Bhabha			4.5	12.11
3	Baner	1996	3 x 4.00 MW	12	60.67
4	Bassi	1970, 71, 81	4 x 16.50 MW	66	346.83
5	Bhaba	1989	3 x 40.00 MW	120	464.7
6	Binwa	1984	2 x 3.00 MW	6	29.25
7	Chaba	1913-14	2 x 0.5 + 3 x 0.25	1.75	7.67
8	Chamba	1938, 57, 85	3 x 0.15 MW	0.45	5.0
9	Gaj	1996	3 x 3.50 MW	10.5	38.31
10	Ghanvi	2000	2 x 11.25 MW	22.5	93.34
11	Giri	1978	2 x 30.00 MW	60	289.55
12	Gumma	2000	2 x 1.50 MW	3	18.11
13	Holi	2004	2 x 1.50 MW	3	17.52
14	Killar	1995	3 x 0.10 MW	0.3	NA
15	Khauri	2006	2 x 6.00 MW	12	49.95
16	Larji	2006	3 x 42.00 MW	126	586.82
17	Nogli	1963, 69, 78	2 x 0.25 + 4 x 0.50 MW	2.5	14.7

Sl.	Hydro Electric Plant	Year of Commission	Units	Installed Capacity	Design Energy
				(MW)	(MU)
18	Rong Tong	1986-87, 97	4 x 0.50 MW	2	7.64
19	Rukti	1979, 80	3 x 0.50 MW	1.5	6.54
20	Sal – II	1999	2 x 1.00 MW	2	12.52
21	Thirot	1995	3 x 1.50 MW	4.5	23.44
	Total			477.45	2,166.97

2.2. Allocation of corporate office and other common office O&M costs

2.2.1. The Petitioner has submitted that the O&M costs for many common establishments are currently being charged to one of the plant accounts, which should be otherwise shared between plants. Therefore, to ensure proper allocation of such common costs, such costs are allocated to the respective plants based on the ratio of the installed capacity of each powerhouse.

2.3. Carrying Cost Computation

2.3.1. To arrive at the applicable rate of interest for computation of Carrying Cost, The Petitioner has taken one-year weighted average of the SBI Base Rate (applicable for the True-Up period) plus 300 basis points, for each True-Up Year. The Year wise details have been given below:

Table 5: Carrying cost computation

True-Up Year	Weighted Average Base Rate (%)	Rate of Interest for Carrying Cost (%)
FY 2011-12	9.65%	12.65%
FY 2012-13	9.83%	12.83%
FY 2013-14	9.81%	12.81%

2.4. Capital Investment

2.4.1. In its true-up petition, HPSEBL has submitted that additional capitalization was incurred in 2nd Control Period, which has been necessary for efficient operation of the plants. The Petitioner has submitted that the major capitalization expense has been incurred in Bassi Plant for RMU scheme.

2.4.2. The plant wise and year wise details of additional capitalization as submitted by the Petitioner are as follows:

Table 6: Details of Capitalisation in existing plants (INR. Crs)

Plant name	FY 12	FY 13	FY 14	Total
Andhra	0.02	-	0.15	0.17
Baner	-	1.85	1.38	3.23
Bassi	0.31	120.44	-	120.76
Bhaba	0.21	0.02	9.35	9.58
Binwa	0.05	0.03	-	0.08
Chaba	-	-	0.15	0.15
Chamba	-	-	0.13	0.13
Gaj	-	0.24	0.99	1.23
Giri	4.36	0.88	0.19	5.42
Larji	5.89	0.63	-	6.52
Nogli	0.59	0.09	0.15	0.83
Rongtong	0.72	-	0.42	1.14
Rukti	-	-	0.15	0.15
Total	12.15	124.18	13.06	149.40

2.5. Actual Annual Fixed Charges (AFC)

2.5.1. The Petitioner has submitted the comparison of approved AFC charges vis-à-vis the actual expenses incurred for the individual generating plants for trueing up of the 2nd Control Period. The various assumption made by the Petitioner for the True-Up of second Control Period are as follows:

- a) The Petitioner has submitted that the capital cost of projects has been taken as approved by the Commission in the Second MYT order for FY 2011-12 to FY 2013-14.
- b) The ROE has been considered @ 15.50% on the equity base approved as per the Commission's Hydro Generation Tariff Regulations 2011 and subsequent amendments 1, 2 and 3. However, pre - tax ROE for Larji HEP is considered to be @19.38% for first 10 years and thereafter @ 22.94%.
- c) The Petitioner has submitted that the O&M expenses including terminal benefits have been considered on actual basis for the years FY 2011-12 to FY 2013-14.
- d) The Petitioner has submitted that in order to calculate the accumulated depreciation on the original GFA up to FY 2011-12, the approach approved by the Commission in Tariff Order dated 19th July, 2011 of the 2ndMYT Control Period has been adopted and depreciation at the rate of 2.5% has been assumed, except for Larji HE for which the rate of depreciation is assumed to be 5.17%.
- e) The GoHP has 12% share in the generation of power from plants Gaj, Baner, Ghanvi, Khaul, Ghanvi II and Larji. The Petitioner has reduced the same from total generation to arrive at the net saleable energy from these plants to recover the AFC.
- f) The Petitioner has submitted that the interest on finance charges has been claimed on normative basis and the rate of interest is calculated on the basis of actual loan portfolio at the beginning of each year applicable to the project. The Petitioner has further submitted that in case of additional capitalisation, interest on finance charges has been claimed on 70% debt. In the ibid Petition, the rate of interest is considered same as applicable to the project. In case there is no specific loan portfolio for the project, the rate of interest of actual loan portfolio applicable to generation business has been considered.
- g) The Petitioner has further submitted that as per 2nd amendment of Hydro tariff Regulations, 2011, the rate of Interest on Working Capital is considered as SBI MCLR (1 year) as on 1st April, 2019 plus 300 basis points (i.e. 12.55%) for true up.

2.5.2. The Plant wise true-up of the AFC submitted by the Petitioner vis-à-vis the actual has been provided in the following sections.

2.6. Actual AFC for Andhra

2.6.1. Andhra HEP is a 16.95 MW (3 x 5.65 MW) project commissioned in the year 1987. In the Tariff Order dated July 19, 2011 Commission approved an AFC of INR 5.82 Cr for each year of the 2nd MYT Control Period i.e. FY 11-12 to FY 13-14.

2.6.2. The summary of expenses filed by Petitioner vis-à-vis approved by Commission and its deviation is as follows:

Table 7: Andhra AFC for 2nd MYT Control Period True-up, submitted by Petitioner

Particulars	Approved	Actual	Deviation	Approved	Actual	Deviation	Approved	Actual	Deviation
	FY 12			FY 13			FY 14		
Gross Generation (Design Energy) (MU)	87.30	72.55	(14.75)	87.30	65.11	(22.19)	87.30	77.79	(9.51)
Total Auxiliary (MU)	0.87	0.13	(0.74)	0.87	0.14	(0.74)	0.87	0.14	(0.73)
Aux Consumption (%)	1.00%	0.18%	(0.82%)	1.00%	0.21%	(0.79%)	1.00%	0.18%	(0.82%)
Net Generation (MU)	86.43	72.42	(14.01)	86.43	64.98	(21.45)	86.43	77.65	(8.78)
Less: Free Power to GOHP (MU)	-	-	-	-	-	-	-	-	-
Energy Available for Sale (MU)	86.43	72.42	(14.01)	86.43	64.98	(21.45)	86.43	77.65	(8.78)
O&M expenses (INR Cr)	4.45	4.41	(0.04)	4.45	6.42	1.97	4.45	9.11	4.66
R&M Expenses	-	0.88	0.88	-	0.96	0.96	-	2.74	2.74
Employees Expenses	-	3.48	3.48	-	5.39	5.39	-	6.27	6.27
Pension Contribution	-	-	-	-	-	-	-	-	-
A&G Expenses	-	0.06	0.06	-	0.06	0.06	-	0.11	0.11
Depreciation (INR Cr)	1.10	1.44	0.34	1.10	1.44	0.34	1.10	1.45	0.35
Interest & Finance Charges (INR Cr)	-	0.00	0.00	-	-	-	-	0.01	0.01
Return on Equity (INR Cr)	-	0.00	0.00	-	0.00	0.00	-	0.01	0.01
Interest on Working Capital (INR Cr)	0.27	0.24	(0.03)	0.27	0.33	0.06	0.27	0.46	0.19
Other Cost (INR Cr)	-	-	-	-	-	-	-	-	-
Annual Fixed Charges (INR Cr)	5.82	6.09	0.27	5.82	8.19	2.37	5.82	11.04	5.22
Sale Rate of Energy (Rs/KWh)	0.67	0.84		0.67	1.26		0.67	1.42	
Energy Charge Rate	0.34	0.42		0.34	0.63		0.34	0.71	

2.6.3. The resulting gap between the approved and actual AFC along with the carrying cost to be recoverable in the 4th MYT Control Period as submitted by the Petitioner is as follows:

Table 8: Andhra-Standalone Gap of 2nd MYT Control Period, submitted by Petitioner

Particular	FY 12	FY 13	FY 14	Total
Gap in AFC	0.27	2.37	5.22	7.86

2.7. Actual AFC for Baner

2.7.1. Baner HEP is a 12 MW (3 x 4 MW) project commissioned by the Petitioner in the year 1996. In the Tariff Order dated July 19, 2011 the Commission had approved an AFC of INR 7.98 Cr for each year of the 2nd MYT Control Period i.e. FY 11-12 to FY 13-14.

2.7.2. The summary of expenses filed by Petitioner vis-à-vis approved by Commission and its deviation is as follows:

Table 9: Baner AFC for 2nd MYT Control Period True-up, submitted by Petitioner

Particulars	Approved	Actual	Deviation	Approved	Actual	Deviation	Approved	Actual	Deviation
	FY 12			FY 13			FY 14		
Gross Generation (Design Energy)	60.67	46.09	(14.58)	60.67	43.29	(17.38)	60.67	42.63	(18.04)

Particulars	Approved	Actual	Deviation	Approved	Actual	Deviation	Approved	Actual	Deviation
	FY 12			FY 13			FY 14		
(MU)									
Total Auxiliary (MU)	0.61	0.09	(0.52)	0.61	0.08	(0.53)	0.61	0.09	(0.52)
Aux Consumption (%)	1.01%	0.19%	(0.82%)	1.01%	0.19%	(0.81%)	1.01%	0.21%	(0.79%)
Net Generation (MU)	60.06	46.00	(14.06)	60.06	43.20	(16.86)	60.06	42.54	(17.52)
Less: Free Power to GOHP (MU)	7.21	5.52	(1.69)	7.21	5.18	(2.03)	7.21	5.10	(2.11)
Energy Available for Sale (MU)	52.86	40.48	(12.38)	52.86	38.02	(14.84)	52.86	37.44	(15.42)
O&M expenses (INR Cr)	4.14	4.13	(0.01)	4.14	4.97	0.83	4.14	5.61	1.47
R&M Expenses	-	0.48	0.48	-	0.35	0.35	-	0.54	0.54
Employees Expenses	-	3.59	3.59	-	4.56	4.56	-	5.01	5.01
Pension Contribution	-	-	-	-	-	-	-	-	-
A&G Expenses	-	0.06	0.06	-	0.06	0.06	-	0.06	0.06
Depreciation (INR Cr)	1.19	1.39	0.20	1.19	1.46	0.27	1.19	1.52	0.33
Interest & Finance Charges (INR Cr)	0.01	-	(0.01)	0.01	0.12	0.11	0.01	0.09	0.08
Return on Equity (INR Cr)	2.33	2.33	(0.00)	2.33	2.41	0.08	2.33	2.47	0.14
Interest on Working Capital (INR Cr)	0.31	0.27	(0.04)	0.31	0.31	0.00	0.31	0.34	0.03
Other Cost (INR Cr)	-	-	-	-	-	-	-	-	-
Annual Fixed Charges (INR Cr)	7.98	8.12	0.14	7.98	9.27	1.29	7.98	10.03	2.05
Sale Rate of Energy (Rs/KWh)	1.51	2.00		1.51	2.44		1.51	2.68	
Energy Charge Rate (Rs/KWh)	0.75	1.00		0.75	1.22		0.75	1.34	

2.7.3. The resultant gap between the approved and actual AFC along with the carrying cost to be recoverable in the 4th MYT Control Period as submitted by the Petitioner is as follows:

Table 10: Baner-Standalone Gap of 2nd MYT Control Period True-up, submitted by Petitioner

Particular	FY 12	FY 13	FY 14	Total
Gap in AFC	0.14	1.29	2.05	3.48

2.8. Actual AFC for Bassi

2.8.1. Bassi HEP is a 66 MW project commissioned by the Petitioner in the year 1970, 1971 and 1981. In the Tariff Order dated July 19, 2011 Commission had approved capital cost of INR 141.24 Cr including RMU scheme expense of INR 109.98 Cr. However as per the Petitioner there was an additional amount sanctioned towards the scheme of INR 14.26 Cr and hence the revised sanctioned amount for the scheme is INR 124.25 Cr. Thus, the Petitioner has requested to approve the revised capital cost of INR 155.50 Cr.

2.8.2. The summary of expenses filed by Petitioner vis-à-vis approved by Commission and its deviation is as follows:

Table 11: Bassi - AFC for 2nd MYT Control Period True-up, submitted by Petitioner

Particulars	Approved	Actual	Deviation	Approved	Actual	Deviation	Approved	Actual	Deviation
	FY 12			FY 13			FY 14		
Gross Generation (Design Energy) (MU)	346.83	155.4	(191.46)	346.83	246.89	(99.94)	346.83	228.7	(118.09)
Total Auxiliary (MU)	2.43	0.67	(1.76)	2.43	0.85	(1.58)	2.43	0.89	(1.54)
Aux Consumption (%)	0.70%	0.43%	(0.27%)	0.70%	0.34%	(0.36%)	0.70%	0.39%	(0.31%)
Net Generation (MU)	344.40	154.70	(189.70)	344.40	246.04	(98.36)	344.40	227.9	(116.55)
Less: Free Power to GOHP (MU)	-	-	-	-	-	-	-	-	-
Energy Available for Sale	344.40	154.7	(189.70)	344.40	246.0	(98.36)	344.40	227.9	(116.55)

Particulars	Approv ed	Actu al	Deviati on	Approv ed	Actu al	Deviati on	Approv ed	Actu al	Deviati on
	FY 12			FY 13			FY 14		
(MU)									
O&M expenses (INR Cr)	8.58	13.90	5.32	8.58	33.82	25.24	8.58	14.94	6.36
<i>R&M Expenses</i>	-	9.40	9.40	-	21.43	21.43	-	0.70	0.70
<i>Employees Expenses</i>	-	4.39	4.39	-	12.14	12.14	-	13.87	13.87
<i>Pension Contributions</i>	-	-	-	-	-	-	-	-	-
<i>A&G Expenses</i>	-	0.11	0.11	-	0.25	0.25	-	0.37	0.37
Depreciation (INR Cr)	6.74	3.89	(2.85)	6.74	3.90	(2.84)	6.74	3.90	(2.84)
Interest & Finance Charges (INR Cr)	6.15	7.98	1.83	6.15	19.29	13.14	6.15	8.06	1.91
Return on Equity (INR Cr)	-	0.01	0.01	-	5.61	5.61	-	5.61	5.61
Interest on Working Capital (INR Cr)	0.77	0.71	(0.06)	0.77	1.75	0.98	0.77	1.05	0.28
Other Cost (INR Cr)		(9.2)	(9.19)	-	(21.0)	(21.03)	-	-	-
Annual Fixed Charges (INR Cr)	22.24	17.29	(4.95)	22.24	43.33	21.09	22.24	33.55	11.31
Sale Rate of Energy (Rs/KWh)	0.65	1.12		0.65	1.76		0.65	1.47	
Energy Charge Rate (Rs/KWh)	0.32	0.56		0.32	0.88		0.32	0.74	

2.8.3. The resulting gap between the approved and actual AFC along with the carrying cost to be recoverable in the 4th MYT Control Period as submitted by the Petitioner is as follows:

Table 12: Bassi-Standalone Gap of 2nd MYT Control Period True-up, submitted by Petitioner

Particular	FY 12	FY 13	FY 14	Total
Gap in AFC	(4.95)	21.09	11.31	27.46

2.9. Actual AFC for SVP Bhaba

2.9.1. Bhaba HEP is a 120 MW (3 x 40 MW) project commissioned in the year 1989. In the Tariff Order dated July 19, 2011 the Commission had approved an AFC of INR 20.27 Cr for each year of the 2ndMYT Control Period i.e. FY 11-12 to FY 13-14.

2.9.2. The summary of expenses filed by Petitioner vis-à-vis approved by Commission and its deviation is as follows:

Table 13: SVP Bhaba- AFC for 2nd MYT Control Period True-up, submitted by Petitioner

Particulars	Approv ed	Actu al	Deviati on	Approv ed	Actu al	Deviati on	Approv ed	Actu al	Deviati on
	FY 12			FY 13			FY 14		
Gross Generation (Design Energy) (MU)	464.70	590.30	125.60	464.70	365.34	(99.36)	464.70	536.53	71.83
Total Auxiliary (MU)	5.58	2.30	(3.28)	5.58	1.72	(3.86)	5.58	2.36	(3.22)
Aux Consumption (%)	1.20%	0.39%	(0.81%)	1.20%	0.47%	(0.73%)	1.20%	0.44%	(0.76%)
Net Generation (MU)	459.12	588.00	128.88	459.12	363.62	(95.50)	459.12	534.17	75.05
Less: Free Power to GOHP (MU)	-	-	-	-	-	-	-	-	-
Energy Available for Sale (MU)	459.12	588.00	128.88	459.12	363.62	(95.50)	459.12	534.17	75.05
O&M expenses (INR Cr)	14.92	16.79	1.87	14.92	24.59	9.67	14.92	17.27	2.35
<i>R&M Expenses</i>		5.80	5.80	-	3.67	3.67	-	1.65	1.65
<i>Employees Expenses</i>		10.74	10.74	-	20.59	20.59	-	15.23	15.23
<i>Pension Contributions</i>		-	-	-	-	-	-	-	-
<i>A&G Expenses</i>		0.25	0.25	-	0.33	0.33	-	0.38	0.38
Depreciation (INR Cr)	4.42	5.57	1.15	4.42	5.57	1.15	4.42	6.09	1.67
Interest & Finance Charges (INR Cr)	-	0.01	0.01	-	0.00	0.00	-	0.62	0.62
Return on Equity (INR Cr)	-	0.01	0.01	-	0.01	0.01	-	0.45	0.45

Particulars	Approved	Actual	Deviation	Approved	Actual	Deviation	Approved	Actual	Deviation
	FY 12			FY 13			FY 14		
Interest on Working Capital (INR Cr)	0.93	0.86	(0.07)	0.93	1.27	0.34	0.93	0.95	0.02
Other Cost (INR Cr)	-	(2.25)	(2.25)	-	-	-	-	(0.27)	(0.27)
Annual Fixed Charges (INR Cr)	20.27	20.99	0.72	20.27	31.44	11.17	20.27	25.10	4.83
Sale Rate of Energy (Rs/KWh)	0.44	0.36		0.44	0.86		0.44	0.47	
Energy Charge Rate (Rs/KWh)	0.22	0.18		0.22	0.43		0.22	0.23	

2.9.3. The resulting gap between the approved and actual AFC along with the carrying cost to be recoverable in the 4th MYT Control Period as submitted by the Petitioner is as follows:

Table 14: SVP Bhaba-Standalone Gap of 2nd MYT Control Period True-up, submitted by Petitioner

Particular	FY 12	FY 13	FY 14	Total
Gap in AFC	0.72	11.17	4.83	16.72

2.10. Actual AFC for Binwa

2.10.1. Binwa HEP is a 6 MW (2 x 3 MW) project commissioned by the Petitioner in the year 1984. The summary of expenses filed by Petitioner vis-à-vis approved by Commission and its deviation is as follows:

Table 15: Binwa- AFC for 2nd MYT Control Period True-up, submitted by Petitioner

Particulars	Approved	Actual	Deviation	Approved	Actual	Deviation	Approved	Actual	Deviation
	FY 12			FY 13			FY 14		
Gross Generation (Design Energy) (MU)	29.25	34.13	4.88	29.25	29.49	0.24	29.25	19.31	(9.94)
Total Auxiliary (MU)	0.20	0.10	(0.10)	0.20	0.09	(0.11)	0.20	0.07	(0.13)
Aux Consumption (%)	0.68%	0.29%	(0.39%)	0.68%	0.32%	(0.36%)	0.68%	0.36%	(0.32%)
Net Generation (MU)	29.05	34.03	4.98	29.05	29.40	0.34	29.05	19.24	(9.81)
Less: Free Power to GOHP (MU)	-	-	-	-	-	-	-	-	-
Energy Available for Sale (MU)	29.05	34.03	4.98	29.05	29.40	0.34	29.05	19.24	(9.81)
O&M expenses (INR Cr)	3.45	3.50	0.05	3.45	4.10	0.65	3.45	4.69	1.24
R&M Expenses	-	0.33	0.33	-	0.47	0.47	-	0.56	0.56
Employees Expenses	-	3.12	3.12	-	3.56	3.56	-	4.07	4.07
Pension Contributions	-	-	-	-	-	-	-	-	-
A&G Expenses	-	0.06	0.06	-	0.07	0.07	-	0.07	0.07
Depreciation (INR Cr)	0.30	0.44	0.14	0.30	0.44	0.14	0.30	0.44	0.14
Interest & Finance Charges (INR Cr)	-	0.00	0.00	-	0.00	0.00	-	-	-
Return on Equity (INR Cr)	-	0.00	0.00	-	0.00	0.00	-	0.00	0.00
Interest on Working Capital (INR Cr)	0.21	0.17	(0.04)	0.21	0.20	(0.01)	0.21	0.23	0.02
Other Cost (INR Cr)		(0.02)	(0.02)	-	(0.05)	(0.05)	-	(0.01)	(0.01)
Annual Fixed Charges (INR Cr)	3.96	4.10	0.14	3.96	4.70	0.74	3.96	5.36	1.40
Sale Rate of Energy (Rs/KWh)	1.36	1.20		1.36	1.60		1.36	2.79	
Energy Charge Rate (Rs/KWh)	0.68	0.60		0.68	0.80		0.68	1.39	

2.10.2. The resulting gap between the approved and actual AFC along with the carrying cost to be recoverable in the 4th MYT Control Period as submitted by the Petitioner is as follows:

Table 16: Binwa-Standalone Gap of 2nd MYT Control Period True-up, submitted by Petitioner

Particular	FY 12	FY 13	FY 14	Total
Gap in AFC	0.14	0.74	1.40	2.28

2.11. Actual AFC for Chaba

2.11.1. Chaba HEP is a 1.75 MW (2 x 0.5 MW + 3 x 0.25 MW) project commissioned in the year 1913-14.

2.11.2. As per the Petitioner submission, the project was initially executed with a capital cost of INR 1.21 Cr and was funded through 100% debt. Further, as the 94 years old plant has totally depreciated and no depreciations has been claimed, the Petitioner has requested to the Commission to approve the expense on account of additional Capitalization separately as additional R&M expense.

2.11.3. The summary of expenses filed by Petitioner vis-à-vis approved by Commission and its deviation is as follows:

Table 17: Chaba- AFC for 2nd MYT Control Period True-up, submitted by Petitioner

Particulars	Approv ed	Actu al	Deviati on	Approv ed	Actu al	Deviati on	Approv ed	Actu al	Deviati on
	FY 12			FY 13			FY 14		
Gross Generation (Design Energy) (MU)	7.67	8.98	1.31	7.67	7.65	(0.02)	7.67	4.79	(2.88)
Total Auxiliary (MU)	0.08	0.02	(0.06)	0.08	0.02	(0.06)	0.08	0.01	(0.07)
Aux Consumption (%)	1.04%	0.18%	(0.86%)	1.04%	0.21%	(0.83%)	1.04%	0.18%	(0.86%)
Net Generation (MU)	7.59	8.97	1.38	7.59	7.64	0.05	7.59	4.78	(2.81)
Less: Free Power to GOHP (MU)	-	-	-	-	-	-	-	-	-
Energy Available for Sale (MU)	7.56	8.97	1.41	7.56	7.64	0.08	7.56	4.78	(2.78)
O&M expenses (INR Cr)	1.31	1.29	(0.02)	1.31	1.67	0.36	1.31	1.78	0.47
R&M Expenses	-	0.18	0.18	-	0.37	0.37	-	0.37	0.37
Employees Expenses	-	1.11	1.11	-	1.30	1.30	-	1.38	1.38
Pension Contributions	-	-	-	-	-	-	-	-	-
A&G Expenses	-	0.00	0.00	-	0.01	0.01	-	0.03	0.03
Depreciation (INR Cr)	-	-	-	-	-	-	-	-	-
Interest & Finance Charges (INR Cr)	-	-	-	-	-	-	-	-	-
Return on Equity (INR Cr)	-	-	-	-	-	-	-	-	-
Interest on Working Capital (INR Cr)	0.07	0.06	(0.01)	0.07	0.08	0.01	0.07	0.09	0.02
Other Cost (INR Cr)	-	-	-	-	-	-	-	-	-
Additional R&M expense	-	-	-	-	-	-	-	0.15	0.15
Annual Fixed Charges (INR Cr)	1.38	1.35	(0.03)	1.38	1.75	0.37	1.38	2.01	0.63
Sale Rate of Energy (Rs/KWh)	1.83	1.51		1.83	2.29		1.83	4.21	
Energy Charge Rate (Rs/KWh)	0.91	0.75		0.91	1.15		0.91	2.11	

2.11.4. The resulting gap between the approved and actual AFC along with the carrying cost to be recoverable in the 4thMYT Control Period as submitted by the Petitioner is as follows:

Table 18: Chaba-Standalone Gap of 2nd MYT Control Period True-up, submitted by Petitioner

Particular	FY 12	FY 13	FY 14	Total
Gap in AFC	(0.03)	0.37	0.63	0.98

2.12. Actual AFC for BS-Chamba

2.12.1. BS-Chamba HEP is a 0.45 MW (3 X 0.15 MW) project commissioned by the Petitioner in the year 1938, 1957 and 1985. In the Tariff Order dated July 19, 2011 the Commission had approved an AFC of INR 0.37 Cr for each year of the 2ndMYT Control Period i.e. FY 11-12 to FY 13-14.

2.12.2. The summary of expenses filed by Petitioner vis-à-vis approved by Commission and its deviation is as follows:

Table 19: BS-Chamba- AFC for 2nd MYT Control Period True-up, submitted by Petitioner

Particulars	Approved	Actual	Deviation	Approved	Actual	Deviation	Approved	Actual	Deviation
	FY 12			FY 13			FY 14		
Gross Generation (Design Energy) (MU)	5.00	0.31	(4.69)	5.00	0.55	(4.45)	5.00	1.49	(3.52)
Total Auxiliary (MU)	0.05	0.01	(0.04)	0.05	0.01	(0.04)	0.05	0.02	(0.03)
Aux Consumption (%)	1.00%	3.21%	2.21%	1.00%	2.37%	1.37%	1.00%	1.08%	0.08%
Net Generation (MU)	4.95	0.30	(4.65)	4.95	0.54	(4.42)	4.95	1.47	(3.48)
Less: Free Power to GOHP (MU)	-	-	-	-	-	-	-	-	-
Energy Available for Sale (MU)	4.95	0.30	(4.65)	4.95	0.54	(4.42)	4.95	1.47	(3.48)
O&M expenses (INR Cr)	0.33	0.10	(0.23)	0.33	0.34	0.01	0.33	0.50	0.17
<i>R&M Expenses</i>	-	0.02	0.02	-	0.10	0.10	-	0.38	0.38
<i>Employees Expenses</i>	-	0.09	0.09	-	0.23	0.23	-	0.11	0.11
<i>Pension Contributions</i>	-	-	-	-	-	-	-	-	-
<i>A&G Expenses</i>	-	0.00	0.00	-	0.00	0.00	-	0.00	0.00
Depreciation (INR Cr)	0.02	0.01	(0.01)	0.02	0.01	(0.01)	0.02	0.02	(0.00)
Interest & Finance Charges (INR Cr)	-	-	-	-	-	-	-	0.01	0.01
Return on Equity (INR Cr)	-	-	-	-	-	-	-	0.01	0.01
Interest on Working Capital (INR Cr)	0.02	0.01	(0.01)	0.02	0.02	(0.00)	0.02	0.02	0.00
Other Cost (INR Cr)	-	-	-	-	-	-	-	-	-
Annual Fixed Charges (INR Cr)	0.37	0.12	(0.25)	0.37	0.36	(0.01)	0.37	0.55	0.18
Sale Rate of Energy (Rs/KWh)	0.75	4.02		0.75	6.81		0.75	3.77	
Energy Charge Rate (Rs/KWh)	0.37	2.01		0.37	3.41		0.37	1.89	

2.12.3. The resulting gap between the approved and actual AFC along with the carrying cost to be recoverable in the 4thMYT Control Period as submitted by the Petitioner is as follows:

Table 20: BS-Chamba-Standalone Gap of 2nd MYT Control Period True-up, submitted by Petitioner

Particular	FY 12	FY 13	FY 14	Total
Gap in AFC	(0.25)	(0.01)	0.18	(0.07)

2.13. Actual AFC for Gaj

2.13.1. Gaj HEP is a 10.50 MW (3 x 3.50 MW) project commissioned by the Petitioner in the year 1996. In the Tariff Order dated July 19, 2011 the Commission had approved an AFC of INR 7.63 Cr for each year of the 2ndMYT Control Period i.e. FY 11-12 to FY 13-14.

2.13.2. The summary of expenses filed by Petitioner vis-à-vis approved by Commission and its deviation is as follows:

Table 21: Gaj- AFC for 2nd MYT Control Period True-up, submitted by Petitioner

Particulars	Approved	Actual	Deviation	Approved	Actual	Deviation	Approved	Actual	Deviation
	FY 12			FY 13			FY 14		
Gross Generation (Design Energy) (MU)	38.31	41.77	3.46	38.31	39.18	0.87	38.31	46.57	8.26
Total Auxiliary (MU)	0.38	0.09	(0.29)	0.38	0.09	(0.29)	0.38	0.09	(0.29)
Aux Consumption (%)	0.99%	0.21%	(0.78%)	0.99%	0.23%	(0.76%)	0.99%	0.18%	(0.81%)
Net Generation (MU)	37.93	41.69	3.76	37.93	39.09	1.16	37.93	46.48	8.55
Less: Free Power to GOHP (MU)	4.55	5.00	0.45	4.55	4.69	0.14	4.55	5.58	1.03
Energy Available for Sale (MU)	33.38	36.68	3.30	33.38	34.39	1.01	33.38	40.91	7.53
O&M expenses (INR Cr)	3.71	3.56	(0.15)	3.71	5.65	1.94	3.71	4.55	0.84
<i>R&M Expenses</i>	-	0.42	0.42	-	1.53	1.53	-	0.20	0.20
<i>Employees Expenses</i>	-	3.08	3.08	-	4.05	4.05	-	4.23	4.23
<i>Pension Contributions</i>	-	-	-	-	-	-	-	-	-
<i>A&G Expenses</i>	-	0.06	0.06	-	0.08	0.08	-	0.12	0.12
Depreciation (INR Cr)	1.28	1.51	0.23	1.28	1.52	0.24	1.28	1.56	0.28
Interest & Finance Charges (INR Cr)	0.02	0.01	(0.01)	0.02	0.01	(0.01)	0.02	0.07	0.05
Return on Equity (INR Cr)	2.33	2.33	(0.00)	2.33	2.33	0.00	2.33	2.38	0.05
Interest on Working Capital (INR Cr)	0.29	0.24	(0.05)	0.29	0.34	0.05	0.29	0.29	0.00
Other Cost (INR Cr)		(0.09)	(0.09)	-	(0.06)	(0.06)	-	-	-
Annual Fixed Charges (INR Cr)	7.63	7.55	(0.08)	7.63	9.80	2.17	7.63	8.85	1.22
Sale Rate of Energy (Rs/KWh)	2.29	2.06		2.29	2.85		2.29	2.16	
Energy Charge Rate (Rs/KWh)	1.14	1.03		1.14	1.42		1.14	1.08	

2.13.3. The resulting gap between the approved and actual AFC along with the carrying cost to be recoverable in the 4th MYT Control Period as submitted by the Petitioner is as follows:

Table 22: Gaj-Standalone Gap of 2nd MYT Control Period True-up, submitted by Petitioner

Particular	FY 12	FY 13	FY 14	Total
Gap in AFC	(0.08)	2.17	1.22	3.32

2.14. Actual AFC for Giri

2.14.1. Giri HEP is a 60 MW (2 x 30 MW) project commissioned by the Petitioner in the year 1978. In the Tariff Order dated July 19, 2011 the Commission had approved an AFC of INR 13.85 Cr for each year of the 2ndMYT Control Period i.e. FY 11-12 to FY 13-14.

2.14.2. The summary of expenses filed by Petitioner vis-à-vis approved by Commission and its deviation is as follows:

Table 23: Giri- AFC for 2nd MYT Control Period True-up, submitted by Petitioner

Particulars	Approved	Actual	Deviation	Approved	Actual	Deviation	Approved	Actual	Deviation
	FY 12			FY 13			FY 14		
Gross Generation (Design Energy) (MU)	289.55	214.8	(74.77)	289.55	196.7	(92.89)	289.55	231.4	(58.16)
Total Auxiliary (MU)	2.03	0.87	(1.16)	2.03	0.65	(1.39)	2.03	0.72	(1.31)
Aux Consumption (%)	0.70%	0.40%	(0.30%)	0.70%	0.33%	(0.37%)	0.70%	0.31%	(0.39%)
Net Generation (MU)	287.52	213.92	(73.60)	287.52	196.01	(91.51)	287.52	230.66	(56.86)
Less: Free Power to GOHP (MU)	-	-	-	-	-	-	-	-	-
Energy Available for Sale (MU)	287.52	213.9	(73.60)	287.52	196.0	(91.51)	287.52	230.7	(56.86)
O&M expenses (INR Cr)	12.66	10.99	(1.67)	12.66	18.80	6.14	12.66	18.92	6.26
<i>R&M Expenses</i>	-	2.73	2.73	-	5.57	5.57	-	4.49	4.49

Particulars	Approved	Actual	Deviation	Approved	Actual	Deviation	Approved	Actual	Deviation
	FY 12			FY 13			FY 14		
Employees Expenses	-	8.08	8.08	-	13.01	13.01	-	14.14	14.14
Pension Contributions	-	0.00	0.00	-	-	-	-	0.00	0.00
A&G Expenses	-	0.19	0.19	-	0.22	0.22	-	0.30	0.30
Depreciation (INR Cr)	0.47	1.05	0.58	0.47	1.08	0.61	0.47	1.09	0.62
Interest & Finance Charges (INR Cr)	-	0.27	0.27	-	0.06	0.06	-	0.01	0.01
Return on Equity (INR Cr)	-	0.20	0.20	-	0.24	0.24	-	0.25	0.25
Interest on Working Capital (INR Cr)	0.71	0.54	(0.17)	0.71	0.91	0.20	0.71	0.92	0.21
Other Cost (INR Cr)		(0.54)	(0.54)	-	(0.08)	(0.08)	-	-	-
Annual Fixed Charges (INR Cr)	13.84	12.51	(1.33)	13.84	21.01	7.17	13.84	21.19	7.35
Sale Rate of Energy (Rs/KWh)	0.48	0.58		0.48	1.07		0.48	0.92	
Energy Charge Rate (Rs/KWh)	0.24	0.29		0.24	0.54		0.24	0.46	

2.14.3. The resulting gap between the approved and actual AFC along with the carrying cost to be recoverable in the 4th MYT Control Period as submitted by the Petitioner is as follows:

Table 24: Giri-Standalone Gap of 2nd MYT Control Period True-up, submitted by Petitioner

Particular	FY 12	FY 13	FY 14	Total
Gap in AFC	(1.33)	7.17	7.35	13.19

2.15. Actual AFC for Larji

2.15.1. Larji HEP is a 126 MW (3 x 42 MW) project commissioned in the year 2006. In the Tariff Order dated July 19, 2011 the Commission had approved an AFC of INR 150.75 Cr for each year of the 2nd MYT Control Period i.e. FY 11-12 to FY 13-14.

2.15.2. The summary of expenses filed by Petitioner vis-à-vis approved by Commission and its deviation is as follows:

Table 25: Larji- AFC for 2nd MYT Control Period True-up, submitted by Petitioner

Particulars	Approved	Actual	Deviation	Approved	Actual	Deviation	Approved	Actual	Deviation
	FY 12			FY 13			FY 14		
Gross Generation (Design Energy) (MU)	586.82	696.89	110.07	586.82	651.91	65.09	586.82	598.70	11.88
Total Auxiliary (MU)	7.04	1.41	(5.63)	7.04	1.15	(5.89)	7.04	1.15	(5.89)
Aux Consumption (%)	1.20%	0.2%	(1.00%)	1.20%	0.18%	(1.02%)	1.20%	0.19%	(1.01%)
Net Generation (MU)	579.78	695.49	115.71	579.78	650.76	70.98	579.78	597.55	17.77
Less: Free Power to GOHP (MU)	69.57	83.46	13.89	69.57	78.09	8.52	69.57	71.71	2.14
Energy Available for Sale (MU)	510.21	612.03	101.82	510.21	572.67	62.46	510.21	525.84	15.63
O&M expenses (INR Cr)	15.00	17.32	2.32	16.25	24.14	7.89	17.60	26.62	9.02
R&M Expenses	-	4.73	4.73	-	4.39	4.39	-	4.03	4.03
Employees Expenses	-	11.95	11.95	-	18.93	18.93	-	21.58	21.58
Pension Contributions	-	0.33	0.33	-	0.44	0.44	-	0.39	0.39
A&G Expenses	-	0.30	0.30	-	0.38	0.38	-	0.62	0.62
Depreciation (INR Cr)	56.69	57.11	0.42	56.69	57.14	0.45	56.69	57.14	0.45
Interest & Finance Charges (INR Cr)	45.56	38.64	(6.92)	34.59	28.23	(6.36)	25.16	18.43	(6.73)
Return on Equity (INR Cr)	30.14	30.49	0.35	30.14	30.53	0.39	30.14	30.53	0.39
Interest on Working Capital	3.36	3.28	(0.08)	3.20	3.48	0.28	3.08	3.35	0.27

Particulars	Approved	Actual	Deviation	Approved	Actual	Deviation	Approved	Actual	Deviation
	FY 12			FY 13			FY 14		
(INR Cr)									
Other Cost (INR Cr)		(0.60)	(0.60)	-	-	-	-	-	-
Annual Fixed Charges (INR Cr)	150.75	146.23	(4.52)	150.75	143.52	(7.23)	150.75	136.06	(14.69)
Sale Rate of Energy (Rs/KWh)	2.95	2.39		2.95	2.51		2.95	2.59	
Energy Charge Rate (Rs/KWh)	1.48	1.19		1.48	1.25		1.48	1.29	

2.15.3. The resulting gap between the approved and actual AFC along with the carrying cost to be recoverable in the 4thMYT Control Period as submitted by the Petitioner is as follows:

Table 26: Larji-Standalone Gap of 2nd MYT Control Period True-up, submitted by Petitioner

Particular	FY 12	FY 13	FY 14	Total
Gap/(Surplus) in AFC	(4.52)	(7.23)	(14.69)	(26.44)

2.16. Actual AFC for Nogli

2.16.1. Nogli HEP is a 2.50 MW (2 x 0.25 + 4 x 0.50 MW)) project commissioned by the Petitioner in the years 1963, 1970 and 1974. In the Tariff Order dated July 19, 2011 the Commission had approved an AFC of INR 2.14 Cr for each year of the 2ndMYT Control Period i.e. FY 11-12 to FY 13-14.

2.16.2. The summary of expenses filed by Petitioner vis-à-vis approved by Commission and its deviation is as follows:

Table 27: Nogli- AFC for 2nd MYT Control Period True-up, submitted by Petitioner

Particulars	Approved	Actual	Deviation	Approved	Actual	Deviation	Approved	Actual	Deviation
	FY 12			FY 13			FY 14		
Gross Generation (Design Energy) (MU)	14.70	7.25	(7.45)	14.70	5.87	(8.83)	14.70	5.93	(8.77)
Total Auxiliary (MU)	0.15	0.01	(0.14)	0.15	0.01	(0.14)	0.15	0.01	(0.14)
Aux Consumption (%)	1.02%	0.14%	(0.88%)	1.02%	0.17%	(0.85%)	1.02%	0.15%	(0.87%)
Net Generation (MU)	14.55	7.24	(7.31)	14.55	5.86	(8.69)	14.55	5.93	(8.63)
Less: Free Power to GOHP (MU)	-	-	-	-	-	-	-	-	-
Energy Available for Sale (MU)	14.55	7.24	(7.31)	14.55	5.86	(8.69)	14.55	5.93	(8.63)
O&M expenses (INR Cr)	1.80	1.70	(0.10)	1.80	2.28	0.48	1.80	3.15	1.35
<i>R&M Expenses</i>	-	0.56	0.56	-	0.71	0.71	-	1.11	1.11
<i>Employees Expenses</i>	-	1.12	1.12	-	1.55	1.55	-	2.00	2.00
<i>Pension Contributions</i>	-	-	-	-	-	-	-	-	-
<i>A&G Expenses</i>	-	0.01	0.01	-	0.03	0.03	-	0.04	0.04
Depreciation (INR Cr)	-	0.32	0.32	-	0.32	0.32	-	0.33	0.33
Interest & Finance Charges (INR Cr)	-	0.04	0.04	-	0.01	0.01	-	0.01	0.01
Return on Equity (INR Cr)	-	0.03	0.03	-	0.03	0.03	-	0.04	0.04
Interest on Working Capital (INR Cr)	0.35	0.09	(0.26)	0.35	0.11	(0.24)	0.35	0.16	(0.19)
Other Cost (INR Cr)		-	-	-	-	-	-	-	-
Annual Fixed Charges (INR Cr)	2.15	2.17	0.02	2.15	2.76	0.61	2.15	3.68	1.53
Sale Rate of Energy (Rs/KWh)	1.48	2.99		1.48	4.70		1.48	6.21	
Energy Charge Rate (Rs/KWh)	0.74	1.50		0.74	2.35		0.74	3.10	

2.16.3. The resulting gap between the approved and actual AFC along with the carrying cost to be recoverable in the 4thMYT Control Period as submitted by the Petitioner is as follows:

Table 28: Nogli-Standalone Gap of 2nd MYT Control Period True-up, submitted by Petitioner

Particular	FY 12	FY 13	FY 14	Total
Gap in AFC	0.02	0.61	1.53	2.15

2.17. Actual AFC for Rongtong

2.17.1. Rongtong HEP is a 2 MW (4 x 0.50 MW) project commissioned by the Petitioner in the year 1986-87. In the Tariff Order dated July 19, 2011 the Commission had approved an AFC of INR 1.12 Cr for each year of the 2ndMYT Control Period i.e. FY 11-12 to FY 13-14.

2.17.2. The summary of expenses filed by Petitioner vis-à-vis approved by Commission and its deviation is as follows:

Table 29: Rongtong- AFC for 2nd MYT Control Period True-up, submitted by Petitioner

Particulars	Approv ed	Actu al	Deviati on	Approv ed	Actu al	Deviati on	Approv ed	Actu al	Deviati on
	FY 12			FY 13			FY 14		
Gross Generation (Design Energy) (MU)	7.64	1.73	(5.91)	7.64	1.49	(6.15)	7.64	0.65	(6.99)
Total Auxiliary (MU)	0.08	0.00	(0.08)	0.08	0.01	(0.07)	0.08	0.01	(0.08)
Aux Consumption (%)	1.05%	0.23%	(0.82%)	1.05%	0.40%	(0.64%)	1.05%	0.77%	(0.28%)
Net Generation (MU)	7.56	1.73	(5.83)	7.56	1.48	(6.08)	7.56	0.65	(6.91)
Less: Free Power to GOHP (MU)	-	-	-	-	-	-	-	-	-
Energy Available for Sale (MU)	7.56	1.73	(5.83)	7.56	1.48	(6.08)	7.56	0.65	(6.91)
O&M expenses (INR Cr)	0.79	0.94	0.15	0.79	0.60	(0.19)	0.79	1.85	1.06
R&M Expenses	-	0.46	0.46	-	0.22	0.22	-	0.34	0.34
Employees Expenses	-	0.48	0.48	-	0.37	0.37	-	1.48	1.48
Pension Contributions	-	-	-	-	-	-	-	-	-
A&G Expenses	-	0.00	0.00	-	0.01	0.01	-	0.03	0.03
Depreciation (INR Cr)	0.28	0.45	0.17	0.28	0.45	0.17	0.28	0.48	0.20
Interest & Finance Charges (INR Cr)	-	0.04	0.04	-	-	-	-	0.03	0.03
Return on Equity (INR Cr)	-	0.03	0.03	-	0.03	0.03	-	0.05	0.05
Interest on Working Capital (INR Cr)	0.05	0.05	0.00	0.05	0.04	(0.01)	0.05	0.10	0.05
Other Cost (INR Cr)	-	-	-	-	-	-	-	-	-
Annual Fixed Charges (INR Cr)	1.12	1.53	0.41	1.12	1.12	0.00	1.12	2.50	1.38
Sale Rate of Energy (Rs/KWh)	1.48	8.84		1.48	7.56		1.48	38.61	
Energy Charge Rate (Rs/KWh)	0.74	4.42		0.74	3.78		0.74	19.31	

2.17.3. The resulting gap between the approved and actual AFC along with the carrying cost to be recoverable in the 4thMYT Control Period as submitted by the Petitioner is as follows:

Table 30: Rongtong-Standalone Gap of 2nd MYT Control Period True-up, submitted by Petitioner

Particular	FY 12	FY 13	FY 14	Total
Gap in AFC	0.41	0.00	1.38	1.79

2.18. Actual AFC for Rukti

2.18.1. Rukti HEP is a 1.50 MW (3 x 0.50 MW) project commissioned by the HPSEBL in the year 1979 and 1980. In the Tariff Order dated July 19, 2011 the Commission had approved an AFC of INR 0.57 Cr for each year of the 2ndMYT Control Period i.e. FY 11-12 to FY 13-14.

2.18.2. The summary of expenses filed by Petitioner vis-à-vis approved by Commission and its deviation is as follows:

Table 31: Rukti- AFC for 2nd MYT Control Period True-up, submitted by Petitioner

Particulars	Approv ed	Actu al	Deviati on	Approv ed	Actu al	Deviati on	Approv ed	Actu al	Deviati on
	FY 12			FY 13			FY 14		
Gross Generation (Design Energy) (MU)	6.54	0.64	(5.90)	6.54	0.53	(6.01)	6.54	0.56	(5.98)
Total Auxiliary (MU)	0.08	0.01	(0.07)	0.08	0.00	(0.08)	0.08	0.01	(0.08)
Aux Consumption (%)	1.22%	2.20%	0.97%	1.22%	0.75%	(0.47%)	1.22%	0.90%	(0.33%)
Net Generation (MU)	6.46	0.62	(5.84)	6.46	0.53	(5.93)	6.46	0.55	(5.91)
Less: Free Power to GOHP (MU)	-	-	-	-	-	-	-	-	-
Energy Available for Sale (MU)	6.46	0.62	(5.84)	6.46	0.53	(5.93)	6.46	0.55	(5.91)
O&M expenses (INR Cr)	0.52	0.39	(0.13)	0.52	0.34	(0.18)	0.52	3.43	2.91
<i>R&M Expenses</i>	-	0.11	0.11	-	0.06	0.06	-	0.67	0.67
<i>Employees Expenses</i>	-	0.28	0.28	-	0.28	0.28	-	2.70	2.70
<i>Pension Contributions</i>	-	-	-	-	-	-	-	-	-
<i>A&G Expenses</i>	-	0.00	0.00	-	0.00	0.00	-	0.06	0.06
Depreciation (INR Cr)	0.02	0.04	0.02	0.02	0.04	0.02	0.02	0.04	0.02
Interest & Finance Charges (INR Cr)	-	-	-	-	-	-	-	0.01	0.01
Return on Equity (INR Cr)	-	-	-	-	-	-	-	0.01	0.01
Interest on Working Capital (INR Cr)	0.03	0.02	(0.01)	0.03	0.02	(0.01)	0.03	0.16	0.13
Other Cost (INR Cr)	-	-	-	-	-	-	-	-	-
Annual Fixed Charges (INR Cr)	0.57	0.45	(0.12)	0.57	0.40	(0.17)	0.57	3.65	3.08
Sale Rate of Energy (Rs/KWh)	0.88	7.27		0.88	7.53		0.88	66.20	
Energy Charge Rate (Rs/KWh)	0.44	3.64		0.44	3.76		0.44	33.10	

2.18.3. The resulting gap between the approved and actual AFC along with the carrying cost to be recoverable in the 4thMYT Control Period as submitted by the Petitioner is as follows:

Table 32: Rukti-Standalone Gap of 2nd MYT Control Period

Particular	FY 12	FY 13	FY 14	Total
Gap in AFC	(0.12)	(0.17)	3.08	2.80

2.19. Summary

2.19.1. The plant-wise and year wise cumulative gap of True-Up for the 13 plants (excluding Ghanvi-II) including carrying cost as submitted by the Petitioner is as follows:

Table 33: Summary-True-Up impact for 2ndMYT Control Period (INR Cr.) True-up, submitted by Petitioner

S.No.	Particulars	FY 12	FY 13	FY 14
1	Andhra			
	Opening Gap	-	0.29	2.85
	Gap Addition	0.27	2.37	5.22

S.No.	Particulars	FY 12	FY 13	FY 14
	Closing Gap	0.27	2.66	8.07
	Carrying Cost	0.02	0.19	0.70
	Cumulative Gap including Carrying Cost	0.29	2.85	8.77
2	Baner			
	Opening Gap	-	0.14	1.54
	Gap Addition	0.14	1.29	2.05
	Closing Gap	0.14	1.44	3.59
	Carrying Cost	0.01	0.10	0.33
	Cumulative Gap including Carrying Cost	0.14	1.54	3.92
3	Bassi			
	Opening Gap	-	(5.26)	16.51
	Gap Addition	(4.95)	21.09	11.31
	Closing Gap	(4.95)	15.83	27.82
	Carrying Cost	(0.31)	0.68	2.84
	Cumulative Gap including Carrying Cost	(5.26)	16.51	30.66
4	Bhaba			
	Opening Gap	-	0.76	12.74
	Gap Addition	0.72	11.17	4.83
	Closing Gap	0.72	11.93	17.58
	Carrying Cost	0.05	0.81	1.94
	Cumulative Gap including Carrying Cost	0.76	12.74	19.52
5	Binwa			
	Opening Gap	-	0.15	0.95
	Gap Addition	0.14	0.74	1.40
	Closing Gap	0.14	0.89	2.36
	Carrying Cost	0.01	0.07	0.21
	Cumulative Gap including Carrying Cost	0.15	0.95	2.57
6	Chaba			
	Opening Gap	-	(0.03)	0.36
	Gap Addition	(0.03)	0.37	0.63
	Closing Gap	(0.03)	0.34	0.99
	Carrying Cost	(0.00)	0.02	0.09
	Cumulative Gap including Carrying Cost	(0.03)	0.36	1.08
7	Chamba			
	Opening Gap	-	(0.26)	(0.30)
	Gap Addition	(0.25)	(0.01)	0.18
	Closing Gap	(0.25)	(0.27)	(0.12)
	Carrying Cost	(0.02)	(0.03)	(0.03)
	Cumulative Gap including Carrying Cost	(0.26)	(0.30)	(0.15)
8	Gaj			
	Opening Gap	-	(0.08)	2.22
	Gap Addition	(0.08)	2.17	1.22
	Closing Gap	(0.08)	2.09	3.44
	Carrying Cost	(0.00)	0.13	0.36
	Cumulative Gap including Carrying Cost	(0.08)	2.22	3.80
9	Giri			
	Opening Gap	-	(1.42)	6.03
	Gap Addition	(1.33)	7.17	7.35
	Closing Gap	(1.33)	5.75	13.38
	Carrying Cost	(0.08)	0.28	1.24
	Cumulative Gap including Carrying Cost	(1.42)	6.03	14.62
10	Larji			
	Opening Gap	-	(4.80)	(13.11)
	Gap Addition	(4.52)	(7.23)	(14.69)
	Closing Gap	(4.52)	(12.03)	(27.80)
	Carrying Cost	(0.29)	(1.08)	(2.62)

S.No.	Particulars	FY 12	FY 13	FY 14
	Cumulative Gap including Carrying Cost	(4.80)	(13.11)	(30.42)
11	Nogli			
	Opening Gap	-	0.02	0.67
	Gap Addition	0.02	0.61	1.53
	Closing Gap	0.02	0.63	2.20
	Carrying Cost	0.00	0.04	0.18
	Cumulative Gap including Carrying Cost	0.02	0.67	2.38
12	Rongtong			
	Opening Gap	-	0.43	0.49
	Gap Addition	0.41	0.00	1.38
	Closing Gap	0.41	0.43	1.87
	Carrying Cost	0.03	0.06	0.15
	Cumulative Gap including Carrying Cost	0.43	0.49	2.02
13	Rukti			
	Opening Gap	-	(0.12)	(0.32)
	Gap Addition	(0.12)	(0.17)	3.08
	Closing Gap	(0.12)	(0.30)	2.76
	Carrying Cost	(0.01)	(0.03)	0.16
	Cumulative Gap including Carrying Cost	(0.12)	(0.32)	2.92
	Total	(10.18)	30.63	61.69

2.19.2. The Petitioner has requested the Commission to adjust the total impact of truing up in the AFC for FY 2019-20 in the 4th MYT Control Period.

3. SUMMARY OF THE ARR PETITION FOR THE CONTROL PERIOD

3.1. Introduction

3.1.1. This chapter summarizes the highlights of the Petition filed by the Petitioner for determination of the Aggregate Revenue Requirement (ARR) for the fourth MYT Control Period (FY 2019-20 – FY 2023-24).

3.2. Generation from own plants

3.2.1. The Petitioner has submitted generation (MUs) from FY 2014 to FY 2018 as per the actual records and estimates of FY 2019 generation (MUs) is based on 7 months actual generation (Apr – Oct) and the rest 5 months' (Nov – Mar) projections on the basis of energy availability approved by the Commission or revised design energy proposed by HPSEBL, as applicable. The design energy of the plants varies significantly between winter and summer months. Hence, monthly projections of the generation (MUs) during the last 5 months are proposed using the historical trends of the respective 4 months only, instead of simple extrapolation of previous 8 months.

3.2.2. The Petitioner has submitted that ,GoHP has a share of 12% in Ghanvi, Baner, Gaj, Larji, Uhl III and Ghanvi II. Hence, HPSEBL receives 88% of the overall generation from all of these plants. The balance is received as free power.

3.2.3. Based on the above operational parameters, the actual generation filed by the Petitioner for the past four years and the revised estimates for FY 2018-19 of the net generation are given in the following table:

Table 34: Past Years' Generation from FY 2015 to FY 2019, in MUs

Sl.	Plant Name	FY 15	FY 16	FY 17	FY 18	FY 19
1	Bhaba	523.09	-	187.43	492.57	575.58
2	Chaba	7.80	6.81	4.60	6.52	4.98
3	Andhra	71.93	62.07	55.04	65.66	55.58
4	Baner	46.12	48.49	32.68	37.55	42.20
5	Gaj	50.14	45.10	33.22	33.81	38.07
6	Binwa	28.15	27.32	27.63	31.73	28.72
7	Nogli	6.16	6.81	7.60	3.61	4.26
8	Rongtong	0.33	-	0.56	1.03	1.13
9	Rukti	0.19	0.03	1.08	2.42	3.35
10	Chamba	1.28	0.69	1.01	1.85	1.41
11	Giri	213.81	189.41	140.59	169.86	202.52
12	Bassi	307.88	315.93	397.83	315.22	281.13
13	Larji	640.72	656.43	611.67	611.34	537.28
14	Ghanvi-II	38.51	44.81	39.51	23.46	38.94
15	Ghanvi-I	86.04	6.81	85.13	78.40	82.15
16	Khauli	51.32	49.39	35.07	37.98	44.26
17	Thirot	8.138	6.34	11.364	7.71	4.67
18	Bhaba Aug	1.55	11.85	12.80	12.89	7.58
19	Gumma	-	1.78	4.30	5.04	5.04
20	Holi	7.75	0.76	6.20	4.25	3.88

Sl.	Plant Name	FY 15	FY 16	FY 17	FY 18	FY 19
21	Sal-II	5.43	-	-	-	-
22	Killar	0.47	0.43	0.51	0.41	0.30
23	Uhl-III	-	-	-	-	-
	Total	2096.81	1481.26	1695.82	1943.31	1963.03

3.2.4. Petitioner has submitted that few plants have had nil generation in certain years. The reasons for the same as submitted by the Petitioner have been given below:

- SVP Bhaba was damaged due to an unfortunate fire accident on Jan 22, 2015 as a result of which it had nil generation in FY 2015-16.
- Gumma had nil generation in FY 2014-15 due to breakdown of both machines which was then under repair by BHEL.
- The generation from Sal-II has been nil since FY 2015-16 onwards on account of massive damage to the plant due to the heavy floods on Mach 10, 2015 and it is expected to remain under repair over the 4th MYT Control Period as well.
- The 1stUnit of Uhl-III is expected to be commissioned in 2021.

3.2.5. For the purpose of generation projections for the fourth Control Period, the Petitioner has proposed to consider the Commission approved target estimates for FY 2018-19, as follows:

Table 35: Energy Availability in MUs for Hydro Plants

Yearly Gross Power Availability (MUs)						
Sl.	Plant Name	FY 20	FY 21	FY 22	FY 23	FY 24
1	Bhaba	480.00	480.00	480.00	480.00	480.00
2	Chaba	5.50	5.50	5.50	5.50	5.50
3	Andhra	61.00	61.00	61.00	61.00	61.00
4	Baner	48.00	48.00	48.00	48.00	48.00
5	Gaj	40.00	40.00	40.00	40.00	40.00
6	Binwa	30.00	30.00	30.00	30.00	30.00
7	Nogli	6.00	6.00	6.00	6.00	6.00
8	Rongtong	1.40	1.41	1.50	1.51	1.51
9	Rukti	6.00	6.00	6.00	6.00	6.00
10	Chamba	1.76	1.76	1.76	1.76	1.76
11	Giri	190.00	190.00	190.00	190.00	190.00
12	Bassi	300.00	300.00	300.00	300.00	300.00
13	Larji	560.00	560.00	560.00	560.00	560.00
14	Ghanvi-II	39.00	39.00	39.00	39.00	39.00
15	Ghanvi-I	87.00	87.00	87.00	87.00	87.00
16	Khauri	50.00	50.00	50.00	50.00	50.00
17	Thirot	12.00	12.00	12.00	12.00	12.00
18	Bhaba Aug	12.00	12.00	12.00	12.00	12.00
19	Gumma	6.00	6.00	6.00	6.00	6.00
20	Holi	11.00	11.00	11.00	11.00	11.00
21	Sal-II	-	-	-	-	-
22	Killar	0.45	0.45	0.45	0.45	0.45
23	Uhl-III	-	-	-	-	-
	Total	1947.11	1947.12	1947.21	1947.22	1947.22

3.3. Determination of Annual Fixed Charges

3.3.1. The Petitioner, for the purpose of determination of Annual Fixed Charge and the tariff for sale of electricity from the generating station, has considered the following elements as specified by the HPERC (Terms and Conditions for Determination of Hydro Generation Tariff) Regulations, 2011:

- a) Operation and Maintenance Expenses (O&M)
- b) Depreciation
- c) Interest on Loans
- d) Interest on Working Capital; and
- e) Return on Equity (ROE)

3.3.2 The Petitioner has further submitted that AFC for each of the own generating plants has been estimated based on the norms outlined in HPERC (Terms and Conditions for Determination of Hydro Generation supply Tariff), Regulations 2011 along with the respective Amendments thereon and the historical numbers.

3.3.3 The Petitioner has considered the following while calculating the AFC:

- a) The completed cost of projects have been taken as considered by the Commission as per the MYT order for FY 2014-15 to FY 2018-19 dated 10th June 2014.
- b) The base year considered for projections of the 4th MYT Control Period is FY 2018-19.
- c) The ROE has been considered @ 15.50% on the equity base approved as per the Commission’s Hydro Generation Tariff Regulations 2011 and subsequent amendments 1, 2 and 3 except for Larji HEP wherein pre - tax ROE @19.38% for 1st 10 years and thereafter pre-tax ROE @ 22.94% has been approved by Commission in the Tariff Order 2011.
- d) The O&M expenses have been escalated as per the methodology stated in the Regulations. The WPI and CPI considered for this purpose is higher of the 5 year average and 3 year average, which are 2.98% and 4.92% respectively, calculated as below:

Table 36: Calculation of WPI and CPI Factors, as submitted by Petitioner

Year	CPI	% Increase	WPI	% Increase
2018-19	299.92	5.42%	119.79	4.28%
2017-18	284.5	3.11%	114.88	2.92%
2016-17	275.92	4.12%	111.62	1.73%
2015-16	265	5.65%	109.72	-3.65%
2014-15	250.83	6.29%	113.88	1.26%
5 Year Average Inflation		4.92%		1.31%
3 Year Average Inflation		4.22%		2.98%

- i. For the purpose of projecting R&M cost, the historical R&M cost as a percentage of the historical GFA has been escalated by the WPI factor 2.98% for each year.

- ii. The Petitioner has projected the employee cost by escalating the historical employee cost by the CPI factor 4.92%. It was further escalated by the year – on – year growth rate in the employee number.
 - iii. For the purpose of projecting A&G cost, the historical A&G has been escalated by the WPI factor 2.98% each year.
- 3.3.4. Further the first proviso of Regulation 22 in 2nd amendment of Hydro tariff Regulations states the following:
- “....
- Provided that, out of the O&M expenses so determined based on the above regulations, at least 30% shall be spent towards repair and maintenance activities:
- Provided further that, the impact of pay revision (including arrears) shall be allowed on actual during the mid-term performance review or at the end of the Control Period as per audited /unaudited accounts, subject to prudence check and any other factor considered appropriate by the Commission.”
- 3.3.5. In line with the above Regulations, The Petitioner has projected the R&M expenses as minimum 30% of the total O&M expenses in the fourth MYT control Period.
- 3.3.6. To calculate the accumulated depreciation on the original GFA up to FY 2011-12, Petitioner has assumed a rate of depreciation of 2.5%, except for Larji HEP where the rate of depreciation is assumed to be 5.17%. Thereafter, to calculate the regulatory depreciation, remaining depreciable value is spread over the balance useful life of the project.
- 3.3.7. The GoHP has 12% share in the generation of power from plants Gaj, Baner, Ghanvi, Khauli, Ghanvi II and Larji. The Petitioner has reduced the same from total generation to arrive at the net saleable energy from these plants to recover the Annual Fixed Cost.
- 3.3.8. The Petitioner has assumed the time duration for completion and capitalization of new CAPEX projects as 5 years and capitalisation has been calculated accordingly.
- 3.3.9. In case of existing loans, the interest on finance charges has been claimed on normative basis. As per the Regulations, the Interest and Finance Charges for the expected CAPEX in the 4th MYT Control Period has been assumed to be 10.55% (SBI MCLR on 10th April, 2019 is 8.55% + 200 basis pts).
- 3.3.10. As per the Regulations, the Interest on Working Capital has been considered at 11.55% (SBI MCLR on 10th April, 2019 is 8.55% + 300 basis pts).

3.4. Annual Fixed Charges for Andhra HEP

- 3.4.1. Andhra HEP is a 16.95 MW (3 x 5.65 MW) project commissioned in the year 1987. It is a peaking storage project with surface power station and static excitation.
- 3.4.2. The Petitioner has considered the Opening GFA as approved by the Commission in the 2ndMYT tariff order of July 2011, wherein Commission approved a capital cost

of INR 57.61 Cr. The Commission had considered 100% debt funding for the plant with no outstanding loans.

3.4.3. From FY 2011-12 to FY 2017-18, the Petitioner has considered a net additional capitalization of INR 0.5 Cr as illustrated in the table below. Therefore, for the base year of FY 2018-19, the Opening GFA considered by the Petitioner is INR 58.11 Cr.

Table 37: Andhra- Net GFA Additions till FY 2017-18, as submitted by Petitioner

Particulars	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18	Total
Additions to GFA	0.02	-	0.15	-	-	0.30	0.03	0.50
Deductions/Retirals to GFA	-	-	-	-	-	-	-	-
Net Addition to GFA	0.02	0.00	0.15	0.00	-	0.30	-	0.50

3.4.4. In the 4thMYT Control Period, Petitioner has proposed a net addition of INR 4.24 Cr to the GFA through various electromechanical/civil and other works. The capital expenditure and capitalization plan is as follows:

Table 38: Andhra - Capex & Capitalization Plan for 4th Control Period (INR Cr.), as submitted by Petitioner

Particular	Control Period					
	FY 20	FY 21	FY 22	FY 23	FY 24	Total
Proposed Capital Expenditure	1.00	1.80	3.00	0.00	0.00	5.8
Capitalization for FY 2019-20 Projects	0.20	0.20	0.20	0.20	0.20	1.0
Capitalization for FY 2012-21 Projects		0.36	0.36	0.36	0.36	1.4
Capitalization for FY 2021-22 Projects			0.60	0.60	0.60	1.8
Capitalization for FY 2022-23 Projects				-	-	0.0
Capitalization for FY 2023-24 Projects					-	0.0
Total Capitalization	0.20	0.56	1.16	1.16	1.16	4.2

3.4.5. Accordingly, the Petitioner has calculated the Depreciation, which has been tabulated below. The proposed additions to the GFA have been separately calculated.

Table 39: Andhra - GFA & Depreciation for 4th MYT Control Period (INR Cr.), as submitted by Petitioner

Particulars	RE	4th Control Period (Projected)				
	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24
Opening GFA	58.11	58.18	58.38	58.94	60.10	61.26
Add: Additions	0.07	0.20	0.56	1.16	1.16	1.16
Less: Deductions/Retirals	-	-	-	-	-	-
Closing GFA	58.18	58.38	58.94	60.10	61.26	62.42
Accumulated New GFA	0.57	0.77	1.33	2.49	3.65	4.81
Depreciation						
Accumulated at the beginning of Year	41.30	42.78	44.29	45.87	47.62	49.59
Add: Depreciation on Original GFA	1.44	1.44	1.44	1.44	1.44	1.44
Add: Depreciation on additional Capitalisation	0.04	0.07	0.14	0.31	0.52	0.78
Total Depreciation for the year	1.48	1.51	1.58	1.75	1.96	2.22
Accumulated at the end of the year	42.78	44.29	45.87	47.62	49.59	51.81

3.4.6. The AFC submitted by the Petitioner for Andhra HEP, including the impact of True-Up of 2nd MYT Control Period is as follows:

Table 40: Andhra - AFC for the 4th MYT Control Period (INR Cr.), as submitted by Petitioner

Particulars	RE	4th Control Period (Projected)
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	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24
Gross Generation (MU)	55.58	61.00	61.00	61.00	61.00	61.00
Total Auxiliary (MU)	0.11	0.12	0.12	0.12	0.12	0.12
Aux Consumption (%)	0.20%	0.20%	0.20%	0.20%	0.20%	0.20%
Net Generation (MU)	55.47	60.88	60.88	60.88	60.88	60.88
Less: Free Power to GOHP (MU)	-	-	-	-	-	-
Energy Available for Sale (MU)	55.47	60.88	60.88	60.88	60.88	60.88
O&M expenses (INR Cr)	11.84	15.97	16.75	17.57	18.43	19.34
<i>R&M Expenses</i>	<i>1.18</i>	<i>4.79</i>	<i>5.03</i>	<i>5.27</i>	<i>5.53</i>	<i>5.80</i>
<i>Employees Expenses</i>	<i>9.59</i>	<i>10.06</i>	<i>10.56</i>	<i>11.08</i>	<i>11.62</i>	<i>12.19</i>
<i>Pension Contributions</i>	<i>0.96</i>	<i>1.01</i>	<i>1.06</i>	<i>1.11</i>	<i>1.17</i>	<i>1.22</i>
<i>A&G Expenses</i>	<i>0.10</i>	<i>0.11</i>	<i>0.11</i>	<i>0.11</i>	<i>0.12</i>	<i>0.12</i>
Depreciation (INR Cr)	1.48	1.51	1.58	1.75	1.96	2.22
Interest & Finance Charges (INR Cr)	0.00	0.01	0.04	0.08	0.08	0.08
Return on Equity (INR Cr)	0.03	0.03	0.06	0.11	0.16	0.20
Interest on Working Capital (INR Cr)	0.59	0.61	0.64	0.67	0.71	0.74
Other Cost (INR Cr)	-	-	-	-	-	-
Annual Fixed Charges (INR Cr)	13.94	18.14	19.07	20.18	21.34	22.59
Impact of True-Up of 2nd Control Period		8.77				
Sale Rate of Energy (Rs/KWh)	2.51	4.42	3.13	3.32	3.50	3.71
Energy Charge Rate (Rs/KWh)	1.26	2.21	1.57	1.66	1.75	1.85

3.5. Annual Fixed Charges for Baner

3.5.1. Baner HEP is a 12 MW (3 x 4 MW) project commissioned in the year 1996.

3.5.2. Petitioner has considered the opening GFA for FY 2011-12 as INR 55.67 Cr as approved by the Commission in the second MYT Order. From FY 2011-12 to FY 2017-18, the Petitioner has considered a net additional capitalization of INR 4.02 Cr as illustrated in the table below. Therefore, for the base year of FY 2018-19, the Opening GFA as submitted by the Petitioner is INR 59.69 Cr.

Table 41: Baner- Net GFA Additions till FY 2017-18, as submitted by Petitioner

Particulars	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18	Total
Additions to GFA	-	1.85	1.38	-	0.10	-	0.96	4.29
Deductions/Retirals to GFA	-	-	0.04	0.06	0.06	0.06	0.06	0.28
Net Addition to GFA	-	1.85	1.34	(0.06)	0.04	(0.06)	0.90	4.02

3.5.3. In the 4th MYT Control Period, the Petitioner has proposed a net addition of INR 2.97 Cr to the GFA through various electromechanical/civil and other works. The capital expenditure and capitalization plan has been given below:

Table 42: Baner - Capex & Capitalization Plan for 4th Control Period (INR Cr.) , as submitted by Petitioner

Particular	Control Period					
	FY 20	FY 21	FY 22	FY 23	FY 24	Total
Proposed Capital Expenditure	1.00	1.00	1.00	1.00	0.85	4.85
Capitalization for FY 2019-20 Projects	0.20	0.20	0.20	0.20	0.20	1.00
Capitalization for FY 2012-21 Projects		0.20	0.20	0.20	0.20	0.80
Capitalization for FY 2021-22 Projects			0.20	0.20	0.20	0.60
Capitalization for FY 2022-23 Projects				0.20	0.20	0.40
Capitalization for FY 2023-24 Projects					0.17	0.17
Total Capitalization	0.20	0.40	0.60	0.80	0.97	2.97

3.5.4. Accordingly, the Petitioner has calculated the Depreciation, which has been tabulated below. The proposed additions to the GFA have been separately calculated.

Table 43: Baner - GFA & Depreciation for 4th MYT Control Period (INR Cr.) , as submitted by Petitioner

Particulars	RE	4th Control Period (Projected)				
	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24
Opening GFA	59.69	60.30	60.50	60.90	61.50	62.30
Add: Additions	0.61	0.20	0.40	0.60	0.80	0.97
Less: Deductions/Retirals	-	-	-	-	-	-
Closing GFA	60.30	60.50	60.90	61.50	62.30	63.27
Accumulated New GFA	4.91	5.11	5.51	6.11	6.91	7.88
Depreciation						
Accumulated at the beginning of Year	29.28	30.87	32.48	34.11	35.77	37.49
Add: Depreciation on Original GFA	1.39	1.39	1.39	1.39	1.39	1.39
Add: Depreciation on additional Capitalisation	0.20	0.21	0.24	0.27	0.32	0.39
Total Depreciation for the year	1.60	1.61	1.63	1.66	1.72	1.78
Accumulated at the end of the year	30.87	32.48	34.11	35.77	37.49	39.27

3.5.5. The AFC determined by Petitioner for Baner HEP, including the impact of True-Up of 2nd MYT Control Period is as follows:

Table 44: Baner - AFC for the 4th MYT Control Period (INR Cr.), as submitted by Petitioner

Particulars	RE	4th Control Period (Projected)				
	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24
Gross Generation (MU)	42.20	48.00	48.00	48.00	48.00	48.00
Total Auxiliary (MU)	0.08	0.09	0.09	0.09	0.09	0.09
Aux Consumption (%)	0.18%	0.18%	0.18%	0.18%	0.18%	0.18%
Net Generation (MU)	42.12	47.91	47.91	47.91	47.91	47.91
Less: Free Power to GOHP (MU)	5.05	5.75	5.75	5.75	5.75	5.75
Energy Available for Sale (MU)	37.07	42.16	42.16	42.16	42.16	42.16
O&M expenses (INR Cr)	7.76	10.28	10.78	11.31	11.86	12.44
<i>R&M Expenses</i>	0.90	3.08	3.23	3.39	3.56	3.73
<i>Employees Expenses</i>	6.60	6.93	7.27	7.63	8.00	8.40
<i>Pension Contributions</i>	0.17	0.17	0.18	0.19	0.20	0.21
<i>A&G Expenses</i>	0.09	0.09	0.09	0.10	0.10	0.10
Depreciation (INR Cr)	1.60	1.61	1.63	1.66	1.72	1.78
Interest & Finance Charges (INR Cr)	0.04	0.01	0.03	0.04	0.05	0.06
Return on Equity (INR Cr)	2.55	2.55	2.57	2.60	2.63	2.67
Interest on Working Capital (INR Cr)	0.45	0.46	0.48	0.50	0.52	0.54
Other Cost (INR Cr)	-	-	-	-	-	-
Annual Fixed Charges (INR Cr)	12.39	14.91	15.49	16.11	16.78	17.50
Impact of True-Up of 2nd Control Period		3.92	-	-	-	-
Sale Rate of Energy (Rs/KWh)	3.34	4.47	3.67	3.82	3.98	4.15
Energy Charge Rate (Rs/KWh)	1.67	2.23	1.84	1.91	1.99	2.08

3.6. Annual Fixed Charges for Bassi

3.6.1. The Commission, in the 2nd MYT tariff order of July 2011, had approved a capital cost of INR 141.24 Cr. The Commission had considered 100% debt funding for the plant with no outstanding loans. However, the Petitioner has requested to approve the revised capital cost of INR155.50 Cr on account of the cost of RMU

scheme of INR 122.39 Cr. Accordingly, the Petitioner has considered the opening GFA for FY 2011-12 as INR 155.50 Cr.

3.6.2. From FY 2011-12 to FY 2017-18, the Petitioner has considered a net additional capitalization of INR 128.79 Cr as illustrated in the table below. Therefore, for the base year of FY 2018-19, the Opening GFA submitted by the Petitioner is INR 284.29 Cr.

Table 45: Bassi- Net GFA Additions till FY 2017-18(INR Cr.), as submitted by Petitioner

Particulars	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18	Total
Additions to GFA	0.31	120.44	-	2.99	0.41	0.23	6.59	130.98
Deductions/ Retirals to GFA	0.12	-	2.07	-	-	-	-	2.19
Net Addition to GFA	0.20	120.44	-2.07	2.99	0.41	0.23	6.59	128.79

3.6.3. Further, the year wise Capitalisation due to RMU scheme as submitted by the Petitioner has been given below:

Table 46: Capitalisation due to RMU Scheme -Bassi plant (INR Cr.), as submitted by Petitioner

Particulars	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18	Total
Capitalisation due to RMU scheme	0.15	120.15	-	2.95	-	0.23	-	123.48

3.6.4. In the 4thMYT Control Period, the Petitioner has considered a net addition of INR 14.35 Cr to the GFA through various electromechanical/civil and other works. The capital expenditure and capitalization plan has been given below:

Table 47: Bassi - Capex & Capitalization Plan for 4th Control Period (INR Cr.), as submitted by Petitioner

Particular	Control Period						Total
	FY 20	FY 21	FY 22	FY 23	FY 24		
Proposed Capital Expenditure	2.30	7.60	7.08	4.30	0.00	21.28	
Capitalization for FY 2019-20 Projects	0.46	0.46	0.46	0.46	0.46	2.30	
Capitalization for FY 2012-21 Projects		1.52	1.52	1.52	1.52	6.08	
Capitalization for FY 2021-22 Projects			1.42	1.42	1.42	4.25	
Capitalization for FY 2022-23 Projects				0.86	0.86	1.72	
Capitalization for FY 2023-24 Projects					-	0.00	
Total Capitalization	0.46	1.98	3.40	4.26	4.26	14.35	

3.6.5. It has been submitted by the Petitioner that the useful life due to additional Capitalisation will extend to another 20 years. Therefore, it has requested that the Commission may approve the additional Capitalisation expense. Accordingly, the GFA details along with the depreciation expense for the 4th Control Period are presented in the following table. The depreciation expenses for the existing GFA and the proposed additions to the GFA have been separately calculated.

Table 48: Bassi - GFA & Depreciation for 4th MYT Control Period (INR Cr.), as submitted by Petitioner

Particulars	RE		4th Control Period (Projected)			
	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24
Opening GFA	284.29	285.80	286.26	288.24	291.63	295.89
Add: Additions	1.50	0.46	1.98	3.40	4.26	4.26
Less: Deductions/Retirals	-	-	-	-	-	-
Closing GFA	285.80	286.26	288.24	291.63	295.89	300.14
Accumulated New GFA	132.48	132.94	134.92	138.32	142.58	146.83
Depreciation						

Particulars	RE		4th Control Period (Projected)			
	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24
Accumulated at the beginning of Year	132.53	136.75	140.99	145.32	149.79	154.47
Add: Depreciation on Original GFA	3.89	3.89	3.89	3.89	3.89	3.89
Add: Depreciation on additional Capitalisation	0.33	0.35	0.44	0.59	0.79	1.00
Total Depreciation for the year	4.22	4.24	4.32	4.48	4.68	4.89
Accumulated at the end of the year	136.75	140.99	145.32	149.79	154.47	159.36

3.6.6. The AFC calculated for Bassi HEP, including the impact of True-Up of 2ndMYT Control Period is as follows:

Table 49: Bassi - AFC for the 4th MYT Control Period (INR Cr.), as submitted by Petitioner

Particulars	RE		4th Control Period (Projected)			
	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24
Gross Generation (MU)	281.13	300.00	300.00	300.00	300.00	300.00
Total Auxiliary (MU)	0.70	0.75	0.75	0.75	0.75	0.75
Aux Consumption (%)	0.25%	0.25%	0.25%	0.25%	0.25%	0.25%
Net Generation (MU)	280.43	299.25	299.25	299.25	299.25	299.25
Less: Free Power to GOHP (MU)	-	-	-	-	-	-
Energy Available for Sale (MU)	280.43	299.25	299.25	299.25	299.25	299.25
O&M expenses (INR Cr)	19.28	27.44	28.78	30.18	31.66	33.20
R&M Expenses	0.96	8.23	8.63	9.06	9.50	9.96
Employees Expenses	16.59	17.41	18.27	19.16	20.11	21.09
Pension Contributions	1.35	1.42	1.49	1.56	1.64	1.72
A&G Expenses	0.37	0.38	0.39	0.41	0.42	0.43
Depreciation (INR Cr)	4.22	4.24	4.32	4.48	4.68	4.89
Interest & Finance Charges (INR Cr)	4.09	4.14	3.40	2.66	1.88	1.04
Return on Equity (INR Cr)	6.16	6.17	6.26	6.40	6.58	6.76
Interest on Working Capital (INR Cr)	1.19	1.24	1.27	1.31	1.35	1.39
Other Cost (INR Cr)	-	-	-	-	-	-
Annual Fixed Charges (INR Cr)	34.93	43.23	44.03	45.03	46.14	47.28
Impact of True-Up of 2nd Control Period		30.66				
Sale Rate of Energy (Rs/KWh)	1.25	2.47	1.47	1.50	1.54	1.58
Energy Charge Rate (Rs/KWh)	0.62	1.23	0.74	0.75	0.77	0.79

3.7. Annual Fixed Charges for SVP Bhaba

3.7.1. The opening GFA for FY 2011-12 has been considered as INR 222.19 Cr as approved by the Commission in the Second MYT order. The Petitioner has further submitted that from FY 2011-12 to FY 2017-18 the plant has had a net additional capitalization of INR 86.71 Cr as illustrated in the table below.

Table 50: SVP-Bhaba- Net GFA Additions till FY 2017-18, as submitted by Petitioner

Particulars	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18	Total
Additions to GFA	0.21	0.02	9.35	8.34	0.54	65.01	26.32	109.80
Deductions/Retirals to GFA	-	-	-	19.72	3.37	-	-	23.09
Net Addition to GFA	0.21	0.02	9.35	(11.38)	(2.83)	65.01	26.32	86.71

3.7.2. In the 4th MYT Control Period, the Petitioner has considered a net addition of INR 8.98 Cr to the GFA through various electromechanical/civil and other works. The capital expenditure and capitalization plan as submitted by Petitioner is given below:

Table 51: SVP Bhaba - Capex & Capitalization Plan for 4th Control Period (INR Cr.), as submitted by Petitioner

Particular	Control Period
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	FY 20	FY 21	FY 22	FY 23	FY 24	Total
Proposed Capital Expenditure	2.51	2.61	1.72	5.61	5.55	18.00
Capitalization for FY 2019-20 Projects	0.50	0.50	0.50	0.50	0.50	2.51
Capitalization for FY 2012-21 Projects		0.52	0.52	0.52	0.52	2.09
Capitalization for FY 2021-22 Projects			0.34	0.34	0.34	1.03
Capitalization for FY 2022-23 Projects				1.12	1.12	2.24
Capitalization for FY 2023-24 Projects					1.11	1.11
Total Capitalization	0.50	1.02	1.37	2.49	3.60	8.98

3.7.3. The proposed additions to the GFA have been calculated separately by the Petitioner.

Table 52: SVP Bhaba - GFA & Depreciation for 4th MYT Control Period (INR Cr.), as submitted by Petitioner

Particulars	RE	4th Control Period (Projected)				
	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24
Opening GFA	308.90	324.58	325.08	326.11	327.47	329.96
Add: Additions	15.69	0.50	1.02	1.37	2.49	3.60
Less: Deductions/Retirals	-	-	-	-	-	-
Closing GFA	324.58	325.08	326.11	327.47	329.96	333.56
Accumulated new GFA	125.48	125.98	127.01	128.37	130.86	134.46
Depreciation						
Accumulated at the beginning of Year	164.66	179.04	193.48	208.01	222.70	237.70
Add: Depreciation on Original GFA	5.55	5.55	5.55	5.55	5.55	5.55
Add: Depreciation on additional Capitalisation	8.83	8.88	8.98	9.13	9.45	9.99
Total Depreciation for the year	14.39	14.43	14.53	14.69	15.01	15.55
Accumulated at the end of the year	179.04	193.48	208.01	222.70	237.70	253.25

3.7.4. The AFC submitted by the Petitioner for SVP Bhaba HEP, including the impact of True-Up of 2nd MYT Control Period has been tabulated below:

Table 53: SVP Bhaba - AFC for the 4th MYT Control Period (INR Cr.), as submitted by Petitioner

Particulars	RE	4th Control Period (Projected)				
	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24
Gross Generation (MU)	575.58	480.00	480.00	480.00	480.00	480.00
Total Auxiliary (MU)	3.07	2.56	2.56	2.56	2.56	2.56
Aux Consumption (%)	0.53%	0.53%	0.53%	0.53%	0.53%	0.53%
Net Generation (MU)	572.50	477.44	477.44	477.44	477.44	477.44
Less: Free Power to GOHP (MU)	-	-	-	-	-	-
Energy Available for Sale (MU)	572.50	477.44	477.44	477.44	477.44	477.44
O&M expenses (INR Cr)	40.89	49.22	51.63	54.15	56.79	59.57
R&M Expenses	8.04	14.77	15.49	16.24	17.04	17.87
Employees Expenses	30.51	32.01	33.59	35.24	36.97	38.79
Pension Contributions	1.75	1.83	1.92	2.02	2.12	2.22
A&G Expenses	0.60	0.61	0.63	0.65	0.67	0.69
Depreciation (INR Cr)	14.39	14.43	14.53	14.69	15.01	15.55
Interest & Finance Charges (INR Cr)	1.06	-	0.07	0.09	0.17	0.24
Return on Equity (INR Cr)	5.42	5.44	5.49	5.54	5.65	5.80
Interest on Working Capital (INR Cr)	2.34	2.43	2.53	2.62	2.72	2.83
Other Cost (INR Cr)	-	-	-	-	-	-
Annual Fixed Charges (INR Cr)	64.09	71.52	74.25	77.09	80.33	83.98
Impact of True-Up of 2nd Control Period		19.52	-	-	-	-
Sale Rate of Energy (Rs/KWh)	1.12	1.91	1.56	1.61	1.68	1.76
Energy Charge Rate (Rs/KWh)	0.56	0.95	0.78	0.81	0.84	0.88

3.8. Annual Fixed Charges for Gaj

3.8.1. Gaj HEP is a 10.5 MW (3 x 3.5 MW) project commissioned in the year 1996.

3.8.2. The Petitioner has considered the opening GFA for FY 2011-12 as INR 60.58 Cr as approved by the Commission in second MYT Order. From FY 2011-12 to FY 2017-18, Petitioner has considered a net additional capitalization of INR (28.44) Cr as illustrated in the table below. Therefore, for the base year of FY 2018-19, the Opening GFA as calculated by Petitioner is INR 32.14 Cr.

Table 54: Gaj- Net GFA Additions till FY 2017-18, as submitted by Petitioner

Particulars	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18	Total
Additions to GFA	-	0.24	0.99	0.06	-	-	0.53	1.81
Deductions/Retirals to GFA	30.20	0.06	-	-	-	-	-	30.26
Net Addition to GFA	(30.20)	0.18	0.99	0.06	-	-	0.53	(28.44)

3.8.3. In the 4thMYT Control Period, the Petitioner has considered a net addition of INR 2.87 Cr to the GFA through various electromechanical/civil and other works. The capital expenditure and capitalization plan as submitted by Petitioner is as follows:

Table 55: Gaj - Capex & Capitalization Plan for 4th Control Period (INR Cr.), as submitted by Petitioner

Particular	Control Period					
	FY 20	FY 21	FY 22	FY 23	FY 24	Total
Proposed Capital Expenditure	1.00	1.00	1.00	1.00	0.35	4.35
Capitalization for FY 2019-20 Projects	0.20	0.20	0.20	0.20	0.20	1.00
Capitalization for FY 2012-21 Projects		0.20	0.20	0.20	0.20	0.80
Capitalization for FY 2021-22 Projects			0.20	0.20	0.20	0.60
Capitalization for FY 2022-23 Projects				0.20	0.20	0.40
Capitalization for FY 2023-24 Projects					0.07	0.07
Total Capitalization	0.20	0.40	0.60	0.80	0.87	2.87

3.8.4. The GFA details along with the depreciation expense for the 4th Control Period as submitted by the Petitioner are presented in the following table. The depreciation expenses for the existing GFA and the proposed additions to the GFA have been separately calculated.

Table 56: Gaj - GFA & Depreciation for 4th MYT Control Period (INR Cr.), as submitted by Petitioner

Particulars	RE	4th Control Period (Projected)				
	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24
Opening GFA	32.14	32.40	32.60	33.00	33.60	34.40
Add: Additions	0.26	0.20	0.40	0.60	0.80	0.87
Less: Deductions/Retirals	-	-	-	-	-	-
Closing GFA	32.40	32.60	33.00	33.60	34.40	35.27
Accumulated New GFA	2.07	2.27	2.67	3.27	4.07	4.94
Depreciation						
Accumulated at the beginning of Year	31.33	32.93	34.54	36.18	37.85	39.57
Add: Depreciation on Original GFA	1.51	1.51	1.51	1.51	1.51	1.51
Add: Depreciation on additional Capitalisation	0.09	0.10	0.12	0.16	0.21	0.27
Total Depreciation for the year	1.60	1.61	1.64	1.67	1.72	1.78
Accumulated at the end of the year	32.93	34.54	36.18	37.85	39.57	41.36

3.8.5. The AFC submitted by the Petitioner for Gaj HEP, including the impact of True-Up of 2ndMYT Control Period is as follows:

Table 57: Gaj - AFC for the 4th MYT Control Period (INR Cr.), as submitted by Petitioner

Particulars	RE	4th Control Period (Projected)				
	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24
Gross Generation (MU)	38.07	40.00	40.00	40.00	40.00	40.00
Total Auxiliary (MU)	0.07	0.07	0.07	0.07	0.07	0.07
Aux Consumption (%)	0.19%	0.19%	0.19%	0.19%	0.19%	0.19%
Net Generation (MU)	38.00	39.93	39.93	39.93	39.93	39.93
Less: Free Power to GOHP (MU)	4.56	4.79	4.79	4.79	4.79	4.79
Energy Available for Sale (MU)	33.44	35.13	35.13	35.13	35.13	35.13
O&M expenses (INR Cr)	6.84	9.35	9.80	10.28	10.78	11.31
R&M Expenses	0.60	2.80	2.94	3.08	3.24	3.39
Employees Expenses	5.95	6.24	6.55	6.87	7.20	7.56
Pension Contributions	0.16	0.17	0.17	0.18	0.19	0.20
A&G Expenses	0.14	0.14	0.14	0.15	0.15	0.16
Depreciation (INR Cr)	1.60	1.61	1.64	1.67	1.72	1.78
Interest & Finance Charges (INR Cr)	0.02	0.01	0.03	0.04	0.05	0.06
Return on Equity (INR Cr)	2.42	2.43	2.44	2.47	2.50	2.54
Interest on Working Capital (INR Cr)	0.40	0.42	0.43	0.45	0.47	0.49
Other Cost (INR Cr)	-	-	-	-	-	-
Annual Fixed Charges (INR Cr)	11.28	13.82	14.34	14.91	15.53	16.18
Impact of True-Up of 2nd Control Period		3.80	-	-	-	-
Sale Rate of Energy (Rs/KWh)	3.37	5.01	4.08	4.24	4.42	4.60
Energy Charge Rate (Rs/KWh)	1.69	2.51	2.04	2.12	2.21	2.30

3.9. Annual Fixed Charges for Binwa

3.9.1. The Petitioner has considered the opening GFA for FY 2011-12 as INR 17.44 Cr as approved by the Commission in the Second MYT Order. The Petitioner has further submitted that from FY 2011-12 to FY 2017-18 the plant has had a net additional capitalization of INR 4.43 Cr as illustrated in the table below. Therefore, for the base year of FY 2018-19, the Opening GFA is considered as INR 21.87 Cr.

Table 58: Binwa- Net GFA Additions till FY 2017-18, as submitted by Petitioner

Particulars	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18	Total
Additions to GFA	0.05	0.03	-	-	0.14	3.24	0.96	4.43
Deductions/Retirals to GFA	-	-	-	-	-	-	-	-
Net Addition to GFA	0.05	0.03	-	-	0.14	3.24	0.96	4.43

3.9.2. In the 4th MYT Control Period, the Petitioner has considered a net addition of INR 32.19 Cr to the GFA through various electromechanical/civil and other works. The capital expenditure and capitalization plan is as follows:

Table 59: Binwa - Capex & Capitalization Plan for 4th Control Period (INR Cr.), as submitted by Petitioner

Particular	Control Period					Total
	FY 20	FY 21	FY 22	FY 23	FY 24	
Proposed Capital Expenditure	12.19	10.00	10.00	10.00	10.00	52.19
Capitalization for FY 2019-20 Projects	2.44	2.44	2.44	2.44	2.44	12.19
Capitalization for FY 2012-21 Projects		2.00	2.00	2.00	2.00	8.00
Capitalization for FY 2021-22 Projects			2.00	2.00	2.00	6.00
Capitalization for FY 2022-23 Projects				2.00	2.00	4.00
Capitalization for FY 2023-24 Projects					2.00	2.00
Total Capitalization	2.44	4.44	6.44	8.44	10.44	32.19

3.9.3. Accordingly, the Petitioner has calculated the Depreciation, which has been tabulated below. The proposed additions to the GFA have been calculated separately by the Petitioner.

Table 60: Binwa - GFA & Depreciation for 4th MYT Control Period (INR Cr.), as submitted by Petitioner

Particulars	RE	4th Control Period (Projected)				
	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24
Opening GFA	21.87	22.50	24.94	29.38	35.81	44.25
Add: Additions	0.63	2.44	4.44	6.44	8.44	10.44
Less: Deductions/Retirals	-	-	-	-	-	-
Closing GFA	22.50	24.94	29.38	35.81	44.25	54.69
Accumulated New GFA	5.06	7.50	11.94	18.37	26.81	37.25
Depreciation						
Accumulated at the beginning of Year	14.58	15.62	17.10	19.58	23.98	32.19
Add: Depreciation on Original GFA	0.44	0.44	0.44	0.44	0.44	0.44
Add: Depreciation on additional Capitalisation	0.60	1.04	2.04	3.97	7.77	17.16
Total Depreciation for the year	1.04	1.48	2.48	4.41	8.21	17.60
Accumulated at the end of the year	15.62	17.10	19.58	23.98	32.19	49.79

3.9.4. The AFC submitted by the Petitioner for Binwa HEP, including the impact of True-Up of 2nd MYT Control Period is as follows:

Table 61: Binwa - AFC for the 4th MYT Control Period (INR Cr.), as submitted by Petitioner

Particulars	RE	4th Control Period (Projected)				
	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24
Gross Generation (MU)	28.72	30.00	30.00	30.00	30.00	30.00
Total Auxiliary (MU)	0.08	0.08	0.08	0.08	0.08	0.08
Aux Consumption (%)	0.28%	0.28%	0.28%	0.28%	0.28%	0.28%
Net Generation (MU)	28.64	29.92	29.92	29.92	29.92	29.92
Less: Free Power to GOHP (MU)	-	-	-	-	-	-
Energy Available for Sale (MU)	28.64	29.92	29.92	29.92	29.92	29.92
O&M expenses (INR Cr)	6.09	8.05	8.45	8.86	9.29	9.75
R&M Expenses	0.72	2.42	2.53	2.66	2.79	2.92
Employees Expenses	4.55	4.77	5.01	5.25	5.51	5.78
Pension Contributions	0.76	0.80	0.84	0.88	0.92	0.97
A&G Expenses	0.06	0.06	0.06	0.07	0.07	0.07
Depreciation (INR Cr)	1.04	1.48	2.48	4.41	8.21	17.60
Interest & Finance Charges (INR Cr)	0.04	0.16	0.29	0.43	0.56	0.69
Return on Equity (INR Cr)	0.24	0.34	0.52	0.79	1.15	1.58
Interest on Working Capital (INR Cr)	0.30	0.34	0.38	0.44	0.55	0.77
Other Cost (INR Cr)	(0.43)	-	-	-	-	-
Annual Fixed Charges (INR Cr)	7.29	10.37	12.12	14.93	19.75	30.39
Impact of True-Up of 2nd Control Period		2.57	-	-	-	-
Sale Rate of Energy (Rs/KWh)	2.54	4.32	4.05	4.99	6.60	10.16
Energy Charge Rate (Rs/KWh)	1.27	2.16	2.03	2.50	3.30	5.08

3.10. Annual Fixed Charges for Chaba

3.10.1. The Commission, in the 2nd MYT tariff order of July 2011, had approved a capital cost of INR 1.21 Cr. Accordingly, Petitioner has considered the opening GFA for FY 2011-12 as INR 1.21 Cr.

3.10.2. From FY 2011-12 to FY 2017-18, the Petitioner has considered a net additional capitalization of INR 0.6 Cr as illustrated in the table below. Therefore, for the base year of FY 2018-19, the Opening GFA is considered by Petitioner is INR 1.81 Cr.

Table 62: Chaba- Net GFA Additions till FY 2017-18, as submitted by Petitioner

Particulars	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18	Total
Additions to GFA	0.00	0.00	0.15	0.01	-	0.44	-	0.60
Deductions/Retirals to GFA	-	0.00	-	-	-	-	-	-
Net Addition to GFA	0.00	0.00	0.15	0.01	-	0.44	-	0.60

3.10.3. In the 4th MYT Control Period, the Petitioner has considered a net addition of INR 0.96 Cr to the GFA through various electromechanical/civil and other works. The capital expenditure and capitalization plan as submitted by the Petitioner is as follows:

Table 63: Chaba - Capex & Capitalization Plan for 4th Control Period (INR Cr.), as submitted by Petitioner

Particular	Control Period					
	FY 20	FY 21	FY 22	FY 23	FY 24	Total
Proposed Capital Expenditure	0.56	0.50	0.00	0.00	0.00	1.06
Capitalization for FY 2019-20 Projects	0.11	0.11	0.11	0.11	0.11	0.56
Capitalization for FY 2012-21 Projects		0.10	0.10	0.10	0.10	0.40
Capitalization for FY 2021-22 Projects			-	-	-	0.00
Capitalization for FY 2022-23 Projects				-	-	0.00
Capitalization for FY 2023-24 Projects					-	0.00
Total Capitalization	0.11	0.21	0.21	0.21	0.21	0.96

3.10.4. Since, plant useful life has already expired, the Petitioner has requested the Commission to approve the expense on account of additional Capitalisation separately as additional R&M expense. Accordingly, the GFA details along with the depreciation expense for the 4th Control Period as submitted by the Petitioner are presented in the following table. The depreciation expenses for the existing GFA and the proposed additions to the GFA have been separately calculated.

Table 64: Chaba - GFA & Depreciation for 4th MYT Control Period (INR Cr.), as submitted by Petitioner

Particulars	RE	4th Control Period (Projected)				
	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24
Opening GFA	1.81	1.89	2.00	2.22	2.43	2.64
Add: Additions	0.09	0.11	0.21	0.21	0.21	0.21
Less: Deductions/Retirals	-	-	-	-	-	-
Closing GFA	1.89	2.00	2.22	2.43	2.64	2.85
Accumulated New GFA	0.68	0.79	1.01	1.22	1.43	1.64
Depreciation						
Accumulated at the beginning of Year	2.64	2.64	2.64	2.64	2.64	2.64
Add: Depreciation on Original GFA	-	-	-	-	-	-
Add: Depreciation on additional Capitalisation	-	-	-	-	-	-
Total Depreciation for the year	-	-	-	-	-	-
Accumulated at the end of the year	2.64	2.64	2.64	2.64	2.64	2.64

3.10.5. The AFC submitted by the Petitioner for Chaba HEP, including the impact of True-Up of 2nd MYT Control Period is as follows:

Table 65: Chaba - AFC for the 4th MYT Control Period (INR Cr.), as submitted by Petitioner

Particulars	RE	4th Control Period (Projected)				
	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24
Gross Generation (MU)	4.98	5.50	5.50	5.50	5.50	5.50
Total Auxiliary (MU)	0.01	0.02	0.02	0.02	0.02	0.02
Aux Consumption (%)	0.29%	0.29%	0.29%	0.29%	0.29%	0.29%
Net Generation (MU)	4.96	5.48	5.48	5.48	5.48	5.48
Less: Free Power to GOHP (MU)	-	-	-	-	-	-
Energy Available for Sale (MU)	4.96	5.48	5.48	5.48	5.48	5.48
O&M expenses (INR Cr)	2.41	3.09	3.24	3.40	3.56	3.74
R&M Expenses	0.35	0.93	0.97	1.02	1.07	1.12
Employees Expenses	2.05	2.15	2.26	2.37	2.49	2.61
Pension Contributions	-	-	-	-	-	-
A&G Expenses	0.01	0.01	0.01	0.01	0.01	0.01
Depreciation (INR Cr)	-	-	-	-	-	-
Interest & Finance Charges (INR Cr)	-	0.01	0.01	0.01	0.01	0.01
Return on Equity (INR Cr)	-	-	-	-	-	-
Interest on Working Capital (INR Cr)	0.12	0.12	0.13	0.13	0.14	0.15
Other Cost (INR Cr)	-	-	-	-	-	-
Additional R&M expense	0.09	0.11	0.21	0.21	0.21	0.21
Annual Fixed Charges (INR Cr)	2.61	3.33	3.59	3.76	3.93	4.12
Impact of True-Up of 2nd Control Period		1.08	-	-	-	-
Sale Rate of Energy (Rs/KWh)	5.25	8.04	6.55	6.85	7.17	7.50
Energy Charge Rate (Rs/KWh)	2.62	4.02	3.28	3.43	3.59	3.75

3.11. Annual Fixed Charges for BS-Chamba

3.11.1. BS-Chamba HEP is a 0.45 MW (3 x 0.15 MW) project commissioned in the years 1938, 1957 and 1985. It is a non-peaking run of the river project with surface power station and rotating exciters.

3.11.2. The Petitioner has considered the opening GFA for FY 2011-12 as INR 0.50 Cr as approved by the Commission in second MYT Order. From FY 2011-12 to FY 2017-18. The Petitioner has considered a net additional capitalization of INR 0.13 Cr as illustrated in the table below. Therefore, for the base year of FY 2018-19, the Opening GFA as submitted by Petitioner is INR 0.63 Cr.

Table 66: BS-Chamba- Net GFA Additions till FY 2017-18, as submitted by Petitioner

Particulars	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18	Total
Additions to GFA	-	-	0.13	-	-	-	-	0.13
Deductions/Retirals to GFA	-	-	-	-	-	-	-	-
Net Addition to GFA	-	-	0.13	-	-	-	-	0.13

3.11.3. The GFA details along with the depreciation expense for the 4th Control Period as submitted by the Petitioner are presented in the following table. The depreciation expenses for the existing GFA and the proposed additions to the GFA have been separately calculated.

Table 67: BS-Chamba - GFA & Depreciation for 4th MYT Control Period (INR Cr.), as submitted by Petitioner

Particulars	RE	4th Control Period (Projected)				
	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24
Opening GFA	0.63	0.65	0.65	0.65	0.65	0.65
Add: Additions	0.02	-	-	-	-	-

Particulars	RE	4th Control Period (Projected)				
	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24
Less: Deductions/Retirals	-	-	-	-	-	-
Closing GFA	0.65	0.65	0.65	0.65	0.65	0.65
Accumulated New GFA	0.15	0.15	0.15	0.15	0.15	0.15
Depreciation						
Accumulated at the beginning of Year	0.37	0.39	0.41	0.44	0.46	0.48
Add: Depreciation on Original GFA	0.01	0.01	0.01	0.01	0.01	0.01
Add: Depreciation on additional Capitalisation	0.01	0.01	0.01	0.01	0.01	0.01
Total Depreciation for the year	0.02	0.02	0.02	0.02	0.02	0.02
Accumulated at the end of the year	0.39	0.41	0.44	0.46	0.48	0.50

3.11.4. The AFC submitted by the Petitioner for BS-Chamba HEP, including the impact of True-Up of 2nd MYT Control Period is as follows:

Table 68: BS-Chamba - AFC for the 4th MYT Control Period (INR Cr.), as submitted by Petitioner

Particulars	RE	4th Control Period (Projected)				
	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24
Gross Generation (MU)	1.41	1.76	1.76	1.76	1.76	1.76
Total Auxiliary (MU)	0.01	0.02	0.02	0.02	0.02	0.02
Aux Consumption (%)	0.97%	0.97%	0.97%	0.97%	0.97%	0.97%
Net Generation (MU)	1.39	1.74	1.74	1.74	1.74	1.74
Less: Free Power to GOHP (MU)	-	-	-	-	-	-
Energy Available for Sale (MU)	1.39	1.74	1.74	1.74	1.74	1.74
O&M expenses (INR Cr)	0.29	0.29	0.30	0.30	0.31	0.31
R&M Expenses	0.25	0.25	0.26	0.26	0.26	0.26
Employees Expenses	0.04	0.04	0.04	0.04	0.05	0.05
Pension Contributions	-	-	-	-	-	-
A&G Expenses	0.00	0.00	0.00	0.00	0.00	0.00
Depreciation (INR Cr)	0.02	0.02	0.02	0.02	0.02	0.02
Interest & Finance Charges (INR Cr)	0.00	-	-	-	-	-
Return on Equity (INR Cr)	0.01	0.01	0.01	0.01	0.01	0.01
Interest on Working Capital (INR Cr)	0.01	0.01	0.01	0.01	0.01	0.02
Other Cost (INR Cr)	-	-	-	-	-	-
Annual Fixed Charges (INR Cr)	0.33	0.33	0.34	0.35	0.35	0.35
Impact of True-Up of 2nd Control Period		(0.15)	-	-	-	-
Sale Rate of Energy (Rs/KWh)	2.40	1.08	1.98	1.99	2.00	2.02
Energy Charge Rate (Rs/KWh)	1.20	0.54	0.99	1.00	1.00	1.01

3.12. Annual Fixed Charges for Giri

3.12.1. Giri HEP is a 60 MW (2 x 30 MW) project commissioned in the years 1978. It is a non-peaking run of the river project with surface power station and rotating exciters.

3.12.2. The Commission, in the 2nd MYT tariff order of July 2011, had approved a capital cost of INR 36.22 Cr and considered 100% debt funding for the plant with no outstanding loans.

3.12.3. As such, the Petitioner has considered the opening GFA for FY 2011-12 as INR 36.22 Cr. From FY 2011-12 to FY 2017-18 The Petitioner has considered a net additional capitalization of INR 7.93 Cr as illustrated in the table below. Therefore, for the base year of FY 2018-19, the Opening GFA is INR 44.15 Cr.

Table 69: Giri- Net GFA Additions till FY 2017-18, as submitted by Petitioner

Particulars	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18	Total
Additions to GFA	4.36	0.88	0.19	0.27	2.43	0.01	-	8.14
Deductions/Retirals to GFA	-	-	-	0.21	-	-	-	0.21
Net Addition to GFA	4.36	0.88	0.19	0.06	2.43	0.01	-	7.93

3.12.4. In the 4th MYT Control Period, the Petitioner has considered a net addition of INR 116.93 Cr to the GFA through various electromechanical/civil and other works. The capital expenditure and capitalization plan is as follows:

Table 70: Giri - Capex & Capitalization Plan for 4th Control Period (INR Cr.), as submitted by Petitioner

Particular	Control Period					
	FY 20	FY 21	FY 22	FY 23	FY 24	Total
Proposed Capital Expenditure	46.50	71.95	21.45	0.00	0.00	139.90
Capitalization for FY 2019-20 Projects	9.30	9.30	9.30	9.30	9.30	46.50
Capitalization for FY 2012-21 Projects		14.39	14.39	14.39	14.39	57.56
Capitalization for FY 2021-22 Projects			4.29	4.29	4.29	12.87
Capitalization for FY 2022-23 Projects				-	-	0.00
Capitalization for FY 2023-24 Projects					-	0.00
Total Capitalization	9.30	23.69	27.98	27.98	27.98	116.93

3.12.5. The GFA details along with the depreciation expense for the 4th Control Period as submitted by the Petitioner are presented in the following table. The depreciation expenses for the existing GFA and the proposed additions to the GFA have been separately calculated.

Table 71: Giri - GFA & Depreciation for 4th MYT Control Period (INR Cr.), as submitted by Petitioner

Particulars	RE	4th Control Period (Projected)				
	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24
Opening GFA	44.15	45.32	54.62	78.31	106.29	134.27
Add: Additions	1.16	9.30	23.69	27.98	27.98	27.98
Less: Deductions/Retirals	-	-	-	-	-	-
Closing GFA	45.32	54.62	78.31	106.29	134.27	162.25
Accumulated New GFA	9.30	18.60	42.29	70.27	98.25	126.23
Depreciation						
Accumulated at the beginning of Year	34.79	36.04	37.72	40.60	44.95	50.87
Add: Depreciation on Original GFA	0.91	0.91	0.91	0.91	0.91	0.91
Add: Depreciation on additional Capitalisation	0.34	0.78	1.97	3.45	5.02	6.70
Total Depreciation for the year	1.25	1.69	2.87	4.35	5.93	7.61
Accumulated at the end of the year	36.04	37.72	40.60	44.95	50.87	58.48

3.12.6. The AFC submitted by the Petitioner for Giri HEP, including the impact of True-Up of 2nd MYT Control Period is as follows:

Table 72: Giri - AFC for the 4th MYT Control Period (INR Cr.), as submitted by Petitioner

Particulars	RE	4th Control Period (Projected)				
	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24
Gross Generation (MU)	202.52	190.00	190.00	190.00	190.00	190.00
Total Auxiliary (MU)	0.71	0.67	0.67	0.67	0.67	0.67
Aux Consumption (%)	0.35%	0.35%	0.35%	0.35%	0.35%	0.35%
Net Generation (MU)	201.80	189.33	189.33	189.33	189.33	189.33
Less: Free Power to GOHP (MU)	-	-	-	-	-	-
Energy Available for Sale (MU)	201.80	189.33	189.33	189.33	189.33	189.33
O&M expenses (INR Cr)	22.33	26.88	28.19	29.56	31.01	32.52
R&M Expenses	4.40	8.06	8.46	8.87	9.30	10.58

Particulars	RE	4th Control Period (Projected)				
	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24
Employees Expenses	16.52	17.33	18.18	19.08	20.01	21.00
Pension Contributions	1.11	1.17	1.22	1.28	1.35	1.41
A&G Expenses	0.31	0.32	0.33	0.34	0.35	0.36
Depreciation (INR Cr)	1.25	1.69	2.87	4.35	5.93	7.61
Interest & Finance Charges (INR Cr)	0.08	0.62	1.57	1.86	1.86	1.86
Return on Equity (INR Cr)	0.42	0.81	1.80	2.97	4.15	5.32
Interest on Working Capital (INR Cr)	1.09	1.15	1.26	1.41	1.62	1.86
Other Cost (INR Cr)	-	-	-	-	-	-
Annual Fixed Charges (INR Cr)	25.17	31.15	35.70	40.16	44.56	49.99
Impact of True-Up of 2nd Control Period		14.62				
Sale Rate of Energy (Rs/KWh)	1.25	2.42	1.89	2.12	2.35	2.64
Energy Charge Rate (Rs/KWh)	0.62	1.21	0.94	1.06	1.18	1.32

3.13. Annual Fixed Charges for Larji

3.13.1. Larji HEP is a 126 MW (3 x 42 MW) project commissioned in the year 2006.

3.13.2. The Petitioner has considered the opening GFA for FY 2011-12 as INR 1098.70 Cr as approved by Commission in the second MYT Order. The Petitioner has further submitted that the additional capitalization in FY 2013-14 amounting to INR 1,139.7 Cr has not been considered, as it is on account of transfer of balance in books of account of Larji and to avoid double accounting. However, From FY 2011-12 to FY 2017-18 the Petitioner has considered a net additional capitalization of INR 1,148.20 Cr as illustrated in the table below. Therefore, for the base year of FY 2018-19, the Opening GFA as submitted by the Petitioner is INR 1,107.16 Cr.

Table 73: Larji- Net GFA Additions till FY 2017-18, as submitted by Petitioner

Particulars	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18	Total
Additions to GFA	5.89	0.63	1,139.7	-	0.72	1.22	-	1,148.20
Deductions/Retirals to GFA	-	-	-	-	-	-	-	-
Net Addition to GFA	5.89	0.63	1,139.7	-	0.72	1.22	-	1,148.20

3.13.3. In the 4th MYT Control Period, the Petitioner has considered a net addition of INR 10.82 Cr to the GFA through various electromechanical/civil and other works. The capital expenditure and capitalization plan is as follows:

Table 74: Larji - Capex & Capitalization Plan for 4th Control Period (INR Cr.), as submitted by Petitioner

Particular	Control Period					
	FY 20	FY 21	FY 22	FY 23	FY 24	Total
Proposed Capital Expenditure	4.18	6.59	1.47	1.07	0.30	13.61
Capitalization for FY 2019-20 Projects	0.84	0.84	0.84	0.84	0.84	4.18
Capitalization for FY 2012-21 Projects		1.32	1.32	1.32	1.32	5.27
Capitalization for FY 2021-22 Projects			0.29	0.29	0.29	0.88
Capitalization for FY 2022-23 Projects				0.21	0.21	0.43
Capitalization for FY 2023-24 Projects					0.06	0.06
Total Capitalization	0.84	2.15	2.45	2.66	2.72	10.82

3.13.4. The GFA details along with the depreciation expense for the 4th Control Period as submitted by the Petitioner are presented in the following table. The

depreciation expenses for the existing GFA and the proposed additions to the GFA have been separately calculated.

Table 75: Larji - GFA & Depreciation for 4th MYT Control Period (INR Cr.), as submitted by Petitioner

Particulars	RE	4th Control Period (Projected)				
	FY 20	FY 21	FY 22	FY 23	FY 24	FY 20
Opening GFA	1,107.16	1,108.37	1,109.21	1,111.36	1,113.81	1,116.47
Add: Additions	1.21	0.84	2.15	2.45	2.66	2.72
Less: Deductions/Retirals	-	-	-	-	-	-
Closing GFA	1,108.37	1,109.21	1,111.36	1,113.81	1,116.47	1,119.19
Accumulated New GFA	9.67	10.51	12.66	15.11	17.77	20.49
Depreciation						
Accumulated at the beginning of Year	655.80	713.10	770.45	827.90	885.49	943.21
Add: Depreciation on Original GFA	56.80	56.80	56.80	56.80	56.80	56.80
Add: Depreciation on additional Capitalisation	0.50	0.54	0.65	0.78	0.92	1.06
Total Depreciation for the year	57.30	57.35	57.46	57.58	57.72	57.86
Accumulated at the end of the year	713.10	770.45	827.90	885.49	943.21	1,001.07

3.13.5. The AFC submitted by the Petitioner for Larji HEP, including the impact of True-Up of 2nd MYT Control Period is as follows:

Table 76: Larji - AFC for the 4th MYT Control Period (INR Cr.), as submitted by Petitioner

Particulars	RE	4th Control Period (Projected)				
	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24
Gross Generation (MU)	537.28	560.00	560.00	560.00	560.00	560.00
Total Auxiliary (MU)	0.97	1.01	1.01	1.01	1.01	1.01
Aux Consumption (%)	0.18%	0.18%	0.18%	0.18%	0.18%	0.18%
Net Generation (MU)	536.31	558.99	558.99	558.99	558.99	558.99
Less: Free Power to GOHP (MU)	64.36	67.08	67.08	67.08	67.08	67.08
Energy Available for Sale (MU)	471.96	491.91	491.91	491.91	491.91	491.91
O&M expenses (INR Cr)	32.20	40.71	42.69	44.76	46.94	49.23
<i>R&M Expenses</i>	5.03	12.21	12.81	13.43	14.08	14.77
<i>Employees Expenses</i>	25.71	26.97	28.30	29.69	31.15	32.68
<i>Pension Contributions</i>	0.73	0.77	0.81	0.85	0.89	0.93
<i>A&G Expenses</i>	0.73	0.75	0.78	0.80	0.82	0.85
Depreciation (INR Cr)	57.30	57.35	57.46	57.58	57.72	57.86
Interest & Finance Charges (INR Cr)	-	0.06	0.14	0.16	0.18	0.18
Return on Equity (INR Cr)	36.35	36.40	36.54	36.69	36.85	37.02
Interest on Working Capital (INR Cr)	3.35	3.42	3.49	3.57	3.65	3.73
Other Cost (INR Cr)	-	-	-	-	-	-
Annual Fixed Charges (INR Cr)	129.21	137.93	140.32	142.77	145.34	148.02
Impact of True-Up of 2nd Control Period		(30.42)	-	-	-	-
Sale Rate of Energy (Rs/KWh)	2.74	2.19	2.85	2.90	2.95	3.01
Energy Charge Rate (Rs/KWh)	1.37	1.09	1.43	1.45	1.48	1.50

3.14. Annual Fixed Charges for Nogli

3.14.1. Nogli HEP is a 2.5 MW (2 x 0.25 + 4 x 0.50 MW) project commissioned in the years 1963, 1970 and 1974. It is a non-peaking, run of the river project with surface power station and static excitation. The Petitioner has considered the opening GFA for FY 2011-12 as INR 11.81 Cr as approved in the second MYT Order. From FY 2011-12 to FY 2017-18 the Petitioner has considered a net additional capitalization of INR 4.80 Cr as illustrated in the table below.

Therefore, for the base year of FY 2018-19, the Opening GFA as submitted by the Petitioner is INR 16.61 Cr.

Table 77: Nogli- Net GFA Additions till FY 2017-18, as submitted by Petitioner

Particulars	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18	Total
Additions to GFA	0.59	0.09	0.15	-	-	-	3.97	4.80
Deductions/Retirals to GFA	-	-	-	-	-	-	-	-
Net Addition to GFA	0.59	0.09	0.15	-	-	-	3.97	4.80

3.14.2. In the 4th MYT Control Period, the Petitioner has considered a net addition of INR2.16 Cr to the GFA through various electromechanical/civil and other works. The capital expenditure and capitalization plan is as follows:

Table 78: Nogli - Capex & Capitalization Plan for 4th Control Period (INR Cr.), as submitted by Petitioner

Particular	Control Period						Total
	FY 20	FY 21	FY 22	FY 23	FY 24		
Proposed Capital Expenditure	1.33	1.22	0.39	0.11	0.11	3.16	
Capitalization for FY 2019-20 Projects	0.27	0.27	0.27	0.27	0.27	1.33	
Capitalization for FY 2012-21 Projects		0.24	0.24	0.24	0.24	0.98	
Capitalization for FY 2021-22 Projects			0.08	0.08	0.08	0.23	
Capitalization for FY 2022-23 Projects				0.02	0.02	0.04	
Capitalization for FY 2023-24 Projects					0.02	0.02	
Total Capitalization	0.27	0.51	0.59	0.61	0.63	2.61	

3.14.3. The GFA details along with the depreciation expense for the 4th Control Period as submitted by the Petitioner are presented in the following table. The depreciation expenses for the existing GFA and the proposed additions to the GFA have been separately calculated.

Table 79: Nogli - GFA & Depreciation for 4th MYT Control Period (INR Cr.), as submitted by Petitioner

Particulars	RE	4th Control Period (Projected)				
	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24
Opening GFA (11-12 as approved by HPERC)	16.61	17.29	17.56	18.07	18.66	19.27
Add: Additions	0.69	0.27	0.51	0.59	0.61	0.63
Less: Deductions/Retirals	-	-	-	-	-	-
Closing GFA	17.29	17.56	18.07	18.66	19.27	19.90
Accumulated New GFA	5.48	5.75	6.26	6.85	7.46	8.09
Depreciation						
Accumulated at the beginning of Year	12.32	12.90	13.49	14.12	14.79	15.50
Add: Depreciation on Original GFA	0.30	0.30	0.30	0.30	0.30	0.30
Add: Depreciation on New GFA	0.28	0.30	0.33	0.37	0.42	0.47
Total Depreciation for the year	0.58	0.59	0.63	0.67	0.71	0.76
Accumulated at the end of the year	12.90	13.49	14.12	14.79	15.50	16.26

3.14.4. The AFC as submitted by Petitioner for Nogli HEP, including the impact of True-Up of 2nd MYT Control Period is as follows:

Table 80: Nogli - AFC for the 4th MYT Control Period (INR Cr.), as submitted by Petitioner

Particulars	RE	4th Control Period (Projected)				
	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24
Gross Generation (MU)	4.26	6.00	6.00	6.00	6.00	6.00
Total Auxiliary (MU)	0.06	0.08	0.08	0.08	0.08	0.08
Aux Consumption (%)	1.33%	1.33%	1.33%	1.33%	1.33%	1.33%
Net Generation (MU)	4.20	5.92	5.92	5.92	5.92	5.92

Particulars	RE	4th Control Period (Projected)				
	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24
Less: Free Power to GOHP (MU)	-	-	-	-	-	-
Energy Available for Sale (MU)	4.20	5.92	5.92	5.92	5.92	5.92
O&M expenses (INR Cr)	2.92	3.38	3.54	3.72	3.90	4.09
<i>R&M Expenses</i>	0.66	1.01	1.06	1.12	1.17	1.23
<i>Employees Expenses</i>	2.09	2.20	2.31	2.42	2.54	2.66
<i>Pension Contributions</i>	0.14	0.15	0.16	0.17	0.17	0.18
<i>A&G Expenses</i>	0.02	0.02	0.02	0.02	0.02	0.02
Depreciation (INR Cr)	0.58	0.59	0.63	0.67	0.71	0.76
Interest & Finance Charges (INR Cr)	0.05	0.02	0.03	0.04	0.04	0.04
Return on Equity (INR Cr)	0.25	0.27	0.29	0.31	0.34	0.36
Other Cost (INR Cr)	-	-	-	-	-	-
Annual Fixed Charges (INR Cr)	3.95	4.42	4.67	4.92	5.18	5.46
Impact of True-Up of 2nd Control Period		2.38				
Sale Rate of Energy (Rs/KWh)	9.39	11.49	7.89	8.31	8.76	9.23
Energy Charge Rate (Rs/KWh)	4.70	5.75	3.94	4.16	4.38	4.62

3.15. Annual Fixed Charges for Rongtong

3.15.1. The Petitioner has considered the opening GFA for FY 2011-12 as INR 16.39 Cr as approved by the Commission in the Second MYT Order. From FY 2011-12 to FY 2017-18 the Petitioner has submitted a net additional capitalization of INR 4.62 Cr as illustrated in the table below. Therefore, for the base year of FY 2018-19, the Opening GFA as submitted by the Petitioner is INR 21.01 Cr.

Table 81: Rongtong- Net GFA Additions till FY 2017-18, as submitted by Petitioner

Particulars	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18	Total
Additions to GFA	0.72	-	0.42	3.48	-	-	-	4.62
Deductions/Retirals to GFA	-	-	-	-	-	-	-	-
Net Addition to GFA	0.72	-	0.42	3.48	-	-	-	4.62

3.15.2. The Petitioner has not considered any additional capitalisation in the fourth MYT Control Period. Accordingly, the GFA details along with the depreciation expense as submitted by Petitioner for the 4th Control Period are tabulated in the following table. The depreciation expenses for the existing GFA and the proposed additions to the GFA have been separately calculated.

Table 82: Rongtong - GFA & Depreciation for 4th MYT Control Period (INR Cr.), as submitted by Petitioner

Particulars	RE	4th Control Period (Projected)				
	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24
Opening GFA	21.01	21.67	21.67	21.67	21.67	21.67
Add: Additions	0.66	-	-	-	-	-
Less: Deductions/Retirals	-	-	-	-	-	-
Closing GFA	21.67	21.67	21.67	21.67	21.67	21.67
Accumulated New GFA	5.28	5.28	5.28	5.28	5.28	5.28
Depreciation						
Accumulated at the beginning of Year	13.10	13.88	14.67	15.45	16.24	17.02
Add: Depreciation on Original GFA	0.41	0.41	0.41	0.41	0.41	0.41
Add: Depreciation on additional Capitalisation	0.37	0.37	0.37	0.37	0.37	0.37
Total Depreciation for the year	0.78	0.78	0.78	0.78	0.78	0.78
Accumulated at the end of the year	13.88	14.67	15.45	16.24	17.02	17.80

3.15.3. The AFC as submitted by Petitioner for Rongtong HEP, including the impact of True-Up of 2nd MYT Control Period is as follows:

Table 83: Rongtong - AFC for the 4th MYT Control Period (INR Cr.), as submitted by Petitioner

Particulars	RE	4th Control Period (Projected)				
	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24
Gross Generation (MU)	1.13	1.40	1.41	1.50	1.51	1.51
Total Auxiliary (MU)	0.01	0.01	0.01	0.01	0.01	0.01
Aux Consumption (%)	0.63%	0.63%	0.63%	0.63%	0.63%	0.63%
Net Generation (MU)	1.13	1.39	1.40	1.49	1.50	1.50
Less: Free Power to GOHP (MU)	-	-	-	-	-	-
Energy Available for Sale (MU)	1.13	1.39	1.40	1.49	1.50	1.50
O&M expenses (INR Cr)	1.27	1.78	1.87	1.96	2.05	2.14
<i>R&M Expenses</i>	0.07	0.53	0.56	0.59	0.61	0.64
<i>Employees Expenses</i>	1.05	1.10	1.16	1.21	1.27	1.34
<i>Pension Contributions</i>	0.02	0.02	0.02	0.02	0.02	0.02
<i>A&G Expenses</i>	0.12	0.12	0.13	0.13	0.14	0.14
Depreciation (INR Cr)	0.78	0.78	0.78	0.78	0.78	0.78
Interest & Finance Charges (INR Cr)	0.04	-	-	-	-	-
Return on Equity (INR Cr)	0.25	0.25	0.25	0.25	0.25	0.25
Interest on Working Capital (INR Cr)	0.08	0.08	0.09	0.09	0.09	0.09
Other Cost (INR Cr)	-	-	-	-	-	-
Annual Fixed Charges (INR Cr)	2.42	2.89	2.98	3.07	3.17	3.27
Impact of True-Up of 2nd Control Period		2.02				
Sale Rate of Energy (Rs/KWh)	21.48	35.35	21.36	20.61	21.14	21.80
Energy Charge Rate (Rs/KWh)	10.74	17.67	10.68	10.31	10.57	10.90

3.16. Annual Fixed Charges for Rukti

3.16.1. Rukti HEP is a 1.5 MW (3 x 0.50 MW) project commissioned in the year 1979 and 1980. It is a non-peaking plant run of the river and project with surface power station and static excitation.

3.16.2. The Commission in the 2nd MYT tariff order of July 2011, had approved a capital cost of INR 1.59 Cr and considered 100% debt funding for the plant with no outstanding loans. In accordance with the same the Petitioner has considered the opening GFA for FY 2011-12 as INR 1.59 Cr. From FY 2011-12 to FY 2017-18 the Petitioner has considered a net additional capitalization of INR 8.92 Cr as illustrated in the table below. Therefore, for the base year of FY 2018-19, the Opening GFA as submitted by the Petitioner is INR 10.51 Cr.

Table 84: Rukti- Net GFA Additions till FY 2017-18, as submitted by Petitioner

Particulars	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18	Total
Additions to GFA	-	-	0.15	-	-	7.30	1.47	8.92
Deductions/Retirals to GFA	-	-	-	-	-	-	-	-
Net Addition to GFA	-	-	0.15	-	-	7.30	1.47	8.92

3.16.3. The Petitioner has not considered any additional capitalisation in the fourth MYT Control Period. Accordingly, the GFA details along with the depreciation expense, as submitted by Petitioner for the 4th Control Period are presented in the following table. The depreciation expenses for the existing GFA and the proposed additions to the GFA have been separately calculated.

Table 85: Rukti - GFA & Depreciation for 4th MYT Control Period (INR Cr.), as submitted by Petitioner

Particulars	RE	4th Control Period (Projected)				
	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24
Opening GFA	10.51	11.78	11.78	11.78	11.78	11.78
Add: Additions	1.27	-	-	-	-	-
Less: Deductions/Retirals	-	-	-	-	-	-
Closing GFA	11.78	11.78	11.78	11.78	11.78	11.78
Accumulated New GFA	10.19	10.19	10.19	10.19	10.19	10.19
Depreciation						
Accumulated at the beginning of Year	0.71	1.01	1.32	1.62	1.93	2.23
Add: Depreciation on Original GFA	0.04	0.04	0.04	0.04	0.04	0.04
Add: Depreciation on additional Capitalisation	0.26	0.26	0.26	0.26	0.26	0.26
Total Depreciation for the year	0.30	0.30	0.30	0.30	0.30	0.30
Accumulated at the end of the year	1.01	1.32	1.62	1.93	2.23	2.54

3.16.4. The AFC calculated by the Petitioner for Rukti HEP, including the impact of True-Up of 2nd MYT Control Period is as follows:

Table 86: Rukti - AFC for the 4th MYT Control Period (INR Cr.), as submitted by Petitioner

Particulars	RE	4th Control Period (Projected)				
	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24
Gross Generation (MU)	3.35	6.00	6.00	6.00	6.00	6.00
Total Auxiliary (MU)	0.07	0.13	0.13	0.13	0.13	0.13
Aux Consumption (%)	2.19%	2.19%	2.19%	2.19%	2.19%	2.19%
Net Generation (MU)	3.28	5.87	5.87	5.87	5.87	5.87
Less: Free Power to GOHP (MU)	-	-	-	-	-	-
Energy Available for Sale (MU)	3.28	5.87	5.87	5.87	5.87	5.87
O&M expenses (INR Cr)	0.93	1.03	1.13	1.15	1.17	1.20
R&M Expenses	0.52	0.61	0.68	0.68	0.68	0.68
Employees Expenses	0.36	0.38	0.40	0.42	0.44	0.46
Pension Contributions	0.04	0.04	0.04	0.04	0.04	0.05
A&G Expenses	0.00	0.00	0.00	0.00	0.00	0.00
Depreciation (INR Cr)	0.30	0.30	0.30	0.30	0.30	0.30
Interest & Finance Charges (INR Cr)	0.09	-	-	-	-	-
Return on Equity (INR Cr)	0.47	0.47	0.47	0.47	0.47	0.47
Interest on Working Capital (INR Cr)	0.06	0.06	0.07	0.07	0.07	0.07
Other Cost (INR Cr)	-	-	-	-	-	-
Annual Fixed Charges (INR Cr)	1.85	1.88	1.97	2.00	2.02	2.05
Impact of True-Up of 2nd Control Period		2.92				
Sale Rate of Energy (Rs/KWh)	5.66	8.17	3.37	3.40	3.44	3.49
Energy Charge Rate (Rs/KWh)	2.83	4.08	1.68	1.70	1.72	1.74

3.17. Tariff for Ghanvi-II and Uhl-III

3.17.1. Ghanvi-II HEP is a 10 MW (2 x 5 MW) project commissioned in the year 2014.

3.17.2. Uhl-III HEP is a 100 MW (3 x 33.33 MW) project with expected COD of the 1st Unit in July 2019.

3.17.3. HPSEBL has submitted that it is in the process for compiling the accounts for these Plants and shall submit a detailed Petition Capital Cost at the earliest.

3.17.4. The Petitioner has requested the Commission to approve a levelised tariff of Rs.3.44 /kWh for Ghanvi-II HEP as per Tariff Order dated March 24, 2018 and Rs. 8.50/kWh for Uhl-III HEP as approved in the previous Tariff Order for Distribution Business.

4. OBJECTION FILED AND ISSUES RAISED BY CONSUMERS DURING PUBLIC HEARING

- 4.1.1. The interested parties/stakeholders were asked to file their objections and suggestions on the Petition by 10.03.2021. However, no comments and suggestions were received from any stakeholder including consumers/ consumer associations and general public by the given due date.
- 4.1.2. A Public Hearing was held on 27.03.2021, 11:30 AM through video conferencing where none of the stakeholders appeared to make any objections or provide any comments/ suggestions.

5. ANALYSIS OF TRUE UP OF FY 12 - FY 14 UNDER SECOND CONTROL PERIOD

5.1. Background

- 5.1.1. The Petitioner in its Multi Year Tariff Petition for the fourth Control Period has submitted True-up of the 13 Hydro-electric Plants (HEP) for the 2nd Control Period based on the variation in actual expenses and revenue from the numbers approved in Tariff Order dated July 19, 2011. The Petitioner has provided plant wise accounts for the period April 1, 2012 to March 31, 2014 in support of the actual expense and revenue for the period.
- 5.1.2. The Commission has reviewed the operational and financial performance of the Petitioner for second Control Period based on the Petitioner's submission and plant-wise accounts made available. The Commission has also finalised the true-up in line with the Himachal Pradesh Electricity Regulatory Commission (Terms and Conditions for Determination of Hydro Generation Tariff) Regulations, 2011 and amendments thereof (hereinafter referred to as the 'MYT Regulations, 2011'), taking into account all the information, data submissions and necessary clarifications submitted by the HPSEBL as well as views expressed by stakeholders.
- 5.1.3. This Chapter covers analysis on the proposed plant wise true-up of ARR for each year of the second Control Period including O&M expenses, Depreciation, Interest and Finance Charges and Working Capital Requirement, etc.

5.2. Commission's Approach

- 5.2.1. Regulation 9 of the Himachal Pradesh Electricity Regulatory Commission (Terms and Conditions for Determination of Hydro Generation Tariff) Regulations, 2011 and its amendments provides for the True-Up of the Annual Revenue Requirement and Annual Fixed Cost of Hydro Electric Plants owned and operated by HPSEBL. The relevant excerpts of the aforementioned regulation has been provided below:

"9. True Up

*(1) The true up across various controllable parameters shall be conducted by the Commission, for the previous years for which the **actual/audited** accounts are made available by the generator, at the times and as per principles stated below: -*

(A) at the times -

(i) for the previous years of the previous Control Period:- along with the petition for determination of ARR cum generation tariff for the Control Period;

(ii) for the previous years of the Control Period and for the previous Control Period:- along with the mid-term performance review during the Control Period; and

(iii) for the Control Period true up:- along with the mid-term performance review of the next Control Period;

(B) as per principles -

(i) the Commission shall review actual capital investment vis-à-vis approved capital investment;
(ii) depreciation and financing cost, which includes cost of debt including working capital (interest), cost of equity (return) shall be trued up on the basis of actual/audited information and prudence check by the Commission; and
(iii) any surplus and deficit on account of O&M expenses shall be to the account of the generating company and shall not be trued up in ARR.

(2) The gain or loss on account of other controllable factors, unless otherwise specifically provided by the Commission shall be to the account of the generating company.

(3) Notwithstanding anything contained in these regulations, the gains or losses in the controllable items of ARR on account of force majeure, change in law and change in taxes and duties shall be passed on as an additional charge or rebate in ARR over such period as may be laid down in the order of the Commission."

- 5.2.2. For estimating the separate costs of generation plants, the Commission in its previous orders had directed HPSEBL to maintain separate record of accounts for each generating plant, such as amounts of revenue, cost, asset, liability, and reserve for the generation business. The Petitioner in the current petition has provided plant-wise accounts. However, it is observed that the plant-wise accounts submitted by the Petitioner are prepared internally and have not been certified by the statutory auditor.
- 5.2.3. During prudence check, it was observed that the information of various plants as per the plant-wise accounts did not reconcile with the overall generation expenses as per the Audited accounts of HPSEBL for the respective years of the 2nd Control Period. Also, contradictory numbers have been submitted by the Petitioner in response to the clarifications and additional information sought by the Commission during the processing of the Petition. Due to significant differences observed, the Commission noted that the plant-wise accounts are not being maintained appropriately resulting in variations with the overall audited accounts of HPSEBL. The Petitioner is directed to maintain proper plant-wise accounts and undertake audit of the same.
- 5.2.4. The Commission also observed that the Petitioner has not filed true-up of few plants for which the Commission had approved tariff during the second Control Period. In response to the clarifications, the Petitioner submitted that the Commission had determined levelized tariff vide its order HPERC/Petition No. 54/2013/2013-14/2967-84 and therefore the true-up for these power houses have not been submitted.
- 5.2.5. The Order for levelized tariff was issued by the Commission on 15.04.2014 and the tariff set thereof became applicable from 01.04.2014 i.e. FY 2014-15. Therefore, the Commission observes that True-up of these plants is also required to be undertaken for second Control Period i.e. FY 2011-12 to FY 2013-14. In the absence of any True-up Petition for these plants, the Commission has undertaken a suo-motu true-up for these plants i.e. Ghumma, Ghanvi, Sal-II, Khauli, Holi, Killar and Thiroth.

- 5.2.6. The Commission, for True-Up of Annual Fixed Charges and the tariff for sale of electricity from the generating stations, has considered the following elements as specified by the HPERC (Terms and Conditions for Determination of Hydro Generation Tariff) Regulations, 2011 and amendments thereof.
- a) Operation and Maintenance Expenses (O&M)
 - b) Depreciation
 - c) Interest on Loans
 - d) Interest on Working Capital; and
 - e) Return on Equity (RoE)
- 5.2.7. Further the Commission held several rounds of technical discussions to validate the data submitted by the Petitioner and sought further clarifications on various issues based on its scrutiny and analysis. The Commission has considered all information submitted by the Petitioner as part of the Tariff Petition including responses to various queries raised during the discussions.
- 5.2.8. The following sections details the methodology adopted by the Commission for truing-up of various parameters of each plant for the second Control Period.

Additional Capital Expenditure

- 5.2.9. The Commission in the Tariff Order dated July 19, 2011 for the Second Control Period did not approve any additional capital expenditure. In the Order, the Commission had observed that the proposed additional capital expenditure was either for execution of new upcoming plants or of the nature of normal operations and maintenance for the existing plants. Since the proposed capital expenditure for new plants did not form part of the AFC for existing plants, the Commission had not considered the same in the tariff order for 2nd Control Period. Further, for the proposed capital expenditure on existing plants, the Commission directed the Petitioner as below:

"6.27. The Petitioner has proposed a capital investment of INR 45.04 Cr in FY12, INR 48.05 Cr in FY13 and INR 22.49 Cr in FY14 on the completed project. The Petitioner has not provided details of schemes which are proposed to be under taken during the Control Period for these projects. As per information available with the Commission, the expenditure proposed in these projects is in the nature of normal operations and maintenance which is been taken as capital expenditure by the Petitioner. Hence, for the expenditure proposed has not been considered for the purpose of tariff determination and the Petitioner has to meet the investment requirement from the O&M expenses approved for these projects in this order.

6.28 The Petitioner is directed to file petitions for additional capitalisation schemes which it intends to undertake on the existing projects in accordance with the provisions of the HPERC Generation Tariff regulations, 2011 for the approval of the Commission. The Petition should be complete with respect to scheme details, financing proposed and the benefit expected. The Commission shall consider the additional capitalisation petition submitted on merit and provide for recovery of the expenditure at the time of true up of the Control Period."

- 5.2.10. In the Current True-Up Petition, it is observed that the Petitioner had submitted additional capitalization for each of the plants during the second Control Period. However, it is observed that the Petitioner has not provided any details of the works undertaken such as DPR, work orders, funding and approval of the Commission. In response to these information sought by the Commission, the Petitioner has referred to the list of works undertaken with funding breakup of the additional capitalization during the second Control Period. Also during the TVS the Petitioner clarified that the works are of low cost and are met through the common pool of funds allotted from the budget on an annual basis.
- 5.2.11. Based on the details of works submitted by the Petitioner, it is observed that multiple works were undertaken by Petitioner for small amounts and are of the nature of routine repair and maintenance of the respective plants. In absence of any substantive documents detailing the nature of work and supporting DPR, Board approval, and prior Commission approval with respect to the proposed capital works, the Commission is of the view that these works cannot be classified under additional capital expenditure. Accordingly, the Commission has not allowed any additional capitalization as part of the truing-up for the second Control Period.
- 5.2.12. In case of Bassi HEP, the Commission had approved an amount of Rs. 109.98 Cr. as additional capitalization on account of RMU&LE scheme which covered improvement of existing water conductor system, construction of additional tail race, RMU of Turbines, Generators, control and protection system and uprating of existing capacity from 60 MW to 66 MW. Accordingly, the same has been considered as detailed below.
- 5.2.13. Plant specific observations with respect to additional capitalization/ de-capitalization for 2nd Control Period, are as follows:
- i. **Bassi HEP:** In the tariff order for 2nd MYT Control Period, the Commission had approved an additional capitalization of Rs. 109.98 Cr in the beginning of FY 2011-12 towards RMU & LE scheme. The Commission observed that the majority of capitalization for RMU & LE scheme has been done in FY 2012-13 by the Petitioner in its accounts. Accordingly, the Commission has now shifted the capitalization of Rs. 109.98 Cr. from FY 2011-12 to FY 2012-13. Further, details are discussed in the plant specific sub-section of Annual Fixed Charges for Bassi HEP.
 - ii. **Larji HEP:** The Petitioner has filed for additional capitalization of Rs. 9.22 crore from FY 2011-12 to FY 2013-14. However, the Accounts submitted for Larji HEP also show an addition of Rs. 1,139 Cr. to GFA in FY 2013-14. The Petitioner later clarified that the entry is not additional capitalization and was done as a book entry only to avoid double accounting. The Petitioner has provided copy of Transfer Entry Order as Documentary Evidence. Therefore, no additional capitalization has been considered.
 - iii. **Gaj HEP:** The Commission has considered a de-capitalization of Rs. 30.2 Cr. in FY 2011-12. The Petitioner has clarified in its submissions that the de-capitalization was done on account of transfer to a newly created division i.e. Khauli Power House Division as the execution of said power

house was done by Gaj Division. The same has been accounted as part of the truing-up for second Control Period.

- iv. Khauli HEP:** In view of the transfer of GFA amounting to Rs. 30.2 Cr. in FY 2011-12 from Gaj HEP to Khauli HEP, the Commission has considered the same as addition in Khauli HEP during FY 2011-12.

5.2.14. The proposed vs approved additional capital expenditure for various HPSEBL generation plants has been detailed in table below:

Table 87: Additional Capital Expenditure (Rs. Cr) approved by Commission for 2ndControl Period.

Name of station	Proposed by Petitioner			Approved by Commission		
	FY12	FY13	FY14	FY12	FY13	FY14
Andhra	1.61	1.28	1.72	-	-	-
Baner	3.05	1.55	1.61	-	-	-
Bassi	1.14	0.22	0.06	-	109.98*	-
Bhaba	10.16	13.40	1.23	-	-	-
Binwa	1.98	0.33	0.00	-	-	-
Chaba	0.30	0.91	0.00	-	-	-
Chamba	0.21	0.09	0.09	-	-	-
Gaj	3.34	1.96	0.31	(30.2)	-	-
Giri	3.44	14.75	12.69	-	-	-
Larji	2.76	5.56	0.90	-	-	-
Nogli	0.98	1.44	0.41	-	-	-
Rongtong	0.72	-	0.42	-	-	-
Rukti	-	-	0.15	-	-	-
Sal-II	0.21	0.1	0.09	-	-	-
Killar	1.87	1.14	0.19	-	-	-
Gumma	0.26	0.63	0.45	-	-	-
Ghanvi	8.40	2.02	0.54	-	-	-
Holi	0.11	0.08	0.08	-	-	-
Khauli	0.93	1.14	0.73	30.2	-	-
Thirot	4.29	1.45	1.39	-	-	-

*Rs. 109.98 cr. of additional capex was approved in tariff order of 2nd MYT period, to be capitalized in FY12; basis review in this order, the capitalization has been shifted to FY13 for the same amount of capex

Gross Fixed Assets (GFA)

5.2.15. Based on the review of plant-wise accounts, discrepancies were observed in the opening GFA amount for various plants with the GFA approved for the purpose of tariff determination during the second Control Period.

5.2.16. The Commission sought clarifications from the Petitioner for these differences. However, in response the Petitioner did not provide any justification and submitted that it has considered the GFA for each plant as per the approved GFA in the Order for second Control Period.

5.2.17. Considering that the Petitioner has not been able to provide a suitable justification for difference in GFA amount and that the plant wise accounts submitted by the Petitioner are not certified by Auditor, the Commission has adopted the opening GFA as approved in tariff order for 2nd Control Period.

5.2.18. In its submissions, the Petitioner has added proposed additional capitalization each year to the approved opening GFA as per the MYT Order for 2nd Control

Period. The Commission has considered the opening GFA approved in the MYT Order for 2nd Control Period along with approved additional capitalization as discussed above in this True-up Order to determine the approved GFA for each year of the 2nd Control Period.

Table 88: Plant wise closing GFA (in Rs. Cr.) approved by Commission for 2nd Control Period

Sl.	Name of station	As per Petition			As per Accounts			Approved		
		FY12	FY13	FY14	FY12	FY13	FY14	FY12	FY13	FY14
1.	Andhra	57.63	57.63	57.78	50.99	50.99	51.14	57.61	57.61	57.61
2.	Baner	55.67	57.52	58.86	52.46	54.01	55.35	55.67	55.67	55.67
3.	Bassi	155.69	155.69	153.62	58.74	179.08	177.07	31.26	141.24	141.24
4.	Bhaba	222.40	222.42	231.77	182.98	183.00	192.43	222.19	222.19	222.19
5.	Binwa	17.49	17.52	17.52	16.33	16.36	16.36	17.44	17.44	17.44
6.	Chaba	1.21	1.21	1.36	7.30	7.30	7.45	1.21	1.21	1.21
7.	Chamba	0.50	0.50	0.63	0.86	0.86	0.99	0.50	0.50	0.50
8.	Gaj	30.38	30.56	31.55	58.08	58.32	59.31	30.38	30.38	30.38
9.	Giri	40.58	41.46	41.65	59.54	60.47	60.65	36.22	36.22	36.22
10.	Larji	1,104.59	1,105.22	1,105.22	237.57	238.37	1,443.39	1,096.39	1,096.39	1,096.39
11.	Nogli	12.40	12.49	12.64	11.48	11.57	11.73	11.81	11.81	11.81
12.	Rongtong	17.11	17.11	17.53	3.09	3.19	3.19	16.39	16.39	16.39
13.	Rukti	1.59	1.59	1.74	1.15	1.15	1.30	1.59	1.59	1.59
14.	Sal-II	-	-	-	17.39	17.39	17.52	17.48	17.48	17.48
15.	Killar	-	-	-	0.86	0.86	0.99	8.65	8.65	8.65
16.	Gumma	-	-	-	33.31	33.83	33.98	28.89	28.89	28.89
17.	Ghanvi	-	-	-	117.90	120.52	120.67	142.62	142.62	142.62
18.	Holi	-	-	-	1.44	1.44	1.58	29.93	29.93	29.93
19.	Khauri	-	-	-	140.03	139.98	140.11	108.20	108.20	108.20
20.	Thirot	-	-	-	39.66	39.67	39.80	49.30	49.30	49.30

Operation and Maintenance Expense

5.2.19. The Petitioner in its Tariff Petition has submitted O&M Expenses for FY 2011-12 to FY 2013-14. The Commission has noted that actual O&M expenses submitted by the Petitioner for FY 2011-12 and FY 2013-14 are higher than that approved by the Commission for these years in the Tariff Order of second MYT Control Period. A comparison of the same is provided in the table below:

Table 89: O&M Expense (in INR Cr) approved in 2nd MYT Tariff Order and filed by Petitioner

Name of station	FY 12			FY 13			FY 14		
	Approved in 2 nd MYT order	Submitted by Petitioner	Deviation	Approved in 2 nd MYT order	Submitted by Petitioner	Deviation	Approved in 2 nd MYT order	Submitted by Petitioner	Deviation
Andhra	4.45	4.41	0.04	4.45	6.46	-2.01	4.45	9.19	-4.74
Baner	4.14	5.59	-1.45	4.14	4.97	-0.83	4.14	5.61	-1.47
Bassi	8.58	13.90	-5.32	8.58	33.94	-25.36	8.58	15.18	-6.60
Bhaba	14.92	16.79	-1.87	14.92	24.59	-9.67	14.92	17.27	-2.35
Binwa	3.45	3.50	-0.05	3.45	4.10	-0.65	3.45	4.69	-1.24
Chaba	1.31	1.49	-0.18	1.31	1.68	-0.37	1.31	1.75	-0.44
Chamba	0.33	0.10	0.23	0.33	0.34	-0.01	0.33	0.50	-0.17
Gaj	3.71	3.57	0.14	3.71	5.65	-1.94	3.71	4.55	-0.84
Giri	12.66	10.99	1.67	12.66	18.80	-6.14	12.66	18.92	-6.26
Larji	15.00	17.32	-2.32	16.25	24.58	-8.33	17.60	27.01	-9.41
Nogli	1.80	1.70	0.10	1.80	2.28	-0.48	1.80	3.15	-1.35
Rong Tong	0.79	0.94	-0.15	0.79	0.60	0.19	0.79	1.85	-1.06
Rukti	0.52	0.39	0.13	0.52	0.34	0.18	0.52	3.43	-2.91

Name of station	FY 12			FY 13			FY 14		
	Approved in 2 nd MYT order	Submitted by Petitioner	Deviation	Approved in 2 nd MYT order	Submitted by Petitioner	Deviation	Approved in 2 nd MYT order	Submitted by Petitioner	Deviation
Sall-II	0.45	0.40	0.06	0.45	0.52	-0.07	0.45	0.72	-0.27
Killar	0.61	0.01	0.60	0.61	0.20	0.41	0.61	0.51	0.10
Gumma	1.63	1.81	-0.18	1.63	1.86	-0.23	1.63	1.42	0.21
Ghanvi	4.58	5.57	-0.99	4.58	5.55	-0.97	4.58	4.57	0.01
Holi	0.62	0.47	0.15	0.62	0.85	-0.23	0.62	1.51	-0.89
Khauri	4.03	6.59	-2.56	4.03	4.59	-0.56	4.03	4.26	-0.23
Thirot	0.79	0.99	-0.20	0.79	1.25	-0.46	0.79	1.07	-0.28
Total	84.37	96.52	-12.15	85.62	143.15	-57.53	86.97	127.15	-40.18

5.2.20. The Commission observed variation between the total plant-wise O&M cost submitted by the Petitioner and the amount of O&M towards generation business in the HPSEBL's consolidate audited accounts. In response, the Petitioner submitted that the corporate office and other common office costs have been allocated to the plants based on the capacity in addition to the amount of expense recorded towards generation business in the audited accounts of HPSEBL. The Commission observes that the Petitioner had already submitted these common office costs under audited account break-up for true-up of distribution business. Therefore, considering this additional corporate office and common office costs towards generation business would result in double counting under the O&M head and the Commission has accordingly excluded such costs as part of the true-up for generation business.

5.2.21. Also the Commission has already allowed common expenses such as terminal liabilities/ benefits put together in the ARR of the Distribution licensee which is being now claimed separately by the Petitioner. These amounts would result in double counting of the already approved common pool cost under the distribution business. Therefore, the Commission has excluded the same while comparing the O&M expenses for various plants. A comparison of submitted overall O&M cost of generation business vis-à-vis the true-up O&M cost in the second Control Period is summarized below:

Table 90: Revised Submitted* vs Trued-up O&M cost for various plants (in Rs. Cr.)

Name of station	FY 12			FY 13			FY 14		
	Submitted	Trued-up	Deviation	Submitted	Trued-up	Deviation	Submitted	Trued-up	Deviation
Andhra	5.48	4.45	1.03	5.43	4.45	0.98	7.79	4.45	3.34
Baner	3.99	4.14	-0.15	4.27	4.14	0.13	4.67	4.14	0.53
Bassi	12.23	8.58	3.65	8.81	8.58	0.23	9.67	8.58	1.09
Bhaba	15.50	14.92	0.58	17.73	14.92	2.81	7.83	14.92	-7.09
Binwa	3.47	3.45	0.02	3.69	3.45	0.24	4.20	3.45	0.75
Chaba	1.31	1.31	0.00	1.57	1.31	0.26	1.64	1.31	0.33
Chamba	0.21	0.33	-0.12	0.51	0.33	0.18	0.46	0.33	0.13
Gaj	3.58	3.71	-0.13	4.98	3.71	1.27	3.74	3.71	0.03
Giri	10.35	12.66	-2.31	15.16	12.66	2.50	14.19	12.66	1.53
Larji	12.75	15.00	-2.25	16.95	16.25	0.70	16.83	17.60	-0.77
Nogli	1.82	1.80	0.02	2.14	1.80	0.34	2.96	1.80	1.16
Rong Tong	0.17	0.79	-0.62	0.48	0.79	-0.31	1.69	0.79	0.90
Rukti	0.22	0.52	-0.30	0.26	0.52	-0.26	3.32	0.52	2.80
Sall-II	0.34	0.45	-0.11	0.56	0.45	0.11	0.78	0.45	0.33
Killar	0.00	0.61	-0.61	0.20	0.61	-0.41	0.51	0.61	-0.10
Gumma	0.56	1.63	-1.07	1.88	1.63	0.25	1.62	1.63	-0.01
Ghanvi	3.55	4.58	-1.03	5.06	4.58	0.48	4.39	4.58	-0.19

Name of station	FY 12			FY 13			FY 14		
	Submitted	Trued-up	Deviation	Submitted	Trued-up	Deviation	Submitted	Trued-up	Deviation
Holi	0.38	0.62	-0.24	0.91	0.62	0.29	1.03	0.62	0.41
Khaulti	3.92	4.03	-0.11	3.82	4.03	-0.21	3.92	4.03	-0.11
Thirot	0.89	0.79	0.10	1.27	0.79	0.48	1.08	0.79	0.29
Total	80.72	84.37	-3.65	95.68	85.62	10.06	92.32	86.97	5.35

**Revised submitted O&M number is as per submission of Petitioner after reconciliation with audited accounts of HPSEBL excluding terminal benefits*

5.2.22. Based on the above table, it is observed that the overall variation in actual O&M cost as compared with the approved O&M expense is very low. In the Order for second Control Period, the Commission had noticed high O&M cost of Petitioner’s plant based on benchmarking with other central hydro plants. Accordingly, the Commission had approved the O&M expenses for FY11 and had directed the Petitioner to rationalise employee cost and reduce O&M expense for its generating stations. Therefore, the approved O&M cost for second Control Period of each plant is considered to be reasonable.

5.2.23. Further, O&M expense is required to be Trued-up in accordance with the Regulation 9 of the HPERC (Terms and Conditions for Determination of Hydro Generation Tariff) Regulations, 2011. As per the aforementioned regulations, O&M expense is Controllable in nature and any surplus or deficit on controllable items has to be on account of HPSEBL itself. Therefore, the Commission has continued with the O&M expense approved in the Tariff Order for Second Control Period dated July 19, 2011.

Depreciation

5.2.24. The Commission has determined the depreciation for the station in accordance to Regulation 20 of HPERC Generation Regulations, 2011, which states:

"20(5) For generating station which are in operation for less than 12 years, the difference between the cumulative depreciation recovered and the cumulative depreciation arrived at by applying the depreciation rates specified in this regulation corresponding to 12 years, shall be spread over the period up to 12 years, and the remaining depreciable value as on 31st March of the year closing after a period of 12 years from date of commercial operation shall be spread over the balance useful life of the asset.

20(6) For the project in operation for more than 12 years, the balance depreciation to be recovered shall be spread over the remaining useful life of the asset."

5.2.25. Before the promulgation of HPERC Generation Regulations of 2011, the Commission used to calculate accumulated depreciation for the individual projects considering a depreciation rate of 2.50% for each year post commercial operation date of the projects upto a maximum of 90% of the original cost of the asset. Post implementation of HPERC Generation Regulations of 2011 (i.e. from FY 2011-12 onwards), for plants in operation for more than 12 years, the balance depreciation after adjusting for the depreciation upto FY 2010-11 has been spread over the remaining useful life of the project. In case of plants where age was less than 12 years, the Commission has considered depreciation at the rate of 5.28% until 12 years of plant life is completed post which the balance depreciation is spread across the remaining useful life of the project.

The useful life of the project has been considered as 40 years in accordance to Regulation 3(36) of HPERC Generation Regulations of 2011, which defines the useful life.

- 5.2.26. In case of Larji HEP, the depreciation rate of 5.17% (approved in the Commission’s Tariff Order dated July 19, 2011) has been considered to calculate the Depreciation for the Second Control Period.
- 5.2.27. Further, for the Plants which are less than 12 years old as on 31st March 2011 like Holi and Khauli, the Commission has considered a depreciation rate of 5.28% till they attain life of 12 year from the year of commissioning.

Interest on loans

- 5.2.28. The Commission has determined the interest charged in accordance to Regulation 17 of HPERC (Terms and Conditions for Determination of Hydro Generation Tariff) Regulations, 2011 and based on capital cost and means of finance approved for each generating station in the tariff order dated July 19, 2011.
- 5.2.29. For most of the plants (except for Bassi, Larji, Ghanvi and Khauli) there was no interest on loan charged during the 2nd Control Period, as there was no loan outstanding. Interest on loan for Bassi, Larji, Ghanvi and Khauli plants are discussed in subsequent sub-sections along with each plant’s individual AFC True-up analysis.

Interest on Working Capital

- 5.2.30. The interest on working capital has been determined in accordance with the Regulation 18 and 19 of HPERC (Terms and Conditions for Determination of Hydro Generation Tariff) Regulations, 2011. As per Regulation 18, the working capital for hydroelectric power station shall contain following components:
 - a) Operation and Maintenance (O&M) expenses for 1 month
 - b) Maintenance spares equivalent to 15% of O&M
 - c) Receivables equivalent to two months of fixed cost
- 5.2.31. As per Regulation 19, the rate of interest on working capital shall be on normative basis and shall be equal to the Short-Term Prime Lending Rate of the State Bank of India as on 1st April of the relevant year.
- 5.2.32. The Commission in its Tariff Order dated July 19, 2011, considered a rate of interest of 13.50% applicable as on 1st April 2011 for determining interest on working capital for the Control Period. However, while Truing-up the Annual Revenue Requirement for the second MYT Control Period, the Commission has considered the SBI prime lending rate applicable for the respective year as follows:

Table 91: Approved rate of Interest on Working Capital

Particular	FY12	FY13	FY14
Rate of Interest on WC (SBI PLR as on 1 st April of FY)	13.00%	14.75%	14.45%

Return on Equity

- 5.2.33. As per the regulation 21 of HPERC (Terms and Conditions for Determination of Hydro Generation Tariff) Regulations, 2011, Return on equity is computed on the equity determined in accordance with regulation 16 and on pre-tax basis at the base rate of 15.5% to be grossed up as per sub-regulation (3) of this regulation. However, in absence of any tax paid during the second Control Period, RoE of 15.5% has been allowed on equity portion of respective plants.

Generation and Auxiliary Consumption

- 5.2.34. Plant wise actual generation was submitted by the Petitioner. It was observed that while actual generation in case of few plants was higher than the design energy, in case of others actual generation was lower than the design energy. However, the Petitioner did not provide any reasons in case of such plants where actual generation was lower than design energy. In line with the HPERC Generation Regulations 2011, the Commission has considered trued-up ARR and design energy for determination of Fixed charge and Energy Charge Rate (ECR) for each year of the 2nd Control Period. Also, for the purpose of true-up, the Commission has considered Auxiliary Consumption figures approved in its MYT order for 2nd Control Period. Accordingly, the trued-up fixed charge and ECR is considered for determination of realizable revenue against each plant based on the actual generation for each year of the 2nd Control Period.
- 5.2.35. In case of plants where actual generation was higher than the design energy, the Commission has considered the provision 26 (7) of HPERC Generation Regulations, 2011 which provides for limiting ECR to a maximum of eighty paise per unit.
- 5.2.36. The Plant wise True-Up of the AFC vis-à-vis the actual has been provided in the following sections.

5.3. Annual Fixed Charges for Andhra HEP

- 5.3.1. Andhra HEP is a 16.95 MW (3 x 5.65 MW) project commissioned in the year 1987. The project was executed with a capital cost of INR 57.61 Cr and was funded through 100% debt with no outstanding loan.
- 5.3.2. The Petitioner has filed for true-up of AFC on account of higher actual O&M cost and additional capital expenditure.
- 5.3.3. As discussed in section 5.2 of this order, no additional capitalization has been approved for Andhra HEP during 2nd Control Period. Also as discussed in section 5.3 of this Order, O&M cost being a Controllable Cost item has been approved similar to that approved in the Order for second Control Period.
- 5.3.4. The difference in Trued-up numbers for 2nd Control Period from the approved numbers in the Tariff Order dated 19-Jul-11, is on account of change in rate of interest for working capital. The details of the True-Up of Annual Fixed Charges for the Andhra HEP for Second Control Period are provided in the table below:

Table 92: Trued-up AFC of 2nd Control Period for Andhra HEP

Particular	Units	FY 12		FY 13		FY 14	
		MYT approved	Trued-up	MYT approved	Trued-up	MYT approved	Trued-up
Generation							
Gross Generation (DE)	MU	87.30	87.30	87.30	87.30	87.30	87.30
Total Auxiliary	MU	0.87	0.87	0.87	0.87	0.87	0.87
Net generation	MU	86.43	86.43	86.43	86.43	86.43	86.43
Less: Free Power to GoHP	MU	0.00	0.00	0.00	0.00	0.00	0.00
Energy Available (DE)	MU	86.43	86.43	86.43	86.43	86.43	86.43
Actual Generation	MU		72.42		64.98		77.65
Annual Fixed Charges							
O&M Expenses	Rs. Cr.	4.45	4.45	4.45	4.45	4.45	4.45
Depreciation	Rs. Cr.	1.10	1.10	1.10	1.10	1.10	1.10
Interest Charges	Rs. Cr.	0.00	0.00	0.00	0.00	0.00	0.00
Return on Equity	Rs. Cr.	0.00	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	Rs. Cr.	0.27	0.26	0.27	0.30	0.27	0.29
Total AFC	Rs. Cr.	5.82	5.81	5.82	5.84	5.82	5.84
Difference in AFC	Rs. Cr.		0.01		-0.02		-0.02
Tariff (based on DE)							
Energy Charge Rate	Rs/KWh	0.34	0.34	0.34	0.34	0.34	0.34
Capacity Charges	Rs. Cr.	2.91	2.90	2.91	2.92	2.91	2.92

5.4. Annual Fixed Charges for Baner HEP

- 5.4.1. Baner HEP is a 12 MW (3 x 4 MW) project commissioned in the year 1996. The Commission in its tariff order for 1st Control Period of FY 2008-09 to FY 2010-11 dated 30th May 2008 had considered INR 55.67 Cr as the capitalized project cost for the project and approved INR 34.66 Cr of loan (arranged from PFC, LIC and GoHP) and Rs.15 Cr of GoHP equity. The Commission considered that the remaining fund requirement of INR 6.01 Cr has been funded through short-term loans taken by the HPSEBL.
- 5.4.2. Further the Commission in its Tariff Order dated 30-May-2008 considered that the equity of Rs. 15 Cr invested in the project by the GoHP was later transferred to the HPSEBL. As such, the Commission provided return on equity to HPSEBL for Rs. 15 Cr of GoHP equity (later transferred to the HPSEBL) at 15.50% as per the HPERC Generation Regulation, 2011 in the 2nd Control Period. The Commission in the current Tariff Order has also allowed return on the GoHP equity of Rs. 15 Cr at 15.50% p.a.
- 5.4.3. The Petitioner has filed for true-up of AFC on account of higher actual O&M cost and additional capital expenditure.
- 5.4.4. As discussed in section 5.2 of this order, no additional capitalization has been approved for Baner HEP during 2nd Control Period. Also as discussed in section 5.3 of this Order, O&M cost being a Controllable Cost item has been approved similar to that approved in the Order for second Control Period.
- 5.4.5. The difference in Trued-up numbers for 2nd Control Period from the approved numbers in the Tariff Order dated 19-Jul-11, is on account of change in rate of interest for working capital. The details of the True-Up of Annual Fixed Charges for the Baner HEP for Second Control Period are provided in the table below:

Table 93: Trued-up AFC of 2nd Control Period for Baner HEP

Particular	Units	FY 12		FY 13		FY 14	
		MYT Approved	Trued-Up	MYT Approved	Trued-Up	MYT Approved	Trued-Up
Generation							
Gross Generation (DE)	MU	60.67	60.67	60.67	60.67	60.67	60.67
Total Auxiliary	MU	0.61	0.61	0.61	0.61	0.61	0.61
Net generation	MU	60.06	60.06	60.06	60.06	60.06	60.06
Less: Free Power to GoHP	MU	7.21	7.21	7.21	7.21	7.21	7.21
Energy Available (DE)	MU	52.85	52.85	52.85	52.85	52.85	52.85
Actual Generation	MU		40.48		38.02		37.44
Annual Fixed Charge							
O&M Expenses	Rs. Cr.	4.14	4.14	4.14	4.14	4.14	4.14
Depreciation	Rs. Cr.	1.19	1.17	1.19	1.17	1.19	1.17
Interest Charges	Rs. Cr.	0.01	0.01	0.00	0.00	0.00	0.00
Return on Equity	Rs. Cr.	2.33	2.33	2.33	2.33	2.33	2.33
Interest on Working Capital	Rs. Cr.	0.31	0.30	0.31	0.34	0.31	0.33
Total	Rs. Cr.	7.98	7.94	7.97	8.13	7.97	7.97
Difference in AFC	Rs. Cr.		0.04		-0.16		0.00
Tariff and Revenue							
Energy Charge Rate	Rs/KWh	0.66	0.75	0.66	0.75	0.66	0.75
Capacity Charges	Rs. Cr.	3.99	3.97	3.99	3.99	3.99	3.98

5.5. Annual Fixed Charges for Bassi HEP

5.5.1. Bassi HEP is a 60 MW (4 x 15 MW) project commissioned in the year 1970, 1971 and 1981.

5.5.2. The Commission in the 1stMYT Control Period Tariff Order had approved a capital cost of INR 31.26 Cr. as the original cost of the project, funded through 100% debt.

5.5.3. In the Tariff Order for 2ndMYT Control Period, the Commission had provisionally considered an additional capitalization of INR 109.98 Cr towards RMU & LE scheme, resulting in opening GFA of INR 141.24 Cr. for FY 2011-12.

5.5.4. In its petition, the Petitioner clarified that an additional capitalization of Rs. 124.23 Cr for RMU & LE scheme has been considered in opening GFA of FY2012-13, as against the original approved cost of Rs. 109.98. The Petitioner submitted in one of the replies to queries raised by the Commission, that this increased expenditure of Rs. 14.27 Cr. was on account of:

- i. Retrofitting and uprating Generator Transformer of Bassi HEP
- ii. Replacement of 132 kV ABCB circuit breaker with SF6 circuit breaker
- iii. Revamping / renovation of CO2 system breaking and jacking system emulsifier etc.

5.5.5. Information with respect to DPR, relevant approvals of Board and Commission were sought from the Petitioner. However, the Petitioner has only provided Amendment Work Orders for the RMU & LE scheme that led to the overall escalation. However, classification of additional amount under RMU & LE scheme was not justified.

5.5.6. The Petitioner had also stated in its submissions that RMU & LE scheme has led to 10% capacity enhancement for Bassi HEP from 60 MW to 66 MW. In support of this, the Petitioner has submitted a comparison of Bassi HEP's cumulative

generation for 6 years period, before (FY03 to FY08) and after (FY15 to FY20) RMU & LE scheme completion. Accordingly the Commission has considered enhanced generation units for true-up.

- 5.5.7. Further in one of the replies, the Petitioner submitted year-wise reconciliation statement/ work wise detail exhibit shows that a total of Rs. 153.85 Cr has been capitalized by HPSEBL for Bassi's RMU & LE scheme between FY 2005-06 and FY 2016-17, as follow:

Table 94: Year on Year additional capitalization for Bassi HEP, proposed by Petitioner (in Rs. Cr.)

Year	Capitalized/ Transferred to Gross Fixed Assets	Cumulative
FY06	0.21	0.21
FY07	0.78	0.99
FY08	0.00	0.99
FY09	0.00	0.99
FY10	20.61	21.60
FY11	8.76	30.36
FY12	0.15	30.51
FY13	120.15	150.66
FY14	0.00	150.66
FY15	2.95	153.61
FY16	0.00	153.61
FY17	0.23	153.85
Total	153.85	

- 5.5.8. The above table shows that only Rs. 30.51 Cr was capitalized till the end of FY 2011-12. Further the plant wise accounts submitted by HPSEBL for Bassi HEP show opening GFA for FY 2012-13 as just Rs. 58.74 Cr as against Rs. 155.69 Cr. considered by HPSEBL in its Petition.

- 5.5.9. In its queries, the Commission highlighted these discrepancies to the Petitioner and observes that the Petitioner is revising the actual amount incurred towards Bassi RMU scheme in its subsequent submissions. The Commission directed Petitioner to submit an auditor certificate with respect to year-wise amount of expenditure incurred toward RMU of Bassi power plant as per the scope identified under the scheme. In response, the Petitioner responded that the process for appointment of Auditor for vetting the expenditure incurred on the Bassi RMU Scheme has already been initiated by HPSEBL. Further, the Petitioner stated that the completion of the exercise will take some time and hence HPSEBL shall submit the Auditor Certificate towards the RMU Scheme of Bassi Power House along with the petition for True up of 3rd Control Period of Generation Business.

- 5.5.10. Due to the lack of sufficient information with respect to the works covered under RMU & LE and the audited cost numbers, the Commission has considered the originally approved capital expenditure of Rs. 109.98 Cr as additional capitalization. Further, the Petitioner is directed to file a separate petition with all supporting data (including DPR, details of works, year-wise expenditure, auditor certificate, Board approval, etc.) for prudence and approval of additional capitalization.

- 5.5.11. Based on the submissions of the Petitioner, majority of capitalization for RMU& LE scheme has been undertaken in FY 2012-13 (as also evident from the table

above).Accordingly, the Commission has excluded the additional capitalization considered in opening GFA of FY 2011-12 (as approved in tariff order for 2nd Control Period) and considered the same in FY 2012-13.In line with considerations in Order for 2nd Control Period, the Commission has considered this amount of Rs. 109.98 Cr. to be funded 100% by debt. Interest rate of 11.62% in FY12, 12.51% in FY13 and 12.58% in FY14 has provisionally been considered as per weighted average rate of interest as per submission of the Petitioner.

- 5.5.12. Also, the Petitioner submitted that de-capitalization of 0.218 Cr. has been done in FY 2013-14 for 132 kV Bassi-Shanan Line being an Inter-state Transmission line which was transferred to HPPTCL under HP Power Sector Reforms Transfer Scheme (Actual cost of the asset being Rs. 2.18 Cr.). The Petitioner has provided a copy of advice of Transfer Memo Debit/ Credit as documentary evidence for the same. The Commission shall consider such de-capitalization as part of detailed scrutiny of additional capitalization of the plant.
- 5.5.13. Further in line with the submissions of the Petitioner, the Commission has considered a life extension of 20 years for Bassi HEP (taking its total life from 40 years to 60 years). Accordingly, the remaining depreciation for the plant has been spread out over the extended life.
- 5.5.14. On account of changes discussed above, revised components of ARR i.e. depreciation, interest charges and ROE for the plant have been worked out.
- 5.5.15. Further as discussed in section 5.3 of this order, no change has been approved in O&M cost, on account of it being a Controllable Cost item.
- 5.5.16. The details of the True-Up of Annual Fixed Charges for the Bassi HEP for Second Control Period are provided in the table below:

Table 95: Trued up AFC of 2nd Control Period for Bassi HEP

Particular	Units	FY 12		FY 13		FY 14	
		MYT Approved	Trued-up	MYT Approved	Trued-up	MYT Approved	Trued-up
Generation							
Gross Generation (DE)	MU	346.83	346.83	346.83	346.83	346.83	346.83
Total Auxiliary	MU	2.43	2.43	2.43	2.43	2.43	2.43
Net generation	MU	344.40	344.40	344.40	344.40	344.40	344.40
Less: Free Power to GoHP	MU	0.00	0.00	0.00	0.00	0.00	0.00
Energy Available (DE)	MU	344.40	344.40	344.40	344.40	344.40	344.40
Actual Generation	MU		154.71		246.04		227.85
Annual Fixed Charge							
O&M Expenses	Rs. Cr.	8.58	8.58	8.58	8.58	8.58	8.58
Depreciation	Rs. Cr.	6.74	0.36	7.46	3.86	7.46	3.93
Interest Charges	Rs. Cr.	6.15	0.00	5.33	6.53	4.51	12.46
Return on Equity	Rs. Cr.	0.00	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	Rs. Cr.	0.77	0.46	0.77	0.78	0.75	0.91
Total	Rs. Cr.	22.23	9.41	22.13	19.76	21.29	25.88
Difference in AFC	Rs. Cr.		12.82		2.37		-4.59
Tariff and Revenue							
Energy Charge Rate	Rs./Kwh	0.32	0.14	0.32	0.29	0.31	0.38
Capacity Charges	Rs. Cr.	11.12	4.70	11.07	9.88	10.65	12.94

5.6. Annual Fixed Charges for Bhaba HEP

5.6.1. Bhaba HEP is a 120 MW (3 x 40 MW) project commissioned in the year 1989. The Commission in its earlier tariff orders had considered the completed cost of the project as per the Accounts at INR 222.19 Cr for tariff determination. The project was assumed to be funded through 100% debt with no outstanding loan.

5.6.2. The Petitioner has filed for true-up of AFC on account of higher actual O&M cost and additional capital expenditure.

5.6.3. As discussed in section 5.2 of this order, no additional capitalization has been approved for Bhaba HEP during 2nd Control Period. Also as discussed in section 5.3 of this order, no change has been approved in O&M cost, on account of it being a Controllable Cost item.

5.6.4. The difference is primarily on account of change in rate of interest for working capital. The details of the True-Up of Annual Fixed Charges for the Bhaba HEP for Second Control Period are provided in the table below:

Table 96: Trued-up AFC of 2nd Control Period for Bhaba HEP

Particular	Units	FY 12		FY 13		FY 14	
		MYT Approved	Trued-up	MYT Approved	Trued-up	MYT Approved	Trued-up
Generation							
Gross Generation (DE)	MU	464.70	464.70	464.70	464.70	464.70	464.70
Total Auxiliary	MU	5.58	5.58	5.58	5.58	5.58	5.58
Net generation	MU	459.12	459.12	459.12	459.12	459.12	459.12
Less: Free Power to GoHP	MU	0.00	0.00	0.00	0.00	0.00	0.00
Energy Available (DE)	MU	459.12	459.12	459.12	459.12	459.12	459.12
Actual Generation	MU		588.00		363.62		534.17
Annual Fixed Charge							
O&M Expenses	Rs. Cr.	14.92	14.92	14.92	14.92	14.92	14.92
Depreciation	Rs. Cr.	4.42	4.42	4.42	4.42	4.42	4.42
Interest Charges	Rs. Cr.	0.00	0.00	0.00	0.00	0.00	0.00
Return on Equity	Rs. Cr.	0.00	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	Rs. Cr.	0.93	0.89	0.93	1.01	0.93	0.99
Total	Rs. Cr.	20.27	20.23	20.27	20.35	20.27	20.33
Difference in AFC	Rs. Cr.		0.04		-0.08		-0.06
Tariff and Revenue							
Energy Charge Rate	Rs/KWh	0.22	0.22	0.22	0.22	0.22	0.22
Capacity Charges	Rs. Cr.	10.14	10.11	10.14	10.17	10.14	10.16

5.7. Annual Fixed Charges for Binwa HEP

5.7.1. Binwa HEP is a 6 MW (2 x 3 MW) project commissioned by the Petitioner in the year 1984. The project was executed with a capital cost of INR 17.44 Cr and was funded through 100% debt with no outstanding loan

5.7.2. The Petitioner has filed for true-up of AFC on account of higher actual O&M cost and additional capital expenditure.

5.7.3. As discussed in section 5.2 of this order, no additional capitalization has been approved for Binwa HEP during 2nd Control Period. Also as discussed in section 5.3 of this order, no change has been approved in O&M cost, on account of it being a Controllable Cost item.

5.7.4. The difference in is primarily on account of change in rate of interest for working capital. The details of the True-Up Annual Fixed Charges for the Binwa HEP for the Second Control Period are provided in the table below:

Table 97: Trued-up AFC of 2nd Control Period for Binwa HEP

Particular	Units	FY 12		FY 13		FY 14	
		MYT Approved	Trued-up	MYT Approved	Trued-up	MYT Approved	Trued-up
Generation							
Gross Generation (DE)	MU	29.25	29.25	29.25	29.25	29.25	29.25
Total Auxiliary	MU	0.20	0.20	0.20	0.20	0.20	0.20
Net generation	MU	29.04	29.05	29.04	29.05	29.04	29.05
Less: Free Power to GoHP	MU	0.00	0.00	0.00	0.00	0.00	0.00
Energy Available (DE)	MU	29.04	29.05	29.04	29.05	29.04	29.05
Actual Generation	MU		34.03		29.40		19.24
Annual Fixed Charge							
O&M Expenses	Rs. Cr.	3.45	3.45	3.45	3.45	3.45	3.45
Depreciation	Rs. Cr.	0.30	0.30	0.30	0.30	0.30	0.30
Interest Charges	Rs. Cr.	0.00	0.00	0.00	0.00	0.00	0.00
Return on Equity	Rs. Cr.	0.00	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	Rs. Cr.	0.21	0.19	0.23	0.22	0.25	0.21
Annual Fixed Charge	Rs. Cr.	3.95	3.94	3.95	3.96	3.95	3.96
Difference in AFC	Rs. Cr.		0.01		-0.01		-0.01
Tariff and Revenue							
Energy Charge Rate	Rs/KWh	0.68	0.68	0.68	0.68	0.68	0.68
Capacity Charges	Rs. Cr.	1.98	1.97	1.99	1.98	2.00	1.98

5.8. Annual Fixed Charges for Chaba HEP

5.8.1. Chaba HEP is a 1.75 MW (2 x 0.5 MW + 3 x 0.25 MW) project commissioned in the year 1913-14. The project was executed with a capital cost of INR1.21 Cr and was funded through 100% debt. It is a 94 year old completely depreciated plant with no outstanding loan.

5.8.2. The Petitioner has filed for true-up of AFC on account of higher actual O&M cost and additional capital expenditure.

5.8.3. As discussed in section 5.2 of this order, no additional capitalization has been approved for Chaba HEP during 2nd Control Period. Also as discussed in section 5.3 of this order, no change has been approved in O&M cost, on account of it being a Controllable Cost item.

5.8.4. The difference is primarily on account of change in rate of interest for working capital. The details of the True-Up Annual Fixed Charges for the Chaba HEP for the Second Control Period are provided in the table below:

Table 98: Trued-up AFC of 2nd Control Period for Chaba HEP

Particular	Units	FY 12		FY 13		FY 14	
		MYT Approved	Trued-up	MYT Approved	Trued-up	MYT Approved	Trued-up
Generation							
Gross Generation (DE)	MU	7.67	7.67	7.67	7.67	7.67	7.67
Total Auxiliary	MU	0.08	0.08	0.08	0.08	0.08	0.08
Net generation	MU	7.59	7.59	7.59	7.59	7.59	7.59
Less: Free Power to GoHP	MU	0.00	0.00	0.00	0.00	0.00	0.00
Energy Available (DE)	MU	7.59	7.59	7.59	7.59	7.59	7.59
Actual Generation	MU		8.97		7.64		4.78

Particular	Units	FY 12		FY 13		FY 14	
		MYT Approved	Trued-up	MYT Approved	Trued-up	MYT Approved	Trued-up
Annual Fixed Charge							
O&M Expenses	Rs. Cr.	1.31	1.31	1.31	1.31	1.31	1.31
Depreciation	Rs. Cr.	0.00	0.00	0.00	0.00	0.00	0.00
Interest Charges	Rs. Cr.	0.00	0.00	0.00	0.00	0.00	0.00
Return on Equity	Rs. Cr.	0.00	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	Rs. Cr.	0.07	0.07	0.07	0.08	0.07	0.08
Annual Fixed Charge	Rs. Cr.	1.39	1.38	1.39	1.39	1.39	1.39
Difference in AFC	Rs. Cr.		0.01		0.00		0.00
Tariff and Revenue							
Energy Charge Rate	Rs/KWh	0.91	0.91	0.91	0.92	0.91	0.91
Capacity Charges	Rs. Cr.	0.69	0.69	0.69	0.69	0.69	0.69

5.9. Annual Fixed Charges for Chamba HEP

5.9.1. Chamba HEP is a 0.45 MW (3 X 0.15 MW) project commissioned by the Petitioner in the year 1938, 1957 and 1985. The project was executed with a capital cost of INR 0.50 Cr and was funded through 100% debt with no outstanding loan.

5.9.2. The Petitioner has filed for true-up of AFC on account of higher actual O&M cost and additional capital expenditure.

5.9.3. As discussed in section 5.2 of this order, no additional capitalization has been approved for Chamba HEP during 2nd Control Period. Also as discussed in section 5.3 of this order, no change has been approved in O&M cost, on account of it being a Controllable Cost item. The difference is primarily on account of change in rate of interest for working capital. The details of the True-Up Annual Fixed Charges for the Chamba HEP for the Second Control Period are provided in the table below:

Table 99: Trued-up AFC of 2nd Control Period for Chamba HEP

Particular	Units	FY 12		FY 13		FY 14	
		MYT Approved	Trued-up	MYT Approved	Trued-up	MYT Approved	Trued-up
Generation							
Gross Generation (DE)	MU	5.00	5.00	5.00	5.00	5.00	5.00
Total Auxiliary	MU	0.05	0.05	0.05	0.05	0.05	0.05
Net generation	MU	4.95	4.95	4.95	4.95	4.95	4.95
Less: Free Power to GoHP	MU	0.00	0.00	0.00	0.00	0.00	0.00
Energy Available (DE)	MU	4.95	4.95	4.95	4.95	4.95	4.95
Actual Generation	MU		0.30		0.54		1.47
Annual Fixed Charge							
O&M Expenses	Rs. Cr.	0.33	0.33	0.33	0.33	0.33	0.33
Depreciation	Rs. Cr.	0.00	0.01	0.00	0.01	0.00	0.01
Interest Charges	Rs. Cr.	0.00	0.00	0.00	0.00	0.00	0.00
Return on Equity	Rs. Cr.	0.00	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	Rs. Cr.	0.02	0.02	0.02	0.02	0.02	0.02
Annual Fixed Charge	Rs. Cr.	0.36	0.36	0.36	0.36	0.36	0.36
Difference in AFC			0.00		0.00		0.00
Tariff and Revenue							
Energy Charge Rate	Rs/Kwh	0.36	0.36	0.36	0.36	0.36	0.36
Capacity Charges	Rs. Cr.	0.18	0.18	0.18	0.18	0.18	0.18

5.10. Annual Fixed Charges for Gaj HEP

- 5.10.1. Gaj HEP is a 10.50 MW (3 x 3.50 MW) project commissioned by the Petitioner in the year 1996.
- 5.10.2. The Commission in its tariff order dated 30th May 2009 had considered Rs.60.58 Cr as the capitalized project cost for the purpose of determination of AFC during the Control Period and approved Rs.37.31 Cr of loan arranged from PFC, LIC and GoHP and the Rs.15 Cr GoHP equity as submitted by the HPSEBL. The Commission considered that the remaining fund requirement of Rs.8.27 Cr would be funded through short-term loans taken by the HPSEBL.
- 5.10.3. The Commission in its Tariff Order considered that the equity of Rs. 15 Cr invested in the project by the GoHP was later transferred to the HPSEBL. As such, the commission provided return on Rs.15 Cr of GoHP equity (transferred to the HPSEBL) at 15.50% as per the HPERC Generation Regulation, 2011.
- 5.10.4. The Commission in its Current Tariff Order has also allowed return on the GoHP equity of Rs. 15 Cr.
- 5.10.5. The Petitioner has filed for true-up of AFC on account of higher actual O&M cost and additional capital expenditure.
- 5.10.6. As discussed in section 5.2 of this order, no additional capitalization has been approved for Gaj HEP during 2nd Control Period. Also as discussed in section 5.3 of this order, no change has been approved in O&M cost, on account of it being a Controllable Cost item.
- 5.10.7. Further, as per the submissions made by Petitioner, a de-capitalization of Rs. 30.2 Cr. has been done in FY 2011-12. The Petitioner has clarified in its submissions that the de-capitalization was done on account of transfer to of a power house which was executed by Gaj Division to a newly created division i.e. Khauli Power House Division.
- 5.10.8. Based on the decapitalization and revision of interest on working capital, the components of ARR have been redetermined for Gaj HEP. The details of the Trued-up Annual Fixed Charges for the Gaj HEP for the Second Control Period are provided in the table below:

Table 100: Trued-up AFC of 2nd Control Period for Gaj HEP

Particular	Units	FY 12		FY 13		FY 14	
		MYT Approved	Trued-up	MYT Approved	Trued-up	MYT Approved	Trued-up
Generation							
Gross Generation (DE)	MU	38.31	38.31	38.31	38.31	38.31	38.31
Total Auxiliary	MU	0.38	0.38	0.38	0.38	0.38	0.38
Net generation	MU	37.93	37.93	37.93	37.93	37.93	37.93
Less: Free Power to GoHP	MU	4.55	4.55	4.55	4.55	4.55	4.55
Energy Available (DE)	MU	33.38	33.38	33.38	33.38	33.38	33.38
Actual Generation	MU		36.68		34.39		40.91
Annual Fixed Charge							
O&M Expenses	Rs. Cr.	3.71	3.71	3.71	3.71	3.71	3.71
Depreciation	Rs. Cr.	1.28	0.64	1.28	0.64	1.28	0.64
Interest Charges	Rs. Cr.	0.00	0.00	0.00	0.00	0.00	0.00
Return on Equity	Rs. Cr.	2.33	2.33	2.33	2.33	2.33	2.33
Interest on Working Capital	Rs. Cr.	0.29	0.26	0.29	0.33	0.29	0.29
Total	Rs. Cr.	7.62	6.94	7.61	6.97	7.61	6.97

Particular	Units	FY 12		FY 13		FY 14	
		MYT Approved	Trued-up	MYT Approved	Trued-up	MYT Approved	Trued-up
Difference in AFC	Rs. Cr.		0.68		0.64		0.64
Tariff and Revenue							
Energy Charge Rate	Rs/Kwh	1.00	1.04	0.99	1.04	0.99	1.04
Capacity Charges	Rs. Cr.	3.81	3.47	3.81	3.49	3.81	3.48

5.11. Annual Fixed Charges for Giri HEP

- 5.11.1. Giri HEP is a 60 MW (2 x 30 MW) project commissioned by the Petitioner in the year 1978.
- 5.11.2. The Commission in its tariff order date 30th May 2009 had considered the project with capital cost of INR 36.22 Cr for tariff determination and funded through 100% debt with no outstanding loan.
- 5.11.3. The Petitioner has filed for true-up of AFC on account of higher actual O&M cost and additional capital expenditure.
- 5.11.4. As discussed in section 5.2 of this order, no additional capitalization has been approved for Giri HEP during 2nd Control Period. Also as discussed in section 5.3 of this order, no change has been approved in O&M cost, on account of it being a Controllable Cost item.
- 5.11.5. The difference is primarily on account of change in rate of interest for working capital. The details of the Trued-up Annual Fixed Charges for the Giri HEP for the Second Control Period are provided in the table below:

Table 101: Trued-up AFC of 2nd Control Period for Giri HEP

Particular	Units	FY 12		FY 13		FY 14	
		MYT Approved	Trued-up	MYT Approved	Trued-up	MYT Approved	Trued-up
Generation							
Gross Generation (DE)	MU	289.55	289.55	289.55	289.55	289.55	289.55
Total Auxiliary	MU	2.03	2.03	2.03	2.03	2.03	2.03
Net generation	MU	287.52	287.52	287.52	287.52	287.52	287.52
Less: Free Power to GoHP	MU	0.00	0.00	0.00	0.00	0.00	0.00
Energy Available (DE)	MU	287.52	287.52	287.52	287.52	287.52	287.52
Actual Generation	MU		213.92		196.01		230.66
Annual Fixed Charge							
O&M Expenses	Rs. Cr.	12.66	12.66	12.66	12.66	12.66	12.66
Depreciation	Rs. Cr.	0.47	0.47	0.47	0.47	0.47	0.47
Interest Charges	Rs. Cr.	0.00	0.00	0.00	0.00	0.00	0.00
Return on Equity	Rs. Cr.	0.00	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	Rs. Cr.	0.71	0.68	0.71	0.78	0.71	0.76
Total	Rs. Cr.	13.85	13.82	13.85	13.91	13.85	13.89
Difference in AFC	Rs. Cr.		0.03		-0.06		-0.04
Tariff and Revenue							
Energy Charge Rate	Rs/KWh	0.24	0.24	0.24	0.24	0.24	0.24
Capacity Charges	Rs. Cr.	6.92	6.91	6.92	6.96	6.92	6.94

5.12. Annual Fixed Charges for Larji HEP

- 5.12.1. Larji HEP is a 126 MW (3 x 42 MW) project commissioned in the year 2006.
- 5.12.2. Further, as per the Order dated 07.07.2011, for approval of Capital cost of Larji Power Plant, the Commission approved Capital Cost of Rs.1098.70 crore. The

Commission had considered Rs. 155.57 crore being funded through equity infusion and the balance amount of Rs. 943.13 crore funded by way of Debt. Thus, out of a total loan amount of Rs.1060 crore availed by the HPSEBL, the Commission had not considered an amount of Rs. 116.87 crore on account of disallowance in Capital Cost of the Project.

5.12.3. The Commission in its Order dated 07.07.2011, had also determined the tariff of Larji HEP for 2nd Control Period from FY 2011-12 to FY 2013-14. The Commission had approved INR 544.62 Cr as the opening loan balance for FY 2011-12.

5.12.4. For the purpose of True-up of interest charges in this order, the Commission has considered the submission of Petitioner for weighted average rate of interest and actual loan repayment. Accordingly, the interest charges worked out by the Commission for the Control Period from FY 2011-12 to FY 2013-14 is summarised below:

Table 102: Approved Interest Cost for Larji HEP

Particulars	Units	FY 12	FY 13	FY 14
Opening Balance	Rs. Cr.	544.6	411.6	288.6
Fresh loan taken	Rs. Cr.	-	-	-
Principal Repayment	Rs. Cr.	133.0	123.0	101.0
Closing balance	Rs. Cr.	411.6	288.6	187.6
Wtd. Avg. Interest Rate	%	8.01%	8.17%	8.04%
Interest Payment	Rs. Cr.	38.3	28.6	19.2

5.12.5. The Commission in its Order dated 07.07.2011 had also approved the applicable rate of return on the Equity for first 10 years beginning from the date of COD as 19.38%. However, in view of no tax liability during the second Control Period, the Commission has considered rate of return on equity for Larji HEP to be 15.5% for true-up. Considering there is no tax incidence on HPSEBL during the 2nd Control Period, therefore RoE rate of 15.50% is taken on post tax basis for True-up.

5.12.6. As discussed in section 5.2 of this order, no additional capitalization has been approved for Larji HEP during 2nd Control Period. Also as discussed in section 5.3 of this order, no change has been approved in O&M cost, on account of it being a Controllable Cost item.

5.12.7. The details of the Trued-up Annual Fixed Charges for the Larji HEP for the Second Control Period are provided in the table below:

Table 103: Trued-up AFC of 2nd Control Period for Larji HEP

Particular	Units	FY 12		FY 13		FY 14	
		MYT Approved	Trued-up	MYT Approved	Trued-up	MYT Approved	Trued-up
Generation							
Gross Generation (DE)	MU	586.82	586.82	586.82	586.82	586.82	586.82
Total Auxiliary	MU	7.04	7.04	7.04	7.04	7.04	7.04
Net generation	MU	579.78	579.78	579.78	579.78	579.78	579.78
Less: Free Power to GoHP	MU	69.57	69.57	69.57	69.57	69.57	69.57
Energy Available (DE)	MU	510.21	510.21	510.21	510.21	510.21	510.21
Actual Generation	MU		612.03		572.67		525.84
Annual Fixed Charge							
O&M Expenses	Rs. Cr.	15.00	15.00	16.25	16.25	17.60	17.60
Depreciation	Rs. Cr.	56.69	56.69	56.69	56.69	56.69	56.69

Particular	Units	FY 12		FY 13		FY 14	
		MYT Approved	Trued-up	MYT Approved	Trued-up	MYT Approved	Trued-up
Interest Charges	Rs. Cr.	45.56	38.31	34.59	28.60	25.16	19.15
Return on Equity	Rs. Cr.	30.14	24.11	30.14	24.11	30.14	24.11
Interest on Working Capital	Rs. Cr.	3.36	3.44	3.20	3.74	3.08	3.51
Total	Rs. Cr.	150.77	137.55	140.89	129.40	132.68	121.07
Difference in AFC	Rs. Cr.		13.20		11.49		11.61
Tariff and Revenue							
Energy Charge Rate	Rs/KWh	1.48	1.35	1.38	1.27	1.30	1.19
Capacity Charges	Rs. Cr.	75.38	68.77	70.44	64.70	66.34	60.53

5.13. Annual Fixed Charges for Nogli HEP

5.13.1. Nogli HEP is a 2.50 MW (2 x 0.25 + 4 x 0.50 MW) project commissioned in the years 1963, 1970 and 1974. The project was executed with a capital cost of INR 11.81 Cr and was funded through 100% debt. It is a completely depreciated plant with no outstanding loan.

5.13.2. The Petitioner has filed for true-up of AFC on account of higher actual O&M cost and additional capital expenditure.

5.13.3. As discussed in section 5.2 of this order, no additional capitalization has been approved for Nogli HEP during 2nd Control Period. Also as discussed in section 5.3 of this order, no change has been approved in O&M cost, on account of it being a Controllable Cost item.

5.13.4. The difference is primarily on account of change in rate of interest for working capital. The details of the Trued-up Annual Fixed Charges for the Nogli HEP for the Second Control Period are provided in the table below:

Table 104: Trued-up AFC of 2nd Control Period for Nogli HEP

Particular	Units	FY 12		FY 13		FY 14	
		MYT Approved	Trued-up	MYT Approved	Trued-up	MYT Approved	Trued-up
Generation							
Gross Generation (DE)	MU	14.70	14.70	14.70	14.70	14.70	14.70
Total Auxiliary	MU	0.15	0.15	0.15	0.15	0.15	0.15
Net generation	MU	14.55	14.55	14.55	14.55	14.55	14.55
Less: Free Power to GoHP	MU	0.00	0.00	0.00	0.00	0.00	0.00
Energy Available (DE)	MU	14.55	14.55	14.55	14.55	14.55	14.55
Actual Generation	MU		7.24		5.86		5.93
Annual Fixed Charge							
O&M Expenses	Rs. Cr.	1.80	1.80	1.80	1.80	1.80	1.80
Depreciation	Rs. Cr.	0.00	0.00	0.00	0.00	0.00	0.00
Interest Charges	Rs. Cr.	0.00	0.00	0.00	0.00	0.00	0.00
Return on Equity	Rs. Cr.	0.00	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	Rs. Cr.	0.35	0.10	0.35	0.11	0.35	0.11
Total	Rs. Cr.	2.14	1.90	2.14	1.91	2.14	1.91
Difference in AFC	Rs. Cr.		0.24		0.23		0.23
Tariff and Revenue							
Energy Charge Rate	Rs/KWh	0.74	0.65	0.74	0.66	0.74	0.66
Capacity Charges	Rs. Cr.	1.08	0.95	1.08	0.95	1.08	0.95

5.14. Annual Fixed Charges for Rongtong HEP

5.14.1. Rongtong HEP is a 2 MW (4 x 0.50 MW) project commissioned by the Petitioner in the year 1986-87.

- 5.14.2. The Petitioner has filed for true-up of AFC on account of higher actual O&M cost and additional capital expenditure.
- 5.14.3. As discussed in section 5.2 of this order, no additional capitalization has been approved for Rongtong HEP during 2nd Control Period. Also as discussed in section 5.3 of this order, no change has been approved in O&M cost, on account of it being a Controllable Cost item.
- 5.14.4. The difference is primarily on account of change in rate of interest for working capital. The details of the Trued-up Annual Fixed Charges for the Rongtong HEP for the Second Control Period are provided in the table below:

Table 105: Trued-up AFC of 2nd Control Period for Rongtong HEP

Particular	Units	FY 12		FY 13		FY 14	
		MYT Approved	Trued-up	MYT Approved	Trued-up	MYT Approved	Trued-up
Generation							
Gross Generation (DE)	MU	7.64	7.64	7.64	7.64	7.64	7.64
Total Auxiliary	MU	0.08	0.08	0.08	0.08	0.08	0.08
Net generation	MU	7.56	7.56	7.56	7.56	7.56	7.56
Less: Free Power to GoHP	MU	0.00	0.00	0.00	0.00	0.00	0.00
Energy Available (DE)	MU	7.56	7.56	7.56	7.56	7.56	7.56
Actual Generation	MU		1.73		1.48		0.65
Annual Fixed Charge							
O&M Expenses	Rs. Cr.	0.79	0.79	0.79	0.79	0.79	0.79
Depreciation	Rs. Cr.	0.28	0.28	0.28	0.28	0.28	0.28
Interest Charges	Rs. Cr.	0.00	0.00	0.00	0.00	0.00	0.00
Return on Equity	Rs. Cr.	0.00	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	Rs. Cr.	0.05	0.05	0.05	0.05	0.05	0.05
Total	Rs. Cr.	1.12	1.12	1.12	1.12	1.12	1.13
Difference in AFC	Rs. Cr.		0.00		0.00		-0.01
Tariff and Revenue							
Energy Charge Rate	Rs/KWh	0.73	0.74	0.73	0.74	0.73	0.74
Capacity Charges	Rs. Cr.	0.56	0.56	0.56	0.56	0.56	0.56

5.15. Annual Fixed Charges for Rukti HEP

- 5.15.1. Rukti HEP is a 1.50 MW (3 x 0.50 MW) project commissioned by the HPSEBL in the year 1979 and 1980.
- 5.15.2. The Petitioner has filed for true-up of AFC on account of higher actual O&M cost and additional capital expenditure.
- 5.15.3. As discussed in section 5.2 of this order, no additional capitalization has been approved for Rukti HEP during 2nd Control Period. Also as discussed in section 5.3 of this order, no change has been approved in O&M cost, on account of it being a Controllable Cost item.
- 5.15.4. The difference is primarily on account of change in rate of interest for working capital. The details of the Trued-up Annual Fixed Charges for the Rukti HEP for the Second Control Period are provided in the table below:

Table 106: Trued-up AFC of 2nd Control Period for Rukti HEP

Particular	Units	FY 12		FY 13		FY 14	
		MYT Approved	Trued-up	MYT Approved	Trued-up	MYT Approved	Trued-up
Generation							
Gross Generation (DE)	MU	6.54	6.54	6.54	6.54	6.54	6.54

Particular	Units	FY 12		FY 13		FY 14	
		MYT Approved	Trued-up	MYT Approved	Trued-up	MYT Approved	Trued-up
Total Auxiliary	MU	0.07	0.07	0.07	0.07	0.07	0.07
Net generation	MU	6.47	6.47	6.47	6.47	6.47	6.47
Less: Free Power to GoHP	MU	0.00	0.00	0.00	0.00	0.00	0.00
Energy Available (DE)	MU	6.47	6.47	6.47	6.47	6.47	6.47
Actual Generation	MU		0.62		0.53		0.55
Annual Fixed Charge							
O&M Expenses	Rs. Cr.	0.52	0.52	0.52	0.52	0.52	0.52
Depreciation	Rs. Cr.	0.02	0.02	0.02	0.02	0.02	0.02
Interest Charges	Rs. Cr.	0.00	0.00	0.00	0.00	0.00	0.00
Return on Equity	Rs. Cr.	0.00	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	Rs. Cr.	0.03	0.03	0.03	0.03	0.03	0.03
Total	Rs. Cr.	0.57	0.57	0.57	0.57	0.57	0.57
Difference in AFC	Rs. Cr.		0.00		0.00		0.00
Tariff and Revenue							
Energy Charge Rate	Rs/KWh	0.44	0.44	0.44	0.44	0.44	0.44
Capacity Charges	Rs. Cr.	0.29	0.29	0.29	0.29	0.29	0.29

5.16. Annual Fixed Charges for Sal-II HEP

5.16.1. Sal-II HEP is a 2 MW (2 x 1 MW) project commissioned in the year 2000. The Commission in its tariff order date 30th May 2009 had considered the completed cost of the project as per the Accounts at Rs 17.48 Cr for tariff determination. The project is assumed to be funded through 100% debt with no outstanding loan.

5.16.2. The Petitioner has not filed details of true-up for Sal-II HEP in its petition. The Commission has undertaken a Suo-moto true-up of 2nd Control Period for the plant as discussed in section 5.1 of this order.

5.16.3. The Commission has taken fixed cost for the plant based on the capital cost approved in the Tariff Order dated July 19, 2011. No change is approved in O&M cost as it is a controllable item.

5.16.4. The difference is primarily on account of change in rate of interest for working capital. The details of the Trued-up Annual Fixed Charges for the Sal-II HEP for the Second Control Period are provided in the table below:

Table 107: Trued-up AFC of 2nd Control Period for Sal-II HEP

Particular	Units	FY 12		FY 13		FY 13	
		MYT Approved	Trued-up	MYT Approved	Trued-up	MYT Approved	Trued-up
Generation							
Gross Generation (DE)	MU	12.52	12.52	12.52	12.52	12.52	12.52
Total Auxiliary	MU	0.09	0.09	0.09	0.09	0.09	0.09
Net generation	MU	12.43	12.43	12.43	12.43	12.43	12.43
Less: Free Power to GoHP	MU	0.00	0.00	0.00	0.00	0.00	0.00
Energy Available (DE)	MU	12.43	12.43	12.43	12.43	12.43	12.43
Actual Generation	MU		3.76		3.55		6.65
Annual Fixed Charge							
O&M Expenses	Rs. Cr.	0.45	0.45	0.45	0.45	0.45	0.45
Depreciation	Rs. Cr.	0.39	0.39	0.39	0.39	0.39	0.39
Interest Charges	Rs. Cr.	0.00	0.00	0.00	0.00	0.00	0.00
Return on Equity	Rs. Cr.	0.00	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	Rs. Cr.	0.03	0.03	0.03	0.04	0.03	0.04

Particular	Units	FY 12		FY 13		FY 13	
		MYT Approved	Trued-up	MYT Approved	Trued-up	MYT Approved	Trued-up
Total	Rs. Cr.	0.87	0.87	0.88	0.88	0.88	0.88
Difference in AFC	Rs. Cr.		0.00		0.00		0.00
Tariff and Revenue							
Energy Charge Rate	Rs/KWh	0.35	0.35	0.35	0.35	0.35	0.35
Capacity Charges	Rs. Cr.	0.44	0.44	0.44	0.44	0.43	0.44

5.17. Annual Fixed Charges for Killar HEP

- 5.17.1. Killar HEP is a 0.30 MW (3 x 0.10 MW) project commissioned in the year 1995. The project was executed with a capital cost of Rs 8.65 Cr and was funded through 100% debt with no outstanding loan.
- 5.17.2. The Petitioner has not filed details of true-up for Killar HEP in its petition. The Commission has undertaken a Suo-moto true-up of 2nd Control Period for the plant as discussed in section 5.1 of this order.
- 5.17.3. The Commission has taken fixed cost for the plant based on the capital cost approved in the Tariff Order dated July 19, 2011. No change is approved in O&M cost as it is a controllable item. The difference is primarily on account of change in rate of interest for working capital. The details of the Trued-up Annual Fixed Charges for the Killar HEP for the Second Control Period are provided in the table below:

Table 108: Trued-up AFC of 2nd Control Period for Killar HEP

Particular	Units	FY 12		FY 13		FY 13	
		MYT Approved	Trued-up	MYT Approved	Trued-up	MYT Approved	Trued-up
Generation							
Gross Generation (DE)	MU	1.16	1.16	1.16	1.16	1.16	1.16
Total Auxiliary	MU	0.01	0.01	0.01	0.01	0.01	0.01
Net generation	MU	1.15	1.15	1.15	1.15	1.15	1.15
Less: Free Power to GoHP	MU	0.00	0.00	0.00	0.00	0.00	0.00
Energy Available (DE)	MU	1.15	1.15	1.15	1.15	1.15	1.15
Actual Generation	MU		0.36		0.28		0.39
Annual Fixed Charge							
O&M Expenses	Rs. Cr.	0.61	0.61	0.61	0.61	0.61	0.61
Depreciation	Rs. Cr.	0.18	0.18	0.18	0.18	0.18	0.18
Interest Charges	Rs. Cr.	0.00	0.00	0.00	0.00	0.00	0.00
Return on Equity	Rs. Cr.	0.00	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	Rs. Cr.	0.04	0.04	0.04	0.04	0.04	0.04
Total	Rs. Cr.	0.83	0.83	0.83	0.83	0.83	0.83
Difference in AFC	Rs. Cr.		0.00		0.00		0.00
Tariff and Revenue							
Energy Charge Rate	Rs/KWh	3.57	3.59	3.57	3.61	3.57	3.61
Capacity Charges	Rs. Cr.	0.42	0.41	0.42	0.42	0.42	0.42

5.18. Annual Fixed Charge for Gumma HEP

- 5.18.1. Gumma HEP is a 3 MW (2 x 1.5 MW) project commissioned in the year 2000. The Commission in its tariff order date 30th May 2009 had considered the completed cost of the project as per the Accounts at Rs 28.89 Cr for tariff determination. The project is assumed to be funded through 100% debt with no outstanding loan.

5.18.2. The Petitioner has not filed details of true-up for Gumma HEP in its petition. The Commission has undertaken a Suo-moto true-up of 2nd Control Period for the plant as discussed in section 5.1 of this order.

5.18.3. The Commission has taken fixed cost for the plant based on the capital cost approved in the Tariff Order dated July 19, 2011. No change is approved in O&M cost as it is a controllable item. The difference is primarily on account of change in rate of interest for working capital. The details of the Trued-up Annual Fixed Charges for the Gumma HEP for the Second Control Period are provided in the table below:

Table 109: Trued-up AFC of 2nd Control Period for Gumma HEP

Particular	Units	FY 12		FY 13		FY 13	
		MYT Approved	Trued-up	MYT Approved	Trued-up	MYT Approved	Trued-up
Generation							
Gross Generation (DE)	MU	18.11	18.11	18.11	18.11	18.11	18.11
Total Auxiliary	MU	0.13	0.13	0.13	0.13	0.13	0.13
Net generation	MU	17.98	17.98	17.98	17.98	17.98	17.98
Less: Free Power to GoHP	MU	0.00	0.00	0.00	0.00	0.00	0.00
Energy Available (DE)	MU	17.98	17.98	17.98	17.98	17.98	17.98
Actual Generation	MU		6.94		3.57		0.00
Annual Fixed Charge							
O&M Expenses	Rs. Cr.	1.63	1.63	1.63	1.63	1.63	1.63
Depreciation	Rs. Cr.	1.53	1.53	1.53	1.53	0.54	0.54
Interest Charges	Rs. Cr.	0.00	0.00	0.00	0.00	0.00	0.00
Return on Equity	Rs. Cr.	0.00	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	Rs. Cr.	0.12	0.12	0.12	0.14	0.10	0.11
Total	Rs. Cr.	3.28	3.28	3.28	3.29	2.26	2.28
Difference in AFC	Rs. Cr.		0.00		-0.01		-0.02
Tariff and Revenue							
Energy Charge Rate	Rs/KWh	0.90	0.91	0.90	0.92	0.62	0.63
Capacity Charges	Rs. Cr.	1.64	1.64	1.64	1.65	1.15	1.14

5.19. Annual Fixed Charge for Ghanvi HEP

5.19.1. Ghanvi HEP is a 22.50 MW (2 x 11.25 MW) project commissioned by the HPSEBL in the year 2000.

5.19.2. The Commission in its tariff order date 30th May 2009 had approved Rs. 142.62 Cr. as the capitalized project cost with Rs. 93.97 Cr. of loan arranged from PFC and LIC. The Commission had approved the remaining fund requirement of Rs. 48.65 Cr. to be funded through short term loans taken by the HPSEBL, with no equity infusion in the project from the HPSEBL.

5.19.3. The GoHP has 12% share in the generation as free power which has been reduced to arrive at the net saleable energy from the project.

5.19.4. The Petitioner has not filed details of true-up for Ghanvi HEP in its petition. The Commission has undertaken a suo-motu true-up of 2nd Control Period for the plant as discussed in section 5.1 of this order.

5.19.5. No change is approved in O&M cost as it is a controllable item. The difference is primarily on account of change in rate of interest for working capital. The details of the Trued-up Annual Fixed Charges for the Ghanvi HEP for the Second Control Period are provided in the table below:

Table 110: Trued-up AFC of 2nd Control Period for Ghanvi HEP

Particular	Units	FY 12		FY 13		FY 14	
		MYT Approved	Trued-up	MYT Approved	Trued-up	MYT Approved	Trued-up
Generation							
Gross Generation (DE)	MU	93.34	93.34	93.34	93.34	93.34	93.34
Total Auxiliary	MU	1.12	1.12	1.12	1.12	1.12	1.12
Net generation	MU	92.22	92.22	92.22	92.22	92.22	92.22
Less: Free Power to GoHP	MU	11.07	11.07	11.07	11.07	11.07	11.07
Energy Available (DE)	MU	81.15	81.15	81.15	81.15	81.15	81.15
Actual Generation	MU		60.85		64.61		66.90
Annual Fixed Charges							
O&M Expenses	Rs. Cr.	4.58	4.58	4.58	4.58	4.58	4.58
Depreciation	Rs. Cr.	7.53	7.53	7.53	7.53	2.72	2.73
Interest Charges	Rs. Cr.	0.36	0.36	0.09	0.09	0.02	0.02
Return on Equity	Rs. Cr.	0.00	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	Rs. Cr.	0.43	0.42	0.43	0.47	0.32	0.34
Total	Rs. Cr.	12.91	12.89	12.63	12.67	7.63	7.67
Difference in AFC	Rs. Cr.		0.02		-0.04		-0.04
Tariff and Revenue							
Energy Charge Rate	Rs/KWh	0.69	0.79	0.68	0.78	0.41	0.47
Capacity Charges	Rs. Cr.	6.45	6.45	6.32	6.33	3.82	3.83

5.20. Annual Fixed Charge for Holi HEP

5.20.1. Holi HEP is a 3 MW (2 x 1.5 MW) project commissioned by the HPSEBL in the year 2004. The project was commissioned with a capitalized cost of Rs 29.93 Cr (with no outstanding capitalization as per Accounts) as of date and was funded through 100% debt with no outstanding loan.

5.20.2. The Petitioner has not filed details of true-up for Holi HEP in its petition. The Commission has undertaken a Suo-moto true-up of 2nd Control Period for the plant as discussed in section 5.1 of this order.

5.20.3. No change is approved in O&M cost as it is a controllable item. The difference is primarily on account of change in rate of interest for working capital. The details of the Trued-up Annual Fixed Charges for the Holi HEP for the Second Control Period are provided in the table below:

Table 111: Trued-up AFC of 2nd Control Period for Holi HEP

Particular	Units	FY 12		FY 13		FY 13	
		MYT Approved	Trued-up	MYT Approved	Trued-up	MYT Approved	Trued-up
Generation							
Gross Generation (DE)	MU	17.52	17.52	17.52	17.52	17.52	17.52
Total Auxiliary	MU	0.12	0.12	0.12	0.12	0.12	0.12
Net generation	MU	17.40	17.40	17.40	17.40	17.40	17.40
Less: Free Power to GoHP	MU	0.00	0.00	0.00	0.00	0.00	0.00
Energy Available (DE)	MU	17.40	17.40	17.40	17.40	17.40	17.40
Actual Generation	MU		5.04		9.54		8.29
Annual Fixed Charges							
O&M Expenses	Rs. Cr.	0.62	0.62	0.62	0.62	0.62	0.62
Depreciation	Rs. Cr.	1.58	1.58	1.58	1.58	1.58	1.58
Interest Charges	Rs. Cr.	0.00	0.00	0.00	0.00	0.00	0.00
Return on Equity	Rs. Cr.	0.00	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	Rs. Cr.	0.07	0.07	0.07	0.08	0.07	0.08
Total	Rs. Cr.	2.27	2.27	2.27	2.28	2.27	2.28

Particular	Units	FY 12		FY 13		FY 13	
		MYT Approved	Trued-up	MYT Approved	Trued-up	MYT Approved	Trued-up
Difference in AFC	Rs. Cr.		0.00		-0.01		-0.01
Tariff and Revenue							
Energy Charge Rate	Rs/KWh	0.65	0.65	0.65	0.65	0.65	0.65
Capacity Charges	Rs. Cr.	1.14	1.13	1.14	1.14	1.14	1.14

5.21. Annual Fixed Charge for Khauli HEP

5.21.1. Khauli HEP is a 12 MW (2 x 6 MW) project commissioned by the HPSEBL in the year 2006.

5.21.2. In absence of any separate capital cost determination for Khauli HEP, the Commission had considered a capital cost of Rs. 78 Cr. for the project for tariff determination in the Tariff Order dated 30th May 2009. The same has been continued for true-up of tariff for Khauli HEP. Funding of the project has been considered as 100% from debt (Rs 70 Cr loan from HP Cooperative Bank and remaining amount of Rs 8 Cr to be funded through short term loans).

5.21.3. The GoHP has 12% share in the generation as free power has been reduced to arrive at the net saleable energy from the project.

5.21.4. The Petitioner has not filed details of true-up for Khauli HEP in its petition. The Commission has undertaken a Suo-moto true-up of 2nd Control Period for the plant as discussed in section 5.1 of this order.

5.21.5. No change is approved in O&M cost as it is a controllable item. The difference is primarily on account of change in rate of interest for working capital. The details of the Trued-up Annual Fixed Charges for the Khauli HEP for the Second Control Period are provided in the table below:

Table 112: Trued-up AFC of 2nd Control Period for Khauli HEP

Particular	Units	FY 12		FY 13		FY 13	
		MYT Approved	Trued-up	MYT Approved	Trued-up	MYT Approved	Trued-up
Generation							
Gross Generation (DE)	MU	49.95	49.95	49.95	49.95	49.95	49.95
Total Auxiliary	MU	0.35	0.35	0.35	0.35	0.35	0.35
Net generation	MU	49.60	49.60	49.60	49.60	49.60	49.60
Less: Free Power to GoHP	MU	5.95	5.95	5.95	5.95	5.95	5.95
Energy Available (DE)	MU	43.65	43.65	43.65	43.65	43.65	43.65
Actual Generation	MU		44.16		41.35		39.86
Annual Fixed Charges							
O&M Expenses	Rs. Cr.	4.03	4.03	4.03	4.03	4.03	4.03
Depreciation	Rs. Cr.	4.12	4.12	4.12	5.71	4.12	5.17
Interest Charges	Rs. Cr.	1.40	1.40	0.35	0.35	0.00	0.00
Return on Equity	Rs. Cr.	0.00	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	Rs. Cr.	0.35	0.34	0.33	0.40	0.32	0.38
Total	Rs. Cr.	9.91	9.89	8.83	10.49	8.47	10.12
Difference in AFC	Rs. Cr.		0.02		-1.66		-1.65
Tariff and Revenue							
Energy Charge Rate	Rs/KWh	0.99	1.13	0.88	1.20	0.85	1.16
Capacity Charges	Rs. Cr.	4.95	4.94	4.42	5.25	4.24	5.06

5.22. Annual Fixed Charge for Thiroth HEP

- 5.22.1. Thiroth HEP is a 4.50 MW (3 x 1.50 MW) project commissioned in the year 1995. The Commission in its tariff order date 30th May 2009 had considered the completed cost of the project as Rs 49.30 Cr for tariff determination. The project is assumed to be funded through equity of Rs 15 Cr and a debt of Rs 34.30 Cr with no outstanding loan.
- 5.22.2. The Commission in its order dated 30th May 2009 has considered that the only equity that was invested in the project was from GoHP of Rs 15 Cr which was later transferred to the HPSEBL. The Commission has provided return on Rs 15 Cr of GoHP equity (transferred to HPSEBL) at 15.50% as per the HPERC Generation Regulation, 2011.
- 5.22.3. The Petitioner has not filed details of true-up for Thiroth HEP in its petition. The Commission has undertaken a Suo-moto true-up of 2nd Control Period for the plant as discussed in section 5.1 of this order.
- 5.22.4. No change is approved in O&M cost as it is a controllable item. The difference is primarily on account of change in rate of interest for working capital. The details of the Trued-up Annual Fixed Charges for the Thiroth HEP for the Second Control Period are provided in the table below:

Table 113: Trued-up AFC of 2nd Control Period for Thiroth HEP

Particular	Units	FY 12		FY 13		FY 13	
		MYT Approved	Trued-up	MYT Approved	Trued-up	MYT Approved	Trued-up
Generation							
Gross Generation (DE)	MU	23.44	23.44	23.44	23.44	23.44	23.44
Total Auxiliary	MU	0.16	0.16	0.16	0.16	0.16	0.16
Net generation	MU	23.28	23.28	23.28	23.28	23.28	23.28
Less: Free Power to GoHP	MU	0.00	0.00	0.00	0.00	0.00	0.00
Energy Available (DE)	MU	23.28	23.28	23.28	23.28	23.28	23.28
Actual Generation	MU		9.68		13.16		13.85
Annual Fixed Charges							
O&M Expenses	Rs. Cr.	0.79	0.79	0.79	0.79	0.79	0.79
Depreciation	Rs. Cr.	1.03	1.03	1.03	1.03	1.03	1.03
Interest Charges	Rs. Cr.	0.00	0.00	0.00	0.00	0.00	0.00
Return on Equity	Rs. Cr.	2.33	2.33	2.33	2.33	2.33	2.33
Interest on Working Capital	Rs. Cr.	0.12	0.12	0.12	0.13	0.12	0.13
Total	Rs. Cr.	4.27	4.26	4.27	4.28	4.27	4.27
Difference in AFC			0.01		-0.01		0.00
Tariff and Revenue							
Energy Charge Rate	Rs/KWh	0.91	0.92	0.91	0.92	0.91	0.92
Capacity Charges	Rs. Cr.	2.14	2.13	2.14	2.14	2.14	2.14

5.23. Summary of surplus/ (gap) for all plants

- 5.23.1. Based on the revised fixed and variable cost as per the MYT Regulations, 2011, and the actual generation from respective plants, the Commission has worked out the total cost of generation to be recovered from the distribution business.
- 5.23.2. Details of total trued-up revenue recoverable based on generation of various plants is summarized in table below:

Table 114: Total trued-up revenue recoverable for all generation plants (Rs. Cr.)

Plant Name	FY12	FY13	FY14
Andhra	5.34	5.12	5.54
Baner	7.01	6.99	6.80
Bassi	6.82	16.93	21.50
Bhabha	23.07	18.23	21.99
Binwa	4.27	3.99	3.29
Chaba	1.49	1.39	1.13
Chamba	0.19	0.20	0.23
Gaj	7.20	7.05	7.57
Giri	12.05	11.70	12.52
Larji	145.69	134.40	122.32
Nogli	1.42	1.34	1.34
RongTong	0.69	0.67	0.61
Rukti	0.31	0.31	0.31
Sal II	0.57	0.56	0.67
Killar	0.54	0.52	0.56
Gumma	2.27	1.97	1.14
Ghanvi	11.28	11.38	7.00
Holi	1.46	1.76	1.68
Khauli	9.93	10.21	9.68
Thirot	3.02	3.35	3.41
Total	244.61	238.08	229.29

5.23.3. The Petitioner has proposed additional expenditure for its generating stations as part of true-up for 2nd Control Period. Based on scrutiny and additional submission in response to the queries, the Commission observed that the proposed plant-wise additional capitalization comprises of several small expenditure which are of the nature of Repair and Maintenance. Also, the Petitioner has not submitted any documents i.e. DPR, cost-benefit analysis or approval from its Board towards such additional capital expenditure. Appropriate in-principle or prior approval has not been undertaken from the Commission against the additional capital expenditure undertaken for the respective plants. In view of no proper approvals and adequate supporting documents, the Commission had disallowed the additional capitalization undertaken towards the various generating stations as discussed in the preceding sections.

5.23.4. While the Commission is of the view that this expenditure should not be allowed in absence of adequate approvals and compliance to the regulations, but denying the complete cost would result in significant financial disallowance for the Petitioner. Therefore, the Commission has scrutinized the type of works undertaken by the Petitioner based on the details provided and has been approved select expenditure (i.e. installation of real time water discharge management system and procurement of runners) as one-time additional expense. The Commission clarifies that this is a one-time allowance and would not to be considered as precedence in approval of additional capital expenditure in future truing-up exercises. The Petitioner is directed to undertake prior

approvals for any additional capital expenditure required to be undertaken with respect to the generating stations.

5.23.5. The plant-wise works and amount approved are as follows:

Table 115: One-time additional expense approved by the Commission (Rs. Cr.)

Plant	Details of Work	FY12	FY13	FY14
Andhra	Real time Water Discharge Management system	-	-	0.15
Bhabha	Purchase of two runners	-	8.75	-
	Real time Water Discharge Management system	-	0.15	-
	Sub-Total	-	8.90	-
Gaj	Procurement of 2 runners	-	1.13	-
	Real time Water Discharge Management system	-	-	0.15
	Sub-Total	-	1.13	0.15
Giri	Modernization of GPH unit 1	1.51	-	-
	Real time Water Discharge Management system	-	-	0.15
	Sub-Total	1.51	-	0.15
Nogli	Real time Water Discharge Management system	-	-	0.15
Chaba	Real time Water Discharge Management system	-	-	0.15
Ghanvi	Real time Water Discharge Management system	-	-	0.15
RongTong	Real time Water Discharge Management system	-	-	0.15
Rukti	Real time Water Discharge Management system at the downstream of power house	-	-	0.15
Khauli	Real time Water Discharge Management system at the downstream of power house	-	-	0.13
Holi	Real time Water Discharge Management system	-	-	0.13
Sall-II	Real time Water Discharge Management system	-	-	0.13
Baner	One number runner of Baner PH Jia	-	0.15	-
	Total for All Plants	1.51	10.19	1.59

5.23.6. The Commission had approved power purchase cost from own generation as part of the Distribution business in the trueing-up for respective years. A comparison of the same along with surplus-gap to be adjusted for each year is summarized below:

Table 116: Surplus/ (Gap) for all generation plants

Particulars	FY12	FY13	FY14
Total Trued-up recovery from Generating Stations (A)	244.61	238.08	229.29
One time additional expense (B)	1.51	10.19	1.59
Total Amount Approved after True-up	246.12	248.27	230.88
Cost of own generation allowed in Distribution True-up (C)	272.37	254.41	235.58
Surplus/(Gap): (C) – (A) – (B)	26.25	6.14	4.70

5.23.7. Along with Surplus/ (Gap) in revenue for various plants, the Commission has also allowed carrying cost equivalent to interest cost of working capital loans on the Surplus/ (Gap) determined.

5.23.8. The overall closing surplus indicated above, shall be adjusted in the Order for HPSEBL - distribution business for FY 2022-23, along with carrying cost as follows:

Table 117: Overall surplus/ (gap) with carrying cost (Rs. Cr.)

Particulars	FY12	FY13	FY14	FY15	FY16	FY17
Opening Surplus/ (Gap)	0.00	27.95	38.67	49.30	56.57	64.92
Addition	26.25	6.14	4.70	0.00	0.00	0.00
Closing Surplus/ (Gap)	26.25	34.10	43.37	49.30	56.57	64.92
Interest Rate	13.00%	14.75%	14.45%	14.75%	14.75%	12.20%
Average Surplus/ (Gap)	13.12	31.02	41.02	49.30	56.57	64.92
Carrying Cost	1.71	4.58	5.93	7.27	8.34	7.92
Closing Surplus/ (Gap) with carrying cost	27.95	38.67	49.30	56.57	64.92	72.83

Particulars	FY18	FY19	FY20	FY21	FY22
Opening Surplus/ (Gap)	72.83	80.85	89.86	100.24	111.02
Addition	0.00	0.00	0.00	0.00	0.00
Closing Surplus/ (Gap)	72.83	80.85	89.86	100.24	111.02
Interest Rate	11.00%	11.15%	11.55%	10.75%	10.00%
Average Surplus/ (Gap)	72.83	80.85	89.86	100.24	111.02
Carrying Cost	8.01	9.01	10.38	10.78	11.10
Closing Surplus/ (Gap) with carrying cost	80.85	89.86	100.24	111.02	122.12

6. ANALYSIS OF AGGREGATE REVENUE REQUIREMENT FOR 4TH CONTROL PERIOD

6.1. Background

- 6.1.1. This Chapter covers analysis on the proposed plant wise ARR for each year of the Fourth Control Period (FY2019-20 to FY 2023-24) including Depreciation, O&M expenses, Interest and Finance Charges and Working Capital Requirement, etc.
- 6.1.2. The Petitioner in its Multi Year Tariff Petition for the fourth Control Period has submitted the Projection of Annual Revenue Requirement of the Fourth Control Period based on the HPERC (Terms and Conditions for Determination of Hydro Generation Tariff) Regulations, 2011.
- 6.1.3. HPSEBL has 22 hydro generation plants. For Uhl-III (not yet commissioned), the Petitioner has not filed for 4th Control Period tariff determination, stating that HPSEBL is compiling the accounts for this Plant and shall submit a detailed Petition for its Capital Cost determination later. For Ghanvi-II, the Petitioner has filed a separate petition for approval of capital cost and determination of tariff. Accordingly, the Commission shall approve the capital expenditure and tariff for Ghanvi II through a separate Order. Further, the Commission has approved levelized tariff for 8 SHPs (Killar, Sal-II, Gumma, Ghanvi, holi, Khauli, Bhaba Augmentation and Thiroth) vide its order HPERC/Petition No. 54/2013/2013-14/2967-84 dated 15th January 2014. These plants have not be considered in this Order for tariff determination.
- 6.1.4. Accordingly, the Commission has determined tariffs for 4th Control Period, for the following 13 plants in this order:

Table 118: HPSEBL plants for whom 4th Control Period tariffs are determined in this order

Sl.	Plant Name	Commissioning Year	Units	Installed Capacity (MW)
1	Chaba	1913-14	2 x 0.5 + 3 x 0.25	1.75
2	Chamba	1938, 57, 85	3 x 0.15 MW	0.45
3	Nogli	1963, 69, 78	2 x 0.25 + 4 x 0.50 MW	2.50
4	Bassi	1970, 71, 81	4 x 15.00 MW	66.00
5	Giri	1978	2 x 30.00 MW	60.00
6	Rukti	1979, 80	3 x 0.50 MW	1.50
7	Binwa	1984	2 x 3.00 MW	6.00
8	Rong Tong	1986-87, 97	4 x 0.50 MW	2.00
9	Andhra	1987	3 x 5.65 MW	16.95
10	Bhaba	1989	3 x 40.00 MW	120.00
11	Gaj	1996	3 x 3.50 MW	10.50
12	Baner	1996	3 x 4.00 MW	12.00
13	Larji	2006	3 x 42.00 MW	126.00

6.2. Commission's Approach

- 6.2.1. The Commission has analysed the MYT Petition submitted by the Petitioner for approval of the ARR and determination of Generation Tariff for the Fourth Control

Period (FY 2019-20 to FY 2023-24). This Chapter covers analysis on the proposed plant wise ARR for each year of the Fourth Control Period including Depreciation, O&M expenses, Interest and Finance Charges, Return on Equity and Working Capital Requirement, etc.

- 6.2.2. The Commission has sought several clarifications on various issues based on the scrutiny of the Petition and additional information submitted by the Petitioner. The Commission has considered all information submitted by the Petitioner as part of the Tariff Petition including responses to various queries.
- 6.2.3. The Commission, for the determination of Annual Fixed Charges for the individual plants has relied on the information available in Commission's records, information submitted by the Petitioner during the tariff determination process and additional information submitted during the course of various correspondence held with the Petitioner during processing of current tariff petition.

Additional Capitalisation

- 6.2.4. As per regulation 13 of HPERC (Terms and Conditions for Determination of Hydro Generation Tariff) Regulations, 2011, the Additional Capitalisation shall only be allowed in the cases where the expenditure done is covered under the original scope of work or for other reason as mentioned in the aforementioned regulation. The relevant excerpt of the Regulation has been reproduced below:-

'13. Additional Capitalisation

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

(a) Undischarged liabilities;

(b) Works deferred for execution;

(c) Procurement of initial capital spares within the original scope of work, subject to the provisions of regulation 12;

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

(e) Change in law:

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

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

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

(b) change in law;

(b) any expenditure which has become necessary on account of damage caused by natural calamities (but not due to flooding of power house attributable to the negligence of the generating company) including due to geological reasons after adjusting for proceeds from any insurance scheme, and expenditure incurred due to any additional work which has become necessary for successful and efficient plant operation:

Provided that in any expenditure on acquiring the minor items or the assets like tools and tackles, furniture, air-conditioners, voltage stabilizers, refrigerators, coolers, fans, washing machines, heat convectors, mattresses, carpets etc. brought after the cut-off date shall not be considered for additional capitalisation for determination of tariff w.e.f. 1.4.2011.'

6.2.5. In its petition, the Petitioner has proposed additional capital expenditure and capitalization for various plants during the 4th Control Period.

6.2.6. With respect to proposed plant-wise capital expenditure, the Commission observes that very limited details and supporting documents i.e. DPR, board approval, etc. has been provided by the Petitioner. Therefore, in absence of adequate DPR and justification for proposed additional capital expenditure, the Commission has disallowed the additional capital expenditure during 4th Control Period and directs the Petitioner to seek approval of the Commission post finalization of DPR and availability of approval from the Board. However, the Commission has approved additional capitalization for few plants which are discussed below.

6.2.7. Plant specific observations with respect to additional capitalization/ de-capitalization for 4th Control Period, are as follows:

- **Baner HEP:** The Petitioner proposed additional capitalization in its petition, without providing any details of the capital works. The Commission observed that as per Form 13 of the model filed along with its tariff petition, Petitioner has stated that additional capital expenditure is required towards New Scheme for Renovation Modernization & Life Extension (RM & LE) works. However, the Petitioner has not provided any details such as DPR, in-principle approval, cost benefit analysis for this capital expenditure. Accordingly, the Commission has not allowed any additional capitalization during the 4th Control Period for Baner HEP.
- **Bassi HEP:** The Commission has provisionally allowed additional capital expenditure of Rs. 7.76 Cr. for Bassi HEP, as per the in-principle approval awarded earlier vide its letter HPERC/ Capex-Gen/ 2018-1179 dated 01-08-18, subject to true-up later. Therefore, the Commission has considered the proposed additional capital expenditure for tariff determination as discussed in the plant specific sub-section of Annual Fixed Charges for Bassi HEP.
- **Gaj HEP:** The Petitioner has stated that the proposed additional capital expenditure is towards Renovation, Modernization and Life extension (R&M/ LE) of the power house. The Petitioner has further stated that the scheme is under finalization and details of the scheme shall be submitted to the

Commission for approval before taking up the work for execution. In absence of details of work, the Commission has not considered any additional capital expenditure for Gaj HEP in this Order. The Petitioner is directed to finalize and submit the details of the scheme to Commission for approval along with Mid-Term Review of the 4th Control Period.

- **Giri HEP:** The Petitioner has proposed capital expenditure in 4th Control Period for RMU & LE scheme. It is observed that an in-principle approval was provided by the Commission for the RMU scheme of Giri HEP via order dated 3.5.2017 in the petition No. 44/2016 for Rs. 139.80 Crores. The Petitioner's submission considers capital expenditure in years FY20 to FY22, with each individual year's expenditure capitalized over next 5 years distributed equally. The Commission has provisionally capitalized 50% of the additional capital expenditure in FY23 and remaining 50% in FY24 - one in each year for the two units of plant for which RMU scheme is being implemented. Interest rate of 10.55% is considered for 4th Control Period, as per submission of Petitioner. The Petitioner is directed to finalize and submit the details of the scheme to Commission for approval along with Mid Term Review of the 4th Control Period.

6.2.8. The plant-wise capital expenditure proposed by the Petitioner and approved by the Commission for 4th Control Period are given in the table below:-

Table 119: Plant wise Capital Expenditure in Rs. Cr. – proposed and approved

Name of station	Proposed					Approved				
	FY20	FY21	FY22	FY23	FY24	FY20	FY21	FY22	FY23	FY24
Andhra	1.00	1.80	3.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Baner	1.00	1.00	1.00	1.00	0.85	0.00	0.00	0.00	0.00	0.00
Bassi	2.30	7.60	7.08	4.30	0.00	1.99	2.99	2.77	0.00	0.00
Bhaba	2.51	2.61	1.72	5.61	5.55	0.00	0.00	0.00	0.00	0.00
Binwa	12.19	10.00	10.00	10.00	10.00	0.00	0.00	0.00	0.00	0.00
Chaba	0.56	0.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Chamba	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gaj	1.00	1.00	1.00	1.00	0.35	0.00	0.00	0.00	0.00	0.00
Giri	46.50	71.95	21.45	0.00	0.00	46.50	71.95	21.35	0.00	0.00
Larji	4.18	6.59	1.47	1.07	0.30	0.00	0.00	0.00	0.00	0.00
Nogli	1.33	1.22	0.39	0.11	0.11	0.00	0.00	0.00	0.00	0.00
Rong Tong	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rukti	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	72.57	104.27	47.11	23.09	17.16	48.46	74.89	24.21	0.00	0.00

6.2.9. Based on the above discussions, the Commission has considered additional capitalization for various plants as follows:

Table 120: Plant wise Capitalization in Rs. Cr. – proposed and approved

Name of station	Proposed					Approved				
	FY20	FY21	FY22	FY23	FY24	FY20	FY21	FY22	FY23	FY24
Andhra	0.20	0.56	1.16	1.16	1.16	0.00	0.00	0.00	0.00	0.00
Baner	0.20	0.40	0.60	0.80	0.97	0.00	0.00	0.00	0.00	0.00
Bassi	0.46	1.98	3.40	4.26	4.26	0.00	0.00	7.76	0.00	0.00
Bhaba	0.50	1.02	1.37	2.49	3.60	0.00	0.00	0.00	0.00	0.00
Binwa	2.44	4.44	6.44	8.44	10.44	0.00	0.00	0.00	0.00	0.00
Chaba	0.11	0.21	0.21	0.21	0.21	0.00	0.00	0.00	0.00	0.00
Chamba	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gaj	0.20	0.40	0.60	0.80	0.87	0.00	0.00	0.00	0.00	0.00

Name of station	Proposed					Approved				
	FY20	FY21	FY22	FY23	FY24	FY20	FY21	FY22	FY23	FY24
Giri	9.30	23.69	27.98	27.98	27.98	0.00	0.00	0.00	69.90	69.90
Larji	0.84	2.15	2.45	2.66	2.72	0.00	0.00	0.00	0.00	0.00
Nogli	0.27	0.51	0.59	0.61	0.63	0.00	0.00	0.00	0.00	0.00
Rong Tong	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rukti	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	14.52	35.36	44.80	49.41	52.84	0.00	0.00	7.76	69.90	69.90

6.2.10. The plants for which additional capital expenditure is not approved above, the Petitioner is directed to submit details such as DPR along with supporting documents and Board approval of the proposed additional capital expenditure etc.

Gross Fixed Assets

- 6.2.11. For considering the opening GFA, the Commission has considered the closing GFA of respective hydro plants along with provisional additional capitalization for select plants during the third Control Period (FY 2014-15 to FY 2018-19). In the Tariff Order for 3rd Control Period, the Commission had not approved any additional capitalization against the HPSEBL's plants. For the third Control Period, the Commission has considered additional capitalization in case of Bhabha power plant only while additional capitalization for other plants have not been considered in absence of prior approval of additional capital expenditure sought by the Petitioner. The same would be considered at the time of true-up for third Control Period along with mid-term review of the respective plants subject to prudence check and necessary documents provided by the Petitioner.
- 6.2.12. In case of Bhabha HEP, the Commission has provisionally allowed additional capitalization of Rs. 76.03 Cr. during 3rd Control Period for rehabilitation scheme, along with de-capitalization of Rs. 23.85 Cr, subject to prudence check at the time of final true-up. Further, details are discussed in the plant specific sub-section of Annual Fixed Charges for Bhabha HEP.

Operation and Maintenance Expense

- 6.2.13. The Employee cost, A&G expense and Repair & Maintenance expenses together comprise the O&M expenses. The O&M expenses as per the MYT Regulations, 2011 are considered as controllable costs except for Terminal Benefits (TBs) which are considered uncontrollable. The O&M expenses as per these Regulations are to be worked out for the Generation Business for each year of the Control Period as under:-

"22. Operation and Maintenance (O&M) Expenses

1) Operation and Maintenance (O&M) expenses shall comprise of the following:-

- a) salaries, wages, pension contribution and other employee costs;*
- b) administrative and general costs;*
- c) repairs and maintenance; and*

d) *other miscellaneous expenses including insurance costs, statutory levies and taxes (except corporate income tax).*

2) *Operation and maintenance expenses, for the existing generating stations which have been in operation for 3 years or more as on 31 March 2013, shall be derived on the basis of actual operation and maintenance expenses for the years 2010-11 to 2012-13, based on the audited balance sheets, excluding abnormal operation and maintenance expenses, if any, after prudence check by the Commission.*

....

....

6) *Post, determination of base O&M Expenses for the generator/generating company in sub-regulation (2), the O&M expenses for the nth year and also for the year immediately preceding the Control Period, shall be approved based on the formula given below:-*

$$O\&M_n = R\&M_n + EMP_n + A\&G_n:$$

Where -

'O&M_n' – *Operation and Maintenance expenses for the nth year;*

'EMP_n' – *Employee Costs for the nth year;*

'R&M_n' – *Repair and Maintenance costs for the nth year;*

'A&G_n' – *Administrative and General Costs for the nth year; and -*

$$'EMP_n' = [(EMP_{n-1}) \times (1+G_n) \times (CPIinflation)] + Provision(Emp)$$

$$'A\&G_n' = [(A\&G_{n-1}) \times (WPIinflation)] + Provision(A\&G)$$

$$'R\&M_n' = K \times (GFA_{n-1}) \times (WPIinflation); \text{ and -}$$

EMP_{n-1} – Employee Cost of the generator for the (n-1)th year; (employee cost for the base year would be adjusted for provisions for expenses beyond the control of the licensee and one time expected expenses, such as recovery/ adjustment of terminal benefits, implication of pay revisions, arrears and interim relief);

6.2.14. The Commission has approved the Operation and Maintenance Expense for the Fourth Control Period in accordance with the Regulation 22 of HPERC (Terms and Conditions for Determination of Hydro Generation Tariff) Regulations, 2011 and its second amendment. In accordance with the regulations, the Commission has calculated the "WPI Inflation" and "CPI Inflation" based on the average increase in WPI and CPI data over last three years i.e. FY 2016-17 to FY 2018-19, as follows:

Table 121: Approved WPI and CPI inflation for 4th Control Period

Particulars	FY17	FY18	FY19	Average
WPI Inflation	1.73%	2.92%	4.28%	3.0%
CPI Inflation	4.12%	3.11%	5.42%	4.2%

- 6.2.15. As per the Regulation 22 of HPERC (Terms and Conditions for Determination of Hydro Generation Tariff) Regulations, 2011 and its second amendment, the Employee expense, Administrative Expense and Repair & Maintenance Expense shall be projected after escalating the Base year value by the approved "WPI Inflation" and "CPI Inflation".
- 6.2.16. For the purpose of projecting the various components of O&M expense, the Commission has considered the actual expense for the period FY 2014-15 to FY 2018-19 as provided by the Petitioner in response to one of the queries of the Commission. However, it was observed that there were significant differences in year-on-year expenditure under each head i.e. employee, R&M and A&G. Accordingly, the Commission has considered average of past years wherever such differences or inconsistencies in amounts were observed.
- 6.2.17. Detailed approach for projection of Employee expense, Administrative Expense and Repair & Maintenance Expense for the fourth Control Period is as below:
- i. **R&M:** In accordance with MYT regulations, K factor is determined based on actual R&M expense and GFA for past three years and appropriate escalation based on WPI inflation has been considered to project the R&M cost for each year for the fourth Control Period. For RongTong power project, actual R&M figures for FY17 to FY19 were reported as 'nil', the Commission has calculated R&M cost by inflating approved R&M cost for FY19 (as per MYT order of 3rd Control Period), with approved WPI inflation year on year.
 - ii. **Employee Cost:** Average of the actual employee cost for each plant for FY17 to FY19 has been considered as the base for projecting the employee cost for the fourth Control Period. An escalation equivalent to CPI inflation for FY19 is additionally considered to arrive at the base employee cost post which approved CPI inflation has been considered to project the employee cost for each year of the Control Period.

For Chamba and Rong Tong plants, actual reported employee cost for period FY17 to FY19 were 'nil'. For such projects, the Commission has calculated employee cost by inflating approved employee cost for FY19 (as per MYT order of 3rd Control Period), with approved CPI inflation year on year.

Table 122: Employee Cost as per accounts and last 3 years average, for various plants

Plant Name	Employee Cost as per Accounts (Rs. Cr.)			Average (FY17-19)
	FY17	FY18	FY19	
Andhra	6.64	6.94	6.61	6.73
Baner	5.00	5.38	5.18	5.19
Bassi	8.83	9.24	9.82	9.30
Bhaba	13.52	16.53	16.81	15.62
Binwa	4.22	4.55	4.33	4.37
Chaba	1.69	1.85	1.67	1.74
Chamba	NA	NA	NA	NA
Gaj	4.17	4.52	4.45	4.38

Plant Name	Employee Cost as per Accounts (Rs. Cr.)			Average (FY17-19)
	FY17	FY18	FY19	
Giri	10.86	10.72	12.89	11.49
Larji	13.95	14.85	14.60	14.47
Nogli	1.58	1.99	2.16	1.91
Rong Tong	NA	NA	NA	NA
Rukti	0.25	0.26	0.22	0.24

- iii. **A&G:** For calculation of A&G expense, similar approach is adopted as for employee expense. Average of the actual A&G expense for each plant for FY17 to FY19 has been considered as the base for projecting the A&G expense for the fourth Control Period. An escalation equivalent to WPI inflation for FY19 is additionally considered to arrive at the base employee cost post which approved WPI inflation has been considered to project the A&G expense for each year of the Control Period.

Table 123: A&G Cost as per accounts and last 3 years average, for various plants

Plant Name	A&G Cost as per Accounts (Rs. Cr.)			Average (FY17-19)
	FY17	FY18	FY19	
Andhra	0.07	0.07	0.07	0.07
Baner	0.06	0.06	0.06	0.06
Bassi	0.26	0.23	0.15	0.21
Bhaba	0.36	0.34	0.64	0.45
Binwa	0.05	0.05	0.06	0.05
Chaba	0.01	0.01	0.01	0.01
Chamba	NA	NA	NA	NA
Gaj	0.10	0.11	0.12	0.11
Giri	0.37	0.18	0.21	0.25
Larji	0.50	0.46	0.41	0.46
Nogli	0.02	0.01	0.01	0.01
Rong Tong	NA	NA	NA	NA
Rukti	NA	NA	NA	NA

- iv. **Terminal benefit:** The Commission, in the MYT Order dated 29.06.2019 for HPSEBL's Distribution Business had allocated an amount each year during the 4th Control Period towards terminal benefits for employee of generation business and reduced from the overall terminal benefits projected for HPSEBL for arriving at the approved terminal benefits for HPSEBL's Distribution Business. The amount of terminal benefit approved towards HPSEBL's Generation Business in the MYT Order dated 29.06.2019 for HPSEBL's Distribution Business has been now allocated among various plants, in proportion of their installed capacity.

Table 124: Total Terminal Benefit approved in the MYT Order for Distribution Business for all plants of HPSEBL

	FY20	FY21	FY22	FY23	FY24
Terminal Benefit	10.39	11.11	11.89	12.72	13.61

	FY20	FY21	FY22	FY23	FY24
(Rs. Cr.)					

Depreciation

6.2.18. The Commission has determined the depreciation for the station in accordance to Regulation 20 of HPERC Generation Regulations, 2011. As per Regulation 20 (5) and 20(6),

"For generating station which are in operation for less than 12 years, the difference between the cumulative depreciation recovered and the cumulative depreciation arrived at by applying the depreciation rates specified in this regulation corresponding to 12 years, shall be spread over the period up to 12 years, and the remaining depreciable value as on 31st March of the year closing after a period of 12 years from date of commercial operation shall be spread over the balance useful life of the asset. For the project in operation for more than 12 years, the balance depreciation to be recovered shall be spread over the remaining useful life of the asset."

6.2.19. Before the promulgation of HPERC Generation Regulations of 2011, the Commission used to calculate accumulated depreciation for the individual projects considering a depreciation rate of 2.50% for each year post commercial operation date of the projects upto a maximum of 90% of the original cost of the asset. Post implementation of HPERC Generation Regulations of 2011 (i.e. from FY 2011-12 onwards), for plants in operation for more than 12 years, the balance depreciation after adjusting for the depreciation upto FY 2010-11 has been spread over the remaining useful life of the project. In case of plants where age was less than 12 years, the Commission has considered depreciation at the rate of 5.28% until 12 years of plant life is completed post which the balance depreciation is spread across the remaining useful life of the project. The useful life of the project has been considered as 40 years in accordance to Regulation 3(36) of HPERC Generation Regulations of 2011, which defines the useful life.

6.2.20. In case of plants where RMU & LE has been undertaken, an additional 20 years of life extension has been considered for the purpose of depreciation computation.

Interest on loans

6.2.21. The Commission has determined the interest charged in accordance to Regulation 17 of HPERC (Terms and Conditions for Determination of Hydro Generation Tariff) Regulations, 2011, continuing with the approach adopted in the tariff orders for previous Control Periods.

6.2.22. For most of the plants (except for Bassi and Larji) there was no loan outstanding at the beginning of 4th Control Period and hence there is no interest on outstanding loan. Interest on loan for other stations i.e. Bassi and Larji plants are discussed in subsequent sub-sections along with each plant's individual AFC analysis.

Interest on Working Capital

- 6.2.23. The interest on working capital has been determined in accordance with the Regulation 18 and 19 of HPERC (Terms and Conditions for Determination of Hydro Generation Tariff) Regulations, 2011 and amendments thereof. As per Regulation 18, the working capital for hydroelectric power station shall contain following components:
- a) Operation and Maintenance (O&M) expenses for 1 month
 - b) Maintenance spares equivalent to 15% of O&M
 - c) Receivables equivalent to two months of fixed cost
- 6.2.24. As per Regulation 19, the rate of interest on working capital shall be on normative basis and shall be equal to the 1 year SBI MCLR as on 1st April of the relevant year plus 300 basis points.

Return on Equity

- 6.2.25. As per the regulation 21 of HPERC (Terms and Conditions for Determination of Hydro Generation Tariff) Regulations, 2011, Return on equity is computed on the equity determined in accordance with regulation 16 and on pre-tax basis at the base rate of 15.5% to be grossed up as per sub-regulation (3) of this regulation. As applicability of income tax has not been there on the Petitioner in last few years, no gross-up for tax has been considered and the same shall be considered on actuals at the time of truing-up.

Generation and Auxiliary Consumption

- 6.2.26. In its Order dated 15.01.2014 for 'Restating of Design Energy and Reconsideration of Tariff for Small Hydro Power Plants of HPSEB Limited', the Commission has stated design energy and auxiliary consumption for various small hydro plants. The Commission has considered design energy and auxiliary consumption for these plants as per this Order.
- 6.2.27. For large hydro plants including Bassi, Giri and Larji, the Commission has continued with the Design Energy and Auxiliary Consumption as considered in the previous MYT Order for 3rd Control Period dated 10.06.2014.

6.3. Annual Fixed Charges for Andhra HEP

- 6.3.1. Andhra HEP is a 16.95 MW (3 x 5.65 MW) project commissioned by the HPSEBL in the year 1987. It is a peaking, storage project with surface power station and static excitation.
- 6.3.2. The Petitioner has proposed additional capitalization for the plant in its current Petition but has not submitted relevant details and supporting documents as stipulated in applicable HPERC regulations. As discussed in section 6.2 of this Order, the Commission has not allowed any additional capitalization during the 4th Control Period for the plant. Further, the ARR cost items for the plant are calculated in accordance with methodology discussed under section 6.2 of this Order.

6.3.3. The details of the approved Annual Fixed Charges for the Andhra HEP for the Fourth Control Period are provided in the table below:

Table 125: Approved AFC for Andhra HEP

Particulars	Units	FY 20	FY 21	FY 22	FY 23	FY 24
Generation						
Gross Generation (DE)	MU	87.30	87.30	87.30	87.30	87.30
Total Auxiliary	MU	0.87	0.87	0.87	0.87	0.87
Net generation	MU	86.43	86.43	86.43	86.43	86.43
Less: Free Power to GoHP	MU	-	-	-	-	-
Energy available for Sale	MU	86.43	86.43	86.43	86.43	86.43
Annual Fixed Charge						
O&M Expenses	Rs. Cr.	9.29	9.67	10.07	10.48	10.92
a) Employee expense	Rs. Cr.	7.39	7.70	8.03	8.37	8.72
b) R&M Expenses	Rs. Cr.	1.46	1.50	1.55	1.59	1.64
c) A&G Expenses	Rs. Cr.	0.07	0.08	0.08	0.08	0.08
d) Terminal expense	Rs. Cr.	0.36	0.39	0.41	0.44	0.47
Depreciation	Rs. Cr.	1.10	1.10	1.10	1.10	1.10
Interest Charges	Rs. Cr.	0.00	0.00	0.00	0.00	0.00
Return on Equity	Rs. Cr.	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	Rs. Cr.	0.46	0.48	0.50	0.52	0.54
Total AFC	Rs. Cr.	10.84	11.24	11.66	12.09	12.55
Tariff						
Energy Charge Rate	Rs/KWh	0.63	0.65	0.67	0.70	0.73
Capacity Charges	Rs. Cr.	5.42	5.62	5.83	6.05	6.27

6.4. Annual Fixed Charges for Baner HEP

6.4.1. Baner HEP is a 12 MW (3 x 4 MW) project commissioned by the HPSEBL in the year 1996.

6.4.2. The Petitioner has proposed additional capitalization for the plant in its current Petition but has not submitted relevant details and supporting documents as stipulated in applicable HPERC regulations. As discussed in section 6.2 of this Order, the Commission has not allowed any additional capitalization during the 4th Control Period for the plant. Further, the ARR cost items for the plant are calculated in accordance with methodology discussed under section 6.2 of this Order.

6.4.3. The details of the approved Annual Fixed Charges for the Baner HEP for the Fourth Control Period are provided in the table below:

Table 126: Approved AFC for Baner HEP

Particulars	Units	FY 20	FY 21	FY 22	FY 23	FY 24
Generation						
Gross Generation (DE)	MU	60.67	60.67	60.67	60.67	60.67
Total Auxiliary	MU	0.61	0.61	0.61	0.61	0.61
Net generation	MU	60.06	60.06	60.06	60.06	60.06
Less: Free Power to GoHP	MU	7.21	7.21	7.21	7.21	7.21
Energy available for Sale	MU	52.85	52.85	52.85	52.85	52.85
Annual Fixed Charges						
O&M Expenses	Rs. Cr.	7.06	7.35	7.65	7.97	8.30
a) Employee expense	Rs. Cr.	5.70	5.94	6.19	6.45	6.72
b) R&M Expenses	Rs. Cr.	1.04	1.07	1.10	1.14	1.17
c) A&G Expenses	Rs. Cr.	0.06	0.07	0.07	0.07	0.07
d) Terminal expense	Rs. Cr.	0.26	0.27	0.29	0.31	0.34

Particulars	Units	FY 20	FY 21	FY 22	FY 23	FY 24
Depreciation	Rs. Cr.	1.16	1.16	1.16	1.16	1.16
Interest Charges	Rs. Cr.	0.00	0.00	0.00	0.00	0.00
Return on Equity	Rs. Cr.	2.33	2.33	2.33	2.33	2.33
Interest on Working Capital	Rs. Cr.	0.40	0.41	0.43	0.44	0.46
Total AFC	Rs. Cr.	10.95	11.25	11.57	11.90	12.25
Tariff						
Energy Charge Rate	Rs/KWh	1.04	1.06	1.09	1.13	1.16
Capacity Charges	Rs. Cr.	5.47	5.63	5.79	5.95	6.12

6.5. Annual Fixed Charges for Bassi HEP

6.5.1. Bassi HEP is 66 MW (uprated from 60 MW as a result of RMU & LE scheme) project commissioned by the HPSEBL in the year 1970, 1971 and 1981.

6.5.2. The Petitioner has proposed additional capitalization for the plant in its current Petition. With respect to the proposed additional capitalization, the Commission sought details including rationale, DPR, prior approval, loan agreement, etc. for the Bassi HEP. In response, the Petitioner correspondence with the Commission, providing in-principle approval for certain capital expenditure works, as follows:

Table 127: Details of in-principal approval provided for additional capex earlier by HPERC

Sl.	HPERC Letter	Name of work	Amount
1.	HPERC/ Gen/ HPSEBL/2020-3553 dated 17.03.2020	Supply, erection, testing and commissioning of 220V/ 750Ah Battery Bank	Estimated amount by HPSEBL is Rs. 1.00 Cr. (Not specified in Commission's order)
2.	HPERC/ Capex-Gen/ 2019-071; dated 07-08-19	Supply, erection, testing and commissioning of 4 nos. of modifier new upper bracket, new bearing design of kansbury pad supports, self pumping and insulated upper bearing, improved bearing cooling and oil circulated with self pumping bearing design with new HPOsystem	Estimated amount by HPSEBL is Rs. 10.00 Cr. (Not specified in Commission's order)
3.	HPERC/ Capex-Gen/ 2018-1179; dated 01-08-18	Supply, erection, testing and commissioning of 4 nos. of new upper brackets (including dismantling of existing 4 nos upper bracket), re-insulation of 2 nos. rotor poles including dismantling, erection and commissioning of 4 nos. rotor lead and 2 nos. new rotor poles as spares for smooth/ effective operation of 4x16.50 MW Bassi Power House division	Rs. 7.76 Cr. amount specified in Commission's order

6.5.3. From the works listed in table above, the Commission has provisionally allowed additional capital expenditure of Rs. 7.76 Cr. as per the in-principle approval provided earlier, subject to true-up based on actual and prudence check. The amount has been capitalized in FY2021-22 with 100% funding from debt, as per the break-up of year on year expenditure submitted by the Petitioner and approved by the Commission, as follow:

Table 128: Proposed and approved capital expenditure for Bassi HEP (in Rs. Lakhs)

Description	Estimated Cost	FY 20	FY 21	FY 22	FY 23	FY24
Proposed by Petitioner	778	200	300	278	-	-
Approved by Commission	776	199	299	277	-	-

6.5.4. Interest rate of 10.55% is considered on loan corresponding to additional capitalization during 4th Control Period, as per the submission of Petitioner.

6.5.5. Further, the ARR cost items for the plant are calculated in accordance with methodology discussed under section 6.2 of this Order.

6.5.6. The details of the approved Annual Fixed Charges for the Bassi HEP for the Fourth Control Period are provided in the table below:

Table 129: Approved AFC for Bassi HEP

Particulars	Units	FY 20	FY 21	FY 22	FY 23	FY 24
Generation						
Gross Generation (DE)	MU	346.83	346.83	346.83	346.83	346.83
Total Auxiliary	MU	2.43	2.43	2.43	2.43	2.43
Net generation	MU	344.40	344.40	344.40	344.40	344.40
Less: Free Power to GoHP	MU	-	-	-	-	-
Energy available for Sale	MU	344.40	344.40	344.40	344.40	344.40
Annual Fixed Charges						
O&M Expenses	Rs. Cr.	12.87	13.44	14.03	14.65	15.30
<i>a) Employee expense</i>	Rs. Cr.	10.22	10.65	11.09	11.56	12.05
<i>b) R&M Expenses</i>	Rs. Cr.	1.02	1.05	1.08	1.12	1.15
<i>c) A&G Expenses</i>	Rs. Cr.	0.23	0.23	0.24	0.25	0.26
<i>d) Terminal expense</i>	Rs. Cr.	1.41	1.50	1.61	1.72	1.84
Depreciation	Rs. Cr.	3.93	3.93	4.33	4.33	4.33
Interest Charges	Rs. Cr.	3.48	2.32	1.55	1.03	0.65
Return on Equity	Rs. Cr.	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	Rs. Cr.	0.75	0.76	0.78	0.80	0.82
Total AFC	Rs. Cr.	21.03	20.44	20.69	20.80	21.10
Tariff						
Energy Charge Rate	Rs/KWh	0.31	0.30	0.30	0.30	0.31
Capacity Charges	Rs. Cr.	10.52	10.22	10.34	10.40	10.55

6.6. Annual Fixed Charges for Bhabha HEP

6.6.1. Bhabha HEP is a 120 MW (3 x 40 MW) project commissioned in the year 1989.

6.6.2. It is observed that significant capital expenditure was done during FY 2016-17 to FY 2018-19 on account of rehabilitation scheme of the Bhabha plant. In a submission, the Petitioner has stated that SVP Bhabha was damaged due to an unfortunate fire accident on Jan 22, 2015. In reply to Commission's query, the Petitioner submitted the report of committee constituted for investigation of break down, DPR documents, copy of work orders and copy of approval from competent authority.

6.6.3. As per these submissions, the Commission observed that competent authority of HPSEBL had sanctioned Rs. 76.03 Cr as the cost of rehabilitation scheme for recommissioning of the Bhabha power plant. While the Petitioner has not undertaken prior approval from the Commission towards additional capitalization

of Bhabha HEP, the Commission has considered the capital expenditure of Rs. 76.03 Cr. provisionally in GFA during the 3rd Control Period for the purpose of opening GFA in the tariff determination for 4th Control Period. The proposed capitalization shall be subject to prudence check at the time of true-up for 3rd Control Period. In accordance with the submissions in the Petition, Rs. 65.01 Cr. is capitalized in FY 2016-17 and the remaining expenditure of Rs. 11.02 Cr. is capitalized in FY 2017-18 for Bhabha HEP provisionally. The actual capitalization shall be determined at the time of true-up and determination of additional capitalization for the plant.

6.6.4. In the absence of any details and supporting document regarding equity infusion, the additional capitalization has been considered to be funded from 100% from debt. Interest rate of 10.55% is considered provisionally, as per submission of the Petitioner for 4th Control Period.

6.6.5. In its petition, HPSEBL has also submitted that de-capitalization of Rs. 3.57 Cr. was done during 2015 and Rs. 20.28 Cr. during 2016 of the 3rd Control Period. The Commission has considered this de-capitalization while calculating the GFA for the project. Since there was no outstanding loan or equity against the plant, the amount of the decapitalization has been adjusted in the opening GFA and accumulated depreciation.

6.6.6. Further, the ARR cost items for the plant are calculated in accordance with methodology discussed under section 6.2 of this Order.

6.6.7. The details of the approved Annual Fixed Charges for the Bhabha HEP for the Fourth Control Period are provided in the table below:

Table 130: Approved AFC for Bhabha HEP

Particulars	Units	FY 20	FY 21	FY 22	FY 23	FY 24
Generation						
Gross Generation (Design Energy)	MU	464.70	464.70	464.70	464.70	464.70
Total Auxiliary	MU	5.58	5.58	5.58	5.58	5.58
Net generation	MU	459.12	459.12	459.12	459.12	459.12
Less: Free Power to GoHP	MU	-	-	-	-	-
Energy available for Sale	MU	459.12	459.12	459.12	459.12	459.12
Annual Fixed Charges						
O&M Expenses	Rs. Cr.	25.53	26.60	27.72	28.90	30.12
<i>a) Employee expense</i>	Rs. Cr.	17.16	17.89	18.64	19.43	20.24
<i>b) R&M Expenses</i>	Rs. Cr.	5.32	5.48	5.65	5.81	5.99
<i>c) A&G Expenses</i>	Rs. Cr.	0.48	0.49	0.51	0.52	0.54
<i>d) Terminal expense</i>	Rs. Cr.	2.56	2.74	2.93	3.13	3.35
Depreciation	Rs. Cr.	9.07	9.07	9.07	9.07	9.07
Interest Charges	Rs. Cr.	5.73	4.93	4.13	3.32	2.52
Return on Equity	Rs. Cr.	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	Rs. Cr.	1.49	1.53	1.56	1.60	1.65
Total AFC	Rs. Cr.	41.82	42.12	42.48	42.89	43.36
Tariff						
Energy Charge Rate	Rs/kWh	0.46	0.46	0.46	0.47	0.47
Capacity Charges	Rs. Cr.	20.91	21.06	21.24	21.45	21.68

6.7. Annual Fixed Charges for Binwa HEP

6.7.1. Binwa HEP is a 6 MW (2 x 3 MW) project commissioned in the year 1984.

6.7.2. The Petitioner has proposed additional capitalization for the plant in its current Petition but has not submitted relevant details and supporting documents as stipulated in applicable HPERC regulations. As discussed in section 6.2 of this Order, the Commission has not allowed any additional capitalization during the 4th Control Period for the plant. Further the ARR cost items for the plant are calculated in accordance with methodology discussed under section 6.2 of this Order.

6.7.3. The details of the approved Annual Fixed Charges for the Binwa HEP for the Fourth Control Period are provided in the table below:

Table 131: Approved AFC for Binwa HEP

Particulars	Units	FY 20	FY 21	FY 22	FY 23	FY 24
Generation						
Gross Generation (Design Energy)	MU	29.25	29.25	29.25	29.25	29.25
Total Auxiliary	MU	0.20	0.20	0.20	0.20	0.20
Net generation	MU	29.05	29.05	29.05	29.05	29.05
Less: Free Power to GoHP	MU	-	-	-	-	-
Energy available for Sale	MU	29.05	29.05	29.05	29.05	29.05
Annual Fixed Charges						
O&M Expenses	Rs. Cr.	5.58	5.82	6.06	6.31	6.57
<i>a) Employee expense</i>	Rs. Cr.	4.80	5.00	5.21	5.43	5.66
<i>b) R&M Expenses</i>	Rs. Cr.	0.60	0.62	0.64	0.66	0.68
<i>c) A&G Expenses</i>	Rs. Cr.	0.06	0.06	0.06	0.06	0.06
<i>d) Terminal expense</i>	Rs. Cr.	0.13	0.14	0.15	0.16	0.17
Depreciation	Rs. Cr.	0.30	0.30	0.30	0.30	0.30
Interest Charges	Rs. Cr.	0.00	0.00	0.00	0.00	0.00
Return on Equity	Rs. Cr.	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	Rs. Cr.	0.27	0.28	0.29	0.30	0.32
Total AFC	Rs. Cr.	6.15	6.39	6.64	6.91	7.18
Tariff						
Energy Charge Rate	Rs/KWh	1.06	1.10	1.14	1.19	1.24
Capacity Charges	Rs. Cr.	3.07	3.20	3.32	3.45	3.59

6.8. Annual Fixed Charges for Chaba HEP

6.8.1. Chaba HEP is a 1.75 MW (2 x 0.5 MW + 3 x 0.25 MW) project commissioned in the year 1913-14.

6.8.2. The Petitioner has proposed additional capitalization for the plant in its current Petition but has not submitted relevant details and supporting documents as stipulated in applicable HPERC regulations. As discussed in section 6.2 of this Order, the Commission has not allowed any additional capitalization during the 4th Control Period for the plant. Further the ARR cost items for the plant are calculated in accordance with methodology discussed under section 6.2 of this Order.

6.8.3. The details of the approved Annual Fixed Charges for the Chaba HEP for the Fourth Control Period are provided in the table below:

Table 132: Approved AFC for Chaba HEP

Particulars	Units	FY 20	FY 21	FY 22	FY 23	FY 24
Generation						
Gross Generation (Design Energy)	MU	7.67	7.67	7.67	7.67	7.67
Total Auxiliary	MU	0.08	0.08	0.08	0.08	0.08
Net generation	MU	7.59	7.59	7.59	7.59	7.59
Less: Free Power to GoHP	MU	-	-	-	-	-
Energy available for Sale	MU	7.59	7.59	7.59	7.59	7.59
Annual Fixed Charges						
O&M Expenses	Rs. Cr.	2.08	2.16	2.25	2.35	2.44
<i>a) Employee expense</i>	Rs. Cr.	1.74	1.81	1.89	1.97	2.05
<i>b) R&M Expenses</i>	Rs. Cr.	0.30	0.31	0.32	0.33	0.33
<i>c) A&G Expenses</i>	Rs. Cr.	0.01	0.01	0.01	0.01	0.01
<i>d) Terminal expense</i>	Rs. Cr.	0.04	0.04	0.04	0.05	0.05
Depreciation	Rs. Cr.	0.00	0.00	0.00	0.00	0.00
Interest Charges	Rs. Cr.	0.00	0.00	0.00	0.00	0.00
Return on Equity	Rs. Cr.	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	Rs. Cr.	0.10	0.10	0.11	0.11	0.11
Total AFC	Rs. Cr.	2.18	2.27	2.36	2.46	2.56
Tariff						
Energy Charge Rate	Rs/KWh	1.43	1.49	1.55	1.62	1.68
Capacity Charges	Rs. Cr.	1.09	1.13	1.18	1.23	1.28

6.9. Annual Fixed Charges for Chamba HEP

6.9.1. Chamba HEP is a 0.45 MW (3 X 0.15 MW) project commissioned in the years 1938, 1957 and 1985.

6.9.2. The Petitioner has not proposed any additional capital expenditure during 4th Control Period for the plant. Further, the ARR cost items for the plant are calculated in accordance with methodology discussed under section 6.2 of this Order.

6.9.3. The details of the approved Annual Fixed Charges for the Chamba HEP for the Fourth Control Period are provided in the table below:

Table 133: Approved AFC for Chamba HEP

Particulars	Units	FY 20	FY 21	FY 22	FY 23	FY 24
Generation						
Gross Generation (Design Energy)	MU	1.77	1.77	1.77	1.77	1.77
Total Auxiliary	MU	0.02	0.02	0.02	0.02	0.02
Net generation	MU	1.75	1.75	1.75	1.75	1.75
Less: Free Power to GoHP	MU	-	-	-	-	-
Energy available for Sale	MU	1.75	1.75	1.75	1.75	1.75
Annual Fixed Charges						
O&M Expenses	Rs. Cr.	0.45	0.47	0.49	0.51	0.53
<i>a) Employee expense</i>	Rs. Cr.	0.30	0.31	0.33	0.34	0.36
<i>b) R&M Expenses</i>	Rs. Cr.	0.13	0.13	0.14	0.14	0.14
<i>c) A&G Expenses</i>	Rs. Cr.	0.01	0.01	0.01	0.01	0.01
<i>d) Terminal expense</i>	Rs. Cr.	0.01	0.01	0.01	0.01	0.01
Depreciation	Rs. Cr.	0.01	0.01	0.01	0.01	0.01
Interest Charges	Rs. Cr.	0.00	0.00	0.00	0.00	0.00
Return on Equity	Rs. Cr.	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	Rs. Cr.	0.02	0.02	0.02	0.02	0.02
Total AFC	Rs. Cr.	0.48	0.50	0.52	0.54	0.56
Tariff						
Energy Charge Rate	Rs/KWh	1.37	1.43	1.48	1.54	1.60

Particulars	Units	FY 20	FY 21	FY 22	FY 23	FY 24
Capacity Charges	Rs. Cr.	0.24	0.25	0.26	0.27	0.28

6.10. Annual Fixed Charges for Gaj HEP

6.10.1. Gaj HEP is a 10.50 MW (3 x 3.50 MW) project commissioned by the HPSEBL in the year 1996.

6.10.2. The Petitioner has proposed additional capitalization for the plant in its current Petition but has not submitted relevant details and supporting documents as stipulated in applicable HPERC regulations. As discussed in section 6.2 of this Order, the Commission has not allowed any additional capitalization during the 4th Control Period for the plant. Further, the ARR cost items for the plant are calculated in accordance with methodology discussed under section 6.2 of this Order.

6.10.3. The details of the approved Annual Fixed Charges for the Gaj HEP for the Fourth Control Period are provided in the table below:

Table 134: Approved AFC for Gaj HEP

Particulars	Units	FY 20	FY 21	FY 22	FY 23	FY 24
Generation						
Gross Generation (Design Energy)	MU	38.31	38.31	38.31	38.31	38.31
Total Auxiliary	MU	0.38	0.38	0.38	0.38	0.38
Net generation	MU	37.93	37.93	37.93	37.93	37.93
Less: Free Power to GoHP	MU	4.55	4.55	4.55	4.55	4.55
Energy available for Sale	MU	33.38	33.38	33.38	33.38	33.38
Annual Fixed Charges						
O&M Expenses	Rs. Cr.	5.81	6.05	6.30	6.57	6.84
<i>a) Employee expense</i>	Rs. Cr.	4.81	5.01	5.23	5.45	5.68
<i>b) R&M Expenses</i>	Rs. Cr.	0.66	0.68	0.70	0.72	0.74
<i>c) A&G Expenses</i>	Rs. Cr.	0.12	0.12	0.12	0.13	0.13
<i>d) Terminal expense</i>	Rs. Cr.	0.22	0.24	0.26	0.27	0.29
Depreciation	Rs. Cr.	0.64	0.64	0.64	0.64	0.64
Interest Charges	Rs. Cr.	0.00	0.00	0.00	0.00	0.00
Return on Equity	Rs. Cr.	2.33	2.33	2.33	2.33	2.33
Interest on Working Capital	Rs. Cr.	0.33	0.34	0.36	0.37	0.38
Total AFC	Rs. Cr.	9.11	9.36	9.62	9.90	10.18
Tariff						
Energy Charge Rate	Rs/kWh	1.36	1.40	1.44	1.48	1.53
Capacity Charges	Rs. Cr.	4.55	4.68	4.81	4.95	5.09

6.11. Annual Fixed Charges for Giri HEP

6.11.1. Giri HEP is a 60 MW (2 x 30 MW) project commissioned in the year 1978.

6.11.2. As discussed in section 6.2 of this Order, the Commission has allowed additional capital expenditure of Rs. 139.80 Cr. for RMU & LE scheme, for which an in-principle approval was provided earlier by the Commission via order in the petition No. 44/2016 dated 3.5.2017. The Commission has provisionally capitalized 50% of the additional capital expenditure in FY23 and remaining 50% in FY24 for the purpose of tariff determination. The Petitioner is directed to finalize and submit the details of the scheme to Commission for approval along with Mid-Term Review of the 4th Control Period.

6.11.3. The ARR cost items for the plant are calculated in accordance with methodology discussed under section 6.2 of this Order.

6.11.4. The details of the approved Annual Fixed Charges for the Giri HEP for the Fourth Control Period are provided in the table below:

Table 135: Approved AFC for Giri HEP

Particulars	Units	FY 20	FY 21	FY 22	FY 23	FY 24
Generation						
Gross Generation (Design Energy)	MU	289.55	289.55	289.55	289.55	289.55
Total Auxiliary	MU	2.03	2.03	2.03	2.03	2.03
Net generation	MU	287.52	287.52	287.52	287.52	287.52
Less: Free Power to GoHP	MU	0.00	0.00	0.00	0.00	0.00
Energy available for Sale	MU	287.52	287.52	287.52	287.52	287.52
Annual Fixed Charges						
O&M Expenses	Rs. Cr.	19.30	20.08	20.90	21.75	22.64
<i>a) Employee expense</i>	Rs. Cr.	12.62	13.16	13.71	14.29	14.89
<i>b) R&M Expenses</i>	Rs. Cr.	5.13	5.28	5.44	5.60	5.77
<i>c) A&G Expenses</i>	Rs. Cr.	0.27	0.28	0.29	0.30	0.31
<i>d) Terminal expense</i>	Rs. Cr.	1.28	1.37	1.46	1.57	1.68
Depreciation	Rs. Cr.	0.00	0.00	0.00	3.15	6.46
Interest Charges	Rs. Cr.	0.00	0.00	0.00	3.50	10.14
Return on Equity	Rs. Cr.	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	Rs. Cr.	0.52	0.54	0.56	0.59	0.61
Total AFC	Rs. Cr.	19.82	20.63	21.46	28.99	39.85
Tariff						
Energy Charge Rate	Rs./KWh	0.34	0.36	0.37	0.50	0.69
Capacity Charges	Rs. Cr.	9.91	10.31	10.73	14.49	19.92

6.12. Annual Fixed Charges for Larji HEP

6.12.1. The Larji Hydro Electric Project is a 126 MW (3 X 42 MW) plant on river Beas in district Kullu which is about 190 km from Shimla. The plant was Commission in year 2006.

6.12.2. The Petitioner has proposed additional capitalization for the plant in its current Petition but has not submitted relevant details and supporting documents as stipulated in applicable HPERC regulations. As discussed in section 6.2 of this Order, the Commission has not allowed any additional capitalization during the 4th Control Period for the plant. Further the ARR cost items for the plant are calculated in accordance with methodology discussed under section 6.2 of this Order.

6.12.3. The details of the approved Annual Fixed Charges for the Larji HEP for the Fourth Control Period are provided in the table below:

Table 136: Approved AFC for Larji HEP

Particulars	Units	FY 20	FY 21	FY 22	FY 23	FY 24
Generation						
Gross Generation (Design Energy)	MU	586.82	586.82	586.82	586.82	586.82
Total Auxiliary	MU	7.04	7.04	7.04	7.04	7.04
Net generation	MU	579.78	579.78	579.78	579.78	579.78
Less: Free Power to GoHP	MU	69.57	69.57	69.57	69.57	69.57
Energy available for Sale	MU	510.21	510.21	510.21	510.21	510.21
Annual Fixed Charge						
O&M Expenses	Rs. Cr.	24.17	25.19	26.27	27.38	28.56

Particulars	Units	FY 20	FY 21	FY 22	FY 23	FY 24
a) Employee expense	Rs. Cr.	15.90	16.57	17.26	17.99	18.75
b) R&M Expenses	Rs. Cr.	5.10	5.25	5.41	5.57	5.73
c) A&G Expenses	Rs. Cr.	0.49	0.51	0.52	0.54	0.55
d) Terminal expense	Rs. Cr.	2.69	2.87	3.07	3.29	3.52
Depreciation	Rs. Cr.	10.17	10.17	10.17	10.17	10.17
Interest Charges	Rs. Cr.	0.00	0.00	0.00	0.00	0.00
Return on Equity	Rs. Cr.	24.11	24.11	24.11	24.11	24.11
Interest on Working Capital	Rs. Cr.	1.81	1.86	1.91	1.96	2.02
Total AFC	Rs. Cr.	60.27	61.34	62.46	63.63	64.86
Tariff						
Energy Charge Rate	Rs/KWh	0.59	0.60	0.61	0.62	0.64
Capacity Charges	Rs. Cr.	30.13	30.67	31.23	31.81	32.43

6.13. Annual Fixed Charges for Nogli HEP

6.13.1. Nogli HEP is a 2.50 MW (2 x 0.25 + 4 x 0.50 MW) project commissioned in the years 1963, 1970 and 1974. It is a non-peaking, run of the river project with surface power station and static excitation.

6.13.2. The Petitioner has proposed additional capitalization for the plant in its current Petition but has not submitted relevant details and supporting documents as stipulated in applicable HPERC regulations. As discussed in section 6.2 of this Order, the Commission has not allowed any additional capitalization during the 4th Control Period for the plant. Further the ARR cost items for the plant are calculated in accordance with methodology discussed under section 6.2 of this Order.

6.13.3. The details of the approved Annual Fixed Charges for the Nogli HEP for the Fourth Control Period are provided in the table below:

Table 137: Approved AFC for Nogli HEP

Particulars	Units	FY 20	FY 21	FY 22	FY 23	FY 24
Generation						
Gross Generation (Design Energy)	MU	9.85	9.85	9.85	9.85	9.85
Total Auxiliary	MU	0.10	0.10	0.10	0.10	0.10
Net generation	MU	9.75	9.75	9.75	9.75	9.75
Less: Free Power to GoHP	MU	0.00	0.00	0.00	0.00	0.00
Energy available for Sale	MU	9.75	9.75	9.75	9.75	9.75
Annual Fixed Charge						
O&M Expenses	Rs. Cr.	2.95	3.06	3.18	3.31	3.44
a) Employee expense	Rs. Cr.	2.10	2.18	2.28	2.37	2.47
b) R&M Expenses	Rs. Cr.	0.78	0.81	0.83	0.86	0.88
c) A&G Expenses	Rs. Cr.	0.02	0.02	0.02	0.02	0.02
d) Terminal expense	Rs. Cr.	0.05	0.06	0.06	0.07	0.07
Depreciation	Rs. Cr.	0.00	0.00	0.00	0.00	0.00
Interest Charges	Rs. Cr.	0.00	0.00	0.00	0.00	0.00
Return on Equity	Rs. Cr.	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	Rs. Cr.	0.14	0.14	0.15	0.16	0.16
Total AFC	Rs. Cr.	3.09	3.21	3.33	3.47	3.60
Tariff						
Energy Charge Rate	Rs/KWh	1.58	1.64	1.71	1.78	1.85
Capacity Charges	Rs. Cr.	1.54	1.60	1.67	1.73	1.80

6.14. Annual Fixed Charges for Rongtong HEP

6.14.1. Rong Tong HEP is a 2 MW (4 x 0.50 MW) project commissioned in the year 1986-87.

6.14.2. The Petitioner has not proposed any additional capitalization in 4th Control Period for Rongtong HEP. Further the ARR cost items for the plant are calculated in accordance with methodology discussed under section 6.2 of this Order.

6.14.3. The details of the approved Annual Fixed Charges for the Rongtong HEP for the Fourth Control Period are provided in the table below:

Table 138: Approved AFC for Rongtong HEP

Particulars	Units	FY 20	FY 21	FY 22	FY 23	FY 24
Generation						
Gross Generation (Design Energy)	MU	7.64	7.64	7.64	7.64	7.64
Total Auxiliary	MU	0.08	0.08	0.08	0.08	0.08
Net generation	MU	7.56	7.56	7.56	7.56	7.56
Less: Free Power to GoHP	MU	-	-	-	-	-
Energy available for Sale	MU	7.56	7.56	7.56	7.56	7.56
Annual Fixed Charges						
O&M Expenses	Rs. Cr.	2.15	2.23	2.33	2.42	2.52
<i>a) Employee expense</i>	Rs. Cr.	1.88	1.95	2.04	2.12	2.21
<i>b) R&M Expenses</i>	Rs. Cr.	0.23	0.23	0.24	0.25	0.25
<i>c) A&G Expenses</i>	Rs. Cr.	0.00	0.00	0.00	0.00	0.00
<i>d) Terminal expense</i>	Rs. Cr.	0.04	0.05	0.05	0.05	0.06
Depreciation	Rs. Cr.	0.31	0.31	0.31	0.31	0.31
Interest Charges	Rs. Cr.	0.00	0.00	0.00	0.00	0.00
Return on Equity	Rs. Cr.	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	Rs. Cr.	0.11	0.11	0.12	0.12	0.13
Total AFC	Rs. Cr.	2.57	2.66	2.76	2.86	2.96
Tariff						
Energy Charge Rate	Rs/KWh	1.70	1.76	1.82	1.89	1.96
Capacity Charges	Rs. Cr.	1.28	1.33	1.38	1.43	1.48

6.15. Annual Fixed Charges for Rukti HEP

6.15.1. Rukti HEP is a 1.50 MW (3 x 0.50 MW) project commissioned in the year 1979 and 1980. It is a non-peaking plant run of the river and project with surface power station and static excitation.

6.15.2. The Petitioner has not proposed any additional capitalization in 4th Control Period for Rukti HEP. Further the ARR cost items for the plant are calculated in accordance with methodology discussed under section 6.2 of this Order.

6.15.3. The details of the approved Annual Fixed Charges for the Rukti HEP for the Fourth Control Period are provided in the table below:

Table 139: Approved AFC for Rukti HEP

Particulars	Units	FY 20	FY 21	FY 22	FY 23	FY 24
Generation						
Gross Generation (Design Energy)	MU	6.54	6.54	6.54	6.54	6.54
Total Auxiliary	MU	0.07	0.07	0.07	0.07	0.07
Net generation	MU	6.47	6.47	6.47	6.47	6.47
Less: Free Power to GoHP	MU	-	-	-	-	-

Particulars	Units	FY 20	FY 21	FY 22	FY 23	FY 24
Energy available for Sale	MU	6.47	6.47	6.47	6.47	6.47
Annual Fixed Charge						
O&M Expenses	Rs. Cr.	0.47	0.49	0.51	0.53	0.55
<i>a) Employee expense</i>	Rs. Cr.	0.27	0.28	0.29	0.30	0.31
<i>b) R&M Expenses</i>	Rs. Cr.	0.17	0.18	0.18	0.19	0.19
<i>c) A&G Expenses</i>	Rs. Cr.	0.00	0.00	0.00	0.00	0.00
<i>d) Terminal expense</i>	Rs. Cr.	0.03	0.03	0.04	0.04	0.04
Depreciation	Rs. Cr.	0.02	0.00	0.00	0.00	0.00
Interest Charges	Rs. Cr.	0.00	0.00	0.00	0.00	0.00
Return on Equity	Rs. Cr.	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	Rs. Cr.	0.02	0.02	0.02	0.02	0.03
Total AFC	Rs. Cr.	0.51	0.51	0.53	0.55	0.57
Tariff						
Energy Charge Rate	Rs/KWh	0.40	0.39	0.41	0.43	0.44
Capacity Charges	Rs. Cr.	0.26	0.26	0.27	0.28	0.29

6.16. Total ARR/ AFC for 4th Control Period

6.16.1. The table below summarizes the Annual Fixed Charge, combined for 13 HEPs of HPSEBL, as approved in this order.

Table 140: Total AFC for 13 HEPs of HPSEBL, for 4th Control Period

Particulars	Units	FY 20	FY 21	FY 22	FY 23	FY 24
Generation						
Gross Generation (DE)	MU	1,936.90	1,936.90	1,936.90	1,936.90	1,936.90
Total Auxiliary	MU	19.49	19.49	19.49	19.49	19.49
Net generation	MU	1,917.41	1,917.41	1,917.41	1,917.41	1,917.41
Less: Free Power to GoHP	MU	81.33	81.33	81.33	81.33	81.33
Energy available for Sale	MU	1,836.08	1,836.08	1,836.08	1,836.08	1,836.08
Annual Fixed Charge						
O&M Expenses	Rs. Cr.	117.70	122.61	127.75	133.11	138.71
<i>a) Employee expense</i>	Rs. Cr.	84.87	88.45	92.18	96.06	100.11
<i>b) R&M Expenses</i>	Rs. Cr.	21.94	22.59	23.26	23.96	24.67
<i>c) A&G Expenses</i>	Rs. Cr.	1.82	1.87	1.93	1.99	2.05
<i>d) Terminal expense</i>	Rs. Cr.	9.07	9.70	10.38	11.11	11.88
Depreciation	Rs. Cr.	26.70	26.68	27.09	30.23	33.54
Interest Charges	Rs. Cr.	9.21	7.25	5.68	7.85	13.32
Return on Equity	Rs. Cr.	28.76	28.76	28.76	28.76	28.76
Interest on Working Capital	Rs. Cr.	6.42	6.60	6.80	7.01	7.24
Total AFC	Rs. Cr.	188.80	191.91	196.08	206.98	221.58

6.17. Normative Plant Availability Factor

6.17.1. In accordance with regulation 23 of MYT Regulations 2011, the operational norms for hydro station shall include Normative Annual Plant Availability Factor (NAPAF)

"(1) The norms of operation for hydro generating stations shall be as under-

(a) Normative Annual Plant Availability Factor (NAPAF) for hydro generating stations shall be determined by the Commission as per the following criteria:-

(i) storage and pondage type plants with head variation between Full Reservoir Level (FRL) and Minimum Draw Down Level (MDDL) of up to 8%, and where plant availability is not affected by silt : 90%

(ii) storage and pondage type plants with head variation between FRL and MDDL of more than 8%, where plant availability is not affected by silt:

Plant-specific allowance to be provided in NAPAF for reduction in MW output capability as reservoir level falls over the months. As a general guideline the allowance on this account in terms of a multiplying factor may be worked out from the projection of annual average of net head, applying the formula:

(Average head / Rated head) + 0.02

Alternatively in case of a difficulty in making such projection, the multiplying factor may be determined as:

(Head at MDDL/Rated head) x 0.5 + 0.52

(iii) pondage type plants where plant availability is significantly affected by silt : 85%

(iv)run-of-river type plants: NAPAF to be determined plant-wise, based on 10-day design energy data, moderated by past experience where available/relevant;

(2) A further allowance may be made by the Commission in NAPAF determination under special circumstances, e.g. abnormal silt problem or other operating conditions, and known plant limitations.

(3) In case of a new hydro electric project the developer shall have the option of approaching the Commission in advance for fixation of NAPAF based on the principles enumerated in clause (a) of sub-regulation (1) of this regulation.

(4) The Commission may lay down relaxed operational norms including the norms of NAPAF and auxiliary consumption contained in these regulations for a generating station, and these relaxed norms shall be applicable for determination of tariff for such generating station during the Control Period."

- 6.17.2. As most of the plants of the Petitioner are very old and have outlived their useful life, the Commission has considered relaxed operation norms based on the average plant availability of the respective stations in the past (excluding any outliers) for approving the NAPAF for fourth Control Period, rounded of the nearest 5% (for instance if average PAF is 82.61%, target provided is 85%).
- 6.17.3. In case of newer plants likes Gaj and Baner, normative NAPAF of 90% as per regulations has been considered.
- 6.17.4. For Rong Tong HEP, the Petitioner did not provide actual historical PAF figures. Hence, Rong Tong has been provided NAPAF target of 85%, same as Andhra HEP which has similar remaining life as Rong Tong HEP. For Rukti HEP, NAPAF has been considered at 50% in view of the very low actual PAF in the past years.
- 6.17.5. The table below summarizes the actual Plant Availability Factor (PAF) from FY2014-15 to FY 2018-19 and approved NAPAF for fourth Control Period for various generation plants of the Petitioner.

Table 141: Approved NAPAF for fourth Control Period

Plant	FY15	FY16	FY17	FY18	FY19	Approved NAPAF
Andhra	79%	78%	79%	93%	85%	85%
Baner	92%	86%	73%	75%	76%	80%
Bassi	89%	63%	96%	62%	59%	80%
Bhaba	62%	0%	19%	66%	83%	85%
Binwa	95%	97%	99%	98%	98%	90%
Chaba	61%	44%	41%	90%	85%	85%
Chamba	72%	28%	39%	64%	56%	65%
Gaj	73%	71%	67%	95%	92%	90%
Giri	86%	91%	92%	91%	90%	90%
Larji	86%	89%	83%	89%	82%	85%
Nogli	50%	47%	97%	50%	97%	85%
Rukti	21%	3%	19%	19%	33%	50%
Rong Tong	NA	NA	NA	NA	NA	85%
Average	72%	58%	67%	74%	78%	-

6.17.6. The above approved NAPAF shall be considered for recovery of fixed charges as per Regulation 26 "Computation of Capacity Charge and Energy Charge". The Petitioner is directed to provide details of plant availability factor duly certified by SLDC along with truing-up for the fourth Control Period.

7. DIRECTIVES

Plant-wise Audited Accounts

7.1.1. It is observed that the plant-wise accounts submitted by the Petitioner are prepared internally and have not been certified by the statutory auditor. Also, information available in the respective plant-wise accounts did not reconcile with the overall generation business as per the Audited accounts of HPSEBL for the respective years of the 2nd Control Period. Also, contradictory numbers have been submitted by the Petitioner in response to the clarifications and additional information sought by the Commission during the processing of the Petition. Due to significant differences observed, the Commission is of the view that plant-wise accounts are not being maintained appropriately. Therefore, the Petitioner is directed to maintain proper plant-wise accounts and undertake audit of the same. In future, true up petition shall not be entertained without plant-wise audited accounts.

Additional Capitalization of Bassi Power Plant

7.1.2. With respect to approved amount of Rs. 109.98 Cr. towards RMU & LE for Bassi power plant during the 2nd Control Period, the submission of the Petitioner is incomplete and the actual amount is not supported by auditor certificate. The Commission directs the Petitioner to submit a separate petition for approval of additional capitalization towards RMU & LE scheme undertaken during second Control Period with all supporting data (including DPR, details of works, year-wise expenditure, auditor certificate, Board approval, etc.).

Additional Capitalization of Bhabha Power Plant

7.1.3. The Commission has currently considered provisional amount of additional capitalization for Bhabha power plant during the third Control Period. The Commission directs the Petitioner to submit a separate petition for approval of additional capitalization towards Bhabha additional capitalization undertaken during third Control Period with all supporting data (including DPR, details of works, year-wise expenditure, auditor certificate, Board approval, etc.).

High O&M expenditure

7.1.4. It is observed that the O&M expenditure for the generating stations are very high and primarily comprise of employee expense. The Commission directs the Petitioner to rationalise employee staffing at the stations and reduce the O&M expenses by developing O&M/ staffing norms for the stations and submit a proposal to the Commission for approval. In most of the small hydroelectric projects under operation by the Petitioner and in some of the medium size plants, O&M expenditure is much more than the revenue receipt for the plants. The Petitioner should take immediate steps to bring its routine O&M expenditure within the revenue accrued from each power plant. The Commission will not

entertain O&M expenditure on any power plant which is more than the revenue from FY 2022-23 onwards.

In-principle approval of Additional Capital Expenditure

7.1.5. In absence of adequate DPR and justification for proposed additional capital expenditure, the Commission has disallowed the additional capital expenditure proposed for generating stations during 4th Control Period. Plants for which additional capital expenditure has not been approved for the fourth Control Period and in cases where tenders have not been invited so far, the Petitioner is directed to submit detailed DPR along with supporting documents and Board approval for in-principle approval of the proposed additional capital expenditure. In absence of detailed DPR and in-principle approval for the proposed expenditure, the Commission shall be constrained to disallow additional expenditure towards the respective plant.

Submission of Plant Availability Factor

7.1.6. The Petitioner is directed to provide details of plant availability factor duly certified by SLDC along with truing-up for the fourth Control Period.

Submission of Mid-term Review along with truing-up for third Control Period

7.1.7. Considering that the third Control Period is over and accounts for the period is available, the Petitioner is directed to submit the petition for Mid-term Review along with truing-up for third Control Period by 31 December 2021. This would ensure timely adjustment of surplus / gap in the tariff for subsequent period.

Prior Approval for deviation in Additional Capitalization

7.1.8. The Petitioner is directed to take prior approval from the Commission in case the actual additional capitalization is higher than 5% of the approved additional capitalization with respect to its hydro plants as part of the in-principle approval.

Data from real time water discharge management systems

7.1.9. It is observed that the Petitioner has installed real time water discharge management systems at several of its plants. The Petitioner is directed to periodically upload plant wise data from these real time water discharge management systems on its website. The Petitioner is also directed to work out efficiency of each generating machine in its power houses for each quarter, considering the actual discharge and available head. This information for each machine in its power houses be submitted to the Commission at the end of each quarter.