

Approval of Capital Cost and determination of tariff for 33/132kV GIS Sub-station at Chambi (Shahpur) alongwith 132 kV D/C Transmission Dehra-Kangra Transmission Line to GIS pooling Sub-station at Chambi for the period from COD to FY 2023-24

Himachal Pradesh Power Transmission Corporation Limited (HPPTCL)



**Himachal Pradesh Electricity Regulatory
Commission
September 28, 2022**

**BEFORE THE HIMACHAL PRADESH ELECTRICITY REGULATORY COMMISSION AT
SHIMLA
PETITION NO: 28/2022**

CORAM
**Sh. DEVENDRA KUMAR SHARMA
Sh. BHANU PRATAP SINGH
Sh. YASHWANT SINGH CHO GAL**

In the matter of:

Approval of MYT petition for approval of capital cost and determination of tariff for the period starting from COD to FY 2023-24 for 33/132kV 2x25/31.5 MVA GIS Sub-Station at Chambi (Shahpur) and 132 kV D/C Transmission Line from tapping point of 132 kV Dehra-Kangra Transmission Line to 33/132 kV GIS pooling Sub-Station at Chambi under the Himachal Pradesh Electricity Regulatory Commission (Terms and Conditions for Determination of Transmission Tariff) Regulation, 2011 and subsequent amendments to the Tariff Regulations carried thereafter and under Section 62, read with Section 86 of the Electricity Act, 2003.

AND

IN THE MATTER OF:

Himachal Pradesh Power Transmission Corporation Ltd. (HPPTCL).....Petitioner

ORDER

The Himachal Pradesh Power Transmission Corporation Limited (hereinafter called the 'HPPTCL' or 'Petitioner') has filed a petition with the Himachal Pradesh Electricity Regulatory Commission (hereinafter referred to as 'the Commission' or 'HPERC') for approval of capital cost and determination of tariff for the period starting from COD to FY 2023-24 for 33/132kV 2x25/31.5 MVA GIS Sub-Station at Chambi (Shahpur) and 132 kV D/C Transmission Line from tapping point of 132 kV Dehra-Kangra Transmission Line to 33/132 kV GIS pooling Sub-Station at Chambi under the Himachal Pradesh Electricity Regulatory Commission (Terms and Conditions for Determination of Transmission Tariff) Regulation, 2011 and subsequent amendments and under Section 62, read with section 86 of the Electricity Act, 2003. (hereinafter referred to as "the Act").

The Commission having heard the Petitioner, interveners and stakeholders through various representations and having had formal interactions with the officers of the HPPTCL and having considered the documents available on record, herewith accepts the Petition with modifications, conditions and directions specified in the following Tariff Order.

It is also to be highlighted that the Petitioner took significant time in responding to the clarification and queries raised by the Commission. On several occasions, the information provided was either incomplete or did not address the query of the commission adequately. As a result, even post the written submissions, clarifications were sought verbally from the Petitioner. The delay in submission and lack of complete information remained a major bottleneck which has resulted in delay of this Tariff Order.

The Commission has determined the capital cost and Aggregate Revenue Requirement (ARR) for 33/132kV 2x25/31.5 MVA GIS Sub-Station at Chambi (Shahpur) and 132 kV D/C Transmission Line from tapping point of 132 kV Dehra-Kangra Transmission Line to 33/132 kV GIS pooling Sub-Station at Chambi in accordance with the guidelines laid down in Section 61 of the Electricity Act, 2003, the National Electricity Policy, the National Tariff Policy, CERC (Terms and Conditions of Tariff) Regulations, 2019 and HPERC (Terms and Conditions for Determination of Transmission Tariff) Regulations, 2011. Details of prudence check and approach adopted by the Commission with regard to approval of capital cost and ARR for Sub-station and transmission line are summarized in the detailed Order.

Sd/-

**(YASHWANT SINGH
CHOGAL)
Member**

Sd/-

**(BHANU PRATAP SINGH)
Member**

Sd/-

**(DEVENDRA KUMAR
SHARMA)
Chairman**

Shimla

Dated: 28 September, 2022

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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 5th January, 2001. After the enactment of the Electricity Act, 2003 on 25th May, 2003, the HPERC has been functioning as a statutory body with a quasi-judicial and legislative role under Electricity Act, 2003.

1.1.2 Functions of the Commission

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 licences 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 licence;
- 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.

1.1.3 The State Commission is also empowered under the Electricity Act, 2003 to 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.

1.2 Himachal Pradesh Power Transmission Corporation Ltd.

1.2.1 Himachal Pradesh Power Transmission Corporation Limited (hereinafter referred to as 'HPPTCL' or 'the Petitioner') is a deemed licensee under first, second and fifth provision of Section 14 of the Electricity Act, 2003 (hereinafter referred to as 'the Act') for transmission of electricity in the State of Himachal Pradesh.

1.2.2 The Government of Himachal Pradesh (hereinafter referred to as 'GoHP' or the 'State Government' formed HPPTCL through a notification vide its notification No. MPP-A-(1)-4/2006-Loose, dated 11th September, 2008.

1.2.3 HPPTCL was entrusted with the following work / business with immediate effect:

- a) All new works of construction of Sub-Stations of 66 kV and above
- b) All new works of laying/ construction of transmission lines of 66 kV and above
- c) Formulation, updating, execution of Transmission Master Plan for the state for strengthening of Transmission network and evacuation of power including new works under schemes already submitted by the Himachal Pradesh State Electricity Board (HPSEB) under this plan to the Financial Institutions for funding and where loan agreements have not yet been signed
- d) All matters relating to planning and co-ordinations of the transmission related issues with CTU, CEA, Ministry of Power, State Government and HPSEBL
- e) Planning and co-ordination with the IPPs/ CPSUs/ State PSUs/ Other Departments or organizations or agencies of the Central Government and State Government, HPSEBL and HPPCL with regard to all transmission related issues

1.2.4 HPPTCL was declared the State Transmission Utility (STU) by the GoHP vide its order dated 10th June, 2010 and as a result thereof the Commission recognized HPPTCL as a deemed "Transmission Licensee" as per the Commission's Order dated 31st July, 2010 in Petition No. 32 of 2010 filed by HPPTCL under Sections 14 and 15 of the Act, for grant of Transmission Licensee in the State of Himachal Pradesh. Prior to FY 2010-11, the transmission tariff was being determined as a part of the tariff orders applicable to HPSEBL system.

1.3 Multi Year Tariff Framework

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

1.3.2 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 network expansion and load growth during the Control Period. The longer time span enables the Petitioner to propose its investment plan with details on the possible sources of financing and the corresponding capitalization schedule for each investment.

1.3.3 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.

1.3.4 Thereafter, the Commission had notified the HPERC (Terms and Conditions for Determination of Transmission Tariff) Regulations, 2011. These Regulations were notified in the year 2011 and subsequently amended as (First Amendment) Regulations, 2013 on 1st November, 2013 and (Second Amendment) Regulations, 2018 on 22nd November, 2018 (The Regulations and its subsequent amendments combined shall be herein after referred to as "HPERC Transmission Regulations 2011").

1.3.5 The Commission issued the first Multi-Year Tariff (MYT) Order for HPPTCL for the period FY 2011-12 to FY 2013-14 on 14th July, 2011 and thereafter for the second Control Period (FY 2014-15 to FY 2018-19) on 10th June, 2014. The Commission has also issued the Tariff Order on True Up for the FY 2014-2015 to FY 2015-2016 and Mid Term Review for Third Control Period FY 2016-2017 to FY 2018-19. Thereafter, on 29th June, 2019, the Commission issued the MYT Order for the fourth Control Period (FY 2019-20 to FY 2023-24).

1.4 Interaction with the Petitioner

1.4.1 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.

1.4.2 Based on preliminary scrutiny of the petition, the Commission vide letter No. HPERC-F(1)-26/2021-2339-40 dated 25-11-2021 directed the Petitioner to submit details regarding first set of deficiencies identified in the petition, which were submitted by the Petitioner vide MA No. 11/2022 dated 15/02/2022. Subsequently, the Commission issued second, and third set of deficiencies letters

whose replies were submitted by the Petitioner by 18th May, 2022 and 19th July, 2022.

- 1.4.3 Based on the detailed scrutiny of the petition, various clarifications/ information were sought by the Commission from time to time. The following submissions made by the Petitioner in response there to, have been taken on record:

Table 1: Communication with the Petitioner

Sl.	Submission of the Petitioner	Date
1	Filing No. 210/2021	22 nd October, 2021
2	MA No. 11/2022	15 th February 2022
3	MA No. 96/2022	18 th May, 2022
4	MA No. 99/2022 HPSEBL Comments on the Petition	23 rd May, 2022
5	MA No. 118/2022 Reply on HPSEBL Comments	30 th June 2022
6	MA No. 129/2022	19 th July 2022

1.5 Public Hearings

- 1.5.1 The interim order, 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: List of Newspapers for Public Hearing

Sl.	Name of News Paper	Date of Publication
1.	The Tribune	8 th May 2022
2.	Amar Ujala	8 th May 2022

- 1.5.2 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 which was published in the newspapers as mentioned in the table:

Table 3: List of Newspapers for Public Notice by Commission

Sl.	Name of News Paper	Date of Publication
1.	The Times of India (Chandigarh Editions)	13.05.2022
2.	Amar Ujala (Chandigarh & Dharmshala Editions)	13.05.2022

- 1.5.3 The stakeholders were requested to file their objections by 15th June, 2022. HPPTCL was required to submit replies to the suggestions/ objections to the Commission by 22nd June, 2022 with a copy to the objectors on which the objectors were required to submit rejoinder by 30th June, 2022.

- 1.5.4 The Commission in order to conduct a public hearing issued a public notice informing the public about the scheduled date of public hearing as 4th July 2022. All the parties, who had filed their objections/ suggestions, were also informed about the date, time and venue for presenting their case during the public hearing.
- 1.5.5 In order to resolve the objections raised by the Commission during the first Public Hearing, a second public hearing was also held on 16th July 2022.
- 1.5.6 The Commission has undertaken detailed scrutiny of the submissions made by the Petitioner and the various objections raised by stakeholders for the purpose of issuance of this Order.

2. STAKEHOLDER OBJECTIONS

2.1 Introduction

- 2.1.1 As detailed out in Chapter-1 of this Order, the Commission through Public Notice in various newspapers informed the public/stakeholders about the date for filing comments/ objections and date of public hearing as 4th July, 2022.
- 2.1.2 Accordingly, the public hearing was conducted at HPERC 4th July, 2022. During the hearing, the Petitioner was unable to clarify all the queries of the Commission. Therefore, the Commission scheduled a subsequent public hearing on 16th July, 2022 to provide another opportunity for requisite response to the queries of the Commission. HPSEBL also submitted their comments/ suggestions before the Commission. Issues raised by HPSEBL in their written submission, along with replies given by the Petitioner and views of the Commission are summarized in the following paras:

Stakeholders' Submission

- 2.1.3 HPPTCL (petitioner) has filed petition for approval of capital cost and determination of tariff for the period starting from COD on 28.08.2019 to FY2023-24 for 33/132kV 2x25/31.5 MVA GIS Pooling Sub-station at Chambhi (Shahpur) (referred as Asset 1) and from COD on 05.08.2020 to FY2023-24 for 132 kV D/C Transmission Line from tapping point of 132 kV Dehra- Kangra Transmission Line to 33/132 kV GIS pooling Sub-station at Chambhi (Shahpur) (referred as Asset 2).
- 2.1.4 HPSEBL submitted that various transmission assets created/being created by HPPTCL are for evacuation of power from the various hydro generators in the State of Himachal Pradesh. The drawl requirements of HPSEBL for meeting the power requirements of consumers have not been taken into consideration while carrying out the Load Flow Studies in respect of various transmission assets of HPPTCL. Thus, HPPTCL cannot claim that HPSEBL is 100% beneficiary of above transmission assets created by HPPTCL. Moreover, the stakeholders submitted that the Sub-stations and transformation capacities were created by the Petitioner based upon the anticipated power evacuation requirements and there were no written requirement from HPSEBL for drawl of power from these Sub-stations.

Petitioner's Response

- 2.1.5 The Petitioner has mentioned that the averment made with regard to HPSEBL not being the sole beneficiary of the Transmission Asset is incorrect and Recovery of Annual Transmission Charges has to be done from the present beneficiary of Transmission asset in line with HPERC Transmission Regulations 2011.

2.1.6 The Petitioner has also submitted that details of IPPs, which are having PPAs with HPSEBL and whose power is presently being evacuated from the Chambhi Sub-station and all future beneficiaries of Chambhi Sub-station, has already been supplied vide reply dated 11.02.2022. Further, the Petitioner has claimed that details submitted clearly indicate that HPSEBL is the sole beneficiary of the instant asset and the entire Transmission Charges is to be borne by HPSEBL. However, as and when other beneficiaries start utilizing the said asset, the transmission charges will be shared between beneficiaries as per HPERC Transmission Regulations 2011.

Commission's Observations

2.1.7 As per the DPR of the project, power from 9 nos. of hydro generating projects with a total capacity of 42.4 MW would be evacuated from the transmission asset. The capacity of these projects are in the range of 1MW to 12 MW reflecting all the generating stations are Small Hydro Projects (SHPs). As per reply received from the Petitioner in the first deficiency letter, the currently power evacuated from the Sub-station has been over 53.8 MW from the commissioned plants and additional plants are also scheduled to come up in the future. The plants from where the energy is being evacuated have PPAs with HPSEBL or are owned by HPSEBL.

2.1.8 Further, the Petitioner has signed a supplementary TSA with HPSEBL on 14th July 2022 agreeing to evacuate power from the 132/22kV Chambhi Sub-Station among other assets of HPPTCL. In view of the various submissions of the Stakeholders and Petitioner, the Commission has covered the aspect of applicability and allocation of transmission charges in Chapter 4 of this Order under the head 'Transmission Charges'.

Stakeholders' Submission

2.1.9 In the HPPTCL petition, there is no mention of upcoming SHPs being developed by Generating Companies (IPPs) in the Shahpur Area for whom these assets (Asset 1 & Asset 2) have been created and commissioned on 28.08.2019 & 05.08.2020 respectively by HPPTCL. The details of connectivity agreements, LTOA/ MTOA have not been provided by HPPTCL. As per the DPR, the instant assets have been constructed by HPPTCL for the evacuation of power of 42.4 MW envisaged from Small Hydro Projects in the Shahpur Area in Beas basin in District Kangra. These assets were primarily planned by HPPTCL to cater to evacuation needs of upcoming SHP generating stations. In the absence of details of other beneficiaries, the contention of HPPTCL to state that HPSEBL is the only beneficiary of the instant transmission assets is not correct. HPSEBL is beneficiary to the extent of utilization of these assets and in this regard signing of Supplementary TSA between HPPTCL & HPSEBL is in process. Therefore, HPPTCL may provide the latest data of the actual load flow on these assets to the Hon'ble Commission for scrutiny & assessment of beneficiaries of the Assets.

Petitioner's Response

2.1.10 The Petitioner has submitted the details of actual load flow from the asset w.e.f. COD to May, 2022

Commission's Observations

2.1.11 The Petitioner has provided the list of plants from which energy is being evacuated currently in reply to deficiency note. As against the planned generation capacity of 42.4 MW which included 9 plants, currently there are 10 plants whose energy is wheeled through this network with an installed capacity of 53.8 MW. All the ten plants are either owned by HPSEBL or have a PPA with HPSEBL. Therefore, the claim of the stakeholder is not entirely correct. For the remaining plants, which are still to be commissioned, the beneficiary is likely to be HPSEBL considering that all these plants are SHPs and HPSEBL would be the likely beneficiary from these projects. The Commission has further deliberated on the issue Chapter 3 of this order under the section 'Energy flow and Nature of Asset'.

Stakeholders' Submission

2.1.12 The O&M expenses claimed for Asset 2 is on normative basis which are based on O&M Expenses norms as specified in CERC (Terms and Conditions of Tariff) Regulations, 2019 which include employee expenses whereas while claiming O&M expenses for Asset 1, it has been mentioned at para 4.9.3 that HPPTCL has employed 9 officials in FY2019-20 to carry out the operation at the site. The manpower strength had increased from 9 to 16 in FY2020-21 and shall remain the same throughout the control period and accordingly actual employee expenses have been claimed for Asset 1. HPPTCL should clarify that O&M expenses for Asset 1 and Asset 2 are not common in nature and the Commission may decide accordingly.

Petitioner's Response

2.1.13 In reply to the averments made by the Respondent under Para 10 with regard to O&M expenses for Asset-I and Asset-II not being similar in nature, the Petitioner submits that actual O&M expenses for Asset-I and Asset-II during FY 2019-20 and FY 2020-21 respectively has been considered. These actual O&M expenses have been escalated by WPI and CPI index for projecting O&M expenses for remaining years of Control Period. Accordingly, there's no variation in the methodology adopted for projecting O&M expenses for both the Assets. Further, the Petitioner has requested the Commission to approve the O&M expenses for Asset-I and Asset-II as claimed in the Petition.

Commission's Observations

2.1.14 For the purpose of determining O&M expenses for both the assets, the Commission has utilized benchmark O&M rates as prescribed in the CERC (Terms and Conditions of Tariff) Regulations, 2019.

3. APPROVAL OF CAPITAL COST

3.1 Introduction

3.1.1 HPPTCL has submitted a petition for determination of capital cost for 33/132kV Sub-station at Chambhi (Shahpur) and 132 kV D/C Transmission Line from COD to FY 2023-24 in line with the provisions of the HPERC Transmission Regulations 2011.

3.1.2 Regulation 14 of the HPERC Transmission Regulations 2011, provides as under:-

"14. Capital cost of the project

(1) The capital cost for a project shall include-

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

(b) capitalised initial spares subject to the ceiling norms as per regulation 15;

(c) additional capital expenditure determined under regulation 16:

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

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

Provided that the prudence check of capital cost may be carried out based on the benchmark norms to be specified by the Commission from time to time:

Provided further that in cases where benchmark norms have not been specified, prudence check may include scrutiny of the reasonableness of the capital expenditure, financing plan, interest during construction, use of efficient technology, cost over-run and time over-run, and such other matters as may be considered appropriate by the Commission for determination of tariff:

Provided further that where the implementation agreement and the transmission service agreement entered into between the transmission

licensee and the long-term transmission customer provides for ceiling of actual expenditure, the capital expenditure admitted by the Commission shall take into consideration such ceiling for determination of tariff:

"Provided further that in case of the existing projects, the capital cost admitted by the Commission prior to the start of the control period and the additional capital expenditure projected to be incurred for the respective years of the control period, as may be admitted by the Commission, shall form the basis for determination of tariff:"

- 3.1.3 The Commission has reviewed the proposed capital cost for 33/132kV Sub-station at Chambhi (Shahpur) and 132 kV D/C Transmission Line from COD and ARR for each year from COD until the end of the Control Period i.e. FY 2023-24. Multiple set of deficiencies in the petition were shared with the Petitioner to realistically validate the reasons for cost and time overrun, claimed amount, beneficiary details, etc.
- 3.1.4 The original Petition for determination of capital cost and ARR for 33/132kV Sub-station at Chambhi (Shahpur) and 132 kV D/C Transmission Line from COD lacks significant detailing and supporting information to ascertain the capital cost for the Sub-Station and line. Information provided in the Petition was inadequate for which the Commission sought additional submissions and supporting documents from the Petitioner through deficiency letters for the purpose of reviewing the capital cost and ARR. In some of the cases, the information provided by the Petitioner in response to the queries of the Commission remained incomplete and/or could not be validated through appropriate supporting documents.
- 3.1.5 The Commission has undertaken detailed prudence check and adequate assumptions, wherever required, for approving the capital cost of Sub-Station and transmission line. The scrutiny and prudence check undertaken by the Commission for approval of capital cost of 33/132kV Sub-Station at Chambhi (Shahpur) and 132 kV D/C Transmission Line from has been discussed in the following paragraphs.

3.2 Summary of the Project

Petitioner Submission

- 3.2.1 The Petitioner submitted that scheme for construction of 33/132kV 2x25/31.5 MVA GIS Sub-Station at Chambhi and 132 kV D/C Transmission Line from tapping point of 132 kV Dehra-Kangra Transmission Line to 33/132 kV GIS pooling Sub-Station at Chambhi was approved in the 15th Board of Directors (BOD) meeting with an anticipated capacity of 42.4 MW.
- 3.2.2 The Petitioner submitted that transmission line & Chambhi Sub-Station are being used to evacuate power generated from hydro generating stations within the state and further it is connected to 132 kV Dehra-Kangra Transmission Line of HPSEBL.
- 3.2.3 Subsequent to BoD approval, the project was awarded to 2 EPC Contractors for Line and Sub-Station separately. While the Line is under Commercial operation since 6th August, 2020, the Sub-Station is under commercial operation since 28th August, 2019.

3.2.4 Relevant technical details and configuration of the Sub-Station as submitted by the Petitioner is tabulated as follows:

Table 4: Sub-Station details

Name of Sub-Station	Type of Sub-station	Voltage level KV	No. of Bays				COD
			765 KV	400 KV	132 KV	33 kV	
33/132kV 2x25/31.5 MVA GIS Sub-Station at Chambhi (Shahpur)	GIS	132	-	-	2	4	28 th August, 2019

3.2.5 Relevant technical details and configuration of the transmission line as submitted by the Petitioner is tabulated as follows:

Table 5: Transmission Line details

Name of Transmission line	Type of line (AC/HVDC)	S/C or D/C	Name of Sub-Conductors	Voltage level kV	Line Length (Km)	COD
132 kV D/C Transmission Line from tapping point of 132 kV Dehra-Kangra Transmission Line to 33/132 kV GIS pooling Sub-Station at Chambhi	AC	D/C	Panther	132	15	6 th August, 2020

3.2.6 HPPTCL submitted that the capital cost of the project initially was envisaged as INR 7,131.38 lakh as per the scope of work defined in the original Detailed Project Report (DPR). However, due to introduction of GST and change in scope after detailed site survey resulting in changes in quantity of items along with type of towers and inclusion of provision of Departmental Charges, the capital cost of the project was revised as INR 8,490.34 lakh.

3.2.7 Further, the Petitioner submitted that the audited capital cost as on COD of the scheme is INR 8,490.34 lakh which is inclusive of IDC and Departmental Charges.

3.2.8 The following table provides the actual capital cost of the project based on the revised scope of work and the cost approved in the original DPR:

Table 6: Abstract of Capital Cost (INR Lakh)

Particulars	Capital Cost – DPR	Contract Value	Capital Cost* - Petition
Transmission Line			
Hard Cost	2550.00	1,851.22	2260.24
IDC	86.39	-	337.04
Departmental charges	209.00		144.09
Sub-Total	2845.39	1,851.22	2741.37
Sub-Station			
Hard Cost	4334.28	4358.00	4453.26

Particulars	Capital Cost – DPR	Contract Value	Capital Cost* - Petition
IDC	156.00	-	557.16
Departmental charges	449.00	-	302.83
Sub-Total	4939.28	4,358.00	5313.16
Total	7784.67	6209.22	8054.53

*Capital cost claimed as on COD

3.2.9 The project was awarded to M/s Shyam Indus Power Solution Pvt. Ltd. and M/s. Coal Mines Associated Traders Pvt. Ltd for construction of Sub-Station and transmission line respectively. The scheduled commissioning period for the Sub-Station from the effective date of project execution was 18 months. For transmission line actual implementation period as per contract was 30 months.

3.2.10 The Petitioner submitted that it has been able to contain the total capital cost within INR 8,092.65 lakh including the IDC and Departmental Charges as on 31st March, 2020, which is very much in the range of total capital cost envisaged in DPR of INR 7,784.67. The Petitioner has claimed that there was cost escalation in the project after the field survey.

3.2.11 The Petitioner submitted that there was a delay in commissioning of the project. While the COD of the Sub-Station was achieved on 28th August, 2019, the transmission line was commissioned on 6th August 2020. The Petitioner further submitted that the Sub-Station was fully constructed by August 2019 with a delay of 272 days due to variation in quantity and unavailability of the SF6 termination kit. The transmission line got delayed almost by 339 days primarily on account of factors such as delay in getting approval from MoEF, hindrances by locals, changes in Tower location charts. Both the activities were delayed due to COVID 19 induced Force Majeure.

3.2.12 The Petitioner submitted that with regards to the evacuation arrangement of power, HPSEBL has signed long term power purchase agreement with IPPs for purchase of power. These generating stations will be having their permanent tapping point with 132 kV Dehra-Kangra Transmission Line of HPSEBL

3.2.13 For making application for grant of long term access to Inter-State Transmission system, beneficiaries of the SHPs having long term PPA's can directly sign Long Term Transmission Agreement (LTA) with HPPTCL for evacuation of their power through HPPTCL system. Accordingly, HPSEBL has agreed on Draft Supplementary Transmission Service Agreement (STSA) in the meeting held on 23rd March 2022. The agreement was an addendum to Supplementary Transmission Service Agreement of 18th April 2017. The Final Transmission Service agreement between HPPTCL and HPSEBL was signed on 14th July, 2022.

Commission's Analysis

3.2.14 Originally, the DPR was approved for INR 6500 Lakh and the works included 33/132kV 2x25/31.5 MVA GIS Sub-Station at Chambhi (Shahpur) and 132 kV D/C Transmission Line from tapping point of 132 kV Dehra-Kangra Transmission Line to 33/132 kV GIS pooling Sub-Station at Chambhi in Kangra of Himachal Pradesh. However, it was realized that a LILO/interconnection will not suffice the

- requirement, and the scope of Transmission line was modified from only interconnection/LILO to stringing of 15 km 132 kV Transmission line along with associated Transmission works, as a major work.
- 3.2.15 As per the revised DPR of the Transmission line, the total project cost was increased to INR 7,131.38 Lakhs. The Petitioner has provided approval of Managing Director with respect to revised cost dated 2nd January 2015.
- 3.2.16 It is observed that this project was a part of ADB funding for the Clean Energy Transmission Investment program for various transmission projects covered in Power Systems Master plan. The overall funding under the plan was \$350 Million of which this project was covered under Tranche – II funding amounting to \$110 Million. The project was part of the composite scheme consisting of switching station at Urni, double circuit line from Urni to Wangtoo, GIS Power-Station at Lahal among others. The agreement for Tranche – II was signed on 3rd September 2014.
- 3.2.17 As per the supporting documents submitted by the Petitioner, it is observed that the LOA for the Transmission line was awarded on 25th December 2015 at a cost of INR 1,851.22 Lakh for the Supply (INR 902.96 lakh) and the Services (INR 948.25 lakh) to M/s. Coal Mines Associated Traders Pvt. Ltd. As per the Petition, the effective date of commencement of supplies part was 18.03.2016 and that of commencement of services part was 16.03.2018. The works of Transmission line was to be completed by September 2019. The line was envisaged to be funded at a debt-equity ratio of 75:25.
- 3.2.18 The construction of line was delayed by 311 days on account of factors such as delay in getting approval from MoEF, RoW issues and local hinderances as claimed by the Petitioner. With respect to proof of COD of the line, the Petitioner had provided a provisional Electrical Inspector Certificate (EIC) approval for 8th July 2020. In reply to the deficiency letter, the final EIC approval dated 17th August 2021 was provided by the Petitioner.
- 3.2.19 The Commission observed that the LOA for the Sub-Station was issued on 1st October 2015 at a cost of INR 3,918.36 Lakh for the Supply (INR 3,109.48 lakh), Services (INR 794.50 lakh) and training (INR 14.38 Lakh) to M/s. Shyam Indus Power Solutions Pvt. Ltd. There was a Forex component to the LoA which included \$944,950 for supplies and \$15,000 for training. The Petition mentioned that the effective date for start of project execution was 15.06.2016 and works were scheduled to be completed within time period of 18 months i.e. upto 30.11.2017. The Sub-Station component was envisaged with a debt-equity funding ratio of 80:20.
- 3.2.20 As per the submission of the Petitioner, the construction of the Sub-Station was delayed by 11.5 months due to introduction of the GST regime and 271 days on account of non-availability of SF6 kits and control cables. The actual date of commissioning of the Sub-Station is 28th August 2019. The Sub-Station was charged on 28th August 2019 through the supply from 33/11kV HPSEBL Sub-Station through 33kV Chambhi Shahpur feeder. The Petitioner has provided a provisional EIC approval dated 28.08.2019. In reply to the deficiency letter, the final EIC approval dated 9th July 2020 was provided by the Petitioner corresponding to the COD of the Sub-station.

3.2.21 The Commission observes that the date of commissioning of Sub-Station and line as claimed by Petitioner does not reconcile with the documentary evidence in form of provisional and final EIC. Based on the claim and supporting documents submitted during clarifications, the dates of each element are summarized below:

Table 7: CODs of the Transmission system elements

Particulars	COD claimed by Petitioner	Provisional EIC	Final EIC
Sub-Station	28-Aug-19	28-Aug-19	9-Jul-20
Line	6-Aug-20	8-Jul-20	17-Aug-21

3.2.22 As the dates do not reconcile with the EIC certificates, the Commission also asked the Petitioner to clarify the reason for considering separate CODs for Sub-Station and transmission line when there is an interlinkage between the two elements. In response, the Petitioner was unable to provide any valid reason and mentioned that the transmission line was delayed due to force majeure reasons and therefore separate dates have been considered.

3.2.23 The claim of the Petitioner with respect to commissioning of the Sub-Station and line differ by approximately one year. The Commission is of the view that COD of the Sub-Station is inappropriate as it can be put to use only after commissioning of the transmission line. As a result, the Commission is of the view that COD of the entire transmission asset i.e. transmission line and Sub-Station needs to be considered as on the date of commissioning of the transmission line.

3.2.24 With respect to consideration of an appropriate commissioning date, it is observed that the transmission line was provided a provisional EIC approval on 8.07.2020. However the Petitioner has considered 6.08.2020 as the COD date of transmission line. As per the data of energy flow submitted by the Petitioner, it is observed that actual energy flow was initiated from August 2020 onwards. Therefore, the Commission has considered the actual COD of the transmission asset as 6.08.2020 as per the claim of the Petitioner.

3.2.25 The actual cost on COD for the line and Sub-Station as per the Petition is INR 8,054.53 lakh for which the Petitioner has submitted the Auditor's certificate for the Sub-Station in support of its claim. However, it is observed that the Petitioner has not provided an auditor certificate with respect to the transmission line cost. In response to clarification of the Commission, the Petitioner submitted that the auditor certificate for the transmission line was not available as the accounts for FY 2022 have not been finalized yet. The Commission has considered the provisional amount submitted by the Petitioner for the purpose of approval of capital cost and tariff. The Petitioner is directed to submit the Auditor certificate for final capital cost at the time of truing-up and tariff determination of subsequent Control Period.

3.2.26 Also, the Petitioner has claimed total cost of INR 8,368.26 Cr. towards the project as on 31st March 2021. The additional cost is claimed on account of payments made post COD as per agreed terms under the contract. The cost aspects have been analyzed in detail in the subsequent paras.

3.2.27 It is observed that the Petitioner has not undertaken capital investment approval for the transmission schemes as per the requirement of HPERC (Terms and

Conditions for Determination of Transmission Tariff) Regulations, 2011. Absence of scheme-wise capital investment approval for the transmission works results in difficulties in determining reasonable capital cost and applicability of transmission charges. The Petitioner is directed to undertake scheme-wise approval for such capital investments for all future schemes.

3.2.28 The Commission has analysed the Petition and supporting annexures in detail and found several deficiencies in the information provided. In order to undertake in-depth analysis, the Commission in its various discrepancy letters sought additional information and supporting documents such as approvals of the BOD/competent agencies, details of awards/ contracts, correspondences, documents against project funding, payments made to the contractors, and COD certificate etc.

3.3 Energy flow and Nature of Asset

Petitioner Submission

3.3.1 The Petitioner submitted that capacity of the Sub-Station is 50/31.5 MVA whereas the transmission line has been constructed with an anticipated evacuation capacity of 42.4 MW. This project will be able to cater to the envisaged power capacity of Small HEPs in the valleys along with the additional capacity to be installed through Himurja. The system shall also cater to future SHPs that may come in the region.

Commission's Analysis

3.3.2 The Petitioner has submitted that the sole beneficiary of transmission asset would be HPSEBL as the evacuation of power from various SHP's is to be done through the project with the primary beneficiary being HPSEBL.

3.3.3 As per the DPR, the pooling Sub-Station at Chambhi was envisaged for evacuation of 42.4 MW of power from various small HEPs in Shahpur area.

3.3.4 It is observed that the Sub-Station and line has been constructed to evacuate power from the various HEPs in the State. During the planning stage, the capacity to be evacuated was expected to be 42.4 MW. Currently, the Sub-Station is wheeling power from the below mentioned power plants:

Plant	Capacity (MW)	Remarks
Gaj -III	5	The Gaj-III HEP has PPA with HPSEBL and as per PPA, the interconnection point is 33/132kV Chambhi Sub-station, therefore, transmission charges for usage of HPPTCL system will be borne by HPSEBL.
Khauli	12	Project owned by HPSEBL
Gaj	10.5	Project owned by HPSEBL
Gaj Top	3.8	Gaj Top has a PPA with HPSEBL and connected to 33/11 kV Gaj Sub-Station which is further connected to Chambhi Sub-Station through 33 KV feeder. The transmission charges for evacuation of power of said HEP through HPPTCL station shall be borne by HPSEBL
Gaj -II	1.5	Gaj II has a PPA with HPSEBL and connected to 33/11 kV Gaj Sub-Station which is further connected to Chambhi Sub-Station through 33 KV feeder. The transmission charges for evacuation of power of said HEP through HPPTCL station shall be borne by HPSEBL

Plant	Capacity (MW)	Remarks
Leond	2	Leond has a PPA with HPSEBL and connected to 33/11 kV Gaj Sub-Station which is further connected to Chambhi Sub-Station through 33 KV feeder. The transmission charges for evacuation of power of said HEP through HPPTCL station shall be borne by HPSEBL
Dhrindhar	5	Dhrindhar has a PPA with HPSEBL and connected to 33/11 kV Shahpur Sub-Station which is further connected to Chambhi Sub-Station through 33 KV feeder. The transmission charges for evacuation of power of said HEP through HPPTCL station shall be borne by HPSEBL
Upper Khauli	5	Upper Khauli has a PPA with HPSEBL and connected to 33/11 kV Shahpur Sub-Station which is further connected to Chambhi Sub-Station through 33 KV feeder. The transmission charges for evacuation of power of said HEP through HPPTCL station shall be borne by HPSEBL
Bhrahah Top	5	Bhrahah Top has a PPA with HPSEBL and connected to 33kV yard of Khauli Powerhouse Sub-Station which is further connected to Chambhi Sub-Station through 33 KV feeder. The transmission charges for evacuation of power of said HEP through HPPTCL station shall be borne by HPSEBL
Brahah Powerhouse	4	Brahah Power house has a PPA with HPSEBL and connected to 33/11 kV Shahpur Sub-Station which is further connected to Chambhi Sub-Station through 33 KV feeder. The transmission charges for evacuation of power of said HEP through HPPTCL station shall be borne by HPSEBL

3.3.5 In addition to above, Guna Devi (5 MW), Gaj Gehra (5 MW) and Gaj Garju IPP (1.25 MW) are proposed to evacuate power from the Chambhi Sub-station. The power is being evacuated from small HEPs for which the sole beneficiary is considered to be HPSEBL. Therefore, the transmission asset can be considered to be part of intra-state transmission network.

3.3.6 In view of the responsibility of determination of ARR for such intra-state assets by the State Commission, the Commission has undertaken detailed prudence check of the capital cost of the line and Sub-Station and determination of ARR for each year from COD to FY 2023-24.

3.4 Capital Cost

Petitioner's submission

3.4.1 The Petitioner submitted that the project was awarded to M/s Shyam Indus Power Solutions Pvt. Ltd. and M/s Coal Mines Associated Traders Pvt. Ltd. for construction of Sub-Station and transmission line respectively. The scheduled construction period for the Sub-Station and transmission line were 18 months. However, due to delay on account of various factors the COD for the Sub-Station and transmission line got delayed and were finally achieved on 28th August 2019 and 6th August 2020, respectively.

3.4.2 The work of transmission line was awarded with an expected construction period of 18 months. The Petitioner submitted that as per revised DPR the estimated project cost was Rs. 28.45 Crore including Interest During Construction (IDC) charges of Rs. 0.86 Crore and Departmental Charges (DC) of Rs. 2.09 Crore.

3.4.3 Based on the DPR, bids were invited, and contract of construction was awarded to M/s Coal Mines Associated Traders Pvt. Ltd. at INR 1,851.22 lakh. Based on the

change in quantities and inclusion of GST, the cost of construction increased to INR 2,093 lakh (excluding IDC) post the revision.

3.4.4 In the Petition, the Petitioner has submitted the following reasons for increase in cost of transmission line:

"The above Contract was first amended on 24.02.2018 due to implementation of GST and second amendment on 27.02.2020 due to change in quantity of some items and type of tower has changed "

The Petitioner submitted that against an approved cost of INR 28.45 Cr., it has incurred a cost of INR 27.68 Cr. which is well within the approved cost.

3.4.5 The following table provides the original DPR cost, Contract Value and the actual cost on CoD & 31st March 2021 as per the unaudited certificate (since the accounts were not finalized for the financial year) incurred against the transmission line:

Table 8: Capital Cost comparison – Transmission Line (INR Cr.)

Particular	HPPTCL Board Approval for both assets	Cost as per revised DPR	Contract Value	Actual Cost as on CoD (06.08.2020)	Add. Cap. from COD to FY 2020-21	Total Cost of the project as on 31.03.2021
Hard Cost of Asset-2	-	25.50	20.93	19.19	0.26	19.45
Other Expenses			-	3.41	0.01	3.42
IDC	-	0.86	-	3.37	-	3.37
Departmental Charges	-	2.09	-	1.44	-	1.44
Total	65.00	28.45	20.93	27.41	0.27	27.68

3.4.6 The Petitioner submitted that there was a delay in construction of line by 310 days on account of factors such as delay in getting approval from MoEF, change in tower locations, local hinderances and due to Force Majeure on outbreak of COVID-19. The line finally achieved CoD on 6th August 2020.

3.4.7 With regards, to the sub-station, the Petitioner submitted that the project was awarded to M/s Shyam Indus Power Solutions Pvt. Ltd. with a scheduled construction period of 18 months.

3.4.8 Similar to transmission line, the board approval for the Sub-Station was received with a total DPR Cost of INR 4,939.29 lakh (including IDC and DC).

3.4.9 The contract for setting up of the Sub-Station was initially awarded at a cost of INR 3,109.48 lakh plus \$944,950 for supplies and INR 808.89 lakh plus \$15,000 for services. The petitioner has claimed the original awarded cost after dollar conversion at rate of INR 65=\$1 as Rs. 4,358 lakh. The Petitioner has submitted that the total capital cost incurred for the Sub-Station is INR 5,719.09 lakh (inclusive of IDC, DC and other expenses).

3.4.10 The following table provides the cost of the Sub-Station as approved in DPR, Contract Value and the actual cost on CoD & 31st March 2020 as per the auditor certificate submitted by the Petitioner:

Table 9: Capital Cost comparison – Sub-Station (INR Cr.)

Particular	Cost as per DPR	CEA Approval	Contract Value*	Actual Cost as on CoD (28.08.2019)	Add. Cap. From COD to FY 2019-20	Total Cost of the project as on 31.03.2020
Hard Cost of Asset	43.34	43.34	43.58	42.61	2.01	44.62
Other Expenses			-	1.92	0.11	2.03
IDC	1.56	1.56	-	5.57	1.85	7.42
Departmental Charges	4.49	4.49	-	3.03	0.09	3.12
Total	49.39	49.39	43.58	53.13	4.06	57.19

*including all four amendments issued with respect to the contract

3.4.11 The Petitioner submitted that the construction of Sub-Station was completed in August, 2019 with a delay of 11.5 months on account of variation of quantity and GST implementation under the first and second amendment, respectively. The project was further delayed by 271 days due to unavailability of SF6 termination kits and supply of control cables.

3.4.12 The Sub-Station was back charged from the of 33kV Chambhi Shahpur feeder and received a provisional EIC certificate on that date. Since the line achieved its CoD later than the Sub-station, the combined system CoD has been taken as 6th August 2020.

3.4.13 The total capital cost claimed by the Petitioner for the Sub-Station and line combined has been provided in the table as follows:

Table 10: Capital Cost claimed by the Petitioner (INR Lakh)

Particulars	Capital Cost – Claimed
Transmission Line	
Land/preliminary works/ compensation etc.	341.45
Supplies, Erection and Civil Works	1945.52
IDC	337.02
Departmental charges	147.26
Sub-Total	2771.25
Sub-Station	
Land/preliminary works/ compensation etc.	274.65
Supplies, Erection and Civil Works	4,390.47
IDC	741.77
Departmental charges	312.20
Sub-Total	5,719.09
Total	8490.34

Commission's Analysis

3.4.14 The Commission has done a detailed scrutiny of the various components of the capital cost. As part of the prudence check, the Commission sought additional information and supporting documents including auditor certificate, approvals of BOD, details of awards/ contracts, correspondences, payments made to

contractors, COD certificate, etc. The Petitioner was also asked to submit the relevant approvals taken for the project from the Commission and any other approval in revision of Capital cost from the BoD.

3.4.15 Based on the DPR submitted by the Petitioner, the tentative cost was Rs. 49.39 Crore (including IDC and DC) for the Sub-Station and same was approved by CEA. As per the submission of Petitioner, it is observed that the scope of work of transmission line was earlier limited to interconnection /LILO and was later increased to stringing of 132kV transmission line of 15 km along with associated transmission work. Accordingly, a revised estimate of Rs. 28.45 Crore for transmission line was prepared and approved. CEA in its approval mentioned that the project to be awarded based on competitive bidding and the project cost will be restricted to the actual bid price discovered through competitive bidding.

3.4.16 Accordingly, the estimated capital cost of the transmission line and Sub-Station was INR 2,845 lakh and INR 4,939 lakh respectively. It is observed that the costs were inclusive of IDC and Departmental Charges. As per the DPR, the consolidated cost for the project is INR 7,784 lakh (including IDC and DC). The composite scheme for construction of 33/132 kV, 2x25/31.5 MVA Sub-Station at Chambi and 132 kV transmission line connecting the Sub-Station to Dehra Kangra line was approved by BOD of HPPTCL in the meeting held on 1st June 2012 and subsequently by CEA on 5th June 2012. Copy of the CEA approval and minutes of the 15th BOD meeting has been enclosed by the Petitioner.

3.4.17 Further, the copies of the contracts submitted by the Petitioner were scrutinized. As per the contracts, the transmission line was awarded to M/s. Coal Mines Associated Traders Pvt. Ltd at cost of INR 1851.22 lakh and Sub-Station was awarded to M/s Shyam Indus Power Solutions Pvt. Ltd. at cost of INR 4,358 lakh (INR 3918.36 lakh plus US \$959,950). As against the awarded cost, the hard cost (excluding IDC, department charges and other expenses) claimed by the Petitioner is summarized in table below:

Table 11: Comparison of changes in Hard Costs (Rs. Lakh)

Particulars	DPR Cost	Original Awarded Cost*	Revised Awarded Cost*	Claimed Amount (as on COD)	Claimed Amount (including Add. Cap)
Transmission Line					
Supply Cost	976.76	902.96	1100.00	1088.33	1088.33
Services Cost	457.80	948.25	993.00	830.84	857.19
Total Hard Cost	1434.56	1851.22	2093.00	1919.17	1945.52
Sub-Station Cost					
Supply Cost	2738.37	3723.69	3599.51	3588.57	3629.82
Services Cost	629.90	794.50	749.28	601.02	760.65
Training		24.13	10.24		
Total Hard Cost	3368.28	4542.33	4359.03	4189.59	4390.47

*including all amendments to the contract and conversion of US dollar contract to INR (1\$=65 INR)

3.4.18 It is observed that the hard cost claimed by the Petitioner is higher than the DPR cost. The Petitioner has clarified that the higher awarded cost was on account of change in scope of work based on the detailed engineering review and inclusion of impact of GST. However, the actual expenditure incurred is within the awarded

contract (including amendments). The amendments were on account of revision of scope as well as impact due to implementation of GST. The amendments in contract value are detailed in table below:

Table 12: Change in Award cost of Sub-Station due to Amendments

Amendment	Amount		Difference		Remarks
	INR Lakhs	USD	INR Lakhs	USD	
Supplies					
Awarded Cost	3109.47	944950			
First Amendment	3109.47	944950	0	0	Change in Scope of Work
Second Amendment	3276.87	944950	167.4	0	GST Amendment
Third Amendment	3035.13	944950	-241.74	0	Change in Scope of Work based on engineering and addition of GST component on training abroad
Fourth Amendment	2985.29	944950	-49.84	0	Variation in Scope of Work
Services					
Awarded Cost	808.89	15000			Change in Scope of Work
First Amendment	809.04	15000	0.15	0	GST Amendment
Second Amendment	859.5	15000	50.46	0	Change in Scope of Work based on engineering and addition of GST component on training abroad
Third Amendment	853.58	15753	-5.92	753	Variation in Scope of Work
Fourth Amendment	749.28	15753	-104.3	0	

3.4.19 The reasons for the increased claim were sought from the Petitioner. In response, the Petitioner clarified that cost escalation for the Sub-Station was on account of change in tax rate due to introduction of GST and minor variation in quantities. Also, recognition of requirement of SF6 kit and the associated control cables also led to cost escalations at the Sub-station. With regard to the transmission line, the Petitioner submitted that change in tower location led to changes in quantities and location of construction thereby leading to cost escalation for the transmission line.

3.4.20 Further, for the payments made in dollar denominations, the Commission has analysed the conversion rate as on the date of payments made by the Petitioner. The submissions included the payment advice issued by the banks. The total amount of the services and supply is observed to be in line with the claim made by the Petitioner.

3.4.21 An Auditor certificate towards the Sub-Station cost was submitted by the Petitioner. However, for the capital cost of transmission line, a provisional certificate signed by the accounts team has been submitted. In response to the query, the Petitioner clarified that the 132kV Kangra-Chambi Transmission line was completed in the month of August, 2020 and the Annual Accounts for FY 2020-21 are yet to be finalized. The Petitioner requested the Commission to allow to submission of audited capital cost for Transmission line upon finalization of accounts for FY 2020-21 at the time of truing up

3.4.22 The Commission has considered the auditor certificate towards Sub-Station and provisional certificate against transmission line submitted by the Petitioner for the purpose of approval of capital cost and tariff. The Petitioner is directed to submit

the Auditor certificate for final capital cost at the time of truing-up and tariff determination of subsequent Control Period.

3.4.23 The claimed hard cost towards transmission line and Sub-Station is within the contracted cost (including amendments) and therefore Commission decides to approve the hard cost as on COD based on the submission of the Petitioner.

3.4.24 In case of sub-station, the Commission observed that the revised cost was enhanced on account of increase in cost towards supply and civil works. In support of its claim, the Petitioner has submitted the amendments issued to the vendor for the capital works. The first two amendments issued were for the quantity variation and for the GST implications. The other two amendments included the SF6 kits and the control cables. There was a minor increase in the training cost.

3.4.25 Apart from the contracted cost of supply and services, cost such as land cost, forest clearance cost, tender fees, survey expenses, variation/actual statutory taxes, etc. were also incurred. Detail of such expense for transmission line and Sub-Station is summarised below:

Table 13: Other Expenses - Line and Sub/Station (INR Lakh)

Particulars	DPR Cost	Claimed (as on COD)	Claimed (as on 31 st Mar 21)
Transmission Line			
Land	0	17.40	17.40
Forest Clearance	0	263.75	263.75
Other Expenses including Crop compensation, Survey Exp. etc)	462.15	59.92	60.30
Sub-Total	462.15	341.07	341.45
Sub-station			
Land	450.00	174.57	174.59
Entry Tax	0	71.64	71.64
Other Charges including Contingency, Bank Commission Etc.	516.00	17.46	18.79
Sub-Total	966.00	263.67	265.02
Total (Line and Sub-station)	1428.15	604.74	606.47

3.4.26 The Commission has considered the other expenses as per the Auditor certificate for the Sub-Station and signed expense certificate for the Transmission Line received from the Petitioner.

3.4.27 The details of the Hard Costs as per the Awarded contract, Revised after amendments and as claimed in the Petition (on CoD and 31st March of Financial Year) for the Transmission line (unaudited) and Sub-Station(audited) are provided in the following table:

Table 14: Hard Cost (including land cost) – Transmission Line and Sub-Station(INR Lakh)

Particulars	Awarded	Revised*	Cost as on CoD	Claimed (as on 31 st March)	Approved (as on COD)
Transmission Line					
Supply and Material	902.96	1100	1088.33	1088.33	1088.33
Erection and Civil Works	948.25	993	830.84	857.19	830.84
Sub-total	1851.22	2093.00	1919.17	1945.32	1919.17
Land Cost	-	-	17.4	17.4	17.4
Preliminary works, Compensatory Afforestation/ compensation for crop damage etc.	-	-	323.67	324.05	323.67
Total	1851.22	2093.00	2260.24	2286.97	2260.24
Sub-station					
Supply and Material		3588.57	3588.57	3629.82	3588.57
Erection and Civil Works including cost towards lab/protection/ fencing/ security accommodation etc.	4358.00	601.02	601.02	760.65	601.02
Sub-total	4358.00	4189.59	4189.59	4390.47	4189.59
Land Cost			174.59	174.59	174.59
Preliminary works, Compensatory Afforestation/ compensation for crop damage etc.			89.10	100.06	89.10
Total	4358.00	4189.59	4453.26	4665.12	4453.26

*including amendments and conversion from USD to INR

3.5 Overheads (IDC and Departmental Charges)

Petitioner's submission

3.5.1 The Petitioner submitted that the IDC and Departmental Charges have been claimed based on actuals. Time overrun took place during construction of Sub-Station and line.

3.5.2 With regard to IDC of the Sub-station, the Petitioner submitted that in the DPR, the provision for IDC was kept at Rs. 1.56 Crore against which the actual IDC incurred is Rs. 5.57 Crore as on COD. It is submitted that while preparing the DPR, the IDC was computed based on the ADB loan interest rate of 4.64% on estimated Debt of Rs. 33.05 Crore and for implementation period of 24 months as against the actual interest rate payable to GoHP is 10% on actual Debt amount of Rs. 37.85 Crore and actual implementation period as per contract of 30 months. In case the same is calculated at GoHP rate (10.00%) and for 30 months, it works out to be Rs. 5.30 Crore. With regard to remaining IDC, over and above of Rs. 5.30 Crore, i.e. Rs. 0.27 Crore (Rs. 5.57 Crore less Rs. 5.30 Crore) there are various uncontrollable factors stated which led to an increase in the

implementation schedule of the project and further increase in the IDC. The time overrun during the construction of the Sub-Station was on account of non - availability of correct SF6 kits and associated control cables and the introduction of the GST.

- 3.5.3 The departmental charges of the Sub-Station up to COD works out to be Rs. 3.03 Crore which is lower than the cost assumed in the DPR and hence may please be allowed.
- 3.5.4 Time overrun during the construction of line occurred on account of factors such as delay in getting approval from MoEF, RoW issues (NHAI), Local hinderances and imposition of Force Majeure due to COVID – 19.
- 3.5.5 The rate of interest for calculation of IDC has been considered in accordance with the terms and conditions approved in the loan agreement signed with ADB.

Commission's Analysis

- 3.5.6 As discussed in previous sections, IDC and DC were included in the original DPR cost. The following table provides the IDC and Departmental Charges as per original DPR, revised cost and actual as claimed by Petitioner as on COD:

Table 15: IDC and Departmental charges claimed by Petitioner (INR Lakh)

Particulars	DPR	Claimed (as on COD)	Claimed (as on 31.03.21)
Transmission Line			
IDC	86.39	337.04	337.02
Departmental charges	209.00	144.09	147.26
Sub Total	295.39	481.13	484.28
Sub-Station			
IDC	156.00	557.16	741.77
Departmental charges	449.00	302.74	312.20
Sub Total	605.00	859.90	1053.97
Total	900.39	1341.03	1538.25

- 3.5.7 The claim towards IDC and department charges are very high as compared with DPR cost. The Petitioner had clarified in its petition that higher IDC was on account of lower interest rate considered in the DPR as well as delay in commissioning of the project due to various uncontrollable aspects.
- 3.5.8 A review of the contracts awarded by the Petitioner was undertaken. As per the contract document for transmission line, the LoA was given to the contractor on 26th December 2015. The original date of completion was 18 months from the commencement of services. This got delayed by 311 days as stated earlier and was granted provisional CoD on 6th August 2020.
- 3.5.9 In case of the Sub-station, the LoA was given to the contractor on 1st October 2015. The overall timeline of 18 months was delayed by 11.5 months in one instance and additionally by 271 days as discussed earlier. Accordingly, the Sub-Station was granted provisional CoD by EIC on 28th August 2019. The timelines

for Transmission Line and Sub-Station as submitted by the Petitioner have been summarized in the table below:

Table 16: Project Timelines as submitted by Petitioner

Description	Date	
	Transmission Line	Sub-Station
LOA	26 th December 2015	1 st October 2015
Commencement of Supplies	18 th March 2016	
Commencement of Work	16 th March 2018	15 th June 2016
Original Completion date	30 th September 2019	7 th December 2017
CoD	6 th August 2020	28 th August 2019

3.5.10 In case of the Sub-station, the LoA date was 1.10.2015 while an agreement was signed with the contractor on 2nd Dec 2015. It is observed that as per the agreement the time period for execution of work was 18 months. The date of LoA in case of transmission line was 26.12.2015 and the original completion date mentioned as 30.09.2019 as submitted by the Petitioner above.

3.5.11 It is observed that the scheduled completion date of Sub-Station and transmission line was not coordinated. The reasons for having differential completion dates have not been provided by the Petitioner. Also, it is observed that while the Sub-Station was completed on 28.08.2019 but the transmission line was commissioned on 06.08.2020 resulting in non-utilization of the Sub-Station for a period of approx. one year. The delay in commissioning of transmission line has resulted in overall delay in utilization of the complete transmission asset. The Commission is of the view that the Petitioner should have ensured that interdependent assets are commissioned simultaneously in order to ensure timely utilization of the assets and be commercially prudent.

3.5.12 Further, the Commission in its deficiency letter asked the Petitioner to quantify the time delay on account of the various factors as submitted. As per the submission of the Petitioner, the major reasons of time overrun included the following:

Table 17: Reasons for time overrun as claimed by Petitioner

Sl.	Reason for Delay	Time Period	Description
Transmission Line			
1	Delay in getting approval from MoEF	311 days	<ul style="list-style-type: none"> Out of 54 locations only 26 got approval as on 6/6/2018 Final approval for all the towers was received on 18/1/2019
2	Delay on Tower Location		<ul style="list-style-type: none"> NHAI asset passing under tower location, the case was settled on 18/3/2020
3	Delay on Local hinderance		<ul style="list-style-type: none"> Landowner of T-51 filed application, the case was settled on 25/2/2020 and the work completed on 18/3/2020
4	Delay due to COVID-19		<ul style="list-style-type: none"> Work resumed after 21/4/2020 after the imposition of Force Majeure

Sl.	Reason for Delay	Time Period	Description
Sub-Station			
1	Variation of Quantities and GST implementation	11.5 Months	<ul style="list-style-type: none"> The introduction of GST led to change in cost of items from the vendor There was variation in the BoQ quantities which were added during the construction phase
2	Delay due to availability of SF6 Termination Kits	271 Days	<ul style="list-style-type: none"> Termination kits required for GIS panels are different from the heat shrinkable type which were present in the BoQ. Required SF 6 kits were finally approved and imported from Germany and were installed on 25/7/2019 The time taken for recognition of the issue 5/3/2019 to the final installation was 4 months
3	Delay in supply for Control Cables		<ul style="list-style-type: none"> Cable from RTCC panel, SF6 gas zone protection for 33kV and 132kV GIS are required to be laid. The dispatch instruction was issued on 24/4/2019 and the cables were laid on 20/7/2019

3.5.13 Against a tentative time period of 18 months for construction of line and Sub-station, the overall completion period of the project was ~5 years.

3.5.14 Of the overall delay, part of the delay is attributable towards Judgement by Hon'ble Court of Civil Judge – II, Dharamshala in case of local hinderance due to land acquisition. The construction of four lane highway along with a 19 meter high bridge by NHAI led to change in the Tower location chart and Bill of Quantity leading to delay which could not have been avoided. However, the Commission feels that with better planning of tower locations and timely application for forest approval on the part of the Petitioner could have avoided the delay. For the Sub-station, the inclusion of correct SF6 kits and the import of the kit along with associated control cable has increased the cost and led to the time delay of over 4 months. Adequate diligence on the part of the Petitioner during Bill of Quantity preparation would have been instrumental in avoidance of delay and cost escalation to a large extent.

3.5.15 As per the submission of Petitioner, the imposition of GST regime had a significant impact on the dispatch of material from the vendor. The contract had to be amended and until the new rates were decided, no payment could have been made to the vendor. This further led to the delay in supply of material from the vendor. The Commission is of the view that the delay of 11.5 months in contract revision (reissuance of new prices) due to GST implementation is significantly large and could have been lower.

3.5.16 Based on reasons stated by the Petitioner, while part of the delay could be considered under force majeure but delay due to changes in BoQ or time required for amendment of contract due to GST, etc. cannot be allowed in the overall capital cost. The Commission therefore decided to allow sharing of excess amount of IDC (over and above the normative IDC) between the Petitioner and beneficiaries in equal ratio (50:50).

3.5.17 The Commission hereby advise the Petitioner to build a strong project management team to oversee such projects with proper mechanisms in place to flag delays at each milestone and take corrective actions for the same. The Commission also advise the Petitioner to conduct proper due diligence before releasing the BoQ for such projects as inclusion of new items can lead to significant delay and cost escalations.

3.5.18 In view of revision in hard cost as well as rate of interest, the Commission has computed a revised benchmark for the IDC. For assessing the benchmark IDC for Sub-Station and transmission line, the Commission has assumed 40% debt disbursement in first year and 60% in the remaining six months against project duration of 18 months as per the claim of Petitioner and as per timelines provided in the contract agreement. The phasing of debt disbursement has been assumed in accordance with the disbursement observed in similar projects undertaken by Petitioner.

3.5.19 The benchmark IDC for Sub-Station and line as computed is summarized as follows:

Table 18: Revised Benchmark IDC - Line

Particulars	Unit	Year I	Year II	Total
Debt disbursement	%	40%	60%	100%
Opening Debt (a)	INR Lakh	-	721.30	
Addition during the year (b)	INR Lakh	721.30	1081.95	
Closing Debt (c)	INR Lakh	721.30	1803.25	
Average Debt (d=(a+c)/2)	INR Lakh	360.65	1262.27	
Interest rate (e)	%	10%	10%	
Total IDC (f=d*e*0.25)	INR Lakh	36.06	63.11	99.18

Table 19: Revised Benchmark IDC – Sub-Station

Particulars	Unit	Year I	Year II	Total
Debt disbursement	%	40%	60%	100%
Opening Debt (a)	INR Lakh	0.00	1521.92	
Addition during the year (b)	INR Lakh	1521.92	2282.88	
Closing Debt (c)	INR Lakh	1521.92	3804.80	
Average Debt (d=(a+c)/2)	INR Lakh	760.96	2663.36	
Interest rate (e)	%	10%	10%	
Total IDC (f=d*e)	INR Lakh	76.10	133.17	209.26

*Considered for 6 months

3.5.20 With respect to actual IDC, the Petitioner submitted an excel sheet for working of IDC based on queries sought by the Commission. However, it was observed that there were apparent errors in the IDC calculation. The Petitioner had claimed IDC computation upto 31/3/2020 while its claim for commissioning was 28.08.2019. The basis for rate of interest provided by the Petitioner in the computation was

also not clear. The rates claimed were 13.56% and 10.56% as against the rates agreed with GoHP as per the loan agreement i.e. 10%.

3.5.21 Therefore, the Commission decided to undertake own calculation for arriving at the actual IDC for the project upto the COD based on following:

- COD of 6th August 2020 for both line and sub-station
- Actual drawal of loans as per submission of Petitioner

3.5.22 Interest rate of 10% in line with the terms and conditions of the loan agreement with GoHP as submitted by the Petitioner.

3.5.23 Based on the actual interest arrived as per the drawal schedule and normative interest (without delay), the Commission computed the IDC in the table as follows:

Table 20: Actual IDC upto COD considered by Commission (INR Lakhs)

Particular	Amount	Remarks
Transmission Line		
IDC with no delay	99.18	As per Table 18
IDC with delay (upto 6.08.2020)	273.34	Based on loan drawal schedule and interest rate
Excess IDC	174.16	
Allowable IDC due to time delay	87.08	50% of Excess IDC
Approved IDC	186.26	
Sub Station		
IDC with no delay	209.26	As per Table 19
IDC with delay (upto 6.08.2020)	766.27	Based on loan drawal schedule and interest rate
Excess IDC	557.00	
Allowable IDC due to time delay	278.50	50% of Excess IDC
Approved IDC	487.77	

3.5.24 In case of the departmental charges, the Commission has allowed the minimum normative charges determined in accordance with the provisions of DPR i.e. 11% of hard cost or actual departmental charges. Since the actual departmental charges on CoD is lower than 11% of the approved hard cost, actual departmental charges on CoD has been considered. The approved department charges are as below:

Table 21: Approved Departmental Charges (DC) (INR Lakh)

Particular	Claimed*	Approved
Departmental Charges for Transmission line	147.26	144.09
Departmental Charges for Sub-station	312.20	302.74

Particular	Claimed*	Approved
Total Departmental Charges	459.46	446.83

*In case of Transmission line departmental charges are as on 31st March 2021 and in case of Sub-Station the charges are as on 31st March 2020

3.5.25 In line with the Hard Cost, IDC and Departmental Charges approved in preceding sections, the approved project cost as on COD vis-à-vis the project cost claimed by the Petitioner towards Chambhi Sub-Station and associated Transmission line is summarized in the following table:

Table 22: Approved Capital Cost (INR Lakh)

Cost Heads	Claimed	Approved
Transmission Line		
Land Acquisition Cost	17.40	17.40
Preliminary works	324.05	323.67
Materials and Supplies	1088.33	1088.33
Erection and Civil Works	857.19	830.84
Interest During Construction (IDC)	337.02	186.26
Departmental Charges	147.26	144.09
Sub – Total	2771.25	2590.59
Sub-station		
Land Acquisition Cost	174.57	174.57
Preliminary works	100.06	89.10
Materials and Supplies	3629.82	3588.57
Erection and Civil Works	760.65	601.02
Interest During Construction (IDC)	741.77	487.77
Departmental Charges	312.2	302.74
Sub - Total	5719.09	5243.77
Total Capital Cost	8490.34	7834.36

3.6 Project Funding

Petitioner Submission

3.6.1 The Petitioner has quoted the Regulation 18 of the HPERC Transmission Regulations 2011, which provides as follows:

"18. Debt-equity ratio

For the purpose of determination of the tariff, the equity and outstanding debt as determined for the base year by the Commission shall be considered as given. However, for any fresh capitalization of assets, the Commission

shall apply a debt equity ratio of 70:30 on the capitalised amount as approved by the Commission for each year of the control period:

Provided that where equity employed is in excess of 30%, the amount of equity for the purpose of tariff shall be limited to 30% and the balance amount shall be considered as loan. The interest rate applicable on the equity in excess of 30% treated as loan has been specified in regulation 20. Where actual equity employed is less than 30%, the actual equity shall be considered."

- 3.6.2 The loan has been sourced from ADB with a total loan drawn of INR 3,785 lakh for the Sub-Station and INR 1,858 lakh for the transmission line.
- 3.6.3 The actual equity infused in the project is INR 1,528 lakh for the Sub-Station and INR 883 for the line.
- 3.6.4 The following table provides the project funding of the project as claimed by the Petitioner:

Table 23: Project funding proposed by Petitioner

Particulars	Capital Cost – Petition (INR Lakh)	Debt: Equity Ratio	Additional Capitalisation (INR Lakh)	Total (INR Lakh)	Debt: Equity Ratio
Transmission Line					
Debt	1919	70.00%		1919	67.83%
Equity	822	30.00%	27	910	32.17%
Project Cost	2741	100.00%	27	2768	100.00%
Sub-station					
Debt	3785	71.24%	639	4424	77.36%
Equity	1528	28.76%	-(243)	1285	22.64%
Project Cost	5313	100.00%	396	5709	100.00%

Commission's Analysis

- 3.6.5 The Commission observed that the Petitioner has submitted higher than 30% of equity investment in the transmission line and has requested for a debt-equity ratio of 67.83:32.17 for the line and 77.36:22.64 for the Sub-station.
- 3.6.6 Based on the DPR and loan agreement submitted by the Petitioner, it is observed that the Sub-Station was conceptualised to be funded in debt:equity ratio of 80:20 and the transmission line in debt:equity ratio of 75:25. Accordingly, equity amount is expected to be sourced from GoHP towards the scheme. Higher utilization of equity remains unexplained and HPPTCL has not been able to produce any specific documents in this regard. Also, it was observed that the Petitioner has been drawing additional loan post commissioning of the project. Therefore, the Commission finds it prudent to continue with the original funding pattern for the transmission and Sub-Station element.

3.6.7 In response to a query of the Commission with respect to details of consumer contribution or subsidy availed by the Petitioner against the transmission asset, the Petitioner clarified that M/s Kangra Hydro Power Ventures Pvt Ltd (Gaj III) had requested HPPTCL for construction of 1 no. of 33kV additional bay at Chambhi Sub-station. The Petitioner has provided an estimate of Rs. 1.06 Crore, however no charges had been paid as per the clarification provided by the Petitioner by the IPP till date. Therefore, the Commission has not considered any consumer contribution as part of the current funding of the capital cost of the Sub-Station and shall consider the same as per actual at the time of truing-up.

3.6.8 The approved project funding for line and Sub-Station is summarized as follows:

Table 24: Project Funding approved vis-à-vis claimed

Particulars	Claimed		Approved	
	Capital Cost as on COD (INR Lakh)	% of Funding	Capital Cost as on COD (INR Lakh)	% of Funding
Transmission Line				
Consumer Contribution	-	-	-	-
Debt	1919.00	67.83%	1,942.94	75%
Equity	910.00	32.17%	647.65	25%
Sub-Total	2768	100.00%	2,590.59	100.00%
Sub-Station				
Consumer Contribution	-	-	-	-
Debt	3785.16	71.24%	4,195.01	80%
Equity	1528.00	28.76%	1,048.75	20%
Sub-Total	5313.16	100.00%	5,243.77	100.00%
Line + Sub-Station				
Consumer Contribution	-	-	-	-
Debt	5704.16		6,137.96	
Equity	2438.00		1,696.40	
Total Cost	8081.16		7,834.36	

3.7 Additional Capitalisation

Petitioner Submission

3.7.1 The Petitioner has submitted for an additional capitalisation of INR 396 lakh for the Sub-Station and INR 27 lakh for the transmission Line. These payments were made toward Bank Commission, installation of GSRS, etc as per pre agreed terms of the contract.

Commission's Analysis

3.7.2 The Commission, in order to approve the additional capitalisation for each year sought relevant documents from the Petitioner in support of its claim. The

Commission had raised queries with respect to the escalation of cost from CoD to financial closure. The Petitioner has responded that payments made after CoD are for the outstanding payments and in line with terms agreed earlier. Hence, the Commission has allowed the additional capitalization equivalent to the difference in cost between the CoD and financial closure.

3.7.3 With regards to IDC, the Commission believes that the Petitioner's claim of IDC post COD is unwarranted as IDC as the name suggests is applicable during the time of construction until the time of COD of the project. Also, the Commission has considered IDC as per COD of 6.08.2020 for both Sub-Station and transmission line and, therefore, no additional IDC is required to be considered. Hence, the Commission disallows the Petitioner's claim of IDC post COD as part of additional capitalisation. The IDC approved for the project has been discussed above in the relevant section of this Order.

3.7.4 Accordingly, the additional capitalisation as claimed and provisionally approved by the Commission is provided in the following table:

Table 25: Additional Capitalisation approved by Commission (INR Lakh)

Particulars	Claimed (INR Lakh)	Approved (INR Lakh)
Transmission Line		
Erection/Civil Works	26	26.35
Crop Compensation	1	0.38
Transmission Line Total	27	26.73
Sub-station		
Erection/Civil Works	160	159.63
Material Supplies	41	41.25
Installation of GSRS	8	7.67
Bank Commission	2	1.96
Testing & Soil Investigation Charges	1	1.30
IDC	185	-
Sub-Station Total	396	211.86
Grand Total	423	238.59

3.7.5 The funding of the above approved additional capitalization has been considered as per the funding of the Sub-Station and line in accordance with the funding provided by ADB. The approved funding for additional capitalisation for line and Sub-Station is summarized as follows:

Table 26: Funding of additional capitalisation approved by Commission

Particulars	Additional Capitalization	% of Funding
	(INR Lakh)	
Transmission Line		

Particulars	Additional Capitalization	% of Funding
	(INR Lakh)	
Debt	20.05	75.00%
Equity	6.68	25.00%
Sub-Total	26.73	100.00%
Sub-station		
Debt	169.49	80.00%
Equity	42.37	20.00%
Sub-Total	211.86	100.00%
Total		
Debt	189.54	
Equity	49.05	
Total Cost	238.59	100.00%

3.7.6 As the Commission has considered the commissioning date of both the assets as a whole i.e. 05.08.2020, the additional capitalization in case of Sub-Station has been included under opening GFA while that of transmission line has been considered in the first year of operations i.e. FY 2020-21.

4. APPROVAL OF ARR AND TARIFF

4.1 Background

4.1.1 The Petitioner has proposed projections for FY 2020-21 (prorated) to FY 2023-24, in accordance with the HPERC Transmission Regulations 2011 and its subsequent amendments. As per the submission of the Petitioner, ARR for each year of the Control Period has been divided into following elements:

- O&M Expenses;
- Depreciation;
- Interest and Financing Charges;
- Interest on Working Capital;
- Return on Equity

4.1.2 The Commission has examined the petition and the subsequent submissions made by the Petitioner in response to the deficiency letters for the purpose of approving the elements of ARR for the period from COD to FY 2023-24. The Commission has considered the provisions of HPERC Transmission Regulations, 2011, Capital cost certificate by statutory auditor, CERC (Terms and Conditions of Tariff) Regulations, 2019 and approved capital expenditure and funding plan for both Sub-Station and transmission line and accordingly approved a consolidated ARR for each year.

4.1.3 In this chapter, the Commission has detailed the methodology for computing each component of the ARR for Transmission line and Chambhi Sub-Station of HPPTCL including O&M expenses, interest on loan, depreciation, return on equity, working capital requirement, etc. for approving the total ARR for each year from COD till FY 2023-24. The methodology followed and approved values for each component of the ARR is detailed in the subsequent sections.

4.2 Depreciation

Petitioner Submission

4.2.1 The Petitioner has submitted the depreciation for each year of the Control Period in accordance with the Regulation 23 of the HPERC Transmission Regulations, 2011 and its subsequent amendments based on the actual capital cost. Consumer Contribution and cost of land has been adjusted to derive the depreciable value of the asset.

4.2.2 In accordance with the HPERC Transmission Regulations 2011, the depreciation for each year has been estimated as shown in the following table:

Table 27: Depreciation claimed by Petitioner (INR Cr.)

Particulars	Unit	FY20	FY 21	FY22	FY23	FY24
Transmission Line						
Net Opening GFA	INR Cr		27.41	27.41	27.41	27.41
Addition	INR Cr		0.27	-	-	-
Grant portion	INR Cr		-	-	-	-
Freehold Land	INR Cr		-	-	-	-
Depreciable Value	INR Cr		27.68	27.41	27.41	27.41
Rate of Depreciation	%		5.28%	5.28%	5.28%	5.28%
Depreciation	INR Cr		0.95	1.46	1.46	1.46
Sub-station						
Net Opening GFA	INR Cr	53.13	57.10	57.10	57.10	57.10
Addition	INR Cr	3.9646		-	-	-
Grant portion	INR Cr		-	-	-	-
Freehold Land	INR Cr		-	-	-	-
Depreciable Value	INR Cr		57.10	57.10	57.10	57.10
Rate of Depreciation	%	5.04%	5.02%	5.02%	5.02%	5.02%
Depreciation	INR Cr	1.65	2.87	2.87	2.87	2.87
Line + Sub-station						
Depreciation	INR Cr	1.65	3.81	4.33	4.33	4.33

Commission's Analysis

4.2.3 The Commission has approved the depreciation in line with provisions of the Regulation 23 of the HPERC Transmission Regulations, 2011 which are as follows:

"23. Depreciation

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

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

(3)(2-a) The salvage value for IT equipment and software shall be considered as NIL and 100% value of the assets shall be considered depreciable.

(4)Depreciation shall be calculated annually based on Straight Line Method and at rates specified in Appendix-I to these regulations for the assets of the transmission system:

Provided that, the remaining depreciable value as on 31st March of the year closing after a period of 12 years from date of commercial operation shall be spread over the balance useful life of the asset.

(5)For transmission project 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.

(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.

(7)Depreciation shall be chargeable from the first year of commercial operation. In case of commercial operation of the asset for part of the year, depreciation shall be charged on pro rata basis."

4.2.4 The Commission has examined the depreciation proposed by the Petitioner in detail. The Petitioner has not provided the component wise depreciation; hence the Commission has approved the depreciation as per the approved Capital Cost.

4.2.5 The yearly depreciation approved from COD to FY 2023-24 is summarized in table below:

Table 28: Depreciation approved by Commission (INR Lakh)

Particulars	FY 21	FY22	FY23	FY24
Transmission Line				
Net Opening GFA	2,590.59	2,599.92	2,599.92	2,599.92
Addition	26.73	-	-	-
Freehold Land	17.40			
Depreciable Value	2,599.92	2,599.92	2,599.92	2,599.92
Rate of Depreciation (%)	5.28%	5.28%	5.28%	5.28%
Depreciation	89.14	137.28	137.28	137.65
Sub-station				
Net Opening GFA	5455.63	5,281.04	5,281.04	5,281.04
Addition	-	-	-	-
Freehold Land	174.59			
Depreciable Value	5,281.04	5,281.04	5,281.04	5,281.04
Rate of Depreciation (%)	5.02%	5.02%	5.02%	5.02%
Depreciation	172.14	265.11	265.11	265.83
Total Depreciation	261.27	402.38	402.38	403.49

4.3 Interest on Loan

Petitioner Submission

4.3.1 The Petitioner has submitted the interest on loan in accordance with the Regulation 20 of the HPERC Transmission Regulations, 2011 and its subsequent amendments.

4.3.2 The Petitioner has claimed the interest on loan as per the ADB Loan agreement with GoHP at 10%. The Petitioner has requested for the deferment of loan period by 5 years from ADB.

4.3.3 The Petitioner has claimed that in the absence of any actual repayment, for the purpose of working out the Interest on Loan, the repayment has been considered equal to Depreciation charged during each year of the Control Period for

calculation of Interest on Loan. The Computation of Interest on Loan has been shown as under:

Table 29: Interest on Loan claimed by Petitioner (INR Cr.)

Particulars	Units	FY20	FY21	FY22	FY23	FY24
Transmission Line						
Opening Balance	INR Cr		19.18	17.92	16.45	14.99
Addition	INR Cr		0.19	0.00	0.00	0.00
Repayment	INR Cr		1.45	1.46	1.46	1.46
Closing Balance	INR Cr		17.92	16.45	14.99	13.53
Rate of Interest	%		10%	10%	10%	10%
Interest on Loan	INR Cr		1.21	1.72	1.57	1.43
Sub-station						
Opening Balance	INR Cr	37.85	41.37	38.50	35.64	32.77
Addition	INR Cr	6.39		-	-	-
Repayment	INR Cr	2.78	2.87	2.87	2.87	2.87
Closing Balance	INR Cr	41.47	38.50	35.64	32.77	29.90
Rate of Interest	%	10%	10%	10%	10%	10%
Interest on Loan	INR Cr	2.35	3.99	3.71	3.42	3.13
Line + Sub-station						
Interest on Loan	INR Cr	2.35	5.20	5.43	4.99	4.56

*Note: Interest on Loan for FY 2020-21 is on pro-rata basis i.e. from 06.08.2020 for Transmission Line and for FY 2019-20 from 28.08.2019 for the Sub-station

Commission's Analysis

4.3.4 The Commission has considered the loan amount in line with the project funding approved for the project in the previous chapter.

4.3.5 Regulation 20 of the HPERC Transmission Regulations 2011 stipulates the following:

"20. Interest and Finance Charges

(1) Interest and finance charges on loan capital shall be computed on the outstanding loans, duly taking into account the schedule of repayment in accordance with the terms and conditions of relevant agreements of loan, bond or non-convertible debentures. Exception can be made for the existing or past loans which may have different terms as per the agreements already executed if the Commission is satisfied that the loan has been contracted for and applied to identifiable and approved projects.

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

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

Provided further that if the transmission licensee does not have actual loan then the weighted average rate of interest of the transmission licensee as a whole shall be considered.

Provided further that if the Transmission Licensee as a whole does not have actual loan, then one (1) Year State Bank of India (SBI) MCLR / any replacement thereof as notified by RBI for the time being in effect applicable for one (1) Year period, as may be applicable as on 1st April of the relevant Year plus 200 basis points shall be considered as the rate of interest for the purpose of allowing the interest on the normative loan.

(3) The interest rate on the amount of equity in excess of 30% treated as notional loan shall be the weighted average rate of the loans of the respective years and shall be further limited to the rate of return on equity specified in these regulations:

Provided that all loans considered for this purpose shall be identified with the assets created:

Provided further that the interest and finance charges of re-negotiated loan agreements shall not be considered, if they result in higher charges:

Provided further that the interest and finance charges on works in progress shall be excluded and shall be considered as part of the capital cost:

Provided further that neither penal interest nor overdue interest shall be allowed for computation of tariff.

(4) In case any moratorium period is availed of in any loan, depreciation provided or in the tariff during the years of moratorium shall be treated, as notional repayment of loan during those years and interest on loan capital shall be calculated accordingly.

(5) The transmission licensee shall make every effort to refinance the loan as long as it results in net benefit to the beneficiaries. The costs associated with such refinancing shall be borne by the transmission customers and any benefit on account of refinancing of loan and interest on loan shall be shared in the ratio of 2:1 between the transmission licensee and the transmission customers. Refinancing may also include restructuring of debt.

(6) In respect of foreign currency loans, variation in rupee liability due to foreign exchange rate variation, towards interest payment and loan repayment actually incurred, in the relevant year shall be admissible; provided it directly arises out of such foreign exchange rate variation and is not attributable to the transmission licensee or its suppliers or contractors.

(7) The above interest computation shall exclude the interest on loan amount, normative or otherwise, to the extent of capital cost funded by consumer contribution, deposit work, capital subsidy or grant, carried out by transmission licensee."

- 4.3.6 The Commission has approved the Interest on Loan in accordance with the HPERC Transmission Regulations, 2011. Repayment equivalent to approved depreciation has been considered for each year in line with the regulations. Accordingly, the opening and closing loan balances for each year has been determined.
- 4.3.7 The Commission has considered the debt amount as per the approved funding, including additional capitalization as discussed in Chapter 3 earlier.
- 4.3.8 Accordingly, the Commission from FY 2020-21 onwards has considered the rate of 10% as applicable in accordance with the terms and conditions of the loan.
- 4.3.9 It is observed that the rate of interest charged from the Petitioner by the GoHP is 10% which is higher than the rate of interest agreed with the ADB. The Petitioner has submitted that the GoHP levies interest rate at 10% on all loans funded by ADB as per the agreement entered by the GoHP with HPPTCL. Since, the ADB provides loan to GoHP which is transferred to the Petitioner for implementation, the rate of interest of 10% is applicable as per the agreement of the Petitioner with GoHP. The Commission is of the view that the rate of 10% is competitive as compared with the rates applicable on other transmission assets of HPPTCL and borrowings by similar utilities in other states from various sources and, therefore, approves the same for tariff determination.
- 4.3.10 However, considering that the lending agency may be charging at lower rate, the Commission directs the Petitioner to negotiate with GoHP and align the interest rate in line with the rate of interest agreed by GoHP with ADB. Any efforts in this direction will not only lead to better cost optimisation in the form of lower interest costs, but also benefit the consumers of the State of Himachal Pradesh as a whole.
- 4.3.11 The following table provides the Interest on Loan approved by the Commission for each year:

Table 30: Interest on Loan approved by Commission (INR lakh)

Particulars	FY21	FY22	FY23	FY24
Transmission Line				
Opening Balance	1,942.94	1,873.85	1,736.58	1,599.30
Addition	20.05	-	-	-
Repayment	89.14	137.28	137.28	137.65
Closing Balance	1,873.85	1,736.58	1,599.30	1,461.65
Rate of Interest (%)	10.00%	10.00%	10.00%	10.00%
Interest on Loan	123.92	180.52	166.79	153.47
Sub-station				
Opening Balance	4,364.50	4,192.36	3,927.25	3,662.15
Addition	-	-	-	-
Repayment	172.14	265.11	265.11	265.83
Closing Balance	4,192.36	3,927.25	3,662.15	3,396.31
Rate of Interest (%)	10.00%	10.00%	10.00%	10.00%
Interest on Loan	277.81	405.98	379.47	353.89
Total Interest on Loan	401.72	586.50	546.26	507.36

*Note: Interest on Loan for FY 2020-21 is on pro-rata basis i.e. from 06.08.2020

4.4 Return on Equity

Petitioner Submission

4.4.1 The Petitioner has submitted that they have infused an equity of Rs. 15.28 Crore (28.76% of project cost) in the Sub-Station and Rs. 8.83 Crore (32.23% of project cost) for the Transmission line as on CoD of the project and considered the refinancing of equity on actual basis with loan during the period from COD till 31.03.2020. The Petitioner has not grossed up the allowable RoE of 15.50% with prevalent Tax Rate and the same will be claimed at the time of truing up.

4.4.2 The Petitioner has claimed that in accordance to the HPERC Transmission Regulations 2011, equity above 30% is considered as notional loan and additional capitalization of Rs. 0.27 Crore is taken on normative ratio of 70:30 (Debt:Equity) for calculation of tariff.

4.4.3 The RoE proposed by the Petitioner for each year is summarised in the table as follows:

Table 31: RoE claimed by Petitioner (INR Cr.)

Particulars	FY20	FY21	FY22	FY23	FY24
Transmission Line					
Opening Equity		8.22	8.30	8.30	8.30
Addition		-	-	-	-
Closing Equity		8.22	8.30	8.30	8.30
RoE (%)		15.50%	15.50%	15.50%	15.50%
Return on Equity		0.84	1.29	1.29	1.29
Sub-station					
Opening Equity	15.28	12.95	12.95	12.95	12.95
Addition	-2.33	0.00	0.00	0.00	0.00
Closing Equity	12.95	12.95	12.95	12.95	12.95
RoE (%)	15.50%	15.50%	15.50%	15.50%	15.50%
Return on Equity	1.30	2.01	2.01	2.01	2.01
Line + Sub-station					
Return on Equity	1.30	2.84	3.29	3.29	3.29

*Note: Return on Equity for FY 2020-21 is on pro-rata basis i.e. from 06.08.2020 for Transmission Line and for FY 2019-20 from 28.08.2019 for the Sub-station

Commission's Analysis

4.4.4 Regulation 19 of the HPERC Transmission Regulations 2011 stipulates the following:

"19. Return on Equity

(1) Return on equity shall be computed on the equity determined in accordance with regulation 18 and on pre-tax basis at the base rate of 15.5% to be grossed up as per sub-regulation (3) of this regulation:

(2) The rate of return on equity shall be computed by grossing up the base rate with the normal tax rate applicable to the concerned transmission licensee company:

Provided that return on equity with respect to the actual tax rate applicable to the transmission licensee in line with the provisions of the relevant Finance Acts of the respective year during the tariff period shall be trued up separately for each year of the tariff period along with the tariff petition filed for the next tariff period.

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

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

(b) Where t is the applicable tax rate in accordance with sub-regulation (2) of this regulation."

- 4.4.5 Equity corresponding to the capital cost has been approved by the Commission in the previous Chapter under the head 'Project funding'. The same has been considered for approving the return on equity. Equity corresponding to additional capitalization has been considered in the subsequent years.
- 4.4.6 The Petitioner has claimed rate of return @21.87% considering the base rate as 15.50% grossed up for corporate tax rate for the purpose of claiming RoE.
- 4.4.7 The Commission has considered rate of return @15.50% for approval of RoE for the Control Period. Any tax liability arising on the Petitioner during the Control Period shall be trued-up at the end of Control Period based on effective tax rate/liability.
- 4.4.8 Based on the above, the return on equity approved by the Commission is summarised in the table below:

Table 32: RoE approved by Commission (INR Lakh)

Particulars	FY21	FY22	FY23	FY24
Transmission Line				
Opening Equity	647.65	654.33	654.33	654.33
Addition	6.68			
Closing Equity	654.33	654.33	654.33	654.33
RoE (%)	15.50%	15.50%	15.50%	15.50%
Return on Equity	65.52	101.42	101.42	101.70
Sub-station				
Opening Equity	1,091.13	1,091.13	1,091.13	1,091.13
Addition	-	-	-	-
Closing Equity	1,091.13	1,091.13	1,091.13	1,091.13
RoE (%)	15.50%	15.50%	15.50%	15.50%
Return on Equity	109.82	169.12	169.12	169.59
Return on Equity	175.33	270.55	270.55	271.29

Return on Equity pro-rated for 238 days for FY 2020-21 based on COD (i.e. 6th August 2020)

4.5 O&M Expenses

Petitioner Submission

4.5.1 The Petitioner submitted that as per HPERC Transmission Regulations 2011, Operation and Maintenance Expense is computed considering the following methodology:

"(3) The O&M expenses for the nth year of the control period shall be approved based on the formula given below:-

O&M_n = R&M_n + EMP_n + A&G_n : Where -

'EMP_n' = [(EMP_{n-1}) x (1+G_n) x (CPIinflation)] + Provision (Emp);

'A&G_n' = [(A&G_{n-1}) x (WPIinflation)] + Provision(A&G);

'R&M_n' = K x (GFA_{n-1}) x (WPIinflation) ;

'K' - is a constant (could be expressed in %). Value of K for each year of the control period shall be determined by the Commission in the MYT Tariff order based on licensee's filing, benchmarking of repair and maintenance expenses, approved repair and maintenance expenses vis-à-vis GFA approved by the Commission in past and any other factor considered appropriate by the Commission;

'CPIinflation' - is the average increase in the Consumer Price Index (CPI) for immediately preceding three years before the base year;

'WPIinflation' - is the average increase in the Wholesale Price Index (WPI) for immediately preceding three years before the base year;

'EMP_n' - employee's cost of the transmission licensee for the nth 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.);

'Provision (Emp)'- Provision corresponding to clauses (iii), (iv) and (v) of sub regulation (1-a) of regulation 13, duly projected for relevant year for expenses beyond control of the Transmission Licensee and expected one-time expenses as specified above;

'A&G_n' - administrative and general costs of the transmission licensee for the nth year;

'Provision(A&G)'-Cost for initiatives or other one-time expenses as proposed by the Transmission licensee and approved by the Commission after prudence check;"

'R&M_n' - Repair and Maintenance costs of the transmission licensee for the nth year;

'GFA_{n-1}' - Gross Fixed Asset of the transmission licensee for the n-1th year;

'G_n' - is a growth factor for the nth year. Value of G_n shall be determined by the Commission in the MYT tariff order for meeting the additional manpower requirement based on licensee's filings, benchmarking, approved cost by the Commission in past and any other factor that the Commission feels appropriate;"

- 4.5.2 The Petitioner has claimed that for the transmission line, it has employed staff in FY 2020-21 to carry out the operation at the site. The actual expenses with respect to Employee Cost have been annualized for FY 2019-20 and the annualized cost has been escalated by WPI and CPI index respectively to work out the Employee Cost for the remaining Control Period.
- 4.5.3 Further, with respect to A&G Expenses, the actual expenses for FY 2019-20 is escalated by WPI and CPI index for the remaining Control Period. The net A&G expenses on account of Insurance, Petition filing fees, Manpower training and Consultancy fee has been considered.
- 4.5.4 The Petitioner has claimed that the R&M expenses for each year during the Control Period has been worked out taking into account the K-Factor of 1.74% as claimed in MYT Petition and GFA at the beginning of year and escalating the same by WPI index.
- 4.5.5 Accordingly, the O&M Expenses has been projected for remaining period of the Control Period based on the actual value for FY 2019-20 for the Sub-Station and FY 2020-21 for the Transmission Line from COD till 31.03.2020 and the provisions as per Regulations, which shall be subject to truing up based on actual is as follows:

Table 33: O&M Expenses claimed by Petitioner (INR Cr)

Particulars	Units	FY20	FY21	FY22	FY23	FY24
Transmission Line						
Employee Expenses	INR Cr	-	0.03	0.05	0.05	0.05
A&G Expenses	INR Cr	-	-	0.50	0.51	0.53
R&M Expenses	INR Cr	-	0.00	0.12	0.12	0.12
O&M Expenses	INR Cr		0.03	0.66	0.68	0.70
Sub-station						
Employee Expenses	INR Cr	0.07	0.37	0.39	0.42	0.44
A&G Expenses	INR Cr	0.00	1.02	1.05	1.08	1.12
R&M Expenses	INR Cr	0.02	0.03	0.52	0.24	0.24
O&M Expenses	INR Cr	0.10	1.43	1.97	1.74	1.79
Line + Sub-station						
O&M Expenses	INR Cr	0.10	1.46	2.63	2.42	2.49

1. O&M Expense pro-rated for FY 2019-20 based on proposed COD of Sub-Station and for FY 2020-21 as per the Cod of the Transmission Line
2. Expense towards Petition filing, insurance, training and consultancy included in A&G Expenses

Commission's Analysis

- 4.5.6 The Commission observes that the O&M expenses for the first year of operation for both the line and the Sub-Station are on a conservative side, that may be due to partial operations but may increase in the upcoming years due to expected increase in Employee, R&M and A&G expenses. Considering that O&M expenses submitted are for partial year and actual audited O&M expenses for sufficient number of years are not available, it is difficult to ascertain a realistic trend for

O&M expenses for the upcoming years. In absence of any accurate benchmark, the Commission has relied upon the normative O&M expenses prescribed in the CERC (Terms and Conditions of Tariff) Regulations, 2019.

4.5.7 The Commission has determined the O&M expenses for Sub-Station and line separately. Based on the number of bays, voltage, circuit and conductor, the following norms have been considered as per the technical details of line and Sub-Station for computation of O&M expenses:

Table 34: Normative O&M Expenses

Item	Unit	FY21	FY22	FY23	FY24
Double Circuit (Single Conductor)	INR Lakh/Km	0.39	0.40	0.42	0.43
132 kV and below	Lakh/bay	16.64	17.23	17.83	18.46

4.5.8 Based on the above norms, the Commission has approved the O&M expenses for each year. Also, a factor of 0.7 has been considered for computing the O&M for GIS based Sub-stations based on the CERC guidelines.

4.5.9 The following table provides the O&M expenses approved by the Commission for each year:

Table 35: O&M Expenses approved by Commission

Item	Unit	FY21	FY22	FY23	FY24
Transmission Line					
Double Circuit (Single Conductor)	INR Lakh/Km	0.39	0.40	0.42	0.43
Line length	km	15.00	15.00	15.00	15.00
O&M Expenses	INR Lakh	3.81	6.06	6.29	6.51
Sub-station					
132 kV and below	INR Lakh/bay	16.64	17.23	17.83	18.46
132 kV bays	No.	2.00	2.00	2.00	2.00
33 kV bays	No.	4.00	4.00	4.00	4.00
O&M Expenses*	INR Lakh	45.38	72.37	74.89	77.74
Total O&M Expenses	INR Lakh	49.19	78.43	81.17	84.26

O&M Expenses pro-rated for 238 days for FY 2020-21 based on COD (i.e. 6th August 2020)

Sub-Station expenses multiplied by 0.7 as per CERC norms as this is a GIS Sub-station

4.5.10 The CERC norms for O&M expenditure do not provide for any additional provision for expenditure towards insurance, consultancy charges, petition filing fees, manpower training etc. Hence, no additional expenses pertaining to the same have been allowed.

4.5.11 The Petitioner is directed to undertake necessary insurance cover for the transmission line at the earliest. Any additional expenditure on account of the same shall be reviewed at the time of true-up as per the submissions of the Petitioner and prudence check.

4.6 Interest on Working Capital

Petitioner Submission

4.6.1 The Petitioner has computed interest on working capital as per Regulation 21 and 22 of the HPERC Transmission Regulations, 2011 and its subsequent amendments thereof.

4.6.2 The Petitioner has calculated the interest on working capital considering prevalent SBI MCLR as on 01.04.2019 plus 300 basis points for FY 2019-20, as on 01.04.2020 plus 300 basis points for FY 2020-21 and as on 01.04.2021 plus 300 basis points for the remaining period of the Control period i.e. for FY 2021-22 to FY 2023-24. In accordance with the above Regulations, the interest on working capital claimed is as shown below:

Table 36: Interest on Working Capital claimed by Petitioner (INR Lakh)

Particulars	Units	FY20	FY21	FY22	FY23	FY24
Transmission Line						
O&M Expenses for 1 month	INR Lakh		0.40	5.51	5.65	5.80
Maintenance Spares (at 15% monthly O&M Expenses)	INR Lakh		78.75	87.03	84.85	82.68
Receivables for 2 months	INR Lakh		0.06	0.83	0.85	0.87
Total Working Capital	INR Lakh		79.21	93.37	91.35	89.35
Interest Rate (%)	%		10.75%	10.00%	10.00%	10.00%
Interest on Working Capital	INR Lakh		5.55	9.34	9.14	8.93
Sub-station						
O&M Expenses for 1 month	INR Lakh	1.36	11.92	16.38	14.48	14.94
Maintenance Spares (at 15% monthly O&M Expenses)	INR Lakh	154.50	175.02	179.07	170.31	166.40
Receivables for 2 months	INR Lakh	0.20	1.79	2.46	2.17	2.24
Total Working Capital	INR Lakh	156.06	188.73	197.90	186.96	183.58
Interest Rate (%)	%	11.55%	10.75%	10.00%	10.00%	10.00%
Interest on Working Capital	INR Lakh	10.69	20.29	19.79	18.70	18.36
Line + Sub-station						
Interest on Working Capital	INR Lakh	10.69	25.84	29.13	27.84	27.29

Interest on Working Capital pro-rated for FY 2019-20 for the Sub-Station and FY 2020-21 for the Transmission Line

Commission's Analysis

4.6.3 Based on the approved O&M expenses and expected receivables, the Commission has approved the working capital requirements and interest on working capital for the Control Period in accordance with Regulations 21 and 22 of the HPERC Transmission Regulations 2011.

4.6.4 The relevant clause of the Regulation is reproduced as follows:

"21. Working Capital- The Commission shall calculate the working capital requirement for the transmission licensee containing the following components: -

(a) O&M expenses for 1 month;

(b) receivables for two months on the projected annual transmission charges; and

(c) maintenance spares @ 40% of repair and maintenance expenses for one month.

"22. Interest Charges on Working Capital- Rate of interest on working capital to be computed as provided hereinafter in these regulations shall be on normative basis and shall be equal one (1) Year State Bank of India (SBI) MCLR / any replacement thereof as notified by RBI for the time being in effect applicable for one (1) Year period, as may be applicable as on 1st April of the Financial Year in which the Petition is filed plus 300 basis points. The interest on working capital shall be payable on normative basis notwithstanding that the licensee has not taken working capital loan from any outside agency or has exceeded the working capital loan based on the normative figures."

4.6.5 According to the revised provision for computation of interest on working capital, the Commission has considered the rate of interest on working capital as SBI MCLR as on 1st April of each year plus 300 basis points for FY 2019-20 and FY 2020-21. From FY 2021-22 onwards SBI MCLR as on 1st April, 2021 plus 300 basis points has been considered. For FY 2018-19 SBI Base Rate as on 1st April, 2018 plus 350 points has been considered in accordance with the HPERC Transmission Regulations 2011 as applicable for FY 2018-19.

4.6.6 The interest on working capital shall be trued-up based on the actual rates as on 1st April of relevant financial year and the HPERC Transmission Regulations 2011. The computation for approved working capital requirement and interest on working capital is shown in the table as follows:

Table 37: Interest on Working Capital approved by Commission (INR Lakh)

Particulars	FY21	FY22	FY23	FY24
Transmission Line				
O&M Expenses for 1 month	0.32	0.51	0.52	0.54
Maintenance Spares (at 15% monthly O&M Expenses)	0.05	0.08	0.08	0.08
Receivables for 2 months	47.93	72.09	69.80	67.69
Total Working Capital	48.29	72.67	70.41	68.32
Interest Rate (%)	10.75%	10.00%	10.00%	10.00%
Interest on Working Capital	5.19	7.27	7.04	6.83
Sub-Station				
O&M Expenses for 1 month	3.78	6.03	6.24	6.48
Maintenance Spares (at 15% monthly O&M Expenses)	0.57	0.90	0.94	0.97
Receivables for 2 months	102.78	154.79	150.73	147.08
Total Working Capital	107.12	161.73	157.91	154.54
Interest Rate (%)	10.75%	10.00%	10.00%	10.00%
Interest on Working Capital	11.52	16.17	15.79	15.45

Particulars	FY21	FY22	FY23	FY24
Total Interest on Working Capital	16.71	23.44	22.83	22.29

Interest on Working Capital pro-rated for 238 days for FY 2020-21 based on COD (i.e. 6th August 2020)

4.7 Aggregate Revenue Requirement

Petitioner Submission

4.7.1 The table given below summarizes the proposed Aggregate Revenue Requirement for each year from COD to FY 2023-24 as claimed by the Petitioner.

Table 38: Summary of ARR claimed by Petitioner (INR Lakh)

Particulars	Units	FY20	FY21	FY22	FY23	FY24
Transmission Line						
Depreciation	INR Lakh		3.17	66.08	67.81	69.59
Interest on Loan	INR Lakh		120.99	171.91	157.30	142.68
Return on Equity	INR Lakh		5.55	9.34	9.14	8.93
O&M Expenses	INR Lakh		94.84	146.15	146.15	146.15
Interest on Working Capital	INR Lakh		83.52	128.72	128.72	128.72
Aggregate Revenue Requirement	INR Lakh		308.08	522.20	509.11	496.08
Sub-station						
Depreciation	INR Lakh	9.66	143.07	196.52	173.73	179.27
Interest on Loan	INR Lakh	234.86	399.38	370.71	342.04	313.36
Return on Equity	INR Lakh	10.69	20.29	19.79	18.70	18.36
O&M Expenses	INR Lakh	164.71	286.72	286.72	286.72	286.72
Interest on Working Capital	INR Lakh	129.71	200.69	200.69	200.69	200.69
Aggregate Revenue Requirement	INR Lakh	549.62	1050.14	1074.42	1021.87	998.40
Line + Sub-station						
ARR	INR Lakh	549.62	1358.2	1596.6	1531	1494.5

Commission's Analysis

4.7.2 Based on the discussions in the preceding paras, the summary of the Aggregate Revenue Requirement (ARR) approved by the Commission for each year is summarised in the table as follows:

Table 39: Summary of ARR approved by Commission (INR Lakh)

Particulars	Units	FY21	FY22	FY23	FY24
Transmission Line					
Depreciation	INR Lakh	89.14	137.28	137.28	137.65

Particulars	Units	FY21	FY22	FY23	FY24
Interest on Loan	INR Lakh	123.92	180.52	166.79	153.47
Interest on Working Capital	INR Lakh	5.19	7.27	7.04	6.83
Return on Equity	INR Lakh	65.52	101.42	101.42	101.70
O&M Expenses	INR Lakh	3.81	6.06	6.29	6.51
ARR	INR Lakh	287.57	432.55	418.82	406.16
Sub-station					
Depreciation	INR Lakh	172.14	265.11	265.11	265.83
Interest on Loan	INR Lakh	277.81	405.98	379.47	353.89
Interest on Working Capital	INR Lakh	11.52	16.17	15.79	15.45
Return on Equity	INR Lakh	109.82	169.12	169.12	169.59
O&M Expenses	INR Lakh	45.38	72.37	74.89	77.74
ARR	INR Lakh	616.65	928.75	904.38	882.51
Total ARR	INR Lakh	904.22	1,361.30	1,323.20	1,288.67

4.8 Transmission Charges

Petitioner Submission

4.8.1 The Petitioner has submitted that HPSEBL is the sole beneficiary of the transmission scheme as the same forms part of Intra State Transmission Network.

Commission's Analysis

4.8.2 The Petitioner was asked to provide details and copy of Transmission Service Agreement (TSA) signed with the beneficiaries. In response, the Petitioner submitted that HPSEBL is the primary beneficiary of this asset as generators evacuating power have PPA with HPSEBL. Further, it submitted that it has taken up the matter with HPSEBL regarding signing of the TSA and the same is under progress.

4.8.3 As per the DPR of the transmission asset, power from 9 nos. of generating projects with a total capacity of 42.4 MW would be evacuated from the transmission asset. The capacity of these projects is in the range of 1 MW to 12 MW reflecting all the generating stations are Small Hydro Projects (SHPs). Currently, the total quantum of power evacuated through the system is being drawn by HPSEBL. Further, HPSEBL has not provided any details regarding the capacity utilization of the plant. As per the DPR, the envisaged capacity of the Sub-Station was to cater to the upcoming generation capacity in the region.

4.8.4 As per the claim of the Petitioner, currently the transmission system is wheeling power from 10 Plants in the Shahpur area with installed capacity of 53.8 MW. Of these 10 plants, 2 are owned by HPSEBL while the other 8 have PPAs with HPSEBL. In response to the queries of the Commission, the Petitioner has submitted a signed Transmission Service Agreement with HPSEBL dated 14th July, 2022 for evacuation of power through Chambhi Sub-Station and Transmission Line among other transmission asset.

- 4.8.5 Further, the Petitioner has submitted that few other power stations i.e. Guna Devi IPP (5MW), Gaj Gehra IPP (2MW) and Gaj Garju IPP (1.25MW) are proposed to evacuate their power through Chambhi Sub-station. However, as on date, no connectivity agreement has been executed by the Petitioner with these generating stations.
- 4.8.6 The Commission observed that the project was designed for evacuation of 42.8 MW as per the DPR while as per the submissions of the Petitioner the Sub-Station is catering to evacuation of approx. 53.8 MW from the operating SHPs and few new SHPs are also planned to be evacuated from this system. As per the submission of details of energy transmitted through the Sub-Station from August 2020 to November 2021, it is observed that the energy flow from the commissioned generating stations is not utilizing the rated capacity during any of the months and there has been scope for additional flow of energy. During discussions, the Petitioner had also clarified that this was due to local consumption in the Shahpur area around the generating stations and, therefore, the existing Sub-Station at Chambhi is capable to handle the flow of energy from additional generating stations which are expected to commission in future.
- 4.8.7 Based on the details submitted by the Petitioner with respect to existing generating projects from which power is being evacuated through the Chambhi Sub-Station and associated transmission line, prima facie the Chambhi transmission asset is observed to be part of intra-state transmission network and HPSEBL as the prime beneficiary of the asset . The Petitioner is directed to enter into connection agreements/TSA/LTAs with the existing and upcoming beneficiaries of the transmission asset in a time bound manner.
- 4.8.8 Further, the Petitioner is directed to identify and enter into long-term /medium-term agreement with the beneficiaries of the Transmission Asset and recover the approved ARR as per the Regulation 33 of HPERC Transmission Tariff Regulations, 2011:
- "33. Allocation of Transmission Service Charge and Losses (1) The Annual Transmission Service Charge (ATSC) shall be shared between the long and medium term customers of the transmission system on monthly basis based on the allotted transmission capacity or contracted capacity, as the case may be."*

Sd/-

**(YASHWANT SINGH
CHOGAL)
Member**

Sd/-

**(BHANU PRATAP SINGH)
Member**

Sd/-

**(DEVENDRA KUMAR
SHARMA)
Chairman**