# Approval of Capital Cost and determination of tariff for 33/220kV GIS Sub Station at Karian along with 220kV D/C Transmission line from Karian to Rajera for the period from COD to FY 2023-24

## Himachal Pradesh Power Transmission Corporation Limited (HPPTCL)

## Himachal Pradesh Electricity Regulatory Commission
## November 1, 2021

**BEFORE THE HIMACHAL PRADESH ELECTRICITY REGULATORY COMMISSION AT SHIMLA**
**PETITION NO: 98/2020**

CORAM
**Sh. DEVENDRA KUMAR SHARMA**
**Sh. BHANU PRATAP SINGH**

In the matter of:

Approval of MYT petition for approval of capital cost and determination of tariff for the period starting from COD (12th May, 2018) to FY 2023-24 for 33/220kV GIS sub-station at Karian along with 220kV D/C transmission line to PGCIL pooling sub-station at Chamera-II 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 33/220kV GIS sub-station at Karian and 220kV D/C transmission line from Karian to PGCIL pooling sub-station at Chamera-II 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 applicant, interveners, consumers and consumer representatives 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 application with modifications, conditions and directions specified in the following Tariff Order.

The Commission has determined the capital cost and Aggregate Revenue Requirement (ARR) for approval of capital cost and determination of tariff for 33/220kV GIS sub-station at Karian and 220kV D/C transmission line from Karian to PGCIL pooling sub-station at Chamera-II in accordance with the guidelines laid down in Section 61 of the Electricity Act, 2003, the National Electricity Policy, the National Tariff Policy, CERC Tariff Regulations, 2019 and Regulations framed by the Commission. 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/- | Sd/- |
|---|---|
| **(BHANU PRATAP SINGH)** | **(DEVENDRA KUMAR SHARMA)** |
| **Member** | **Chairman** |

**Shimla**
**Dated: 1 November, 2021**

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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 6th January, 2001. After the enactment of the Electricity Act, 2003 on 26th 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 shall advise the State Government on all or any of the following matters, namely

a) promotion of competition, efficiency and economy in activities of the electricity industry;

b) promotion of investment in electricity industry;

c) reorganization and restructuring of electricity industry in the State;

d) Matters concerning generation, transmission, distribution and trading of electricity or any other matter referred to the State Commission by State Government.

## 1.2 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 Through notification No. MPP-A-(1)-4/2006-Loose dated 3rd December, 2008 read with the GoHP's earlier notification dated 31st October, 2008, 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 10$^{th}$ June, 2010 and as a result thereof the Commission recognized HPPTCL as a deemed "Transmission Licensee" as per the Commission's Order dated 31$^{st}$ 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. The MYT Regulations notified in the year 2011 were amended as (First Amendment) Regulations, 2013 on 1$^{st}$ November, 2013 and (Second Amendment) Regulations, 2018 on 22$^{nd}$ November, 2018 (The Regulations and its subsequent amendments combined shall be herein after referred to as "HPERC MYT 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 14$^{th}$ July,2011 and thereafter for the second Control Period (FY 2014-15 to FY 2018-19) on 10$^{th}$ 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 29$^{th}$ 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/HPPTCL-KARIAN/2020-1388-89 dated 3rd September, 2020 directed the Petitioner to submit details regarding first set of deficiencies identified in the petition, which were submitted by the Petitioner vide M.A. No. 188/2020 dated 18th December, 2020. Subsequently, the Commission issued a second, third and fourth set of deficiencies whose replies were submitted by the Petitioner by 16th April, 2021, 27th August 2021 and 1st October 2021 respectively.

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 | M.A. No. 188/2020 | 18.12.2020 |
| 2 | M.A. No. 37/2021 | 05.03.2021 |
| 3 | M.A. No. 69/2021 | 16.04.2021 |
| 4 | M.A. No. 161/2021 | 27.08.2021 |
| 5 | M.A. No. 202/2021 | 01.10.2021 |

## 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. | Amar Ujala | 03.01.2021, 05.02.2021 |
| 2. | The Tribune | 02.01.2021, 17.02.2021 |

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. | Hindustan Times | 15.01.2021 |
| 2. | Amar Ujala | 15.01.2021 |

1.5.3 The stakeholders were requested to file their objections by 15th February, 2021. HPPTCL was required to submit replies to the suggestions/ objections to the Commission by 23rd February, 2021 with a copy to the objectors on which the objectors were required to submit rejoinder by 3rd March, 2021.

1.5.4 In view of ongoing lockdown and restrictions related to COVID-19, the Commission decided to conduct an online public hearing and therefore issued a public notice informing the public about the scheduled date of public hearing as 5th March, 2021. All the parties, who had filed their objections/ suggestions, were also informed about the date, time and venue for presenting their case in the public hearing.

1.5.5 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 5th March, 2021 for the Petition of approval of Capital Cost and determination of tariff for the period starting from COD to FY 2023-24 for 33/220kV GIS sub-station at Karian along with 220kV D/C transmission line to PGCIL pooling sub-station at Chamera-II.

2.1.2 Accordingly, the public hearing was conducted through online mode on 5th March, 2021. HPSEBL 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 HPSEBL submitted that HPPTCL has not detailed out other users of the 220kV Karian substation & transmission line from Karian to Rajera in the Petition.

***Petitioner's Response***

2.1.4 The Petitioner submitted that the instant asset has been declared as ISTS by NRPC. Hence, it shall file an application for inclusion of asset under POC once the AFC/ARR is approved by the Commission.

***Commission's Observations***

2.1.5 The Commission had also raised similar query to the Petitioner against which the Petitioner submitted that as of now only HPSEBL is the primary beneficiary of the system. In view of the current line being declared as ISTS, the Commission directs the Petitioner to submit an application for inclusion of the asset under PoC. However, considering that the ISTS certificate is valid for one year, the Petitioner is directed to undertake measures for inclusion of the asset under ISTS in the future years. In case the transmission asset in any year is not considered under ISTS, the Petitioner is directed to file an application to the Commission for recovery of the approved ARR.

***Stakeholders' Submission***

2.1.6 HPSEBL submitted that CERC (Sharing of Interstate Transmission Charges and losses) Regulations 2020 (Sharing Regulations 2020) have been notified on 04.05.2020 by CERC which have come into force w.e.f. 01.11.2020. As per Regulations 26 of the Sharing Regulations 2020, the CERC (Sharing of interstate transmission charges & losses) Regulations 2010 have been repealed.

Further, HPSEBL submitted that as per the terms of the Sharing Regulations 2020, the transmission charges for the Designated ISTS Customer (DIC) consist of a National Component, Regional Component, Transformer Component and AC System Component.

***Petitioner's Response***

2.1.7 The Petitioner submitted that HPSEBL has selectively interpreted only the sub Regulation (l) of Regulation 26 of Central Electricity Regulatory Commission (Sharing of Interstate Transmission Charges & Losses) Regulations, 2020 (hereinafter referred as CERC Sharing Regulations, 2020) wherein it was specified that Central Electricity Regulatory Commission (Sharing of Interstate Transmission Charges & Losses) Regulations, 2010 (hereinafter referred as CERC Sharing Regulations, 2010) have been repealed. Whereas, the sub Regulation (2) of Regulation 26 states that notwithstanding such repeal, anything done or any action taken or purported to have been done or taken under the repealed.

Further, CERC in Petition No. 50/TT/2014 has categorically ruled that the Petitioner can file petition for inclusion of charges under POC mechanism.

***Commission's Observations***

2.1.8 The Commission believes that since the asset has been classified as ISTS, the Petitioner should comply with the requirements of the applicable CERC regulations and file necessary application for inclusion of the same under PoC.

***Stakeholders' Submission***

2.1.9 In the HPPTCL petition, the commercial date of operation of instant asset is mentioned as 12.05.2018 and HPPTCL has taken almost two year to file the present petition. The reasons for delay in filing of petition may be sought from HPPTCL. The capacity utilization of the instant asset and the beneficiary wise details may be sought from HPPTCL.

***Petitioner's Response***

2.1.10 The Petitioner submitted that the delay in filing of the instant Petition is due to some inadvertent reasons and requests the Hon'ble Commission to condone the delay in filing of the Petition and dispose of the Petition accordingly. With regard to the information of capacity utilization and beneficiary details, it is submitted that the Petitioner has submitted the information as sought by the Hon'ble Commission in the Compliance Report dated 18.12.2020 and the Petition.

***Commission's Observations***

2.1.11 The Commission has approved the capital cost of the line and sub-stations after detailed examination of the submissions of the Petitioner. The detailed basis for approval of capital cost has been discussed in Chapter 3 of this Order. Further, the ARR and tariff have been approved in accordance with the applicable regulations as discussed in detail in Chapter 4 of this Order.

***Stakeholders' Submission***

2.1.12 The 33/ 220kV Karian Pooling substation & associated transmission line upto PGCIL point at Chamera II was envisaged in DPR with capital cost of INR 52.06 Cr. i.e. substation INR 47.97 Cr. & transmission line INR 4.09 Cr. (excluding IDC) in October 2010. The project was awarded to M/s Siemens Ltd. & M/s Case Cold Roll Forming Ltd. in September 2011 for construction of 33/ 220kV Karian Pooling substation and transmission line with scheduled commissioning period of 18 months for substation & 6 months for transmission lines. However, the instant asset had achieved COD on 12.05.2018 (excluding the second circuit of transmission line from Karian to Rajera). There is time over run in the construction of the aforementioned asset. The Hon'ble Commission may seek clarification from HPPTCL for the time over run while approving the capital cost of the asset. The claimed actual cost as on COD of the instant asset is INR 51.87 Cr. The IDC was not envisaged in the original DPR of the asset. The IDC of INR 7.97 Cr has been claimed which is high and the reason could be time over run for the completion of the assets. The Hon'ble Commission may seek clarification from HPPTCL & scrutinize the IDC amount before approving the capital cost. The Departmental Charges of INR 3.88 Cr have been claimed which were not part of original DPR.

***Petitioner's Response***

2.1.13 The Petitioner submitted that the required information as sought by the Hon'ble Commission has been supplied and is ready to provide the information as per requirement of the Hon'ble Commission during the prudence check.

***Commission's Observations***

2.1.14 The Commission has approved the capital cost of the line and sub-station after detailed examination of the submissions of the Petitioner. Additional information and clarifications were sought with regards to time and cost overrun along with proper justification and supporting evidence through the deficiency letters. The capital cost allowed by the Commission along with IDC and Departmental Charges have been discussed in detail in Chapter 3 of the Order.

***Stakeholders' Submission***

2.1.15 In terms of the Regulation 18 of the HPERC Transmission Tariff Regulations 2011, for any fresh capitalization of assets, the Commission shall apply a Debt-Equity ratio of 70:30 on the capitalized amount. In the petition, HPPTCL has claimed that it has withdrawn domestic loan from REC amounting to INR 15.22 Cr. as on COD and infused equity amounting to INR 35.71 Cr. The Debt-Equity ratio comes out to be 70.11: 29.88 against the normative value of 70:30. The Hon'ble Commission may allow the Debt-Equity ratio on normative value only as same will have impact on the cost of initial spares, ROE & Interest on loan transmission tariff of the asset.

The Interest charges on working capital for FY 2018-19 i.e. from COD upto 21.05.2018 may be considered in terms of HPERC Transmission Tariff Regulations 2011 & from 22.11.2018 in terms of the 3rd Amendment dated 22.11.2018 to the HPERC transmission tariff regulations.

***Petitioner's Response***

2.1.16 The Petitioner submitted that as per the Petition, the Petitioner has already submitted to consider the normative debt equity ratio of 70:30 in line with the HPERC MYT Tariff Regulations, 2011 and subsequent amendments thereof.

With regard to the averment of calculation of components of tariff, it is submitted that the Petitioner has claimed the tariff in accordance with HPERC MYT Tariff Regulations, 2011 and subsequent amendments thereof.

***Commission's Observations***

2.1.17 The Commission has undertaken a detailed examination of the submissions of the Petitioner including Loan Agreements, approvals etc. along with details of loan and equity availed against the transmission asset. Based on the detailed examination and supporting documents, the Commission has approved the project funding which is detailed in Chapter 3 of this Order.

With regards to the Rate of Interest for calculation of interest on working capital, the same has been considered in accordance with the HPERC MYT Tariff Regulations, 2011 and subsequent amendments thereof.

***Stakeholders' Submission***

2.1.18 The additional capitalization has been claimed by HPPTCL due to the force majeure event which occurred on three occasions and emergency restoration work was carried out. These incidents indicated that the quality of construction work of towers & civil works has been compromised. The area is snow bound and extreme weather conditions do occur in Chamba district of HP. Therefore, the expenditure incurred towards restoration work of the towers & civil works may be recovered from the contractors whom the works were awarded or the same expenditure may be considered under the Repair & Maintenance Expenses for the instant assets during the respective year.

***Petitioner's Response***

2.1.19 The Petitioner submitted that the HPSEBL submissions are denied as they are devoid of any merit. HPSEBL has alleged that the quality of works has been compromised by linking the same with force majeure events which is a completely baseless argument.

***Commission's Observations***

2.1.20 The Commission has reviewed the submissions made by the Petitioner with respect to restoration works and the same has been discussed in detail in Chapter 3 of this Order.

***Stakeholders' Submission***

2.1.21 HPSEBL submitted that HPPTCL may be directed to seek the insurance cover for this asset. The Hon'ble Commission in its MYT order dated 29.06.2019 of HPPTCL for the control period 2019-24, has allowed insurance of assets under the "A&G Expenses" and at para 4.2.22 of the said order it is mentioned that 'the Commission has noted the submission of the HPPTCL in this regard and has provisionally approved the cost towards insurance as per the submissions of the HPPTCL. At para 6.3.19 of the order dated 26.09.2019, Hon'ble Commission has observed that 'Insurance at the rate of 0.30% of the asset value insured in line with the proposal of the HPPTCL has been considered.

***Petitioner's Response***

2.1.22 The Petitioner submitted that the averments made by HPSEBL are welcomed considering that the insuring of the assets pertains to safety and security of both the assets and personnel.

***Commission's Observations***

2.1.23 The Petitioner is directed to take adequate insurance for the transmission assets which shall be allowed as per actuals after prudence check during true-up.

***Stakeholders' Submission***

2.1.24 The Hon'ble HPERC has approved the Short Term transmission charges vide MYT Order dated 29.06.2019 of HPPTCL for the 4$^{th}$ control period 2019-24. During the period of FY 2021, Hon'ble Commission has approved the asset wise transmission tariff for the following assets:

a) 220kV D/ C Kashang Bhaba transmission line from the COD in FY 2016-17 to FY 2023-24 vide Order dated 26.08.2020,

b) 220/ 66kV Bhoktoo Pooling substation for the period from COD in FY 2016-17 to FY2023-24 vide Order dated 25.07.2020.

The aforementioned assets of HPPTCL may be considered as the part of STU network of the State. The ARR of these assets after approval by Hon'ble Commission may be considered for reworking the Short Term transmission charges of STU. ARR of HPPTCL should be consolidated so as to revise the Short Term transmission charges of STU for the remaining period of the 4$^{th}$ MYT control period.

***Petitioner's Response***

2.1.25 It is humbly submitted that 220kV Kashang-Bhaba Transmission line has been affirmed as dedicated Transmission line by Hon'ble HPERC and sharing of ARR will be done as per the Order dated 29.08.2020 and only 220/66/22kV Bhoktoo Pooling station is an STU Transmission system whose ARR will be recovered from Long term/Medium Term Customers.

***Commission's Observations***

2.1.26 The proposed suggestion of stakeholder is not a subject of the current petition. The same may be considered at the time of mid-term review of the 4$^{th}$ Control Period for the intra-state transmission network.

# 3. APPROVAL OF CAPITAL COST

## 3.1 Introduction

3.1.1 HPPTCL has submitted a petition for determination of capital cost for 33/220kV GIS sub-station at Karian and 220kV D/C transmission line from Karian to Rajera from COD to FY 2023-24 in line with the provisions of the HPERC MYT Transmission Regulations 2011.

3.1.2 As per the HPERC MYT Transmission Regulations 2011,

***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 33/220kV GIS sub-station at Karian and 220kV D/C transmission line and ARR for each year by the Petitioner 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, the data submitted, beneficiary details etc.

3.1.4 The original Petition for determination of capital cost and ARR for 33/220kV GIS sub-station at Karian and 220kV D/C transmission line 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 33/220kV GIS sub-station at Karian and 220kV D/C transmission line has been discussed in the following paragraphs.

## 3.2 HPPTCL Current Infrastructure

3.2.1 During the unbundling of State power sector, only 15 numbers of Transmission Lines have been transferred to HPPTCL which were held by erstwhile Himachal Pradesh State Electricity Board (HPSEB). Whereas the line bays, substations, C&R Panel, metering arrangement and other transmission related infrastructure were retained within the distribution entity i.e. Himachal Pradesh State Electricity Board Limited (HPSEBL) which was formed post unbundling of HPSEB.

3.2.2 The Petitioner has provided the details of existing intra-state transmission infrastructure vested with HPPTCL as per notification no. MPP-A (3)-1/2001-iv dated 10$^{th}$ June, 2010 by the Government of Himachal Pradesh. In addition to the above, the transmission system of HPPTCL also has three inter-state transmission lines, the tariff of which is approved by Central Electricity

Regulatory Commission (CERC). The details of the existing Intra-state and Inter-state Transmission system of the Petitioner is tabulated as follows:

**Table 4: Details of existing Transmission lines**

| Sl. | Name of Existing lines | Type | Type of line AC/ HVDC | S/C or D/C | Line length (km) | Date of Commercial Operation |
|---|---|---|---|---|---|---|
| **A** | **220 KV Lines** | | | | | |
| 1 | 220 kV D/C Bairasul - Pong Line (LILO portion at Jassure) | Intra-State | AC | D/C | 0.24 | 09-1985 |
| 2 | 220 kV S/C Jassure-Thein Line | Inter-State | AC | S/C | 25.60 | 03-2001 |
| 3 | 220 kV Dehar-Kangoo Line (S/C ckt. Line on D/C tower) | Intra-State | AC | S/C | 3.18 | 06-1999 |
| 4 | 220 kV D/C Panchkula-Kunihar Line | Inter-State | AC | D/C | 46.72 | 05-1989 |
| 5 | 220 kV D/C Kodari-Majri Line | Inter-State | AC | D/C | 35.02 | 09-1989 |
| 6 | 220 kV D/C Nalagarh (PGCIL)-Nalagarh Line | Intra-State | AC | D/C | 3.50 | 07-2010 |
| **B** | **132 KV Lines** | | | | | |
| 7 | 132 kV S/C Giri-Kulhal Line | Intra-State | AC | S/C | 17.40 | 04-1978 |
| 8 | 132 kV D/C Giri-Abdullapur Line | Intra-State | AC | D/C | 16.22 | 08-1982 |
| 9 | 132 kV S/C Kangra Tap Line | Intra-State | AC | S/C | 0.14 | 02-1979 |
| 10 | 132 kV S/C Dehar-Kangoo Line | Intra-State | AC | S/C | 2.99 | 12-1998 |
| 11 | 132 kV D/C Shanan-Bassi Line | Intra-State | AC | D/C | 5.00 | 03-1970 |
| **C** | **66 KV Lines** | | | | | |
| 12 | 66 kV Shanan-Bijni Line | Intra-State | AC | S/C | 35.00 | 10-1969 |
| 13 | 66 kV Pinjore-Parwanoo Line | Intra-State | AC | S/C | 8.23 | 04-1956 |
| 14 | 66 kV Pong-Sansarpur Terrace Line | Intra-State | AC | S/C | 6.30 | 10-1990 |
| 15 | 66 kV Bhakra-Goalthai-Rakkar Line | Intra-State | AC | S/C | 16.72 | 12-1985 |

3.2.3 HPPTCL has further been undertaking various transmission schemes since its formation in 2008 for evacuation of upcoming generation and system strengthening of transmission infrastructure in the state.

3.2.4 The Petitioner has now submitted this petition for approval of Capital Cost and determination of tariff for 33/220kV GIS sub-station at Karian and 220kV D/C transmission line.

3.2.5 Relevant technical details and configuration of the sub-station as submitted by the Petitioner is tabulated as follows:

**Table 5: Detail of the Sub-Station**

| Name of Sub-Station | Type of Substation | Voltage level KV | No. of Bays | | | | COD |
|---|---|---|---|---|---|---|---|
| | | | 765 KV | 400 KV | 220 KV | 33 kV | |
| 33/220kV of 50/63 MVA GIS Substation Karian | GIS | 220 | - | - | 3 | 9 | 12th May, 2018 |

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

**Table 6: Detail of the Transmission Line**

| Name of Transmission line | Type of line (AC/ HVDC) | S/C or D/C | No. of Sub-Conductors | Voltage level kV | Line Length (Km) | COD |
|---|---|---|---|---|---|---|
| 220kV D/C Transmission line from Karian GIS sub-station to PGCIL pooling sub-station at Rajera | AC | D/C | Single Conductor | 220 | 3.7 | 12th May, 2018 |

## 3.3 Summary of the Project

**Petitioner Submission**

3.3.1 The Petitioner submitted that scheme for construction of 33/220 kV of 50/63 MVA pooling sub-station at Karian and 220 kV connecting transmission line from Karian sub-station to PGCIL substation at Rajera was approved in the 7th Board of Directors (BOD) meeting with an anticipated capacity of 250 MW.

3.3.2 The Petitioner submitted that the Karian-Rajera line & Karian sub-station is being used to evacuate power generated from hydro generating stations within the state & further it is connected to PGCIL's 220 kV Pooling Station at Rajera, evacuating power through PGCIL's Jalandhar line.

3.3.3 Subsequent to BoD approval, the project was awarded to EPC Contractor and the same is under Commercial operation since 12th May, 2018.

3.3.4 HPPTCL submitted that the capital cost of the instant project was envisaged as INR 5,206.27 lakh (excluding Interest During Construction (IDC) and Departmental Charges (DC)) as per the scope of work defined in the original Detailed Project Report (DPR). However, due to change in scope for inclusion of additional civil works such as second circuit of the transmission line from Karian sub-station to Chamera-II and inclusion of provision of Departmental Charges, the capital cost of the project was revised and approved as INR 5,912.83 lakh by the BOD in 42nd meeting held on 24th May, 2019. The Petitioner further submitted that although the board approval was received for INR 5,912.83 lakh, the final cost as per revised DPR was INR 5,467.58 lakh.

3.3.5 The Petitioner submitted that the audited capital cost as on COD of the scheme is INR 5,187.12 lakh, which is inclusive of IDC and Departmental Charges.

3.3.6 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 7: Abstract of Capital Cost (INR Lakh)**

| Particulars | Capital Cost – DPR | Revised Capital Cost – DPR | Capital Cost* - Petition |
|---|---|---|---|
| **Transmission Line** | | | |
| Hard Cost | 409.10 | 1,029.85 | 769.58 |
| IDC | - | - | 130.72 |
| Departmental charges | - | 85.81 | 117.08 |
| **Sub-Total** | **409.10** | **1,115.66** | **1,017.38** |
| **Sub-Station** | | | |
| Hard Cost | 4,797.17 | 3,313.58 | 3,232.32 |
| IDC | - | - | 271.06 |
| Departmental charges | - | 342.78 | 353.75 |
| **Sub-Total** | **4,797.17** | **4,351.92** | **4,169.74** |
| **Total** | **5,206.27** | **5,467.58** | **5,187.12** |

**Capital cost claimed as on COD*

3.3.7 The project was awarded to M/s Siemens Ltd. and M/s Case Cold Roll Forming Ltd. for construction of sub-station and transmission line, respectively. The scheduled commissioning period for the sub-station and transmission line were 18 months and 6 months, respectively, as per the awarded contract.

3.3.8 The Petitioner submitted that best practices were followed while awarding the project to EPC contractor and optimization of the loan drawl schedule. HPPTCL has been able to contain the total capital cost within INR 5,187.12 lakh (excluding cost of second circuit of Karian to Rajera Transmission line) including the IDC and Departmental Charges, which is well within the total capital cost of INR 5,467.58 lakh (excluding IDC) as per the revised scope of work. Petitioner has claimed that there was no cost escalation in the project.

3.3.9 The Petitioner submitted that the COD of the line and sub-station got delayed and COD of both line and sub-station were finally achieved on 12th May, 2018. The Petitioner further submitted that the sub-station was fully constructed by June, 2013 with a slight delay due to environmental factors such as flash floods etc. The transmission line got delayed almost by ~5 years primarily on account of factors such as delay in getting approval from MoEF, RoW issues, bad weather conditions and slow progress in construction by the transmission line contractor.

3.3.10 The sub-station was although ready for operation by June, 2013 but due to delay in transmission line, the COD was finally achieved on 12th May, 2018 for both sub-station and transmission line.

3.3.11 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 from Dunali SHP (5.00 MW), Hul-II SHP (3.4 MW), Kurtha SHP (5.00 MW), Belij SHP (5.00 MW) and Belij-II SHP (3.5 MW). These generating stations will be having their permanent inter-connection point with 220 kV Karian Substation.

3.3.12 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 signed a Supplementary Transmission Service Agreement (TSA) on 29th May, 2018 to original TSA dated 10th February, 2012 with HPPTCL to include 220 kV Karian sub-station for evacuation of power from above IPPs beyond inter-connection point. The total contracted capacity as per addendum dated 18th April, 2017 to original TSA dated 10th February, 2012 remained unchanged at 1060 MW considering the actual loading during FY 2016-17 and FY 2017-18.

3.3.13 With regards to the energising of line and sub-station, the Petitioner received intimation about first time charging of the line occurring on 12th May, 2018 from PGCIL via email dated 13th May, 2018.

**Commission's Analysis**

3.3.14 The Commission observed that the construction work on Karian-Rajera line & Karian sub-station was initiated in 2011. The project is used to evacuate power from hydro generating stations within the state. The project is further connected to PGCIL's 220 kV Pooling Station, evacuating power through PGCIL's Jalandhar line.

3.3.15 As per the DPR the project was originally envisaged at a cost of INR 5,206.27 lakh and accordingly the BOD approval for construction of 33/220 kV of 50/63 MVA pooling sub-station at Karian and 220 kV connecting transmission line from Karian Sub-station to PGCIL substation at Rajera was received in the 7th BoD Meeting held on 21.05.2010.

3.3.16 It is observed that the project was envisaged as part of the Transmission Evacuation Plan submitted by the erstwhile HPSEB for Small Hydro Projects (SHPs) in 2007. An in-principle approval was provided by the Commission for the Transmission Evacuation Plan which included the Karian sub-station and transmission line on 18th October, 2007. However, no separate approval for the same was undertaken by the Petitioner prior to execution of the project. In response to a query, the Petitioner submitted that no scheme level approval was taken from CEA or any other competent agency as the project had been executed through domestic funding.

3.3.17 The project was part of the composite scheme consisting of sub-station at Phojal, transmission line from Phojal to Patlikuhal, sub-station at Karian and Karian to Rajera transmission line. The scheme was further ratified by the Board for approving additional cost towards second circuit of existing 220kV transmission line from Karian to Rajera, inclusion of statutory payments like entry tax etc. along with seeking higher quantum of funding from REC (90%) in the 42nd BOD meeting of the Petitioner held on 24.05.2019.

3.3.18 The cost as per the DPR of the project was INR 5,206.27 lakh (excluding IDC and DC). Subsequently, approval for stringing of second circuit on the existing line and construction of residential quarters in the vicinity of the project was approved in the 42nd BOD.

3.3.19 The project was envisaged at a debt-equity ratio of 90:10. Post approval of the revised scope of work, permission was given to the Petitioner in the 42nd BOD meeting based on which additional loan to the extent of 90% was to be sought from REC against project. The request for loan to REC was sent via letter dated 19th June, 2019 considering the same debt- equity arrangement of 90:10 for the project.

3.3.20 As per the contract agreements submitted by the Petitioner, the contract for supply and service for sub-station was awarded on 29th June, 2011 to M/s Siemens Ltd. and contract for transmission line was awarded on 6th September, 2011 to M/s Case Cold Roll Forming Ltd..

3.3.21 The construction of line was delayed by ~58 months on account of factors such as delay in getting approval from MoEF, RoW issues, bad weather conditions and slow pace of construction by the contractor based on the submissions of the Petitioner.

3.3.22 The construction of sub-station was delayed by ~6 months on account of bad weather conditions/flash floods. While the construction was completed in June, 2013 but due to significant delay in commissioning of associated transmission line the sub-station couldn't be energised. The Commission has reviewed the supporting documentary evidence submitted by the Petitioner.

3.3.23 It was only after the completion of line, the sub-station and transmission line combined were energised on 12th May, 2018 which the Petitioner has submitted to consider as COD of the project.

3.3.24 The Petitioner with regards to COD, in its reply to first set of queries of the Commission, provided the provisional certificate from Electrical Inspectorate (EI) for COD of line and sub-station dated 19th March, 2018. Subsequently, final EI certificate was sought against which the Petitioner submitted the final EI certificate for both sub-station and line in reply to the third deficiency letter. The said document only depicts that the line and sub-station have been energised but has no mention of the date of commissioning of sub-station and line.

3.3.25 Accordingly, based on the submission of the Petitioner and intimation received from PGCIL on 13th May, 2018 regarding first time charging of the system on 12th May, 2018, the Commission has considered the COD as 12th May, 2018 in line with submission of the Petitioner.

3.3.26 In reply to one of the Commission's queries, the Petitioner submitted that though Karian has SCADA based operations, the operations of sub-station shall be through Joint Control Centre (JCC) which is in construction stage and is expected to be completed by March 2022.

3.3.27 The actual cost on COD for the line and sub-station as per the Petition is INR 5,187.12 lakh against which the Petitioner has submitted the Auditor's certificate in support of its claim. It is observed that the cost as on COD is exclusive of the cost towards stringing of 2nd circuit and cost towards construction of residential quarters.

3.3.28 The Petitioner submitted that evacuation of power from various SHP's is to be done through the project with the primary beneficiary being HPSEBL.

3.3.29 The Commission has reviewed 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 BOD/competent agencies, details of awards/ contracts, correspondences, documents against project funding, payments made to contractors, and COD certificate etc.

## 3.4 Energy flow and Nature of Asset

**Petitioner Submission**

3.4.1 The Petitioner submitted that capacity of the substation is 50/63 MVA whereas the transmission line has been constructed with an anticipated evacuation capacity of 250 MW.

3.4.2 As per the Petitioner, the only beneficiary of 33/220 kV GIS substation at Karian is HPSEBL. HPSEBL has signed long term power purchase agreement with IPPs for purchase of power from Dunali SHP (5.00 MW), Hul-II SHP (3.4 MW), Kurtha SHP (5.00 MW), Belij SHP (5.00 MW) and Belij-II SHP (3.5 MW). These generating stations will be having their permanent inter-connection point with 220 kV Karian Substation.

3.4.3 The Petitioner has submitted that it has applied for NRPC certification of 220 kV D/C Karian-Rajera Transmission line for inclusion under POC charges for FY 2019-20. As per the 45$^{th}$ Technical Coordination Sub–Committee (TCC) meeting and 48$^{th}$ Northern Regional Power Committee (NRPC) meeting held on 2$^{nd}$ September, 2020, the asset has been declared as ISTS for FY 2019-20.

3.4.4 As per the established procedure, to determine the nature of an asset(s), actual data of second and fourth quarter has to be studied to declare the asset as ISTS asset by NRPC. Accordingly, considering the data of second and fourth quarter of FY 2018-19, the instant assets have been declared as ISTS assets for inclusion in POC for FY 2019-20 by the NRPC in 45$^{th}$ and 48$^{th}$ NRPC Meeting.

3.4.5 The Petitioner submitted that since the data for FY 2018-19 demonstrates that the line was carrying Inter-State Power, once the tariff is approved, the Petitioner shall approach the CERC for inclusion of transmission charges for both FY 2018-19 and FY 2019-20.

3.4.6 The Petitioner in support of its submission has quoted the supplementary TSA. The supplementary TSA states as follows:

*"AND WHEREAS HPSEBL have signed long term PPAs with IPPs for purchase of power from Dunali (5.00 MW), Hul-II (3.4 MW), Kurtha (5.00 MW) Belij (5.00 MW) and Belij-II (3.5 MW SHPs from their projects in the Stale of Himachal Pradesh having their permanent Inter-connection Point with 220 kV Karian Substation of HPPTCL-"*

*…………………………*

*AND WHEREAS, IPPs have tied up their saleable Power with HPSEBL through long term PPA(s) and also as per the decision of GOHP, HPSEBL is to avail the free power of GoHP in the projects connected to HPSEBL/HPPTCL System. Therefore, HPSEBL is beneficiary or 100% of the Power in these SHPs."*

3.4.7 IPPs having their permanent inter-connection point with the sub-station have signed PPA with HPSEBL and HPSEBL avails the free power of GoHP in the projects connected to the system. Considering the same, the nature of the asset varies from time to time depending on the decision of GoHP on utilizing the free power and in future years for which the nature of assets comes out to be as intrastate, the tariff for such year has to be recovered from the beneficiaries who were utilizing the system. As of now HPSEBL is the only beneficiary of the system.

**Commission's Analysis**

3.4.8 It is observed that the sub-station and line has been constructed to evacuate power from the various HEP's in the state such as Dunali SHP (5.00 MW), Hul-II SHP (3.4 MW), Kurtha SHP (5.00 MW), Belij SHP (5.00 MW) and Belij-II SHP (3.5 MW). As of now the only beneficiary of the line is HPSEBL which procures power from the abovementioned stations.

3.4.9 The Petitioner has stipulated the Regulation 7(1)(n) of CERC (Sharing of Inter State Transmission Charges and Losses) Regulations, 2010 which states as follows:

*"(n) For the computation of transmission charges at each node as per Hybrid Methodology, cost of ISTS transmission licensees whose lines feature on the Basic Network shall be considered.*

*Provided that in case of STU lines which are physically inter-State lines and whose tariff is approved by the Commission, such tariff shall be considered for computation of PoC charges:*

*Provided further that in case of non-ISTS lines (lines owned by STUs but being used for carrying inter-State power as certified by respective RPCs), the asset-wise tariff as approved by the respective State Commission shall be considered. Where asset-wise tariff is not available, the tariff as computed by the Commission based on the ARR of the STUs (as approved by respective State Commissions) by adopting the methodology similar to the methodology used for ISTS transmission licensees shall be considered. The transmission charges received by the concerned STU on this account shall be adjusted in its approved Annual Revenue Requirement."*

3.4.10 The Petitioner further informed that it had filed a Petition No. 550/TT/2014 in the matter of approval of tariff for 220/33 kV Karian substation and transmission line from Karian to Chamera-II. The proposed line was incidental to inter-State transmission network and covered under the definition of inter-state transmission system as provided in Section 2(36) of the inter-state transmission lines. However, CERC in its Order dated 23rd September, 2015 had directed the Petitioner to approach State Commission for determination of ARR and thereafter to CERC for inclusion of line for PoC computation. The relevant abstract of the said CERC order is as under:-

*"7. The petition has been filed in response to the Commission's directions for determination of tariff of transmission lines owned or controlled by the STU which carry inter-state power. This line is not an ISTS line as Karian as well as Chamera-II are in the State of Himachal Pradesh. However, Section 2(36) of the Act defines the ISTS as under:-*

*"2(36) inter-State transmission system includes-*

*(i) Any system for the conveyance of electricity by means of main transmission line from the territory of one State to another state;*

*(ii) The conveyance of electricity across the territory of any intervening State as well as conveyance within the State which is incidental to such inter-State transmission of electricity;*

*(iii) The transmission of electricity within the territory of a State on a system built, owned, operated, maintained or controlled by a Central Transmission Utility"*

*8. The petitioner has submitted that the instant line is incidental to inter-State transmission network and it is covered under the definition of inter-State transmission system as provided in Section 2(36) of the inter-State transmission lines. STU lines carrying inter-State power or lines incidental to ISTS can be considered for inclusion in the computation of PoC charges if it is certified by RPC as carrying inter-state power in terms of para 2.1.3 of the Annexure-I to the Central Electricity Regulatory Commission (Sharing of inter-State Transmission Charges and Losses) Regulations, 2010 (2010 Sharing Regulations) which is extracted overleaf:-*

*"xxx*

*xxx*

*(g) Overall charges to be allocated among nodes shall be computed by adopting the YTC of transmission assets of the ISTS licensees, deemed ISTS licensees and owners of the non-ISTS lines which have been certified by the respective Regional Power Committees (RPC) for carrying inter-State power. The Yearly Transmission Charge, computed for assets at each voltage level and conductor configuration in accordance with the provisions of these regulations shall be calculated for each ISTS transmission licensee based on indicative cost level provided by the Central Transmission Utility for different voltage levels and conductor configuration. The YTC for the RPC certified non-ISTS lines which carry inter-State power shall be approved by the Appropriate Commission."*

*9. These assets can be considered for inclusion in the PoC only if they are certified by NRPC that these lines are used for evacuation of inter-state power. The tariff of such lines is determined by respective State Commissions by way of ARR. The Commission has worked out a methodology for the purpose of calculation of PoC charges and apportionment of transmission lines and charges to the transmission system of different configurations of the*

*STU and this methodology has adopted in case of all the natural inter-state transmission lines. Similar procedure will be adopted in the instant case. The Commission in its order dated 18.3.2015 in Petition No. 213/TT/2015 has observed as follows:-*

*"17. We have not carried out any due diligence of the tariff of these lines (for consideration of PoC calculations) as the jurisdiction to determine the tariff of the lines owned by STU rests with the State Regulatory Commission. We have considered the ARR of the STU as approved by the State Regulatory Commission and have adopted the methodology as discussed in paras 15 and 16 of this order for the purpose of calculation of PoC charges and apportionment of transmission lines and charges to the transmission system of different configurations of the STU. This methodology shall be adopted uniformly for the lines owned by other STUs used for inter-State transmission of power duly certified by respective RPCs for the purpose of inclusion in the PoC mechanism."*

*10. We have considered the submissions of the petitioner. As the instant assets are likely to be commissioned only after December, 2015, the instant petition is disposed of with a liberty to the petitioner to file fresh petition for inclusion of line in PoC computation after the commercial operation of the lines and approval of the tariff of the instant asset by the State Commission. The petitioner is further directed to obtain the necessary certificate from the NRPC to the effect that the instant assets are being used for inter-state transmission of power. The petition filing fees deposited along with this petition will be adjusted towards the fees to be deposited by the petitioner in future petitions."*

3.4.11 It is observed that based on the Order of CERC, the Petitioner has approached the Commission with the current petition for approval of Capital Cost and determination of tariff for the Period from COD to FY 2023-24 which shall be subsequently included in the PoC computation.

3.4.12 The Commission observed that in the Agenda note shared for the 45th TCC Meeting held on 27th and 28th August, 2020 and the 48th NRPC meeting held on 2nd September, 2020, the transmission line was recommended for certification of ISTS in the discussions held in the 167th OCC Meeting. The relevant extract of the agenda has been provided as follows:

*"**B.2 Certification of Non-ISTS lines for inclusion in PoC Charges for FY 2019-20***

*B.2.1 Central Electricity Regulatory Commission (Sharing of Inter State Transmission Charges and Losses) (Third Amendment) Regulations, 2015 provides as under:*

*"Certification of non-ISTS lines carrying inter-State power, which were not approved by the RPCs on the date of notification of the Central Electricity Regulatory Commission (Sharing of Transmission Charges and Losses) Regulations, 2009, shall be done on the basis of load flow studies. For this purpose, STU shall put up proposal to the respective RPC Secretariat for approval. RPC Secretariat, in consultation with RLDC, using WebNet Software*

*would examine the proposal. The results of the load flow studies and participation factor indicating flow of Inter State power on these lines shall be used to compute the percentage of usage of these lines as inter State transmission. The software in the considered scenario will give percentage of usage of these lines by home State and other than home State. For testing the usage, tariff of similar ISTS line may be used. The tariff of the line will also be allocated by software to the home State and other than home State. Based on percentage usage of ISTS in base case, RPC will approve whether the particular State line is being used as ISTS or not. Concerned STU will submit asset-wise tariff. If asset wise tariff is not available, STU will file petition before the Commission for approval of tariff of such lines. The tariff in respect of these lines shall be computed based on Approved ARR and it shall be allocated to lines of different voltage levels and configurations on the basis of methodology which is being done for ISTS lines."*

*B.2.2 Based on the methodology suggested by a group formulated based on the decision of 31st TCC and 35th NRPC meeting for carrying out the certification of the non-ISTS lines carrying inter-State power, the study was carried out for certification of non-ISTS lines submitted by HP, Rajasthan, Uttarakhand and Punjab for FY 2019-20.*

*B.2.3 The transmission lines, which fulfil the approved criteria and recommended by 167$^{th}$ OCC for certification as ISTS for the Financial Year (2019-20) are listed below:*

| ***Sl. No.*** | ***Name of Transmission Line Owner*** | ***Owner STU*** |
|---|---|---|
| *1* | *220 kV Karian - Rajera* | *HP* |
| *2* | *400 kV S/C Merta - Heerapura Line* | *RVPN* |
| *3* | *400 kV D/C Chhitorgarh - Bhilwara line* | *RVPN* |
| *4* | *400 kV D/C Bhilwara-Ajmer line* | *RVPN* |
| *5* | *132 kV Mahuakheraganj - Thakurdwara Line* | *PTCUL* |

*B.2.4 The complete list of transmission lines submitted by STUs can be sub-divided in following categories:*

*B.2.4.1 Transmission lines, which fulfil the criteria recommended by the Group and hence are recommended to be certified as ISTS.*

*B.2.4.2 Transmission lines, which do not fulfil the criteria recommended by the Group and hence may not be certified as ISTS.*

*B.2.4.3 The transmission lines which are natural inter-state lines and  ence need not be certified as ISTS.*

*B.2.5 The complete category wise list of transmission lines submitted by STUs is enclosed at* ***Annexure-B.II****."*

3.4.13 Further the Annexure- B.II of the agenda states the following:

*"1. Transmission Lines which are recommended to be certified as ISTS*

| ***S. No.*** | ***Name of Transmission Line Owner*** | ***Owner STU*** | ***Average % Utilization (of 2$^{nd}$ and 4$^{th}$ Qtr of 2018-19) by states other than the home state of owner STU*** |
|---|---|---|---|
| *1* | *220 kV Karian - Rajera* | *HPPTCL* | *98.25* |
| *2* | *400 kV S/C Merta - Heerapura Line* | *RVPN* | *53.25* |
| *3* | *400 kV D/C Chhitorgarh - Bhilwara line* | *RVPN* | *55.1* |
| *4* | *400 kV D/C Bhilwara-Ajmer line* | *RVPN* | *50.3* |
| *5* | *132 kV Mahuakheraganj - Thakurdwara Line* | *PTCUL* | *99.3* |

"

3.4.14 Further MoM of 45$^{th}$ TCC Meeting and the 48th NRPC meeting states the following:

***"B.2. Certification of Non-ISTS lines for inclusion in PoC Charges for FY 2019-20***

***TCC Deliberation***

*B.2.1 Members were apprised that as per Central Electricity Regulatory Commission (Sharing of Inter State Transmission Charges and Losses) (3rd amendment) Regulations, 2015, NRPC Sectt is certifying the Non-ISTS lines carrying ISTS power for inclusion in PoC Charges as per the methodology approved in 36$^{th}$ NRPC meeting.*

*B.2.2 The proposal for FY 2019-20 were submitted by HP, Rajasthan, Uttarakhand and Punjab. The same was studied as per the approved methodology and all the transmission lines submitted were divided in the following categories:*

*B.2.2.1 Transmission lines, which fulfill the criteria recommended by the Group and hence are recommended to be certified as ISTS.*

*B.2.2.2 Transmission lines, which do not fulfill the criteria recommended by the Group and hence may not be certified as ISTS.*

*B.2.2.3 The transmission lines which are natural inter-state lines and hence need not be certified as ISTS.*

*B.2.3 The complete category wise list of transmission lines submitted by STUs is enclosed at Annexure-B.II of Agenda.*

*B.2.4 The result of the study were deliberated in 167$^{th}$ OCC meeting wherein it was highlighted that natural ISTS lines and lines emanating from ISGS do not require certification of NRPC and are automatically considered for inclusion in PoC charges. Thus, members are advised not to submit such lines for study.*

*B.2.5 TCC recommended the following transmission lines for approval of NRPC for inclusion in PoC charges:*

| *Sl. No.* | *Name of Transmission Line Owner* | *Owner STU* |
|---|---|---|
| *1* | *220 kV Karian - Rajera* | *HP* |
| *2* | *400 kV S/C Merta - Heerapura Line* | *RVPN* |
| *3* | *400 kV D/C Chhitorgarh - Bhilwara line* | *RVPN* |
| *4* | *400 kV D/C Bhilwara-Ajmer line* | *RVPN* |
| *5* | *132 kV Mahuakheraganj - Thakurdwara Line* | *PTCUL* |

*B.2.6 Members were also informed that for the FY 2020-21, the proposal has only been received from Rajasthan.*

*B.2.7 Further, it was agreed that said certification of non-ISTS lines will be done only as per the methodology, approved in 36$^{th}$ NRPC meeting and in line with extant CERC (sharing of ISTS charges & losses) regulations. Any deviation from the extant certification methodology would require approval of NRPC.*

***NRPC Deliberation***

*B.2.8 NRPC concurred with the deliberations held in the TCC meeting and approved 5 no. of lines for inclusion in PoC charges."*

3.4.15 From the above discussions, agenda points and the MoM shared for the 45th TCC meeting and 48th NRPC meeting, it can be observed that the instant line has been certified as ISTS line.

3.4.16 In view of the responsibility of determination of ARR for such inter-state assets by the State Commission, as indicated in the Order issued by CERC against the said asset, the Commission has undertaken detailed prudence check of the capital cost of line and sub-station and determination of ARR for each year from COD to FY 2023-24.

## 3.5 Capital Cost

**Petitioner's submission**

3.5.1 The Petitioner submitted that the project was awarded to M/s Siemens Ltd. and M/s Case Cold Roll Forming Ltd. for construction of sub-station and transmission line respectively. The scheduled construction period for the substation and transmission line were 18 months and 6 months respectively. However due to delay on account of various factors the COD for both sub-station and line got delayed and was finally achieved on 12$^{th}$ May, 2018.

3.5.2 The work of transmission line was awarded with an expected construction period of 6 months. The Petitioner submitted that originally the contract was awarded based on the DPR approved by the BOD. The cost of construction of transmission line was envisaged at INR 409.10 lakh (excluding IDC and DC) for a line length of 3.7 km.

3.5.3 Based on the DPR, bids were invited and contract of construction was awarded to M/s Cold Roll Forming Ltd. at an awarded cost of INR 555.09

lakh. Initially the transmission line was envisaged as single circuit transmission line. Subsequently, it was decided that stringing of second circuit shall be done and accordingly board approval for the same was received in the 42nd BOD of the Petitioner. Hence, the cost of construction increased to INR 1,115.66 lakh (excluding IDC) post the revision.

3.5.4 The relevant extract from the Petitioner's submission against the increment in cost of line is reproduced as follows:

*"The project cost was revised on account of the following:*

*………..*

- ***Second Circuit of the transmission line from Karian Substation to Rajera:*** *As per the master plan, there was a provision of 220 kV D/C transmission line from Majra to Karian. Therefore, the second circuit of existing 220 kV transmission line from Karian to Rajera needs to be strung. Accordingly, a provision for second circuit of Karian to Rajera transmission line along with erection of three additional towers for assuring hillside* ***clearance was included in the scope of the project.***

- ***Inclusion of provision of Departmental Charges:*** *It is submitted at the time of drafting of the DPR, cost pertaining to Interest During Construction (IDC) and departmental charges was not included. However, in the revised scheme the cost pertaining to departmental charges has been included."*

3.5.5 The Petitioner submitted that against an approved cost of INR 1,115.66 lakh the Petitioner has incurred a cost of INR 1,017.37 lakh which is well within the approved cost.

3.5.6 The following table provides the original DPR cost, the revised capital cost and actual cost incurred against the transmission line:

**Table 8: Capital Cost comparison - Line (INR Lakh)**

| Particulars | Capital Cost – DPR | Revised Capital Cost | Capital Cost - Actual |
|---|---|---|---|
| Land/preliminary works/ compensation etc. | 49.91 | 161.41 | 156.07 |
| Material and Supplies<br>Erection and Civil Works | 359.19 | 618.67 | 613.51 |
| Additional cost of construction of 2nd Circuit | - | 239.16 | - |
| IDC | - | - | 130.72 |
| Departmental charges | - | 96.42 | 117.08 |
| **Sub-Total** | **409.10** | **1,115.66** | **1,017.38** |

3.5.7 The Petitioner submitted that there was a delay in construction of line by ~58 months on account of factors such as delay in getting approval from MoEF, RoW issues, bad weather conditions and slow pace of construction by the contractor.

3.5.8 With regards, to the sub-station, the Petitioner submitted that the project was awarded to M/s Siemens Ltd. with a scheduled construction period of 18 months.

3.5.9 Similar to transmission line, the board approval for the sub-station was received with a total DPR Cost of INR 4,797.17 lakh (excluding IDC and DC). Subsequently, it was realised that the cost of construction of the sub-station and transmission line combined is expected to be lower than planned and hence extra scope of work involving construction of residential quarters for the staff was approved.

3.5.10 The contract for setting up of the sub-station was initially awarded at a cost of INR 2,829.47 lakh which was subsequently enhanced owing to factors such as enhanced scope of work and addition of preliminary cost which were not included in the earlier DPR cost. The capital cost incurred against the sub-station is INR 4,169.74 lakh.

3.5.11 The following table provides the cost of the sub-station as approved in DPR, revised cost estimate and actual cost claimed by the Petitioner:

**Table 9: Capital Cost comparison – Sub-Station (INR Lakh)**

| Particulars | Capital Cost – DPR | Revised Capital Cost | Capital Cost - Actual |
|---|---|---|---|
| Land/preliminary works/ compensation etc. | 310.00 | 12.87 | 17.78 |
| Material and Supplies | 4,487.17 | 3,239.01 | 3,214.54 |
| Erection and Civil Works | | | |
| Extra Civil Works | - | 695.56 | - |
| IDC | - | - | 666.36 |
| Departmental charges | - | 404.48 | 271.06 |
| **Sub-Total** | **4,797.17** | **4,351.92** | **4,169.74** |

3.5.12 The Petitioner submitted that the construction of sub-station was completed in June, 2013 with a delay of ~6 months on account of factors such as flash floods in the month of July to August 2012.

3.5.13 The construction was although completed in June, 2013 but the sub-station could only be energised along with the commissioning of the line i.e. on 12$^{th}$ May, 2018.

3.5.14 The total capital cost claimed by the Petitioner for the sub-station and line combined vis-à-vis the revised capital cost has been provided in the table as follows:

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

| Particulars | Revised Capital Cost | Capital Cost – Claimed |
|---|---|---|
| **Transmission Line** | | |
| Land/preliminary works/ compensation etc. | 161.41 | 156.07 |
| Supplies, Erection and Civil Works | 618.67 | 613.51 |

| Particulars | Revised Capital Cost | Capital Cost – Claimed |
|---|---|---|
| Additional cost of construction of 2nd Circuit | 239.16 | - |
| IDC | - | 130.72 |
| Departmental charges | 96.42 | 117.08 |
| **Sub-Total** | **1,115.66** | **1,017.38** |
| **Sub-Station** | | |
| Land/preliminary works/ compensation etc. | 12.87 | 17.78 |
| Supplies, Erection and Civil Works | 3,239.01 | 3,214.54 |
| Extra Civil Works | 695.56 | - |
| IDC | - | 666.36 |
| Departmental charges | 404.48 | 271.06 |
| **Sub-Total** | **4,351.92** | **4,169.74** |
| **Total** | **5,467.58** | **5,187.12** |

**Commission's Analysis**

3.5.15 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/ Board.

3.5.16 Based on the DPR submitted by the Petitioner, the capital cost of the transmission line and sub-station in the DPR is INR 409.10 lakh and INR 4,797.17 lakh, respectively at 2011 base price levels. It is observed that the costs were exclusive of IDC and Departmental Charges. As per the DPR, the consolidated cost for the project is INR 5,206.27 lakh (excluding IDC and DC). The composite scheme for construction of 33/220 kV, 50/63 MVA GIS sub-station at Karian and 220 kV transmission line connecting Karian to Rajera was approved in the 7th BOD Meeting of the Petitioner held on 21st May, 2010.

3.5.17 As per the copy of contracts provided by the Petitioner, the transmission line was for awarded to M/s Case Cold Roll Forming Ltd at cost of INR 555.09 lakh and sub-station was awarded to M/s Siemens at cost of INR 2,829.47 lakh. However, the final consolidated capital cost claimed as per the petition is INR 5,187.12 lakh including INR 1,017.38 lakh claimed against transmission line and INR 4,169.74 lakh claimed against sub-station.

3.5.18 Auditor certificate against the claimed capex towards transmission line and substation was sought along with the reasons for the increased claim. In response, the Petitioner submitted that the scope of work was revised to include the following:

a) Stringing of second circuit of existing 220 kV D/C Transmission line from Karian to Rajera along with erection of three number towers for ensuring proper clearance for second circuit in order to facilitate injection of power from Mazra Substation.

b) Provision for residential quarters,

c) Provision of departmental charges and

d) Additional civil works

3.5.19 In view of the changes, the consolidated project cost was revised to INR 5,467.58 lakh (excluding IDC) with Board approval received for the same in the 42nd BOD meeting held on 24th May, 2019. The Commission notes that even post approvals for additional work/ cost, the overall cost of the project remained within the initial approved levels. This was primarily due to higher estimates of project cost considered in the DPR.

3.5.20 The Petitioner also submitted a copy of its proposal to REC for higher loan disbursement due to revised capital cost as also ratified by its Board.

3.5.21 The following table provides the comparison of original DPR cost, awarded cost, revised cost based on the enhanced scope of work and auditor approved capital cost:

**Table 11: DPR vs Awarded vs Revised Capital Cost (INR Lakh)**

| Particulars | Capital Cost - DPR | Awarded Cost | Revised Capital Cost | Cost as per Auditor Certificate |
|---|---|---|---|---|
| **Transmission Line** | | | | |
| Land/preliminary works/ compensation etc. | 49.91 | - | 161.41 | 156.07 |
| Supplies, Erection and Civil Works | 359.19 | 555.09 | 618.67 | 613.51 |
| Additional cost of construction of 2nd Circuit | - | - | 239.16 | - |
| IDC | - | - | - | 130.72 |
| Departmental charges | - | - | 96.42 | 117.08 |
| **Sub-Total** | **409.10** | **555.09** | **1,115.66** | **1,017.38** |
| **Sub-Station** | | | | |
| Land/preliminary works/ compensation etc. | 310.00 | - | 12.87 | 17.78 |
| Supplies, Erection and Civil Works | 4,487.17 | 2,829.47 | 3,239.01 | 3,214.54 |
| Extra Civil Works | - | - | 695.56 | - |
| IDC | - | - | - | 666.36 |
| Departmental charges | - | - | 404.48 | 271.06 |
| **Sub-Total** | **4,797.17** | **2,829.47** | **4,351.92** | **4,169.74** |
| **Total** | **5,206.27** | **3,384.56** | **5,467.58** | **5,187.12** |

3.5.22 It can be observed from above that the original DPR didn't have the provision of IDC and departmental charges. In addition, the revised capital cost was excluding the IDC. IDC and departmental charges are vital components of the project cost. They have been discussed in detail in the next section.

3.5.23 The Petitioner had sent the proposal for securing higher loan against the project on 19th June 2019 wherein it had provided details of increased cost of each component of transmission and substation. In case of transmission line, the increase in capital cost vis-à-vis the awarded cost for the transmission line was primarily on account of inclusion of preliminary works and survey, cost of compensatory afforestation, additional cost towards excavation in tower foundation and cost of works towards stringing of second circuit.

3.5.24 It is observed that non-inclusion of land cost and compensatory afforestation has resulted in the differential cost. The Commission takes objection of absence of basic elements of cost in the estimated capital cost during the DPR preparation. However, considering such elements are generally considered as per actual during the capital cost, the Commission has considered the same under approved cost. Also, additional works towards tower foundation have been considered for determining the hard cost of transmission line.

3.5.25 The transmission line got delayed by almost ~5 years primarily on account of factors such as delay in getting approval from MoEF, RoW issues, bad weather conditions and slow progress in construction by the contractor.

3.5.26 In view of the significant delay caused in erection of the transmission line, the Commission sought clarification from the Petitioner on whether any kind of penalty, etc. has been levied on the contractor. In response, the Petitioner submitted that a penalty on account of slow pace of work was levied in form of liquidated damages from M/s Case Cold Roll Forming Ltd of INR 27.59 lakh which is already adjusted in the overall hard cost. The Commission has also considered the same in the final capital cost approved for the line.

3.5.27 As on COD, the actual cost is marginally lower than the revised overall capital cost including the additional costs and works. Accordingly, based on the review of the submissions of the Petitioner, the Commission approves the actual hard cost incurred for the transmission line as on COD.

**Table 12: Hard Cost (including land cost) - Line (INR Lakh)**

| Particulars | Awarded | Revised | Claimed | Approved |
|---|---|---|---|---|
| Land Cost | - | 161.41 | 137.43 | 137.43 |
| Preliminary works, Compensatory Afforestation/ compensation for crop damage etc. | - | | 28.64 | 28.64 |
| Supply and Material | 302.03 | 298.72 | 298.72 | 298.72 |
| Erection and Civil Works | 253.06 | 297.22 | 314.79 | 314.79 |
| Contingency Charges | - | 22.72 | - | - |
| **Sub-Total** | **555.09** | **780.08** | **769.58** | **769.58** |

| Particulars | Awarded | Revised | Claimed | Approved |
|---|---|---|---|---|
| Additional cost of construction of 2nd Circuit | - | 239.16 | - | - |
| **Total** | **555.09** | **1,019.24** | **769.58** | **769.58** |

3.5.28 At the time of filing of petition, the Petitioner submitted that the work for stringing of second circuit is in progress. However, in subsequent communications and replies to the deficiencies, the Petitioner submitted that the works for stringing of second circuit has been completed during the FY 2020-21. The cost towards the same has been considered as part of the additional capitalisation as discussed in the subsequent sections by the Commission.

3.5.29 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 various approvals taken in lieu of the increased capital cost. In a letter dated 13$^{th}$ August, 2018 the Petitioner had detailed the requirement to add a 250 KVA transformer as the existing transformer was already overloaded. Considering the requirements, the transformer was sourced from M/s Siemens and corresponding cost of Rs. 12.98 lacs has been included in the revised capital cost. Also, an amount of Rs. 120 lakh was paid towards entry tax on supply.

3.5.30 Also, there were quantity variations for which details have been submitted by the Petitioner and subsequently included in revised costs approved by the Board. Few other costs pertaining to preliminary works i.e. tender fees, survey expenses, variation/actual statutory taxes which were not part of awarded cost were also included in the revised capital cost. In view of the above changes in costs, an amount of Rs. 195.94 lakh excluding contingency and departmental charges were included as part of revised cost. The Commission has considered the same under approved capital cost for sub-station considering the nature of work to be incremental or payment towards statutory taxes and duties.

3.5.31 Apart from above, the scope of work for supplies and civil works was enhanced to include the works towards construction of residential accommodation for employees, rest camp cum testing laboratory, providing protection work at different tower locations, accommodation for security personal and fencing of sub-station. All this combined constituted major portion of the increased capital cost of the project.

3.5.32 Based on the submissions of the Petitioner, the works against construction of residential accommodation is under progress and is expected to complete by FY 2021-22.

3.5.33 Amongst the break-up provided an amount of INR 135.70 lakh is reflected towards recommissioning charges as part of the total capital cost of the sub-station. It is observed that while the sub-station was completed in June 2013, it could not be energised/commissioned as the connecting transmission line was delayed. On completion of work and commissioning of transmission line, the sub-station was required to be recommissioned against which the Petitioner had to pay additional costs to M/s Siemens Ltd. as recommissioning charges. The Commission is of the opinion that since Karian- Rajera was an associated line, the Petitioner should have ensured simultaneous commissioning of the line and sub-station. Further, the delay in commissioning of the transmission line was primarily due to delay on contractor end which could have been avoided if the Petitioner would have undertaken timely steps for such delay.

3.5.34 Therefore, the Commission believes that the additional burden cannot be passed in the approved capital cost for the project and disallows the recommissioning charges claimed as part of overall project cost by Petitioner.

3.5.35 Based on comparison of revised approved and claimed cost, the Commission observes the overall cost incurred (excluding recommissioning charges) is lower than the revised capital cost of the sub-station. Accordingly, the Commission has approved the capital cost for sub-station as provided in the following table:

**Table 13: Hard Cost (including land cost) – Sub-Station (INR Lakh)**

| Particulars | Awarded | Revised | Claimed | Approved |
|---|---|---|---|---|
| Land Cost | - | - | 1.45 | 1.45 |
| Preliminary works, Compensatory Afforestation/ compensation for crop damage etc. | - | 12.87 | 16.33 | 16.33 |
| Supply and Material | 2,394.97 | 2,418.68 | 2,402.78 | 2,402.78 |
| Erection and Civil Works including cost towards lab/protection/ fencing/ security accommodation etc. | 434.50 | 736.51 | 556.06 | 556.06 |
| Entry Tax | - | 120.00 | 120.00 | 120.00 |
| Contingency Charges | - | 90.76 | - | - |
| **Sub-Total** | **2,829.47** | **3,378.82** | **3,096.62** | **3,096.62** |
| Recommissioning Charges | - | 135.70 | 135.70 | - |
| Construction of residential accommodation | - | 432.92 | - | - |
| **Total** | **2,829.47** | **3,947.44** | **3,232.32** | **3,096.62** |

## 3.6 Overheads (IDC and Departmental Charges)

**Petitioner's submission**

3.6.1 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.

3.6.2 The construction of sub-station was delayed on account of unavoidable factors such as flash floods occurred during three months from June to August 2012 during the construction period.

3.6.3 Time overrun during the construction of line occurred on account of factors such as delay in getting approval from MoEF, RoW issues, bad weather conditions and slow pace of construction by the contractor.

3.6.4 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 REC.

**Commission's Analysis**

3.6.5 As discussed in previous sections, IDC and DC were not included in the original DPR cost. Subsequently, in the revised capital cost submitted to REC, although departmental charges were included, IDC was not included. 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 14: IDC and Departmental charges claimed by Petitioner (INR Lakh)**

| Particulars | DPR | Revised | Claimed |
|---|---|---|---|
| **Transmission Line** | | | |
| IDC | - | - | 130.72 |
| Departmental charges | - | 96.42 | 117.08 |
| **Total** | **-** | **96.42** | **247.80** |
| **Sub-Station** | | | |
| IDC | - | - | 666.36 |
| Departmental charges | - | 404.48 | 271.06 |
| **Total** | **-** | **404.48** | **937.42** |

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

**Table 15: Reasons for time overrun as claimed by Petitioner**

| Sl. | Reason for Delay | Time Period (In Months) | Description |
|---|---|---|---|
| **Transmission Line** | | | |
| 1 | Delay in getting approval from MoEF | 19 months (Sep 2011 to April 2013) | Delay in getting environmental approval from Ministry of Environment, Forest and Climate Change (MoEF). |
| 2 | Clearance from PGCIL and RoW issues | 7 months (May 2013 to Nov 2013) | • As the Transmission line was to terminate at Rajera Substation, approval from M/s PGCIL could not be obtained on account of higher angle at gantry. PGCIL suggested for exploring |

| Sl. | Reason for Delay | Time Period (In Months) | Description |
|---|---|---|---|
| | | | possibility for reducing angle at gantry below 15 degrees and in accordance with the same, firm had to resurvey for deciding route of Transmission line.<br>• Trees were to be cut by HP Forest Corporation Chamba and trees were physically marked dated 8th July, 2013 and felled by HP Forest Corporation Chamba in November 2013.<br>• At some locations work could not be started due to pending ROW issues and Court Cases. Most of the sites selected for construction of Transmission line were non-approachable and were without water resources. |
| 3 | Bad weather conditions | 2 months (Dec 2013 to Jan 2014) | The work progress was extremely slow due to extreme winter and snowfall in the region |
| 4 | Rescinding of the work | 29 months (Jan 2014 till June 2016) | • The work progress was slow on account of Contractor who could not deploy enough work force to complete the work on time<br>• As the contractor could not execute the contract effectively even after several deliberations the contract was rescinded by HPPTCL via letter dated 28th March, 2016<br>• After detailed deliberations the contract was revived w.e.f. from 30th June, 2016. and it was decided that the firm will complete the balance work by October 2016 on the same rates, terms and conditions of contract with levy of LD. |
| **Sub-Station** | | | |
| 1 | Flash Floods | June 2012 to August 2012 | Delay on account of flash floods and subsequent revival of works |

3.6.7 As per the awarded contracts, the sub-station was envisaged to be completed in 18 months while the transmission line was expected to be completed in 6 months. However, the actual time taken was over 5 years combined (from the date of award of contract) which is significantly higher.

3.6.8 The Petitioner with regards to the delay in works by the contractor submitted a record of the communications taken place internally and between the Petitioner and the contractor. Review of the documents indicates that the pace of the work was extremely slow and several communications was done by Petitioner requesting to expedite the project works.

3.6.9 Also, it is observed that the contract for transmission line had to be rescinded given the pace of work. However, it was reinstated again with the condition to expedite the work with no price escalation and levy of Liquidated Damages (LD).

3.6.10 Against a tentative time period of 6 months for construction of line as per the awarded contract, it is observed that the transmission line was completed in a period of ~5 years. Of the overall delay, a majority part (~3 years) is attributable towards slow pace of work by the contractor.

3.6.11 While the Petitioner, in response to one of the query submitted that new contractor could not be appointed as enough portion of the works had been executed and appointing a new contractor could only have delayed the work further. The Commission believes that timely communications and proper monitoring of progress could have averted the significant amount of delay in transmission line causing delay of COD of overall project. Even subsequent delays on account of environmental aspects also would have been avoided.

3.6.12 The Commission directs the Petitioner to ensure that only contractors with strong technical and financial capability be selected to undertake projects. Further, the Commission also advises 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.

3.6.13 With regards to other reasons for time overruns provided such as bad weather conditions, delay from PGCIL, RoW issues etc. the details only mentioned various dates when issues emerged. However, it could not be established that how each activity had impacted the overall timeline of the project and whether other activities could have been planned in a manner where the delay could have been avoided.

3.6.14 Based on reasons stated by the Petitioner, while part of the delay could be considered under force majeure, delay on part of contractor is not of uncontrollable nature and therefore cannot be allowed in the overall capital cost. The Commission therefore decided to allow sharing of excess amount of IDC between the Petitioner and beneficiaries in equal ratio (50:50).

3.6.15 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 line, the Commission has assumed 40% debt disbursement in first quarter and 60% in second quarter against a project duration of 6 months as per awarded contract. Similarly, for the sub-station, with project duration of 18 months, the Commission has assumed 40% total debt disbursement in the first year and 60% disbursement in the remaining six months. The phasing of debt disbursement has been assumed in accordance with the disbursement observed in similar projects undertaken by Petitioner.

3.6.16 The benchmark IDC for sub-station and lines as computed is summarized as follows:

**Table 16: Revised Benchmark IDC - Line**

| Particulars | Unit | Qtr I | Qtr II | Total |
|---|---|---|---|---|
| Debt disbursement | % | 40% | 60% | 100% |
| Opening Debt (a) | INR Lakh | - | 301.34 | |
| Addition during the year (b) | INR Lakh | 301.34 | 452.02 | |
| Closing Debt (c) | INR Lakh | 301.34 | 753.36 | |

| Particulars | Unit | Qtr I | Qtr II | Total |
|---|---|---|---|---|
| Average Debt (d=(a+c)/2) | INR Lakh | 150.67 | 527.35 | |
| Interest rate (e) | % | 12.25% | 12.25% | |
| **Total IDC (f=d*e*0.25)** | INR Lakh | **4.61** | **16.15** | **20.76** |

**Table 17: Revised Benchmark IDC – Sub-Station**

| Particulars | Unit | Year I | Year II | Total |
|---|---|---|---|---|
| Debt disbursement | % | 40% | 60% | 100% |
| Opening Debt (a) | INR Lakh | - | 1212.36 | |
| Addition during the year (b) | INR Lakh | 1212.36 | 1818.55 | |
| Closing Debt (c) | INR Lakh | 1212.36 | 3030.91 | |
| Average Debt (d=(a+c)/2) | INR Lakh | 606.18 | 2121.64 | |
| Interest rate (e) | % | 12.25% | 12.25% | |
| **Total IDC (f=d*e)** | INR Lakh | **74.26** | **129.95*** | **204.21** |

**Considered for 6 months*

3.6.17 With respect to actual IDC, the Petitioner submitted an excel for working of IDC based on queries sought by the Commission. However, it was observed that there were apparent errors in the IDC calculation, with tenure of interest computation upto 31.03.2019 inspite of the fact that the project was commissioned much earlier in May 2018.

3.6.18 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 12th May, 2018 for both line and sub-station
- Actual drawal of loans as per submission of Petitioner
- Interest rate as per loan agreement. As per the terms and conditions of the loan agreement, interest rate was reset from 13th March, 2017 onwards to 11.50% from earlier rate of 12.25%

3.6.19 It is observed that only one instalment of loan of Rs. 16.31 lakh has been undertaken prior to COD of the project. Accordingly, the Commission computed the IDC in the table as follows:

**Table 18: Actual IDC upto date of COD considered by Commission**

| Date of draw down | Draw down (INR Lakh) | No. of Days | Interest Rate (%) | IDC (INR Lakh) | Remarks |
|---|---|---|---|---|---|
| **Transmission Line** | | | | | |
| 13-Mar-14 | 267.53 | 1,096 | 12.25% | 98.41 | |
| 13-Mar-17 | - | 425 | 11.50% | 35.82 | Interest Rate reset to 11.50% |
| | **267.53** | | | **134.23** | |
| Less: Interest Earned | | | | 44.52 | As per Petitioner's |

| Date of draw down | Draw down (INR Lakh) | No. of Days | Interest Rate (%) | IDC (INR Lakh) | Remarks |
|---|---|---|---|---|---|
| | | | | | submission |
| **Net Interest** | | | | **89.72** | |
| **Sub-Station** | | | | | |
| 13-Mar-14 | 1,363.74 | 1,096 | 12.25% | 501.63 | |
| 13-Mar-17 | - | 425 | 11.50% | 182.61 | Interest Rate reset to 11.50% |
| | **1,363.74** | | | **684.24** | |
| Less: Interest Earned | | | | 226.92 | As per Petitioner's submission |
| **Net Interest** | | | | **457.32** | |
| **Total Interest** | **1,631.27** | | | **547.03** | |

3.6.20 As discussed in preceding paras, the Commission has allowed 50% of the excess IDC over and above the revised benchmark IDC computed assuming no time delay.

**Table 19: Approved IDC (INR Lakh)**

| Particular | Benchmark | Actual | Difference | Approved = Actual -50% of difference |
|---|---|---|---|---|
| Line | 20.76 | 89.72 | 68.95 | 55.24 |
| Sub-station | 204.21 | 457.32 | 253.11 | 330.76 |
| **Total** | | | | **386.00** |

3.6.21 In absence of any departmental charges approved as part of the original DPR, the Commission has allowed the minimum of the actual departmental charges and normative charges determined in accordance with the standard provisions of DPR (11% of hard cost) as considered by Petitioner. The approved department charges are as below:

**Table 20: Approved Departmental Charges (DC) (INR Lakh)**

| Particular | Claimed | Approved |
|---|---|---|
| Departmental Charges for Transmission line | 117.08 | 67.09 |
| Departmental Charges for sub-station | 271.06 | 271.06 |
| **Total Departmental Charges** | **388.14** | **338.55** |

3.6.22 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 Karian-Rajera line and Karian sub-station is summarized in the following table:

**Table 21: Approved Capital Cost (INR Lakh)**

| Cost Heads | Claimed | Approved |
|---|---|---|
| **Transmission Line** | | |
| Land Acquisition Cost | 137.43 | 137.43 |
| Preliminary works | 18.64 | 18.64 |
| Materials and Supplies | 298.72 | 298.72 |
| Erection and Civil Works | 314.79 | 314.79 |
| Departmental Charges | 117.08 | 67.49 |
| Interest During Construction (IDC) | 130.72 | 55.24 |
| **Sub - Total** | **1,017.38** | **892.31** |
| **Sub-Station** | | |
| Land Acquisition Cost | 1.45 | 1.45 |
| Preliminary works | 16.33 | 16.33 |
| Materials and Supplies | 2,402.78 | 2,402.78 |
| Erection and Civil Works | 556.06 | 556.06 |
| Recommissioning Charges | 135.70 | - |
| Entry Tax | 120.00 | 120.00 |
| Departmental Charges | 271.06 | 271.06 |
| Interest During Construction (IDC) | 666.36 | 330.76 |
| **Sub - Total** | **4,169.74** | **3,698.44** |
| **Total Capital Cost** | **5,187.12** | **4,590.75** |

## 3.7 Project Funding

**Petitioner Submission**

3.7.1 The Petitioner has quoted the Regulation 18 of the HPERC MYT 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."*

3.7.2 The loan has been sourced from REC with a total loan drawn of 1,522 lakh as on CoD (Actual loan drawn as on CoD is INR 1,631 lakh, wherein INR 109 lakh was repaid on 15th March, 2018). Further, the Petitioner has infused equity amounting to INR 3,556 lakh.

3.7.3 The Petitioner has further drawn actual loan in FY 2018-19 of INR 1,415 lakh which has been considered additionally for FY 2018-19, thereby replacing the notional loan by the same amount.

3.7.4 The Petitioner also submitted that it has received consumer contribution of INR 94 lakh.

3.7.5 The actual equity infused in the project is INR 3,571 lakh which is greater than the permissible limit of 30% as per the HPERC MYT Transmission Regulations 2011. The Petitioner, for the purpose of calculation of ARR for FY 2018-19, has considered the normative debt equity ratio of 70:30 as on COD after excluding the consumer contribution.

3.7.6 The following table provides the project funding of the project as claimed by the Petitioner:

**Table 22: Project funding proposed by Petitioner**

| Particulars | Capital Cost – Petition (INR Lakh) | Additional Capitalisation (INR Lakh) | | | Debt: Equity Ratio |
|---|---|---|---|---|---|
| | | FY20 | FY21 | FY22 | |
| Consumer Contribution | 93.91 | - | - | - | - |
| Debt | 3,565.32 | 86.73 | 151.52 | 151.52 | 70.00% |
| Equity | 1,528.00 | 37.17 | 64.94 | 64.94 | 30.00% |
| **Project Cost** | **5,187.23** | **123.89** | **216.46** | **216.46** | **100.00%** |

**Commission's Analysis**

3.7.7 The Commission observed that the Petitioner has submitted higher than 30% of equity investment in the project and requested for a debt-equity ratio of 70:30. However, supporting documents with respect to the loan availed against the project such as loan agreement, disbursal, etc. were not submitted.

3.7.8 Based on the loan agreement submitted by the Petitioner in response to a query, it is observed that the Petitioner has secured a loan from REC at a debt equity ratio of 90:10 including Karian and Palchan project. The Commission has reviewed the submissions of the Petitioner viz. loan agreement, sanction letter, actual disbursal, etc. to ascertain the reason for low infusion of debt inspite of 90% approval from REC.

3.7.9 Additional submission by the Petitioner reflected that in the 42nd BOD meeting, the Board had recommended to secure additional loan to maintain the originally envisaged debt-equity ratio of 90:10. Accordingly, the Petitioner had sent a request for additional funding to the REC on 19th June, 2019.

3.7.10 In one of the responses, the Petitioner submitted that it had borrowed loan from REC in three tranches. The following table provides the disbursement details and loan amount borrowed by the Petitioner.

**Table 23: Details of Loan Borrowed (INR Lakh)**

| Particulars | Tranche I (13th Mar 2014) | Tranche II (6th Aug 2018) | Tranche III 2nd Dec 2019) | Total |
|---|---|---|---|---|
| Line | 267.53 | 233.95 | 332.13 | 833.61 |
| Sub-Station | 1,363.74 | 1,192.55 | 859.17 | 3,415.46 |
| **Total** | **1,631.27** | **1,426.5** | **1,191.30** | **4,249.07** |

3.7.11 The Petitioner in its response has clarified the following:

*"It is humbly submitted that loan taken from REC is for composite scheme of Kullu and Chamba areas. As per original scheme sanctioned by REC, HPPTCL is entitled to avail loan of Rs 115.49 Crs. but loan amounting to Rs 74.39 Crs. was drawn by HPPTCL upto May 2019. Corresponding to loan drawl of Rs 74.39 Crs. for composite scheme, loan allocated for Karian Substation and Karian-Rajera Transmission line are Rs. 25.56 Crs. and Rs. 5.01 Crs. respectively.* ***Balance amount of expenditure on composite scheme was done through own sources. In order to avail balance undrawn loan of Rs. 41.1 Crs., amount of Rs. 40 Crs. was drawn on dated 02.12.2019 which was utilized to reduce equity capitalization.*** *The apportionment against loan amount of Rs. 40 Crs. to the Karian Substation and Karian-Rajera Transmission line is Rs. 8.59Cr. and 3.32Crs. respectively."*

3.7.12 It is pertinent to mention here that the request to secure the funding was sent more than a year after the COD of the project which has resulted in different debt-equity ratio for the project at the time of commissioning vis-à-vis the actual debt-equity attained post the COD of the project as originally envisaged. Also, additional loan was drawn for retaining 90:10 debt equity for the project. This indicates initial funding through alternate funds of other projects available with the Petitioner. As the Petitioner based on its revised proposal has secured debt-equity of 90:10 for the project, the Commission has considered the same for purpose of IDC computation and ARR determination.

3.7.13 In the Petition, an amount of Rs. 93.91 lakh was reflected to be received as consumer contribution from M/s Sahu Hydro. In response to additional queries raised by the Commission, the Petitioner submitted that it has also received consumer contribution of INR 187.13 lakh from M/s Batot Hydro Power Limited towards two no. of bays at the substation. Further, INR 3.48 lakh has been received towards interest accumulated on the instalments received from the consumers. Accordingly, the Commission has considered INR 285.22 lakh towards consumer contribution and has adjusted the same in the overall capital cost.

3.7.14 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 - COD | % of Funding | Capital Cost - COD | % of Funding |
| **Transmission Line** | | | | |
| Consumer Contribution | - | - | - | - |
| Debt | - | - | 803.08 | *90.00%* |
| Equity | - | - | 89.23 | *10.00%* |
| **Sub-Total** | - | - | **892.31** | ***100.00%*** |
| **Sub-Station** | | | | |
| Consumer Contribution | - | - | 285.22 | - |
| Debt | - | - | 3,071.90 | *90.00%* |
| Equity | - | - | 341.32 | *10.00%* |
| **Sub-Total** | - | - | **3,698.44** | ***100.00%*** |
| **Line + Sub-Station** | | | | |
| Consumer Contribution | 93.91 | - | 285.22 | - |
| Debt | 3,565.32 | *70.00%* | 3,874.97 | *90.00%* |
| Equity | 1,528.00 | *30.00%* | 430.55 | *10.00%* |
| **Total Cost** | **5,187.12** | ***100.00%*** | **4,590.75** | ***100.00%*** |

**Breakup of funding into line and sub-station not provided by the Petitioner*

## 3.8 Additional Capitalisation

**Petitioner Submission**

3.8.1 The Petitioner has submitted an additional capitalisation of INR 123.89 lakh towards emergency restoration works for the transmission line which was executed in FY 2019-20 on account of heavy rainfall and flash floods occurring in February and June 2019.

3.8.2 In addition, the Petitioner has proposed additional capitalisation of INR 216.46 lakh each in FY 2020-21 and FY 2021-22 against construction of residential accommodation. The Petitioner submitted that the works are in progress and are anticipated to be completed in FY 2021-22.

**Commission's Analysis**

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

3.8.4 Against the emergency restoration works, the Petitioner submitted that on 6$^{th}$ and 7$^{th}$ February 2019, Tower No. 11 of the 220 kV Karian-Rajera line got tilted from the middle cross-arm portion due to heavy snow fall. Further, on 20$^{th}$ and 21$^{st}$ February 2019, heavy rainfall caused landslide at Tower No. 4 and Tower No. 14 which resulted in completed damage of Tower No. 4 and sinking of 2 stubs of Tower No. 14. Accordingly, restoration work was carried out by the Petitioner. However, 220 kV Karian-Rajera transmission line was again hit by flash flood on 12th June, 2016, which caused huge damage to Tower No. 16 and 17 of the transmission line. The Petitioner has provided the supporting documents against its claim viz. cost estimate, approvals etc. Accordingly, the Commission approves the claim of the Petitioner on this account. The cost towards the same shall be reviewed at the time of true-up. However, the Commission has serious concerns over the quality of towers and workmanship undertaken under the contract resulting in such damage and requirement for additional costs at such early stage. The Petitioner is directed to undertake adequate insurance against the assets failing which the Commission will be constrained to allow any additional capitalization towards any subsequent damage.

3.8.5 Further, with respect to the construction of residential quarters, the Petitioner has submitted that the work is in progress and is expected to complete in FY 2021-22. As the Board had approved the cost for residential quarters during the 42nd BOD meeting dated 24th May, 2019, the Commission provisionally approves the same to be capitalised in the FY 2021-22 at an estimated cost of INR 432.92 lakh equivalent to that approved in the cost estimate submitted to REC.

3.8.6 The Commission further sought progress of works towards stringing of 2nd circuit on existing transmission line. The Petitioner in response has submitted that the works have been completed in FY 2020-21, however, the actual cost has not been received.

3.8.7 Although, the Petitioner has not claimed the same in the Petition but submissions of the Petitioner in reply to the deficiency letter and owing to the fact that the same has been completed in FY 2020-21, the Commission provisionally approves INR 239.16 lakh as additional capex for stringing of second circuit in the FY 2020-21. The same shall be considered based on actuals at the time of true-up based on prudence-check.

3.8.8 Accordingly, the year-wise 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 | | | Approved | | |
|---|---|---|---|---|---|---|
| | FY20 | FY21 | FY22 | FY20 | FY21 | FY22 |
| Emergency Restoration Works | 123.89 | - | - | 123.89 | - | - |
| Stringing of 2nd circuit on exiting line | - | - | - | - | 239.16 | - |
| Construction of residential accommodation | - | 216.46 | 216.46 | - | - | 432.92 |
| **Total** | **123.89** | **216.46** | **216.46** | **123.89** | **239.16** | **432.92** |

3.8.9 The funding of the above approved additional capitalization has been considered as per the overall approved funding of the project i.e. 90:10

debt:equity in accordance with the funding provided by REC. 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 Capitalisation | | | % of Funding |
|---|---|---|---|---|
| | FY20 | FY21 | FY22 | |
| **Transmission Line** | | | | |
| Consumer Contribution | - | - | - | - |
| Debt | 111.50 | 215.24 | - | *90.00%* |
| Equity | 12.39 | 23.92 | - | *10.00%* |
| **Sub-Total** | **123.89** | **239.16** | - | ***100.00%*** |
| **Sub-Station** | | | | |
| Consumer Contribution | - | - | - | - |
| Debt | - | - | 389.63 | *90.00%* |
| Equity | - | - | 43.29 | *10.00%* |
| **Sub-Total** | **-** | **-** | **432.92** | ***100.00%*** |
| **Line + Sub-Station** | | | | |
| Consumer Contribution | - | - | - | - |
| Debt | 111.50 | 215.24 | 389.63 | *90.00%* |
| Equity | 12.39 | 23.92 | 43.29 | *10.00%* |
| **Total Cost** | **123.89** | **239.16** | **432.92** | ***100.00%*** |

# 4. Approval of ARR and Tariff

## 4.1 Background

4.1.1 The Petitioner has proposed projections for FY 2018-19 to FY 2023-24, in accordance with the HPERC MYT 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 MYT Transmission Regulations 2011, Capital cost certificate by statutory auditor, CERC 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 Karian-Rajera line and Karian 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 MYT 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 Regulations, the depreciation for each year has been estimated as shown in the following table:

**Table 27: Depreciation claimed by Petitioner (INR Lakh)**

| Particulars | FY19 | FY20 | FY21 | FY22 | FY23 | FY24 |
|---|---|---|---|---|---|---|
| Opening GFA | 5,187.23 | 5,093.32 | 5,217.21 | 5,433.67 | 5,650.13 | 5,650.13 |
| Addition | - | 123.89 | 216.46 | 216.46 | 0.00 | 0.00 |
| Closing GFA | 5,187.23 | 5,217.21 | 5,433.67 | 5,650.13 | 5,650.13 | 5,650.13 |
| Average GFA | 5,187.23 | 5,155.27 | 5,325.44 | 5,541.90 | 5,650.13 | 5,650.13 |
| Less: Consumer Contribution | 93.91 | - | - | - | - | - |
| Average GFA less CC | 5,093.32 | 5,155.27 | 5,325.44 | 5,541.90 | 5,650.13 | 5,650.13 |
| Less: Freehold Land | 138.88 | 138.88 | 138.88 | 138.88 | 138.88 | 138.88 |
| Depreciable Value | 4,954.44 | 5,016.39 | 5,186.57 | 5,403.03 | 5,511.26 | 5,511.26 |
| **Depreciation** | **217.46** | **248.24** | **257.61** | **264.84** | **268.45** | **268.45** |

*Depreciation expense pro-rated for FY 2018-19 based on proposed COD (12th May, 2018)*

**Commission's Analysis**

4.2.3 The Commission has approved the depreciation in line with provisions of the Regulation 23 of the HPERC MYT Transmission Regulations 2011 pronounced 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 Commission has arrived on Gross Fixed Assets (GFA) for each year based on the capital cost and year wise capitalisation approved in the previous Chapter.

4.2.5 The Commission has determined the weighted average depreciation rate based on the asset wise breakup provided by the Petitioner. Accordingly, the weighted average depreciation rate has been considered for the purpose of estimation of depreciation for each year. The actual depreciation shall be allowed at the weighted average depreciation rates as per norms approved in the HPERC MYT Transmission Regulations 2011 at the time of true-up.

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

**Table 28: Depreciation approved by Commission (INR Lakh)**

| Particulars | FY19 | FY20 | FY21 | FY22 | FY23 | FY24 |
|---|---|---|---|---|---|---|
| GFA as on COD | 4,590.75 | | | | | |
| Less: Consumer Contribution | 285.22 | | | | | |
| Less: Freehold Land | 138.88 | | | | | |
| Depreciable Opening GFA | 4,166.65 | 4,166.65 | 4,290.54 | 4,529.70 | 4,962.62 | 4,962.62 |
| Addition | - | 123.89 | 239.16 | 432.92 | - | - |
| Depreciable Value | 4,166.65 | 4,290.54 | 4,529.70 | 4,962.62 | 4,962.62 | 4,962.62 |
| Rate of Depreciation | 4.93% | 4.93% | 4.93% | 4.93% | 4.93% | 4.93% |
| **Depreciation** | **182.28** | **208.39** | **217.34** | **233.90** | **244.57** | **244.57** |

*Depreciation expense pro-rated for 324 days for FY 2018-19 based on COD (i.e. 12th May, 2018)*

## 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 MYT Transmission Regulations 2011 and its subsequent amendments.

4.3.2 The Petitioner has claimed the interest on loan as per the weighted average rate of interest on the loan borrowed against the line and sub-station from REC. The Petitioner has considered repayment of loan equivalent to the depreciation proposed for the year. The computation of Interest on Loan has been provided in the following table:

**Table 29: Interest on Loan claimed by Petitioner (INR Lakh)**

| Particulars | FY19 | FY20 | FY21 | FY22 | FY23 | FY24 |
|---|---|---|---|---|---|---|
| Opening Balance | 3,565.32 | 3,360.10 | 3,312.64 | 3,326.65 | 3,335.14 | 3,187.47 |
| Addition | - | 86.73 | 151.52 | 151.52 | - | - |
| Repayment | 205.23 | 134.19 | 137.50 | 143.04 | 147.67 | 145.85 |
| Closing Balance | 3,360.10 | 3,312.64 | 3,326.65 | 3,335.14 | 3,187.47 | 3,041.61 |
| Rate of Interest (%) | 12.45% | 12.45% | 12.45% | 12.45% | 12.45% | 12.45% |
| **Interest on Loan** | **382.80** | **415.51** | **413.43** | **414.83** | **406.16** | **387.88** |

*Interest on Loan pro-rated for FY 2018-19 based on proposed COD (12th May, 2018)*

**Commission's Analysis**

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

4.3.4 Regulation 20 of the HPERC MYT 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."*

4.3.5 As discussed earlier, the terms of loan contains an interest rate reset clause after a period of three years. The first instalment of loan was drawn in March 2014. Subsequently, the rate was reset from 12.25% to 11.50% in March 2017. The Petitioner has also borrowed an additional loan in August, 2018 and December, 2019 respectively at interest rate of 10.50%.

4.3.6 Accordingly, the Commission has determined the weighted average interest rate for the FY 2018-19 and FY 2019-20 at as both the rates of 12.25% and 11.50% were applicable during these years. From FY 2020-21 onwards the Commission has considered the rate of 10.50% as applicable in accordance with the terms and conditions of the loan.

4.3.7 The Commission has approved the Interest on Loan in accordance with the HPERC MYT 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.

4.3.8 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 | FY19 | FY20 | FY21 | FY22 | FY23 | FY24 |
|---|---|---|---|---|---|---|
| Opening Balance | 3,874.97 | 3,692.70 | 3,595.81 | 3,593.71 | 3,749.44 | 3,504.87 |
| Addition | - | 111.50 | 215.24 | 389.63 | - | - |
| Repayment | 182.28 | 208.39 | 217.34 | 233.90 | 244.57 | 244.57 |
| Closing Balance | 3,692.70 | 3,595.81 | 3,593.71 | 3,749.44 | 3,504.87 | 3,260.30 |
| Rate of Interest (%) | 11.03% | 11.03% | 10.50% | 10.50% | 10.50% | 10.50% |
| **Interest on Loan** | **370.59** | **402.09** | **377.45** | **385.52** | **380.85** | **355.17** |

*Interest on Loan pro-rated for 324 days for FY 2018-19 based on COD (i.e. 12th May, 2018)*

## 4.4 Return on Equity

### Petitioner Submission

4.4.1 The Petitioner has submitted that normative equity of INR 1,528 lakh has been infused till the CoD of the project. The Petitioner has considered prevalent Corporate Tax Rate of 29.12% and has grossed up allowable RoE of 15.50% to derive at the pre-tax RoE of 21.87%.

4.4.2 Further, additional capitalisation during each year has been considered at a debt equity ratio of 70:30.

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 Lakh)**

| Particulars | FY19 | FY20 | FY21 | FY22 | FY23 | FY24 |
|---|---|---|---|---|---|---|
| Opening Equity | 1,528.00 | 1,528.00 | 1,565.16 | 1,630.10 | 1,695.04 | 1,695.04 |
| Addition | - | 37.17 | 64.94 | 64.94 | - | - |
| Closing Equity | 1,528.00 | 1,565.16 | 1,630.10 | 1,695.04 | 1,695.04 | 1,695.04 |
| **Average Equity** | **1,528.00** | **1,546.58** | **1,597.63** | **1,662.57** | **1,695.04** | **1,695.04** |
| RoE (%) | 15.50% | 21.87% | 21.87% | 21.87% | 21.87% | 21.87% |
| **Return on Equity** | **210.24** | **338.21** | **349.37** | **363.57** | **370.67** | **370.67** |

*Return on Equity pro-rated for FY 2018-19 based on proposed COD (12th May, 2018)*

### Commission's Analysis

4.4.4 Regulation 19 of the HPERC MYT 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 section '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. It is observed that the Petitioner has submitted tax liability of zero during past periods.

4.4.7 Based on the above, 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 | FY19 | FY20 | FY21 | FY22 | FY23 | FY24 |
|---|---|---|---|---|---|---|
| Opening Equity | 430.55 | 430.55 | 442.94 | 466.86 | 510.15 | 510.15 |
| Addition | - | 12.39 | 23.92 | 43.29 | - | - |
| Closing Equity | 430.55 | 442.94 | 466.86 | 510.15 | 510.15 | 510.15 |
| RoE (%) | 15.50% | 15.50% | 15.50% | 15.50% | 15.50% | 15.50% |
| **Return on Equity** | **59.24** | **67.70** | **70.51** | **75.72** | **79.07** | **79.07** |

*Return on Equity pro-rated for 324 days for FY 2018-19 based on COD (i.e. 12th May, 2018)*

## 4.5 O&M Expenses

**Petitioner Submission**

4.5.1 The Petitioner submitted that as per HPERC MYT 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&Mn = R&Mn + EMPn + A&Gn : Where –*

*'EMPn' = [(EMPn-1) x (1+Gn) x (CPIinflation)] + Provision (Emp);*

*'A&Gn' = [(A&Gn-1) x (WPIinflation)] + Provision(A&G);*

*'R&Mn' = 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;*

*'EMPn' – 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&Gn' – 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&Mn' – Repair and Maintenance costs of the transmission licensee for the nth year;*

*'GFAn-1' – Gross Fixed Asset of the transmission licensee for the n-1th year;*

*'Gn' - is a growth factor for the nth year. Value of Gn 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 further submitted that the project has achieved commercial operation in FY 2018-19 and actual O&M expenses has been considered as O&M expenses for FY 2018-19. Further, R&M expenses have been considered based on the k factor submitted in the MYT petition of HPPTCL before the Commission and GFA as per actual cost of the project.

4.5.3 From FY 2019-20 onwards the Petitioner has used the actual expenses for FY 2018-19 as base and determined the Employee, A&G and R&M expenses in accordance with the HPERC MYT Transmission Regulations 2011.

4.5.4 The Petitioner has further submitted that it is planning to comprehensively insure all the transmission infrastructure from all damages caused due to act of God, fire, theft etc. and intends to take comprehensive insurance of all the assets. And accordingly, the cost towards insurance has been considered at the rate of 0.30% of the asset value insured and the same has been considered as part of provisions.

4.5.5 The Petitioner also intends to train its manpower and therefore the training cost of seven mandays per employee per year has been factored in at the nominal rate of Rs. 4000/person/day of the number of employees. The Petitioner has further included Tariff filing fees of INR 0.15 Cr. and Consultancy charges of INR 0.03 Cr. in the A&G Expenses for FY 2020-21.

4.5.6 The following table provides the O&M expenses claimed by the Petitioner:

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

| Particulars | FY19 | FY20 | FY21 | FY22 | FY23 | FY24 |
|---|---|---|---|---|---|---|
| Employee Expenses | 51.56 | 68.19 | 71.06 | 74.06 | 77.18 | 80.43 |
| A&G Expenses | 10.60 | 29.69 | 48.22 | 30.9 | 31.99 | 33.09 |
| R&M Expenses | 82.50 | 92.94 | 95.16 | 99.04 | 102.92 | 102.92 |
| **O&M Expenses** | **144.65** | **190.82** | **214.44** | **204.00** | **212.09** | **216.44** |

1. *O&M Expense pro-rated for FY 2018-19 based on proposed COD (12$^{th}$ May, 2018)*
2. *Expense towards Petition filing, insurance, training and consultancy included in A&G Expenses*

**Commission's Analysis**

4.5.7 The Commission has reviewed the submissions of the Petitioner in detail. In reply to one of the queries raised by the Commission with regards to the actual audited O&M expenses incurred by the Petitioner, the Petitioner submitted that O&M expenses of INR 69.28 lakh was incurred in FY 2018-19 from COD till 31$^{st}$ March, 2019. The Petitioner, however, for the subsequent years has demanded to retain the O&M expenses as submitted in the Petition.

4.5.8 The Commission observes that the O&M expenses for the first year of operation 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 Tariff Regulations, 2019 for the purpose of year wise estimation of O&M expenses for the control period.

4.5.9 Further, information was sought on deployment of SCADA based operations in sub-station to optimise the O&M expenses. The Petitioner submitted that operations are scheduled through Joint Control Centre (JCC), the construction of which is expected to complete by March 2022. The same will benefit by way of optimising the manpower costs. However, the Petitioner submitted that even after commencement of SCADA, maintenance staff would be required to be deployed at the sub-station for smooth operations.

4.5.10 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 | FY19 | FY20 | FY21 | FY22 | FY23 | FY24 |
|---|---|---|---|---|---|---|---|
| **Transmission Line** | | | | | | | |
| Double Circuit (Single Conductor) | INR Lakh/Km | 0.36 | 0.38 | 0.39 | 0.40 | 0.42 | 0.43 |
| **Sub-station** | | | | | | | |
| 220 kV | Lakh/bay | 21.75 | 22.51 | 23.30 | 24.12 | 24.96 | 25.84 |
| 132 kV and below | Lakh/bay | 15.53 | 16.08 | 16.64 | 17.23 | 17.83 | 18.46 |

4.5.11 Further, the CERC Tariff Regulations, 2019 stipulates that O&M expenses for the GIS sub-station shall be allowed as worked out by multiplying 0.70 to the normative O&M expenses for bays as provided in the table above.

4.5.12 Accordingly, the Commission has approved the O&M expenses for each year. For the purpose of estimating the O&M expenses for FY 2018-19, the Commission has back calculated the norms for the year using the O&M norms of FY 2019-20 as stipulated in the CERC Tariff Regulations, 2019.

4.5.13 Any variation in O&M expenses shall be reviewed and considered at the time of true-up.

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

**Table 35: O&M Expenses approved by Commission (INR Lakh)**

| Item | Unit | FY19 | FY20 | FY21 | FY22 | FY23 | FY24 |
|---|---|---|---|---|---|---|---|
| **Transmission Line** | | | | | | | |
| Double Circuit (Single Conductor) | INR Lakh/Km | 0.36 | 0.38 | 0.39 | 0.40 | 0.42 | 0.43 |
| Line length | km | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 |

| Item | Unit | FY19 | FY20 | FY21 | FY22 | FY23 | FY24 |
|---|---|---|---|---|---|---|---|
| **O&M Expenses** | **INR Lakh** | **1.20** | **1.39** | **1.45** | **1.49** | **1.55** | **1.60** |
| **Sub-station** | | | | | | | |
| 220 kV | INR Lakh/bay | 21.75 | 22.51 | 23.30 | 24.12 | 24.96 | 25.84 |
| 132 kV and below | INR Lakh/bay | 15.53 | 16.08 | 16.64 | 17.23 | 17.83 | 18.46 |
| 220 kV Bays | No. | 3 | 3 | 3 | 3 | 3 | 3 |
| 132 kV and below bays | No. | 9 | 9 | 9 | 9 | 9 | 9 |
| **O&M Expenses*** | **INR Lakh** | **127.41** | **148.58** | **153.76** | **159.20** | **164.75** | **170.56** |
| **Total O&M Expenses** | **INR Lakh** | **128.61** | **149.97** | **155.21** | **160.70** | **166.30** | **172.16** |

**O&M Expenses for GIS sub-station determined by multiplying by factor of 0.70*
*O&M Expenses pro-rated for 324 days for FY 2018-19 based on COD (i.e. 12th May, 2018)*

4.5.15 The CERC norms for O&M expenditure doesn't 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.

4.5.16 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 MYT 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 1st April, 2020 plus 300 basis points. For FY 2018-19 average SBI Base Rate for the period from April 2018 to March 2019 plus 350 basis points has been considered in accordance with the HPERC MYT Transmission Regulations 2011.

4.6.3 In accordance with the above regulations the interest on working capital claimed is shown as follows:

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

| Particulars | FY19 | FY20 | FY21 | FY22 | FY23 | FY24 |
|---|---|---|---|---|---|---|
| O&M Expenses for 1 month | 13.58 | 15.90 | 17.87 | 17.00 | 17.67 | 18.04 |
| Maintenance Spares (at 15% monthly O&M Expenses) | 3.10 | 2.39 | 2.68 | 2.55 | 2.65 | 2.71 |
| Receivables for 2 months | 183.48 | 202.76 | 209.94 | 212.02 | 213.76 | 211.40 |
| **Total Working Capital** | **200.16** | **221.04** | **230.49** | **231.57** | **234.08** | **232.14** |

| Particulars | FY19 | FY20 | FY21 | FY22 | FY23 | FY24 |
|---|---|---|---|---|---|---|
| Interest Rate (%) | 12.43% | 10.75% | 10.75% | 10.75% | 10.75% | 10.75% |
| **Interest on Working Capital** | **22.08** | **23.76** | **24.78** | **24.89** | **25.16** | **24.96** |

*Interest on Working Capital pro-rated for FY 2018-19 based on proposed COD (12th May, 2018)*

**Commission's Analysis**

4.6.4 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 & 22 of the HPERC MYT Transmission Regulations 2011.

4.6.5 The relevant clause of the regulation is pronounced 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."*

4.6.6 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 MYT Transmission Regulations 2011 as applicable for FY 2018-19.

4.6.7 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 MYT 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 | FY19 | FY20 | FY21 | FY22 | FY23 | FY24 |
|---|---|---|---|---|---|---|
| O&M Expenses for 1 month | 12.07 | 12.50 | 12.93 | 13.39 | 13.86 | 14.35 |

| Particulars | FY19 | FY20 | FY21 | FY22 | FY23 | FY24 |
|---|---|---|---|---|---|---|
| Maintenance Spares (at 15% monthly O&M Expenses) | 1.81 | 1.87 | 1.94 | 2.01 | 2.08 | 2.15 |
| Receivables for 2 months | 152.84 | 151.96 | 150.82 | 156.99 | 159.94 | 157.02 |
| **Total Working Capital** | **172.62** | **172.43** | **172.01** | **178.93** | **182.65** | **180.53** |
| Interest Rate (%) | 12.20% | 11.55% | 10.75% | 10.00% | 10.00% | 10.00% |
| **Interest on Working Capital** | **18.69** | **19.92** | **18.49** | **17.89** | **18.26** | **18.05** |

*Interest on Working Capital pro-rated for 324 days for FY 2018-19 based on COD (i.e. 12th May, 2018)*

## 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 | FY19 | FY20 | FY21 | FY22 | FY23 | FY24 |
|---|---|---|---|---|---|---|
| Depreciation | 217.46 | 248.24 | 257.61 | 264.84 | 268.45 | 268.45 |
| Interest on Loan | 382.80 | 415.51 | 413.43 | 414.83 | 406.16 | 387.88 |
| Return on Equity | 210.24 | 338.21 | 349.37 | 363.57 | 370.67 | 370.67 |
| O&M Expenses | 144.65 | 190.82 | 214.44 | 204.00 | 212.09 | 216.44 |
| Interest on Working Capital | 22.08 | 23.76 | 24.78 | 24.89 | 25.16 | 24.96 |
| **Aggregate Revenue Requirement** | **977.23** | **1,216.54** | **1,259.62** | **1,272.13** | **1,282.54** | **1,268.40** |

**Commission's Analysis**

4.7.2 Based on the discussions in sections above, 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 | FY19 | FY20 | FY21 | FY22 | FY23 | FY24 |
|---|---|---|---|---|---|---|
| Depreciation | 182.28 | 208.39 | 217.34 | 233.90 | 244.57 | 244.57 |
| Interest on Loan | 370.59 | 402.09 | 377.45 | 385.52 | 380.85 | 355.17 |
| Return on Equity | 59.24 | 67.70 | 70.51 | 75.72 | 79.07 | 79.07 |
| O&M Expenses | 128.61 | 149.97 | 155.21 | 160.70 | 166.30 | 172.16 |
| Interest on Working Capital | 18.69 | 19.92 | 18.49 | 17.89 | 18.26 | 18.05 |
| **Aggregate Revenue** | **814.02** | **911.74** | **904.90** | **941.95** | **959.66** | **942.13** |

| Particulars | FY19 | FY20 | FY21 | FY22 | FY23 | FY24 |
|---|---|---|---|---|---|---|
| **Requirement** | | | | | | |

## 4.8 Transmission Charges

**Petitioner Submission**

4.8.1 The Petitioner has submitted that the line has been declared as ISTS hence the Petitioner shall make an application before the CERC for recovery of Aggregate Revenue Requirement (ARR) under the POC mechanism.

**Commission's Analysis**

4.8.2 As discussed in the section 'Energy Flow and Nature of the Asset' in Chapter 3, the project has already been certified by NRPC as ISTS for FY 2019-20 with 98% utilization by other states.

4.8.3 Further, the Petitioner has submitted that it will approach the CERC for recovery under the POC mechanism in reply to the 2$^{nd}$ deficiency letter shared with the Petitioner. The relevant extract of submission has been provided as follows:

*"As per the established procedure to determine the nature of an asset(s), actual data of second and fourth quarter has to be studied to declare the asset as ISTS asset by NRPC. Accordingly, considering the data of second and fourth quarter of FY 2018-19, the instant assets have been declared as ISTS assets for inclusion in POC for FY 2019-20 by the NRPC in 45$^{th}$ and NRPC Meeting held on 02.09.2020. It is humbly submitted that since the data for FY 2018-19 demonstrates that the line was carrying Inter-State Power, once the tariff is approved, the Petitioner shall approach the Hon'ble CERC for inclusion of transmission charges for both FY 2018-19 and FY 2019-20."*

4.8.4 Accordingly, the Petitioner is directed to file suitable application before the CERC for recovery of ARR approved in this Order for the period FY 2018-19 to FY 2023-24 under the POC mechanism. In case of laxity or failure to pursue the inclusion of the ARR in PoC mechanism, the Commission shall not allow recovery of the ARR from HPSEBL. In the event the line is not declared as inter-state in any of the future years, appropriate application should be made before the Commission along with justification and evidence for recovery of transmission charges from HPSEBL.