

BEFORE
THE CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

IN THE MATTER OF:

Petition for truing up of Transmission tariff for 2019-24 and determination of transmission tariff for 2024-29 tariff block for 400 kV Substation Srinagar (Asset-I: 400/220 kV 02x03x105 ICT, 220/132 kV 02x160 MVA ICT along with bays and Asset-II: 1x80 MVar Reactor) (Deemed ISTS) under UITP Scheme as per Hon'ble Central Electricity Regulatory Commission's order dated 31 January 2013 against Petition number 133/ MP/2012 in the Northern Region under Section 62 read with Section 79 (1) (d) of the Electricity Act, 2003 and under Regulation 15 (1) (a) and Regulation 23 of Central Electricity Regulatory Commission (Conduct of Business) Regulations, 2023 read with Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 and Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2024.

Petition No.....

TARIFF BLOCK: 2019-24 and 2024-29

POWER TRANSMISSION CORPORATION OF UTTARAKHAND LIMITED

HEADQUARTER & REGISTERED OFFICE

**VIDYUT BHAWAN, NEAR ISBT CROSSING, SAHARANPUR ROAD, MAJRA,
DEHRADUN-248002**


(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

**BEFORE
THE CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No.:.....

IN THE MATTER OF: Petition for truing up of Transmission tariff for 2019-24 and determination of transmission tariff for 2024-29 tariff block for 400 kV Substation Srinagar (Asset-I: 400/220 kV 02x03x105 ICT, 220/132 kV 02x160 MVA ICT along with bays and Asset-II: 1x80 MVar Reactor) (Deemed ISTS) under UITP Scheme as per Hon'ble Central Electricity Regulatory Commission's order dated 31 January 2013 against Petition number 133/ MP/2012 in the Northern Region under Section 62 read with Section 79 (1) (d) of the Electricity Act, 2003 and under Regulation 15 (1) (a) and Regulation 23 of Central Electricity Regulatory Commission (Conduct of Business) Regulations, 2023 read with Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 and Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2024.

Power Transmission Corporation of Uttarakhand Ltd.,
Vidyut Bhawan, Near ISBT Crossing,
Saharanpur Road, Majra,
Dehradun – 248002, Uttarakhand

... Petitioner

Power Grid Corporation of India Ltd (PGCIL),
Corporate Office: Saudamini, Plot No.2, Sector 29,
Near IFFCO Chowk, Gurgaon (Haryana) – 122001
And Others

... Respondents



(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

INDEX

Sl. No.	Description	Enclosure No.	Page No.
1	Index	-	3
2	Letter for registration	-	4-5
3	Memo of Parties	-	6-8
4	Petition for true-up for 2019-24 period and determination of Tariff for 2024-29 period	-	9-32
5	Affidavit, Letter of Authorization	-	33-35
6	Hon'ble Commission's Order dated 27.01.2026 in 186/TT/2024	Encl.-1	36-140
7	Auditors Certificate	Encl.-2	141-142
8	Liability Flow Statement	Encl.-3	143-144
9	Annexures related to Technical Justification	Encl.-4	145-224
10	Trued up Tariff Forms (2019-24)	Encl.-5	225-295
11	Tariff Forms (2024-29)	Encl.-6	296-314
12	Form-1 and Dispatch proof	Encl.-7	



PETITIONER

Power Transmission Corporation of Uttarakhand Ltd.

(Er. ILLA CHANDRA)

**Chief Engineer
(Commercial & Regulatory)
PTCUL**



**BEFORE
THE CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No.:.....

IN THE MATTER OF:

Petition for truing up of Transmission tariff for 2019-24 and determination of transmission tariff for 2024-29 tariff block for 400 kV Substation Srinagar (Asset-I: 400/220 kV 02x03x105 ICT, 220/132 kV 02x160 MVA ICT along with bays and Asset-II: 1x80 MVar Reactor) (Deemed ISTS) under UITP Scheme as per Hon'ble Central Electricity Regulatory Commission's order dated 31 January 2013 against Petition number 133/ MP/2012 in the Northern Region under Section 62 read with Section 79 (1) (d) of the Electricity Act, 2003 and under Regulation 15 (1) (a) and Regulation 23 of Central Electricity Regulatory Commission (Conduct of Business) Regulations, 2023 read with Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 and Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2024.

Power Transmission Corporation of Uttarakhand Ltd.,

... Petitioner

Vidyut Bhawan, Near ISBT Crossing,
Saharanpur Road, Majra,
Dehradun – 248002, Uttarakhand

Power Grid Corporation of India Ltd (PGCIL),

... Respondents

Corporate Office: Saudamini, Plot No.2, Sector 29,
Near IFFCO Chowk, Gurgaon (Haryana) – 122001

And Others

To,

The Secretary

Central Electricity Regulatory Commission
New Delhi

Sir,

The present tariff Petition is filed under Section 62 read with Section 79 (1) (d) of the Electricity Act, 2003 and under Regulation 15 (1) (a) and Regulation 23 of Central Electricity Regulatory Commission (Conduct of Business) Regulations, 2023 read with


(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 and Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2024 and same may please be registered and taken on record by the Hon'ble Commission.



(Er. ILPATIYERA)

Power Transmission Corporation of Uttarakhand Ltd.
(Chief Engineer
(Commercial & Regulatory)
PTCUL



**BEFORE
THE CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No.

IN THE MATTER OF:

Petition for truing up of Transmission tariff for 2019-24 and determination of transmission tariff for 2024-29 tariff block for 400 kV Substation Srinagar (Asset-I: 400/220 kV 02x03x105 ICT, 220/132 kV 02x160 MVA ICT along with bays and Asset-II: 1x80 MVA Reactor) (Deemed ISTS) under UITP Scheme as per Hon'ble Central Electricity Regulatory Commission's order dated 31 January 2013 against Petition number 133/ MP/2012 in the Northern Region under Section 62 read with Section 79 (1) (d) of the Electricity Act, 2003 and under Regulation 15 (1) (a) and Regulation 23 of Central Electricity Regulatory Commission (Conduct of Business) Regulations, 2023 read with Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 and Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2024.

Power Transmission Corporation of Uttarakhand Ltd.,

... Petitioner

Vidyut Bhawan, Near ISBT Crossing,
Saharanpur Road, Majra,
Dehradun – 248002, Uttarakhand

Power Grid Corporation of India Ltd (PGCIL),

... Respondents

Corporate Office: Saudamini, Plot No.2, Sector 29,
Near IFFCO Chowk, Gurgaon (Haryana) – 122001

And Others

MEMO OF PARTIES

Power Transmission Corporation of Uttarakhand Ltd.,

... Petitioner

VERSUS

Northern Region

....Respondents

1. Power Grid Corporation of India Ltd

“Saudamini”, Plot No.2, Sector 29,

Near IFFCO Chowk, Gurgaon (Haryana) – 122001


(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

2. Ajmer Vidyut Vitran Nigam Limited,
Corporate Office, Vidyut Bhawan,
Panchsheel Nagar, Makarwali Road,
Ajmer-305004 (Rajasthan).
3. Jaipur Vidyut Vitran Nigam Limited,
132 kV, GSS RVPNL Sub-station Building,
Caligiri Road, Malviya Nagar,
Jaipur-302017, Rajasthan.
4. Jodhpur Vidyut Vitran Nigam Limited,
New PowerHouse, Industrial Area,
Jodhpur – 342003 (Rajasthan).
5. Himachal Pradesh State Electricity Board Limited,
Vidyut Bhawan, Kumar House Complex Building-II,
Shimla-171004.
6. Punjab State Power Corporation Limited,
The Mall, PSEB Head Office,
Patiala-147001.
7. Haryana Power Purchase Centre,
Shakti Bhawan, Sector-6.
Panchkula (Haryana) - 134109 (Haryana).
8. Jammu Kashmir Power Corporation Ltd,
220/66/33 KV Gladni SS SLDC Building
Narwal, Jammu
9. Uttar Pradesh Power Corporation Limited,
Shakti Bhawan, 14, Ashok Marg,
Lucknow- 226001 (Uttar Pradesh).


(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

10. BSES Yamuna Power Limited,
B-Block, Shakti Kiran, Bldg. (Near Karkadooma Court),
Karkardoma 2nd Floor,
New Delhi- 110092.
11. BSES Rajdhani Power Limited,
BSES Bhawan, Nehru Place,
New Delhi 110019.
12. Tata Power Delhi Distribution Ltd
33 KV Substation Building
Hudson Lane, Kingsway Camp
North Delhi-110009
13. Chandigarh Power Distribution Limited (CPDL)
4th Floor, SCO 33, 34 & 35,
SECTOR 34A, Chandigarh,
Chandigarh – 160022
14. Uttarakhand Power Corporation Limited,
Victoria Cross Vijeyta Gabar Singh Urja Bhawan,
Kanwali Road, Balliwala Chowk, Dehradun 248001, Uttarakhand.
15. North Central Railway,
Allahabad (Uttar Pradesh)- 211011.
16. New Delhi Municipal Council,
Palika Kendra, Sansad Marg,
New Delhi-110002.


PETITIONER
(Er. JLLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

Power Transmission Corporation of Uttarakhand Ltd.

BEFORE
THE CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

Petition No.:.....

IN THE MATTER OF:

Petition for truing up of Transmission tariff for 2019-24 and determination of transmission tariff for 2024-29 tariff block for 400 kV Substation Srinagar (Asset-I: 400/220 kV 02x03x105 ICT, 220/132 kV 02x160 MVA ICT along with bays and Asset-II: 1x80 MVA Reactor) (Deemed ISTS) under UITP Scheme as per Hon'ble Central Electricity Regulatory Commission's order dated 31 January 2013 against Petition number 133/ MP/2012 in the Northern Region under Section 62 read with Section 79 (1) (d) of the Electricity Act, 2003 and under Regulation 15 (1) (a) and Regulation 23 of Central Electricity Regulatory Commission (Conduct of Business) Regulations, 2023 read with Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 and Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2024.

Power Transmission Corporation of Uttarakhand Ltd.,
VidyutBhawan, Near ISBT Crossing,
Saharanpur Road, Majra,
Dehradun – 248002, Uttarakhand

... Petitioner

Vs

Power Grid Corporation of India Ltd. (PGCIL),
"Saudamini", Plot No.2, Sector 29,
Near IFFCO Chowk, Gurgaon (Haryana) – 122001
And Others

... Respondents

MOST RESPECTFULLY SHOWETH:

1. Brief Background of the Petitioner

The Petitioner herein, Power Transmission Corporation of Uttarakhand Ltd. (hereinafter referred to as 'PTCUL' or 'The Petitioner') is a company under the Companies Act, 1956 with its Registered Office at VidyutBhawan, Dehradun 248002,


(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

Distt. - Dehradun, Uttarakhand. In exercise of powers conferred under sub-section 4 of Section 131 of the Electricity Act 2003, the Government of Uttaranchal through transfer scheme dated 31st May 2004 first vested all the interests, rights and liabilities related to Power Transmission and Load Dispatch of "Uttaranchal Power Corporation Limited" into itself and thereafter, re-vested them into a new company, i.e. "Power Transmission Corporation of Uttaranchal Limited", now "Power Transmission Corporation of Uttarakhand Limited" after change of name of the State. The State Government, further vide another notification dated 31st May 2004, declared Power Transmission Corporation of Uttarakhand as the State Transmission Utility (STU) responsible for undertaking, amongst others, the following main functions:

- a. To undertake transmission of electricity through intra-state transmission system
- b. To discharge all functions of planning and co-ordination relating to intra-state transmission system
- c. To ensure development of an efficient, coordinated and economical system of intra-state transmission lines
- d. To provide open access

A new company in the State was thus created to look after the functions of intra-state transmission and load dispatch with effect from May 31, 2004. In view of re-structure functions of UPCL and creation of a separate company for looking after the transmission of power and related activities, the Uttarakhand Electricity Regulatory Commission (hereinafter referred to as the Hon'ble Commission "of the UERC or the "State Commission" or the "Commission") amended the earlier "transmission and Bulk Supply License" granted to UPCL and transmission license was vested on PTCUL for carrying out transmission related works in the state vide Commission's Order dated June 9, 2004.

2. Brief Historical background of Uttarakhand Integrated Transmission Project

- a. Power sector expansion is one of the key pillars of economic development in the state of Uttarakhand. The Government of Uttarakhand ("GoU") along with the Ministry of Power ("MoP") and CEA had defined an investment program for development of generation, transmission, and distribution of power in the state. The financing plan for the program involves inter alia, international financial institutions such as Asian Development Bank (ADB).


(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

- b. Accordingly, the GoU identified that hydro potential of Uttarakhand exists along four major river basins namely Alakananda basin, Bhagirathi Basin, Yamuna basin and Sharda basin. An integrated transmission system was planned in Uttarakhand under the aegis of the CEA to evacuate power from these new generation capacities being developed in the four major basins in the region having regard to the environmental considerations and the difficulty in developing separate transmission systems for the generators situated in each of the basins. Hydro power potential is river basin specific and both generation and transmission need to be developed on an integrated basin approach. The Uttarakhand Integrated Transmission Project (UITP) was conceived as a feasible, economic, and optimal plan for development of transmission system to pool power from several hydro generating plants in the state to designated pooling points within Uttarakhand, from where inter-state network could be developed to convey such power to beneficiaries outside the state. The GoU signed MOUs with various central sector generating companies and IPPs for development of various hydro generation projects in the different basins in the state. It was therefore essential for the Petitioner to develop a reliable, optimal and cost-effective transmission network for evacuation of power from the generating stations which are primarily Central Sector Generating Stations or private sector projects located in the river basins. This required strengthening and augmentation of the intrastate and inter-state transmission systems for Uttarakhand. The Uttarakhand Integrated Transmission Project ("UITP") was conceived to develop an optimal evacuation system for evacuating power from the cluster of hydroelectric generating stations, like Tapovan Vishnugad (520 MW), Lata Tapovan (171 MW), Pilpalkoti HEP (444 MW), Badrinath HEP (300 MW), Bawla Nandprayag (300 MW), Nandprayag Langrasu (100 MW), Devsari (252 MW) etc. The UITP was proposed envisaging power evacuation system for 5406.5 MW of generation projects that are proposed to be developed in the aforementioned four major river basins over a period of time it is envisaged that about 15% of the power from the various generating projects that have already been approved (including CSGS and private sector projects) would be available for the state of Uttarakhand (including free power) and balance about 85% power would be sold by the generators outside the state.
- c. PTCUL had filed a Petition (Petition number 133/ MP/2012) before the Central Electricity Regulatory Commission (hereinafter referred to as 'CERC' or the


(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

'Hon'ble Commission') for appropriate declaration under section 79(1) (c) of the Electricity Act 2003 read with regulations 2(1) (k), 20 & 21 of the CERC (Sharing of Inter State Transmission Charges and Losses) Regulations, 2010 for declaring the UITP being developed by the Petitioner as deemed inter-State Transmission System for the purpose of such regulations, besides other matters. The Hon'ble Commission vide CERC Order dated 31 January 2013 ruled in favor of the Petitioner, thus declaring the UITP as deemed inter-State Transmission System.

- d. It is important to note that the UITP was ring fenced from state transmission projects and expenses incurred on these projects have not been included in the ARR of the Petitioner.
- e. As a transmission licensee, in accordance with Section 14 of the Electricity Act 2003, PTCUL is required to comply with the conditions as laid down in the provisions of the Electricity Act 2003, and the rules prescribed by the CERC (Terms and Conditions of Tariff) Regulations, 2014 and CERC (Terms and Conditions of Tariff) Regulations, 2019 as amended by the Commission from time to time.
- f. The Hon'ble Commission has notified the CERC (Terms and Conditions of Tariff) Regulations, 2024, in accordance with which tariff of transmission projects shall be determined. These Regulations have come into force on 1st April, 2024 and shall remain in force for a period of 5 years, unless reviewed earlier or extended by the Hon'ble Commission.
- g. In compliance to the above, the Petitioner had filed the Petition (Petition No. 80/TT/2016) in the matter of Approval of Annual Fixed Cost and determination of tariff for the licensed transmission business for the financial year FY 2016-17 to FY 2018-19 for 400 kV Srinagar Sub-station and the Hon'ble Commission has approved the tariff from Date of Commercial Operation to FY 2018-19 vide Order dated 9.11.2021.
- h. Further, the Petitioner had filed the Petition (Petition No. 186/TT/2024) in the matter of true-up of Annual Fixed Cost for 2014-19 tariff period and determination of tariff for 2019-24 tariff period for the licensed transmission business for 400 kV Srinagar Sub-station and the Hon'ble Commission has approved the tariff vide order dated 27.01.2026.
- i. As a transmission licensee, in accordance with Section 14 of the Electricity Act 2003, PTCUL is required to comply with the conditions as laid down in the



(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL



provisions of the Electricity Act 2003, and the rules prescribed by the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2024.

- j. This petition is for the consideration of the Hon'ble commission for truing up of transmission tariff for the 2019-24 period and the determination of transmission tariff for the 2024-29 for 400 kV Substation Srinagar (Asset-I: 400/220 kV 02x03x105 ICT, 220/132 kV 02x160 MVA ICT along with bays (Segregated into Group A, Group B, Group C and Group D) and Asset-II: 1x80 MVAr Reactor) (Deemed ISTS) under UITP Scheme. The particulars of the said transmission system are provided below:

Asset	Group	Name of Transmission System	No. of bays	COD
Asset-I	Group A	400 kV Bays - 400/220 kV 315 MVA ICT-1 and ICT-2 along with their bays (HV side)	2	31.7.2016
		400 kV Bays - 400 kV D/C Khandukhal (Srinagar) - 80/TT/2016 GVK HEP line	2	
		220 kV Bays - 400/220 kV 315 MVA ICT-1 & ICT-2 - bays (LV side)	2	
		220 kV Bays - 220/132 kV 160 MVA ICT-1 along with its bay (HV side)	1	
	Group B	400 kV Bays - Bus Coupler Bay	1	14.10.2016
		400 kV Bays - Bus Transfer Bay	1	
		220 kV Bays - Bus Coupler Bay	1	
		220 kV Bays - Bus Transfer Bay	1	
	Group C	220 kV Bays - 220/132 kV 160 MVA ICT-2 along with its bay (HV side)	1	3.8.2016
	Group D	220 kV D/C Khandukhal (Srinagar) - Baramwari Line	2	13.11.2020
Asset-II	-	80 MVAr Bus Reactor	1	20.10.2018

That the final Transmission Tariff based on admitted capital cost as on COD and projected additional capital expenditure during 2019-24 for the instant asset of the said asset has been approved by the Hon'ble Commission vide its order dated 27.1.2026 in Petition No.: 186/TT/2024 for the tariff period 2019-24 upto 31.3.2024. Copy of the Order is enclosed as **Encl-1**. The Cost admitted by Hon'ble Commission as per the said order is given below:


(Er. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL

(Rs. In lakhs)

Assets	Capital cost allowed as on 1.4.2019/DO CO	ACE 2020-21	ACE 2021-22	ACE 2022-23	Total Estimated Completion cost allowed as on 31.3.2024
Asset-I Group-A	13405.35	191.64	-6.03	-51.82	13539.14
Asset-I Group-B	1100.92	15.77	-0.50	-4.26	1111.93
Asset-I Group-C	2686.44	38.40	-1.21	-10.38	2713.25
Asset-I Group-D	505.18	2.73	-0.23	-1.97	505.71
Asset-II	670.52	0.00	0.00	0.00	670.52

Hon'ble Commission vide order dated 27.01.2026 has approved Transmission Tariff of block 2019-24 of asset covered under Petition No. 186/TT/2024.

It is submitted that Petition No. 186/TT/2024 was filed for determination of tariff in respect of 21 bays. However, vide order passed therein, the Hon'ble Commission allowed tariff in respect of only 15 bays and directed the Petitioner to file separate petitions for determination of tariff in respect of the remaining 6 bays. Accordingly, the present Petition has been filed for determination of tariff pertaining to the aforesaid 15 bays. The Petitioner shall file separate petitions for determination of tariff in respect of the remaining 6 bays, in compliance with the directions of the Hon'ble Commission.

It is further submitted that the Petitioner has filed an appeal against order dated 27.01.2026 in Petition No. 186/TT/2024 before the Hon'ble APTEL vide DFR No. 220 of 2026 with respect to the disallowances made towards IEDC, and based on the outcome of the appeal any adjustments (if required) in the tariff shall be claimed by the petitioner.

3. TRANSMISSION TARIFF

- a. The 2019-24 truing up exercise is to be done at the time of tariff petition for next block, i.e. 2024-29 period as per regulation 13 (1) of Tariff Regulation 2019-24.

Regulation 13 (1) of Tariff Regulation 2019-24:

Quote

"The Commission shall carry out truing up exercise for the period 2019-24 along with the tariff petition filed for the next tariff period, for the following:


(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL



a) the capital expenditure including additional capital expenditure incurred up to 31.3.2024, as admitted by the Commission after prudence check at the time of truing up:

b) the capital expenditure including additional capital expenditure incurred up to 31.3.2024, on account of Force Majeure and Change in Law."

Unquote

b. In view of the above in this petition:

(i) Truing up Transmission tariff for 2019-24 block: Truing up Transmission tariff for the block 2019-24 on account of the additional capital expenditure during 2019-24 block under Regulation-13 of CERC (Terms and Conditions of Tariff) Regulations, 2019, for the tariff block 2019-24

And

(ii) Transmission tariff for 2024-29 block: Approval under Regulation 15 (1) (a) and Regulation 23 of Central Electricity Regulatory Commission (Conduct of Business) Regulations, 2023 and CERC (Terms and Conditions of Tariff) Regulations' 2024 for determination of Transmission tariff for the tariff block 2024-29 for the asset covered under this petition has been carried out.

c. That as per regulation 31(3) of CERC (Terms and Conditions of Tariff) Regulations, 2019, the Petitioner is required to adjust grossed up rate of return on equity at the end of every financial year (for the tariff period 2019-24) based on actual tax paid. The petitioner is liable to pay income tax at MAT rates.

Regulation 31 (3) of the tariff Regulation 2019-24:

Quote

"The generating company or the transmission licensee, as the case may be, shall true up the grossed up rate of return on equity at the end of every financial year based on actual tax paid together with any additional tax demand including interest thereon, duly adjusted for any refund of tax including interest received from the income tax authorities pertaining to the tariff period 2019-24 on actual gross income of any financial year. However, penalty, if any, arising on account of delay in deposit or short deposit of tax amount shall not be claimed by the generating company or the transmission licensee, as the case may be. Any under-recovery or over-recovery of grossed up rate on return on equity after truing up, shall


(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL



b) the capital expenditure including additional capital expenditure incurred up to 31.3.2024, on account of Force Majeure and Change in Law."

Unquote

b. In view of the above in this petition:

(i) Truing up Transmission tariff for 2019-24 block: Truing up Transmission tariff for the block 2019-24 on account of the additional capital expenditure during 2019-24 block under Regulation-13 of CERC (Terms and Conditions of Tariff) Regulations, 2019, for the tariff block 2019-24

And

(ii) Transmission tariff for 2024-29 block: Approval under Regulation 15 (1) (a) and Regulation 23 of Central Electricity Regulatory Commission (Conduct of Business) Regulations, 2023 and CERC (Terms and Conditions of Tariff) Regulations' 2024 for determination of Transmission tariff for the tariff block 2024-29 for the asset covered under this petition has been carried out.

c. That as per regulation 31(3) of CERC (Terms and Conditions of Tariff) Regulations, 2019, the Petitioner is required to adjust grossed up rate of return on equity at the end of every financial year (for the tariff period 2019-24) based on actual tax paid. The petitioner is liable to pay income tax at MAT rates.

Regulation 31 (3) of the tariff Regulation 2019-24:

Quote

"The generating company or the transmission licensee, as the case may be, shall true up the grossed up rate of return on equity at the end of every financial year based on actual tax paid together with any additional tax demand including interest thereon, duly adjusted for any refund of tax including interest received from the income tax authorities pertaining to the tariff period 2019-24 on actual gross income of any financial year. However, penalty, if any, arising on account of delay in deposit or short deposit of tax amount shall not be claimed by the generating company or the transmission licensee, as the case may be. Any under-recovery or over-recovery of grossed up rate on return on equity after truing up, shall


(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

be recovered or refunded to beneficiaries or the long term customers, as the case may be, on year to year basis."

Unquote

In line with above Regulation, the tariff for each year of the tariff period 2019-24 has been calculated considering the above Effective Tax percentage to arrive at Grossed up return of equity (ROE).

- d. That in the present petition, truing up of transmission tariff for the tariff block 2019-24 on account of actual additional capitalization during 2019-24 tariff block, change in tax rate as well as floating rate of interest during 2019-24 is being carried out.
- e. The opening capital cost allowed vide order dated 27.01.2026 in Petition No. 186/TT/2024 was determined on an accrual basis, as the tariff in the said Petition was computed on accrual basis. However, in the present Petition, the Additional Capital Expenditure (ACE) has been claimed on a cash basis, in accordance with the applicable CERC Regulations.



(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL



f. It is submitted that, against the Additional Capital Expenditure of ₹248.54 lakh allowed during 2019–24 vide order dated 27.01.2026 in Petition No. 186/TT/2024 towards construction of Type-II buildings, an amount of ₹126.90 lakh pertained to payments made during 2014–19, for which tariff had not been claimed during that period. Accordingly, the said amount has been added to the opening capital cost for 2019–24 tariff period. Further, an amount of ₹141.58 lakh towards other building and civil works and ₹768.88 lakh towards ADB PMO expenses had been included in the capital cost for the 2014–19 tariff period on an accrual basis, though the corresponding payments were made/projected to be made during the 2019–24 and 2024–29 tariff periods, respectively. The additional capital expenditure of ₹141.58 lakh in respect of other building and civil works comprised: retention payment of ₹129.33 lakh payable to M/s ABB Ltd. towards construction of the 400 kV Sub-station at Srinagar, against which ₹124.37 lakh has been discharged during 2019–24, leaving a balance outstanding liability of ₹4.96 lakh as on 31.3.2024; (ii) payment of ₹8.72 lakh payable to M/s Arihant Constructions towards construction of 6 Nos. Type-III double-storey residences, including development of terrace, drains and service road, which has been fully discharged during 2019–20; and (iii) retention payment of ₹3.53 lakh payable to M/s SKT Building Private Limited towards construction of the CC footpath and drain for the village, which remains outstanding as on 31.3.2024. In addition, liability of ₹121.64 lakh payable to M/s Chamoli Associates, capitalised in 2021, has been partially discharged to the extent of ₹81.10 lakh during 2019–24, with the balance outstanding liability of ₹40.54 lakh as on 31.3.2024, further projected to be claimed in FY2028-29. The ADB PMO liability of ₹768.88 lakh has not been discharged during 2019–24 and continues to remain fully outstanding as on 31.3.2024. Out of the total outstanding liability of ₹817.91 lakh as on 31.3.2024, comprising ₹4.96 lakh payable to M/s ABB Ltd., ₹40.54 lakh payable to M/s Chamoli Associates, ₹3.53 lakh payable to M/s SKT Building Private Limited and ₹768.88 lakh towards ADB PMO liability, the Petitioner has projected full discharge during 2028–29, and accordingly no outstanding liability is expected to remain thereafter. Accordingly, the aforesaid amount included earlier on accrual basis has been deducted from the opening capital cost for the 2019–24 tariff period, and the Petitioner has suitably adjusted the capital cost as on 31.3.2019 allowed under the earlier tariff order to reflect the expenditure on cash basis.



(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL



- g. Based on the above the Petitioner has suitably adjusted the capital cost allowed as on 31.3.2019 vide order dated 27.1.2026 in Petition No. 186/TT/2024. The details of Capital cost upto 31.3.2019 along with additional capital expenditure of the 2019-24 tariff period of the instant assets as per Auditor certificate dated 24.7.2025 covered in this petition are summarized below:

Rs. In lakhs

Asset Details	RCE Apportioned approved cost	Expenditure up to 31.3.2019/ DOCO	Add Cap 2019-20	Add Cap 2020-21	Add Cap 2021-22	Add Cap 2022-23	Add Cap 2023-24	Cost as on 31.03.2024
Asset-I (Group-A)	23089.44	12792.55	45.70	30.28	11.20	65.06	11.31	12956.09
Asset-I (Group-B)		1050.59	3.75	2.49	0.92	5.34	0.93	1064.03
Asset-I (Group-C)		2563.62	9.16	6.07	2.24	13.04	2.27	2596.40
Asset-I (Group-D)		507.55	0.00	1.14	0.42	2.45	0.43	511.99
Asset-II		670.52	0.00	0.00	0.00	0.00	0.00	670.52

- h. Further, there is no cost overrun in estimated completion cost of the instant asset w.r.t RCE cost.
- i. The details of underlying assumptions for additional capitalization during the period 2019-24 are summarized as follows:
- j. The additional capitalization incurred in the contextual assets is on account of any liability for works executed prior to the cut-off date. The additional capitalization for the tariff block 2019-24 has been claimed under Regulation 24(1)(a) (Undischarged liabilities), Regulation 24(1)(b) (Works deferred for execution) and Regulation 25(1)(d) (Liability for works executed prior to the cut-off date) of Tariff Regulation 2019. Copy of Auditor Certificate in respect of the assets covered in this petition is enclosed herewith as **Encl-2**. The liability flow statements are enclosed as **Encl-3**. The details of underlying reasons for additional capitalization for above assets are given in Form-7. Hon'ble commission is requested to accord the same.


(Er. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL

4. Tariff for 2019-24 period

- a. The Revised transmission tariff for block 2019-24 has been worked out on account of Truing up of the additional capitalization as per CERC (Terms and Conditions of Tariff) Regulations, 2019. In the present petition the transmission tariff has been calculated taking actual additional capitalization during 2019-24 block.

The details of capital cost and ACE claimed for the instant assets are as detailed below:

Asset I Group-A (Rs in Lakhs)

Sl.No	Expenditure	Leasehold Land	Building & Civil Works	Sub-station	PLCC	Total
1.	As allowed vide order dated 27.1.2026 in Petition No. 186/TT/2024	312.35	875.24	11929.84	287.92	13405.35
2.	Adjustments pertaining to ADB PMO expense	-	-	599.51	-	599.51
3.	Adjustments for liabilities payable during 2019-24, for which tariff was claimed on an accrual basis during 2014-19.	-	13.29	-	-	13.29
4.	Capital cost as on 31.3.2019 on cash basis	312.35	861.95	11330.33	287.92	12792.55
5.	Add-cap 2019-20	-	45.70	-	-	45.70
6.	Add-cap 2020-21	-	30.28	-	-	30.28
7.	Add-cap 2021-22	-	11.20	-	-	11.20
8.	Add-cap 2022-23	-	65.06	-	-	65.06
9.	Add-cap 2023-24	-	11.31	-	-	11.31
10.	Decapitalization during the year	-	-	(33.22)	-	(33.22)
11.	Add-cap 2024-25	-	51.68	90.56	-	142.24
12.	Add-cap 2025-26	-	174.84	-	-	174.84


(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

13.	Add-cap 2026-27	-	87.36	-	-	87.36
14.	Add-cap 2027-28	-	23.19	-	-	23.19
15.	Add-cap 2028-29		37.51	582.07		619.58
16.	Total Estimated Completion Cost	312.35	1400.08	11969.74	287.92	13970.09

Asset I Group-B (Rs in Lakhs)

Sl. No	Expenditure	Leasehold Land	Building & Civil Works	Sub-station	PLCC	Total
1.	As allowed vide order dated 27.1.2026 in Petition No. 186/TT/2024	25.64	71.94	979.70	23.64	1100.92
2.	Adjustments pertaining to ADB PMO expense	-	-	49.23	-	49.23
3.	Adjustments for liabilities payable during 2019-24, for which tariff was claimed on an accrual basis during 2014-19.	-	1.09	-	-	1.09
4.	Capital cost as on 31.3.2019 on cash basis	25.64	70.85	930.46	23.64	1050.59
5.	Add-cap 2019-20	0.00	3.75	0.00	0.00	3.75
6.	Add Cap 2020-21	0.00	2.49	0.00	0.00	2.49
7.	Add-cap 2021-22	0.00	0.92	0.00	0.00	0.92
8.	Add-cap 2022-23	0.00	5.34	0.00	0.00	5.34
9.	Add-cap 2023-24	0.00	0.93	0.00	0.00	0.93
10.	Add-cap 2024-25	0.00	4.25	7.44	0.00	11.68
11.	Add-cap 2025-26	0.00	14.37	0.00	0.00	14.37
12.	Add-cap 2026-27	0.00	7.18	0.00	0.00	7.18
13.	Add-cap 2027-28	0.00	1.91	0.00	0.00	1.91
14.	Add-cap 2028-29	0.00	3.08	47.80	0.00	50.88
15.	Total Estimated Completion Cost	25.64	115.07	985.70	23.64	1150.04


(Er. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL

Asset I Group-C (Rs in Lakhs)

Sl. No	Expenditure	Leasehold Land	Building & Civil Works	Sub-station	PLCC	Total
1.	As allowed vide order dated 27.1.2026 in Petition No. 186/TT/2024	62.59	175.40	2390.74	57.70	2686.44
2.	Adjustments pertaining to ADB PMO expense	-	-	120.14	-	120.14
3.	Net adjustments for liabilities payable during 2019-24, for which tariff was claimed on an accrual basis during 2014-19.	-	2.66	-	-	2.66
4.	Capital cost as on 31.3.2019 on cash basis	62.59	172.74	2270.60	57.70	2563.62
5.	Add-cap 2019-20	0.00	9.16	0.00	0.00	9.16
6.	Add Cap 2020-21	0.00	6.07	0.00	0.00	6.07
7.	Add-cap 2021-22	0.00	2.24	0.00	0.00	2.24
8.	Add-cap 2022-23	0.00	13.04	0.00	0.00	13.04
9.	Add-cap 2023-24	0.00	2.27	0.00	0.00	2.27
10.	Add-cap 2024-25	0.00	10.36	18.15	0.00	28.50
11.	Add-cap 2025-26	0.00	35.04	0.00	0.00	35.04
12.	Add-cap 2026-27	0.00	17.51	0.00	0.00	17.51
13.	Add-cap 2027-28	0.00	4.65	0.00	0.00	4.65
14.	Add-Cap 2028-29	0.00	7.52	116.65	0.00	124.16
15.	Total Estimated Completion Cost	62.59	280.6	2405.4	57.7	2806.26

Asset I Group-D (Rs in Lakhs)

Sl. No	Expenditure	Leasehold Land	Building & Civil Works	Sub-station	PLCC	Total
1.	As allowed vide order dated 27.1.2026 in Petition No. 186/TT/2024	13.25	21.39	458.33	12.21	505.18


(Er. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL

2.	Net adjustments for liabilities payable during 2019-24, for which tariff was claimed on an accrual basis during 2014-19.	-	2.37	-	-	2.37
3.	Capital cost as on DOCO on cash basis	13.25	23.76	458.33	12.21	507.55
4.	Add Cap from DOCO to 31.03.2021	0.00	1.14	0.00	0.00	1.14
5.	Add-cap 2021-22	0.00	0.42	0.00	0.00	0.42
6.	Add-cap 2022-23	0.00	2.45	0.00	0.00	2.45
7.	Add-cap 2023-24	0.00	0.43	0.00	0.00	0.43
8.	Add-cap 2024-25	0.00	1.26	3.48	0.00	4.74
9.	Add-cap 2025-26	0.00	4.27	0.00	0.00	4.27
10.	Add-cap 2026-27	0.00	2.13	0.00	0.00	2.13
11.	Add-cap 2027-28	0.00	0.57	0.00	0.00	0.57
12.	Add-cap 2028-29	0.00	0.92	22.36	0.00	23.28
13.	Total Estimated Completion Cost	13.25	37.35	484.17	12.21	546.98

Asset-II (Rs in Lakhs)

Sl. No	Expenditure	Freehold Land	Building & Civil Works	Sub-station	Transmission Line	PLCC	Total
1	As allowed vide order dated 27.1.2026 in Petition No. 186/TT/2024	0.00	0.00	670.52	0.00	0.00	670.52
2	Add-cap 2019-24	No Add Cap					
3	Add-cap 2024-29						
4	Total Estimated Completion Cost	0.00	0.00	670.52	0.00	0.00	670.52

The trued up annual transmission tariff for the tariff period 2019-24 is summarized as below:

(Rs in Lakh)

Project	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Asset-I Group-A	AFC approved	1945.78	1968.95	1992.11	2007.77	2029.10
	Revised AFC based on truing up	1880.21	1898.19	1914.85	1936.61	1963.65


(Er. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL

Project	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Asset-I Group-B	AFC Approved	120.30	120.90	121.48	121.26	121.29
	Revised AFC based on trueing up	114.91	115.09	115.13	115.42	115.92
Asset-I Group-C	AFC Approved	357.95	361.55	365.14	366.98	370.01
	Revised AFC based on trueing up	344.81	347.38	349.67	352.73	356.90
Asset-I Group-D	AFC Approved	0.00	39.60	105.62	107.26	109.38
	Revised AFC based on trueing up	0.00	39.65	105.72	107.59	109.94
Asset-II	AFC Approved	107.84	108.85	109.90	111.16	112.79
	Revised AFC based on trueing up	107.84	108.85	109.90	111.16	112.79

The tariff for block 2019-24 has been worked out as per the Tariff Regulations for period 2019-24 and the Tariff Filing Formats along with the other relevant information and supporting documentation are attached hereto as **Encl-3**.

5. Tariff for 2024-29 period

That as per Regulation 8(1) (i), 14 (5) and Regulation 15 of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2024, the tariff for transmission of electricity on ISTS shall comprise transmission charges for recovery of annual fixed cost consisting of (a) Return on Equity, (b) Interest on Loan Capital, (c) Depreciation, (d) Interest on Working Capital and (e) Operation and maintenance expenses. The tariff for block 2024-29 has been worked out as per Annexure-I, Part III of the tariff regulations for period 2024-29 and the Tariff Filing Formats along with the other relevant information and supporting documentation (if any) are attached hereto as **Encl-4**.

The transmission assets have been combined in 2024-29 tariff block with an effective DOCO of 19.10.2016.

The capital cost of Rs 17799.03lakh as on 31.03.2024 has been considered for computation of 2024-29 block. Further, additional capital expenditure has been projected during 2024-29 tariff block are as detailed below:


(Er. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL

(Rs in Lakh)

Asset Details	Apportioned. cost as per RCE	Expenditure as on 31.3.2024	De-cap	Actual Add Cap 2024-29		Projected Add Cap 2024-29			Total	Cost as on 31.3.2029
			2024-25	2024-25	2025-26	2026-27	2027-28	2028-29		
Combined Asset	23089.44	17799.03	-33.22	153.95	228.52	114.18	30.31	817.91	1344.87	19143.90

ACE Justification

It is submitted that the claimed Additional Capital Expenditure of Rs. 119.63 lakh during FY 2024-25 is in respect of the Combined Asset on account of the following works: (i) Extension of fire hydrant system inside the 400 kV switchyard at 400/220/132 kV Substation, Srinagar (G) amounting to Rs. 58.40 lakh; and (ii) Supply & Erection of 220V and 48V VRLA Type Battery Set and Charger at 400 kV Substation, Srinagar (G) amounting to Rs. 61.23 lakh.

The expenditure towards extension of the fire hydrant system has been incurred considering the criticality of the Srinagar (G) Substation and the recurring risk of forest fires in the surrounding area. In view of past fire incidents in the vicinity of the substation and inadequate hydrant coverage near the 400 kV switchyard, the said work was necessary to strengthen the fire protection system for safe, secure and reliable operation of the transmission asset. Accordingly, the same is being claimed under Regulation 26(1)(i) of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2024, as additional capital expenditure beyond the original scope, being necessary for efficient operation of the transmission system.

The expenditure towards supply and erection of 220V and 48V VRLA battery sets and chargers has been incurred for replacement of the old battery sets and chargers installed in 2013, which have reached the end of their useful life and were experiencing frequent faults. Since uninterrupted DC supply is essential for protection, SCADA, PLCC, SAS and other critical substation systems, replacement of the existing equipment was necessary for ensuring reliable and secure operation of the substation. Accordingly, the same is being claimed under Regulation 25(2)(c) of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2024, which provides for admissibility of additional capitalization in case of the replacement of such asset or equipment is necessary on account of obsolescence of technology. Hence, there is a decapitalization


(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

amounting to Rs. 33.22 lakhs and accordingly, the net ACE claimed pertaining to replacement of batteries amounts to Rs. 28.01 lakhs.

Accordingly, the aforesaid expenditure of Rs. 86.40 lakh has been claimed as Additional Capital Expenditure for FY 2024-25, being necessary for safety, security and efficient operation of the transmission asset and replacement of batteries.

Further, the Additional Capital Expenditure of Rs. 297.89 lakh during FY 2024-25 and FY 2025-26 in respect of the Combined Asset towards construction of earth retaining structure and storm water drainage system at 400 kV Substation, Srinagar. The said expenditure has been incurred on account of heavy rainfall in the substation area, which resulted in soil erosion and ground subsidence, thereby adversely affecting the stability of equipment foundations, retaining walls, roads and other associated infrastructure within the substation premises. To address the said issue and to safeguard the substation and its costly equipment, remedial measures comprising, inter alia, construction of earth retaining structure, storm water drainage system and allied protection works were undertaken based on the technical recommendations of IIT Roorkee (**Encl- 4**) The aforesaid work was essential for protection of the substation and for ensuring safe, secure and reliable operation of the transmission system. Accordingly, the same is being claimed under Regulation 26(1)(i) of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2024, as additional capital expenditure beyond the original scope, being necessary for efficient operation of the transmission system. It is further submitted that, during execution of the work, damaged/broken stone pitching was noticed and the recovered stones were issued to the contractor, against which recovery of Rs. 1.12 lakh has been affected. Consequently, after adjusting the said recovery, the net Additional Capital Expenditure claimed for the said work is Rs. 296.69 lakh. The ACE of Rs. 67.55 Lakh and Rs. 228.52 Lakh has been claimed with respect to the above-mentioned work in FY 2024-25 and FY 2025-26 on cash basis, respectively.

The Projected Additional Capital Expenditure of Rs. 114.18 lakh during FY 2026-27 in respect of the Combined Asset towards the following works: (i) boring of tubewell and pipeline connections amounting to Rs. 28.59 lakh, (ii) construction of CC road from main gate to quarters amounting to Rs. 60.04 lakh, and (iii) construction of boundary wall in damaged portions and other repair works amounting to Rs. 25.55 lakh. It is submitted that the existing tubewell discharge is low and the water level has decreased significantly, thereby posing a risk of inadequate water availability during fire emergencies in the


(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

substation. Accordingly, boring of new tubewell and associated pipeline connections have become necessary for ensuring adequate water supply and strengthening the fire protection system of the substation. It is further submitted that the existing road from main gate to quarters is damaged and narrow, thereby hindering safe and smooth movement within the substation premises, particularly during emergency situations and movement of machinery and equipment required for maintenance and replacement works in the switchyard. Therefore, reconstruction of the said road through CC road has become necessary for safe and efficient operation of the substation. The aforesaid expenditure is being claimed under Regulation 26(1)(i) of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2024

Additionally, it is further submitted that certain portions of the existing boundary wall were damaged due to exceptionally heavy rainfall, an event beyond the control of the Petitioner and in the nature of force majeure. The damage compromised the integrity of the substation boundary, resulting in vulnerability to unauthorized entry, trespassing, theft, and other security risks. Accordingly, reconstruction of the damaged portions of the boundary wall, along with associated repair works, has become unavoidable and necessary to restore the safety, security, and operational integrity of the substation premises. The aforesaid expenditure of Rs. 25.55 Lakh is being claimed under Regulation 26(1)(c) of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2024, as additional capital expenditure beyond the original scope, being necessary for safe, secure and efficient operation of the transmission system.

The Projected Additional Capital Expenditure of Rs. 30.31 lakh during FY 2027-28 is also claimed for the above boundary wall construction under Regulation 26(1)(c) of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2024, as additional capital expenditure beyond the original scope, being necessary for safe, secure and efficient operation of the transmission system.

The Additional Capital Expenditure of ₹49.03 lakh projected during FY 2028-29 in respect of the Combined Asset comprises: (i) retention payment of ₹40.54 lakh payable to Chamoli Associates towards the construction of Type-II quarters, (ii) retention payment of ₹4.96 lakh payable to M/s ABB towards the construction of the 400 kV Sub-station at Srinagar, and (iii) retention payment of ₹3.53 lakh payable to M/s SKT Buildcon Pvt. Ltd. towards the construction of the CC footpath and drain for the village.

It is submitted that the aforesaid amounts of ₹49.03 lakh represent retention payments pertaining to works already executed in connection with the transmission assets. The


(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

release of such retention amounts is subject to completion of the contractual obligations and the applicable terms and conditions of the respective contracts. Accordingly, the aforesaid expenditure is being claimed under Regulation 25(1)(d) of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2024, as Liability for works executed prior to the cut-off date.

The Additional Capital Expenditure of ₹768.88 lakh projected during FY 2028–29 in respect of the Combined Asset pertains to ADB PMO expenses, which had earlier been included in the capital cost for the 2014–19 tariff period on an accrual basis. However, since the corresponding payment is proposed to be made during the 2028–29 period, the said amount is now being claimed on a cash basis in the present petition. Accordingly, the aforesaid expenditure is being claimed under Regulation 25(1)(d) of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2024, as Liability for works executed prior to the cut-off date.

The Petitioner has deducted the said amount from the opening capital cost as on 1.4.2019 for the 2019–24 tariff period, and the same is being considered as Additional Capital Expenditure during FY 2028–29 in line with the actual/payment basis of accounting.

Further, there is no cost overrun in estimated completion cost of the instant assets/project w.r.t RCEcost.

The tariff for 2024-29 tariff block is summarized below:

Rs in Lakh					
Project	2024-25	2025-26	2026-27	2027-28	2028-29
Combined Asset	2852.12	2894.58	2902.55	2953.56	3061.66

That, it is submitted that the petitioner being liable to pay income tax at MAT rate prescribed vide The Taxation Laws (Amendment) Ordinance, 2019 published in the Gazette dt. 20th September, 2019, the ROE has been calculated @ 18.782% after grossing up the ROE with MAT rate of 17.472% (Base Rate 15% + Surcharge 12% + Cess 4%) based on the formula given at regulation 31 of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2024 for 2024-29 period. That as per clause 31 (3) of the above regulation, the grossed-up rate of ROE at the end of every financial year shall be trued up based on actual tax paid together with any additional tax demand including interest thereon duly adjusted for any refund of tax including interest received from the IT authorities pertaining to the tariff period 2024-29 on actual gross income of any financial year. However, penalty, if any, arising on account of delay in


(Er. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL

At

Q

U

deposit or short deposit of tax amount shall not be claimed by the generating company or the transmission licensee, as the case may be. Any under-recovery or over-recovery of grossed up rate on ROE after truing up shall be recovered or refunded to beneficiaries or the long-term customers, as the case may be on year to year basis. It is further submitted that adjustment due to any additional tax demand including interest duly adjusted for any refund of tax including interest received from IT authorities shall be recoverable /adjustable during the tariff period 2019-24 on year-to-year basis on receipt of Income Tax assessment order.

Under CGST Act, 2017 implemented w.e.f. 01.07.2017, the Govt. of India has exempted the charges of transmission of electricity vide notification no. 12/2017 – Central Tax (Rate) dated 28.06.2017 at serial no. 25 under the heading 9969 “Transmission or distribution of electricity by an electric transmission or distribution utility” by giving applicable GST rate as NIL. Hence, the Transmission Charges as indicated above is exclusive of GST. Further, if GST is levied at any rate and at any point of time in future on Charges of Transmission of Electricity, the same shall be borne and additionally paid by the respondent(s) to the petitioner and the same shall be charged & billed separately by the petitioner. Further additional taxes, if any, are to be paid by the petitioner on account of demand from Govt. / Statutory authorities, the same may be allowed to be recovered from the beneficiaries.

During the tariff period of 2019–24, no Interest on Loan has been claimed, as the loans availed were interest-free. In the tariff calculation for 2024-29 period, Interest on Loan has been calculated on the basis of actual rate of interest of various loans deployed for FY 2024-25 and FY 2025-26 and interest rates prevailing as on 01.04.2026 for respective loans. However, for projected ACE in FY 2026-27, FY 2027-28 and FY 2028-29 loan is also projected and considered at MCLR rate of 8.70%. The change in Interest rate due to floating rate of interest applicable, if any, for the project needs to be claimed / adjusted over the tariff block of 05 years directly from / with the beneficiaries.

The transmission charges computed above is inclusive of O&M expenses derived for the subject asset based on the norms for O&M expenditure for Transmission System as specified under regulation 36 (3) (a) of the tariff regulations for block 2024-29. Further, as the transmission line is in the state of Uttarakhand, the Petitioner has worked out the O&M by multiplying the normative O&M expenses by 1.50.


(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

The application filing fee, expenses incurred on publication of Notices in Newspapers may be allowed to be recovered separately from the respondents in terms of Regulation 94(1) of Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2024. The fees and charges to be paid by the petitioner as ISTS licensee (deemed ISTS licensee) under CERC (Fees and Charges of RLDC and other matters) Regulations as amended from time to time shall also be recoverable from the DICs as provided under clause 94 (3) of Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2024.

The Transmission Charges and other related Charges indicated above, is exclusive of incentive, late payment surcharge, FERV, any statutory taxes, levies, duties, cess, filing fees, RLDC fees and charges or any other kind of imposition (s) and/ or other surcharges etc. whatsoever imposed / charged by any Government (Central/State) and / or any other local bodies/authorities/regulatory authorities in relation to transmission of electricity, environmental protection, and/or in respect of any of its installation associated with the Transmission System and the same shall be borne and additionally paid by the respondent(s) to the petitioner and the same shall be charged, billed separately on the beneficiaries.

7. Sharing of Transmission Charges

Truing up tariff for Transmission of Electricity (Annual Fixed Cost) for 2019-24 shall be recovered on monthly basis in accordance with Regulation 57 of Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 and shall be shared by the beneficiaries and long-term transmission customers in terms of Central Electricity Regulatory Commission (Sharing of Inter State Transmission Charges and Losses) Regulations, 2010 and Central Electricity Regulatory Commission (Sharing of Inter State Transmission Charges and Losses) Regulations, 2020, as amended from time to time for the applicable periods.

Tariff for Transmission of Electricity (Annual Fixed Cost) for 2024-29 shall be recovered on monthly basis in accordance with Regulation 78 of Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2024 and shall be shared by the beneficiaries and long-term transmission customers in terms of Central Electricity


(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL







Regulatory Commission (Sharing of Inter State Transmission Charges and Losses) Regulations, 2020, as amended from time to time.

8. Prayer to the Hon'ble commission

In the above premises, it is respectfully prayed that the Hon'ble Commission may be pleased to: -

- 1) Approve the trued-up Transmission Tariff for 2019-24 block and transmission tariff for 2024-29 block for the assets covered under this petition.
- 2) Approve the Completion cost and additional capitalization incurred during 2019-24 and allow the actual/projected additional capitalization during 2024-29.
- 3) Allow the petitioner to recover the shortfall or refund the excess Annual Fixed Charges, on account of Return on Equity due to change in applicable Minimum Alternate/Corporate Income Tax rate as per the Income Tax Act, 1961 (as amended from time to time) of the respective financial year directly without making any application before the Commission as provided in Tariff Regulation 2019 and Tariff regulations 2024.
- 4) Approve the reimbursement of expenditure by the beneficiaries towards petition filing fee, and expenditure on publishing of notices in newspapers in terms of Regulation 94 (1) Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2024, and other expenditure (if any) in relation to the filing of petition.
- 5) Allow the petitioner to bill and adjust impact on Interest on Loan due to change in Interest rate on account of floating rate of interest applicable during 2024-29 period,
- 6) Allow the petitioner to bill and recover RLDC fees and charges, separately from the respondents in terms of Regulation 94 (3) and (4) Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2024.
- 7) Allow the petitioner to file a separate petition before Hon'ble Commission for claiming the overall security expenses and consequential IOWC on that security expenses.


(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

- 8) Allow the petitioner to file a separate petition before Hon'ble Commission for claiming the overall insurance expenses and consequential IOWC on that insurance expenses.
- 9) Allow the petitioner to file a separate petition before Hon'ble Commission for claiming the overall capital spares at the end of tariff block as per actual.
- 10) Allow the Petitioner to bill and recover GST on Transmission Charges separately from the respondents, if GST on transmission is levied at any rate in future. Further, any taxes including GST and duties including cess etc. imposed by any statutory/Govt./municipal authorities shall be allowed to be recovered from the beneficiaries.
- 11) Allow condonation of any inadvertent omissions/errors/shortcomings and permit Petitioner to add/change/modify/alter this filing and make further submissions as may be required at future date.

and pass such other relief as Hon'ble Commission deems fit and appropriate under the circumstances of the case and in the interest of justice

FILED BY

Place: Dehradun

DATED: 01-09-2026



(Er. ILLA CHANDRA)

Chief Engineer

(Commercial & Regulatory)
PTCUL

Power Transmission Corporation of Uttarakhand Ltd.





BEFORE
THE CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

Petition No.:.....

IN THE MATTER OF: Petition for truing up of Transmission tariff for 2019-24 and determination of transmission tariff for 2024-29 tariff block for 400 kV Substation Srinagar (Asset-I: 400/220 kV 02x03x105 ICT, 220/132 kV 02x160 MVA ICT along with bays and Asset-II: 1x80 MVar Reactor) (Deemed ISTS) under UITP Scheme as per Hon'ble Central Electricity Regulatory Commission's order dated 31 January 2013 against Petition number 133/ MP/2012 in the Northern Region under Section 62 read with Section 79 (1) (d) of the Electricity Act, 2003 and under Regulation 15 (1) (a) and Regulation 23 of Central Electricity Regulatory Commission (Conduct of Business) Regulations, 2023 read with Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 and Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2024.

Power Transmission Corporation of Uttarakhand Ltd.,

... Petitioner

Vidyut Bhawan, Near ISBT Crossing,
Saharanpur Road, Majra,
Dehradun – 248002, Uttarakhand

Power Grid Corporation of India Ltd(PGCIL)

... Respondents

Registered Office: B-9, Qutab Institutional Area,
Katwaria Sarai, New Delhi-110016
Corporate Office: Saudamini, Plot No.2, Sector 29,
Near IFFCO Chowk, Gurgaon (Haryana) – 122001

And Others




(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

AFFIDAVIT VERIFYING THE PETITION

I, Illa Chandra, S/o Nandan Prasad, working as Chief Engineer (Commercial & Regulatory), in the Power Transmission Corporation of Uttarakhand Limited, having its registered Office at "Vidyut Bhawan", Near ISBT Crossing, Saharanpur Road, Majra, Dehradun-248002, Uttarakhand, do hereby solemnly affirm and state on oath as under: -

1. That I am Illa Chandra, S/o Nandan Prasad, working as Chief Engineer (Commercial & Regulatory), the representative of the Petitioner in the above matter, and am duly authorized to make this affidavit.
2. That the enclosed tariff Petition is being filed for truing up of Transmission tariff for 2019-24 and determination of transmission tariff for 2024-29 tariff block for the instant assets.
3. That no other tariff Petition except this petition has been filed directly or indirectly for truing up of Transmission tariff for 2019-24 and determination of transmission tariff for 2024-29 tariff block for the instant assets.
4. That the statements made in the tariff Petition herein are based on petitioner company's official records maintained in the ordinary course of business and I believe them to be true and correct.
5. The documents attached with the petition are legible copies and duly attested by me.

Verification

Verified at Dehradun on this 31st day of August 2026, that the contents of my above noted affidavit are true and correct to my knowledge and no part of it is false and nothing material has been concealed therefrom.

Identified by: -

(Er. Anita Mehra)
Assistant Engineer
(Commercial & Regulatory)
PTCUL



ATTESTED
(BUNIL KUMAR)
Advocate & NOTARY
Court Commissioned
Uttarakhand

(Deponent)
(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

(Deponent)
(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL



पावर ट्रांसमिशन कारपोरेशन ऑफ उत्तराखण्ड लि०

(उत्तराखण्ड सरकार का उपक्रम)

CIN: U40101UR2004SGC028675

प्रबन्ध निदेशक कार्यालय

विद्युत भवन, नजदीक-आई०एस०बी०टी० क्रॉसिंग, सहारनपुर रोड़, माजरा, देहरादून-248002

दूरभाष नं० 0135-2642006 फैक्स नं० 0135-2643460 email:- md.ptcul@rediffmail.com

No. 2241 /MD/PTCUL/CSR

Date: 29 /08/ 2026

Chief Engineer

(Commerical & Regulatory)

Power Transmission Corporation of Uttarakhand Limited.

Dehradun.

Subject:- Authorization for filing of Tariff Petition before the Hon'ble CERC for truing up of Transmission tariff for 2019-24 and determination of transmission tariff for 2024-29 tariff block for 400 kV Substation Srinagar (Asset-I: 400/220 kV 02x03x105 ICT, 220/132 kV 02x160 MVA ICT along with bays and Asset-II: 1x80 MVAr Reactor) (Deemed ISTS) under UITP Scheme.

You are hereby authorised to sign, verify and execute the Vakalatnama, Affidavit, Tariff Petition, Replies/Rejoinder, Interlocutory Application(s), and any other Written Submission(s)/ documents/ as may be necessary and required on behalf of PTCUL before the Hon'ble CERC, New Delhi and also for publication of notices in newspapers.


(P.C. Dhyani)
Managing Director


(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 186/TT/2024

Coram:

**Shri Jishnu Barua, Chairperson
Shri Ramesh Babu V., Member
Shri Harish Dudani, Member
Shri Ravinder Singh Dhillon, Member**

Date of Order: 27.01.2026

In the matter of:

Approval under Sections 61, 62, 79(1)(c) and 79(1)(d) of the Electricity Act, 2003, Regulation 86 of the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999, read with the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 and the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 for truing up of transmission tariff from COD to FY 2018-19 and determination of transmission tariff for the 2019-24 tariff period for 400 kV Substation Srinagar (Asset-I: 400/220 kV 02x03x105 ICT, 220/132 kV 02x160 MVA ICT along with bays and Asset-II: 1x80 MVA Reactor) (Deemed ISTS) under UITP Scheme.

And in the matter of:

**Power Transmission Corporation of Uttarkhand Limited,
"Vidyut Bhawan" Near ISBT Crossing,
Saharanpur Road, Majra,
Dehradun – 248002, Uttarakhand.**

...Petitioner

Versus

**1. Power Grid Corporation of India Limited,
'Saudamini', Plot No.-2, Sector-29,
Gurgaon-122001, Haryana.**

**2. Ajmer Vidyut Vitran Nigam Limited,
Corporate Office, Vidyut Bhawan, Panchsheel Nagar, Makarwali Road,
Ajmer-305004, Rajasthan.**

**3. Jaipur Vidyut Vitran Nigam Limited,
132 kV, GSS RVPNL Sub-station Building,
Caligiri Road, Malviya Nagar, Jaipur-302017, Rajasthan.**

**4. Jodhpur Vidyut Vitran Nigam Limited,
New Power House, Industrial Area,**


(E. J. CHANDRA)

**Chief Engineer
(Commercial & Regulatory)
PTCUL**

Order in Petition No. 186/TT/2024

Page 1 of 105



Jodhpur-342003, Rajasthan.

5. Himachal Pradesh State Electricity Board Limited,
Vidyut Bhawan, Kumar House Complex Building-II,
Shimla-171004.

6. Punjab State Power Corporation Limited,
The Mall, PSEB Head Office, Patiala-147001.

7. Haryana Power Purchase Centre,
Shakti Bhawan, Sector-6,
Panchkula-134109, Haryana.

8. Jammu Kashmir Power Corporation Limited,
220/66/33 kV Gladni SS SLDC Building,
Narwal, Jammu.

9. Uttar Pradesh Power Corporation Limited,
Shakti Bhawan, 14, Ashok Marg,
Lucknow – 226001.

10. BSES Yamuna Power Limited,
B-Block, Shakti Kiran Building (Near Karkadooma Court),
Karkadooma 2nd floor, New Delhi-110092.

11. BSES Rajdhani Power Limited,
BSES Bhawan, Nehru Place,
New Delhi.

12. Tata Power Delhi Distribution Limited,
33 kV Substation Building, Hudson Lane,
Kingsway Camp, North Delhi-110009.

13. Chandigarh Administration,
Sector-9, Chandigarh.

14. Uttarakhand Power Corporation Limited,
Urja Bhawan, Kanwali Road,
Dehradun.

15. North Central Railway,
Allahabad.

16. New Delhi Municipal Council,
Palika Kendra, Sansad Marg,
New Delhi-110002.

...Respondent(s)



For Petitioner: Shri Abhishek Kumar, Advocate, PTCUL
Shri Karan Arora, Advocate, PTCUL.

For Respondents: None

ORDER

The instant Petition has been filed by the Petitioner, Power Transmission Corporation of Uttarakhand Limited (PTCUL), under Sections 61, 62, 79(1)(c) and 79(1)(d) of the Electricity Act, 2003 (hereinafter referred to as "the Act"), read with Regulation 86 of the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999, seeking approval for trueing up of the transmission tariff from the date of commercial operation (COD) to 31.3.2019/FY 2018-19 for assets in terms of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 (hereinafter referred to as "the 2014 Tariff Regulations"), and determination of transmission tariff for the 2019-24 tariff period in terms of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 (hereinafter referred to as "the 2019 Tariff Regulations"), in respect of 400 kV Srinagar Substation which includes Asset-I: 400/220 kV 02x03x105 ICT, 220/132 kV 02x160 MVA ICT along with bays and Asset-II: 1x180 MVAR Reactor (hereinafter referred to as the ('transmission assets') (Deemed ISTS) under Uttarakhand Integrated Transmission Project (UITP) Scheme:

2. The Petitioner has made the following prayers:

“

- a) capital cost as claimed in the Petition and approve the Additional Capitalization incurred/projected to be incurred.
- b) approve the trued-up transmission tariff for FY 2014-19 period and Transmission Tariff for the 2019-24 period for the assets covered under this Petition.
- c) approve the reimbursement of expenditure by the beneficiaries towards Petition filling fees and expenditure on publishing of notices in newspaper and other





- expenditure (if any) in terms of CERC (Terms and Conditions of Tariff) Regulation, 2014 and CERC (Terms and Conditions of Tariff) Regulation, 2019.*
- d) condone the time overrun in commissioning of Assets covered under instant Petition.*
 - e) condone any inadvertent omissions/errors/shortcomings and permit Petitioner to add/change/modify/alter this filing and make further submissions as may be required at future date; and*
 - f) pass Orders, as the Hon'ble Commission may deem fit and proper keeping in view the facts and circumstances of the case;*
 - g) approve the Date of Commercial Operation (DOCO) of the assets covered under the instant petition and allow the True up and Tariff as claimed in the Petition."*

Background

3. The background facts of the project are as follows:

- a) The Petitioner filed Petition No. 133/MP/2012 under Section 79(1)(f) of the Act for open access to the Uttarakhand Integrated Transmission Project (UITP) for evacuation and transmission of power from the Tapovan Vishnugad and Lata Tapovan Hydro Power Projects to the Power Transmission Corporation of Uttarakhand Limited (PTCUL) substation at Kashipur, for onward supply to other States. In Petition No. 133/MP/2012, the Petitioner also sought declaration under Section 79(1)(c) of the Act read with Regulations 2(1)(k), 20 and 21 of the Central Electricity Regulatory Commission (Sharing of Inter-State Transmission Charges and Losses) Regulations, 2010 (hereinafter referred to as "the 2010 Sharing Regulations") for declaring UITP, being developed by the Petitioner, as a deemed Inter-State Transmission System (ISTS). The Commission, vide its order dated 31.1.2013 in Petition No.133/MP/2012, granted the deemed ISTS status for the UITP Scheme, observing as follows:

"23. The Petitioner has approached the Commission for approval of deemed ISTS status to the UITP scheme being executed by it. We have already come to the conclusion that the transmission system developed by the petitioner is part of inter-State Transmission System and shall be used for wheeling power outside the State. Considering the fact that the petitioner is a deemed transmission licensee, we in exercise of power under section 12 of the Act authorise the petitioner to execute the



UITP Scheme and also accord deemed ISTS status to the UITP scheme being executed by the petitioner to the extent it is used for transmission of inter-State power."

- b) The Petitioner filed Petition No. 80/TT/2016 seeking approval of Annual Fixed Charges (AFC) and the determination of transmission tariff for the licensed transmission business from COD to FY 2018-19 regarding the 400 kV Srinagar Substation, pursuant to the Commission's order dated 31.1.2013 in Petition No. 133/MP/2012.
- c) The Commission, through its order dated 9.11.2021 in Petition No. 80/TT/2016, determined the Annual Fixed Charges (AFC) from the COD to FY 2018-19 for the following transmission assets:

(₹ in lakh)

Particulars	Asset-I: 400 kV Srinagar Substation			Asset-II: 80 MVAR Bus Reactor
	2016-17 (Pro-rata 244 days)	2017-18	2018-19	2018-19 (Pro-rata 163 days)
AFC	2192.70	3233.38	3176.79	152.43

- d) The present Petition covers the transmission assets under the deemed ISTS of the UITP scheme. The details of the elements included in transmission assets, namely Assets-I and II, are as follows:

Asset-I: 400 kV Srinagar Substation

- 400/220 kV, 315 MVA ICT-I and ICT-2 along with associated bays.
- 220/132 kV, 160 MVA ICT-1 and ICT-2, along with bays (HV side)
- 2 Nos. 400 kV bays associated with the 400 kV D/C Khandukhal (Srinagar) -GVK HEP line.
- 2 Nos. 400 kV bays associated with the 400 kV D/C Khandukhal (Srinagar) -Kashipur line.

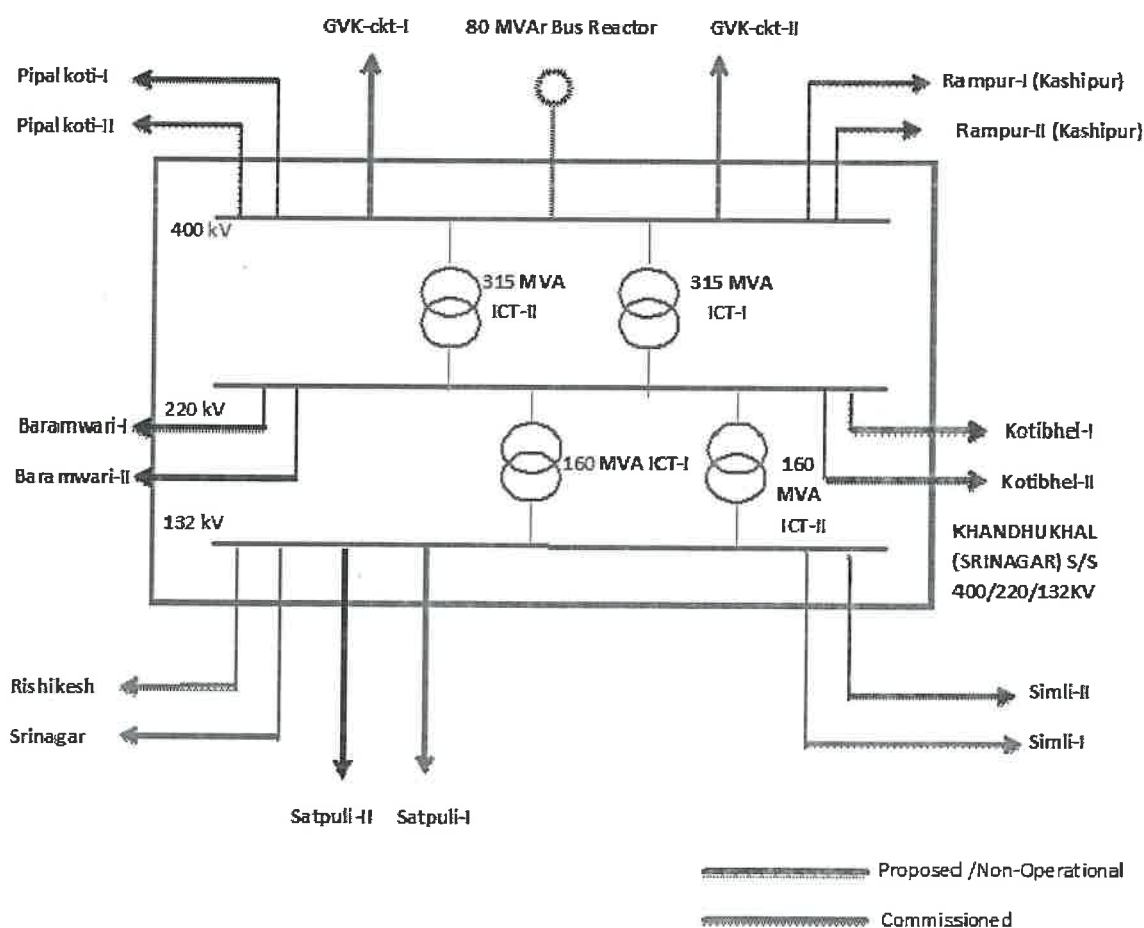

(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL



- 2 Nos. 400 kV bays associated with the 400 kV D/C Khandukhal (Srinagar)
 - Pipalkoti line.
- 400 kV bus coupler and bus transfer bays.
- 2 Nos. 220 kV bays associated with the 220 kV D/C Khandukhal (Srinagar)
 - Kotibhel line.
- 2 Nos. 220 kV bays associated with the 220 kV D/C Khandukhal (Srinagar)
 - Baramwari line.
- 220 kV bus coupler and bus transfer bays

Asset-II: 80 MVAr Bus Reactor

4. The single-line diagram of the transmission project is as follows:



[Signature]

(**ER. ILLA CHANDRA**)

Chief Engineer

(Commercial & Regulatory)
PTCUL

Page 6 of 105

5. The Petitioner has served copies of the Petition on the Respondents and published notices regarding the filing of this Petition in the newspapers, in accordance with Section 64 of the Act. No comments or suggestions have been received from the general public in response to the said notices. None of the Respondents has filed their reply to the Petition.

6. The matter was heard on 26.12.2024 and 25.2.2025. The order in the matter was reserved on 25.2.2025.

7. This order is being issued after considering the Petitioner's submissions in the Petition supported by its affidavits dated 6.9.2023 and 21.2.2025.

8. Having heard the learned counsel for the Petitioner and perused the material available on record, we proceed to dispose of the Petition.

Truing up of Annual Fixed Charges (AFC) from COD to 31.3.2019

9. The Commission vide order dated 9.11.2021 in Petition No. 80/TT/2016 approved the following AFC for the transmission assets from the COD to 31.3.2019:

Asset-I: 400 kV Srinagar Substation

(₹ in lakh)

Particulars	2016-17 (Pro-rata 244 days)	2017-18	2018-19
Depreciation	545.14	815.47	815.47
Interest on Loan	662.65	930.03	856.64
Return on Equity	637.17	953.15	955.71
O&M expenses	292.24	452.24	467.24
Interest on Working Capital	55.51	82.49	81.73
Total	2192.70	3233.38	3176.79

Asset-II: 80 MVar Bus Reactor

(₹ in lakh)

Particulars	2018-19 (Pro-rata 163 days)
Depreciation	33.16
Interest on Loan	43.27



Return on Equity	41.34
O&M expenses	30.68
Interest on Working Capital	3.97
Total	152.43

10. In the instant Petition, the Petitioner has claimed the following AFC concerning the transmission assets from COD to 31.3.2019:

Asset-I: 400 kV Srinagar Substation

(₹ in lakh)

Particulars	2016-17	2017-18	2018-19
Depreciation	634.81	972.38	1000.40
Interest on Loan	-	-	-
Return on Equity	725.22	1115.19	1150.02
O&M Expenses	731.16	1130.60	1198.78
Interest on Working Capital	66.81	99.65	107.41
Total	2158.01	3317.82	3456.61

Asset-II: 80 MVar Bus Reactor

(₹ in lakh)

Particulars	2018-19
Depreciation	15.81
Interest on Loan	-
Return on Equity	17.70
O&M Expenses	-
Interest on Working Capital	0.72
Total	34.23

Date of Commercial Operation (COD):

11. The Commission vide its order dated 9.11.2021 in Petition No. 80/TT/2016 allowed/disallowed the COD for various elements of Assets-I and Asset-II, whose details are as follows:

Sr. No.	400/220 kV bays	Number of bays	COD
A.	Asset-I		
	400 kV		
1	400/220 kV 315 MVA ICT-1 and ICT-2 along with their bays (HV side)	2	31.7.2016
2	400 kV D/C Khandukhal (Srinagar) - GVK HEP line	2	31.7.2016



3	400 kV D/C Khandukhal (Srinagar) - Kashipur line	2	Not Allowed
4	400 kV D/C Khandukhal (Srinagar) - Pipalkoti line	2	Not Allowed
5	Bus Coupler	1	Not Allowed
6	Bus Transfer	1	Not Allowed
220 kV			
1	400/220 kV 315 MVA ICT-1 and ICT-2 - bays (LV side)	2	31.7.2016
2	220/132 kV 160 MVA ICT-1 along with its bay (HV side)	1	31.7.2016
3	220/132 kV 160 MVA ICT-2 along with its bay (HV side)	1	3.8.2016
4	220 kV D/C Khandukhal (Srinagar) – Kotlibhel line	2	Not Allowed
5	220 kV D/C Khandukhal (Srinagar) – Baramwari line	2	Not Allowed
6	Bus Coupler	1	Not Allowed
7	Bus Transfer	1	Not Allowed
B	Asset-II		
1	80 MVAr Bus Reactor	1	20.10.2018

12. The Commission, in its order dated 9.11.2021 in Petition No. 80/TT/2016, further directed the Petitioner to submit supporting documents for the elements whose COD was not allowed, in accordance with Regulation 4(3) of the 2014 Tariff Regulations, and to seek COD approval at the time of trueing up.

13. In the instant true-up Petition, the Petitioner seeks approval of COD for the following transmission elements of Asset-I, whose COD was not approved vide order dated 9.11.2021 in Petition No. 80/TT/2016:

S. No.	400/220 kV bays	No. of Bays	Claimed COD
Asset-I			
400 kV			
1	400 kV D/C Khandukhal (Srinagar) - Kashipur line	2	31.7.2016
2	400 kV D/C Khandukhal (Srinagar) - Pipalkoti line	2	31.7.2016
3	Bus Coupler	1	31.7.2016
4	Bus Transfer	1	31.7.2016
220 kV			



1	Bus Coupler	1	31.7.2016
2	Bus Transfer	1	31.7.2016
3	220 kV D/C Khandukhal (Srinagar) - Baramwari line	2	31.7.2016
4	220 kV D/C Khandukhal (Srinagar) - Kotlibhel line	2	31.7.2016

14. The Commission, in the course of hearing the present Petition through its Record of Proceedings (RoP) dated 26.12.2024, directed the Petitioner to submit the following information with respect to the COD of Assets-I and II:

- Copy of the NRLDC trial run certificate in respect of 220/132 kV 160 MVA ICT-1 and 2.
- Copy of the revised COD certificate in accordance with the Trial Run Certificate in respect of 80 MVAR Bus Reactor.
- Confirm whether the 2 Nos. 400 kV bays associated with 400 kV D/C Khandukhal (Srinagar)-Kashipur Line and 2 Nos. 400 kV bays associated with 400 kV D/C Khandukhal (Srinagar) - Pipalkoti Line are utilised or not. If utilised, submit the documents in respect of the COD as per the relevant Tariff Regulations.
- NRLDC charging certificate in respect of 400 kV bus transfer bay and 400 kV bus coupler bay. Further, submit the details of the elements annexed with the CEA Energisation Certificate dated 18.7.2016.
- NRLDC Charging Certificate in respect of 220 kV bus transfer bay and 220 kV bus coupler bay.
- CEA Energisation Certificate and COD certificate in respect of 220 kV bays associated with 220 kV D/C Srinagar - Bharamwari HEP Line and 220 kV D/C Khandukhal - Kotlibhel HEP Line.

15. In response, the Petitioner, vide affidavit dated 21.2.2025, has submitted the required information along with supporting documents. The information sought and submitted by the Petitioner has been discussed in the following paragraphs:

Analysis and Decision on COD :

16. Regulation 4(3) of the 2014 Tariff Regulations provides as follows:

"4. Date of Commercial Operation:

- (3) *Date of commercial operation in relation to a transmission system shall mean the date declared by the transmission licensee from 0000 hour of which an element of the transmission system is in regular service after successful trial operation for transmitting electricity and communication signal from sending end to receiving end:*



Provided that:

- (i) where the transmission line or substation is dedicated for evacuation of power from a particular generating station, the generating company and transmission licensee shall endeavour to commission the generating station and the transmission system simultaneously as far as practicable and shall ensure the same through appropriate Implementation Agreement in accordance with Regulation 12(2) of these Regulations:
- (ii) in case a transmission system or an element thereof is prevented from regular service for reasons not attributable to the transmission licensee or its supplier or its contractors but is on account of the delay in commissioning of the concerned generating station or in commissioning of the upstream or downstream transmission system, the transmission licensee shall approach the Commission through an appropriate application for approval of the date of commercial operation of such transmission system or an element thereof."

Asset-I

A. 220/132 kV 160 MVA ICT-1 and ICT-2 at Srinagar Sub-station (along with associated bays)

17. The Commission, vide order dated 9.11.2021 in Petition No. 80/TT/2016, approved the COD of 220/132 kV 160 MVA ICT-1 along with associated bays as 31.7.2016, and that of 220/132 kV 160 MVA ICT-2 along with associated bays as 3.8.2016. The Commission, through its aforesaid order dated 9.11.2021, further directed the Petitioner to submit all the documents as required under Regulation 4(3) of the 2014 Tariff Regulations at the time of truing up. The relevant extracts of the order are as follows:

"49. The Petitioner has not specifically made any submissions regarding declaration and approval of COD of 220/132 kV 160 MVA ICT-1 and ICT-2. However, in the tariff forms, the Petitioner has indicated COD of 220/132 kV 160 MVA ICT-1 and ICT-2 as 31.7.2016. Keeping in view SLDC certificate and power flow statement placed on record by the Petitioner, we approve COD of 220/132 kV 160 MVA ICT-1 along with associated bays as 31.7.2016 and for 220/132 kV 160 MVA ICT-2 as 3.8.2016 along with associated bays.

50. We direct the Petitioner to submit all the documents as required under Regulation 4(3) of the 2014 Tariff Regulations at the time of truing up."

18. In compliance with the above directions, the Petitioner in this Petition has furnished the Managing Director's (MD) Certificate dated 20.12.2019, the SLDC Charging Certificate dated 22.1.2020, and the NRLDC Trial Run Operation Certificate



dated 18.2.2025 in support of the COD of 220/132 kV 160 MVA ICT-1 and ICT-2 along with associated bays at Srinagar Sub-station.

19. We have considered Petitioner's submissions and perused the supporting documents placed on record. It is observed that the Trail Run Certificate dated 18.2.2025 certifies the successful completion of a 24-hour trial run. The trial run dates for ICT-1 and ICT-2 are recorded as 26.7.2016 and 3.8.2016, respectively. Further, the SLDC Charging Certificate issued by SLDC, Uttarakhand, confirms the charging of ICT-1 on 25.7.2016 and ICT-2 on 2.8.2016.

20. In view of the above, the Petitioner has submitted the necessary documents in accordance with Regulation 4(3) of the 2014 Tariff Regulations, thereby complying with the directions issued by the Commission, vide its order dated 9.11.2021 in Petition No. 80/TT/2016.

Other 400 kV and 220 kV Bays at Srinagar Sub-station

(i) 400 kV Line Bays

21. The Commission, vide its order dated 9.11.2021 in Petition No. 80/TT/2016, did not approve the COD of 2 Nos. 400 kV bays associated with 400 kV D/C Srinagar-Kashipur transmission line (Rampur), due to non-commissioning of the associated lines under the Petitioner's scope. The relevant extracts of the order are as follows:

"61. Clause 53 of Regulation 3 of the 2014 Tariff Regulations provides as follows:

(53) 'Regular Service' means putting into use a transmission system or element thereof after successful trial operation and a certificate to that effect has been issued by the concerned Regional Load Dispatch Centre;"

62. From the record placed before us, we find that 2 number of bays associated with 400 kV D/C Srinagar-Kashipur Transmission Line (Rampur) and 2 number of bays associated with 400 kV D/C Srinagar-Karanprayag-Pipalkoti Transmission Line are not in use due to non-commissioning of associated lines under the scope of the Petitioner itself. Therefore, we do not approve COD of these 4-line bays. Accordingly, their respective capital costs have been excluded from the capital cost for working out the annual fixed charges."



22. The Petitioner in this true-up Petition has submitted that 400 kV D/C Srinagar-Kashipur Transmission Line (Rampur) was handed over to the Central Sector by the Petitioner, and the line is now being constructed under the Tariff-Based Competitive Bidding (TBCB) by M/s Megha Engineering Company with the matching schedule/date of LTA granted to Tapovan-Vishnugad HEP of M/s. NTPC. Further, the 400 kV D/C Srinagar-Karanprayag-Pipalkoti line is being implemented by the Petitioner under the Implementation Agreement signed with M/s NTPC. Due to the natural disaster, the project has been delayed, and as advised by CEA/CTUIL, the Petitioner is implementing this line in the matching time frame of Tapovan-Vishnugad HEP. Accordingly, these events were beyond the Petitioner's control.

23. Furthermore, the Petitioner, in its affidavit dated 21.2.2025, regarding the Commission's concern about the utilisation of 400 kV bays associated with Khandukhal-Kashipur and Khandukhal-Pipalkoti lines, has stated that these bays have not yet been used. The delay mainly results from the non-commissioning of associated generation projects and other external factors beyond the Petitioner's control. Additionally, the delay in both lines and the subsequent non-utilization of the bays are due to various factors, including (i) June 2013 floods, (ii) contractual obligations, and (iii) revised commissioning schedules of the generating stations. The Petitioner has stated that the aforementioned lines are expected to be commissioned by 31.3.2025.

24. The Petitioner has requested the Commission to approve the deemed COD of the associated bays as per proviso (ii) to Regulation 4 (3) of the 2014 Tariff Regulations as on 31.7.2016, since the bays were prevented from regular service due to reasons not attributable to the transmission licensee but owing to delays in the



commissioning of the concerned generating stations or the upstream or downstream transmission system.

25. We have considered the submissions of the Petitioner and perused the documents furnished by the Petitioner. It is observed that, as per the discussion held on 19.2.2021 in the 3rd NRPC (TP) meeting, the Board of Directors of the Petitioner's Company, vide letter dated 12.1.2021, approved the handing over of the construction of the 400 kV D/C Khandukhal-Rampura line to the Central Sector. The Petitioner has not undertaken construction of the aforementioned line. Accordingly, during the meeting, it was discussed that since the transmission line would be required within the timeframe of Vishnugad Pipalkoti HEP generation of THDC (expected commissioning schedule: June 2023), it was agreed that the implementation of the 400 kV D/C Khandukhal (Srinagar)-Rampura (Kashipur) line to be taken up under the Central Sector as an ISTS scheme with the matching time frame of the commissioning schedule of Vishnugad Pipalkoti HEP of THDC, i.e., June 2023, or Tapovan Vishnugad HEP of NTPC, whichever is earlier. The relevant extracts of the meeting are as follows:

"4.0 Handing over of 400 kV D/c Khandukhal-Rampura line and 220 kV D/c Mori Dehradun line of PTCUL under UITP scheme (deemed ISTS) to Central Sector

4.1 Director (PSPA-I), CEA, stated that UITP (Uttarakhand Integrated Transmission Project) scheme is under implementation by PTCUL. CERC vide its order dated 31.01.2013 had declared the scheme as a deemed ISTS scheme. The scheme comprises of transmission system for evacuation of the power from proposed HEP's in various basins of Uttarakhand. There are certain deemed Inter-State Transmission System (deemed ISTS) elements of UITP, where PTCUL had not been able to achieve the targeted timeline (deadlines). Amongst these are the 400 kV D/C Srinagar (Khandukhal) – Kashipur (Rampura) Transmission line which was required to evacuate power from upcoming projects in the Alaknanda basin, and the 220 kV D/C Mori-Dehradun line which was proposed to evacuate power from proposed generators in Yamuna basin. Construction of these lines had not been taken up by M/s PTCUL so far and recently M/s PTCUL vide letter dated 12.1.2021 has conveyed that Board of Directors of PTCUL had accorded approval for handing over of construction of 400 kV Khandukhal Rampura Transmission Line to Central Sector.

4.2 CE (PSPA-I) stated that immediate requirement of 400 kV Khandukhal-Rampura D/C Transmission Line was for evacuation of power from NTPC Tapovan Vishnugad HEP in Alaknanda basin which was scheduled to be commissioned in December 2022.


(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL



However, due to an unfortunate event, this project is delayed. However, the transmission line would be required in the time frame of Vishnugad Pipalkoti HEP generation of THDC.

4.3 THDC intimated that the commissioning schedule of Vishnugad Pipalkoti HEP is June 2023.

4.6 After deliberations, following was agreed:

(i) Implementation of 400 kV D/c Khandukhal (Srinagar)-Rampura (Kashipur) line to be taken up under central sector as an ISTS scheme with the matching time frame of commissioning of Vishnugad Pipalkoti HEP of THDC i.e. June 2023 or Tapovan Vishnugad HEP of NTPC whichever is earlier.

26. Therefore, as mentioned above, it is observed that initially, the construction of the 400 kV D/C Khandukhal – Rampura transmission line was within the scope of work of the Petitioner. The Petitioner did not complete construction of the transmission line within the specified timeline or in accordance with requirements. Finally, due to the urgency of the power evacuation system for Vishnugad Pipalkoti HEP generation of THDC (expected commissioning schedule: June 2023), it was decided in the 3rd NRPC (NP) meeting held on 19.2.2021 that the execution of the said line would be handed over to the Central Sector as an ISTS scheme.

27. Therefore, the time delay up to 19.2.2021 in the non-utilisation of 400 kV line bays associated with the 400 kV D/C Khandukhal (Srinagar) – Kashipur (Rampura) transmission line is attributable to the Petitioner and as such the Petitioner's claim to allow their COD from 31.7.2016, as per proviso (ii) to Regulation 4 (3) of the 2014 Tariff Regulations, is hereby rejected.

28. Further, the Commission, in its orders dated 9.1.2023 and 27.1.2023 in Petition No. 323/TL/2022 regarding transmission license for Khandukhal Rampur Transmission Limited, observed that subsequent to the decision to handover the execution of 400 kV D/C Khandukhal (Srinagar) – Kashipur (Rampura) transmission line to the Central Sector as an ISTS Scheme in 3rd NRPC (TP) meeting held on 19.2.2021, the bid process for the aforementioned transmission line was initiated by



PFCCL in its capacity as the BPC, on 11.3.2021 and completed the same on 7.10.2022 in accordance with the Guidelines. In the bidding process, Megha Engineering and Infrastructures Limited (MEIL) was selected as the successful bidder in order to provide transmission services to the beneficiaries of the transmission system. Accordingly, the BPC issued a Letter of Intent (LoI) to Megha Engineering & Infrastructure Limited on 7.9.2022, which was accepted by Megha Engineering & Infrastructure Limited.

29. Further, as per the aforementioned orders, the SCOD for the transmission system of 400 kV Khandukhal (Srinagar)-Rampura (Kashipur) D/C line was in the matching time frame of commissioning of Vishnugad Pipalkoti HEP (29.10.2024) of THDC or Tapovan Vishnugad HEP (30.9.2024) of NTPC, whichever is earlier, i.e. 30.9.2024.

30. However, as per the Petitioner's submission vide affidavit dated 21.2.2025, the anticipated commissioning of the said line is on 31.3.2025.

31. Regulation 5(2) of the 2019 Tariff Regulations provides as follows:

"5. Date of Commercial Operation:

(2) In case the transmission system or element thereof executed by a transmission licensee is ready for commercial operation but the interconnected generating station or the transmission system of other transmission licensee as per the agreed project implementation schedule is not ready for commercial operation, the transmission licensee may file petition before the Commission for approval of the date of commercial operation of such transmission system or element thereof:"

32. As mentioned above, the COD of the transmission licensee ready for commissioning can be allowed if the interconnected generating station or the transmission system of another transmission licensee is not ready, according to the agreed implementation schedule. However, in this case, the 400 kV D/C Khandukhal (Srinagar) - Kashipur (Rampura) Transmission Line was handed over to the Central



Sector due to delays caused by the Petitioner's failure to execute the line itself. Additionally, there is no agreed time schedule between the Petitioner and the execution agency for the 400 kV D/C Khandukhal - Rampura Transmission line regarding synchronization of the commissioning schedule of upstream and downstream transmission systems, as the 400 kV associated bays at Srinagar substation were already constructed by the Petitioner before handing over the transmission line to the Central Sector.

33. Therefore, in view of the above facts and in the absence of any agreed time schedule between the Petitioner and the execution agency of 400 kV D/C Khandukhal (Srinagar) - Kashipur (Rampura) Transmission Line under TBCB, we are of the view that the claim of the Petitioner for approval of COD under regulation 5(2) of the 2019 Tariff Regulations concerning 2 Nos. 400 kV line bays associated with the aforementioned transmission line at Srinagar Substation cannot be considered in the instant Petition.

34. Accordingly, the Petitioner is hereby directed to file a separate Petition for the determination of tariff in respect of the aforementioned 2 Nos. 400 kV bays at the Srinagar Substation matching the SCOD/COD of the 400 kV D/C Khandukhal – Rampura transmission line implemented by M/s Megha Engineering & Infrastructure Limited under TBCB. Accordingly, their respective capital costs have been excluded from the capital cost for the purpose of working out the annual fixed charges.

35. Further, regarding the COD of 2 Nos. 400 kV bays associated with the 400 kV D/C Srinagar-Karanprayag-Pipalkoti Transmission Line, it is observed that the associated downstream transmission line is within the scope of Petitioner, and the said



transmission line has not yet been commissioned, and thus the aforementioned associated bays are still unutilized.

36. In view of the above discussions, we are not inclined to approve the COD of the said 2 Nos. line bays as the associated downstream transmission line under the scope of the Petitioner are yet to be commissioned. The Petitioner is also directed to approach the Commission for approval of COD and subsequent tariff after the start of utilisation of said 2 Nos. line bays through a separate tariff Petition, as per the relevant Tariff Regulations in future. Accordingly, their respective capital costs have been excluded from the capital cost for the purpose of working out the annual fixed charges.

(ii) 400 kV Transfer and Bus Coupler Bays

37. The Commission, through its order dated 9.11.2021 in Petition No. 80/TT/2016, did not approve the COD of the 400 kV transfer bay and bus coupler bay as the Petitioner did not submit the NRLDC Trial Operation Certificate. The relevant extracts of the order are as follows:

"(ii) 400 kV Bus Transfer and Bus Coupler bays

63. The Petitioner has claimed COD of these elements as 31.7.2016. On perusal of record, we observe that the Petitioner has submitted CEA Energization Certificate dated 18.7.2016 for bus transfer bays and bus coupler bays at 400 kV level. However, the Petitioner has not submitted NRLDC trial operation certificate for any of them. In the absence of trial operation certificate in respect of these bays, we are not inclined to approve their commercial operation date. Accordingly, their respective capital costs shall be excluded from the capital cost to be considered to work out the annual fixed charges.

64. However, the Petitioner may submit all relevant documents including the trial operation certificate of the said elements at the time of truing-up and seek approval of the commercial operation date of these elements."

38. The Petitioner in the instant true-up Petition has submitted that the 400 kV 'transfer and bus coupler bays' are an integral part of the substation and are being used as a standby element. These elements are being used for operational purposes in accordance with the requirements. These elements were successfully



commissioned and were test-charged on 31.7.2016 along with the 400 kV Substation Khandukhal (Srinagar).

39. Further, the Petitioner has submitted that the 400 kV bus transfer bay was charged on 13.10.2016 and the 400 kV bus coupler bay was charged on 14.10.2016, as per the requirements of operational use. The Petitioner has also submitted that it had applied to the NRLDC for a trial run certificate for the substation vide letter no. 282/SE(PI)/PTCUL dated 19.7.2016 in line with the provisions of the 2014 Tariff Regulations and NRLDC procedure of integration of new element into the grid dated 26.5.2014, and had submitted the details of all elements (including 400 kV bus coupler bay and 400 kV bus transfer bay) to NRLDC. However, the Trial Run Certificates of 400 kV bus transfer and bus coupler bays were not sought separately for the following reasons:

- These elements were not shown under the list of elements in the NRLDC procedure of integration of new elements into the grid dated 26.05.2014, for which a trial run operation certificate was required separately.
- These elements were an integral part of the substation and were commissioned and test-charged along with the substation on 31.7.2016.

40. In compliance with RoP for the hearing dated 26.12.2024, the Petitioner has submitted the NRLDC Charging Certificate dated 18.2.2025 in respect of 400 kV transfer and bus coupler bay and requested to consider the COD of the 400 kV transfer and bus coupler bay as on 31.7.2016.

41. We have considered the Petitioner's submissions. It is observed that there was some ambiguity in the CEA Energisation Certificate and NRLDC Charging Certificate submitted by the Petitioner in Petition No. 80/TT/2016. Accordingly, the Petitioner was directed to submit the charging certificates for the 400 kV and 220 kV bus couplers and bus transfer bays at Srinagar Substation. Now, the Petitioner, in the instant tried-



up Petition, has provided an NRLDC Charging Certificate dated 18.2.2025, certifying the successful charging of the 400 kV transfer and bus coupler bay on 13.10.2016 and 14.10.2016, respectively, which differs from the COD of 31.7.2016, approved in respect of ICTs and other elements at Srinagar Substation vide order dated 9.11.2021 in Petition No. 80/TT/2016.

42. Therefore, taking into consideration the NRLDC Charging Certificate dated 18.2.2025 submitted by the Petitioner in the instant true-up Petition, we are inclined to approve the COD of 400 kV bus transfer and bus coupler bay as 14.10.2016 under Regulation 4(3) of the 2014 Tariff Regulations and allow the capitalisation of said bays accordingly.

220 kV Line Bays

43. The Commission, vide its order dated 9.11.2021 in Petition No. 80/TT/2016, did not approve the COD of 2 Numbers 220 kV line bays associated with 220 kV D/C Khandukhal - Kotlibhel HEP Transmission Line and 2 Numbers 220 kV line bays associated with 220 kV D/c Srinagar - Bharamwari Transmission Line due to non-commissioning of the associated lines under the Petitioner's scope. The relevant extract of the order is as follows:

"(iv) 220 kV line bays

65. On scrutiny of record, it is noticed that 2 number of bays associated with 220 kV D/C Khandukhal - Kotibhel HEP line and 2 number of bays associated with 220 kV D/C Srinagar - Bharamwari line are not in use due to non-commissioning of associated lines by the Petitioner itself. Therefore, we do not approve COD of these 4 line bays. Accordingly, their respective capital costs shall be excluded from the capital cost to be considered to work out the annual fixed charges."

44. The Petitioner in the instant true-up Petition has submitted that Circuit 1 and Circuit 2 of the 220 kV Srinagar - Bharamwari HEP D/C Transmission Line were successfully charged at no load basis (Srinagar end) on 2.6.2020 and 3.6.2020,



respectively. NRLDC vide letter no. NRLDC/SO-1/117/2020/02 dated 29.6.2020 issued the commissioning certificate for the line. The Hydro Electric Project of M/s L&T was not ready on 2.6.2020, and NRLDC informed that since no active power flow was occurring on these lines, the trial certificate cannot be issued. Hydro Electric Project of M/s L&T commenced its commercial operations on 13.11.2020 (Unit 1), 21.12.2020 (Unit II) and 25.12.2020 (Unit III). The line was energised for commencement of trial run on 12.11.2020, and the same was completed on 13.11.2020. The NRLDC has issued the Trial Run Certificate on 22.1.2021 certifying the same.

45. The Petitioner has further submitted that the 220 kV Srinagar - Bharamwari line was planned and to be implemented for the evacuation of the power from 99 MW Singoli Bhatwari HEP (M/s L&T Uttaranchal Power Ltd.), 76 MW Phatabyang HEP (M/s LANCO Ltd.) and 76 MW Rambhara HEP (M/s LANCO Mandakani Hydro Power Ltd.) in the expected timeframe with the generators. However, due to the unprecedented flood and disaster in June 2013, the site of Rambhara HEP was completely washed out, and the project was abandoned, causing severe damage to the site of Singoli Bhatwari HEP and 76 MW Phatabyang HEP, due to which the commissioning schedule of these HEPs was delayed. Since the Petitioner was under the contractual obligation for the construction of the Srinagar substation along with the bays, and till June 2013, most of the civil works, supply and erection works of the substation, including the bays, were already completed, so it was not possible to delay the construction of the above bays at that time. Hence, in view of the same, the associated bays were constructed and commissioned on 31.7.2016. Considering the above reasons, the COD of the bays is claimed to be 31.7.2016.


(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL



46. The Petitioner has also submitted that in the Implementation Agreement signed between the Petitioner and L&T, the 400 kV Srinagar Substation was part of Associated Transmission System (ATS) of 99 MW Singoli Bhatwari HEP and the substation was shown as "already commissioned" in the Implementation Agreement, which means the 220 kV bays were also commissioned along with the commissioning of the 400 kV Srinagar Substation. Thus, it is submitted that COD of the bays associated with 220 kV D/C Srinagar - Bharamwari HEP Line should be considered as 31.7.2016. In support of the COD, the Petitioner has furnished the COD Certificate, CEA Energisation Certificate, and NRLDC Trial Run Certificate.

47. In regard to the 2 Nos. 220 kV line bays associated with 220 kV D/C Khandukhal - Kotlibhel HEP Line, the Petitioner has submitted that it had constructed the associated bays for the evacuation of power from Kotlibhel HEP in the expected timeframe of Kotlibhel HEP. However, due to environmental reasons/considerations, the generating projects in that region were put on hold by the Hon'ble Supreme Court, and the associated matter regarding the same is still pending before the Hon'ble Supreme Court of India. The Petitioner has submitted that the construction of Kotlibhel HEP was not under the control of the Petitioner and requested to approve the COD of the bays associated with 220 kV D/C Khandukhal - Kotlibhel HEP Line as 31.7.2016.

48. Regarding the compliance with the RoP for the hearing dated 26.12.2024, the Petitioner, through an affidavit dated 22.2.2025, has reiterated the submissions made earlier in the main Petition. The Petitioner has stated that the construction of the 220 kV Khandukhal - Kotlibhel Transmission Line was not within the Petitioner's scope. Furthermore, the Petitioner has submitted the CEA Energisation Certificate and COD



certificate for the 220 kV bays associated with the 220 kV D/C Khandukhal - Kotlibhel Transmission Line and has requested approval of the COD for the bays as on 31.7.2016.

49. We have considered the Petitioner's submissions and perused the documents placed on record. With regard to 2 Nos. line bays associated with 220 kV D/C Srinagar - Bharamwari Line, it is observed that as per NRLDC letter dated 29.6.2020, Ckt-1 and Ckt.-2 of 220 kV D/C Srinagar - Bharamwari transmission line were initially charged on 2.6.2020 and 3.6.2020, respectively, from the Srinagar end. However, because there was no active power flow on these lines, NRLDC did not issue the Trial Run Certificate. Further, on commissioning of Unit No. 1 of 99 MW Singoli Bhatwari HEP owned by M/s. L&T, the certificate of successful completion of the trial run of the 220 kV D/C Srinagar - Bharamwari line, was issued by the NRLDC on 22.1.2021.

50. Perusal of record shows that the Commission vide its order dated 20.1.2024 in Petition No. 478/TT/2020 observed that the Petitioner has implemented the interim arrangement, and final CEA Energisation Certificate in respect of 220 kV D/C Srinagar - Bharamwari transmission line was issued on 12.10.2020 and as such did not allow the COD of the associated transmission line under Regulation 5(2) of the 2019 Tariff Regulations. The Commission, in its aforementioned order, approved the COD of the associated transmission line as 13.11.2020. The relevant extracts of the order are as follows:

"41. As per the above direction of the CEA, the Petitioner has obtained NOC vide letter dated 3.7.2020 has obtained defense NOC for the instant transmission line and applied for CEA energization of the instant transmission line and CEA vide letter dated 12.10.2020 has granted approval for energization of the instant transmission line.


(Er. JILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

42. From the above, we conclude that for approval of COD, there is no provision for issue of provisional energization certificate under the 2019 Tariff Regulations, 2019. The Petitioner is required to submit energization certificate without any conditions for claiming the COD of the asset. In the instant case, the Petitioner has submitted the unconditional energization certificate dated 12.10.2020. Therefore, we consider the energization certificate dated 12.10.2020.

43. From the above, we are of the view that as the Petitioner has implemented the instant asset under interim arrangement and has submitted CEA energization certificate dated 12.10.2020. Therefore, the Petitioner's claim for COD of the transmission asset under the Regulation 5(2) of the 2019 Tariff Regulations is not allowed.

44. Taking into consideration the CEA energization certificate dated 12.10.2020 and the trial operation certificate dated 22.1.2021, certifying that the successful trial operation was completed on load on 13.11.2020, the COD of the transmission asset is approved as 13.11.2020."

51. As has been discussed above, the COD of the 220 kV D/C Khandukhal (Srinagar) – Baramwari Line, which was under the Petitioner's scope of work, was approved by the Commission as 13.11.2020. We are inclined to approve the COD of 2 Nos. 220 kV line bays associated with 220 kV D/C Srinagar - Bharamwari transmission line as 13.11.2020.

52. Further, with regard to 2 Nos. 220 kV line bays associated with 220 kV D/C Khandukhal - Kotlibhel HEP Line, it is observed that, as per submissions of the Petitioner, Kotlibhel HEP was put on hold by the Hon'ble Supreme Court due to some environmental reasons, and the matter is still pending. The construction of Kotlibhel HEP was not under PTCUL's control. It is noticed that the 2 Numbers 220 kV line bays associated with 220 kV D/C Khandukhal - Kotlibhel HEP line are not in use due to the non-commissioning of the associated 220 kV D/C Khandukhal - Kotlibhel HEP transmission line by the Petitioner. Therefore, we are not inclined to approve the COD for 2 (two) 220 kV line bays associated with the 220 kV D/C Khandukhal - Kotlibhel HEP line. The Petitioner is directed to approach the Commission for approval of COD and subsequent tariff after the start of utilisation of the said 2 Nos. line bays through a separate tariff Petition as per the relevant Tariff Regulations in



the future. Accordingly, their respective capital costs have been excluded from the capital cost used to work out the AFC.

220 kV Bus Transfer Bays and Bus Coupler Bays.

53. The Commission, in its order dated 9.11.2021 in Petition No. 80/TT/2016, did not approve the COD of the 220 kV bus transfer bays and bus coupler bays due to the reason that the Trial Run Certificate was not furnished. The relevant extract of the order is as follows:

“(iv) 220 kV Bus transfer bays and Bus Coupler Bays

66. The Petitioner has claimed COD of these elements as 31.7.2016. The Petitioner has submitted CEA Energization Certificate dated 18.7.2016 for bus transfer bays and bus coupler bays at 220 kV level. However, the Petitioner has not submitted NRLDC or SLDC (Uttarakhand) trial operation certificate or charging certificate. In the absence of trial operation certificate in respect of these elements, we are not inclined to approve their commercial operation date. Accordingly, their respective capital costs shall be excluded from the capital cost to be considered to work out the annual fixed charges.”

54. The Petitioner in the instant trued-up Petition has submitted that 220 kV transfer and bus coupler bays are an integral part of the substation and are being used as a standby element. These elements are being used for operational purposes in accordance with the requirements. These elements were successfully commissioned and test-charged on 31.7.2016 along with the 400 kV Substation Khandukhal (Srinagar). Further, the Petitioner has submitted the charging certificate for these elements issued by SLDC, Uttarakhand and has requested consideration of CODs of the transmission elements as on 31.7.2016.

55. Furthermore, in compliance with RoP in the hearing dated 26.12.2024, the Petitioner has also submitted the NRLDC Charging Certificate dated 18.2.2025 regarding the 220 kV transfer and bus coupler bays at Srinagar Substation.

56. We have considered the Petitioner's submissions. The NRLDC charging certificate dated 18.2.2025, furnished by the Petitioner, certifies that the 220 kV



transfer and bus coupler bay were successfully charged as of 14.10.2016. Therefore, as per the findings given above in this order, and taking into consideration the NRLDC Charging Certificate dated 18.2.2025, we are inclined to approve the COD of the 220 kV transfer and bus coupler bay as 14.10.2016 under Regulation 4(3) of the 2014 Tariff Regulations and allow the capitalisation of the said bays accordingly.

57. In view of the above discussions, the details of CODs for different transmission elements of Assets-I & Asset-II allowed/disallowed in this order are summarised as follows:

Sr. No.	400/220 kV bays	Number of bays	COD	Remarks
A.	Asset-I			
	400 kV Bays			
1	400/220 kV 315 MVA ICT-1 and ICT-2 along with their bays (HV side)	2	31.7.2016	Allowed vide order dated 9.11.2021 in Petition No. 80/TT/2016
2	400 kV D/C Khandukhal (Srinagar) - GVK HEP line	2	31.7.2016	
3	400 kV D/C Khandukhal (Srinagar) - Kashipur (Rampur) line	2	Not Allowed	
4	400 kV D/C Khandukhal (Srinagar) - Pipalkoti line	2	Not Allowed	
5	Bus Coupler Bay	1	14.10.2016	Allowed in the instant order
6	Bus Transfer Bay	1	14.10.2016	
	220 kV Bays			
1	400/220 kV 315 MVA ICT-1 & ICT-2 -bays (LV side)	2	31.7.2016	Allowed vide order dated 9.11.2021 in Petition No. 80/TT/2016
2	220/132 kV 160 MVA ICT-1 along with its bay (HV side)	1	31.7.2016	
3	220/132 kV 160 MVA ICT-2 along with its bay (HV side)	1	3.8.2016	
4	Bus Coupler Bay	1	14.10.2016	Allowed in instant order
5	Bus Transfer bay	1	14.10.2016	
6	220 kV D/C Khandukhal (Srinagar) - Kotlibhel Line	2	Not Allowed	
7	220 kV D/C Khandukhal (Srinagar) -	2	13.11.2020	Allowed in instant

(Er. ILLA CHANDRA)

Chief Engineer

(Commercial & Regulatory)
PTCUL

Page 26 of 105

Order in Petition No. 186/TT/2024

	Baramwari Line			order
B	Asset-II			
1	80 MVAR Bus Reactor	1	20.10.2018	Allowed vide order dated 9.11.2021 in Petition No. 80/TT/2016

58. In view of the above discussions, the COD of 2 Nos. 220 kV D/C Khandukhal (Srinagar) - Baramwari line bays are approved as of 13.11.2020, respectively, and thus, the AFC for said bays will be determined as per the 2019 Tariff Regulations in subsequent paragraphs of this order.

59. Since the COD of different elements of Asset-I are approved on different dates, we split Asset-I into separate groups based on their respective CODs to determine the capital costs for tariff purposes. These groups are: (i) Group-A with COD as on 31.7.2016, (ii) Group-B with COD as on 14.10.2016, (iii) Group-C with COD as on 3.8.2016, and (iv) Group D with COD as on 13.11.2020.

Time Overrun

Srinagar Substation 400/220/132 kV

60. The Commission, in its order dated 9.11.2021 in Petition No. 80/TT/2016, after detailed analysis on time overrun concerning Assets- I and II, condoned time overrun of 34 months and 23 days out of 50 months for Asset-I, and 30 months and 04 days out of 77 months for Asset-II claimed by the Petitioner. The relevant extracts of the order are as follows:

"94. The details of the time over-run condoned is as follows:

Asset-I

Sr. No.	Activity	From	To	Time taken
1	Delay due to road blockages, damaged roads, landslides, slippages etc.	31.7.2010	21.12.2010	4 months & 22 days


(Er. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL



2	Delay in getting approval from BRO for movement on roads and bridge on Rishikesh to Khandukhal (Srinagar) route and delay due to natural disaster (Flash floods during June, 2013)	3.2.2013	12.12.2014	22 months & 9 days
3	Delay in transportation of heavy consignments i.e. 160 MVA ICTs and 50 MVar Bus Reactor through Rishikesh-Chamba-Tehri Dam route	27.3.2015	15.6.2015	2 months & 20 days
4	Delay due to washing away of staging	14.7.2015	15.12.2015	5 months & 2 days
	Total time over-run condoned			34 months & 23 days

95. Hence, out of the total time over-run of 50 months, time over-run of 34 months and 23 days in case of 400/220/132 kV Srinagar Sub-station is condoned.

80 MVar 400 kV Bus Reactor

96. We have, in earlier part of this order, come to the finding that the scheduled date of commercial operation of the Project (including the bus reactor) was 26.5.2012. There is delay of 77 months in commissioning of bus reactor. The Petitioner has submitted that it was required to erect, test and commission 50 MVar reactor at Srinagar sub-station vide original Contract Agreement dated 30.5.2009 along with other elements like 315 MVA ICTs, 160 MVA ICTs, 400 kV and 220 kV bays. The Petitioner vide affidavit dated 23.12.2019 has submitted an inter-office letter dated 3.8.2015, in which it was informed that on 27.7.2015, the said reactor toppled while in transit to site at Srinagar Sub-station. Thereafter, the reactor was sent back to the factory for its checking.

97. The Petitioner has submitted that it completed the erection work of 80 MVar reactor on 15.7.2018 but due to bad weather and heavy rainfall in the month of July 2018, the final testing of the equipment could be completed in the first week of August 2018 only. Later, the Petitioner approached CEA on 8.8.2018 for the 'Approval of Energization' of 80 MVar reactor which the Petitioner received on 14.9.2018. The successful trial operation of 80 MVar reactor was completed on 19.10.2018. Trial operation certificate was issued by NRLDC on 15.11.2018.

98. The Petitioner has considered the reference date for time taken to commission the reactor as the date of new contract i.e. 7.12.2017 with a schedule of 8 months. However, in our view, any delay in achieving COD has to be considered with respect to the original scheduled COD of the reactor (50 MVar) which was 26.5.2012. The COD of the 80 MVar bus reactor having been approved as 20.10.2018, there is delay of 77 months.

99. The Petitioner has referred to 38th and 39th NRPC meeting regarding installation of 80 MVar reactor in place of 50 MVar reactor as envisaged. We have perused the minutes of meeting of 38th and 39th NRPC meetings. Relevant extract from 38th NRPC minutes of meeting dated 10.1.2017 is as follows:

"B.13 Reactive compensation at 220 kV level TCC Deliberation



B.13.1 Member Secretary NRPC stated that the proposal for installation of bus reactors at 12 nos. 400 kV and 17 nos. 220 kV sub-stations was discussed in the 29th meeting of NRPC held on 13th September 2013. After deliberations, NRPC had approved installation of reactors at 400 kV sub-stations of POWERGRID and RVPNL. As regards 220 kV bus reactors, it was decided that the requirement would be firmed up in consultation with the States in separate meetings. Thereafter, the issue of validation of the data and submission of report of the study for determination of requirement of reactive compensation at 220 kV level had been under discussion at NRPC forum.

400 kV Level

24	Srinagar	Uttarakhand	125 MVAR
----	----------	-------------	----------

B.13.6 TCC accepted the report with the observation that study for Delhi system would be reviewed and recommended for approval of NRPC. NRPC Deliberation NRPC approved the recommendation of the TCC."

100. Relevant extract from 39th NRPC meeting dated 2.5.2017 and minutes of meeting dated 14.7.2017 are as follows:

"B.5 Reactive compensation at 220 kV level.

B.5.2 He added that POWERGRID, in September, 2016 had submitted its report on Reactive compensation in Northern Region. The report was deliberated in 34th TCC/38th NRPC meeting held on 24th /25th October, 2016. Delhi had requested to review the system study for its system. NRPC approved the reactors as per the details given below in Table-2 and Table-3 , subject to review of requirement for Delhi.
Table-2: At 220 kV level:

Table-3: At 400 kV level:

101. In the 39th Standing Committee on Power System Planning of Northern Region held on 28-29.5.2017 and minutes of meeting dated 28.7.2017, following was discussed:

"Reactive Power Compensation Requirement Studies in Northern Region and High voltage at Kurukshetra

27.1 CEA stated that after the Grid Disturbance in July 12, the need for proper reactive power management was emphasised for reliable and secure operation of the grid. The issue of reactive compensation was discussed in 29th meeting of NRPC held on 13/09/2013, wherein, it was deliberated that adequate reactive compensation need to be provided at 400 kV as well as at 220 kV level to contain the high voltages in the grid so as the opening of lines during light load conditions can be avoided. Accordingly, in the meeting, it was agreed that the studies may be carried out by CTU for installation of bus reactors at 400 kV and 220 kV level. 27.2 CTU stated that they had carried out system studies to identify the requirement of reactive compensation at 400 kV and 220 kV voltage level.


(Er. ILLA CHANDRA)

Chief Engineer
(Commercial & Regulatory)
PTCUL



27.3 CTU further stated that while carrying out the studies, requirement of additional shunt reactors at 400 kV was also observed. Accordingly, studies were also carried out for evolving the requirement of shunt reactors at 400 kV level for 2018-19 conditions along with above mentioned additional reactors at 220 kV level. Based on the studies, Reactors at following locations at 400 kV level are proposed:

Sr. No.	Bus Name	State	Reactor proposed (MVAR)
1	-----	-----	-----
23	Kashipur	Uttarakhand	125
24	Srinagar	Uttarakhand	125

27.8 PTCUL stated that they have already put up the proposal for 80 MVAR bus reactor at Srinagar and Kashipur 400 kV S/Ss instead of 125 MVAR due to transportation problems and they have proposed PSDF funding for installation of these reactors.

27.14 After further deliberation following was agreed:

Sr. No.	Bus Name	State	Reactor proposed (MVAR)
1	-----	-----	-----
17	Kashipur	Uttarakhand	125
18	Srinagar	Uttarakhand	125

102. We observe that there was requirement of 125 MVAR reactors at Srinagar and Kashipur as per studies conducted by CTU to find reactive compensation in Northern Region. The said requirements were of CTU in the year 2013 and again in the year 2016. The requirement of reactive compensation nowhere refers to replace 50 MVAR reactor under the scope of PTCUL, rather it is about an additional reactive requirement for 125 MVAR in place of which PTCUL proposed 80 MVAR. For these reasons, we do not find it appropriate to condone the delay occurred due to installation of 80 MVAR reactor in place of 50 MVAR reactor in view of discussions in RPC and Standing Committee meetings.

103. The Petitioner has submitted identical reasons for time over-run till 27.7.2015, as submitted for Srinagar sub-station. These reasons have been analysed in earlier paragraphs of this order and accordingly the treatment for time over-run on this count up to 27.7.2015 is as follows:

Asset-II

Sr. No.	Activity	From	To	Time taken
1	Delay due to road blockages, damaged roads, landslides, slippages etc.	31.7.2010	21.12.2010	4 months & 22 days
2	Delay in getting approval from BRO for movement on roads and bridge on Rishikesh to Khandukhal (Srinagar) route and delay due to natural disaster (Flash floods during June, 2013).	3.2.2013	12.12.2014	22 months & 9 days
3	Delay in transportation of heavy consignments i.e. 160 MVA ICTs and 50 MVAR Bus Reactor through Rishikesh-Chamba-Tehri Dam route	27.3.2015	15.6.2015	2 months & 20 days



4	Delay due to washing away of staging.	14.7.2015	26.7.2015*	13 days
	Total time over-run condoned			30 months & 4 days

*We are not inclined to allow time over-run beyond 27.7.2015 (when 50 MVAR reactor got toppled)

105. Therefore, time over-run beyond 27.7.2015 till 19.10.2018 (COD of the reactor 20.10.2018) is not condoned. Accordingly, out of total time over-run of 77 months, the time over-run of 30 months and 4 days is condoned as shown above.

(v) Computation of time over-run condoned and not condoned in respect of the transmission assets is as follows:

Particulars	Asset-I	Asset-II
SCOD considered	26.5.2012	26.5.2012
Time up to SCOD (months)	30	30
COD Approved	31.7.2016	20.10.2018
Time over-run (months approximately)	50	77
Total time consumed (months approximately)	80	107
Time over-run condoned (months approximately)	34.77	30.13
Time over-run not condoned (months approximately)	15.23	46.87

61. The Petitioner in the current trued-up Petition has again submitted supporting documents regarding the delay, narrating the following reasons, which were not condoned by the Commission in its order dated 9.11.2021 in Petition No. 80/TT/2016 and requested to condone the 15 months and 7 days delay concerning Asset-I:

- Delay in the construction of a bridge of adequate strength.
- Delay due to flash floods and delay due to landslides, slippages, damaged roads and road blockages.
- Delay in obtaining approval from BRO for movement on roads and bridges on the Rishikesh to Khandukhal (Srinagar) route, and delays caused by a natural disaster (flash floods in June 2013).
- Delay in transportation of heavy consignments, i.e. 160 MVA ICTs and 50 MVAR Bus Reactor through Rishikesh-Chamba-Tehri Dam route.
- Delay due to the washing away of staging.
- Delay due to non-availability of GVK HEP - Khandukhal (Srinagar) Substation transmission Line.


(Er. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL



g. Delay in COD of 400/220 KV Srinagar Substation

62. We have considered the Petitioner's submissions. On perusal of the Commission's order dated 9.11.2021 in Petition No. 80/TT/2016, we find nothing in the time overrun analysis section of the order that indicates any liberty was granted to the Petitioner to submit delay justifications with supporting documents for the time delay not condoned. In the absence of such liberty being granted in the order dated 9.11.2021, we are not inclined to re-examine the various reasons for the time delay provided by the Petitioner in the current true-up.

63. Accordingly, the summary of delays condoned and not condoned in relation to elements of Asset-I and Asset-II from their respective COD is as follows:

Particulars	Asset-I			Asset-II
	Group-A elements	Group-B elements	Group-C elements	
SCOD considered	26.5.2012	26.5.2012	26.5.2012	26.5.2012
Time up to SCOD (months)	30	30	30	30
COD Approved	31.7.2016	14.10.2016	3.8.2016	20.10.2018
Time overrun (months approximately)	50	53	50	77
Total time consumed (months approximately)	80	83	80	107
Time overrun condoned (months approximately)	34.77	34.77	34.77	30.13
Time overrun not condoned (months approximately)	15.23	18.23	15.23	46.87

Capital Cost

64. The Petitioner, in its affidavit dated 21.2.2025, has submitted Auditor's Certificate dated 22.5.2023 for the capital cost concerning the transmission assets claimed as on COD and thereafter up to 31.3.2024. The details of the same are as follows:



Sl. No.	Particulars	Upto 31.03.2016	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	Total
Asset-I : 400/220/132 kV Substation at Srinagar and associated bays										
1	Land	433.56	-	-	-	-	-	-	-	433.56
2	Building	289.09	-	288.26	29.65	-	248.54	-	-	855.54
3	Hydraulic Works	153.48	-	-	-	-	-	-	-	153.48
4	Civil Works	411.16	157.65	-	-	-	-	(7.96)	-	560.85
5	Substation Equipment	14848.69	579.43	0.67	90.79	-	-	-	(68.44)	15451.15
6	PLCC	399.66	-	-	-	-	-	-	-	399.66
7	Interest During Construction (IDC)	2414.03	(2172.70)	-	-	(241.33)	-	-	-	0.00
8	Incidental Expenditure During Construction (IEDC)	12.18	-	-	-	-	-	-	-	12.18
9	Establishment Expense	1434.93	-	-	-	-	-	-	-	1434.93
10	ADB Project Management Office Expense	-	-	-	768.88	-	-	-	-	768.88
	Total	20396.78	(1435.61)	288.94	889.33	(241.33)	248.54	(7.96)	(68.44)	20070.23
Asset-II : 80 MVar Reactor										
	80 MVar Reactor				670.52					670.52

65. Based on the above and supported by Form-5, the following capital cost (excluding IDC and IEDC) up to the COD and thereafter up to 31.3.2019 has been claimed by the Petitioner concerning the transmission assets in this Petition:

Sr. No.	Asset's Name	Capital Cost as on COD	ACE				Capital Cost as on 31.3.2019
			2016-17	2017-18	2018-19	Total	
1	Asset-I	16535.64*	737.08	288.94	889.34	1915.35	18450.99
2	Asset-II	670.52	-	-	-	-	670.52

*Excluding IDC & IEDC



66. Out of the capital cost claimed by the Petitioner as indicated above, the following capital cost has been claimed (excluding IDC and IEDC) as on COD for Asset-I (Group-A, Group-B, Group-C & Group-D) and Asset-II for tariff purposes:

(₹ in lakh)			
Sr. No	Particulars	COD	Capital Cost (Excluding IDC & IEDC) as on COD
A.	Asset-I: 400/220 kV, 315 MVA ICT-1 & ICT-2 and 160 MVA, 220/132 kV ICT-1 & 2 along with associated bays at Srinagar Substation		
1	Group -A elements	31.7.2016	11124.45
2	Group -B elements	14.10.2016	915.54
3	Group -C elements	03.08.2016	2229.34
4	Group-D elements	13.11.2020	484.38
	Total		14753.71
B.	Asset-II : 80 MVAr Bus Reactor	20.10.2018	670.52

Note: Asset-I (Group D) shall be dealt with in the next tariff period.

Interest During Construction (IDC)

67. The Petitioner, vide Auditor's Certificate dated 22.5.2023 and Form-5, has claimed IDC as on COD amounting to ₹2414.03 lakh. Further, the entire amount of IDC has been reversed in the later years, i.e. ₹2172.70 lakh and ₹241.33 lakh in FY 2016-17 and FY 2019-20, respectively. The Petitioner submitted in a note in the text portion of the Petition that the IDC was booked initially but was later reversed in its books by way of accounting entry in line with the clarification from the Government of Uttarakhand with regard to the interest on loan, and hence the IDC has been excluded for the purpose of capital cost determination. Further, the Petitioner has submitted that the same is an interest-free loan. Based on the above, it is evident that the IDC amount stated in the Auditor's Certificate is insignificant when determining capital costs.

Incidental Expenditure During Construction (IEDC)

(Signature)
(E. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulation)
PTCUL

68. The Petitioner has claimed ₹1447.11 lakh (₹12.18 lakh as IEDC plus ₹1434.93 lakh as Establishment Expenses) on account of IEDC in respect of Asset-I. The same has been considered on a pro-rata basis of the hard cost allowed.

69. Accordingly, we adjust the corresponding soft cost (i.e. IEDC) on a pro-rata basis of the hard cost allowed to arrive at the total capital cost allowed as on COD. The total capital cost for Asset-I (Group-A, Group-B, Group-C and Group-D) as on COD allowable before adjustment due to time overrun analysis, is as follows:

(₹ in lakh)							
Particulars	Hard Cost Claimed up to COD (as per Auditor's Certificate dated 4.1.2025 (A))	Total Hard Cost Allowed as on COD (B)	Hard Cost Disallowed (C=A-B)	IEDC Claimed (D)	IEDC Disallowed due to disallowance of Hard Cost (E)	IEDC Allowable (F=D-E)	Total capital cost allowable as on COD (before scrutiny of time overrun Analysis) (G)=(B+F)
Freehold Land	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Leasehold Land	433.56	386.84	46.72	37.94	4.09	33.85	420.69
Building & Other Civil Works	700.25	624.79	75.46	61.28	6.60	54.68	679.47
Transmission Line	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sub-Station	15002.17	13385.49	1616.68	1312.91	141.48	1171.43	14556.92
PLCC	399.66	356.59	43.07	34.98	3.77	31.21	387.80
Total	16535.64	14753.71	1781.93	1447.11	155.94	1291.17	16044.88

70. Further, we have adjusted the allowable IEDC on a pro-rata basis of the hard cost allowed for Group-A, Group-B, Group-C and Group-D of Asset-I, to arrive at the total capital cost allowed as on COD. The details of the same are as follows:

(₹ in lakh)					
Particulars Asset-I (Group-A)	Hard Cost Allowed as	Pro-rata apportioned	Pro-rata apportioned	Pro-rata apportioned	Total Capital



	on COD (A)	Allowable IEDC (B)	Disallowed IEDC due to Time Overrun (C)	Allowed IEDC (D)	Cost Allowed as on COD (i.e 31.7.2016) (E)
Freehold Land	0.00	0.00	0.00	0.00	0.00
Leasehold Land	291.68	25.53	4.86	20.67	312.35
Building & Other Civil Works	471.10	41.23	7.85	33.38	504.48
Transmission Line	0.00	0.00	0.00	0.00	0.00
Sub-Station Equipment	10092.80	883.27	168.15	715.12	10807.91
PLCC	268.87	23.53	4.48	19.05	287.92
Total	11124.45	973.55	185.34	788.21	11912.66

(₹ in lakh)

Particulars Asset-I (Group-B)	Hard Cost Allowed as on COD (A)	Pro-rata apportioned Allowable IEDC (B)	Pro-rata apportioned Disallowed IEDC due to Time Overrun (C)	Pro-rata apportioned Allowed IEDC (D)	Total Capital Cost Allowed as on COD (i.e., 14.10.2016) (E)
Freehold Land	0.00	0.00	0.00	0.00	0.00
Leasehold Land	24.01	2.10	0.46	1.64	25.64
Building & Other Civil Works	38.77	3.39	0.75	2.65	41.42
Transmission Line	0.00	0.00	0.00	0.00	0.00
Sub-Station Equipment	830.64	72.69	15.97	56.73	887.36
PLCC	22.13	1.94	0.43	1.51	23.64
Total	915.54	80.12	17.60	62.52	978.06

(₹ in lakh)

Particulars Asset-I (Group-C)	Hard Cost Allowed as on COD (A)	Pro-rata apportioned Allowable IEDC (B)	Pro-rata apportioned Disallowed IEDC due to Time Overrun (C)	Pro-rata apportioned Allowed IEDC (D)	Total Capital Cost Allowed as on COD (i.e 03.08.2016) (E)
Freehold Land	0.00	0.00	0.00	0.00	0.00
Leasehold Land	58.45	5.12	0.97	4.14	62.59
Building & Other Civil Works	94.41	8.26	1.57	6.69	101.10
Transmission Line	0.00	0.00	0.00	0.00	0.00
Sub-Station Equipment	2022.60	177.01	33.70	143.31	2165.91
PLCC	53.88	4.72	0.90	3.82	57.70
Total	2229.34	195.10	37.14	157.96	2387.30

(₹ in lakh)

Particulars Asset-I (Group-D)	Hard Cost Allowed as	Pro-rata apportioned	Pro-rata apportioned	Pro-rata apportioned	Total Capital
----------------------------------	-------------------------	-------------------------	-------------------------	-------------------------	------------------


(E. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL



	on COD (A)	Allowable IEDC (B)	Disallowed IEDC due to Time Overrun (C)	Allowed IEDC (D)	Cost Allowed as on COD (i.e 13.11.2020) (E)
Freehold Land	0.00	0.00	0.00	0.00	0.00
Leasehold Land	12.70	1.11	0.57	0.55	13.25
Building & Other Civil Works	20.51	1.80	0.91	0.88	21.39
Transmission Line	0.00	0.00	0.00	0.00	0.00
Sub-Station Equipment	439.46	38.46	19.59	18.87	458.33
PLCC	11.71	1.02	0.52	0.50	12.21
Total	484.38	42.39	21.59	20.80	505.18

Note: Asset-I (Group D) shall be dealt with in the next tariff period

71. The Petitioner has not claimed any IEDC for Asset-II. It is, therefore, presumed that the IEDC claimed by the Petitioner has been fully discharged as on COD.

Initial Spares

72. The Commission vide order dated 19.2.2021 in Petition No. 80/TT/2016 held that the Initial Spares of ₹416.92 lakh claimed by the Petitioner in the capital cost for all the elements are within the norms of the 2014 Tariff Regulations. Hence, no adjustment is required as on COD. The relevant extracts of the order are as follows:

"127. The Petitioner has submitted Auditor's certificate dated 11.9.2018 wherein Initial Spares of ₹416.92 lakh has been claimed in the capital cost for all the elements of the asset combined together as "400/220 kV Srinagar Sub-station".

128. Initial Spares claimed by the Petitioner corresponding to sub-station are within the norms of the 2014 Tariff Regulations. Hence, no adjustment of Initial Spares is required as on COD."

73. The Petitioner in the current tried-up Petition has submitted the Auditor's Certificate dated 22.5.2023 and Form-5, in which the Initial Spares of ₹416.92 lakh are also claimed as part of the capital cost for all the elements of the transmission assets combined together as "400/220 kV Srinagar Sub-station".

74. Therefore, as the Initial Spares claimed by the Petitioner in the instant tried-up Petition are within the norms of the 2014 Tariff Regulations, the Initial Spares of ₹416.92 lakh claimed by the Petitioner are allowed.


(Er. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL



Capital Cost as on COD

75. Accordingly, the capital cost allowed for the transmission assets as on COD under Regulation 9(2) of 2014 Tariff Regulations is summarised as under:

(₹ in lakh)

Particulars	Asset-I (Group-A) (COD: 31.07.2016)	Asset-I (Group-B) (COD: 14.10.2016)	Asset-I (Group-C) (COD: 03.08.2016)	Asset-II (COD: 20.10.2018)
Freehold Land	0.00	0.00	0.00	0.00
Leasehold Land	312.35	25.64	62.59	0.00
Building & Other Civil Works	504.48	41.42	101.10	0.00
Transmission Line	0.00	0.00	0.00	0.00
Sub-Station Equipment	10807.91	887.36	2165.91	670.52
PLCC	287.92	23.64	57.70	0.00
Total	11912.66	978.06	2387.30	670.52

Note: Asset-I (Group D) shall be dealt with in the next tariff period.

Additional Capital Expenditure (ACE):

76. The Petitioner in Petition No. 80/TT/2016 projected the ACE concerning the transmission assets, and the details are as follows:

(₹ in lakh)

Asset	ACE			
	2016-17	2017-18	2018-19	Total
Asset- I and Asset-II	589.49	288.88	898.55	1776.92

77. The Commission, through an order dated 9.11.2021 in Petition No. 80/TT/2016, held that the projected ACE of ₹1776.92 lakh claimed by the Petitioner up to 31.3.2019 has been considered as the capital cost of the 80 MVar reactor, i.e., Asset-II, as on COD. The relevant extracts of the order are as follows:

“Projected ACE


(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL



130. As discussed above, the Petitioner has claimed the following ACE incurred/ projected to be incurred during the period from claimed COD to 31.3.2019 for the combined asset:

(₹ in lakh)

Expenditure after COD during 2016-17	Expenditure during 2017-18	Expenditure/ Projected expenditure during 2018-19	Total ACE
589.49	288.88	898.55	1776.92

131. ACE of ₹1776.92 lakh claimed during 2016-19 period has been considered as capital cost of 80 MVAR reactor (Asset-II) as on COD and has been dealt in previous paragraphs."

78. The Petitioner in the current tried-up Petition has submitted the Auditor's Certificate dated 22.5.2023 and claimed the actual ACE of ₹257.34 lakh against Asset-I and "NIL" against Asset-II from COD to 31.3.2019, and the details are as follows:

(₹ in lakh)

Sr. No.	Particulars	ACE			Total ACE
		2016-17	2017-18	2018-19	
A	Asset-I				
1	Land	-	-	-	-
2	Building	-	288.26	29.65	317.91
3	Hydraulic Works	-	-	-	-
4	Civil Works	157.65	-	-	157.65
5	Substation Equipment	579.43	0.67	90.79	670.89
6	PLCC	-	-	-	-
7	Interest During Construction (IDC)	(2172.70)			(2172.70)
8	Incidental Expenditure During Construction (IEDC)	-	-	-	-
9	Establishment Expense	-	-	-	-
10	ADB Project Management Office Expense	-	-	768.88	768.88
	Total	(1435.61)	288.94	889.33	(257.34)

79. The Petitioner has submitted that the ACE up to the cut-off date is being dealt with in accordance with the provisions of Regulation 14(1) of the 2014 Tariff


(En. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL



Regulations, and that after the cut-off date, it is being dealt with in accordance with the provisions of Regulation 14(2) of the 2014 Tariff Regulations.

80. Furthermore, regarding the ADB PMO expenditure, the Petitioner has submitted that it previously claimed the same amount under the head of IEDC in Petition No. 80/TT/2016. However, the amount booked under IEDC for the ADB PMO expenses did not relate to IEDC expenses, as the ADB PMO was established through Government letter 897/1/2007-05-12/2004 dated 8.2.2007 to implement the project under the ADB-funded Uttarakhand Power Sector Investment Programme. Therefore, an expenditure of ₹768.88 lakh was booked against the 400 kV Srinagar Substation, and this has been shown separately in the Auditor's certificate for the Commission's consideration. The Petitioner has also stated that the amount relating to the ADB office expenditure pertains to undischarged liabilities and will be claimed in accordance with the final settlement.

81. We have considered the Petitioner's submissions and perused the documents on record. We approve the COD of various elements of Asset-1 in the 2nd and 3rd quarters of FY 2016-17. Therefore, as per Regulation 3(13) of the 2014 Tariff Regulations, the cut-off date of Asset-1 is 31.3.2019.

82. Furthermore, it is observed that, as per Form-7, the Petitioner has claimed the ACE from 1.8.2016 to 31.3.2019 for different types of work, and the details are as follows:

(₹ in Lakh)

Sr. No.	F.Y.	ACE	Nature of Work	Remarks
1	2016-17	147.65	Construction of the approach road to the colony, culverts, drains and other development.	Due to the delay in the tendering process and construction works.
		9.99	Other Civil Works	

(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL



		579.43	Substation and PLCC	Payment for supply and testing works against the bill raised after the total supply of material. Also, payment against the fire protection system, cabling works and earthing works of the substation.
2	2017-18	132.13	Construction of 06 Nos Type-III D/S residences, development of terrace, drains, service roads	Due to the delay in the tendering process and construction works.
		156.14	Construction of 04 Nos Type-IV residences at Srinagar S/station.	
		0.67	Substation Equipment	Payment to the Member Dispute Resolution Board in the matter of a dispute over a transformer.
3	2018-19	90.79	Substation & PLCC	Payment against the balance is available for fire protection, cabling, and earthing work.
		29.65	Construction of 06 Nos Type-III D/S residences, development of terrace, drains and service roads.	Due to the delay in the tendering process and construction works.
		768.88	ADB PMO	Payment of the ADB PMO office.

83. Therefore, based on the combined reading of the Auditor Certificate dated 22.5.2023 and Form-7, it is noted that the Petitioner has claimed the total ACE of ₹475.56 lakh, ₹670.22 lakh, ₹0.67 lakh, ₹768.88 lakh, and (₹2172.70 lakh) for construction of residential accommodations and other civil works, balance payment against supply of material and different E&M works, payment against Dispute Board, expenditure against ADB PMO Office, and interest during construction, respectively. The detailed analysis regarding the actual ACE claimed by the Petitioner is as follows:

A. Payment to Dispute Board Member against Dispute Board: ₹0.67 lakh

84. The Petitioner has claimed the actual ACE of ₹0.67 lakh against payment to a Member of the Dispute Board in the matter of the transformer dispute.


(Er. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL



85. We have considered the Petitioner's submissions and observed that the Petitioner has submitted the Auditor's Certificate dated 22.5.2023 and claimed the aforementioned ACE in FY 2017-18 under Substation equipment.

86. As the payment of ₹0.67 lakh was made by the Petitioner to the Member of the Dispute Board, it appears to be of a revenue nature and should be treated as O&M Expenses. Furthermore, Regulation 14(1) of the 2014 Tariff Regulations does not provide for the inclusion of such expenditure as ACE.

87. Therefore, ACE ₹0.67 lakh claimed by the Petitioner for FY 2017-18 against payment to the Member of the Dispute Board for the dispute of the transformer is hereby disallowed.

B. Payment against Construction of Residential Accommodations, development of terrace, drains, service roads, approach roads to colony, culverts and other civil works: ₹475.56 lakh

88. The Petitioner has claimed an actual ACE of ₹475.56 lakh, including ₹147.65 lakh and ₹9.99 lakh for 2016-17, ₹132.13 lakh and ₹156.14 lakh for FY 2017-18, and ₹29.65 lakh for FY 2018-19, against the construction of Type-III and IV accommodations, as well as the development of terraces, drains, and service roads.

89. We have considered the Petitioner's submissions and are of the view that the Petitioner has submitted the Auditor's Certificate dated 22.5.2023 in support of its claim of actual ACE.

90. Regarding the above, we have perused the Detailed Project Report and found that the Petitioner has already included provisions for a Residential Colony, Community Centre, and other civil works in the detailed estimate of work for the 400 kV Srinagar Substation. The snapshot of the relevant excerpt of the DPR is as follows:



	Item Description	Unit	Supply	Unit Supply Rate including Freight @6% + GST @4% +Excise Duty @16.43% for Supply (₹)	Total Supply Cost	Erection including foundations	Unit erection including Service Tax @12.36% for Erection (₹)	Total
O	Civil works including control room/room building, offices, drinking water system, fencing transformer plinth etc.	LS	-	-	-	1	₹ 10,00,00,000	₹10,00,00,000
P	Civil works including Residential Colony, Community Center, Erection of Hostel & School.	LS	-	-	-	1	₹ 6,65,00,000	₹6,65,00,000

91. Furthermore, according to Form-7 submitted by the Petitioner, the work was approved in May 2014, but it was only initiated in May 2016 due to delays in the tendering process and other reasons.

92. Therefore, in view of the above, we are of the view that the aforementioned work falls under the original scope of work deferred for execution. Accordingly, as per Regulation 14(1)(ii) of the 2014 Tariff Regulations, the ACE ₹317.92 lakh (₹132.13 lakh and ₹156.14 lakh for FY 2017-18, and ₹29.65 lakh for FY 2018-19) claimed by the Petitioner for the construction of residential accommodations, development of terrace, drains, and service roads is hereby allowed.

C. Payment against balance works: ₹670.22 lakh


(Er. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL



93. The Petitioner has claimed the actual ACE of ₹670.22 lakh (₹579.43 lakh for FY 2016-17 and ₹90.79 lakh for FY 2018-19) in respect of the balance payment against the supply of material, fire protection, cabling, earthing work, etc.

94. We have considered the Petitioner's submissions. Since the ACE claimed by the Petitioner relates to balance payments for the supply of materials and other works as per the contract for which the bill was raised after COD, the ACE of ₹670.22 lakh (including ₹579.43 lakh for FY 2016-17 and ₹90.79 lakh for FY 2018-19), as per Regulation 14(1)(i) of the 2014 Tariff Regulations, is hereby allowed.

D. Expenditure against ADB PO Office: ₹768.88 lakh

95. The Petitioner has submitted that the aforementioned expenditure was previously claimed under the head of IEDC in Petition No. 80/TT/2016. However, the ADB PMO expenses were not related to IEDC expenses, as the ADB PMO was created to implement the ADB-funded Uttarakhand Power Sector Investment Programme. Therefore, the expenditure of ₹768.88 lakh was booked against the 400 kV Srinagar substation and was claimed as actual ACE for FY 2018-

96. We have considered the Petitioner's submissions and perused the documents on record. After examining the documents, it is observed that to implement the projects proposed under the ADB-funded Uttarakhand Power Sector Investment Program, the Government of Uttarakhand established the Project Management Office (PMO) vide OM dated 8.2.2007. According to this OM, the PIU heads of the Petitioner and UJVNL will report to the authority of the Project Management Office (PMO) on the physical and financial progress of the ADB project, and the Petitioner shall be responsible for maintaining the PMO office building, communication, staff vehicle, computers, office equipment, and other daily requirements for the smooth functioning of the PMO.



Furthermore, it is observed that the Petitioner has booked ₹768.88 lakh towards the ADB-PMO office expenditure for the 400 kV Srinagar Substation up to 31.3.2019.

97. We are of the view that the Project Management Office had been established by the Government of Uttarakhand for monitoring of projects proposed under the ADB-funded Uttarakhand Power Sector Investment program and as per the Government of Uttarakhand OM dated 8.2.2007, the Petitioner had to bear the expenditure against said PMO office. Therefore, the said expenditure seems to be in the nature of office expenditure and should be met through contingency charges covered under IEDC.

98. Also, it is noted that Regulation 14 of 2014 Tariff Regulations does not specify any provision for the admission of such expenditure as Additional Capital Expenditure (ACE).

99. Regulation 54 of 2014 Tariff Regulations provides as follows:

***“54. Power to Relax.** The Commission, for reasons to be recorded in writing, may relax any of the provisions of these regulations on its own motion or on an application made before it by an interested person.”*

100. Regulation 54 of the 2014 Tariff Regulations empowers the Commission to relax its provisions either on its own motion or upon an application made by an interested person. Therefore, considering the mandatory expenditure that the Petitioner is required to incur in accordance with government directives, and exercising the power under Regulation 54 of the 2014 Tariff Regulations, we relax Regulation 14(1) of the 2014 Tariff Regulations and approve the Petitioner's claim of actual ACE ₹768.88 lakh for the FY 2018-19, related to the ADB-PMO office expenditure allocated to the 400 kV Srinagar Substation up to 31.3.2019.

E. Expenditure against Interest During Construction: (₹2172.70 lakh)


(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL



101. The Petitioner has claimed the actual ACE (₹2172.70 lakh) for FY 2016-17 against IDC.

102. We have considered the Petitioner's submissions and are of the view that, as per the Auditor's Certificate dated 22.5.2023, the Petitioner has claimed ACE ₹2172.70 lakh for FY 2016-17 against IDC, and the same is hereby allowed.

103. Therefore, the details of the ACE claimed by the Petitioner allowed/not allowed in this order are summarised as follows:

(₹ in lakh)

Sr. No.	FY	Nature of Work	ACE claimed by the Petitioner	Allowed ACE	Not allowed ACE
1	2016-17	Construction of the approach road to the Colony, culverts, drains and other development	147.65	147.65	-
		Other Civil Works	9.99	9.99	-
		Substation and PLCC	579.43	579.43	-
		Interest During Construction	(2172.70)	(2172.70)	-
	Total		(1435.63)	(1435.63)	-
2	2017-18	Construction of 06 Nos Type-III D/S residences, development of terrace, drains and service roads.	132.13	132.13	-
		Construction of 04 Nos Type-IV residences at Srinagar substation.	156.14	156.14	-
		Substation Equipment	0.67	-	0.67
	Total		288.94	288.27	0.67
3	2018-19	Substation and PLCC	90.79	90.79	-
		Construction of 06 Nos Type-III D/S residences, development of terrace, drains and service roads.	29.65	29.65	-
		ADB PMO	768.88	768.88	-
	Total		889.32	889.32	-

[Signature]

(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL



104. In view of the above, ACE allowed for the transmission assets for the 2014-19 tariff period as follows:

(₹ in lakh)

Sl. N o.	Particular	COD	Additional Capital Expenditure			
			2016-17	2017-18	2018-19	Total
1	Asset-I (Group -A)	31.7.2016	574.63	224.74	693.32	1492.69
2	Asset-I (Group -B)	14.10.2016	47.29	18.50	57.06	122.85
3	Asset-I (Group -C)	3.8.2016	115.16	45.04	138.94	299.13
	Total		737.08	288.27	889.32	1914.67
4	Asset-II	20.10.2018	-	-	-	-

105. Accordingly, the capital cost allowed in respect of transmission assets for the period 2014-19 tariff period is as follows:

(₹ In lakh)

Particulars Asset-I (Group-A)	Total Capital Cost Allowed as on COD	Additional Capital Expenditure			Total Capital Cost Allowed as on 31-3-2019
		2016-17	2017-18	2018-19	
Freehold Land	0.00	0.00	0.00	0.00	0.00
Leasehold Land	312.35	0.00	0.00	0.00	312.35
Building & Other Civil Works	504.48	122.90	224.74	23.12	875.24
Transmission Line	0.00	0.00	0.00	0.00	0.00
Sub-Station Equipment	10807.91	451.73	0.00	670.20	11929.84
PLCC	287.92	0.00	0.00	0.00	287.92
Total	11912.66	574.63	224.74	693.32	13405.35

(₹ In Lakh)

Particulars Asset-I (Group-B)	Total Capital Cost Allowed as on COD	Additional Capital Expenditure			Total Capital Cost Allowed as on 31-03-2019
		2016-17	2017-18	2018-19	
Freehold Land	0.00	0.00	0.00	0.00	0.00
Leasehold Land	25.64	0.00	0.00	0.00	25.64



Building & Other Civil Works	41.42	10.12	18.50	1.90	71.94
Transmission Line	0.00	0.00	0.00	0.00	0.00
Sub-Station Equipment	887.36	37.18	0.00	55.16	979.70
PLCC	23.64	0.00	0.00	0.00	23.64
Total	978.06	47.29	18.50	57.06	1100.92

(₹ in lakh)

Particulars Asset-I (Group-C)	Total Capital Cost Allowed as on COD	Additional Capital Expenditure			Total Capital Cost Allowed as on 31-03-2019
		2016-17	2017-18	2018-19	
Freehold Land	0.00	0.00	0.00	0.00	0.00
Leasehold Land	62.59	0.00	0.00	0.00	62.59
Building & Other Civil Works	101.10	24.63	45.04	4.63	175.40
Transmission Line	0.00	0.00	0.00	0.00	0.00
Sub-Station Equipment	2165.91	90.53	0.00	134.31	2390.74
PLCC	57.70	0.00	0.00	0.00	57.70
Total	2387.30	115.16	45.04	138.94	2686.44

(₹ in lakh)

Particulars Asset-II	Total Capital Cost Allowed as on COD	Additional Capital Expenditure Allowed	Total Capital Cost Allowed as on 31-03-2019
		2018-19	
Freehold Land	0.00	0.00	0.00
Leasehold Land	0.00	0.00	0.00
Building & Other Civil Works	0.00	0.00	0.00
Transmission Line	0.00	0.00	0.00
Sub-Station Equipment	670.52	0.00	670.52
PLCC	0.00	0.00	0.00
Total	670.52	0.00	670.52

Debt-Equity Ratio

106. The debt-equity ratio for the transmission assets has been set at 70:30 as per Regulation 19(3) of the 2014 Tariff Regulations. The following debt-equity ratio has been considered for transmission assets as on COD and 31.3.2019:



Asset-I (Group-A)				
Particulars	Amount as on COD	Debt: Equity Ratio (In %)	Amount as on 31.3.2019	Debt: Equity Ratio (In %)
Debt	8338.86	70.00	9383.75	70.00
Equity	3573.80	30.00	4021.61	30.00
Total	11912.66	100.00	13405.35	100.00
Asset-I (Group-B)				
Particulars	Amount as on COD	Debt: Equity Ratio (In %)	Amount as on 31.3.2019	Debt: Equity Ratio (In %)
Debt	684.65	70.00	770.64	70.00
Equity	293.42	30.00	330.28	30.00
Total	978.06	100.00	1100.92	100.00
Asset-I (Group-C)				
Particulars	Amount as on COD	Debt: Equity Ratio (In %)	Amount as on 31.3.2019	Debt: Equity Ratio (In %)
Debt	1671.11	70.00	1880.50	70.00
Equity	716.19	30.00	805.93	30.00
Total	2387.30	100.00	2686.44	100.00
Asset-II				
Particulars	Amount as on COD	Debt: Equity Ratio (In %)	Amount as on 31.3.2019	Debt: Equity Ratio (In %)
Debt	469.36	70.00	469.36	70.00
Equity	201.16	30.00	201.16	30.00
Total	670.52	100.00	670.52	100.00

Depreciation

107. Depreciation has been calculated in accordance with Regulation 27 of the 2014 Tariff Regulations. Depreciation has been worked out on the basis of capital expenditure as on COD and ACE incurred thereafter, if any, and depreciation for the first year has been calculated on a pro rata basis for the year/part of year. Asset-I (elements) and Asset-II were put into commercial operation on 31.7.2016, 14.10.2016,



3.8.2016, and 20.10.2018, and will therefore complete 12 years beyond 2018-19.

Thus, depreciation has been calculated annually based on the Straight-Line Method at the rates specified in Appendix II.

108. Depreciation allowed for the Asset-I and Asset-II for the 2014-19 tariff period is as follows:

(₹ in lakh)				
Sl. No.	Particulars Asset-I (Group-A)	2016-17 (Pro-rata for 244 days)	2017-18	2018-19
A	Opening Gross Block	11912.66	12487.29	12712.03
B	ACE	574.63	224.74	693.32
C	Closing Gross Block (A+B)	12487.29	12712.03	13405.35
D	Average Gross Block (A+C)/2	12199.98	12599.66	13058.69
E	Average Gross Block (90% depreciable assets)	12199.98	12599.66	13058.69
F	Average Gross Block (100% depreciable assets)	0.00	0.00	0.00
G	Depreciable value (excluding IT equipment and software) (E*90%)	10979.98	11339.70	11752.82
H	Depreciable value of IT equipment and software	0.00	0.00	0.00
I	Total Depreciable Value (G+H)	10979.98	11339.70	11752.82
J	Weighted Average Rate of Depreciation (WAROD) (in %)	5.1651	5.1420	5.1284
K	Lapsed useful life at the beginning of the year	0	0	1
L	Balance useful life at the beginning of the year	25	25	24
M	Depreciation during the year (D*J)	421.25	647.87	669.71
N	Cumulative Depreciation at the end of the year	421.25	1069.12	1738.83
O	Remaining Aggregate Depreciable Value at the end of the year(I-N)	10558.73	10270.58	10014.00

(₹ in lakh)				
Sl. No.	Particulars Asset-I (Group-B)	2016-17 (Pro-rata for 169 days)	2017-18	2018-19
A	Opening Gross Block	978.06	1025.36	1043.86
B	ACE	47.29	18.50	57.06
C	Closing Gross Block (A+B)	1025.36	1043.86	1100.92
D	Average Gross Block (A+C)/2	1001.71	1034.61	1072.39
E	Average Gross Block (90% depreciable assets)	1001.71	1034.61	1072.39
F	Average Gross Block (100% depreciable assets)	0.00	0.00	0.00


 (E. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL



Sl. No.	Particulars Asset-I (Group-B)	2016-17 (Pro-rata for 169 days)	2017-18	2018-19
G	Depreciable value (excluding IT equipment and software) (E*90%)	901.54	931.15	965.15
H	Depreciable value of IT equipment and software	0.00	0.00	0.00
I	Total Depreciable Value (G+H)	901.54	931.15	965.15
J	Weighted Average Rate of Depreciation (WAROD) (in %)	5.1651	5.1419	5.1283
K	Lapsed useful life at the beginning of the year	0	0	1
L	Balance useful life at the beginning of the year	25	25	24
M	Depreciation during the year (D*J)	23.96	53.20	55.00
N	Cumulative Depreciation at the end of the year	23.96	77.15	132.15
O	Remaining Aggregate Depreciable Value at the end of the year(I-N)	877.58	853.99	833.00

(₹ in lakh)

Sl. No.	Particulars Asset-I (Group-C)	2016-17 (Pro-rata for 241 days)	2017-18	2018-19
A	Opening Gross Block	2387.30	2502.45	2547.49
B	ACE	115.16	45.04	138.94
C	Closing Gross Block (A+B)	2502.45	2547.49	2686.44
D	Average Gross Block (A+C)/2	2444.88	2524.97	2616.96
E	Average Gross Block (90% depreciable assets)	2444.88	2524.97	2616.96
F	Average Gross Block (100% depreciable assets)	0.00	0.00	0.00
G	Depreciable value (excluding IT equipment and software) (E*90%)	2200.39	2272.48	2355.27
H	Depreciable value of IT equipment and software	0.00	0.00	0.00
I	Total Depreciable Value (G+H)	2200.39	2272.48	2355.27
J	Weighted Average Rate of Depreciation (WAROD) (in %)	5.1651	5.1420	5.1284
K	Lapsed useful life at the beginning of the year	0	0	1
L	Balance useful life at the beginning of the year	25	25	24
M	Depreciation during the year (D*J)	83.38	129.83	134.21
N	Cumulative Depreciation at the end of the year	83.38	213.21	347.42
O	Remaining Aggregate Depreciable Value at the end of the year(I-N)	2117.01	2059.26	2007.84

(₹ in lakh)

(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL



Sl. No.	Particulars Asset-II	2018-19 (Pro-rata for 163 days)
A	Opening Gross Block	670.52
B	ACE	0.00
C	Closing Gross Block (A+B)	670.52
D	Average Gross Block (A+C)/2	670.52
E	Average Gross Block (90% depreciable assets)	670.52
F	Average Gross Block (100% depreciable assets)	0.00
G	Depreciable value (excluding IT equipment and software) (E*90%)	603.47
H	Depreciable value of IT equipment and software	0.00
I	Total Depreciable Value (G+H)	603.47
J	Weighted Average Rate of Depreciation (WAROD) (in %)	5.2800
K	Lapsed useful life at the beginning of the year	0
L	Balance useful life at the beginning of the year	25
M	Depreciation during the year (D*J)	15.81
N	Cumulative Depreciation at the end of the year	15.81
O	Remaining Aggregate Depreciable Value at the end of the year(I-N)	587.66

109. Depreciation claimed by the Petitioner concerning the transmission assets and allowed in the instant order is as follows:

(₹ in lakh)			
Asset-I	2016-17 (Pro-rata)	2017-18	2018-19
Claimed by the Petitioner in the instant Petition	634.81	972.38	1000.40
Approved in this order			
Asset-I (Group-A)	421.25	647.87	669.71
Asset-I (Group-B)	23.96	53.20	55.00
Asset-I (Group-C)	83.38	129.83	134.21
Total Approved	528.59	830.90	858.92

Note: Asset-I (Group D) shall be dealt with in the next tariff period.

(₹ in lakh)	
Asset-II	2018-19 (Pro-rata for 163 days)
Claimed by the Petitioner in the instant Petition	15.81
Approved in this order	15.81

Interest on Loan

(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL



110. The Petitioner did not claim any IOL during the 2014-19 tariff period, as stated in the Petition, in reference to the Government of Uttarakhand letter dated 21.11.2020 regarding the sanctioned loan funded by ADB. The GoU clarified that the loan is to be repaid as an interest-free loan. Therefore, no interest on the loan is considered as true up for the 2014-19 tariff period.

111. IOL claimed by the Petitioner in the instant Petition concerning transmission assets, and allowed in this order is as follows:

(₹ in lakh)

Asset-I	2016-17 (Pro-rata)	2017-18	2018-19
Approved by the Commission vide order dated 9.11.2021 in Petition No. 80/TT/2016 (Asset-I as a whole).	662.65	930.03	856.64
Claimed by the Petitioner in the instant Petition (Asset-I as a whole).	0.00	0.00	0.00
Approved in this order.	0.00	0.00	0.00

Note: Asset-I (Group D) shall be dealt with in the next tariff period.

(₹ in lakh)

Asset-II	2018-19 (Pro-rata for 163 days)
Approved by the Commission vide order dated 9.11.2021 in Petition No. 80/TT/2016.	43.27
Claimed by the Petitioner in the instant Petition.	0.00
Approved in this order.	0.00

Return on Equity

112. The Petitioner has claimed RoE for the transmission system under Regulations 24 and 25 of the 2014 Tariff Regulations. The Petitioner has submitted that it is liable



to pay income tax at MAT rates and has claimed the following effective tax rates for the 2014-19 tariff period:

Year	Claimed effective tax rate (in %)	Grossed up RoE (Base Rate/1-t) (in %)
2016-17	21.338	19.705
2017-18	21.337	19.704
2018-19	21.549	19.758

113. The Commission, in its order dated 27.4.2020 in Petition No.274/TT/2019, arrived at the effective tax rate for Power Grid Corporation of India Limited based on the notified MAT rates, and the same is as follows:

Year	Notified MAT rates (inclusive of surcharge & cess)	Effective tax (in %)
2014-15	20.961	20.961
2015-16	21.342	21.342
2016-17	21.342	21.342
2017-18	21.342	21.342
2018-19	21.549	21.549

114. MAT rates, as allowed vide order dated 27.4.2020 in Petition No. 274/TT/2019, for the purpose of grossing up the rate of RoE for truing up the tariff of the 2014-19 period, in accordance with the provisions of the 2014 Tariff Regulations, are considered in the present case, which are as follows:

Year	Notified MAT rates (inclusive of surcharge & cess) (in %)	Base rate of RoE (in %)	Grossed up RoE (Base Rate/1-t) (in %)
2016-17	21.342	15.50	19.705
2017-18	21.342	15.50	19.705
2018-19	21.549	15.50	19.758

115. The Petitioner has claimed RoE for the 2014-19 period after grossing up the RoE at 15.50% with effective tax rates (based on MAT rates) each year, as per the



above-mentioned Regulation. RoE has been trued-up on the basis of MAT rates applicable in the respective years and approved for the transmission assets for the 2014-19 tariff period, as follows:

(₹ in lakh)

Particulars		2016-17 (Pro-rata for 244 days)	2017-18	2018-19
Asset-I (Group-A)				
A	Opening Equity	3573.80	3746.19	3813.61
B	Additions	172.39	67.42	208.00
C	Closing Equity (A+B)	3746.19	3813.61	4021.61
D	Average Equity (A+C)/2	3659.99	3779.90	3917.61
E	Return on Equity (Base Rate) (in %)	15.50	15.50	15.50
F	MAT Rate for respective year (in %)	21.342	21.342	21.549
G	Rate of Return on Equity (in %)	19.705	19.705	19.758
H	Return on Equity (D*G)	482.12	744.83	774.04

(₹ in lakh)

Particulars		2016-17 (Pro-rata for 169 days)	2017-18	2018-19
Asset-I (Group-B)				
A	Opening Equity	293.42	307.61	313.16
B	Additions	14.19	5.55	17.12
C	Closing Equity (A+B)	307.61	313.16	330.28
D	Average Equity (A+C)/2	300.51	310.38	321.72
E	Return on Equity (Base Rate) (in %)	15.50	15.50	15.50
F	MAT Rate for respective year (in %)	21.342	21.342	21.549
G	Rate of Return on Equity (in %)	19.705	19.705	19.758
H	Return on Equity (D*G)	27.42	61.16	63.56

(₹ in lakh)

Particulars		2016-17 (Pro-rata for 241 days)	2017-18	2018-19
Asset-I (Group-C)				
A	Opening Equity	716.19	750.74	764.25
B	Additions	34.55	13.51	41.68
C	Closing Equity (A+B)	750.74	764.25	805.93
D	Average Equity (A+C)/2	733.46	757.49	785.09
E	Return on Equity (Base Rate) (in %)	15.50	15.50	15.50
F	MAT Rate for respective year (in %)	21.342	21.342	21.549
G	Rate of Return on Equity (in %)	19.705	19.705	19.758
H	Return on Equity (D*G)	95.43	149.26	155.12

(₹ in lakh)


(En. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL



Particulars		2018-19 (Pro-rata for 163 days)
Asset-II		
A	Opening Equity	201.16
B	Additions	0.00
C	Closing Equity (A+B)	201.16
D	Average Equity (A+C)/2	201.16
E	Return on Equity (Base Rate) (in %)	15.50
F	MAT Rate for respective year (in %)	21.549
G	Rate of Return on Equity (in %)	19.758
H	Return on Equity (D*G)	17.75

116. RoE claimed by the Petitioner and allowed in this order in respect of transmission assets is as follows:

(₹ in lakh)			
Asset-I	2016-17 (Pro-rata)	2017-18	2018-19
Approved by the Commission vide order dated 9.11.2021 in petition no.80/TT/2016 (Asset 1 as a whole)	637.17	953.15	955.71
Claimed by the Petitioner in the instant Petition (Asset 1 as a whole)	725.22	1115.19	1150.02
Approved in this order			
Asset-I (Group-A)	482.12	744.83	774.04
Asset-I (Group-B)	27.42	61.16	63.56
Asset-I (Group-C)	95.43	149.26	155.12
Total Approved	604.97	955.25	992.71

Note: Asset-I (Group D) shall be dealt with in the next tariff period.

Asset-II	2018-19 (Pro-rata for 163 days)
Approved by the Commission vide order dated 9.11.2021 in Petition No.80/TT/2016	41.34
Claimed by the Petitioner in the instant Petition	17.70
Approved in this order	17.75

Interest on Working Capital


(Er. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL



117. IWC has been worked out as per the methodology provided in Regulation 28 of the 2014 Tariff Regulations, and the trued-up IWC allowed for Asset-I and Asset-II is as follows:

(₹ in lakh)

Sl. No.	Particulars Asset-I (Group-A)	2016-17 (Pro-rata for 244 days)	2017-18	2018-19
A	Working Capital for O&M Expenses (O&M Expenses for one month)	36.48	33.81	34.93
B	Working Capital for Maintenance Spares (15% of O&M expenses)	65.66	60.85	62.87
C	Working Capital for Receivables (Equivalent to 45 days of annual fixed cost/ annual transmission charges)	306.90	308.33	319.38
D	Total Working Capital (A+B+C)	409.04	402.99	417.18
E	Rate of Interest for working capital (in %)	12.80	12.80	12.80
F	Interest of working capital (D*E)	35.00	51.58	53.40

(₹ in lakh)

Sl. No.	Particulars Asset-I (Group-B)	2016-17 (Pro-rata for 169 days)	2017-18	2018-19
A	Working Capital for O&M Expenses (O&M Expenses for one month)	0.00	0.00	0.00
B	Working Capital for Maintenance Spares (15% of O&M expenses)	0.00	0.00	0.00
C	Working Capital for Receivables (Equivalent to 45 days of annual fixed cost/ annual transmission charges)	18.90	19.48	20.19
D	Total Working Capital (A+B+C)	18.90	19.48	20.19
E	Rate of Interest for working capital (in %)	12.80	12.80	12.80
F	Interest of working capital (D*E)	1.12	2.49	2.58

(₹ in lakh)

Sl. No.	Particulars Asset-I (Group-C)	2016-17 (Pro-rata for 241 days)	2017-18	2018-19
A	Working Capital for O&M Expenses (O&M Expenses for one month)	3.75	3.88	4.01
B	Working Capital for Maintenance Spares (15% of O&M expenses)	6.76	6.98	7.22



Sl. No.	Particulars Asset-I (Group-C)	2016-17 (Pro-rata for 241 days)	2017-18	2018-19
C	Working Capital for Receivables (Equivalent to 45 days of annual fixed cost/ annual transmission charges)	54.02	55.69	57.71
D	Total Working Capital (A+B+C)	64.53	66.56	68.93
E	Rate of Interest for working capital (in %)	12.80	12.80	12.80
F	Interest of working capital (D*E)	5.45	8.52	8.82

(₹ in lakh)

Sl. No.	Particulars Asset-II	2018-19 (Pro-rata for 163 days)
A	Working Capital for O&M Expenses (O&M Expenses for one month)	7.22
B	Working Capital for Maintenance Spares (15% of O&M expenses)	12.99
C	Working Capital for Receivables (Equivalent to 45 days of annual fixed cost/ annual transmission charges)	27.94
D	Total Working Capital (A+B+C)	48.15
E	Rate of Interest for working capital (in %)	12.20
F	Interest of working capital (D*E)	2.62

118. IWC claimed by the Petitioner for transmission assets and allowed in this order is as follows:

(₹ in lakh)

Asset-I	2016-17 (Pro-rata)	2017-18	2018-19
Approved by the Commission vide order dated 9.11.2021 in petition no.80/TT/2016 (Asset-I as a whole).	55.51	82.49	81.73
Claimed by the Petitioner in the instant Petition (Asset-I as a whole).	66.81	99.65	107.41
Approved in this order			
Asset-I (Group-A)	35.00	51.58	53.40
Asset-I (Group-B)	1.12	2.49	2.58
Asset-I (Group-C)	5.45	8.52	8.82
Total Approved	41.57	62.59	64.80

Note: Asset-I (Group D) shall be dealt with in the next tariff period.



(₹ in lakh)	
Asset-II	2018-19 (Pro-rata for 163 days)
Approved by the Commission vide order dated 9.11.2021 in petition no.80/TT/2016	3.97
Claimed by the Petitioner in the instant Petition	0.72
Approved in this order	2.62

Operation and Maintenance Expenses:

119. The Commission, by order dated 9.11.2021 in Petition No. 80/TT/2016, allowed the following O&M Expenses for transmission assets:

(₹ in lakh)			
Particulars	2016-17	2017-18	2018-19
Asset-I			
400 kV Bays (4 Numbers)	172.12*	266.04	274.84
220 kV Bays (4 Numbers)	120.12*	186.20	192.40
Asset-II			
400 kV Bus reactor Bay (1 Number)	0.00	0.00	30.68#
Total	292.24*	452.24	497.92

**Pro-rata O&M Expenses for 160 MVA 220/132 kV ICT-2 bays have been considered from 3.8.2016 and other elements from 31.7.2016.*

#COD of reactor has been considered as 20.10.2018.

120. The Petitioner in the instant tried-up Petition has claimed the following O&M Expenses:

(₹ in lakh)			
Particulars	2016-17	2017-18	2018-19
Asset-1 & Asset-2			
400 kV Bays	10	10	11*
O&M expenses	430.00#	665.10	755.81
220 kV Bays (4 Numbers)	10	10	10
O&M Expenses	301.16#	465.50	481.00
Total O&M Expense	731.16	1,130.60	1,198.78

**Included 1 No 400 kV , 80 MVAr Bus reactor bay w.e.f. 20.10.2018*

#on pro-rata Basis considering the COD as on 31.7.2016

121. We have considered the Petitioner's submissions. It is observed that the Petitioner has also claimed the O&M Expenses for bus coupler bays and bus transfer bays. Since these bays are an integral and common part of the substation, O&M



Expenses are not allowed to be separately charged for bus coupler and bus transfer bays.

122. Further, Asset-I has been segregated into different groups based on their Commercial Operation Date (COD) in instant order, and therefore, as per regulation 29 (4) of the 2014 Tariff Regulations, the O&M charges for different groups of Asset-I and Asset-II are worked out as follows:

(₹ in lakh)			
Particulars	2016-17*	2017-18	2018-19
Asset-I			
Group-A Elements: COD: 31.7.2016			
Srinagar Substation: 400 kV Bays			
• 2 Nos, 315 MVA, 400/220 kV ICT-I & II (HV Side)			
• 2 Nos 400 kV D/C Khandukhal (Srinagar)-GVK Line Bays			
Norms as per Regulation (Rs. Per Bay)	64.37	66.51	68.71
O&M Expenses	172.12	266.04	274.84
Srinagar Substation: 220 kV Bays			
• 2 Nos, 315 MVA, 400/220 kV ICT-I & II (LV Side)			
• 1 Nos, 160 MVA, 220/132 kV ICT-I (HV Side)			
Norms as per Regulation (Rs. Per Bay)	45.06	46.55	48.10
O&M expenses	120.49	139.65	144.30
Group-C Elements: COD: 3.8.2016			
Srinagar Substation: 220 kV bays			
• 1 No, 160 MVA, 220/132 kV ICT-II (HV Side)			
Norms as per Regulation (Rs. Per Bay)	45.06	46.55	48.10
O&M Expenses	29.75	46.55	48.10
Total O&M Expenses	322.36	452.24	467.24
Asset-II: COD: 20.10.2018			
Srinagar Substation: 400 kV bays			
• 1 No. 80 MVAr Bus Reactor			
Norms as per Regulation (Rs. Per Bay)	64.37	66.51	68.71
O&M Expenses	-	-	38.68

Annual Fixed Charges for the 2014-19 Tariff Period

123. Annual Fixed Charges (AFC) for transmission assets for the Period 2014-19 are as follows:

(₹ in lakh)			
Annual Fixed Charges Asset-I (Group-A)	2016-17 (Pro-rata for 244 days)	2017-18	2018-19



Depreciation	421.25	647.87	669.71
Interest on Loan	0.00	0.00	0.00
Return on Equity	482.12	744.83	774.04
Interest on Working Capital	35.00	51.58	53.40
O & M Expenses	292.61	405.69	419.14
Total	1230.98	1849.98	1916.29

(₹ in lakh)

Annual Fixed Charges Asset-I (Group-B)	2016-17 (Pro-rata for 169 days)	2017-18	2018-19
Depreciation	23.96	53.20	55.00
Interest on Loan	0.00	0.00	0.00
Return on Equity	27.42	61.16	63.56
Interest on Working Capital	1.12	2.49	2.58
O & M Expenses	0.00	0.00	0.00
Total	52.49	116.85	121.14

(₹ in lakh)

Annual Fixed Charges Asset-I (Group-C)	2016-17 (Pro-rata for 241 days)	2017-18	2018-19
Depreciation	83.38	129.83	134.21
Interest on Loan	0.00	0.00	0.00
Return on Equity	95.43	149.26	155.12
Interest on Working Capital	5.45	8.52	8.82
O & M Expenses	29.75	46.55	48.10
Total	214.01	334.17	346.25

(₹ in lakh)

Annual Fixed Charges Asset-II	2017-18 (Pro-rata for 163 days)
Depreciation	15.81
Interest on Loan	0.00
Return on Equity	17.75
Interest on Working Capital	2.62
O & M Expenses	38.68
Total	74.86

(Signature)

(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL



124. Annual Fixed Charges (AFC) approved by the Commission, claimed by the Petitioner in this Petition and allowed in this order are as follows:

(₹ in lakh)

Asset-I	2016-17 (Pro-rata)	2017-18	2018-19
Approved by the Commission vide order dated 9.11.2021 in Petition No. 80/TT/2016 (Asset I as a whole).	2192.70	3233.38	3176.79
Claimed by the Petitioner in the instant Petition (Asset-I as a whole).	2158.01	3317.82	3456.61
Approved in this order			
Asset-I (Group-A)	1230.98	1849.98	1916.29
Asset-I (Group-B)	52.49	116.85	121.14
Asset-I (Group-C)	214.01	334.17	346.25
Total Approved	1497.48	2301.00	2383.68

Note: Asset-I (Group D) shall be dealt with in the next tariff period.

(₹ in lakh)

Asset-II	2018-19 (Pro-rata for 163 days)
Approved by the Commission vide order dated 9.11.2021 in Petition No.80/TT/2016	152.43
Claimed by the Petitioner in the instant Petition	34.23
Approved in this order	74.86

Determination of Annual Fixed Charges for the 2019-24 Tariff period

125. The Petitioner in the instant petition has claimed the following AFC in respect of transmission assets for the 2019-24 tariff period:

(₹ in lakh)

Particulars	Asset-I				
	2019-20	2020-21	2021-22	2022-23	2023-24
Depreciation	1023.59	1027.75	1031.76	1029.82	1028.02
Interest on Loan	-	-	-	-	-
Return on Equity	1176.30	1128.15	1134.93	1132.78	1130.85
Interest on Working Capital	82.84	77.60	73.41	74.30	86.12
O&M expenses	1138.59	1162.09	1186.03	1211.04	1236.18
Total	3421.33	3395.59	3426.13	3447.94	3481.16

(₹ in lakh)

Particulars	Asset-II
-------------	----------



	2019-20	2020-21	2021-22	2022-23	2023-24
Depreciation	35.40	35.40	35.40	35.40	35.40
Interest on Loan	-	-	-	-	-
Return on Equity	39.64	37.78	37.78	37.78	37.78
Interest on Working Capital	1.13	1.03	0.96	0.96	1.10
O&M expenses	-	-	-	-	-
Total	76.17	74.21	74.14	74.14	74.28

Capital Cost

126. Regulation 19 of the 2019 Tariff Regulations provides as follows:

“19. Capital Cost: (1) The Capital cost of the generating station or the transmission system, as the case may be, as determined by the Commission after prudence check in accordance with these regulations shall form the basis for determination of tariff for existing and new projects.

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

- (a) The expenditure incurred or projected to be incurred up to the date of commercial operation of the project;
- (b) Interest during construction and financing charges, on the loans (i) being equal to 70% of the funds deployed, in the event of the actual equity in excess of 30% of the funds deployed, by treating the excess equity as normative loan, or (ii) being equal to the actual amount of loan in the event of the actual equity less than 30% of the funds deployed;
- (c) Any gain or loss on account of foreign exchange risk variation pertaining to the loan amount availed during the construction period;
- (d) Interest during construction and incidental expenditure during construction as computed in accordance with these regulations;
- (e) Capitalised initial spares subject to the ceiling rates in accordance with these regulations;
- (f) Expenditure on account of additional capitalization and de-capitalisation determined in accordance with these regulations;
- (g) Adjustment of revenue due to sale of infirm power in excess of fuel cost prior to the date of commercial operation as specified under Regulation 7 of these regulations;
- (h) Adjustment of revenue earned by the transmission licensee by using the assets before the date of commercial operation;
- (i) Capital expenditure on account of ash disposal and utilization including handling and transportation facility;
- (j) Capital expenditure incurred towards railway infrastructure and its augmentation for transportation of coal upto the receiving end of the generating station but does not include the transportation cost and any other appurtenant cost paid to the railway;
- (k) Capital expenditure on account of biomass handling equipment and facilities, for co-firing;
- (l) Capital expenditure on account of emission control system necessary to meet the revised emission standards and sewage treatment plant;
- (m) Expenditure on account of fulfilment of any conditions for obtaining environment clearance for the project;
- (n) Expenditure on account of change in law and force majeure events; and
- (o) Capital cost incurred or projected to be incurred by a thermal generating station, on account of implementation of the norms under Perform, Achieve and Trade (PAT)



scheme of Government of India shall be considered by the Commission subject to sharing of benefits accrued under the PAT scheme with the beneficiaries.

(3) The Capital cost of an existing project shall include the following:

- (a) Capital cost admitted by the Commission prior to 1.4.2019 duly trued up by excluding liability, if any, as on 1.4.2019;
- (b) Additional capitalization and de-capitalization for the respective year of tariff as determined in accordance with these regulations;
- (c) Capital expenditure on account of renovation and modernization as admitted by this Commission in accordance with these regulations;
- (d) Capital expenditure on account of ash disposal and utilization including handling and transportation facility;
- (e) Capital expenditure incurred towards railway infrastructure and its augmentation for transportation of coal upto the receiving end of generating station but does not include the transportation cost and any other appurtenant cost paid to the railway; and
- (f) Capital cost incurred or projected to be incurred by a thermal generating station, on account of implementation of the norms under Perform, Achieve and Trade (PAT) scheme of Government of India shall be considered by the Commission subject to sharing of benefits accrued under the PAT scheme with the beneficiaries.

(4) The capital cost in case of existing or new hydro generating station shall also include:

- (a) cost of approved rehabilitation and resettlement (R&R) plan of the project in conformity with National R&R Policy and R&R package as approved; and
- (b) cost of the developer's 10% contribution towards Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY) and Deendayal Upadhyaya Gram Jyoti Yojana (DDUGJY) project in the affected area.

(5) The following shall be excluded from the capital cost of the existing and new projects:

- (a) The asset-forming part of the project, but not in use, as declared in the tariff petition;
- (b) De-capitalised Asset after the date of commercial operation on account of replacement or removal on account of obsolescence or shifting from one project to another project:

Provided that in case replacement of transmission asset is recommended by Regional Power Committee, such asset shall be de-capitalised only after its redeployment;

Provided further that unless shifting of an asset from one project to another is of permanent nature, there shall be no de-capitalization of the concerned asset.

- (c) In case of hydro generating stations, any expenditure incurred or committed to be incurred by a project developer for getting the project site allotted by the State Government by following a transparent process;
- (d) Proportionate cost of land of the existing project which is being used for generating power from generating station based on renewable energy; and
- (e) Any grant received from the Central or State Government or any statutory body or authority for the execution of the project which does not carry any liability of repayment."

Capital Cost

127. As mentioned above, Asset-I has been segregated into different groups based on their respective COD during the 2014-19 tariff period. The capital cost as on



31.3.2019, approved in this order for various elements of Asset-I (Groups A, B, and C) and Asset-II, shall be considered the opening capital cost as on 1.4.2019 for the purpose of determining AFC for the 2019-24 tariff period, in accordance with Regulation 19(3) of the 2019 Tariff Regulations. The details of the same are as follows:

(₹ in lakh)					
Sr. No	Particulars	COD	Capital Cost as on COD	ACE upto 31.3.2019	Capital Cost as on 31.3.2019
A	Asset-I : 400/220 kV, 315 MVA ICT-1 & ICT-2 and 160 MVA, 220/132 kV ICT-1 & 2 along with associated bays at Srinagar Substation.				
1	Group -A elements	31.7.2016	11912.66	1492.69	13405.35
2	Group -B elements	14.10.2016	978.06	122.85	1100.92
3	Group -C elements	3.8.2016	2387.30	299.14	2686.44
	Total				
B.	Asset-II: 80 MVar Bus Reactor				
	80 MVar Bus Reactor	20.10.2018	670.52	NIL	670.52

128. The COD of Asset-I (Group-D), i.e., 2 Nos. 220 kV D/C Khandukhal (Srinagar) - Baramwari line bays, is approved as of 13.11.2020, and as such, the capital cost for these bays will be determined according to the 2019 Tariff Regulations for determining AFC for the 2019-24 tariff period.

129. We have determined the capital cost of Asset-I (Group-D), i.e., 2 Nos 220 kV D/C Khandukhal (Srinagar) - Baramwari line bays," after adjusting for IEDC on a pro-rata basis as on COD, i.e., 13.11.2020, in line with the same methodology used for Asset-I (Groups A, B, and C), as mentioned above in this order, as follows:

(₹ in lakh)



Particulars Asset-I (Group-D)	Hard Cost Allowed as on COD (A)	Pro-rata apportioned Allowable IEDC (B)	Pro-rata apportioned Disallowed IEDC due to Time Overrun (C)	Pro-rata apportioned Allowed IEDC (D)	Total Capital Cost Allowed as on COD (i.e 13.11.2020) (E)
Freehold Land	0.00	0.00	0.00	0.00	0.00
Leasehold Land	12.70	1.11	0.57	0.55	13.25
Building & Other Civil Works	20.51	1.80	0.91	0.88	21.39
Transmission Line	0.00	0.00	0.00	0.00	0.00
Sub-Station Equipment	439.46	38.46	19.59	18.87	458.33
PLCC	11.71	1.02	0.52	0.50	12.21
Total	484.38	42.39	21.59	20.80	505.18

130. Accordingly, the capital cost as on COD (i.e. 13.11.2020) for Asset-I (Group-D) i.e., " 2 Nos 220 kV D/C Khandukhal (Srinagar) -Baramwari line bays," is considered as ₹505.18 lakh.

Time Overrun

131. As mentioned above, in this order, the Commission vide order dated 9.11.2021 in Petition No. 80/TT/2016 did not grant any liberty to the Petitioner to submit justifications with the supporting documents in respect of the delay not condoned, at the time of truing up. For this reason, we are not inclined to entertain the reasons for the delay with respect to the Group-D element of Asset-I. Thus, the summary of time delay condoned and not condoned in respect of the Ground-D element of Asset-I is as follows:

Particulars	Group -D elements
SCOD considered	26.5.2012
Time up to SCOD (months)	30
COD Approved	13.11.2020
Time over-run (months approximately)	102
Total time consumed (months approximately)	132
Time over-run condoned (months approximately)	34.77
Time over-run not condoned (months approximately)	67.23


 (E. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL



Additional Capital Expenditure (ACE):

132. Regulations 24 and 25 of the 2019 Tariff Regulations provide as follows:

"24. Additional Capitalization

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

- a. Undischarged liabilities recognized to be payable at a future date;*
- b. Works deferred for execution;*
- c. Procurement of initial capital spares within the original scope of work, in accordance with the provisions of Regulation 23 of these regulations;*
- d. Liabilities to meet award of arbitration or for compliance of the directions or order of any statutory authority or order or decree of any court of law; and*
- e. Change in law or compliance of any existing law; and*
- f. Force Majeure events:*

Provided that in case of any replacement of the assets, the additional capitalization shall be worked out after adjusting the gross fixed assets and cumulative depreciation of the assets replaced on account of de-capitalization.

(2) The generating company or the transmission licensee, as the case may be shall submit the details of works asset wise/work wise included in the original scope of work along with estimates of expenditure, liabilities recognized to be payable at a future date and the works deferred for execution.

25. Additional Capitalisation within the original scope and after the cut-off date:

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

- a. Liabilities to meet award of arbitration or for compliance of the directions or order of any statutory authority, or order or decree of any court of law;*
- b. Change in law or compliance of any existing law;*
- c. Deferred works relating to ash pond or ash handling system in the original scope of work;*
- d. Liability for works executed prior to the cut-off date;*
- e. Force Majeure events;*
- f. Liability for works admitted by the Commission after the cut-off date to the extent of discharge of such liabilities by actual payments; and*
- g. Raising of ash dyke as a part of ash disposal system.*

(2) In case of replacement of assets deployed under the original scope of the existing project after cut-off date, the additional capitalization may be admitted by the Commission, after making necessary adjustments in the gross fixed assets and the cumulative depreciation, subject to prudence check on the following grounds:

- a. The useful life of the assets is not commensurate with the useful life of the project and such assets have been fully depreciated in accordance with the provisions of these regulations.*
- b. The replacement of the asset or equipment is necessary on account of change in law or Force Majeure conditions;*
- c. The replacement of such asset or equipment is necessary on account of obsolescence of technology; and*



- d. The replacement of such asset or equipment has otherwise been allowed by the Commission."

133. The Petitioner has claimed the following ACE for the 2019-24 tariff period in respect of transmission assets:

(₹ in Lakh)

Sr. No.	Particulars	ACE				
		2019-20	2020-21	2021-22	2022-23	2023-24
A	Asset-I: Srinagar Substation					
1	Land	-	-	-	-	-
2	Building	-	248.54	-	-	-
3	Hydraulic Works	-	-	-	-	-
4	Civil Works	-	-	(7.96)	-	-
5	Substation Equipment	-	-	-	(68.44)	-
6	PLCC	-	-	-	-	-
7	Interest During Construction (IDC)	-	-	-	-	-
8	Incidental Expenditure During Construction (IEDC)	-	-	-	-	-
9	Establishment Expense	-	-	-	-	-
10	ADB Project Management Office Expense	-	-	-	-	-
	Total	-	248.54	(7.96)	(68.44)	-
B	Asset-II					
	80 MVar Bus reactor	-	-	-	-	-

134. As per Form-7 submitted by the Petitioner, the reasons or justifications for the ACE claimed or projected for transmission assets are as follows:

Sr. No.	Particulars	ACE			Reasons
		2020-21	2021-22	2022-23	
1	Asset-I : Srinagar Substation				
2	Building	248.54	-	-	Construction of 12 Nos of Type-II residences.
4	Civil Works	-	(7.96)	-	Adjustment of Civil Cost
5	Substation Equipment	-	-	(68.44)	Adjustment of retention money against the control room building. Excess



					retained money has been adjusted.
--	--	--	--	--	-----------------------------------

135. We have considered the Petitioner's submission. It is observed that the Petitioner has claimed the ACE of ₹248.50 lakh for the 2019-24 tariff period against the construction of residential accommodation. However, the Petitioner has not submitted the Regulation under which the ACE has been projected for the 2019-24 tariff period. Therefore, as per Form-7 submitted by the Petitioner, ACE claim for the 2019-24 tariff period is hereby allowed, subject to the submission of detailed justifications and the Regulation under which the same has been projected, to be reviewed at the time of true-up.

136. Further, the ACE of (₹76.40) lakh {(₹7.96) lakh for FY 2021-22 and (₹68.44) lakh for FY 2022-23} claimed by the Petitioner against the adjustment of civil cost and retention money is hereby allowed.

137. Therefore, the net ACE of ₹172.14 lakh claimed by the Petitioner for the 2019-24 tariff period against Asset-I is hereby approved and further segregated into different elements of Asset-I, namely Groups A, B, C, and D, on a pro-rata basis, and the details are as follows:

Sl. No	Particulars	COD	Additional Capitalisation					Total
			2019-20	2020-21	2021-22	2022-23	2023-24	
1	Asset-I (Group -A)	31.7.2016	-	191.64	(6.03)	(51.82)	-	133.80
2	Asset-I (Group -B)	14.10.2016	-	15.77	(0.50)	(4.26)	-	11.0
3	Asset-I (Group -C)	3.8.2016	-	38.40	(1.21)	(10.38)	-	26.81
4	Asset-I (Group -D)	13.11.2020	-	2.73	(0.23)	(1.97)	-	0.53
	Total			248.54	(7.96)	(68.44)	-	172.14

138. Accordingly, the capital cost allowed in respect of transmission assets for the 2019-24 tariff period is summarised as under:


(Er. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL

(₹ in lakh)

Particulars Asset-I (Group-A)	Total Capital Cost Allowed as on 31-03-2019	Additional Capital Expenditure Allowed					Total Capital Cost Allowed as on 31-03-2024
		2019-20	2020-21	2021-22	2022-23	2023-24	
Freehold Land	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Leasehold Land	312.35	0.00	0.00	0.00	0.00	0.00	312.35
Building & Other Civil Works	875.24	0.00	191.64	-6.03	-51.82	0.00	1009.03
Transmission Line	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sub-Station Equipment	11929.84	0.00	0.00	0.00	0.00	0.00	11929.84
PLCC	287.92	0.00	0.00	0.00	0.00	0.00	287.92
Total	13405.35	0.00	191.64	-6.03	-51.82	0.00	13539.14

(₹ in Lakh)

Particulars Asset-I (Group-B)	Total Capital Cost Allowed as on 31-03-2019	Additional Capital Expenditure					Total Capital Cost Allowed as on 31-03-2024
		2019-20	2020-21	2021-22	2022-23	2023-24	
Freehold Land	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Leasehold Land	25.64	0.00	0.00	0.00	0.00	0.00	25.64
Building & Other Civil Works	71.94	0.00	15.77	-0.50	-4.26	0.00	82.95
Transmission Line	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sub-Station Equipment	979.70	0.00	0.00	0.00	0.00	0.00	979.70
PLCC	23.64	0.00	0.00	0.00	0.00	0.00	23.64
Total	1100.92	0.00	15.77	-0.50	-4.26	0.00	1111.93

(₹ in lakh)

Particulars Asset-I (Group-C)	Total Capital Cost Allowed as on 31-03-2019	Additional Capital Expenditure					Total Capital Cost Allowed as on 31-03-2024
		2019-20	2020-21	2021-22	2022-23	2023-24	
Freehold Land	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Leasehold Land	62.59	0.00	0.00	0.00	0.00	0.00	62.59
Building & Other Civil Works	175.40	0.00	38.40	-1.21	-10.38	0.00	202.21
Transmission Line	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sub-Station Equipment	2390.74	0.00	0.00	0.00	0.00	0.00	2390.74
PLCC	57.70	0.00	0.00	0.00	0.00	0.00	57.70
Total	2686.44	0.00	38.40	-1.21	-10.38	0.00	2713.25

(₹ in Lakh)

(E. ILL. J. K. S. ANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL



Particulars Asset-I (Group-D)	Total Capital Cost Allowed as on COD (13.11.2020)	Additional Capital Expenditure				Total Capital Cost Allowed as on 31-03-2024
		2020-21	2021-22	2022-23	2023-24	
Freehold Land	0.00	0.00	0.00	0.00	0.00	0.00
Leasehold Land	13.25	0.00	0.00	0.00	0.00	13.25
Building & Other Civil Works	21.39	2.73	-0.23	-1.97	0.00	21.92
Transmission Line	0.00	0.00	0.00	0.00	0.00	0.00
Sub-Station Equipment	458.33	0.00	0.00	0.00	0.00	458.33
PLCC	12.21	0.00	0.00	0.00	0.00	12.21
Total	505.18	2.73	-0.23	-1.97	0.00	505.71

(₹ in lakh)

Particulars Asset-II	Total Capital Cost Allowed as on 31-03-2019	Additional Capital Expenditure					Total Capital Cost Allowed as on 31-03-2024
		2019-20	2020-21	2021-22	2022-23	2023-24	
Freehold Land	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Leasehold Land	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building & Other Civil Works	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Transmission Line	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sub-Station Equipment	670.52	0.00	0.00	0.00	0.00	0.00	670.52
PLCC	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	670.52	0.00	0.00	0.00	0.00	0.00	670.52

Debt Equity Ratio:

139. Regulation 18 of the 2019 Tariff Regulations provides as under:

"18. Debt-Equity Ratio: (1) For new projects, the debt-equity ratio of 70:30 as on date of commercial operation shall be considered. If the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan:

Provided that:

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



Explanation-The premium, if any, raised by the generating company or the transmission licensee, as the case may be, while issuing share capital and investment of internal resources created out of its free reserve, for the funding of the project, shall be reckoned as paid up capital for the purpose of computing return on equity, only if such premium amount and internal resources are actually utilised for meeting the capital expenditure of the generating station or the transmission system.

(2) The generating company or the transmission licensee, as the case may be, shall submit the resolution of the Board of the company or approval of the competent authority in other cases regarding infusion of funds from internal resources in support of the utilization made or proposed to be made to meet the capital expenditure of the generating station or the transmission system including communication system, as the case may be.

(3) In case of the generating station and the transmission system including communication system declared under commercial operation prior to 1.4.2019, debt: equity ratio allowed by the Commission for determination of tariff for the period ending 31.3.2019 shall be considered:

Provided that in case of a generating station or a transmission system including communication system which has completed its useful life as on or after 1.4.2019, if the equity actually deployed as on 1.4.2019 is more than 30% of the capital cost, equity in excess of 30% shall not be taken into account for tariff computation;

Provided further that in case of projects owned by Damodar Valley Corporation, the debt: equity ratio shall be governed as per sub-clause(ii) of clause (2) of Regulation 72 of these regulations.

(4) In case of the generating station and the transmission system including communication system declared under commercial operation prior to 1.4.2019, but where debt: equity ratio has not been determined by the Commission for determination of tariff for the period ending 31.3.2019, the Commission shall approve the debt: equity ratio in accordance with clause (1) of this Regulation.

(5) Any expenditure incurred or projected to be incurred on or after 1.4.2019 as may be admitted by the Commission as additional capital expenditure for determination of tariff, and renovation and modernisation expenditure for life extension shall be serviced in the manner specified in clause (1) of this Regulation.

(6) Any expenditure incurred for the emission control system during the tariff period as may be admitted by the Commission as additional capital expenditure for determination of supplementary tariff, shall be serviced in the manner specified in clause (1) of this Regulation."

140. The details of the debt-equity ratio considered and allowed under Regulation 18 of the 2019 Tariff Regulations for computation of the tariff of transmission assets for the 2019-24 tariff period are as follows:

(₹ in lakh)

Asset-I (Group-A)				
Particulars	Amount as on 01.04.2019	Debt Equity Ratio (In %)	Amount as on 31.3.2024	Debt Equity Ratio (In %)
Debt	9383.75	70.00	9477.40	70.00
Equity	4021.61	30.00	4061.74	30.00



Total	13405.35	100.00	13539.14	100.00
Asset-I (Group-B)				
Particulars	Amount as on 01.04.2019	Debt Equity Ratio (In %)	Amount as on 31.3.2024	Debt Equity Ratio (In %)
Debt	770.64	70.00	778.35	70.00
Equity	330.28	30.00	333.58	30.00
Total	1100.92	100.00	1111.93	100.00
Asset-I (Group-C)				
Particulars	Amount as on 01.04.2019	Debt Equity Ratio (In %)	Amount as on 31.3.2024	Debt Equity Ratio (In %)
Debt	1880.50	70.00	1899.27	70.00
Equity	805.93	30.00	813.97	30.00
Total	2686.44	100.00	2713.25	100.00
Asset-I (Group-D)				
Particulars	Amount as on COD	Debt Equity Ratio (In %)	Amount as on 31.3.2024	Debt Equity Ratio (In %)
Debt	353.63	70.00	354.00	70.00
Equity	151.55	30.00	151.71	30.00
Total	505.18	100.00	505.71	100.00
Asset-II				
Particulars	Amount as on 01.04.2019	Debt Equity Ratio (In %)	Amount as on 31.3.2024	Debt Equity Ratio (In %)
Debt	469.36	70.00	469.36	70.00
Equity	201.16	30.00	201.16	30.00
Total	670.52	100.00	670.52	100.00

Depreciation

141. Regulation 33 of the 2019 Tariff Regulations provides as under:

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



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

(2) The value base for the purpose of depreciation shall be the capital cost of the asset admitted by the Commission. In case of multiple units of a generating station or multiple elements of a transmission system, weighted average life for the generating station of the transmission system shall be applied. Depreciation shall be chargeable from the first year of commercial operation. In case of commercial operation of the asset for part of the year, depreciation shall be charged on pro rata basis.

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

Provided that the salvage value for IT equipment and software shall be considered as NIL and 100% value of the assets shall be considered depreciable;

Provided further that in case of hydro generating stations, the salvage value shall be as provided in the agreement, if any, signed by the developers with the State Government for development of the generating station:

Provided also that the capital cost of the assets of the hydro generating station for the purpose of computation of depreciated value shall correspond to the percentage of sale of electricity under long-term power purchase agreement at regulated tariff:

Provided also that any depreciation disallowed on account of lower availability of the generating station or unit or transmission system as the case may be, shall not be allowed to be recovered at a later stage during the useful life or the extended life.

(4) Land other than the land held under lease and the land for reservoir in case of hydro generating station shall not be a depreciable asset and its cost shall be excluded from the capital cost while computing depreciable value of the asset.

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

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

(6) In case of the existing projects, the balance depreciable value as on 1.4.2019 shall be worked out by deducting the cumulative depreciation as admitted by the Commission upto 31.3.2019 from the gross depreciable value of the assets.

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

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

(9) Where the emission control system is implemented within the original scope of the generating station and the date of commercial operation of the generating station or unit thereof and the date of operation of the emission control system are the same, depreciation of the generating station or unit thereof including the emission control system shall be computed in accordance with Clauses (1) to (8) of this Regulation.

(10) Depreciation of the emission control system of an existing or a new generating station or unit thereof where the date of operation of the emission control system is subsequent to the date of commercial operation of the generating station or unit thereof,



shall be computed annually from the date of operation of such emission control system based on straight line method, with salvage value of 10%, over a period of –

a) twenty five years, in case the generating station or unit thereof is in operation for fifteen years or less as on the date of operation of the emission control system; or

b) balance useful life of the generating station or unit thereof plus fifteen years, in case the generating station or unit thereof is in operation for more than fifteen years as on the date of operation of the emission control system; or

c) ten years or a period mutually agreed by the generating company and the beneficiaries, whichever is higher, in case the generating station or unit thereof has completed its useful life.”

142. The depreciation has been worked out based on the ACE as on 1.4.2019/COD and subsequently up to 31.03.2024. The Weighted Average Rate of Depreciation (WAROD) has been worked out for transmission assets according to the depreciation rates specified in the 2019 Tariff Regulations. The depreciation allowed for transmission assets in accordance with the 2019 Tariff Regulations is as follows:

(₹ in lakh)						
Sl. No.	Particulars Asset-I (Group-A)	2019-20	2020-21	2021-22	2022-23	2023-24
A	Opening Capital Cost	13405.35	13405.35	13596.99	13590.96	13539.14
B	Addition during the year 2019-24 due to ACE	0.00	191.64	-6.03	-51.82	0.00
C	Closing Capital Cost (A+B)	13405.35	13596.99	13590.96	13539.14	13539.14
D	Average Capital Cost (A+C)/2	13405.35	13501.17	13593.98	13565.05	13539.14
E	Average Capital Cost (90% depreciable assets)	13405.35	13501.17	13593.98	13565.05	13539.14
F	Average Capital Cost (100% depreciable assets)	0.00	0.00	0.00	0.00	0.00
G	Depreciable value (excluding IT equipment and software) (E*90%)	12064.82	12151.06	12234.58	12208.55	12185.23
H	Depreciable value of IT equipment and software (F*100%)	0.00	0.00	0.00	0.00	0.00
I	Total Depreciable Value (G+H)	12064.82	12151.06	12234.58	12208.55	12185.23



Sl. No.	Particulars Asset-I (Group-A)	2019-20	2020-21	2021-22	2022-23	2023-24
J	Weighted average rate of Depreciation (WAROD) (in %)	5.1307	5.1180	5.1058	5.1096	5.1130
K	Lapsed useful life at the beginning of the year (Year)	2	3	4	5	6
L	Balance useful life at the beginning of the year (Year)	23	22	21	20	19
M	Depreciation during the year (D*J)	687.79	690.99	694.09	693.12	692.26
N	Cumulative Depreciation at the end of the year	2426.62	3117.60	3811.69	4504.81	5197.07
O	Remaining Aggregate Depreciable Value at the end of the year (I-N)	9638.20	9033.45	8422.89	7703.74	6988.16

(₹ in lakh)

Sl. No.	Particulars Asset-I (Group-B)	2019-20	2020-21	2021-22	2022-23	2023-24
A	Opening Capital Cost	1100.92	1100.92	1116.69	1116.19	1111.93
B	Addition during the year 2019-24 due to ACE	0.00	15.77	-0.50	-4.26	0.00
C	Closing Capital Cost (A+B)	1100.92	1116.69	1116.19	1111.93	1111.93
D	Average Capital Cost (A+C)/2	1100.92	1108.80	1116.44	1114.06	1111.93
E	Average Capital Cost (90% depreciable assets)	1100.92	1108.80	1116.44	1114.06	1111.93
F	Average Capital Cost (100% depreciable assets)	0.00	0.00	0.00	0.00	0.00
G	Depreciable value (excluding IT equipment and software) (E*90%)	990.83	997.92	1004.79	1002.65	1000.73
H	Depreciable value of IT equipment and software (F*100%)	0.00	0.00	0.00	0.00	0.00



Sl. No.	Particulars Asset-I (Group-B)	2019-20	2020-21	2021-22	2022-23	2023-24
I	Total Depreciable Value (G+H)	990.83	997.92	1004.79	1002.65	1000.73
J	Weighted average rate of Depreciation (WAROD) (in %)	5.1306	5.1179	5.1057	5.1095	5.1129
K	Lapsed useful life at the beginning of the year (Year)	2	3	4	5	6
L	Balance useful life at the beginning of the year (Year)	23	22	21	20	19
M	Depreciation during the year (D*J)	56.48	56.75	57.00	56.92	56.85
N	Cumulative Depreciation at the end of the year	188.63	245.38	302.38	359.31	416.16
O	Remaining Aggregate Depreciable Value at the end of the year (I-N)	802.19	752.54	702.41	643.35	584.58

(₹ in lakh)

Sl. No.	Particulars Asset-I (Group-C)	2019-20	2020-21	2021-22	2022-23	2023-24
A	Opening Capital Cost	2686.44	2686.44	2724.84	2723.63	2713.25
B	Addition during the year 2019-24 due to ACE	0.00	38.40	-1.21	-10.38	0.00
C	Closing Capital Cost (A+B)	2686.44	2724.84	2723.63	2713.25	2713.25
D	Average Capital Cost (A+C)/2	2686.44	2705.64	2724.23	2718.44	2713.25
E	Average Capital Cost (90% depreciable assets)	2686.44	2705.64	2724.23	2718.44	2713.25
F	Average Capital Cost (100% depreciable assets)	0.00	0.00	0.00	0.00	0.00
G	Depreciable value (excluding IT equipment and software) (E*90%)	2417.79	2435.07	2451.81	2446.59	2441.92


 (Er. J. L. A. CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL



Sl. No.	Particulars Asset-I (Group-C)	2019-20	2020-21	2021-22	2022-23	2023-24
H	Depreciable value of IT equipment and software (F*100%)	0.00	0.00	0.00	0.00	0.00
I	Total Depreciable Value (G+H)	2417.79	2435.07	2451.81	2446.59	2441.92
J	Weighted average rate of Depreciation (WAROD) (in %)	5.1307	5.1180	5.1058	5.1096	5.1130
K	Lapsed useful life at the beginning of the year (Year)	2	3	4	5	6
L	Balance useful life at the beginning of the year (Year)	23	22	21	20	19
M	Depreciation during the year (D*J)	137.83	138.47	139.09	138.90	138.73
N	Cumulative Depreciation at the end of the year	485.26	623.73	762.82	901.73	1040.45
O	Remaining Aggregate Depreciable Value at the end of the year (I-N)	1932.54	1811.34	1688.98	1544.87	1401.47

(₹ in lakh)

Sl. No.	Particulars Asset-I (Group-D)	2020-21 (Pro-rata for 139 days)	2021-22	2022-23	2023-24
A	Opening Capital Cost	505.18	507.91	507.68	505.71
B	Addition during the year 2019-24 due to ACE	2.73	-0.23	-1.97	0.00
C	Closing Capital Cost (A+B)	507.91	507.68	505.71	505.71
D	Average Capital Cost (A+C)/2	506.55	507.80	506.70	505.71
E	Average Capital Cost (90% depreciable assets)	506.55	507.80	506.70	505.71
F	Average Capital Cost (100% depreciable assets)	0.00	0.00	0.00	0.00



Sl. No.	Particulars Asset-I (Group-D)	2020-21 (Pro-rata for 139 days)	2021-22	2022-23	2023-24
G	Depreciable value (excluding IT equipment and software) (E*90%)	455.89	457.02	456.03	455.14
H	Depreciable value of IT equipment and software (F*100%)	0.00	0.00	0.00	0.00
I	Total Depreciable Value (G+H)	455.89	457.02	456.03	455.14
J	Weighted average rate of Depreciation (WAROD) (in %)	5.1674	5.1629	5.1669	5.1704
K	Lapsed useful life at the beginning of the year (Year)	0	0	1	2
L	Balance useful life at the beginning of the year (Year)	25	25	24	23
M	Depreciation during the year (D*J)	9.97	26.22	26.18	26.15
N	Cumulative Depreciation at the end of the year	9.97	36.19	62.37	88.51
O	Remaining Aggregate Depreciable Value at the end of the year (I-N)	445.92	420.83	393.66	366.63

(₹ in lakh)

Sl. No.	Particulars Asset-II	2019-20	2020-21	2021-22	2022-23	2023-24
A	Opening Capital Cost	670.52	670.52	670.52	670.52	670.52
B	Addition during the year 2019-24 due to ACE	0.00	0.00	0.00	0.00	0.00
C	Closing Capital Cost (A+B)	670.52	670.52	670.52	670.52	670.52
D	Average Capital Cost (A+C)/2	670.52	670.52	670.52	670.52	670.52
E	Average Capital Cost (90% depreciable assets)	670.52	670.52	670.52	670.52	670.52
F	Average Capital Cost (100% depreciable assets)	0.00	0.00	0.00	0.00	0.00
G	Depreciable value (excluding IT equipment and software) (E*90%)	603.47	603.47	603.47	603.47	603.47



Sl. No.	Particulars Asset-II	2019-20	2020-21	2021-22	2022-23	2023-24
H	Depreciable value of IT equipment and software (F*100%)	0.00	0.00	0.00	0.00	0.00
I	Total Depreciable Value (G+H)	603.47	603.47	603.47	603.47	603.47
J	Weighted average rate of Depreciation (WAROD) (in %)	5.2800	5.2800	5.2800	5.2800	5.2800
K	Lapsed useful life at the beginning of the year (Year)	2	3	4	5	6
L	Balance useful life at the beginning of the year (Year)	23	22	21	20	19
M	Depreciation during the year (D*J)	35.40	35.40	35.40	35.40	35.40
N	Cumulative Depreciation at the end of the year	51.21	86.62	122.02	157.42	192.83
O	Remaining Aggregate Depreciable Value at the end of the year (I-N)	552.25	516.85	481.45	446.04	410.64

143. Depreciation claimed by the Petitioner and allowed in this order in respect of Asset-I and Asset-II is as follows:

	(₹ in lakh)				
Asset-I	2019-20	2020-21	2021-22	2022-23	2023-24
Claimed by the Petitioner in the instant Petition (Asset-I as a whole)	1023.59	1027.75	1031.76	1029.82	1028.02
Approved in this order:					
Asset-I (Group-A)	687.79	690.99	694.09	693.12	692.26
Asset-I (Group-B)	56.48	56.75	57.00	56.92	56.85
Asset-I (Group-C)	137.83	138.47	139.09	138.90	138.73
Asset-I (Group-D)	-	9.97	26.22	26.18	26.15
Total Approved	882.10	896.18	916.40	915.12	913.99
Asset-II	2019-20	2020-21	2021-22	2022-23	2023-24
Claimed by the Petitioner in the instant Petition	35.40	35.40	35.40	35.40	35.40
Approved in this order	35.40	35.40	35.40	35.40	35.40



Interest on Loan (IoL)

144. The Petitioner has not claimed any IOL during the 2019-24 tariff period, as it was stated in the Petition that, in reference to the Government of Uttarakhand (GoU) letter dated 21.11.2020, regarding the sanctioned loan funded by ADB, the GoU clarified that the loan is to be repaid as an interest-free loan. Consequently, no interest on the loan is considered for the period of 2019-24.

Return on Equity (RoE)

145. Regulations 30 and 31 of the 2019 Tariff Regulations specify as under:

“30. Return on Equity: (1) Return on equity shall be computed in rupee terms, on the equity base determined in accordance with Regulation 18 of these regulations. (2) Return on equity shall be computed at the base rate of 15.50% for thermal generating station, transmission system including communication system and run-of-river hydro generating station, and at the base rate of 16.50% for the storage type hydro generating stations including pumped storage hydro generating stations and run-of-river generating station with pondage:

Provided that return on equity in respect of additional capitalization after cut-off date beyond the original scope, excluding additional capitalization on account of emission control system, shall be computed at the weighted average rate of interest on actual loan portfolio of the generating station or the transmission system or in the absence of actual loan portfolio of the generating station or the transmission system, the weighted average rate of interest of the generating company or the transmission licensee, as the case may be, as a whole shall be considered, subject to ceiling of 14%.

Provided further that:

i. in case of a new project, the rate of return on equity shall be reduced by 1.00% for such period as may be decided by the Commission, if the generating station or transmission system is found to be declared under commercial operation without commissioning of any of the Restricted Governor Mode Operation (RGMO) or Free Governor Mode Operation (FGMO), data telemetry, communication system up to load dispatch centre or protection system based on the report submitted by the respective RLDC;

ii. in case of existing generating station, as and when any of the requirements under (i) above of this Regulation are found lacking based on the report submitted by the concerned RLDC, rate of return on equity shall be reduced by 1.00% for the period for which the deficiency continues;

iii.

Provided that the detailed guidelines in this regard shall be issued by National Load Dispatch Centre by 30.6.2019.



(3) The return on equity in respect of additional capitalization on account of emission control system shall be computed at the base rate of one year marginal cost of lending rate (MCLR) of the State Bank of India as on 1st April of the year in which the date of operation (ODe) occurs plus 350 basis point, subject to ceiling of 14%”

31. Tax on Return on Equity:(1) The base rate of return on equity as allowed by the Commission under Regulation 30 of these regulations shall be grossed up with the effective tax rate of the respective financial year. For this purpose, the effective tax rate shall be considered on the basis of actual tax paid in respect of the financial year in line with the provisions of the relevant Finance Acts by the concerned generating company or the transmission licensee, as the case may be. The actual tax paid on income from other businesses including deferred tax liability (i.e. income from business other than business of generation or transmission, as the case may be) shall be excluded for the calculation of effective tax rate.

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

$$\text{Rate of pre-tax return on equity} = \text{Base rate} / (1-t)$$

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

(3) The generating company or the transmission licensee, as the case may be, shall true up the grossed up rate of return on equity at the end of every financial year based on actual tax paid together with any additional tax demand including interest thereon, duly adjusted for any refund of tax including interest received from the income tax authorities pertaining to the tariff period 2019-24 on actual gross income of any financial year. However, penalty, if any, arising on account of delay in deposit or short deposit of tax amount shall not be claimed by the generating company or the transmission licensee, as the case may be. Any under-recovery or over-recovery of grossed up rate on return on equity after truing up, shall be recovered or refunded to beneficiaries or the long term customers, as the case may be, on year to year basis.”

146. The Petitioner has submitted that the MAT rate applies to it. Accordingly, the MAT rate for the 2019-24 tariff period has been used for calculating the RoE, which will be trued up with the actual tax rate in accordance with Regulation 31(3) of the 2019 Tariff Regulations. The RoE allowed for transmission assets is as follows:

(₹ in lakh)



Sl. No.	Particulars Asset-I (Group-A)	2019-20	2020-21	2021-22	2022-23	2023-24
A	Opening Equity	4021.61	4021.61	4079.10	4077.29	4061.74
B	Addition due to ACE	0.00	57.49	-1.81	-15.55	0.00
C	Closing Equity (A+B)	4021.61	4079.10	4077.29	4061.74	4061.74
D	Average Equity (A+C)/2	4021.61	4050.35	4078.19	4069.52	4061.74
E	Return on Equity (Base Rate) (%)	15.50	15.50	15.50	15.50	15.50
F	Tax Rate applicable (%)	17.472	17.472	17.472	17.472	17.472
G	Rate of Return on Equity (%)	18.782	18.782	18.782	18.782	18.782
H	Return on Equity (D*G)	755.34	760.74	765.97	764.34	762.88

(₹ in lakh)

Sl. No.	Particulars Asset-I (Group-B)	2019-20	2020-21	2021-22	2022-23	2023-24
A	Opening Equity	330.28	330.28	335.01	334.86	333.58
B	Addition due to ACE	0.00	4.73	-0.15	-1.28	0.00
C	Closing Equity (A+B)	330.28	335.01	334.86	333.58	333.58
D	Average Equity (A+C)/2	330.28	332.64	334.93	334.22	333.58
E	Return on Equity (Base Rate) (%)	15.50	15.50	15.50	15.50	15.50
F	Tax Rate applicable (%)	17.472	17.472	17.472	17.472	17.472
G	Rate of Return on Equity (%)	18.782	18.782	18.782	18.782	18.782
H	Return on Equity (D*G)	62.03	62.48	62.91	62.77	62.65

(₹ in lakh)

Sl. No.	Particulars Asset-I (Group-C)	2019-20	2020-21	2021-22	2022-23	2023-24
A	Opening Equity	805.93	805.93	817.45	817.09	813.97
B	Addition due to ACE	0.00	11.52	-0.36	-3.11	0.00
C	Closing Equity (A+B)	805.93	817.45	817.09	813.97	813.97
D	Average Equity (A+C)/2	805.93	811.69	817.27	815.53	813.97
E	Return on Equity (Base Rate) (%)	15.50	15.50	15.50	15.50	15.50
F	Tax Rate applicable (%)	17.472	17.472	17.472	17.472	17.472
G	Rate of Return on Equity (%)	18.782	18.782	18.782	18.782	18.782
H	Return on Equity (D*G)	151.37	152.45	153.50	153.17	152.88

(₹ in lakh)

Sl. No.	Particulars Asset-I (Group-D)	2020-21 (Pro-rata for 139 days)	2021-22	2022-23	2023-24
A	Opening Equity	151.55	152.37	152.30	151.71
B	Addition due to ACE	0.82	-0.07	-0.59	0.00



Sl. No.	Particulars Asset-I (Group-D)	2020-21 (Pro-rata for 139 days)	2021-22	2022-23	2023-24
C	Closing Equity (A+B)	152.37	152.30	151.71	151.71
D	Average Equity (A+C)/2	151.96	152.34	152.01	151.71
E	Return on Equity (Base Rate) (%)	15.50	15.50	15.50	15.50
F	Tax Rate applicable (%)	17.472	17.472	17.472	17.472
G	Rate of Return on Equity (%)	18.782	18.782	18.782	18.782
H	Return on Equity (D*G)	10.87	28.61	28.55	28.49

(₹ in lakh)

Sl. No.	Particulars Asset-II	2019-20	2020-21	2021-22	2022-23	2023-24
A	Opening Equity	201.16	201.16	201.16	201.16	201.16
B	Addition due to ACE	0.00	0.00	0.00	0.00	0.00
C	Closing Equity (A+B)	201.16	201.16	201.16	201.16	201.16
D	Average Equity (A+C)/2	201.16	201.16	201.16	201.16	201.16
E	Return on Equity (Base Rate) (%)	15.50	15.50	15.50	15.50	15.50
F	Tax Rate applicable (%)	17.472	17.472	17.472	17.472	17.472
G	Rate of Return on Equity (%)	18.782	18.782	18.782	18.782	18.782
H	Return on Equity (D*G)	37.78	37.78	37.78	37.78	37.78

147. ROE claimed by the Petitioner and allowed concerning the transmission assets in this order is as follows:

(₹ in lakh)					
Asset-I	2019-20	2020-21	2021-22	2022-23	2023-24
Claimed by the Petitioner in the instant Petition	1176.30	1128.15	1134.93	1132.78	1130.85
Approved in this order:					
Asset-I (Group-A)	755.34	760.74	765.97	764.34	762.88
Asset-I (Group-B)	62.03	62.48	62.91	62.77	62.65
Asset-I (Group-C)	151.37	152.45	153.50	153.17	152.88
Asset-I (Group-D)		10.87	28.61	28.55	28.49
Total Approved	968.74	986.54	1010.99	1008.83	1006.90
Asset-II	2019-20	2020-21	2021-22	2022-23	2023-24
Claimed by the Petitioner in the instant Petition	39.64	37.78	37.78	37.78	37.78
Approved in this order	37.78	37.78	37.78	37.78	37.78

(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

148. ROE claimed by the Petitioner and allowed in the instant order concerning the transmission assets is as follows:

(₹ in lakh)					
Asset-I	2019-20	2020-21	2021-22	2022-23	2023-24
Claimed by the Petitioner in the instant Petition (Asset 1 as a whole)	1176.30	1128.15	1134.93	1132.78	1130.85
Approved in this order:					
Asset-I (Group-A)	755.34	760.74	765.97	764.34	762.88
Asset-I (Group-B)	62.03	62.48	62.91	62.77	62.65
Asset-I (Group-C)	151.37	152.45	153.50	153.17	152.88
Asset-I (Group-D)		10.87	28.61	28.55	28.49
Total Approved	968.74	986.54	1010.99	1008.83	1006.90
Asset-II	2019-20	2020-21	2021-22	2022-23	2023-24
Claimed by the Petitioner in the instant Petition	39.64	37.78	37.78	37.78	37.78
Approved in this order	37.78	37.78	37.78	37.78	37.78

Interest on Working Capital (IWC)

149. Regulation 34(1)(c), 34(3), 34(4) and 3(7) of the 2019 Tariff Regulations provide as follows:

“34. Interest on Working Capital: (1) The working capital shall cover:
(c) For Hydro Generating Station (including Pumped Storage Hydro Generating Station) and Transmission System:
(i) Receivables equivalent to 45 days of annual fixed cost;
(ii) Maintenance spares @ 15% of operation and maintenance expenses including security expenses; and
(iii) Operation and maintenance expenses, including security expenses for one month.”
“(3) Rate of interest on working capital shall be on normative basis and shall be considered as the bank rate as on 1.4.2019 or as on 1st April of the year during the tariff period 2019-24 in which the generating station or a unit thereof or the transmission system including communication system or element thereof, as the case may be, is declared under commercial operation, whichever is later:

Provided that in case of truing-up, the rate of interest on working capital shall be considered at bank rate as on 1st April of each of the financial year during the tariff period 2019-24.

(4) Interest on working capital shall be payable on normative basis notwithstanding that the generating company or the transmission licensee has not taken loan for working capital from any outside agency.”

“3. **Definition** - In these regulations, unless the context otherwise requires:-

(7) ‘**Bank Rate**’ means the one year marginal cost of lending rate (MCLR) of the State Bank of India issued from time to time plus 350 basis points;”



150. IWC has been worked out in accordance with Regulation 34 of the 2019 Tariff Regulations. The Rate of Interest (ROI) considered is 12.05% (SBI 1-year MCLR applicable as on 1.4.2019 of 8.55% plus 350 basis points) for FY 2019-20, 11.25% (SBI 1-year MCLR applicable as on 1.4.2020 of 7.75% plus 350 basis points) for FY 2020-21, 10.50% (SBI 1-year MCLR applicable as on 1.4.2021 of 7.00% plus 350 basis points) for FY 2021-22 and FY 2022-23, and 12.00% (SBI 1-year MCLR applicable as on 1.4.2023 of 8.50% plus 350 basis points) for FY 2023-24. The components of the working capital and interest allowed for the transmission assets are as follows:

(₹ in lakh)

Sl. No.	Particulars Asset-I (Group-A)	2019-20	2020-21	2021-22	2022-23	2023-24
A	Working Capital for O&M Expenses (O&M Expenses for one month)	38.41	39.78	41.18	42.65	44.10
B	Working Capital for Maintenance Spares (15% of O&M Expenses)	69.13	71.61	74.12	76.77	79.38
C	Working Capital for Receivables (Equivalent to 45 days of annual fixed cost /annual transmission charges)	239.24	242.75	245.60	247.53	249.48
D	Total Working Capital (A+B+C)	346.77	354.14	360.91	366.95	372.96
E	Rate of Interest for working capital (%)	12.05	11.25	10.50	10.50	12.00
F	Interest on working capital (D*E)	41.79	39.84	37.90	38.53	44.76

(₹ in lakh)

Sl. No.	Particulars Asset-I (Group-B)	2019-20	2020-21	2021-22	2022-23	2023-24
A	Working Capital for O&M Expenses (O&M Expenses for one month)	0.00	0.00	0.00	0.00	0.00


(Er. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL

Sl. No.	Particulars Asset-I (Group-B)	2019-20	2020-21	2021-22	2022-23		2023-24
B	Working Capital for Maintenance Spares (15% of O&M Expenses)	0.00	0.00	0.00	0.00		0.00
C	Working Capital for Receivables (Equivalent to 45 days of annual fixed cost /annual transmission charges)	14.79	14.91	14.98	14.95		14.91
D	Total Working Capital (A+B+C)	14.79	14.91	14.98	14.95		14.91
E	Rate of Interest for working capital (%)	12.05	11.25	10.50	10.50		12.00
F	Interest on working capital (D*E)	1.78	1.68	1.57	1.57		1.79

(₹ in lakh)

Sl. No.	Particulars Asset-I (Group-C)	2019-20	2020-21	2021-22	2022-23	2023-24
A	Working Capital for O&M Expenses (O&M Expenses for one month)	5.14	5.33	5.52	5.71	5.91
B	Working Capital for Maintenance Spares (15% of O&M Expenses)	9.26	9.59	9.93	10.27	10.64
C	Working Capital for Receivables (Equivalent to 45 days of annual fixed cost /annual transmission charges)	44.01	44.58	45.02	45.24	45.49
D	Total Working Capital (A+B+C)	58.41	59.50	60.46	61.22	62.05
E	Rate of Interest for working capital (%)	12.05	11.25	10.50	10.50	12.00
F	Interest on working capital (D*E)	7.04	6.69	6.35	6.43	7.45

(₹ in lakh)

Sl. No.	Particulars Asset-I (Group-D)	2020-21 (Pro-rata for 139 days)	2021-22	2022-23	2023-24
A	Working Capital for O&M Expenses (O&M Expenses for one month)	3.88	4.02	4.16	4.31



Sl. No.	Particulars Asset-I (Group-D)	2020-21 (Pro-rata for 139 days)	2021-22	2022-23	2023-24
B	Working Capital for Maintenance Spares (15% of O&M Expenses)	6.99	7.24	7.49	7.75
C	Working Capital for Receivables (Equivalent to 45 days of annual fixed cost /annual transmission charges)	12.82	13.02	13.22	13.45
D	Total Working Capital (A+B+C)	23.70	24.28	24.87	25.51
E	Rate of Interest for working capital (%)	11.25	10.50	10.50	12.00
F	Interest on working capital (D*E)	1.02	2.55	2.61	3.06

(₹ in lakh)

Sl. No.	Particulars Asset-II	2019-20	2020-21	2021-22	2022-23	2023-24
A	Working Capital for O&M Expenses (O&M Expenses for one month)	2.68	2.77	2.87	2.97	3.08
B	Working Capital for Maintenance Spares (15% of O&M Expenses)	4.82	4.99	5.17	5.35	5.54
C	Working Capital for Receivables (Equivalent to 45 days of annual fixed cost /annual transmission charges)	13.26	13.42	13.55	13.70	13.87
D	Total Working Capital (A+B+C)	20.76	21.18	21.59	22.02	22.48
E	Rate of Interest for working capital (%)	12.05	11.25	10.50	10.50	12.00
F	Interest on working capital (D*E)	2.50	2.38	2.27	2.31	2.70

151. IWC claimed by the Petitioner and allowed in this order concerning transmission assets is as follows:

(₹ in lakh)

Asset-I	2019-20	2020-21	2021-22	2022-23	2023-24
Claimed by the Petitioner in the instant Petition.	82.84	77.60	73.41	74.30	86.12
Approved in this order:					
Asset-I (Group-A)	41.79	39.84	37.90	38.53	44.76
Asset-I (Group-B)	1.78	1.68	1.57	1.57	1.79



Asset-I	2019-20	2020-21	2021-22	2022-23	2023-24
Asset-I (Group-C)	7.04	6.69	6.35	6.43	7.45
Asset-I (Group-D)		1.02	2.55	2.61	3.06
Total Approved	50.61	49.23	48.37	49.14	57.06
Asset-II	2019-20	2020-21	2021-22	2022-23	2023-24
Claimed by the Petitioner in the instant Petition.	1.13	1.03	0.96	0.96	1.10
Approved in this order	2.50	2.38	2.27	2.31	2.70

Operation and Maintenance Expenses

152. Regulation 35(3)(a) of the 2019 Tariff Regulations provides as follows:

“35(3) Transmission system: (a) The following normative operation and maintenance expenses shall be admissible for the transmission system:

Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Norms for sub-station Bays (₹ Lakh per bay)					
765 kV	45.01	46.60	48.23	49.93	51.68
400 kV	32.15	33.28	34.45	35.66	36.91
220 kV	22.51	23.30	24.12	24.96	25.84
132 kV and below	16.08	16.64	17.23	17.83	18.46
Norms for Transformers (₹ Lakh per MVA)					
765 kV	0.491	0.508	0.526	0.545	0.564
400 kV	0.358	0.371	0.384	0.398	0.411
220 kV	0.245	0.254	0.263	0.272	0.282
132 kV and below	0.245	0.254	0.263	0.272	0.282
Norms for AC and HVDC lines (₹ Lakh per km)					
Single Circuit (Bundled Conductor with six or more sub-conductors)	0.881	0.912	0.944	0.977	1.011
Single Circuit (Bundled conductor with four sub-conductors)	0.755	0.781	0.809	0.837	0.867
Single Circuit (Twin & Triple Conductor)	0.503	0.521	0.539	0.558	0.578
Single Circuit (Single Conductor)	0.252	0.260	0.270	0.279	0.289
Double Circuit (Bundled conductor with four or more sub-conductors)	1.322	1.368	1.416	1.466	1.517
Double Circuit (Twin & Triple Conductor)	0.881	0.912	0.944	0.977	1.011
Double Circuit (Single Conductor)	0.377	0.391	0.404	0.419	0.433
Multi Circuit (Bundled Conductor with four or more sub-conductor)	2.319	2.401	2.485	2.572	2.662
Multi Circuit (Twin & Triple Conductor)	1.544	1.598	1.654	1.713	1.773
Norms for HVDC stations					
HVDC Back-to-Back stations (Rs Lakh per 500 MW) (Except Gazuwaka BTB)	834	864	894	925	958

(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Gazuwaka HVDC Back-to-Back station (₹ Lakh per 500 MW)	1666	1725	1785	1848	1913
500 kV Rihand-Dadri HVDC bipole scheme (Rs Lakh) (1500 MW)	2252	2331	2413	2498	2586
±500 kV Talcher- Kolar HVDC bipole scheme (Rs Lakh) (2000 MW)	2468	2555	2645	2738	2834
±500 kV Bhiwadi-Balia HVDC bipole scheme (Rs Lakh) (2500 MW)	1696	1756	1817	1881	1947
±800 kV, Bishwanath-Agra HVDC bipole scheme (Rs Lakh) (3000 MW)	2563	2653	2746	2842	2942

Provided that the O&M expenses for the GIS bays shall be allowed as worked out by multiplying 0.70 of the O&M expenses of the normative O&M expenses for bays;
Provided further that:

- the operation and maintenance expenses for new HVDC bi-pole schemes commissioned after 1.4.2019 for a particular year shall be allowed pro-rata on the basis of normative rate of operation and maintenance expenses of similar HVDC bi-pole scheme for the corresponding year of the tariff period;
- the O&M expenses norms for HVDC bi-pole line shall be considered as Double Circuit quad AC line;
- the O&M expenses of ±500 kV Mundra-Mohindergarh HVDC bipole scheme (2500 MW) shall be allowed as worked out by multiplying 0.80 of the normative O&M expenses for ±500 kV Talchar-Kolar HVDC bi-pole scheme (2000 MW);
- the O&M expenses of ±800 kV Champa-Kurukshetra HVDC bi-pole scheme (3000 MW) shall be on the basis of the normative O&M expenses for ±800 kV, Bishwanath-Agra HVDC bi-pole scheme;
- the O&M expenses of ±800 kV, Alipurduar-Agra HVDC bi-pole scheme (3000 MW) shall be allowed as worked out by multiplying 0.80 of the normative O&M expenses for ±800 kV, Bishwanath-Agra HVDC bi-pole scheme; and
- the O&M expenses of Static Synchronous Compensator and Static Var Compensator shall be worked at 1.5% of original project cost as on commercial operation which shall be escalated at the rate of 3.51% to work out the O&M expenses during the tariff period. The O&M expenses of Static Synchronous Compensator and Static Var Compensator, if required, may be reviewed after three years

(b) The total allowable operation and maintenance expenses for the transmission system shall be calculated by multiplying the number of sub-station bays, transformer capacity of the transformer (in MVA) and km of line length with the applicable norms for the operation and maintenance expenses per bay, per MVA and per km respectively.

(c) The Security Expenses and Capital Spares for transmission system shall be allowed separately after prudence check:

Provided that the transmission licensee shall submit the assessment of the security requirement and estimated security expenses, the details of year-wise



actual capital spares consumed at the time of truing up with appropriate justification.”

153. The petitioner in this Petition has claimed the O&M Expenses for the 2019-24 tariff period for the transmission assets, and the same are as follows:

(₹ in lakh)					
Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Asset-I : Srinagar substation					
400 kV bays (in Nos)	11	11	11	11	11
220 kV bays (in Nos)	10	10	10	10	10
400 kV ICTs (in Nos)	2	2	2	2	2
220 kV ICTs (in Nos)	2	2	2	2	2
O&M Expenses for bays	834.65	847.08	859.95	873.26	887.01
O&M Expenses for ICTS	303.94	315.01	326.08	337.78	349.17
Total O&M Expenses	1138.59	1162.09	1186.03	1211.04	1236.18

154. We have considered the Petitioner's submissions. It is observed that the Petitioner has also claimed the O&M Expenses for bus coupler bays and bus transfer bays. Since these bays are integral and common parts of the substation, O&M Expenses are not allowed to be separately charged for bus coupler and bus transfer bays.

155. Furthermore, it is observed that the Petitioner has considered the 400 kV bay for the 80 MVA bus reactor under Asset-I and has claimed the O&M Expenses, which shall be calculated separately because the 400 kV, 80 MVA bus reactor, along with the associated bay, is being treated as Asset-II separately in this order. Therefore, as per Regulation 35(3)(a) of the 2019 Tariff Regulation, the O&M Expenses for the transmission assets are worked out as follows:

(₹ in lakh)					
Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Asset-1					
Group-A Elements: COD: 31.7.2016					
Srinagar Substation: 400 kV Bays					
2 Nos, 315 MVA, 400/220 kV ICT-I & II (HV Side) 2 Nos 400 kV D/C Khandukhal (Srinagar) - GVK Line Bays					



Norms as per Regulation (Rs. Per Bay)	32.15	33.28	34.45	35.66	36.91
O&M expenses	128.60	133.12	137.80	142.64	147.64
Srinagar Substation: 220 kV Bays					
2 Nos, 315 MVA, 400/220 kV ICT-I & II (LV Side) 1 No, 160 MVA, 220/132 kV ICT-I (HV Side)					
Norms as per Regulation (Rs. Per Bay)	22.51	23.30	24.12	24.96	25.84
O&M expenses	67.53	69.90	72.36	74.88	77.52
Srinagar Substation: 400/220 kV ICTs					
2 Nos, 315 MVA, 400/220 kV ICT-I & II					
Norms as per Regulation (Rs. Per MVA)	0.358	0.371	0.384	0.398	0.411
O&M Expenses	225.54	233.73	241.92	250.74	258.93
Srinagar Substation: 220/132 kV ICTs					
1 No, 160 MVA, 220/132 kV ICT-I					
Norms as per Regulation (Rs. Per MVA)	0.245	0.254	0.263	0.272	0.282
O&M Expenses	39.20	40.64	42.08	43.52	45.12
Group-C Elements: COD: 3.8.2016					
Srinagar Substation: 220 kV bays					
1 No, 160 MVA, 220/132 kV ICT-II (HV Side)					
Norms as per Regulation (Rs. Per Bay)	22.51	23.30	24.12	24.96	25.84
O&M expenses	22.51	23.30	24.12	24.96	25.84
Srinagar Substation: 220/132 kV ICTs					
1 No, 160 MVA, 220/132 kV ICT-II					
Norms as per Regulation (Rs. Per MVA)	0.245	0.254	0.263	0.272	0.282
O&M expenses	39.20	40.64	42.08	43.52	45.12
Group-D Elements: COD: 13.11.2020					
Srinagar Substation: 220 kV Bays					
2 Nos 220 kV D/C Khandukhal (Srinagar) - Baramwari Line Bays					
Norms as per Regulation (Rs. Per Bay)	22.51	23.30	24.12	24.96	25.84
O&M expenses	-	17.75*	48.24	49.92	51.68
Total O&M expenses	522.58	559.08	608.60	630.18	651.85
Asset-II: COD: 20.10.2018					
Srinagar Substation: 400 kV Bays					
1 No, 80 MVAr Bus Reactor					
Norms as per Regulation (Rs. Per Bay)	32.15	33.28	34.45	35.66	36.91
O&M Expenses	32.15	33.28	34.45	35.66	36.91

*On a pro-rata basis as per the respective COD


(Er. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL



156. The summary of the O&M Expenses allowed relating to the transmission assets is as follows:

(₹ in lakh)

Asset	2019-20	2020-21	2021-22	2022-23	2023-24
Asset-I (Group-A)	460.87	477.39	494.16	511.78	529.21
Asset-I (Group-B)	0.00	0.00	0.00	0.00	0.00
Asset-I (Group-C)	61.71	63.94	66.20	68.48	70.96
Asset-I (Group-D)		17.75 (Pro-rata for 139 days)	48.24	49.92	51.68
Asset-II	32.15	33.28	34.45	35.66	36.91

Annual Fixed Charges for 2019-24 Tariff Period

157. The transmission charges allowed concerning the transmission assets for the 2019-24 tariff period are as follows:

(₹ in lakh)

Particulars Asset-I (Group-A)	2019-20	2020-21	2021-22	2022-23	2023-24
Depreciation	687.79	690.99	694.09	693.12	692.26
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	755.34	760.74	765.97	764.34	762.88
Operation & Maintenance Expenses	460.87	477.39	494.16	511.78	529.21
Interest on Working Capital	41.79	39.84	37.90	38.53	44.76
Total	1945.78	1968.95	1992.11	2007.77	2029.10

(₹ in lakh)

Particulars Asset-I (Group-B)	2019-20	2020-21	2021-22	2022-23	2023-24
Depreciation	56.48	56.75	57.00	56.92	56.85
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	62.03	62.48	62.91	62.77	62.65
Operation & Maintenance Expenses	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	1.78	1.68	1.57	1.57	1.79
Total	120.30	120.90	121.48	121.26	121.29

(₹ in lakh)

Particulars Asset-I (Group-C)	2019-20	2020-21	2021-22	2022-23	2023-24
Depreciation	137.83	138.47	139.09	138.90	138.73



Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	151.37	152.45	153.50	153.17	152.88
Operation & Maintenance Expenses	61.71	63.94	66.20	68.48	70.96
Interest on Working Capital	7.04	6.69	6.35	6.43	7.45
Total	357.95	361.56	365.14	366.98	370.01

(₹ in lakh)

Particulars Asset-I (Group-D)	2020-21 (Pro-rata for 139 days)	2021-22	2022-23	2023-24
Depreciation	9.97	26.22	26.18	26.15
Interest on Loan	0.00	0.00	0.00	0.00
Return on Equity	10.87	28.61	28.55	28.49
Operation & Maintenance Expenses	17.75	48.24	49.92	51.68
Interest on Working Capital	1.02	2.55	2.61	3.06
Total	39.60	105.62	107.26	109.38

(₹ in lakh)

Particulars Asset-II	2019-20	2020-21	2021-22	2022-23	2023-24
Depreciation	35.40	35.40	35.40	35.40	35.40
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	37.78	37.78	37.78	37.78	37.78
Operation & Maintenance Expenses	32.15	33.28	34.45	35.66	36.91
Interest on Working Capital	2.50	2.38	2.27	2.31	2.70
Total	107.84	108.85	109.90	111.16	112.79

158. AFC claimed by the Petitioner and allowed in the current order concerning the transmission assets is as follows:

Asset-I	2019-20	2020-21	2021-22	2022-23	2023-24
Claimed by the Petitioner in the instant Petition.	3421.33	3395.59	3426.13	3447.94	3481.16
Approved in this order:					
Asset-I (Group-A)	1945.78	1968.95	1992.11	2007.77	2029.10
Asset-I (Group-B)	120.30	120.90	121.48	121.26	121.29
Asset-I (Group-C)	357.95	361.56	365.14	366.98	370.01
Asset-I (Group-D)	-	39.60	105.62	107.26	109.38
Total Approved	2424.03	2491.01	2584.35	2603.27	2629.78
Asset-II	2019-20	2020-21	2021-22	2022-23	2023-24
Claimed by the Petitioner in the instant Petition.	76.17	74.21	74.14	74.14	74.28
Approved in this order	107.84	108.85	109.90	111.16	112.79



Sharing of Transmission Charges:

159. As regards sharing of transmission charges, the Commission, vide order dated 19.2.2021 in Petition No. 80/TT/2016 observed that the subject transmission assets are connected to the grid through Vishnuprayag - Muzaffarnagar Transmission Line and has been declared as deemed ISTS and held that the CTU shall raise the bill in accordance with the provisions of the Regulation 15(2)(b) (second bill to the DICs) and Regulation 15(2)(a) (first bill to the DICs) of the Central Electricity Regulatory Commission (Sharing of inter- State transmission Charges and Losses) Regulations, 2020 (2020 Sharing Regulations). The relevant extracts of the order are as follows:

"168. We have considered the submissions of the parties. It is observed that UITP was granted deemed ISTS status in order dated 31.1.2013 in Petition No. 133/MP/2012. The assets covered in the instant petition have been in regular service after successful trial operation. The Petitioner has furnished details of power flow through the transmission assets. The Commission in order dated 20.4.2018 while granting provisional tariff for the transmission assets held that the entire tariff approved for the transmission assets has to be borne by UPCL. However, considering the fact that the subject transmission asset has been in regular service with effect from 31.7.2016, is connected to the grid through Vishnuprayag - Muzaffarnagar Transmission Line and has been declared as deemed ISTS, the transmission charges of the said transmission assets shall be recovered from the ISTS charges pool.

169. Accordingly, the arrears of the transmission charges from the date of commercial operation till the billing period commensurate with the date of issue of this order shall be raised by the CTU in accordance with the provisions of the Regulation 15(2)(b) (second bill to the DICs) and bills for the subsequent billing periods shall be raised in accordance with the provisions of Regulation 15(2)(a) (first bill to the DICs) of the Central Electricity Regulatory Commission (Sharing of inter- State transmission Charges and Losses) Regulations, 2020"

160. In view of the above, the transmission charges from the date of commercial operation till the billing period commensurate with the date of issue of this order shall be raised by the CTUIL in accordance with the provisions of the Regulation 15(2)(b) (second bill to the DICs) and bills for the subsequent billing periods shall be raised in accordance with the provisions of Regulation 15(2)(a) (first bill to the DICs) of the 2020 Sharing Regulations.



Filing Fee and the Publication Expenses

161. The Petitioner has sought reimbursement of the fee it paid for filing the Petition and publication expenses.

162. The Petitioner shall be entitled to reimbursement of the filing fees and publication expenses in connection with the present Petition, directly from the beneficiaries on a pro-rata basis in accordance with Regulation 70(1) of the 2019 Tariff Regulations. Licence Fee & RLDC Fees and Charges

163. The Petitioner has sought reimbursement of the licensee fee under Regulation 70(4) of the 2019 Tariff Regulations for the 2019-24 tariff period. The Petitioner shall be entitled to reimbursement of the licence fee in accordance with Regulation 70(4) of the 2019 Tariff Regulations for the 2019-24 tariff period. The Petitioner shall also be entitled to recovery of the RLDC fee and charges in accordance with Regulations 70(3) of the 2019 Tariff Regulations for the 2019 -24 tariff period.

164. Annexure-I and Annexure-II attached hereinafter shall form part of this order.

165. This order disposes of Petition No. 186/TT/2024 in terms of the above discussions and findings.

sd/-
(Ravinder Singh Dhillon)
Member

sd/-
(Harish Duadani)
Member

sd/-
(Ramesh Babu V.)
Member

sd/-
(Jishnu Barua)
Chairperson


(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL



Annexure-I:

Particulars Asset-I (Group-A)	Admitted Capital Cost as on COD /31.3.201 4	Admitted ACE				Admitted Capital Cost as on 31.3.2019 (₹ in lakh)	Rate of Depreciati on as per Regulation (%)	Annual Depreciation as per Regulations (₹ in lakh)		
		2016-17	2017-18	2018-19	Total			2016-17	2017-18	2018-19
Capital Expenditur e										
Freehold Land	0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00
Leasehold Land	312.35	0.00	0.00	0.00	0.00	312.35	3.34%	10.43	10.43	10.43
Building & Other Civil Works	504.48	122.90	224.74	23.12	370.76	875.24	3.34%	18.90	24.71	28.85
Transmissi on Line	0.00	0.00	0.00	0.00	0.00	0.00	5.28%	0.00	0.00	0.00
Sub-Station Equipment	10807.91	451.73	0.00	670.20	1121.93	11929.84	5.28%	582.58	594.51	612.20
PLCC	287.92	0.00	0.00	0.00	0.00	287.92	6.33%	18.23	18.23	18.23
Total	11912.66	574.63	224.74	693.32	1492.69	13405.35		630.14	647.87	669.71
Average Gross Block (₹ in lakh)								12199.98	12599.66	13058.7
Weighted Average Rate of Depreciati on %								5.165	5.142	5.128


(Er. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL

Particulars Asset-I (Group-B)	Admitted Capital Cost as on COD /31.3.201 4	Admitted ACE				Admitted Capital Cost as on 31.3.2019 (₹ in lakh)	Rate of Depreciat on as per Regulation (%)	Annual Depreciation as per Regulations (₹ in lakh)		
		2016-17	2017-18	2018-19	Total			2016-17	2017-18	2018-19
Capital Expenditur e										
Freehold Land	0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00
Leasehold Land	25.64	0.00	0.00	0.00	0.00	25.64	3.34%	0.86	0.86	0.86
Building & Other Civil Works	41.42	10.12	18.50	1.90	30.52	71.94	3.34%	1.55	2.03	2.37
Transmissi on Line	0.00	0.00	0.00	0.00	0.00	0.00	5.28%	0.00	0.00	0.00
Sub-Station Equipment	887.36	37.18	0.00	55.16	92.33	979.70	5.28%	47.83	48.82	50.27
PLCC	23.64	0.00	0.00	0.00	0.00	23.64	6.33%	1.50	1.50	1.50
Total	978.06	47.29	18.50	57.06	122.85	1100.92		51.74	53.20	55.00
Average Gross Block (₹ in lakh)								1001.711	1034.607	1072.39
Weighted Average Rate of Depreciati on %								5.165	5.142	5.128


(Er. ILKA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL

Particulars Asset-I (Group-C)	Admitted Capital Cost as on COD /31.3.201 4	Admitted ACE				Admitted Capital Cost as on 31.3.2019 (₹ in lakh)	Rate of Depreciati on as per Regulation (%)	Annual Depreciation as per Regulations (₹ in lakh)		
		2016-17	2017-18	2018-19	Total			2016-17	2017-18	2018-19
Capital Expenditur e										
Freehold Land	0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00
Leasehold Land	62.59	0.00	0.00	0.00	0.00	62.59	3.34%	2.09	2.09	2.09
Building & Other Civil Works	101.10	24.63	45.04	4.63	74.30	175.40	3.34%	3.79	4.95	5.78
Transmissi on Line	0.00	0.00	0.00	0.00	0.00	0.00	5.28%	0.00	0.00	0.00
Sub-Station Equipment	2165.91	90.53	0.00	134.31	224.83	2390.74	5.28%	116.75	119.14	122.69
PLCC	57.70	0.00	0.00	0.00	0.00	57.70	6.33%	3.65	3.65	3.65
Total	2387.30	115.16	45.04	138.94	299.14	2686.44		126.28	129.83	134.21
Average Gross Block (₹ in lakh)								2444.88	2524.97	2616.96
Weighted Average Rate of Depreclati on %								5.165	5.142	5.128


(Er. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL

Particulars Asset-II	Admitted Capital Cost as on COD /31.3.2014	Admitted ACE		Admitted Capital Cost as on 31.3.2019 (₹ in lakh)	Rate of Depreciation as per Regulation (%)	Annual Depreciation as per Regulations (₹ in lakh)
		2018-19	Total			
Capital Expenditure						2018-19
Freehold Land	0.00	0.00	0.00	0.00	0.00%	0.00
Leasehold Land	0.00	0.00	0.00	0.00	3.34%	0.00
Building & Other Civil Works	0.00	0.00	0.00	0.00	3.34%	0.00
Transmission Line	0.00	0.00	0.00	0.00	5.28%	0.00
Sub-Station Equipment	670.52	0.00	0.00	670.52	5.28%	35.40
PLCC	0.00	0.00	0.00	0.00	6.33%	0.00
IT Equipment	0.00	0.00	0.00	0.00	5.28%	0.00
Total	670.52	0.00	0.00	670.52		35.40
Average Gross Block (₹ in lakh)						670.52
Weighted Average Rate of Depreciation %						5.280


(Er. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL

Annexure-II:

Particulars Asset-I (Group-A)	Admitted Capital Cost as on 31.3.2019	Admitted ACE						Admitted Capital Cost as on 31.3.2024 (₹ In lakh)	Rate of Depreciati on as per Regulatio n (%)	Annual Depreciation as per Regulations (₹ in lakh)				
		2019-20	2020-21	2021-22	2022-23	2023-24	Total			2019-20	2020-21	2021-22	2022-23	2023-24
Capital Expenditure														
Freehold Land	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00
Leasehold Land	312.35	0.00	0.00	0.00	0.00	0.00	0.00	312.35	3.34%	10.43	10.43	10.43	10.43	10.43
Building & Other Civil Works	875.24	0.00	191.64	-6.03	-51.82	0.00	133.79	1009.03	3.34%	29.23	32.43	35.53	34.57	33.70
Transmissio n Line	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.28%	0.00	0.00	0.00	0.00	0.00
Sub-Station Equipments	11929.84	0.00	0.00	0.00	0.00	0.00	0.00	11929.84	5.28%	629.90	629.90	629.90	629.90	629.90
PLCC	287.92	0.00	0.00	0.00	0.00	0.00	0.00	287.92	6.33%	18.23	18.23	18.23	18.23	18.23
IT Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.00%	0.00	0.00	0.00	0.00	0.00
Total	13405.35	0.00	191.64	-6.03	-51.82	0.00	133.79	13539.14		687.79	690.99	694.09	693.12	692.26
Average Gross Block (₹ in lakh)										13405.35	13501.17	13593.98	13565.05	13539.14
Weighted Average Rate of Depreciati on %										5.131	5.118	5.106	5.110	5.113


(Er. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL

Particulars Asset-I (Group-B)	Admltted Capital Cost as on 31.3.2019	Admitted ACE						Admitted Capital Cost as on 31.3.2024 (₹ in lakh)	Rate of Depreciati on as per Regulatio n (%)	Annual Depreciation as per Regulations (₹ in lakh)				
Capital Expenditure		2019-20	2020-21	2021-22	2022-23	2023-24	Total			2019-20	2020-21	2021-22	2022-23	2023-24
Freehold Land	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00
Leasehold Land	25.64	0.00	0.00	0.00	0.00	0.00	0.00	25.64	3.34%	0.86	0.86	0.86	0.86	0.86
Building & Other Civil Works	71.94	0.00	15.77	-0.50	-4.26	0.00	11.01	82.95	3.34%	2.40	2.67	2.92	2.84	2.77
Transmissio n Line	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.28%	0.00	0.00	0.00	0.00	0.00
Sub-Station Equipments	979.70	0.00	0.00	0.00	0.00	0.00	0.00	979.70	5.28%	51.73	51.73	51.73	51.73	51.73
PLCC	23.64	0.00	0.00	0.00	0.00	0.00	0.00	23.64	6.33%	1.50	1.50	1.50	1.50	1.50
IT Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.00%	0.00	0.00	0.00	0.00	0.00
Total	1100.92	0.00	15.77	-0.50	-4.26	0.00	11.01	1111.93		56.48	56.75	57.00	56.92	56.85
									Average Gross Block (₹ in lakh)	1100.92	1108.8	1116.44	1114.06	1111.93
									Weighted Average Rate of Depreciati on %	5.131	5.118	5.106	5.109	5.113


(Er. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL

Particulars Asset-I (Group-C)	Admited Capital Cost as on 31.3.2019	Admitted ACE						Admitted Capital Cost as on 31.3.2024 (₹ in lakh)	Rate of Depreciat on as per Regulatio n (%)	Annual Depreciation as per Regulations (₹ in lakh)				
Capital Expenditure		2019-20	2020-21	2021-22	2022-23	2023-24	Total			2019-20	2020-21	2021-22	2022-23	2023-24
Freehold Land	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00
Leasehold Land	62.59	0.00	0.00	0.00	0.00	0.00	0.00	62.59	3.34%	2.09	2.09	2.09	2.09	2.09
Building & Other Civil Works	175.40	0.00	38.40	-1.21	-10.38	0.00	26.81	202.21	3.34%	5.86	6.50	7.12	6.93	6.75
Transmissio n Line	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.28%	0.00	0.00	0.00	0.00	0.00
Sub-Station Equipments	2390.74	0.00	0.00	0.00	0.00	0.00	0.00	2390.74	5.28%	126.23	126.23	126.23	126.23	126.23
PLCC	57.70	0.00	0.00	0.00	0.00	0.00	0.00	57.70	6.33%	3.65	3.65	3.65	3.65	3.65
IT Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.00%	0.00	0.00	0.00	0.00	0.00
Total	2686.44	0.00	38.40	-1.21	-10.38	0.00	26.81	2713.25		137.83	138.47	139.09	138.90	138.73
									Average Gross Block (₹ in lakh)	2686.44	2705.64	2724.23	2718.44	2713.25
									Weighted Average Rate of Depreclati on %	5.131	5.118	5.106	5.110	5.113


(Er. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL

Particulars Asset-I (Group-D)	Admitted Capital Cost as on COD /31.3.2019	Admitted ACE					Admitted Capital Cost as on 31.3.2024 (₹ in lakh)	Rate of Depreciatl on as per Regulatio n (%)	Annual Depreciation as per Regulations (₹ in lakh)			
		2020-21	2021-22	2022-23	2023-24	Total			2020-21	2021-22	2022-23	2023-24
Capital Expenditure												
Freehold Land	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00
Leasehold Land	13.25	0.00	0.00	0.00	0.00	0.00	13.25	3.34%	0.44	0.44	0.44	0.44
Building & Other Civil Works	21.39	2.73	-0.23	-1.97	0.00	0.53	21.92	3.34%	0.76	0.80	0.77	0.73
Transmissio n Line	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.28%	0.00	0.00	0.00	0.00
Sub-Station Equipments	458.33	0.00	0.00	0.00	0.00	0.00	458.33	5.28%	24.20	24.20	24.20	24.20
PLCC	12.21	0.00	0.00	0.00	0.00	0.00	12.21	6.33%	0.77	0.77	0.77	0.77
IT Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.00%	0.00	0.00	0.00	0.00
Total	505.18	2.73	-0.23	-1.97	0.00	0.53	505.71		26.18	26.22	26.18	26.15
								Average Gross Block (₹ in lakh)	506.55	507.80	506.70	505.71
								Weighted Average Rate of Depreciati on %	5.167	5.163	5.167	5.170


(Er. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL

Particulars Asset-II	Admitted Capital Cost as on 31.3.2019	Admitted ACE						Admitted Capital Cost as on 31.3.2024 (₹ in lakh)	Rate of Depreciat on as per Regulatio n (%)	Annual Depreciation as per Regulations (₹ in lakh)				
		2019-20	2020-21	2021-22	2022-23	2023-24	Total			2019-20	2020-21	2021-22	2022-23	2023-24
Capital Expenditure														
Freehold Land	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00
Leasehold Land	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.34%	0.00	0.00	0.00	0.00	0.00
Building & Other Civil Works	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.34%	0.00	0.00	0.00	0.00	0.00
Transmission Line	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.28%	0.00	0.00	0.00	0.00	0.00
Sub-Station Equipments	670.52	0.00	0.00	0.00	0.00	0.00	0.00	670.52	5.28%	35.40	35.40	35.40	35.40	35.40
PLCC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.33%	0.00	0.00	0.00	0.00	0.00
IT Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.00%	0.00	0.00	0.00	0.00	0.00
Total	670.52	0.00	0.00	0.00	0.00	0.00	0.00	670.52		35.40	35.40	35.40	35.40	35.40
Average Gross Block (₹ in lakh)										670.52	670.52	670.52	670.52	670.52
Weighted Average Rate of Depreciation %										5.280	5.280	5.280	5.280	5.280


(Er. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL



RAWAT NAKOTI & CO.

CHARTERED ACCOUNTANTS

CERTIFICATE

This is to certify that we have examined and verified the books of account and relevant records of M/s Power Transmission Corporation of Uttarakhand Limited in respect of expenditure incurred on the **PFR-3 Scheme (Construction of 400 KV S/S, Srinagar) at Srinagar**.

Based on our examination of the books of account, bills, vouchers and other relevant records and information and explanations made available to us, we hereby certify that the capital expenditure paid on the aforesaid project upto **31st March 2026**, and the year-wise capital expenditure paid up to 31st March 2026 are as detailed in **Annexure "A"** attached hereto.

Further, with regard to the projected expenditure on the aforesaid project, the Management has represented and confirmed to us that, based on the approved project plan, estimates and information presently available, an expenditure of **Rs 962.40 lakhs** is projected to be incurred on the said project up to the financial year **2028-29**.

The certification of the projected expenditure is based solely on the aforesaid representation and confirmation provided by the Management and has not been independently verified by us, being in the nature of prospective financial information. Accordingly, our certification in respect of the projected expenditure of **Rs 962.40 lakhs up to FY 2028-29** is subject to and reliant upon the Management's representation, for which the Management assumes full responsibility.

This certificate is issued on the basis of the records, information and explanations produced before us and the Management representation referred to above, for the specific purpose for which it has been requested.

For M/s Rawat Nakoti & Co.

Chartered Accountants

FRN.015622C



CA. Sandeep Nakoti

(Partner)

M.No.410571

UDIN: 26410571UUOWLU7376

Date: 24th July 2026

Place: Dehradun

(**Er. ILLA CHANDRA**)
Chief Engineer
(Commercial & Regulatory)
PTCUL

Annexure "A"

FY	Breakup by Asset Type (Rs. in lakh)							IT Equipment	Total
	Land - Freehold	Land - Leasehold	Building & Civil Works	Tr. Line	Sub-station	PLCC/ Communication System			
Expenditure upto 31.03.2019 (Excluding IEDC)	-	433.56	1,238.22	-	15,519.58	399.66	-	-	17,591.02
IEDC	-	35.67	101.86	-	1,276.70	32.88	-	-	1,447.11
Expenditure upto 31.03.2019 (Including IEDC)	-	469.23	1,340.08	-	16,796.28	432.54	-	-	19,038.13
Opening capital Cost as on 1.4.2019	-	469.23	1,340.08	-	16,796.28	432.54	-	-	19,038.13
Expenditure from 1.04.2019 to 31.03.2020	-	-	58.61	-	-	-	-	-	58.61
Expenditure from 01.04.2020 to 31.03.2021	-	-	39.98	-	-	-	-	-	39.98
Expenditure from 01.04.2021 to 31.03.2022	-	-	14.78	-	-	-	-	-	14.78
Expenditure from 1.04.2022 to 31.03.2023	-	-	85.89	-	-	-	-	-	85.89
Expenditure from 01.04.2023 to 31.03.2024	-	-	14.93	-	-	-	-	-	14.93
Total as on 2024	-	469.23	1,554.27	-	16,796.28	432.54	-	-	19,252.32
Decapitalization during 1.4.2024 to 31.3.2025	-	-	-	-	(33.22)	-	-	-	(33.22)
01.04.2024 to 31.03.2025	-	-	67.55	-	119.62	-	-	-	187.17
01.04.2025 to 31.03.2026	-	-	228.52	-	-	-	-	-	228.52
01.04.2026 to 31.03.2027	-	-	114.18	-	-	-	-	-	114.18
01.04.2027 to 31.03.2028	-	-	30.31	-	-	-	-	-	30.31
01.04.2028 to 31.03.2029	-	-	49.03	-	768.88	-	-	-	817.91
Total	-	469.23	2,043.86	-	17,651.56	432.54	-	-	20,597.19

Asset 2

Expenditure upto 31.03.2019	-	-	-	-	670.52	-	-	-	670.52
-----------------------------	---	---	---	---	--------	---	---	---	--------



(E. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL

(Rs. In Lakh)

Liability Flow Statement (400 KV S/s Srinagar)

Asset No	Headwise/ Partywise	Particulars	Year of Actual Capitalization	Outstanding liability as on 2019	Discharge					Outstanding liability as on 2024	
					2019-20	2020-21	2021-22	2022-23	2023-24		Total
Asset-1	M/s ABB Ltd		2016	129.33	38.48	0.00	0.00	85.89	0.00	124.37	4.96
	M/s Arihant Constructions		2018	8.72	8.72	0.00	0.00	0.00	0.00	8.72	0.00
	M/s Chamoli Associates		2021	121.64	11.41	39.98	14.78	0.00	14.93	81.10	40.54
	M/s SKT Building Private Limited		2015	3.53	0.00	0.00	0.00	0.00	0.00	0.00	3.53
	ADB PMO Liability			768.88	0.00	0.00	0.00	0.00	0.00	0.00	768.88
Total				1032.10	58.61	39.98	14.78	85.89	14.93	214.19	817.91

[Signature]

no h/-

[Signature]

[Signature]
 (Er. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL

Liability Flow Statement (400kV S/s Srinagar)

Asset No	Headwise/ Partywise	Particulars	Year of Actual Capitalization	Outstanding liability as on 2024	Discharge						Outstanding liability as on 2029
					2024-25	2025-26	2026-27	2027-28	2028-29	Total	
Asset-1	M/s ABB Ltd		2016	4.96	0.00	0.00	0.00	0.00	4.96	4.96	0.00
	M/s Chamoli Associates		2021	40.54	0.00	0.00	0.00	0.00	40.54	40.54	0.00
	M/s SKT Building Private Limited		2015	3.53	0.00	0.00	0.00	0.00	3.53	3.53	0.00
	ADB PMO Liability			768.88	0.00	0.00	0.00	0.00	768.88	768.88	0.00
	Total			817.91	0.00	0.00	0.00	0.00	817.91	817.91	0.00

Adarsh Mohan
PO
AD

Shaf
 (Er. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL

Detailed justification report on "Earth retaining structures and storm water drainage system for protection of erosion and ground subsidence at 400 kV Substation, Srinagar (G)"

To evacuate the electric power generated from GVK's 330 MW hydroelectric generation plant in Srinagar(G) District-Puari, under construction hydroelectric generation projects such as THDC's 444 MW Vishnugad-Pipalkoti project and NTPC's 520 MW Tapovan-Vishnugad project, other proposed hydroelectric projects and in view of the increasing demand of electric power supply in the Garhwal region of Uttarakhand, Power Transmission Corporation of Uttarakhand Ltd. (PTCUL) has constructed 400 kV substation Khandukhal, Srinagar(G.) in district Pauri. This substation was energized on July 27, 2016

At present, the said 400 kV substation Srinagar (G) is the only 400 kV capacity substation in the hilly areas of Garhwal region of Uttarakhand which is connected to 132 kV substation Srinagar, 132 kV substation Simli, 132 kV substation Rishikesh as well as hydroelectric power generation plants like GVK in Srinagar and Singoli-Bhatwari hydroelectric power plant in district Rudraprayag. Beyond its technical role, the substation holds immense strategic and religious significance by ensuring uninterrupted power supply to the border areas of Garhwal region and the holy shrines of Badrinath and Kedarnath.

Due to the complex geographical terrain of the hilly region, the above substation was constructed in 24 terraces having maximum level 100.00 and minimum level 68.00, requiring extensive soil filling and the construction of high retaining walls.

Since this substation is situated in the hilly area of Garhwal region, heavy monsoon rains caused erosion of the soil backfill beneath the cement-concrete turfing within the substation yard as well soil get washed out from weep holes of retaining wall, consequently, this led to the emergence of ground subsidence (settlement) issues at many places in the yard of the substation. This soil erosion created a hazardous situation for the foundations of critical equipment installed at the substation, as well as for the retaining walls, access roads, and buildings, thereby posing a significant risk to the very existence, structural stability, and safety of this grid-connected substation.

Given the gravity of this sensitive situation and the critical importance of the site, expert consultation was sought from IIT Roorkee to address the prevention of soil erosion and land subsidence. Subsequently, a team of professors from IIT

EE
EE

SE
(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL -145-

Roorkee conducted a preliminary inspection of the site on February 14, 2023, followed by detailed inspections on December 13, 2023, and January 21, 2024. The experts classified the matter as extremely serious and recommended the immediate implementation of remedial measures and submitted a detailed design report regarding drainage systems and retaining structures on March 7, 2024. Based on this report, approval for the "**Earth Retaining Structures and Stormwater Drainage System**" project was granted by the Managing Director on March 2, 2024. Consequently, the aforementioned work commenced on October 24, 2024, and was successfully completed in a time-bound manner on January 21, 2026—prior to the onset of the 2026 monsoon season.

In this project the following works have been done as per the recommendations of IIT, Roorkee.

1. Storm Water Drainage System
2. French Drain System
3. Earth Retaining Structures
4. Sinkhole and Void Repair
5. Weep Hole Rehabilitation
6. Slope Protection Measures
7. Surface Water Diversion Arrangement

During the execution of the "Earth Retaining Structures and Storm water Drainage System" project, professors from IIT Roorkee periodically inspected the work—both physically and via video conferencing—to verify adherence to technical standards. Upon the completion of the project, the Institute deemed the executed works to be satisfactory. Given that this substation serves as the backbone of the entire Garhwal region's power infrastructure, the protective measures undertaken to ensure its stability were of paramount importance and absolute necessity from both technical and administrative perspectives. With the successful completion of these works, the critical machinery and infrastructure of this substation are now significantly more secure against future monsoons and natural disasters than they were previously.

In the view of above facts it is requested to the Hon'ble Commission that kindly approve capitalization of this work in Tariff Petition.


EE


SE
(E. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

Site Inspection Report

Ref:

1. Project Name/Work Name: - Earth retaining structure and storm water drainage system for protection of erosion and ground subsidence at 400 kV substation Srinagar (G).
2. LOA No.: - 238/SE(C)P/PTCUL/D.Dun/L-3, Date 25.10.2024
3. Agreement No: - 01/SE(C)P/DDN/PTCUL/2024-25, Dated 30.11.2024

The professors of Civil Engineering Department Indian Institute of Technology Roorkee along with PTCUL representatives inspected the site through Video Conferencing/Google meet dated 12th of December 2025 for the work of Earth retaining structure and storm water drainage system for protection of erosion and ground subsidence at 400 kV substation Srinagar.

During the inspection, the work of protection and drainage system i.e. open drains, catch basins, French drains etc. was examined in detail and was found to be satisfactory and as per the consultancy report provided by IIT Roorkee.

The site engineers at PTCUL also informed that the installed drainage system performed well during the rainfall of January 2026. Further, the final performance of the drainage system must be seen during the coming monsoon in July 2026.


Dr. Anumita Mishra
Assistant Professor
Department of Civil Engineering
Indian Institute of Technology Roorkee
Roorkee-247 667, Uttarakhand (INDIA)


(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL




(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)




 (Er. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL

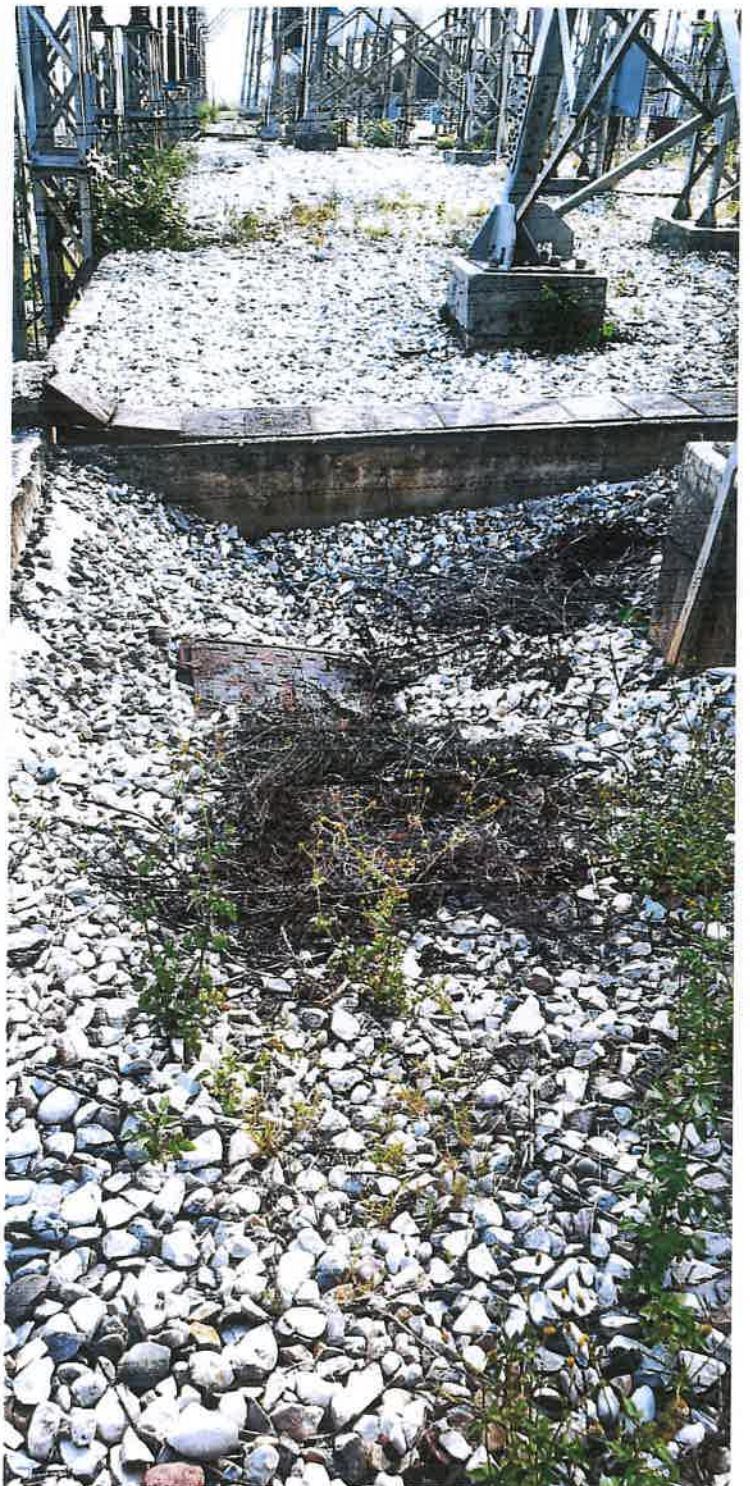



 (Er. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL



Illu

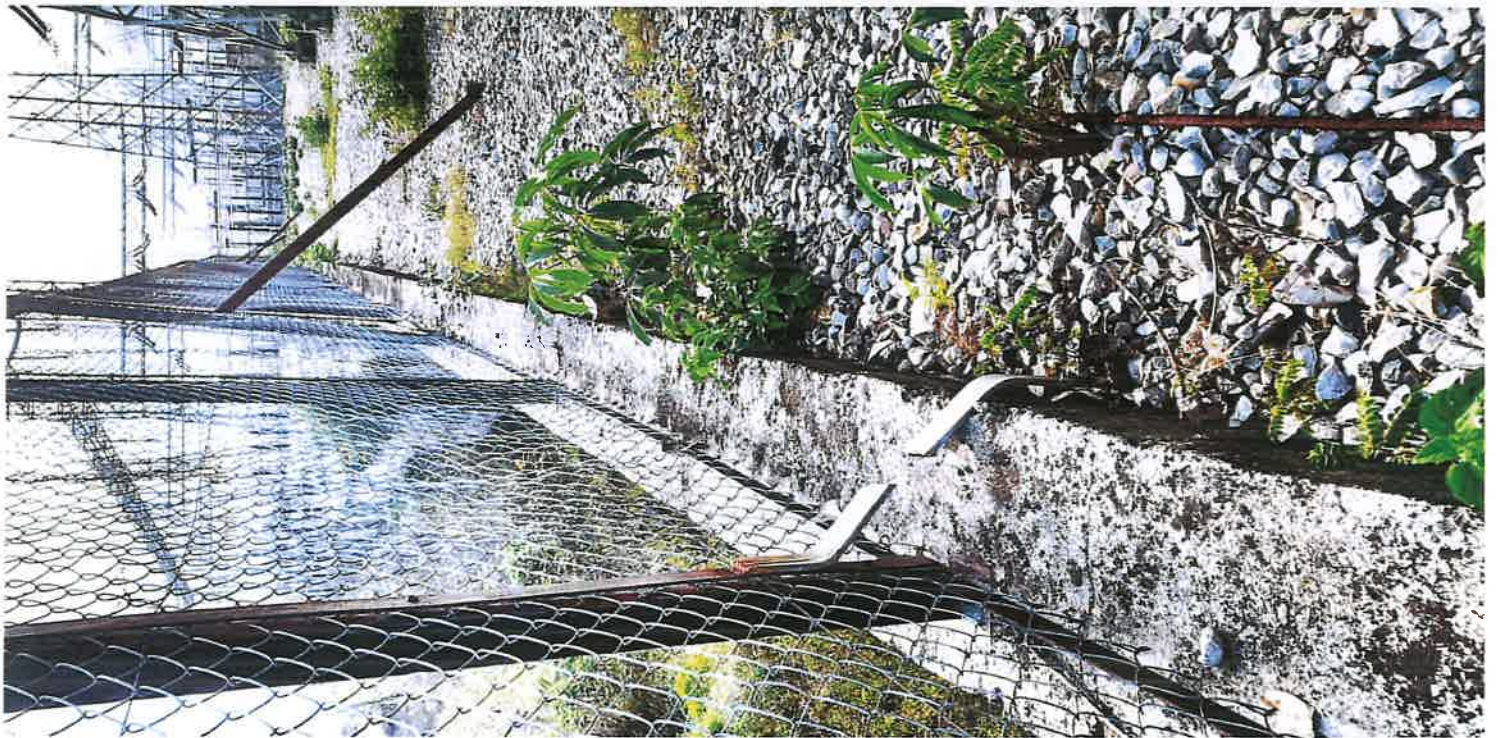
(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)




 (Er. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL



Ill
(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL




(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL




 (Er. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory) PTCUL -155-



slh
(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL



Illu
(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL




 (Er. ~~HLA~~ CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL



Shakti
 (E. J. LA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL

**Detailed Design of Earth Retaining Structure and Storm water
Drainage System for Protection of Erosion and Ground Subsidence
at 400 kV Substation Srinagar**

By
Dr. Anumita Mishra and Prof. C.S.P. Ojha

Project Sponsored by
Power Transmission Corporation of Uttarakhand Limited (PTCUL)



DEPARTMENT OF CIVIL ENGINEERING
INDIAN INSTITUTE OF TECHNOLOGY ROORKEE
ROORKEE- 247667

March 2024

Anumita

CSPO

C.S.P. Ojha

(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

Detailed Design of Earth Retaining Structure and Storm water Drainage System for Protection of Erosion and Ground Subsidence at 400 kV Substation Srinagar

Dr. Anumita Mishra* and Prof. C.S.P. Ojha**

*Assistant Professor, Civil Engineering Department (Geotechnical Engineering Group), IIT Roorkee, Uttarakhand, 247667

** Professor, Civil Engineering Department (Hydraulics Engineering Group), IIT Roorkee, Uttarakhand, 247667

1.0 INTRODUCTION

Mr. Jitendra Chaturvedi, Superintending Engineer (Civil) project, Power Transmission Corporation of Uttarakhand Limited (PTCUL), vide his email dated 01 June 2022, requested Department of Civil Engineering, IIT Roorkee, for consultancy for the protection of soil erosion during heavy rainfall at 400 kV Substation Srinagar. Site visits were made by Dr. Anumita Mishra and Prof. C.S.P. Ojha on 28 November 2022 and 04 February 2023 for preliminary assessment of the issues at the site, and based on the observations, a site visit report outlining the issues identified was submitted on 09 February 2023. PTCUL requested IIT Roorkee to undertake the consultancy for providing remedial measures for the protection of soil erosion vide their email dated 14 February 2023. A proposal for the scope of work was submitted vide email dated 15 February 2023. The proposal was accepted by PTCUL and a purchase order was issued dated 26 September 2023. The fees for detailed design was received at IIT Roorkee on 21 November 2023. Further, site visits were made on 13 December 2023 and 21 January 2024 for assessment of the site. This report presents the remedial measures for protection of erosion and ground subsidence at 400 kV substation Srinagar.

2.0 SCOPE OF THE PROJECT

The authorities at PTCUL suggested the major issues as soil erosion and settlement due to heavy rainfall. IIT Roorkee was approached to provide remedial measures. Based on the issues identified, the scope of project includes the following:

- i. Design of storm water collection and safe disposal system.
 - a. Provision of French drains in each Block.
 - b. Provision of open drains leading up to the outlets.

 
(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

- ii. Design of gabion walls at specified locations in affected blocks.
- iii. Solution for Protection of slope at Block 100 and Block 94.
- iv. Solution for remediation of subsided soil and sinkholes.
- v. Solution for remediation of cracked PCC layer.
- vi. Solution for remediation of weep holes in retaining walls.
- vii. Design of gabion wall and pipe culvert near entrance for diversion of storm water.
- viii. Solution for repairs of cracks in main building walls /columns/septic tank wall and plinth protection.
- ix. Provision of rain water harvesting pits.
- x. Other provisions about maintenance of blocks, retaining walls and roads.

3.0 PROJECT SITE

The details of the site are shown in Fig. 1. The site consists of level grounds having reduced levels (RL) from 100 m to 68 m. There are various blocks or levelled terrains, termed as RL 100, RL 94, RL 92.5, RL 87, RL 85, RL 84, RL 83, RL 81, RL 80, RL 78, RL 77, RL 75, RL 74, RL 73, RL 72, RL 69 and RL 68. These blocks are arranged mostly from higher to lower elevations. Each block is bounded by retaining walls. The entire area is on a hilly terrain, and the site was constructed by cutting and filling method. The depressions were filled with locally available soil while arranging these blocks that houses power distribution system, including transformers. Most of the blocks have a layer of PCC of 5 cm thickness over the filled soil. On the top of PCC layer, a 5-6 cm gravel bed is provided.

gnt
(Er. ILA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

Anurita

CSPOthe

4.0.2 Proposed Drainage system

All the drainage components are judiciously located and installed to divert the surface runoff suitably into the designated outlets. The existing drainage arrangement has been augmented with provisions of French drains (half perforated) fitted with round catch basins, lateral pipes with square catch basins, sink basins, down spout pipes, open channels, RCC Hume pipes, rain water harvesting pits and outlets. Further, open channels have been provided for safe disposal of collected storm water to the identified outlet points. The proposed drainage network is shown in Fig. 2.

Representation of Drainage Network

The drainage network represented by Fig.2 is described as given below:

- The number inside the circle designates the node number corresponding to that location.
- The number inside the rectangle designates the drain line number.
- Lines that connect the nodes with arrow and the number show the direction of flow and corresponding discharge in lit/sec in that section of drainage line, respectively.
- Discharge is computed by multiplying area of influence of a floor catch basin /French drain by the rainfall intensity.

Table 1 shows the details of these nodes and Table 2 shows the details of the drainage lines with discharges.

Note: The different terraces are assumed to be in horizontal planes having elevations as given in Fig.1. Therefore, the elevations of different nodes in Table 1 are approximated with reference to terrace elevation as datum.

Table 1. Details of Nodes and Elevation

Node Number	Approximate Elevation of the Node	Terrace Location	Description of Node
01	96.75	T 97	Invert level of Type I French Drain
02	96.72	T 97	Invert level of Type I French Drain
03	96.70	T 97	Invert level of Type I French Drain (Sink Basin)
04	99.75	T 100	Invert level of Type II French Drain
05	99.68	T 100	Invert level of Type II French Drain
06	99.65	T 100	Invert level of Type II French Drain
07	99.64	T 100	Invert level of Type II French Drain
08	99.49	T 100	Bed level of existing channel at exit end.

Anurita
(*ILLA CHANDRA*)
Chief Engineer
(Commercial & Regulatory)
PTCUL

CS/01/16

PLAN SHOWING NODES, DRAINS/PIPES WITH DISCHARGE

AREA OF CATCHMENT = 63900 SQM

PRECIPITATION OVER CATCHMENT = 50 MM PER HOUR

TOTAL DISCHARGE (RUNOFF) = 886 LIT PER SECOND

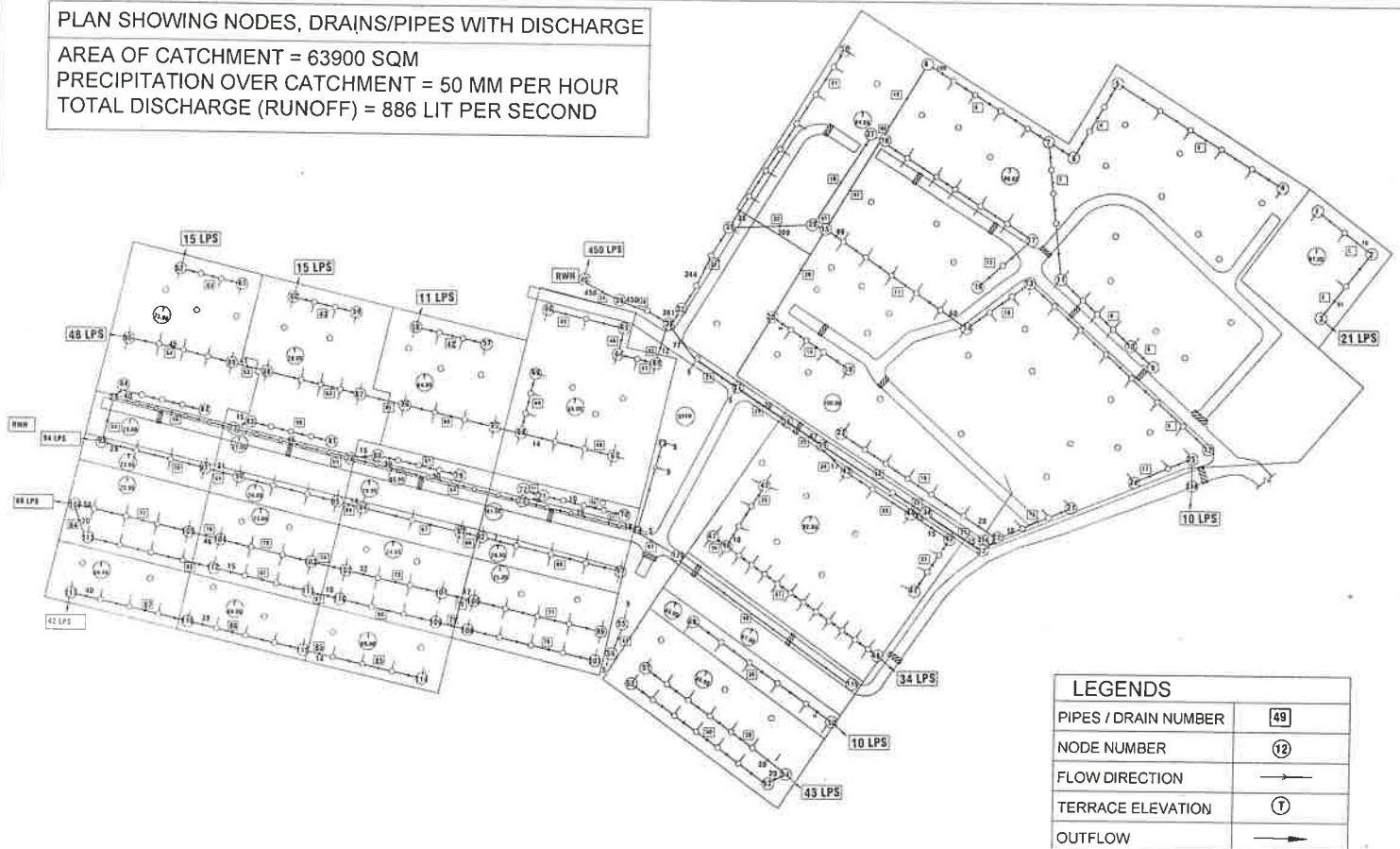


Fig. 2

Anurag

sh
(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

			(Common Sink Basin)
09	99.75	T 100	Invert level of Type II French Drain along Channel
10	99.74	T 100	Invert level of Type II French Drain along Channel
11	99.69	T 100	Invert level of Type II French Drain along Channel
12	99.75	T 100	Invert level of Type II French Drain along Channel
13	99.67	T 100	Invert level of Type II French Drain along Channel
14	99.64	T 100	Invert level of Type II French Drain along Channel
15	99.50	T 100	Bed level of existing channel at exit end. (Common Sink Basin)
16	99.75	T 100	Invert level of Type II French Drain along Channel
17	99.73	T 100	Invert level of Type II French Drain along Channel
18	99.60	T 100	Bed level of existing channel at exit end. (Common Sink Basin)
19	99.57	T 100	Invert level of Type II French Drain along Channel
20	99.61	T 100	Bed level of existing channel at exit end. (Common Sink Basin)
21	99.75	T 100	Invert level of Type II French Drain near wall Sink Basin
22	99.60	T 100	Invert level of Type II French Drain near wall (Sink Basin)
23	99.75	T 100	Invert level of Type II French Drain near wall
24	99.75	T 100	Invert level of Type II French Drain near wall
25	99.60	T 100	Invert level of Type II French Drain near wall (Sink Basin)
27	93.30	T 94	Lower level of 2x250 mm down spout pipes Trough Channel as common sink
28	93.10	T 94	Lower level of 2x250 mm down spout pipes Trough Channel as common sink
30	93.75	T 94	Invert level of Type II French drain near Gabion wall
31	91.80	T 94	Bed level of channel at exit end along Gabion wall (Sink Basin)
32	89.90	Open	Bed Level of Channel near T85 and Store
33	91.00	Near T 92	Bed level of Channel along Road
34	90.20	Near T 92	Bed level of Channel along Road
35	89.60	Near T 92	Bed level of Channel along Road
36	88.50	Near T 92	Bed level of Channel along Road
37	87.00	Open	Bed level of Channel along Road
38	84.20	Near T 85	Bed level of Channel along Road
39	83.60	Near Store	Bed level of Channel along Road (Sink Basin)
40	83.10	Near Store	RWH structure No 1
41	92.25	T 92	Invert level of Type II French Drain along edge of Terrace


(Er. ILA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL

42	92.20	T 92	Invert level of Type II French Drain along edge of Terrace (Sink Basin)
43	92.00	T 92	Invert level of Type II French Drain along edge of Terrace (Sink Basin)
44	92.10	T 92	Invert level of Type II French Drain along edge of Terrace
45	92.25	T 92	Invert level of Type I French Drain
46	92.1	T 92	Bed level of 500 x 300 existing channel at start. (Sink Basin)
47	92.20	T 92	Invert level of Type I French Drain
48	92.0	T 92	Bed level of 500 x 300 existing channel at exit (Sink Basin)
49	82.75	T 83	Invert level of Type II French Drain along Channel
50	82.05	T 83	Invert level of Type II French Drain along Channel (Sink Basin)
51	79.75	T 80	Invert level of Type I French Drain along Channel
52	79.75	T 80	Invert level of Type I French Drain near edge
53	79.05	T 80	Invert level of Type I French drain near edge of terrace along retaining wall.
54	79.00	T 80	Bed level of 500 x 300 existing channel at exit (Sink Basin)
55	77.80	Open	Invert Level of Catch basin
56	77.20	Open	Invert level of Catch basin (Sink Basin)
57	83.75	T 84	Invert level of Type II French Drain near edge
58	83.62	T 84	Invert level of Type II French Drain near edge (Sink Basin)
59	77.75	T 78	Invert level of Type II French Drain near edge
60	77.62	T 78	Invert level of Type II French Drain near edge (Sink Basin)
61	72.75	T 73	Invert level of Type II French Drain near edge
62	72.62	T 73	Invert level of Type II French Drain near edge (Sink Basin)
63	84.60	T 85	Invert level of Type I French Drain near edge (Sink Basin)
64	84.65	T 85	Invert level of Type I French Drain near edge
65	84.72	T 85	Invert level of Type I French Drain near edge
66	84.75	T 85	Invert level of Type I French Drain near edge
67	84.75	T 85	Invert level of Type I French Drain near edge
68	84.70	T 85	Invert level of Type I French Drain near edge (Sink Basin)
69	84.75	T 85	Invert level of Type I French Drain near edge
70	84.75	T 85	Invert level of Type II French Drain near edge



 (Er. S. L. CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL

71	84.60	T 85	Invert level of Type II French Drain near edge
72	84.75	T 85	Invert level of Type II French Drain near edge
73	82.20	Open	Bed Level of Channel near T 85
74	81.00	Open	Bed Level of Channel near T 85
75	79.00	Road	Bed level of Channel
76	78.00	Road	Bed level of Channel (Sink Basin)
77	77.00	Road	Bed level of Channel (Sink Basin)
78	72.60	Road	Bed level of Channel (Sink Basin)
79	83.75	T 84	Invert level of Type I French Drain near edge
80	83.70	T 84	Invert level of Type I French Drain near edge
81	77.75	T 78	Invert level of Type I French Drain near edge
82	77.70	T 78	Invert level of Type I French Drain near edge
83	72.75	T 73	Invert level of Type I French Drain near edge
84	72.70	T 73	Invert level of Type I French Drain near edge
85	83.75	T 84	Invert level of Type II French Drain near edge (Sink Basin)
86	83.71	T 84	Invert level of Type II French Drain along Channel (Sink Basin)
87	77.75	T 78	Invert level of Type II French Drain along Channel (Sink Basin)
88	77.70	T 78	Invert level of Type II French Drain along Channel (Sink Basin)
89	72.75	T 73	Invert level of Type II French Drain along Channel Sink Basin
90	72.70	T 73	Invert level of Type II French Drain along Channel (Sink Basin)
91	77.75	T 78	Invert level of Type I French Drain along Channel
92	77.70	T 78	Invert level of Type I French Drain along Channel (Sink Basin)
93	77.68	T 78	Invert level of Type I French Drain along Channel Sink Basin
94	77.64	T 78	Invert level of Type I French Drain along Channel Sink Basin
95	75.75	T 76	Invert level of Type I French Drain along Channel (Sink Basin)
96	77.71	T 76	Invert level of Type I French Drain along Channel Sink Basin
97	72.75	T 73	Invert level of Type I French Drain along Channel (Sink Basin)
98	72.50	T 73	Invert level of Type I French Drain along Channel (Sink Basin)
99	74.75	T 75	Invert level of Type I French Drain along Channel (Sink Basin)
100	74.70	T 75	Invert level of Type I French Drain along Channel Sink Basin



(Er. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL

101	73.75	T 74	Invert level of Type I French Drain along Channel Sink Basin
102	73.70	T 74	Invert level of Type I French Drain along Channel (Sink Basin)
103	72.75	T 73	Invert level of Type I French Drain along Channel Sink Basin
104	72.70	T 73	Invert level of Type I French Drain along Channel Sink Basin
105	71.75	T 72	Invert level of Type I French Drain along Channel Sink Basin
106	71.55	T 72	Invert level of Type I French Drain along Channel (Sink Basin)
107	74.75	T 75	Invert level of Type II French Drain near edge
108	74.70	T 75	Invert level of Type II French Drain near edge (Sink Basin)
109	73.75	T 74	Invert level of Type II French Drain near edge (Sink Basin)
110	73.70	T 74	Invert level of Type II French Drain near edge (Sink Basin)
111	72.75	T 73	Invert level of Type II French Drain near edge Sink Basin
112	72.70	T 73	Invert level of Type I French Drain near edge (Sink Basin)
113	71.65	T 72	Invert level of Type II French Drain near edge (Sink Basin)
114	68.50	T 69	Bed level of 450 x 600 channel at start along Retaining wall
115	68.20	T 69	Bed level of 450 x 600 channel at exit end along Retaining wall
116	67.9	T 68	Bed level of 450 x 600 channel at exit end along Retaining wall
117	67.70	T 68	Bed level of 450 x 600 channel at exit end along Retaining wall (Sink Basin)
118	94.50	Road	Outlet of down spout from T 100
119	86.50	Road	Bed Level of Channel along Road near T87
120	83.50	Road	Bed Level of Channel along Road near T84

Note: The elevations of nodes in Table 1 are approximate.

1. French Drains

There are two types of French drains used in the drainage system. French drain Type I has one perforated pipe surrounded by 40 mm Gravel and a permeable Geo fabric whereas Type II has two perforated pipes. The construction and layout is described in Fig.3. French drains Type I have been provided in each block along the existing concrete rectangular open channels. The French drains

Anurag

slat
(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

W. B. K.

Type II have been provided running along the retaining walls to intercept the percolating storm water. The position of French drains (Type I and Type II) on the drainage system is shown in Table 2.

Steps for installation of a French drain line (Type I) along existing channel (shown in Fig.4)

- Excavate a trench 60 cm wide and 60 cm deep along an existing concrete open channel.
- Drill 150 mm diameter holes using core cutter in the vertical wall of the existing concrete channel at a spacing of 10 m c/c. The spacing can be reduced wherever required. The centres of hole shall be 175 mm above the channel bed at all locations.
- Prepare a compacted bed for the French drain line. The French drainage line (Type I) shall be along the existing channel laid at a slope of 1 in 1000.
- Cut the French drain line at the location of the hole and fit a Tee (150 x 150) with a small pipe (150 mm diameter) to divert water from French drain line into the concrete channel.
- The lateral pipes (100 mm diameter) carrying flow from distributed catch basins (Floor basins) shall be connected to the nearby French drain line using a Tee (150 mm x 100 mm).
- Attach Drainage catch basins with a vertical riser pipe to the French drain Type I line at 10 m c/c. The spacing can be reduced wherever required.
- Place the geofabric filter and fill 40 mm gravel around the pipe and wrap around as shown in Fig.3 to complete the French drain. Also, fill granular material in the space outside the Geo Fabric filter and soil and compact.

Steps for installation of a French drain line (Type II) along edge of retaining walls

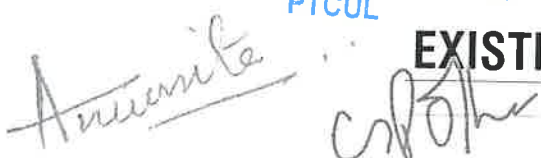
- Excavate a trench 60 cm wide and 80 cm deep along the retaining wall.
- Prepare a compacted bed for the French drain Type II line along the retaining wall at a slope determined by locations of the nodes given in Table 2. **Steeper slopes (1:400) shall be preferred if the site permits.**
- Attach drainage catch basins with a vertical riser pipe to the upper pipe of the French drain Type II line at 10 m c/c. The spacing can be reduced wherever required.
- Attach sink basins wherever required.
- Place the geofabric filter and fill 40 mm gravel around both the pipes and wrap around as shown in Fig.3 to complete the French drain Type II. Also, fill granular material in the space outside the Geo Fabric filter and soil and compact.

Anurag
shs
(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

The diagram illustrates an elevation cut section of a drainage system. It features a central channel with a width of 500 units and a depth of 100 units. The channel is flanked by gravel areas. A French drain is shown on the right side, connected to the channel. The flow direction is indicated by arrows labeled 'FLOW'. The diagram is labeled 'EXISTING CHANNEL' and '(ELEVATION CUT SECTION)'.

INVERT LEVEL OF FRENCH DRAIN 100MM - 150MM ABOVE CHANNEL BED
SLOPE OF FRENCH DRAIN LINE IS SAME AS SLOPE OF CHANNEL BED

1. DRILL 150MM DIA HOLES IN THE VERTICAL WALL OF EXISTING CHANNEL USING CORE CUTTER ABOVE 150MM- 100MM FROM THE CHANNEL BED AS SHOWN IN FIG.
2. CUT THE FRENCH DRAIN LINE AND FIT A TEE 150MM X150MM WITH A SMALL PIPE TO DIVERT WATER INTO CHANNEL.



- The Geo synthetic clay liner shall extend over the top of the retaining wall to stop downward seepage along the face of the retaining wall.

Slope of the French drain lines :

- While laying the French drain lines along the existing channels, care must be taken to ensure a minimum slope of 1 in 1000 since the existing open channels have the slope of 1 in 1000.
- **A steeper slope (1:200) is preferred** for French drain line (Type I and Type II) 11 which are not utilizing the existing channel. Such French drain lines are located near the retaining wall.

Table 2. Details of Drains/Channels and Discharges

Drain No.	Connecting Nodes	Terrace Location	Length Approx. (m)	Discharge Q (LPS)	Description of Drain/Channel
01	01--02	T 97	25	10	Type I French Drain on one side of existing 500 mm wide channel
02	02--03	T 97	23	21	Type I French Drain on one side of 500 mm wide existing Channel
03	04--05	T 100	63	20	Type II French Drain on one side of 500 mm wide existing Channel
04	05--06--07	T 100	30	30	Type II French Drain on one side of 500 mm wide existing Channel
05	09--10	T 100	10	30	Type II French Drain on one side of 500 mm wide existing Channel
06	10--11	T 100	52	30	Type II French Drain on one side of 500 mm existing wide Channel
07	11--07	T 100	32	40	Type II French Drain on one side of 500 mm wide existing Channel
08	07--08	T 100	52	100	Type II French Drain on one side of 500 mm wide existing Channel
09	12--13	T 100	82	40	Type II French Drain on one side of 500 mm wide existing Channel
10	13--14	T 100	26	50	Type II French Drain on one side of 500 mm wide Channel
11	14--15	T 100	57	99	Type II French Drain on both sides of 500 mm wide existing Channel
12	16--17	T 100	23	20	Type II French Drain on one side of 500 mm wide Channel



Er. ILLA CHANDRA
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL

13	17--18	T 100	60	60	Type II French Drain on one side of 500 mm wide existing Channel
14	19--20	T 100	40	50	Type II French Drain on one side of 500 mm wide existing Channel
15	21--22	T 100	30	15	Type II French Drain on edge of the Terrace
16	22--23	T 100	56	20	Type II French Drain on edge of the Terrace
17	24--25	T 100	25	10	Type II French Drain on edge of the Terrace
20	20-15	T 100	35	50	New Channel 600 x 800 Slope 1: 400 Type II French drain on one side. Common Sink
18	8--18	T 100	38	100	New Channel 600 x 800 Slope 1: 400 Type II French drain on one side. Common Sink
92	15-18	T 100	31	99	New Channel 600 x 800 Slope 1: 400 Type II French drain on one side. Common Sink
19	27--28	T 94	30	160	800 x 1000 Channel Slope 1: 200 Collecting discharges from 4 x250 down spouts from upper Terrace T 100
21	30--31	T 94	70	35	New Channel 450 x 600 along Gabion wall and Type II French Drain on one side.
22	31--32--38	T 94	50	361	600 mm wide New RCC Rectangular Channel
23	33--34	T 92.5	17	35	450 mm wide New RCC Rectangular Channel
24	34--35	T 92.5	40	50	450 mm wide New RCC Rectangular Channel
25	35--36	T 92.5	20	67	450 mm wide New RCC Rectangular Channel
26	36--37	Open	20	70	450 mm wide New RCC Rectangular Channel
27	37--38	Open	30	77	450 mm wide New RCC Rectangular Channel
28	38--39	Open	25	450	600 mm wide New RCC Rectangular Channel
29	39--40	Open	10	450	600 mm RCC Pipe
30	28--31	T 94	30	309	Buried 600 mm (NP3) RCC Hume Pipe
31	41- 42-44	T 92.5	35	15	Type I French Drain on edge of the Terrace
32	44--34	T 92.5	8	15	200 mm downspout discharging into Channel


E. ILLA CHANDRA
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL

33	44--43	T 92.5	30	17	Type II French Drain on edge of the Terrace
34	43--35	T 92.5	8	17	200 mm downspout discharging into Channel
35	45--46	T 92.5	30	10	Type I French drain pipe
36	47--46	T 92.5	8	5	Type I French drain Pipe
37	46--48	T 92.5	62	34	Existing 500 x 300 channel and Type II French Drain on both sides of channel.
38	49--50	T 83	68	10	Type II French Drain on edge of the Terrace
39	51--54	T 80	68	20	Existing 500 x 300 channel and Type I French Drain on one side of the Channel
40A	53--54	T 80	10	43	500 mm Hume Pipe
40	52--53	T 80	70	20	Type II French Drain on edge of the Terrace along retaining wall.
41	55--56	Open	15	5	Drainage pipe 150 mm between catch basins.
42	57--58	T 84	38	11	Type II French Drain on edge of the Terrace
43	59--60	T 78	38	15	Type II French Drain on edge of the Terrace
44	61--62	T 73	40	15	Type II French Drain on edge of the Terrace
45	66--65	T 85	30	4	Type I French Drain on edge of the Terrace
46	65--64	T 85	12	6	Type I French Drain on edge of the Terrace
47	64--63	T 85	15	12	Type I French Drain on edge of the Terrace
48	67--68	T 85	45	14	Type I French Drain on both sides of 500 mm wide existing Channel
49	69--68	T 85	30	8	Type I French Drain on edge of the Terrace
50	70--71	T 85	42	10	Type II French Drain on edge of the Terrace
51	72--71	T 85	10	5	Type I French Drain on edge of the Terrace
52	71--75	Along Road	5	15	200 mm Down spout pipe discharging in to channel
53A	73-74	Along Road	20	5	450 mm wide new RCC channel
53	74--75	Along Road	40	15	450 mm wide new RCC Channel
54	75--76	Along Road	60	30	450 mm wide new RCC Channel

Anurita

shs

CPD

(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

55	76--77	Along Road	40	45	450 mm wide new RCC Channel
56	77--78	Along Road	50	60	450 mm wide new RCC Channel
94	78--98	T73	18	75	500 mm Hume pipe
57	79--80	T 84	38	15	Type I French Drain on edge of the Terrace
58	81--82	T 78	38	15	Type I French Drain on edge of the Terrace
59	83--84	T 73	38	15	Type I French Drain on edge of the Terrace
60	85--86	T 84	40	35	Type II French Drain on both sides of existing 500 mm wide Channel
61	86--87	T84/T78	6	35	2x200 mm down spout pipes
62	87--88	T 78	42	40	Type II French Drain on both sides of 500 mm wide existing Channel
63	88--89	T78/T73	5	40	2x200 mm down spout pipe
64	89--90	T 73	52	45	Type II French Drain on both sides of 500 mm wide existing Channel
65	91--92	T 78	45	7	Type I French Drain on both sides of existing 500 mm wide Channel
66	92--93	T 78	5	7	Type I French Drain on both sides of 500 mm wide existing Channel
67	93--94	T 78	45	14	Type I French Drain on both sides of 500 mm wide existing Channel
68	94--95	T78/76	4	14	250 mm down spout pipe
70 A	95--96	T 76	45	21	Type I French Drain on both sides of 500 mm wide existing Channel
70	97-98	T73	40	40	Type I French Drain on both sides of 500 mm wide existing Channel
69	96--97	T76/T73	6	21	250 mm down spout pipe
71	99--100	T 75	48	17	Type I French Drain on one side of 500 mm wide existing Channel
72	100--101	T 75/T74	3	17	250 mm down spout pipe
73	101--102	T 74	45	32	Type I French Drain on one side of 500 mm wide existing Channel
74	102--103	T74/T73	3	32	250 mm down spout pipe
75	103--104	T 73	45	46	Type I French Drain on one side of 500 mm wide Channel
76	104--105	T73/T72	3	46	250 mm down spout pipe
77	105--106	T 72	40	58	Type I French Drain on one side of 500 mm wide existing Channel
78	107--108	T75	45	5	Type II French Drain on edge of the Terrace


 (Er. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL

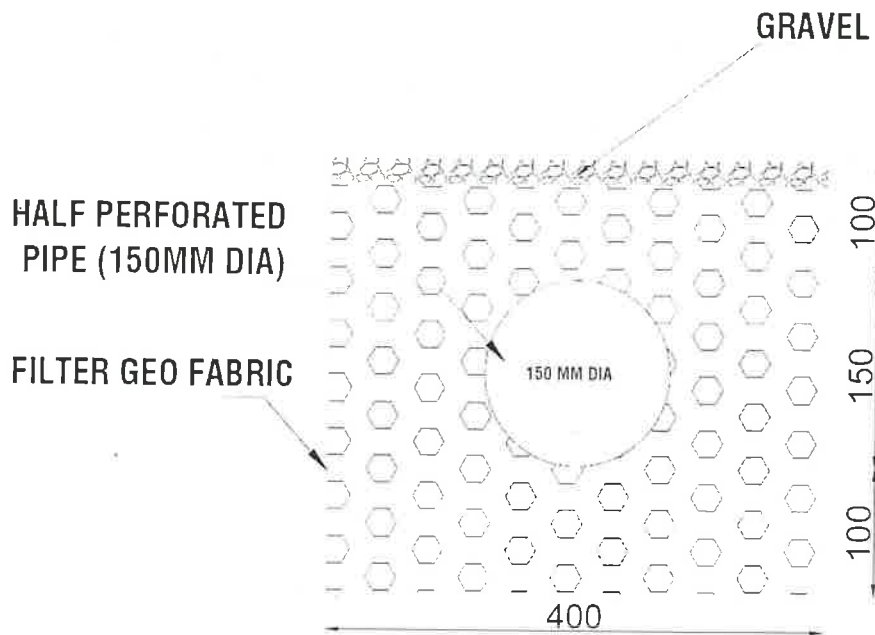
79	108--109	T 75/T74	3	5	200 mm down spout pipe
80	109--110	T 74	45	10	Type II French Drain on edge of the Terrace
81	110--111	T74/T73	3	10	200 mm down spout pipe
82	111--112	T 73	45	15	Type II French Drain on edge of the Terrace
83	112--113	T 73	40	20	Type II French Drain on edge of the Terrace
84	113--106	T 72	10	20	300 mm Hume pipe
85	114--115	T 69	45	14	450 x 600 new Channel along retaining wall & Type II French Drain.
86	115--116	T 69	45	28	450 x 600 new Channel along retaining wall & Type II French Drain.
87	116--117	T 68	45	40	450 x 600 new Channel along retaining wall & Type II French Drain.
88	22--33	T100/ T92.5	8	35	250 mm down spout pipe
90	18--27	T100/ T94	8	60	2x250 mm down spout pipe connecting common sink to Trough Channel
91	15--28	T100/ T94	8	99	2x250 mm down spout pipe connecting common sink to Trough Channel
93	63--38	T85/ Open	3	12	200 mm down spout pipe
95	25--118	T100/ Road	8	10	200 mm down spout pipe
96	119--120	T87	65	6	450 mm wide new RCC channel
97	120--74	Across Road	20	6	450 mm wide new RCC channel

Notes:

- While laying a French drain line or the bed levels of a new channel, the actual slope and length in the direction of flow shall be considered and the elevation of the node so arrived shall supersede the elevation level given in Table 1. Therefore, the slope of the drain line is of significant importance and must be ensured.
- Steeper slopes shall be provided if the site permits for fixing lower levels of the sink basins than given in Table 1. Lower level of the sink basin permits rapid removal of runoff from the site.

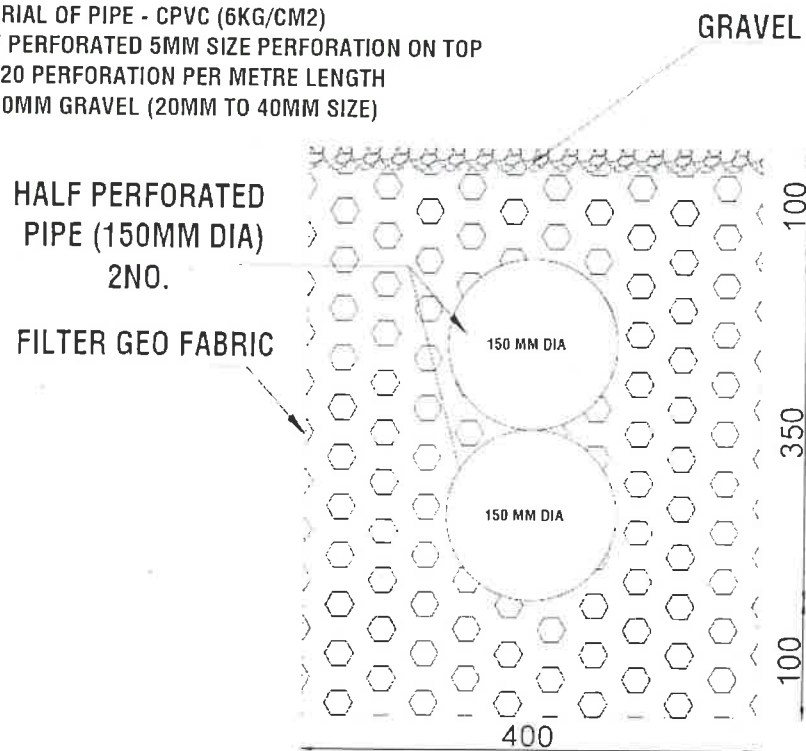

 (Er. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL





French drain: Type I

MATERIAL OF PIPE - CPVC (6KG/CM²)
 PERFORATION : HALF PERFORATED 5MM SIZE PERFORATION ON TOP
 HALF 100-120 PERFORATION PER METRE LENGTH
 GRAVEL : 40MM GRAVEL (20MM TO 40MM SIZE)



French drain: Type II

(a)

Anurag

(Er. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL

[Signature]

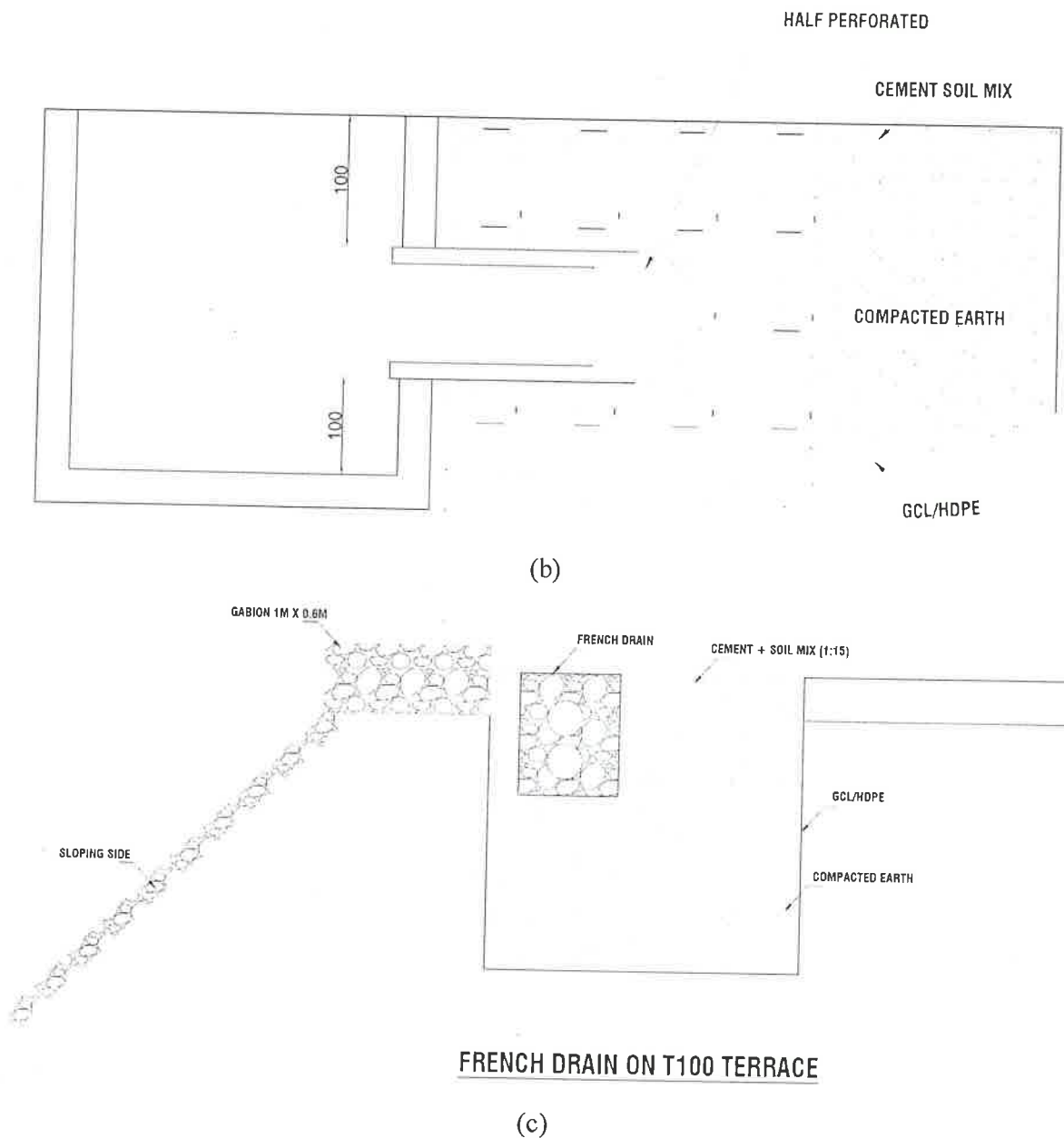


Fig.3. Details of French drain at various locations

2. Down spout Pipes

Rigid pipes (down spout) shall carry the outflows from upper terraces to the lower terraces. The down spout pipe shall be connected between the sink basins on upper and lower terraces. Details of down spout pipes are shown in Table 3.

A sketch showing connection of downspout pipes from Terrace T100 to Terrace T94 is shown in Fig.5. The trough channel (800 mm wide and 1000 mm deep) in this arrangement serves

Anurag
 (Er. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL

as a common sink basin for all four down spout pipes on the lower terrace T94. The trough channel also calms the high velocity flow received from upper Terrace T100.

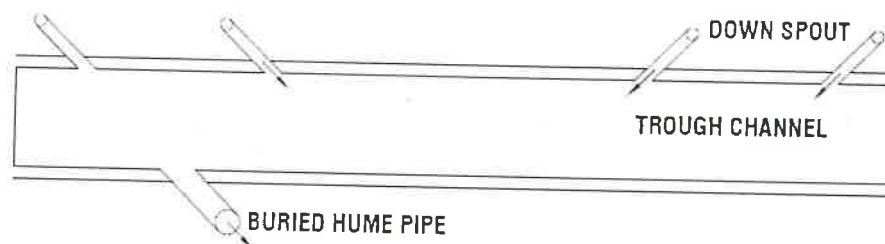
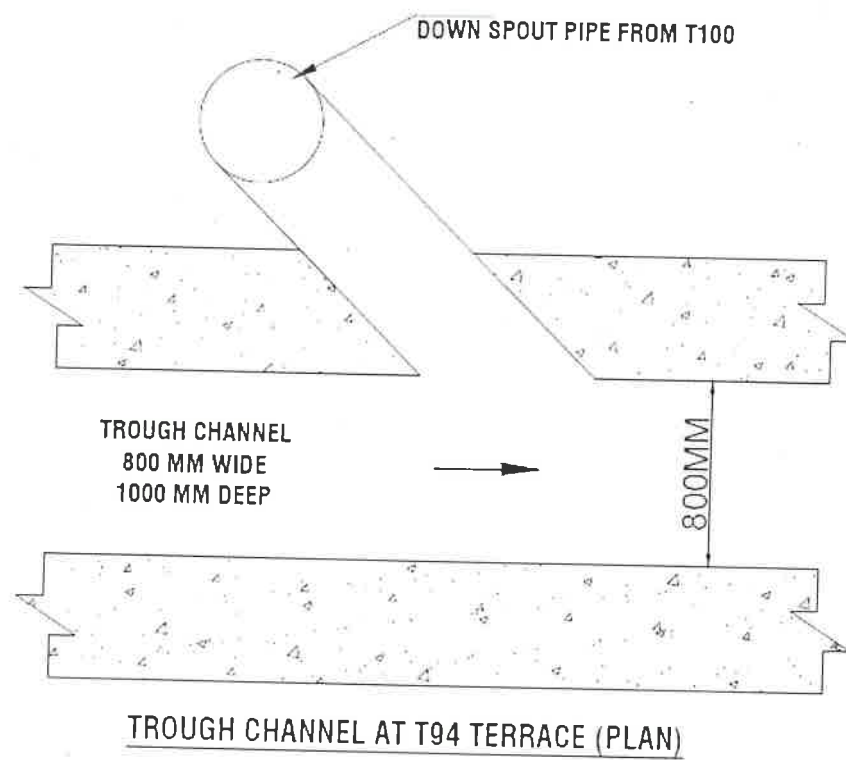
Anchoring of Downspout pipes with vertical Retaining wall

- The down spout pipes (4 Nos) connecting T100 with T94 shall be properly anchored to the vertical face of the masonry wall using a steel channel section (JC 150) for each pipe. The steel channel section (JC 150) shall be anchored to the wall and pipe shall be anchored to the channel.
- **Other longer down spout pipes** shall also be anchored in the same way wherever required.
- The down spout pipes **shall be not be connected** with a bend on the upper terrace. They should always be connected with a **Tee and a small riser pipe** to allow ventilation from the top.
- Remember that the down spout pipes have a tendency to dislodge themselves at the upper end due to vibrations caused by flow. Therefore, above arrangements are a must.

Table 3. Details of Downspout Pipes

Pipe No	Connecting Nodes	Length (m)	Diameter (mm)	Material of Pipe	Connecting Terraces
32	44--34	8	200	CPVC	T92.5 To Channel along Road
34	43--35	8	200	CPVC	T92.5 To Channel along Road
52	71--75	5	200	CPVC	T85 To Channel along Road
61	86-87	6	2x200	CPVC	T84/T78
63	88--89	5	2x200	CPVC	T78 To T73
68	94--95	3	200	CPVC	T78 To T77
69	96--97	6	250	CPVC	T77 To T73
72	100--101	3	250	CPVC	T75 To T74
74	102--103	3	250	CPVC	T74 To T73
76	104--105	3	250	CPVC	T73 To T72
79	108--109	3	200	CPVC	T75 To T74
88	22--23	8	250	CPVC	T100 To Channel near T92.5
90	18-27	8	2x250	CPVC	T100 To T94 Trough Channel
91	15--28	8	2x250	CPVC	T100 To T94 Trough Channel
95	25--118	8	200	CPVC	T100 To Road

Anurag (E. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL



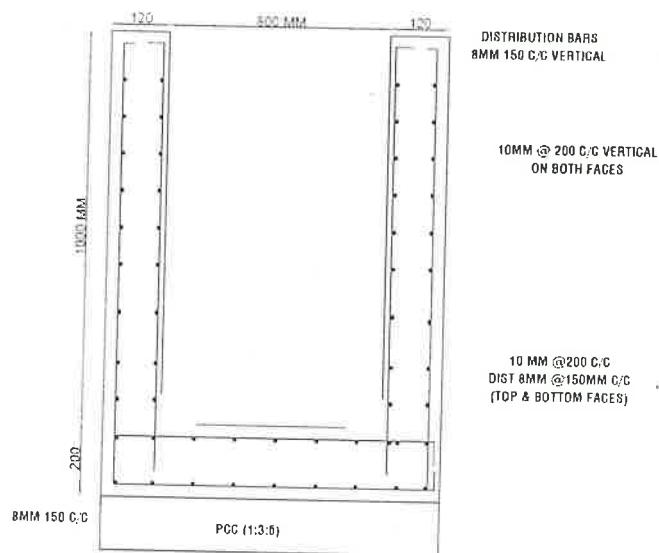
TROUGH CHANNEL AND BURRIED PIPE

Fig.5(a). Down spouts and trough channel arrangement

Amunite

(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

Chandra



TROUGH CHANNEL 800X1000 AT T94 WITH COVER
RCC (1:1.5:3)

RCC COVER 150MM THICK ON TOP
(REBARS IN COVER 10MM @ 200 C/C MAIN)

Fig.5(b). Trough channel

3. Open Channels

3.1 Existing Open Channels

There are thirteen existing open channels 500 mm wide and 300 mm deep laid at a slope of 1:1000 in different terraces. Considering a value of Manning's roughness of **0.015 for concrete finish**, its capacity is about 83.0 lit/s. The locations of all the existing channels are shown in drainage plan. Existing channels have been numbered with the help of node numbers as described in Table 2.

Details of Existing 400 mm wide Open Channels

S. N	Connecting Nodes	Location on Terrace	Runoff diverted in LPS	French Drain Type
1	1-2-3	T97	21	Type I on one side
2	4-5-6-7-8	T100	100	Type II on one side
3	9-10-11-7	T100	40	Type II on one side
4	12-13-14	T100	50	Type II on one side
5	14-15	T100	99	Type II on both sides

Anurag *st*
(**Er. ILLA CHANDRA**)
Chief Engineer
(Commercial & Regulatory)
PTCUL

6	17-18	T100	60	Type II on one side
7	19-20	T100	50	Type II on one side
8	46-48	T92	34	Type II on both sides
9	49-50	T87	10	Type II on one side
10	51-54	T80	20	Type I on one side
11	67-68-85-86-87-88-89-90	T85,T84, T78,T73	48	Type II on both sides
12	91-92-93-94-95-96-97-98	T78,T76, T73	29	Type I on both sides
13	99-100-101-102-103-104-105-106	T75,T74, T73,T72	58	Type I on one sides

Some of the existing channels are in good condition, while some are in bad condition. But all the channels have become non-functional due to subsidence of surrounding soil and they are not receiving surface runoff through the metal grating port. The vertical walls of some channels have either collapsed or dislodged about the base.

The proposed drainage network shall utilize the **good channels** in the following way:-

- French drain lines shall be laid on one or both sides of the channel. French drain lines shall capture the surface runoff from its influence area and feed it to the channel as per the arrangement given in Fig.3(b). If French drain Type II is connected to the channel, then only top pipe shall feed the discharge to the channel. The bottom pipe shall not feed the channel. The bottom pipe of French drain Type II shall be feeding discharge directly to the sink basin located at the exit.
- Distributed floor catch basins are also provided on the terraces which shall collect runoff from their influence area and shall feed it to the French drain lines. A lateral pipe 100 mm in diameter shall connect the floor catch basin to the nearby French drain line.
- The existing channels are laid at a slope of 1:1000. The French drain lines parallel to existing channels shall also be laid at a slope of 1:1000.
- The runoff flowing through the channel shall be collected into the sink basin located on the edge of the terrace.
- The down spout pipe shall carry the discharge from sink basin on the upper terrace to the sink basin on the lower terrace.

Anurag *205*
(Er. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL

- The discharges from terrace to terrace shall ultimately exit through the outlet as per the drainage plan shown in Fig.2.

3.2 New Open Channels

The damaged and nonfunctional existing channels shall be dismantled and built again. The size of the rebuilt channels in place of damaged old channels shall be 500 mm wide and 600 mm deep laid at a slope of 1:1000. The capacity of these channels shall be about 120 lit/sec.

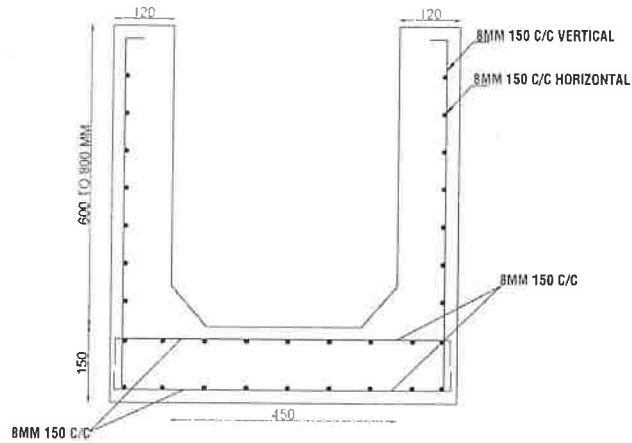
In addition to the above, more new channels are required to be built to carry the surface runoff to the designated outlets. They have been designed to carry the peak flows safely to the outlets without flooding the site. Table 4 shows the details of new open channels.

Table 4. Details of New Open Channels

Channel No	Connecting Nodes	Length (m)	Width (mm)	Depth (mm)	Free Board (mm)	Minimum Slope	Discharge Capacity
Rebuilt Channels in place of existing damaged channels			500	600	200	1 in 1000	120 lit/sec
19 (Trough)	27-28	30	800	1000	400	1 in 400	618 lit/sec
18,92, 20 (Trough)	8-18-15-20	104	600	800	200	1 in 400	618 lit/sec
28	38-39	25	600	800 To 1000	100	1 in 400	493 lit/sec
22	31--32--38	50	600	800 To 1000	100	1 in 400	493 lit/sec
21	30--31	70	450	600 To 800	100	1 in 400	215 lit/sec
23 To 27	33-34-35-36-37-38	127	450	600 To 800	100	1 in 400	215 lit/sec
53A, 53 To 56	73-74-75-76-77-78	210	450	600 To 800	100	1 in 400	215 lit/sec
85,86, 87	114-115-116-117	135	450	600 To 800	100	1 in 400	215 lit/sec
96	119--120	65	450	600 To 800	100	1 in 400	215 lit/sec
97	120--74	20	450	600 To 800	100	1 in 400	215 lit/sec

The drawings of new channels are shown in Fig. 6.

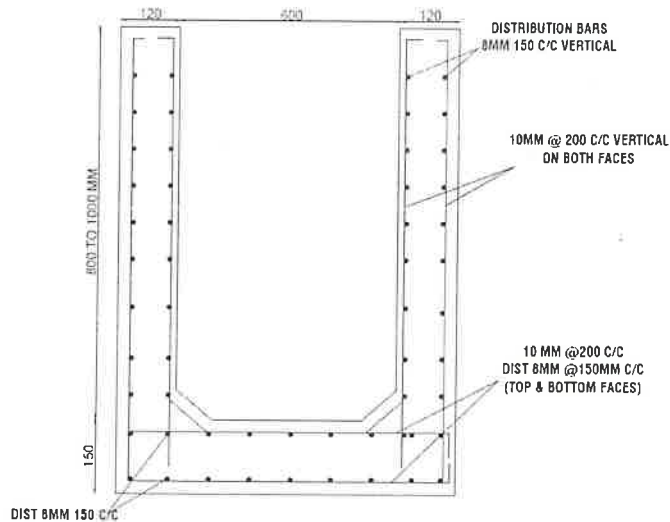
Anurita  
(E. ILLA CHANDRAS)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL



CHANNEL ALONG ROAD SIDE RCC 1:1.5:3

SLOPE : AS PER SITE CONDITION
"MULTIPLE" 1:400 TO STEEPER SLOPES

(a)



CHANNEL ALONG ROAD SIDE AT T94

(b)

Fig.6. Sections of proposed new channels

- 4. RCC Hume Pipes:** RCC Hume Pipes are also required in the new drainage system. The details of Hume pipes are given in Table 5.

Anurag (Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

Table 5. Details of Hume Pipes

Pipe No	Connecting Nodes	Length (m)	Diameter (mm)	Minimum Slope	Remark
30	28-31	30	600	1 in 200	Connecting Trough channel with Sink Basin Discharge 374 lit/sec
29	39--40	10	600	1 in 400	Connecting Sink Basin with RWH structure.
--	40 to out	6	600	1 in 400	Discharging outlet pipe
	48 to out	6	500	1 in 400	Discharge outlet pipe
40A	53 to 54	10	500	1 in 400	Connecting Sink basins
	50 to out	6			Discharge outlet pipe
	54 to out	6	500	1 in 400	Discharge outlet pipe
	56 to out	6	300	1 in 400	Discharge outlet pipe
	58 to out	6	300	1 in 400	Discharge outlet pipe
	60 to out	6	300	1 in 400	Discharge outlet pipe
	62 to out	6	300	1 in 400	Discharge outlet pipe
94	78--98	18	500	1 in 400	Connecting Sink Basin with RWH structure
--	90 to out	6	500	1 in 400	Discharge outlet pipe
--	98 to out	6	500	1 in 400	Discharge outlet pipe
--	106 to out	6	500	1 in 400	Discharge outlet pipe
84	113 --106	10	300	1 in 400	Connecting sink basin to sink basin
	117 to out	6	500	1 in 400	Discharge outlet pipe
	3 to out	6	300	1 in 400	Discharge outlet pipe

5. Distributed Catch Basins (floor basins)

In addition to drainage lines shown in Table 2, there shall be additional distributed catch basins judiciously distributed and mounted on floor of different terraces. A few of them are shown in Fig. 2.

- Such distributed catch basins shall be connected by 100 mm diameter pipes to the nearby main drainage lines. The slope of these lateral lines shall not be flatter than 1:1000. **Care**

Anurag

(E. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

[Signature]

should be taken while selecting the distributed catch basins to ensure that the basins allow fixing of lateral pipes closer to the floor levels.

- The number of distributed catch basins on each terrace is arrived at by considering a density of one catch basin per 300 sq.m of terrace area. The average length of lateral pipe may be taken as 17 m per catch basin.
- Table 6 presents the list of distributed catch basins over different terraces.

A sketch and photograph of distributed catch basin (Floor basins) is shown in Fig.7.

Some circles on the floor of any terrace are shown without number and connecting lines. These are the symbolic representations of **distributed catch basins** (floor basins). Actual locations shall be decided looking into the condition of damaged PCC floor (50 mm thick) at the time of actual installation. These floor basins shall be connected by 100 mm lateral pipes to the nearby French drain lines.

Table 6. Distributed catch basins over different Terraces

Terrace	Area of Terrace (sq.m)	No of distributed Catch basins
T 100	24130	60
T 97	1505	5
T 94	2592	8
T 92	4899	16
T 87	1215	4
T 80	3110	10
T 85	3350	11
T 84	1598	5
T 78 (1)	2608	8
T 73 (1)	3390	11
T 78 (2)	507	3
T 78 (3)	551	3
T 76	472	3
T 73 (2)	1440	5
T 75	1598	5
T 74	1446	5
T 72	1456	5
T 69	2009	7
T 68	1004	3
	Total	177

Anurita (Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

CPD/He

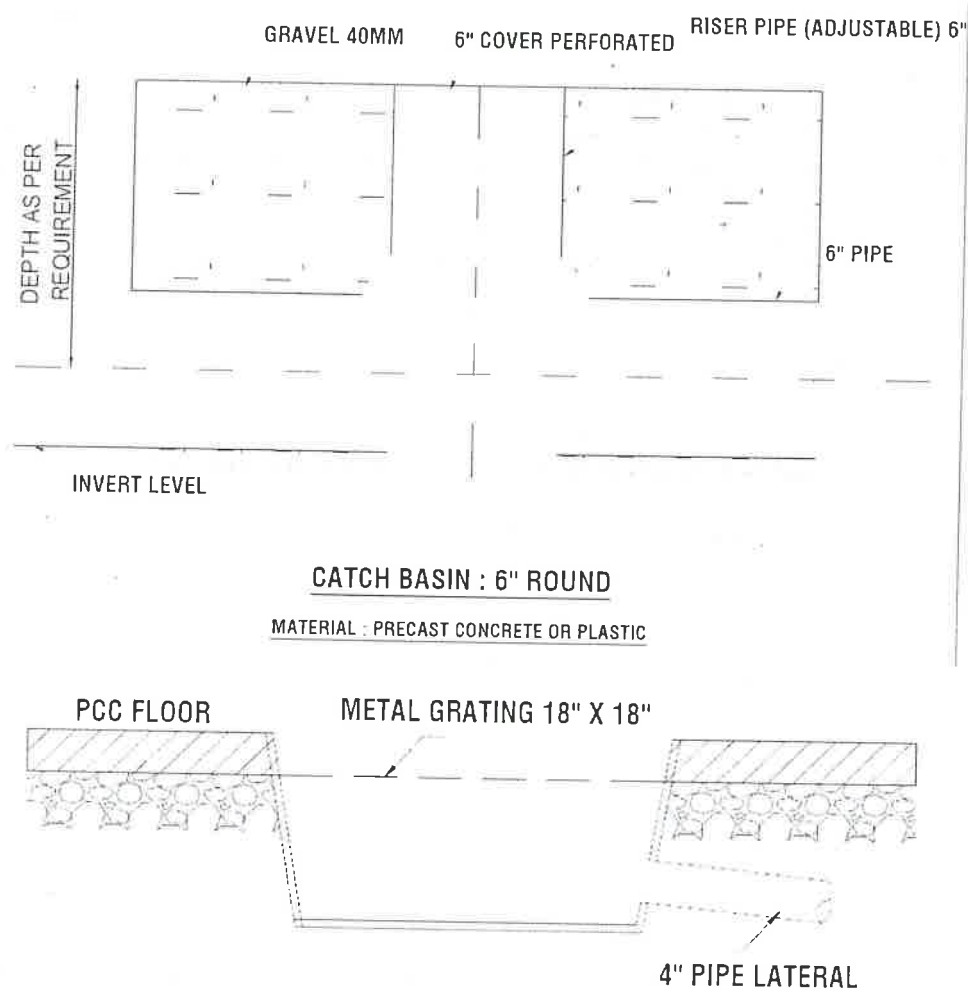


Fig.7. Details of Catch Basin

6. Sink Basins

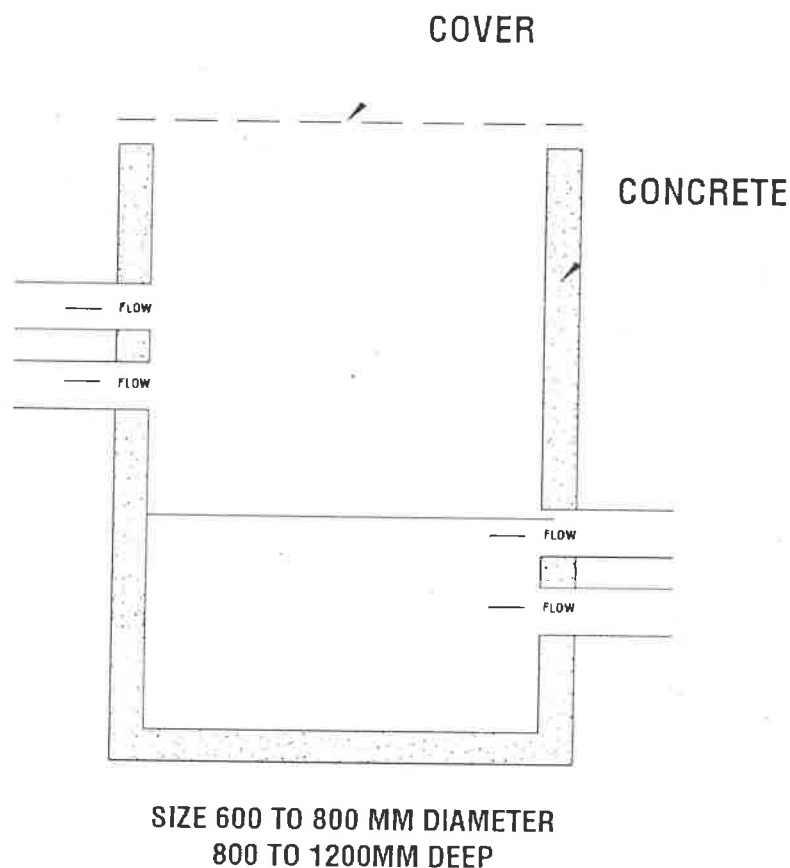
- The sink basins are deeper basins for capturing discharges from the drainage lines or down spouts. They do not capture the surface run off directly like catch basins.
- The locations of sink basins on the drainage network Fig.2 are shown as **Nodes 3, 22, 25, 31, 39, 42, 43, 46, 48, 50, 53, 54, 56, 58, 60, 62, 63, 68, 76, 77, 78, 85, 86, 87, 88, 89, 90, 93, 94, 95, 96, 97, 97, 99, 98, 100, 101, 102, 103, 104, 105, 106, 108, 109, 110, 111, 112, 113, 115, 116, 117** as shown in Table 1.




(Er. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL

- Common sink Basins Connecting nodes 8-18-15-20 & 27-28
- More sink basins shall be provided if the site so requires. Sink basins may be regarded as safety valves against flooding of site.
- The sink basins can be made of concrete (Cast in situ or precast). They can also be made of brick masonry in square rectangular or circular shape. The sink basins connecting to the end of the channel are rectangular.
- The size and shape of the sink basin connected to the discharging end of the downspout shall be so decided that it does not splash the discharge from the down spout.

A sample sketch of a sink basin (600 to 800 mm in diameter and 1000 mm to 1200 mm deep) is shown in Fig. 8.



SINK BASIN WITH ATTACHED DRAINAGE LINES

Fig.8. Schematic diagram of a sink basin

Anurag
(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

W. R. K.

As shown in Fig. 8, the sink basins are connected with two drainage lines. The lower drainage line shall be about 100 mm (minimum) below the upper drainage line. Table 1 shows the invert level of the upper drainage line wherever 'Node' represents the sink basin.

7. Outfalls

The whole catchment is sub divided into a number of sub catchments. Different terraces are interconnected by a series of drainage paths. The runoff is suitably diverted into the designed channels and finally outflows from 14 outlets pipes. The locations of these outlets with discharges are shown in Table 7.

Table 7. Location of Outfalls and discharges

Outlet Node Number	Discharge Lit/sec	Location
40	450	Near Store building (RWH)
58	11	Near Terrace T 84
60	15	Near Terrace T 78
62	15	Near Terrace T 73
90	48	Near Terrace T 73
98	94	Near Terrace T 73 (RWH)
106	88	Near Terrace T 72
117	42	Near Terrace T 68
56	5	Between Terrace T 75 and T 80
54	43	Near Terrace T 80
50	10	Near Terrace T 83
48	34	Near Terrace T 92
118	10	Near Road
3	21	Near Terrace T 97
Total	886. Lit/sec	

4.0.3 Summary of components of drainage system

- French drains:** Type I and Type II, CPVC Plastic Pipes 150 mm in diameter perforated on top as per details given in Fig.3.
- Catch Basins on French Drain lines:** 150 mm round catch basin with adjustable height as per details given in Fig.7a. **Plastic Tee 150 mm x 150 mm with 150 mm riser pipe with cover** can also serve the purpose of a round catch basin on French drain.

Anurag
skt
(Er. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL
CPD

- iii. **Distributed Catch Basins (Floor Basin):** Precast Concrete /Metal with grating of size 450 mm × 450 mm as per details given in Fig.7b.
- iv. **Sink Basins:** Concrete or Masonry of size 600 mm to 800 mm diameter and 800 mm to 1200 mm deep as per details given on Fig.8.
- v. **Lateral Pipes:** CPVC Plastic pipes 100 mm diameter of approximately 2620 m total length
- vi. **Down Spout Pipes:** 150 mm, 200 mm and 250 mm diameter CPVC plastic pipes connected between sink basins on upper and lower terraces. A sample connection of down spout pipe connecting Terrace T100 with T94 is shown in Fig. 5.
- vii. **New Open Channels:** 450mm x 800 mm; 600 mm x 1000 mm; 800 mm x 1000 mm as per details given on Fig.6.
- viii. **RCC Hume Pipes :** 600 mm; 500 mm and 300 mm
- ix. **Rain Water Harvesting Structures:** As per details given in Fig.15.

5.0 Design of Gabion walls

Gabion walls are proposed at required locations as shown in Fig.2. The details are as shown in Table 8, and schematic of gabion walls is shown in Fig.9.

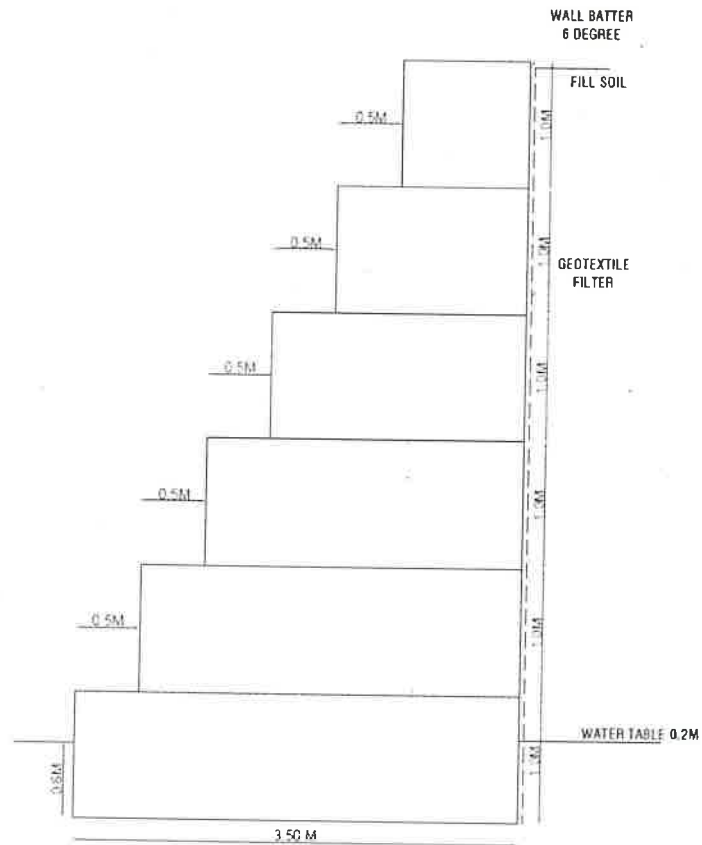
Table 8. Details of proposed gabion walls

Gabion	Location	Height (m)	Base width (m)	Length (m)
Gabion 1	West side of Terrace T 94	6.0	3.5	50
Gabion 2	West side of Terrace T 94	4.0	2.5	30
Gabion 3	Top of pitched slope of Terrace T 100	1.0	0.6	65
Gabion 4	Left Bank of Nalla near entrance	4.5	3.0	15

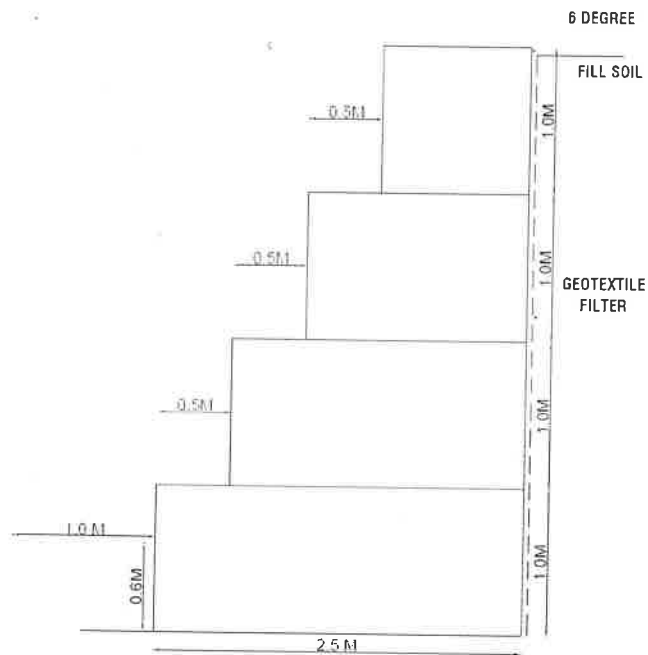
The backfill soil data and foundation soil data were obtained by conducting laboratory tests in Geotechnical laboratory at IIT Roorkee. The test results are presented in **APPENDIX B**.

Note: The geotechnical properties of soil have been determined by conducting tests on limited number of samples. Soils are formed under uncontrolled environment and uncertainties do exist in their properties. Therefore, the geotechnical properties used for design of gabion walls have been conservatively taken to account for any heterogeneities in the soil profile at various locations. If any significant deviation from reported results is observed at the site during construction, the matter should be referred to geotechnical consultant for advice.

Anurita
 (Er. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL



(a)



(b)

Anurita *20/5*

(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

CPD/He

5.0.1 Gabion wall 1 and Gabion wall 2 proposed at Terrace T 94

Terrace T 94 has a dry masonry wall on the west side boundary. There is a chain link fence on the top of this wall. The runoff from upper Terrace T 100 falls and spreads over the lower Terrace T 94 and further flows down to the west side down a steep hill. This has caused erosion of the soil and the dry wall has collapsed at many locations. Therefore, it is proposed to provide a gabion wall of 80 m length at the location of dry masonry wall. The height of the wall is varying from 6 m to 4 m.

The sections of gabion 1 and gabion 2 have been designed as per details given in **Appendix C** and **Appendix D** respectively.

5.0.2 Gabion wall 3 proposed at Terrace T 100

Terrace T 100 has a stone pitched side sloping at 45 degree. There is a concrete topping of about 750 mm width and 120 mm thickness. Due to inadequate drainage on Terrace T 100, the runoff is flowing down this pitched slope, resulting in collapse of the concrete topping at many locations. It is proposed to rehabilitate the sloped pitching and provide a gabion wall of low height in place of concrete topping.

The section of gabion 3 has been designed as per details given in **Annexure E**.

5.0.3 Gabion wall 4 proposed at left bank of Nalla near entrance

Near the entrance, there is a Nalla outside the property line. The left bank of Nalla adjoining the property line has a wall made of stone masonry. This masonry wall has collapsed at many locations and needs rehabilitation. It is proposed to provide a 4.5 high and 15.0 m long gabion wall.

The section of gabion 4 has been designed as per details given in **Annexure F**.

6.0 Protection of slope at Block 100 and Block 94

Outside the terrace T 94 on the west side, the ground is sloping at 45° behind the proposed gabion wall of 5.5 m height. The soil from this slope has eroded due to surface runoff from Terrace T94. There is lot of vegetation growth as well.

Anurita *st* *Chandra*
(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

- The above mentioned slope needs rehabilitation. Soil brought from outside shall be deposited on the eroded portion and compacted properly. The finished slope shall be provided with stone pitching for stability.

In terrace T 100 also there is a sloping side which extends up to the road near terrace T 92. The slope has stone pitching which has been damaged at many locations due to movement of a sheet of water down the slope during rainy season.

- This slope needs to be rehabilitated by compacting earth on affected locations and placing back stones which have been dislodged.

7.0 Remediation of subsided soil and sinkholes

7.1 Causes of formation of sinkholes and ground subsidence

Improper drainage on almost all the terraces has resulted in the formation of sinkholes and soil subsidence. The fine particles of soil have been washed away with the percolating water which emerges at the weep holes of the retaining walls. The weep holes provided for drainage are not able to stop draining away of fine soil particles. Over the period of time, the percolating water has formed piping like channels, resulting in continuous loss of soil and formation of sinkholes and excessive settlement at many locations. There are a number of such locations visible on floors of different terraces.

7.2 Remediation

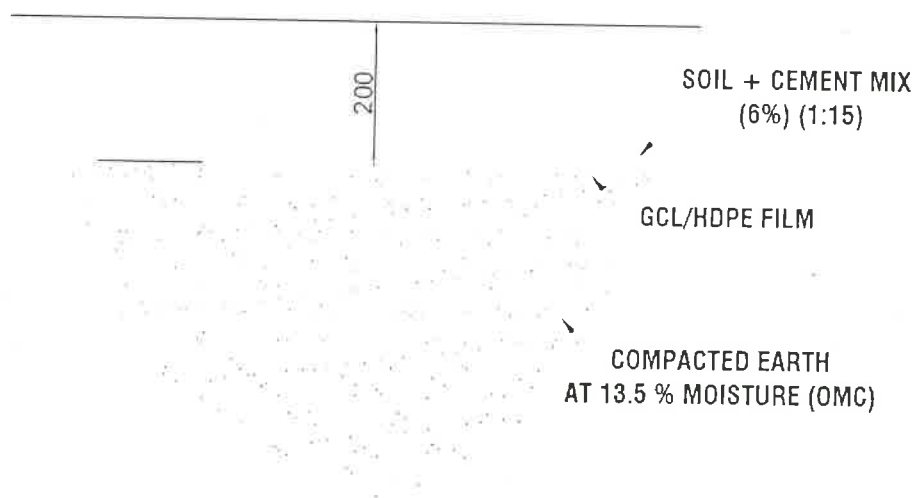
Initially, it was thought to grout the sinkholes. But due to limitation of the site to allow heavy machinery of grouting, the following steps shall be followed for remediation.

- The damaged PCC layer near the retaining wall where most of the sinking has taken place shall be cut (saw cut) up to a maximum width of 1m, wherever required.
- The lost soil shall be made up by depositing soil brought from outside and compacted in layers using **vibratory tamping rammers**. The compaction shall be carried out at an optimum moisture content of 13.5% so as to achieve a maximum dry density of 17.3 kN/cu.m. The compacted layer thickness in one pass shall not exceed 200 mm to achieve best results.

Anurag *Ills* *Chandra*
 (Er. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL

- There are other locations in the interior of the terraces and away from the retaining wall where excessive erosion of soil has taken place beneath the PCC layer. Such locations shall be explored and identified by removing the gravel from the PCC layer.
- A layer of geo synthetic clay liner (GCL) / HDPE geo membrane (1.0 mm to 1.5 mm thick) shall be placed at 200 mm beneath the level of the terrace floor.
- The remediation of subsidence shall also be done similar to the remediation of sinkholes.
- The topmost 200 mm of soil shall be compacted using a cement soil mix. The cement soil mix shall be in the proportion of 1:15 i.e. one part of cement mixed with 15 parts of ordinary soil by weight. The wet mix at optimum moisture content (13.5%) shall also be compacted using vibratory tamping rammers.

The details are shown in the Fig.10.



REPAIR OF SINK HOLES & SUBSEDENCE

Fig.10. Schematic diagram for repair of sink holes and subsidence

8.0 Remediation of cracked 50 mm PCC layer

- The PCC of 50 mm thickness provided on all the terraces has cracked at quite a few locations on almost all the blocks. There is a loss of soil below such cracks and growth of vegetation.
- It is proposed to explore all such locations and the vegetation shall be uprooted properly.

Anurag
 (Er. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL

Chopke

- The cracks shall be properly filled with cement soil mix and compacted.
- If the width of the crack is less than 10 mm, then cracks shall be filled with bentonite and a strip of GCL shall be placed over the affected area to seal it from percolation /seepage. The details are shown in Fig.10.

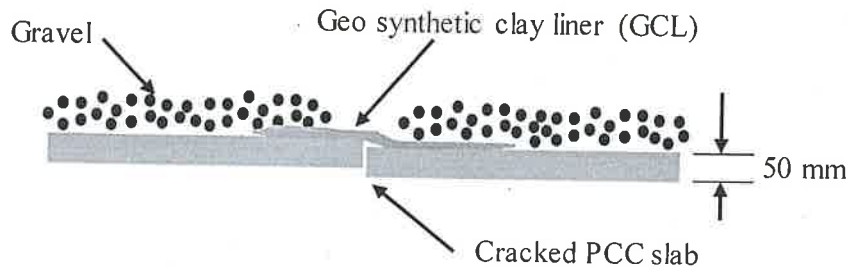


Fig.11. Remediation of cracked PCC layer

9.0 Remediation of weep holes in retaining walls

The weep holes (100 mm size) provided in the retaining walls are discharging fine soil particles along with the seeping water during rains. This has led to loss of soil on the terraces and formation of sinkholes near the retaining wall inner faces.

- It is proposed to rehabilitate the weep holes by providing a Geo fabric/micro sieve filter to stop the loss of soil and permit dirt free seepage.
- There are specialized weep hole filters available in the market which can be installed very quickly and can be cleaned periodically. A photograph of such readymade filter (<https://jetfiltersystem.com>) is shown in Fig.12.

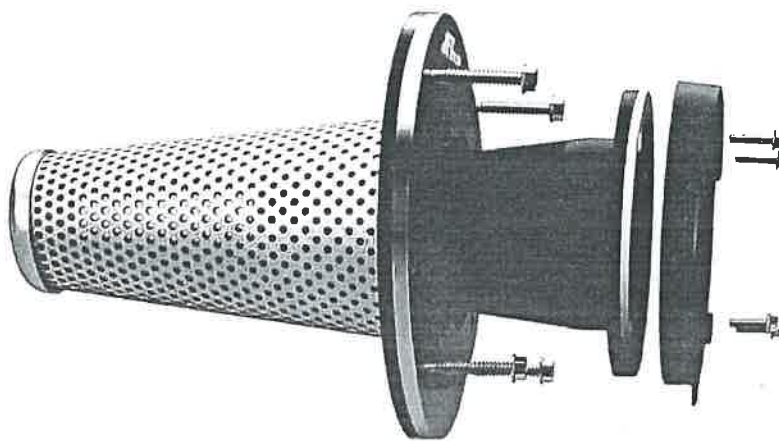


Fig.12. Typical diagram of a readymade filter

Anurag
 (Er. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL

Chandra

The procedure for fitting the above filter is described below:

- Clean the existing weep hole and cut off the extra protruding plastic pipe.
- If the hole is deformed in shape, then use a core cutter (100 mm diameter) to finish the deformed hole into a smooth cylindrical hole of 100 mm diameter up to a length of 250 mm.
- Smoothen the face of retaining wall around the weep hole for seating the collar of the readymade filter assembly.
- Drill collar holes on the face of the retaining wall around the weep hole
- Fit outer housing of the readymade filter with the help of larger bolts to the face of the retaining wall as shown in photograph (Fig. 13).
- Fit removable inner filter and outer cover with the help of small bolts.



Fig.13. Fitting of readymade filter using bolts

10.0 Design of pipe culvert near entrance for diversion of storm water

Behind the proposed gabion wall 4 near the entrance, it is proposed to provide a pipe culvert of 600 mm diameter, and 6 m long to facilitate drainage. The details of the culvert are shown in Fig.14.

Anurag *Shakti*
(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL *Chandra*

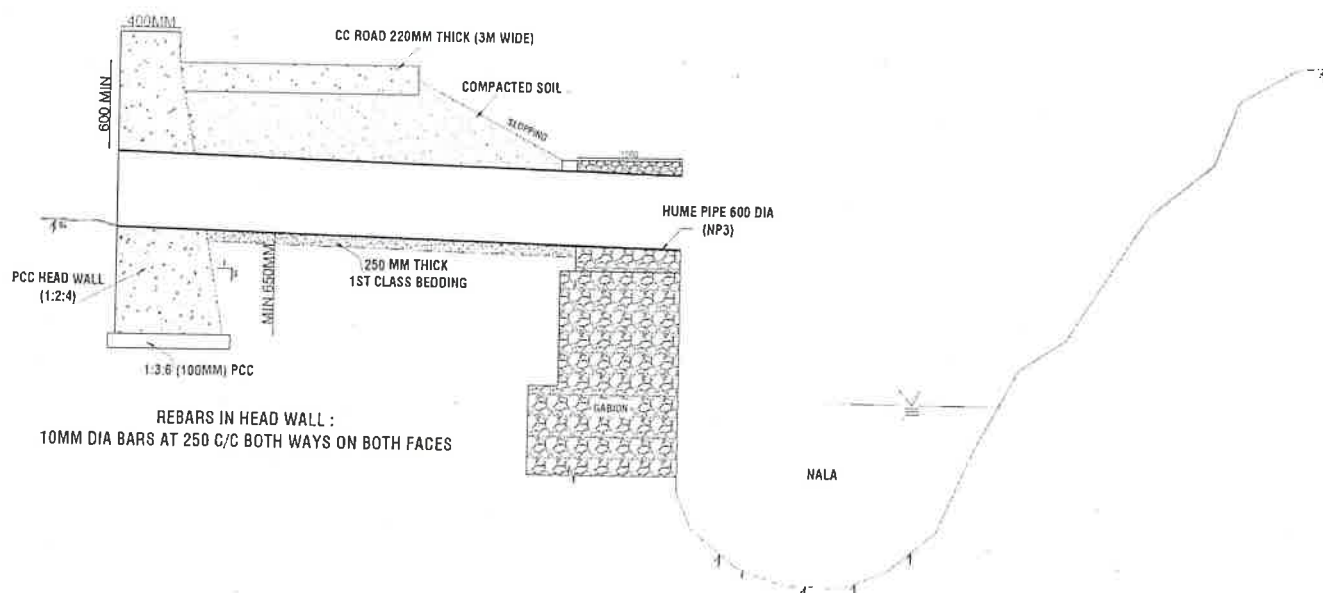


Fig.14. Details of culvert near Nalla

11.0 Repairs of cracks in main building walls/columns/septic tank wall and plinth protection slab

A few columns in the rear side of the main building have cracked. These vertical cracks are along the spout pipes provided for drainage of the roof. Similarly, there is diagonal crack on the outer wall on the rear side. The columns and the walls are structurally intact. Small width cracks in concrete and walls shall be filled with epoxy injection grout under low pressure (less than 4 kg/sq.cm).

Examples of commercially available epoxy injection grouting compounds are:

1. Sika Parex Epoxy injection grout
2. Fosroc Conbextra epoxy grout

All cracks wider than 5 mm shall be filled with cement grout mixed with anti-shrinkage admixture using a hand operated diaphragm pump.

The plinth protection slab (1 m wide) in the rear side of the main building has sunk a few centimeters, forming a crack about 20 mm wide. This crack shall also be filled with cement grout mixed with anti-shrinkage chemical admixture using a hand operated diaphragm pump.

Examples of commercially available anti shrinkage chemical admixtures are:

1. Fosroc Conbextra GP2 Non Shrink Grout

Anurita
shat
 (Er. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL
csf/She

2. Sika Control NS

3. MC Nafufill BB2

The literature outlining the procedure of epoxy grouting or cement grouting for best results can be obtained from the product manufacturers.

12.0 Provision of Rain water Harvesting pits

Storm water runoff draining out of catchment through outlets 40 and 98 shall pass through rain water harvesting (RWH) pits. These pits are designed for recharging of the aquifer. The location and details are shown in Fig.15.

Dimensions: Diameter 2500 mm and 2500 mm deep: Wall thickness 100 mm

Reinforcement: Vertical 10 mm bars at 300 mm c/c and 8 mm circular Hoop bars at 180 mm c/c

Concrete Grade: M-25

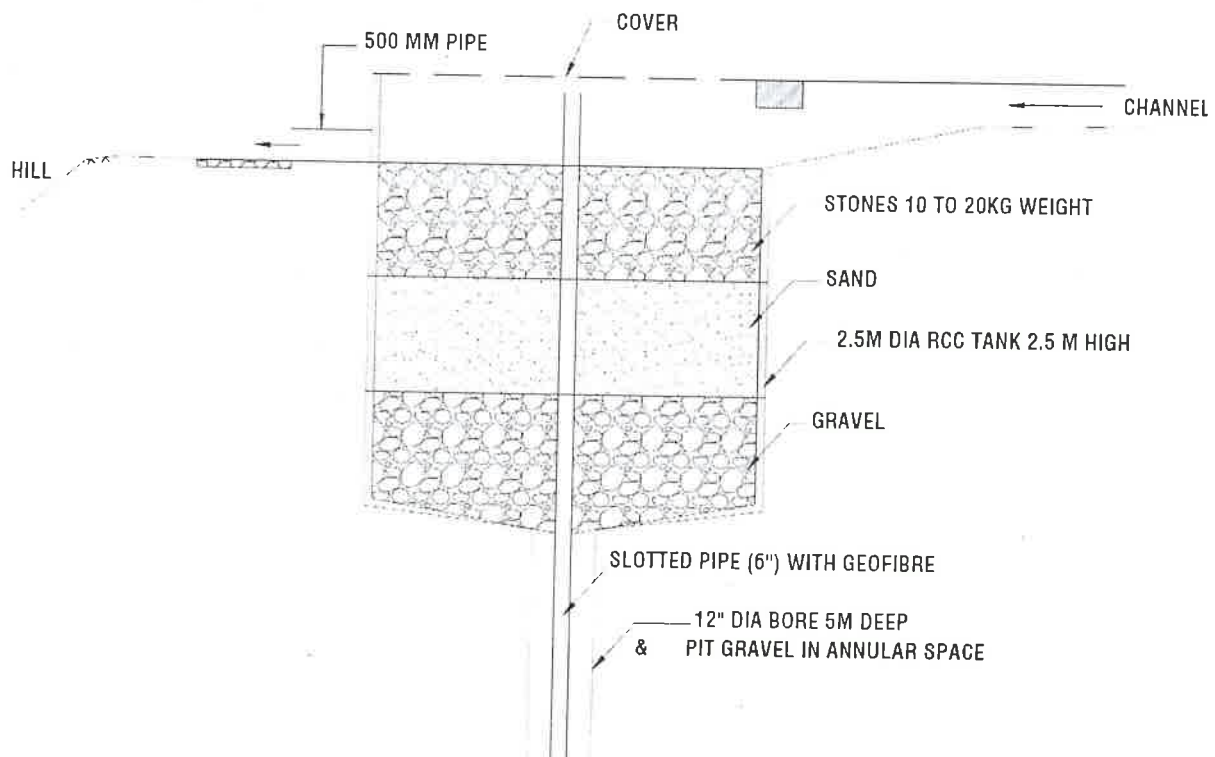


Fig.15. Drawing showing the rain water harvesting structure

Anurita
(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

13.0 Maintenance of Blocks, retaining walls and Roads

- The masonry retaining walls and stone pitching on the block 100 shall be maintained properly. All the vegetation causing distress to the wall shall be cleared.
- There is a narrow concrete road along Nalla adjoining the property line near the entrance. This road is sinking due to erosion of soil of the pavement subgrade. The road near the Block 94 has also collapsed at many locations which shall be rehabilitated.
- It is proposed to provide new road sections for above two roads. The drawing for concrete road section for T94 Terrace is given in Fig.16. For road near Nalla, the thickness of PQC slab is 220 mm.

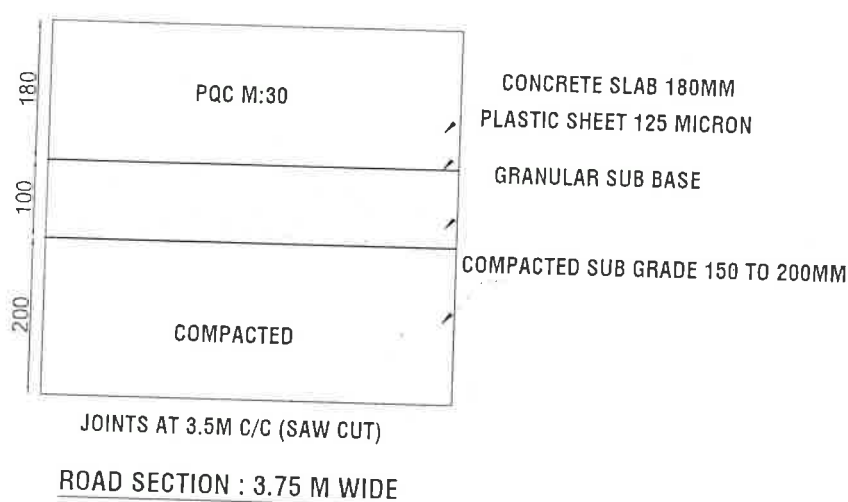


Fig.16. Proposed road section

14.0 Specifications

14.1 Gabion Specifications

The Gabion walls shall be constructed in accordance with IRC SP 116-2018 with regard to specifications of materials and final product after construction. In general the following may be adopted.

Manufacturing: Gabions shall be manufactured from double twist hexagonal woven wire mesh. Diaphragms to be at 1 m centers on the unit length except for 1.5 m long gabions which have no internal diaphragms.

Mesh size: The mesh openings shall be hexagonal and of a nominal dimensions of 80 mm × 100 mm.

Anurag
(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

Mesh Wire: The nominal mesh wire diameter for the body of the gabions shall be 2.7 mm to 3.0 mm in diameter. The tensile strength of wire shall be within a range of 350 to 550 N/sq mm.

Corrosion coating: Wire shall be Zinc coated.

Jointing: Gabions shall be provided with wire or C rings for site assembly. The lacing wire shall be of a nominal diameter of 2.3 mm (all in accordance with the corrosion protection specified) for final jointing.

Rock fill: Gabions fill shall be hard, durable and non-frost susceptible (Rock or stone type) having a minimum dimension of 200 mm.

Construction: Gabions shall be packed tightly to minimize voids and the rock fill on the exposed face of the gabion is to be hand packed. Internal windlass bracing ties are to be incorporated at 2 per sq.m of face at 1/3rd & 2/3rd intervals for 1 m high units 1 placed centrally for 0.5 m high units. The adjacent gabion units are to be tied together with continuous lacing on the vertical joints as well as horizontally at the front and rear of coursed joints. The units shall be filled such that the mesh lid bears down onto the rock fill. The lid shall be wired down or C ringed as above on all joints and across diaphragms.

14.2 Specifications for other Materials

Other materials and works referred in this report shall conform to the quality standards laid down by relevant Indian standards codes.

Item /Material Name	General Specifications	Approximate rate of material only
Geosynthetic Clay Liner (GCL)	6.0 mm to 8.0 mm thick, bentonite sandwiched between woven/ non-woven geotextile liner, needle punched.	Rs. 180-200 per sq.m
Non-woven geo fabric (For filter)	Polypropylene needle punched. Permeability > 0.4 cm/s conforming to IS 13162 (Part 5)-1992	Rs. 15-20 per sq.m
HDPE geomembrane	1.0 mm-1.5 mm thick conforming to IS 16352:2020	-
Hume Pipes	500 mm diameter (NP3) conforming to IS 458-2003	-
CPVC Pipes	6.0 kg/sq cm conforming to IS 15778:2007	-
Filter	As per details in Section 9.0	To be locally fabricated. Cost of SS sheet is Rs. 100-120 per kg

Note: The prices are taken from site of India mart for preliminary assessment of material cost only.


(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

15.0 References

1. IRC SP 116-2018: Guidelines for design and installation of Gabion structures
2. IRC SP 42-2014: Guidelines for Road drainage.
3. IS 1742-1983 (2002): Code of practice for building drainage.
4. IS 458-2003 :Precast Concrete Pipes
5. IS 16352- 2020 Geo synthetics-High density polyethylene (HDPE) membranes for lining.
6. IS 15778-2007 CPVC Pipes for potable hot and cold water distribution supplies.
7. IS 13162 (Part 5)-1992 Geo textiles: Methods of Test
8. Manual on Storm water drainage system Vol I , & Vol II ; CPHEEO –May 2019, GOI
9. IS 458-2003 Precast concrete pipes (with and without reinforcement) Specifications.
10. IS 783-1985 (Reaffirmed 2010) Code of Practice for laying of Concrete Pipes.
11. Geotextile French drain in Indian Rural Roads: A case study: J. of Geotextiles and Geo membranes 12 (1993) pp 73,87 by Rao GV, Gupta KK, Pradhan MPS.
12. GAWAC 3.0: Software for design of Gabion walls and slope stability.

Anurag

Illu
(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

Chandra

APPENDIX A

Analysis of Precipitation Data over PTCUL Power Station

Precipitation over PTCUL power station:

The study aims to assess the annual maximum hourly precipitation over the PTCUL station, utilizing Indian Monsoon Data Assimilation and Analysis (IMDAA) (<https://rds.ncmrwf.gov.in/>) hourly precipitation datasets spanning from 1980 to 2023. In this analysis, precipitation data from four surrounding grid points (figure A1) near the PTCUL station was collected and subjected to Inverse Distance Weightage (IDW) interpolation to estimate hourly precipitation at the PTCUL location. The subsequent focus was on extracting the maximum hourly annual precipitation values from the finalized dataset. Figure A1 illustrates the geographic distribution of precipitation across the four neighboring grid points surrounding the PTCUL station. Of particular interest is the grid point located at coordinates 30.24 N and 78.72 E, which is in close proximity to the PTCUL station. This spatial arrangement implies a substantial influence of precipitation from this specific grid point on the PTCUL location.

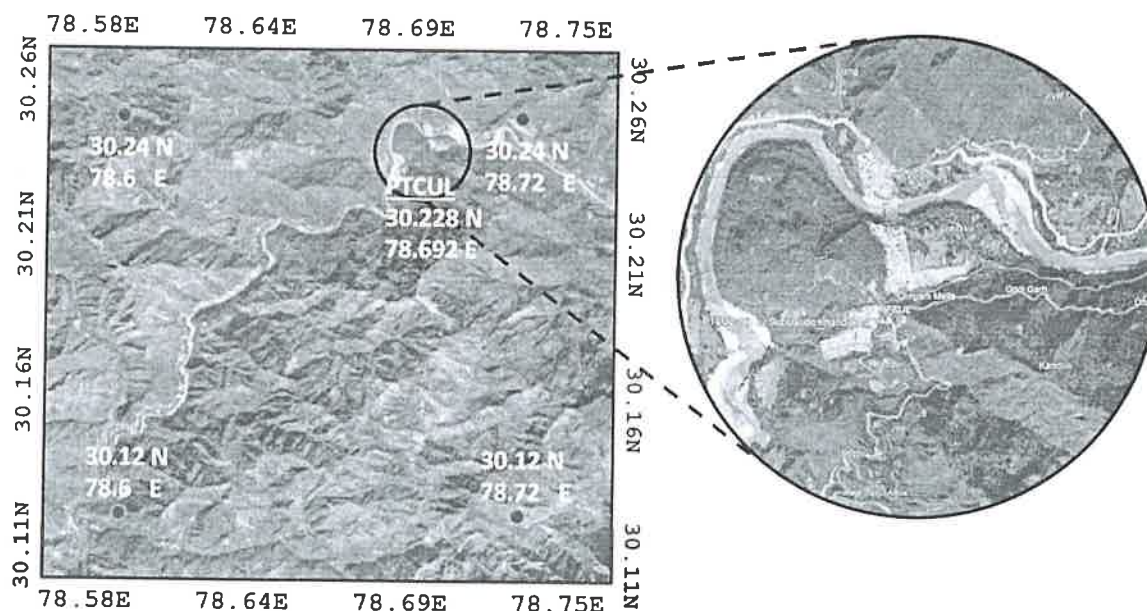


Figure A1: PTCUL station location and 4 selected grid point around station according to IMDAA dataset.

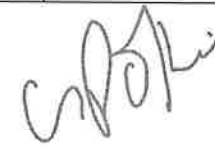
Anurag
(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

CSB

Maximum hourly precipitation in mm at PTCUL location and surrounding grid points for each year is shown in Table A1.

Table A1. Maximum hourly precipitation (mm) in each year at the PTCUL station and 4 grid points.

Grid	0	1	2	3	PTCUL
Latitude	30.12	30.12	30.24	30.24	30.228
Longitude	78.6	78.72	78.6	78.72	78.692
Date Time					
20-06-1980 04:00	17.42188	23.75	20.54688	21.8125	21.65423
27-07-1981 07:00	30.78125	42.03125	38.125	46.53125	44.92935
29-07-1982 20:00	2.6875	3.875	4.9375	18.0625	15.47267
16-04-1983 13:00	10.34375	8.96875	19.26563	18.25	17.47916
24-07-1984 00:00	5.90625	5.875	23.21875	36.59375	32.40408
06-07-1985 01:00	4.546875	9.96875	7.734375	26.65625	23.15324
13-08-1986 03:00	10.625	5.125	38.40625	20.46875	20.74231
23-07-1987 03:00	4.125	4.0625	7.03125	23.67188	20.28792
05-07-1988 16:00	23.8125	27.53125	10.8125	18.0625	18.21668
27-07-1989 20:00	59.21875	37.15625	30.125	26.34375	28.56557
09-07-1990 16:00	14.9375	32.15625	32.34375	23.96875	24.86164
01-09-1991 02:00	1.953125	2.3125	2.046875	21.92188	18.23825
10-09-1992 00:00	18.45313	7.03125	25.75	10.98438	12.32058
31-08-1993 01:00	8.125	18.07813	21.875	32.3125	29.62494
21-02-1994 08:00	11.46875	15.28906	11.14844	10.59375	10.96021
03-07-1995 23:00	24.1875	26.3125	34.9375	39.90625	38.05532
21-06-1996 18:00	5.5	5.3125	7.90625	35.09375	29.78987
10-07-1997 03:00	3.625	16.46875	4.78125	22.625	19.9724
01-07-1998 20:00	5.46875	6.375	29.3125	20.1875	19.59766
27-06-1999 15:00	7.953125	4.875	26.78125	16.76563	16.59224
26-06-2000 21:00	9.609375	10.70313	20.8125	28.07813	25.69295
24-06-2001 21:00	2.09375	2.28125	20.60938	33.78125	29.52447
21-08-2002 05:00	3.65625	11.79688	15.92188	24.125	21.88877
19-08-2003 02:00	3.0625	2.796875	2.40625	23.125	19.32019
08-07-2004 00:00	16.21875	23.90625	33.8125	26.3125	26.44583
20-07-2005 19:00	5.453125	2.28125	19.40625	29.45313	26.02176
19-07-2006 22:00	2.140625	0.890625	2.96875	33.625	27.76655
14-08-2007 02:00	8.390625	9.25	27.89063	34.625	31.50951
18-07-2008 02:00	12.09375	8.40625	25.875	26.78125	25.03539
11-08-2009 02:00	2.09375	1.1875	2.125	43.3125	35.59464
13-09-2010 00:00	18.0625	12.25	40.59375	30.03125	29.42993
26-08-2011 22:00	5.71875	6.421875	4.03125	18.01563	15.62331
03-08-2012 14:00	32.625	44.3125	28.96875	33.03125	33.3441
06-07-2013 21:00	2.375	2	1.90625	34.59375	28.53801
19-07-2014 03:00	13.14063	17.35938	13.01563	24.03125	22.25093



(Er. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL

observed during the months of June, July, August, and September. This temporal pattern underscores the seasonal variability in maximum hourly precipitation trends.

Therefore, 50 mm per hour of rainfall may be considered for computation of surface runoff


(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL





APPENDIX B

Geotechnical laboratory tests on soil

Table B1. Geotechnical properties

S. No.	Geotechnical properties	Values	Figures
1	Specific gravity (Gs)	2.53	
2	Maximum dry density (γ_d)	1.73 g/cm ³	Fig. B1
3	Optimum moisture content	13.53 %	
4	Cohesion, c	1.06 kN/m ²	Fig. B2
5	Angle of internal friction, Φ	32.95°	
6	Coefficient of permeability	8.6 x 10 ⁻⁷ m/s	
7	Gran size distribution (%)		Fig. B3
9	Clay	3.8%	
10	Silt	21.8%	
11	Sand	64.8%	
12	Gravel	9.6%	

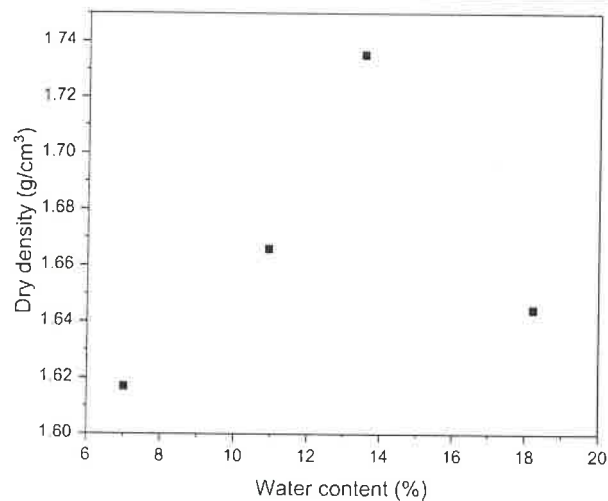
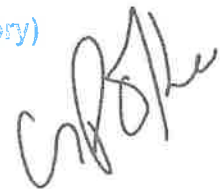


Fig. B1. Dry density Vs water content


 (Er. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL


 Anurag


 Chandra

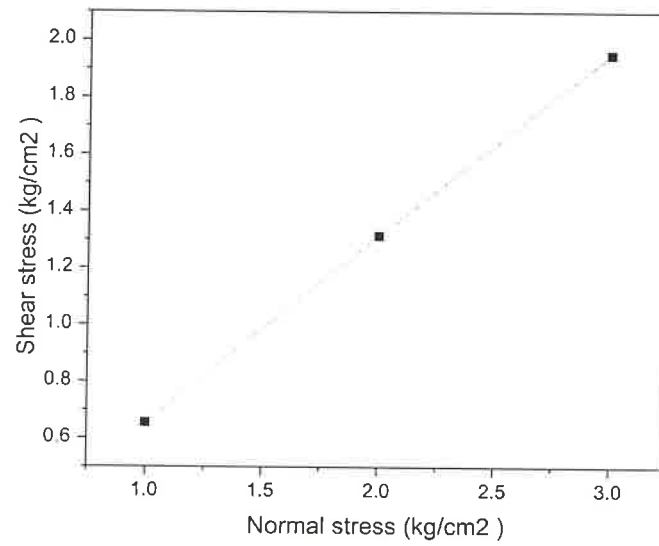


Fig B2: Shear Stress Vs Normal stress

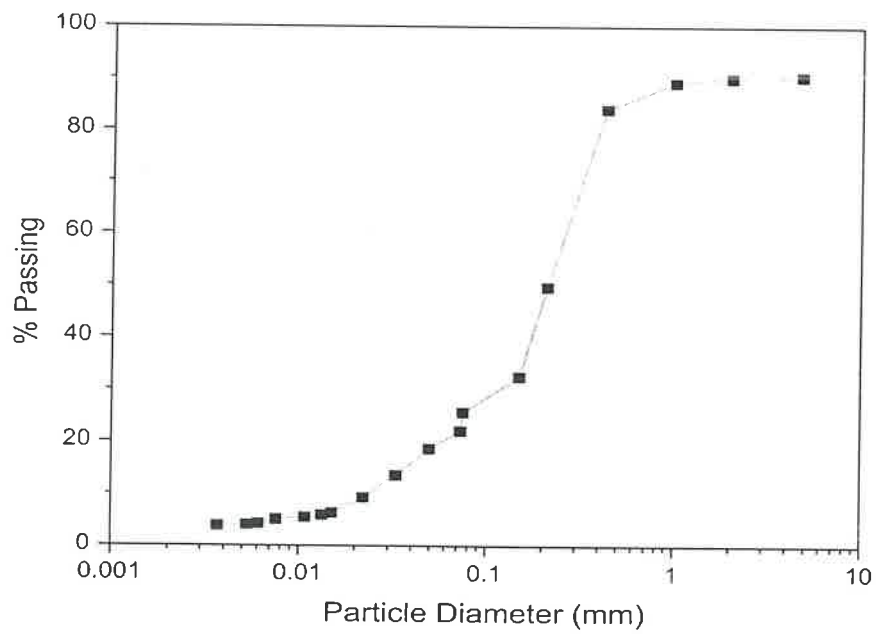


Fig B3: Grain size distribution curve

Anurag
 (Er. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL

20/11/20

Project Information

Title	Client	Description
Number	Designer	
		Comments

Input

Eurocode 7 EN 1997-1 (EU) - DESIGN APPROACH 1: A1+M1+R1

Wall data

Wall batter [°]	6.00
Rockfill unit weight [kN/m³]	25.00
Porosity of gabions [%]	35.00
Geotextile in the backfill	Yes
Friction reduction [%]	5.00
Geotextile on the base	No
Friction reduction [%]	0.00

Backfill soil data

Inclination of Stretch 1 [°]	0.00
Length of stretch 1 [m]	0.00
Inclination of Stretch 2 [°]	0.00
Soil unit weight [kN/m³]	18.00
Soil friction angle [°]	32.00
Soil cohesion [kN/m²]	0.00

Layer	Initial height [m]	Incl. angle deg	Unit weight [kN/m³]	Cohesion [kN/m²]	Friction angle [deg]
-------	--------------------	-----------------	---------------------	------------------	----------------------

Foundation data

Top surface height [m]	0.60
Top surface init. length [m]	1.00
Top surface incl. angle [°]	45.00
Soil unit weight [kN/m³]	18.00
Soil friction angle [°]	32.00
Soil cohesion [kN/m²]	1.00
Foundation allowable pressure [kN/m²]	100.00
Water table height [m]	0.20

Layer	Depth [m]	Unit weight [kN/m³]	Cohesion [kN/m²]	Friction angle [deg]
1	6.00	18.00	1.00	28.00

Loads data

Distributed loads on backfill

First stretch [kN/m²]	Variable Unfavorable	q1	2.00
Second stretch [kN/m²]	Variable Unfavorable	q2	

Distributed loads on wall

Load [kN/m²]	Variable Favorable
--------------	--------------------

Line loads on backfill

Load 1 [kN/m]	Variable Unfavorable
Distance from wall face [m]	
Load 2 [kN/m]	Variable Unfavorable
Distance from wall face [m]	
Load 3 [kN/m]	Variable Unfavorable
Distance from wall face [m]	

Line load on wall

Load [kN/m]	Variable Favorable
Distance from wall face [m]	

Phreatic surface data

Initial height [m]	0.00
Inclination of the 1st stretch [°]	0.00
Length of the 1st stretch [m]	0.00
Inclination of the 2nd stretch [°]	0.00
Length of the 2nd stretch [m]	0.00

Seismic action data

Horizontal coefficient	0.00
Vertical coefficient	0.00

Product

Ambient	Low Aggressive
---------	----------------

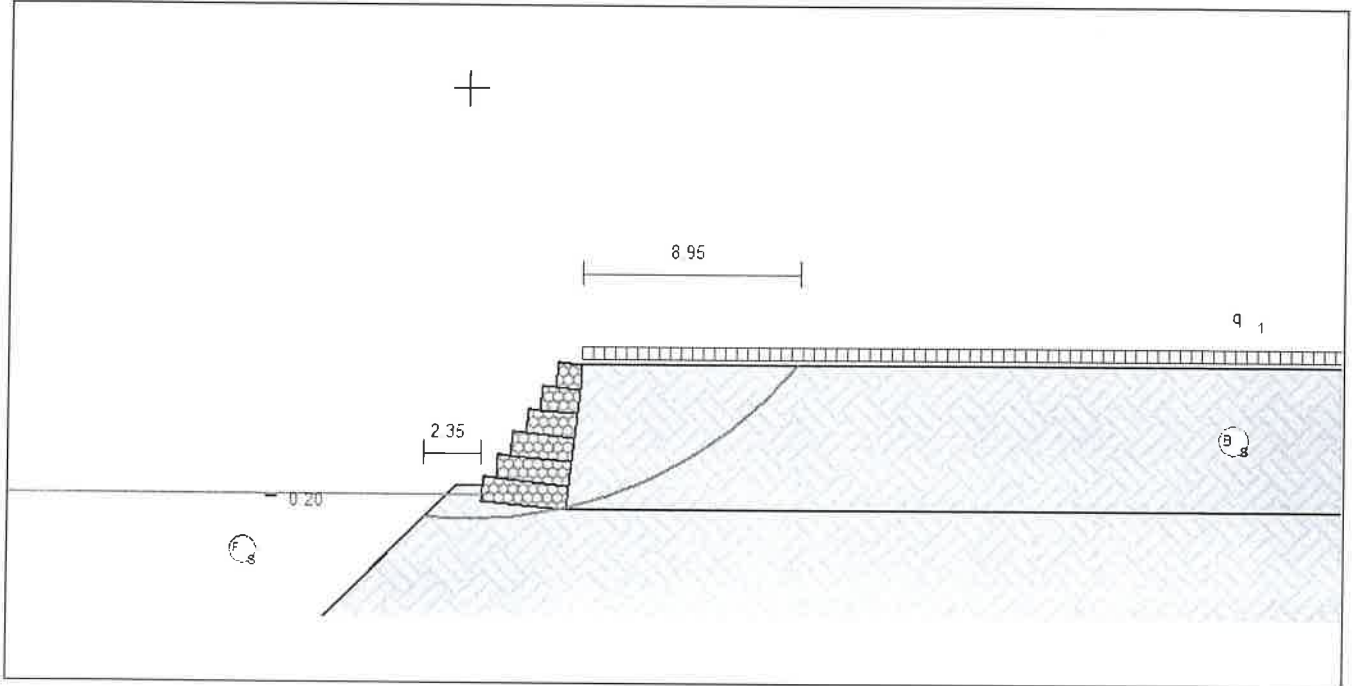
Mesh	GSC 0.5	GSC 1.0
Gabion POLIMAC™ 100/418	978	489

Results

Eurocode 7 EN 1997-1 (EU) - DESIGN APPROACH 1: A1+M1+R1

ULS Ultimate Limit State

Wall Design



Stability Analysis Results

Active and Passive Thrust

Active Thrust [kN/m]	103.31
Point of application ref. to X axis [m]	3.69
Point of application ref. to Y axis [m]	1.65
Direction of the thrust ref. to X axis [°]	24.40
Passive Thrust [kN/m]	0.00
Point of application ref. to X axis [m]	0.00
Point of application ref. to Y axis [m]	0.00
Direction of the thrust ref. to X axis [°]	0.00

Sliding

Normal force on the base [kN/m]	265.85
Point of application ref. to X axis [m]	2.01
Point of application ref. to Y axis [m]	-0.21
Tangential active force [kN/m]	89.11
Tangential resistance force [kN/m]	190.32
Sliding check	2.14

Overturning

Overturning Moment [kN/m x m]	167.33
Restoring Moment [kN/m x m]	661.41
Overturning check	3.95

Stresses Acting on Foundation

Eccentricity	-0.26
Normal stress on outer border [kN/m ²]	42.32
Normal stress on inner border [kN/m ²]	109.60
Ultimate stress on foundation [kN/m ²]	100.00
Stress on foundation (Toe) check	2.36
Stress on foundation (Heel) check	0.91

Global Stability | Bishop

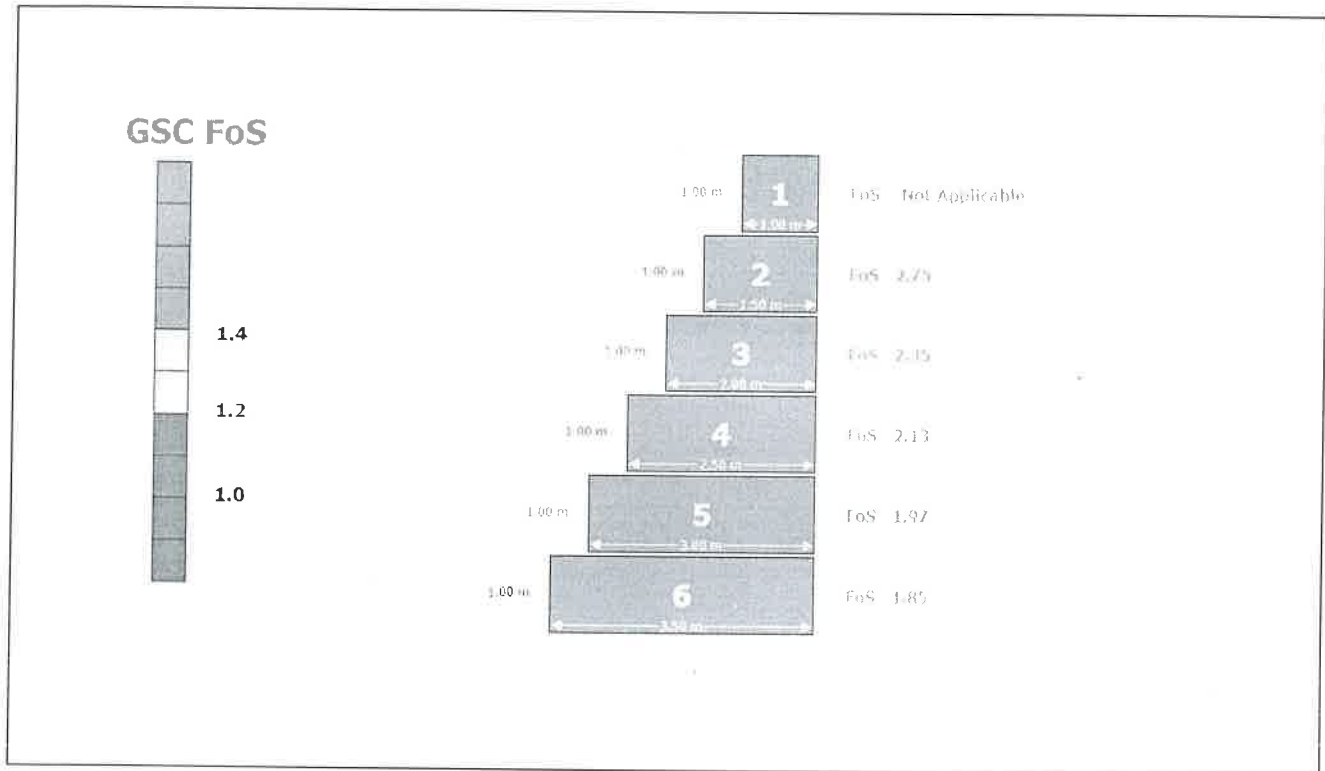
Center of the arch referred to X axis [m]	-0.58
Center of the arch referred to Y axis [m]	16.82
Overall Stability Check	1.56

Results

Eurocode 7 EN 1997-1 (EU) - DESIGN APPROACH 1: A1+M1+R1

SLS Serviceability Limit State

Gabion Serviceability Coefficient



ULS Ultimate Limit State

External stability

Overturning check

Sliding check

Stress on foundation (Toe) Check

Stress on foundation (Heel) Check

Global

Global Stability Check

FoS

3.95

FoS

2.14

FoS

2.36

FoS

0.91

FoS

1.56

Internal stability

Layer	H [m]	N [kN/m]	T [kN/m]	M [kN/m x m]	τ_{Max} [kN/m]	τ_{All} [kN/m ²]	τ FoS	σ_{Max} [kN/m ²]	σ_{All} [kN/m ²]	σ FoS
1	0.99	17.92	1.31	9.59	1.31	37.44	28.58	16.75	518.29	30.94
2	1.99	46.76	6.58	40.09	4.39	50.69	11.55	27.27	518.29	19.01
3	2.98	86.49	15.83	99.83	7.91	62.76	7.93	37.47	518.29	13.83
4	3.98	137.14	29.04	197.20	11.61	74.37	6.41	47.68	518.29	10.87
5	4.97	198.69	46.21	340.54	15.40	85.75	5.57	57.96	518.29	8.94

(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

• Normative

Eurocode 7 EN 1997-1 (EU)

DESIGN APPROACH 1: A1+M1+R1

No Seismic Condition

Partial Factors

			Overturing
Coefficient of shearing resistance	$\gamma\phi'$	1.00	1.25
Effective cohesion	$\gamma c'$	1.00	1.25
Undrained shear strength	γc_u	1.00	1.40
Permanent action (G) Unfavourable	$\gamma G; unfav$	1.35	1.10
Permanent action (G) Favourable	$\gamma G; fav$	1.00	0.90
Variable action (Q) Unfavourable	$\gamma Q; unfav$	1.50	1.50
Variable action (Q) Favourable	$\gamma Q; fav$	0.00	0.00
Bearing resistance	γR_v	1.00	1.00
Sliding resistance	γR_h	1.00	1.00
Overturing resistance	γR_m	1.00	1.00
Earth internal resistance shear	$\gamma Re; intShear$	1.00	1.00
Earth internal resistance compression	$\gamma Re; intComp$	1.00	1.00
Earth overall resistance	$\gamma Re; overall$	1.00	1.00
Gabion wall weight	$\gamma G; Wall$	1.00	1.00
Water Thrust	$\gamma Water$	1.35	1.10

Subh
(Er. **ILIA CHANDRA**)
Chief Engineer
(Commercial & Regulatory)
PTCUL

Project Information

Title	Client	Description
Number	Designer	
		Comments

Input

Eurocode 7 EN 1997-1 (EU) - DESIGN APPROACH 1: A1+M1+R1

Wall data

Wall batter [°]	6.00
Rockfill unit weight [kN/m³]	25.00
Porosity of gabions [%]	35.00
Geotextile in the backfill	Yes
Friction reduction [%]	5.00
Geotextile on the base	No
Friction reduction [%]	0.00

Backfill soil data

Inclination of Stretch 1 [°]	0.00
Length of stretch 1 [m]	0.00
Inclination of Stretch 2 [°]	0.00
Soil unit weight [kN/m³]	18.00
Soil friction angle [°]	32.90
Soil cohesion [kN/m²]	0.00

Layer	Initial height [m]	Incl. angle deg	Unit weight [kN/m³]	Cohesion [kN/m²]	Friction angle [deg]
-------	--------------------	-----------------	---------------------	------------------	----------------------

Foundation data

Top surface height [m]	0.60
Top surface init. length [m]	1.00
Top surface incl. angle [°]	45.00
Soil unit weight [kN/m³]	18.00
Soil friction angle [°]	32.00
Soil cohesion [kN/m²]	0.00
Foundation allowable pressure [kN/m²]	100.00
Water table height [m]	0.20

Layer	Depth [m]	Unit weight [kN/m³]	Cohesion [kN/m²]	Friction angle [deg]
1	6.00	18.00	1.00	28.00

Loads data

Distributed loads on backfill

First stretch [kN/m²]	Variable Unfavorable	q1	2.00
Second stretch [kN/m²]	Variable Unfavorable	q2	2.00

Distributed loads on wall

Load [kN/m²]	Variable Favorable
--------------	--------------------

Line loads on backfill

Load 1 [kN/m]	Variable Unfavorable
Distance from wall face [m]	
Load 2 [kN/m]	Variable Unfavorable
Distance from wall face [m]	
Load 3 [kN/m]	Variable Unfavorable
Distance from wall face [m]	

Line load on wall

Load [kN/m]	Variable Favorable
Distance from wall face [m]	

Phreatic surface data

Initial height [m]	0.00
Inclination of the 1st stretch [°]	0.00
Length of the 1st stretch [m]	0.00
Inclination of the 2nd stretch [°]	0.00
Length of the 2nd stretch [m]	0.00

Seismic action data

Horizontal coefficient	0.00
Vertical coefficient	0.00

Product

Ambient	Low Aggressive
---------	----------------

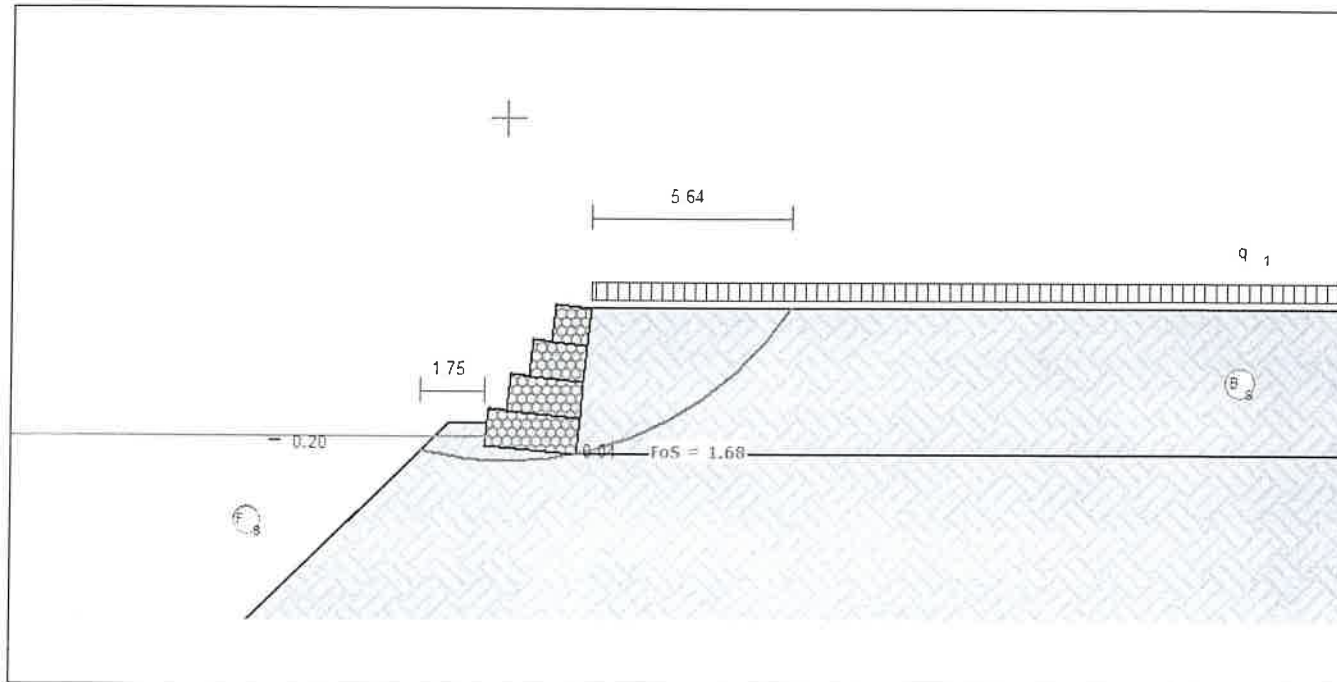
Mesh	GSC 0.5	GSC 1.0
Gabion POLIMAC™ 100/418	978	489

Results

Eurocode 7 EN 1997-1 (EU) - DESIGN APPROACH 1: A1+M1+R1

ULS Ultimate Limit State

Wall Design



Stability Analysis Results

Active and Passive Thrust

Active Thrust [kN/m]	44.84
Point of application ref. to X axis [m]	2.63
Point of application ref. to Y axis [m]	1.09
Direction of the thrust ref. to X axis [°]	25.25
Passive Thrust [kN/m]	0.00
Point of application ref. to X axis [m]	0.00
Point of application ref. to Y axis [m]	0.00
Direction of the thrust ref. to X axis [°]	0.00

Sliding

Normal force on the base [kN/m]	133.55
Point of application ref. to X axis [m]	1.47
Point of application ref. to Y axis [m]	-0.16
Tangential active force [kN/m]	38.33
Tangential resistance force [kN/m]	95.05
Sliding check	2.48

Overturning

Overturning Moment [kN/m x m]	48.33
Restoring Moment [kN/m x m]	232.94
Overturning check	4.82

Stresses Acting on Foundation

Eccentricity	-0.22
Normal stress on outer border [kN/m ²]	24.61
Normal stress on inner border [kN/m ²]	82.23
Ultimate stress on foundation [kN/m ²]	100.00
Stress on foundation (Toe) check	4.06
Stress on foundation (Heel) check	1.22

Global Stability | Bishop

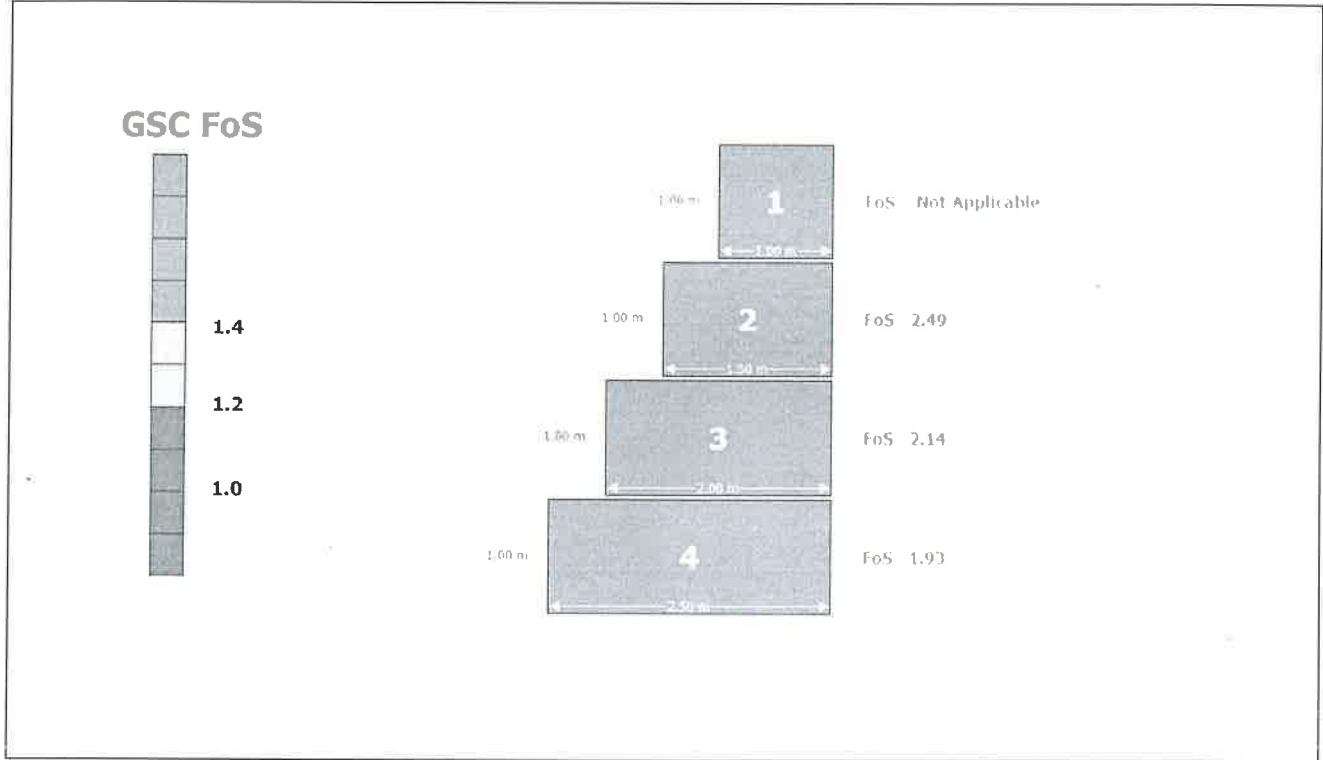
Center of the arch referred to X axis [m]	0.61
Center of the arch referred to Y axis [m]	8.92
Overall Stability Check	1.68

Results

Eurocode 7 EN 1997-1 (EU) - DESIGN APPROACH 1: A1+M1+R1

SLS Serviceability Limit State

Gabion Serviceability Coefficient



ULS Ultimate Limit State

External stability

Overturning check

FoS 4.82

Sliding check

FoS 2.48

Stress on foundation (Toe) Check

FoS 4.06

Stress on foundation (Heel) Check

FoS 1.22

Global

Global Stability Check

FoS 1.68

Internal stability

Layer	H [m]	N [kN/m]	T [kN/m]	M [kN/m x m]	τ_{Max} [kN/m]	τ_{All} [kN/m ²]	τ FoS	σ_{Max} [kN/m ²]	σ_{All} [kN/m ²]	σ FoS
1	0.99	17.91	1.18	9.62	1.18	37.42	31.71	16.66	518.29	31.11
2	1.99	46.69	6.10	40.31	4.07	50.64	12.44	27.03	518.29	19.17
3	2.98	86.34	14.79	100.58	7.39	62.69	8.48	37.06	518.29	13.99

(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

• Normative

Eurocode 7 EN 1997-1 (EU)

DESIGN APPROACH 1: A1+M1+R1

No Seismic Condition

Partial Factors

			Overturing
Coefficient of shearing resistance	$\gamma\phi'$	1.00	1.25
Effective cohesion	$\gamma c'$	1.00	1.25
Undrained shear strength	γc_u	1.00	1.40
Permanent action (G) Unfavourable	$\gamma G; unfav$	1.35	1.10
Permanent action (G) Favourable	$\gamma G; fav$	1.00	0.90
Variable action (Q) Unfavourable	$\gamma Q; unfav$	1.50	1.50
Variable action (Q) Favourable	$\gamma Q; fav$	0.00	0.00
Bearing resistance	γR_v	1.00	1.00
Sliding resistance	γR_h	1.00	1.00
Overturing resistance	γR_m	1.00	1.00
Earth internal resistance shear	$\gamma Re; intShear$	1.00	1.00
Earth internal resistance compression	$\gamma Re; intComp$	1.00	1.00
Earth overall resistance	$\gamma Re; overall$	1.00	1.00
Gabion wall weight	$\gamma G; Wall$	1.00	1.00
Water Thrust	$\gamma Water$	1.35	1.10

Sebast
(Er. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL

Project Information

Title	Client	Description
Number	Designer	
		Comments

Input

Eurocode 7 EN 1997-1 (EU) - DESIGN APPROACH 1: M1+R1±Kh±Kv

Wall data

Wall batter [°]	6.00
Rockfill unit weight [kN/m³]	25.00
Porosity of gabions [%]	35.00
Geotextile in the backfill	Yes
Friction reduction [%]	5.00
Geotextile on the base	No
Friction reduction [%]	0.00

Backfill soil data

Inclination of Stretch 1 [°]	0.00
Length of stretch 1 [m]	0.00
Inclination of Stretch 2 [°]	0.00
Soil unit weight [kN/m³]	18.00
Soil friction angle [°]	32.90
Soil cohesion [kN/m²]	0.00

Layer	Initial height [m]	Incl. angle deg	Unit weight [kN/m³]	Cohesion [kN/m²]	Friction angle [deg]
-------	-----------------------	--------------------	------------------------	---------------------	-------------------------

Foundation data

Top surface height [m]	0.65
Top surface init. length [m]	0.30
Top surface incl. angle [°]	45.00
Soil unit weight [kN/m³]	18.00
Soil friction angle [°]	32.90
Soil cohesion [kN/m²]	0.00
Foundation allowable pressure [kN/m²]	100.00
Water table height [m]	0.00

Layer	Depth [m]	Unit weight [kN/m³]	Cohesion [kN/m²]	Friction angle [deg]
1	6.00	18.00	0.20	32.00

Loads data

Distributed loads on backfill

First stretch [kN/m²]	Variable Unfavorable	q1	2.00
Second stretch [kN/m²]	Variable Unfavorable	q2	2.00

Distributed loads on wall

Load [kN/m²]	Variable Favorable
--------------	--------------------

Line loads on backfill

Load 1 [kN/m]	Variable Unfavorable
Distance from wall face [m]	
Load 2 [kN/m]	Variable Unfavorable
Distance from wall face [m]	
Load 3 [kN/m]	Variable Unfavorable
Distance from wall face [m]	

Line load on wall

Load [kN/m]	Variable Favorable
Distance from wall face [m]	

Phreatic surface data

Initial height [m]	0.00
Inclination of the 1st stretch [°]	0.00
Length of the 1st stretch [m]	0.00
Inclination of the 2nd stretch [°]	0.00
Length of the 2nd stretch [m]	0.00

Seismic action data

Horizontal coefficient	0.16
Vertical coefficient	0.08

Product

Ambient	Low Aggressive
---------	----------------

Mesh

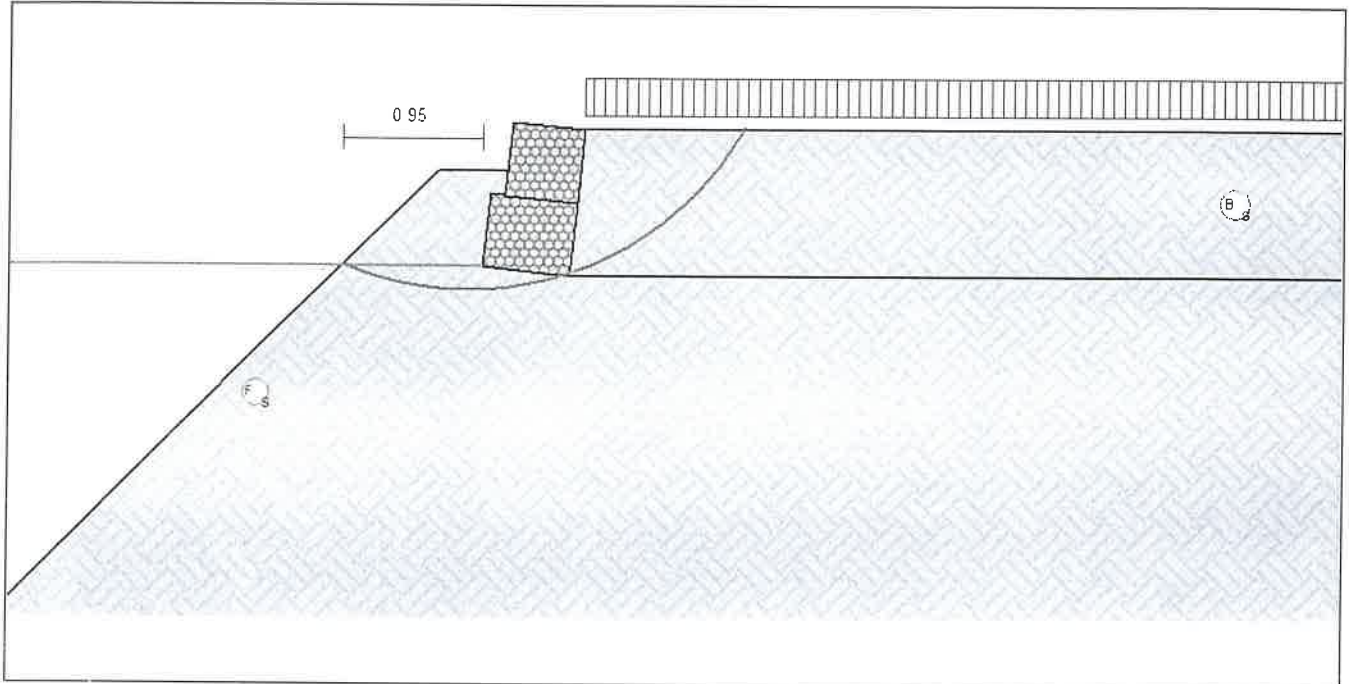
	GSC 0.5	GSC 1.0
Gabion POLIMAC™ 100/418	978	489

Results

Eurocode 7 EN 1997-1 (EU) - DESIGN APPROACH 1: M1+R1±Kh±Kv

ULS Ultimate Limit State

Wall Design



Stability Analysis Results

Active and Passive Thrust

Active Thrust [kN/m]	3.82
Point of application ref. to X axis [m]	0.65
Point of application ref. to Y axis [m]	0.42
Direction of the thrust ref. to X axis [°]	25.25
Passive Thrust [kN/m]	0.00
Point of application ref. to X axis [m]	0.00
Point of application ref. to Y axis [m]	0.00
Direction of the thrust ref. to X axis [°]	0.00

Sliding

Normal force on the base [kN/m]	10.30
Point of application ref. to X axis [m]	0.20
Point of application ref. to Y axis [m]	-0.02
Tangential active force [kN/m]	4.57
Tangential resistance force [kN/m]	7.52
Sliding check	1.64

Overturning

Overturning Moment [kN/m x m]	2.40
Restoring Moment [kN/m x m]	4.09
Overturning check	1.71

Stresses Acting on Foundation

Eccentricity	0.10
Normal stress on outer border [kN/m ²]	34.19
Normal stress on inner border [kN/m ²]	0.13
Ultimate stress on foundation [kN/m ²]	100.00
Stress on foundation (Toe) check	2.92
Stress on foundation (Heel) check	760.18

Global Stability | Bishop

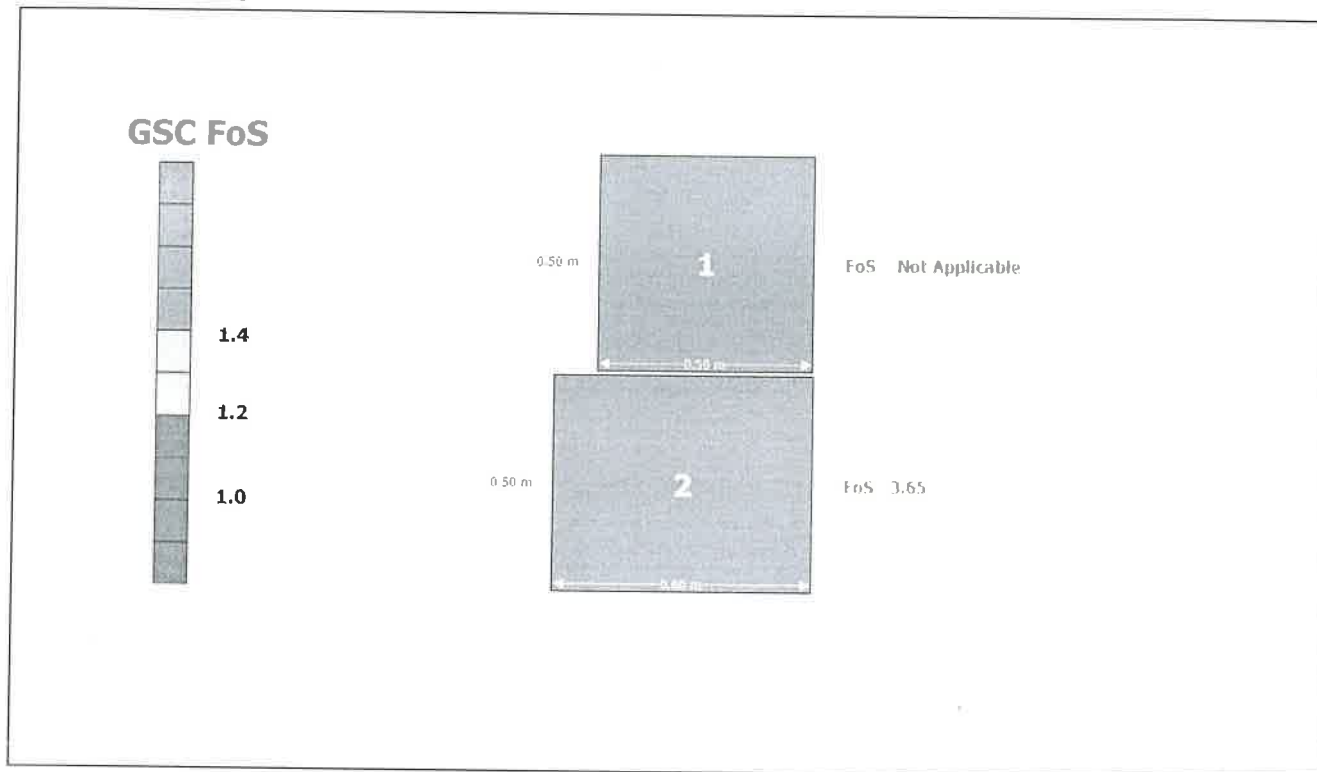
Center of the arch referred to X axis [m]	-0.09
Center of the arch referred to Y axis [m]	2.00
Overall Stability Check	1.56

Results

Eurocode 7 EN 1997-1 (EU) - DESIGN APPROACH 1: M1+R1±Kh±Kv

SLS Serviceability Limit State

Gabion Serviceability Coefficient



ULS Ultimate Limit State

External stability

Overturning check	Sliding check	Stress on foundation (Toe) Check	Stress on foundation (Heel) Check
FoS 1.71	FoS 1.64	FoS 2.92	FoS 760.18

Global

Global Stability Check
FoS 1.56

Internal stability

Layer	H [m]	N [kN/m]	T [kN/m]	M [kN/m x m]	τ_{Max} [kN/m]	τ_{All} [kN/m ²]	τ FoS	σ_{Max} [kN/m ²]	σ_{All} [kN/m ²]	σ FoS
1	0.50	4.37	1.17	0.95	2.35	39.14	16.66	10.09	518.29	51.37

alt
(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

• **Normative**

Eurocode 7 EN 1997-1 (EU)

DESIGN APPROACH 1: M1+R1±Kh±Kv
Seismic Condition

Partial Factors

		Overturning	
Coefficient of shearing resistance	$\gamma\phi'$	1.00	1.25
Effective cohesion	$\gamma c'$	1.00	1.25
Undrained shear strength	γc_u	1.00	1.40
Permanent action (G) Unfavourable	$\gamma G; unfav$	1.00	1.00
Permanent action (G) Favourable	$\gamma G; fav$	1.00	1.00
Variable action (Q) Unfavourable	$\gamma Q; unfav$	1.00	1.00
Variable action (Q) Favourable	$\gamma Q; fav$	1.00	1.00
Bearing resistance	γR_v	1.00	1.00
Sliding resistance	γR_h	1.00	1.00
Overturning resistance	γR_m	1.00	1.00
Earth internal resistance shear	$\gamma Re; intShear$	1.00	1.00
Earth internal resistance compression	$\gamma Re; intComp$	1.00	1.00
Earth overall resistance	$\gamma Re; overall$	1.00	1.00
Gabion wall weight	$\gamma G; Wall$	1.00	1.00
Water Thrust	$\gamma Water$	1.00	1.00


(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

Project Information

Title	Client	Description
Number	Designer	
		Comments

Input

Eurocode 7 EN 1997-1 (EU) - DESIGN APPROACH 1: M1+R1±Kh±Kv

Wall data

Wall batter [°]	6.00
Rockfill unit weight [kN/m³]	25.00
Porosity of gabions [%]	35.00
Geotextile in the backfill	Yes
Friction reduction [%]	5.00
Geotextile on the base	No
Friction reduction [%]	0.00

Backfill soil data

Inclination of Stretch 1 [°]	1.00
Length of stretch 1 [m]	20.00
Inclination of Stretch 2 [°]	1.00
Soil unit weight [kN/m³]	18.00
Soil friction angle [°]	32.00
Soil cohesion [kN/m²]	1.00

Layer	Initial height [m]	Incl. angle deg	Unit weight [kN/m³]	Cohesion [kN/m²]	Friction angle [deg]
-------	--------------------	-----------------	---------------------	------------------	----------------------

Foundation data

Top surface height [m]	0.80
Top surface init. length [m]	1.00
Top surface incl. angle [°]	70.00
Soil unit weight [kN/m³]	18.00
Soil friction angle [°]	32.00
Soil cohesion [kN/m²]	0.00
Foundation allowable pressure [kN/m²]	100.00
Water table height [m]	0.20

Layer	Depth [m]	Unit weight [kN/m³]	Cohesion [kN/m²]	Friction angle [deg]
1	6.00	18.00	1.00	28.00

Loads data**Distributed loads on backfill**

First stretch [kN/m²]	Variable Unfavorable	q1	2.00
Second stretch [kN/m²]	Variable Unfavorable	q2	2.00

Distributed loads on wall

Load [kN/m²]	Variable Favorable
--------------	--------------------

Line loads on backfill

Load 1 [kN/m]	Variable Unfavorable
Distance from wall face [m]	
Load 2 [kN/m]	Variable Unfavorable
Distance from wall face [m]	
Load 3 [kN/m]	Variable Unfavorable
Distance from wall face [m]	

Line load on wall

Load [kN/m]	Variable Favorable
Distance from wall face [m]	

Phreatic surface data

Initial height [m]	0.00
Inclination of the 1st stretch [°]	0.00
Length of the 1st stretch [m]	0.00
Inclination of the 2nd stretch [°]	0.00
Length of the 2nd stretch [m]	0.00

Seismic action data

Horizontal coefficient	0.16
Vertical coefficient	0.08

Product

Ambient	Low Aggressive
---------	----------------

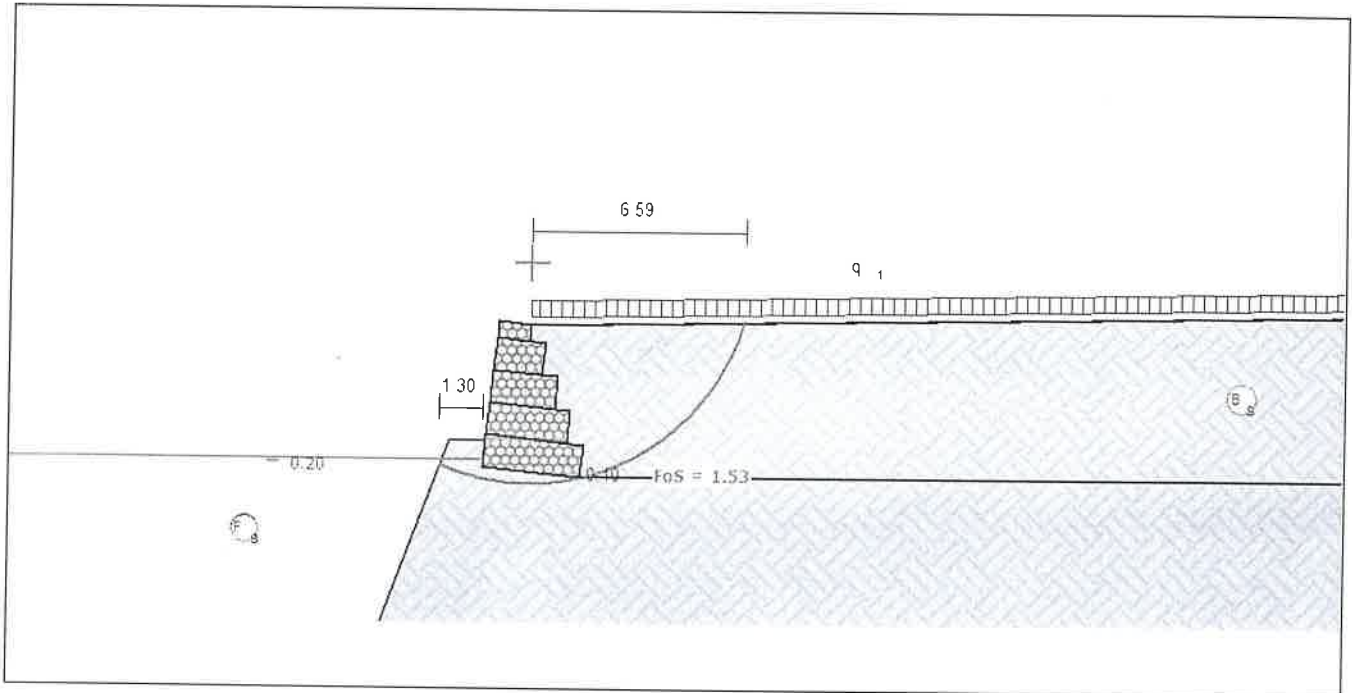
Mesh

	GSC 0.5	GSC 1.0
Gabion POLIMAC™ 100/418	978	489

Results

Eurocode 7 EN 1997-1 (EU) - DESIGN APPROACH 1: M1+R1±Kh±Kv

ULS Ultimate Limit State Wall Design



Stability Analysis Results

Active and Passive Thrust

Active Thrust [kN/m]	130.60
Point of application ref. to X axis [m]	2.28
Point of application ref. to Y axis [m]	1.85
Direction of the thrust ref. to X axis [°]	48.36
Passive Thrust [kN/m]	0.00
Point of application ref. to X axis [m]	0.00
Point of application ref. to Y axis [m]	0.00
Direction of the thrust ref. to X axis [°]	0.00

Sliding

Normal force on the base [kN/m]	238.95
Point of application ref. to X axis [m]	0.81
Point of application ref. to Y axis [m]	-0.08
Tangential active force [kN/m]	96.99
Tangential resistance force [kN/m]	163.04
Sliding check	1.68

Overturning

Overturning Moment [kN/m x m]	233.17
Restoring Moment [kN/m x m]	395.45
Overturning check	1.70

Stresses Acting on Foundation

Eccentricity	0.69
Normal stress on outer border [kN/m²]	197.50
Normal stress on inner border [kN/m²]	0.00
Ultimate stress on foundation [kN/m²]	100.00
Stress on foundation (Toe) check	0.51
Stress on foundation (Heel) check	-

Warning. Not all base is used!

Global Stability | Bishop

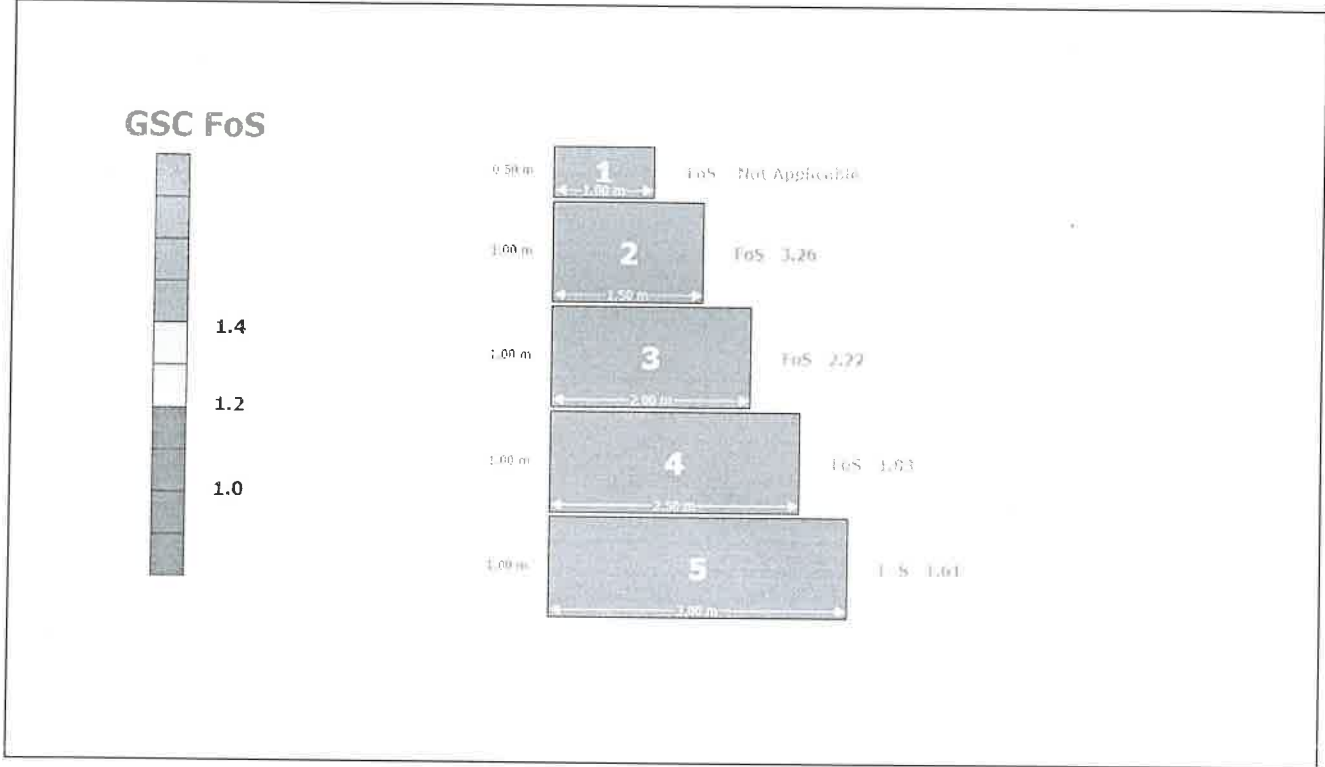
Center of the arch referred to X axis [m]	1.43
Center of the arch referred to Y axis [m]	6.26
Overall Stability Check	1.53

Results

Eurocode 7 EN 1997-1 (EU) - DESIGN APPROACH 1: M1+R1±Kh±Kv

SLS Serviceability Limit State

Gabion Serviceability Coefficient



ULS Ultimate Limit State

External stability

Overturning check

FoS 1.70

Sliding check

FoS 1.68

Stress on foundation (Toe) Check

FoS 0.51

Stress on foundation (Heel) Check

FoS -

Global

Global Stability Check

FoS 1.53

Internal stability

Layer	H [m]	N [kN/m]	T [kN/m]	M [kN/m x m]	τ_{Max} [kN/m]	τ_{All} [kN/m ²]	τ FoS	σ_{Max} [kN/m ²]	σ_{All} [kN/m ²]	σ FoS
1	0.50	7.89	0.96	3.85	0.96	38.29	39.89	8.07	518.29	64.22
2	1.54	37.61	9.63	22.99	6.42	44.59	6.95	30.76	518.29	16.85
3	2.59	86.78	26.39	59.55	13.20	62.90	4.77	63.23	518.29	8.20
4	3.64	155.42	51.32	116.96	20.53	81.68	3.98	103.26	518.29	5.02

• **Normative**

Eurocode 7 EN 1997-1 (EU)

DESIGN APPROACH 1: M1+R1±Kh±Kv
Seismic Condition

Partial Factors

		Overturning	
Coefficient of shearing resistance	$\gamma\phi'$	1.00	1.25
Effective cohesion	$\gamma c'$	1.00	1.25
Undrained shear strength	γc_u	1.00	1.40
Permanent action (G) Unfavourable	$\gamma G; unfav$	1.00	1.00
Permanent action (G) Favourable	$\gamma G; fav$	1.00	1.00
Variable action (Q) Unfavourable	$\gamma Q; unfav$	1.00	1.00
Variable action (Q) Favourable	$\gamma Q; fav$	1.00	1.00
Bearing resistance	γR_v	1.00	1.00
Sliding resistance	γR_h	1.00	1.00
Overturning resistance	γR_m	1.00	1.00
Earth internal resistance shear	$\gamma Re; intShear$	1.00	1.00
Earth internal resistance compression	$\gamma Re; intComp$	1.00	1.00
Earth overall resistance	$\gamma Re; overall$	1.00	1.00
Gabion wall weight	$\gamma G; Wall$	1.00	1.00
Water Thrust	$\gamma Water$	1.00	1.00

Illu
(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

TARIFF FILING FORMS (TRANSMISSION & COMMUNICATION SYSTEM) FOR DETERMINATION OF TARIFF

PART-III Annexure-I

INDEX

PART-III

Checklist of Forms and other information/ documents for tariff filing for
Transmission System& Communication System

Form No.	Title of Tariff Filing Forms (Transmission& Communication System)	Tick
FORM- 1	Summary of Tariff	✓
FORM- 1A	Summary of Asset level cost	✓
FORM-2	Details of Transmission Lines and Substations and Communication System covered in the project scope and O&M for instant asset	✓
FORM-3	Normative parameters considered for tariff computations	✓
FORM- 4	Abstract of existing transmission assets/elements under project, Determination of Effective COD and Weighted Average Life for single AFC for the project as whole.	NA
FORM- 4A	Statement of Capital cost	NA
FORM- 4B	Statement of Capital Works in Progress	NA
FORM- 4C	Abstract of Capital Cost Estimates and Schedule of Commissioning for the New Project/Element	NA
FORM-5	Element wise Break-up of Project/Asset/Element Cost for Transmission System or Communication System	NA
FORM-5A	Break-up of Construction/Supply/Service packages	NA
FORM-5B	Details of all the assets covered in the project	NA
FORM- 6	Actual Cash Expenditure and Financial Package up to COD	✓
FORM- 7	Statement of Additional Capitalisation after COD	✓
FORM- 7A	Financing of Additional Capitalisation	✓
FORM- 7B	Statement of Additional Capitalisation during five year before the end of the useful life of the project.	NA
FORM- 8	Calculation of Return on Equity	✓
FORM-8A	Details of Foreign Equity	NA
FORM-9	Details of Allocation of corporate loans to various transmission elements	NA
FORM-9A	Details of Project Specific Loans	NA
FORM-9B	Details of Foreign loans	NA
FORM-9C	Calculation of Weighted Average Rate of Interest on Actual Loans	NA
FORM-9D	Loans in Foreign Currency	NA
FORM-9E	Calculation of Interest on Normative Loan	NA
FORM- 10	Calculation of Depreciation Rate on original project cost	✓
FORM- 10A	Statement of Depreciation	✓
FORM- 10B	Statement of De-capitalisation	NA
FORM- 11	Calculation of Interest on Working Capital	✓
FORM- 12	Details of time over run	NA
FORM- 12A	Incidental Expenditure during Construction	NA
FORM- 12B	Calculation of IDC & Financing Charges	NA
FORM- 13	Details of Initial spares	NA
FORM- 14	Non-Tariff Income	NA
FORM- 15	Summary of issue involved in the petition	NA
FORM A	Summary of Capital Cost & Annual Fixed Cost (AFC) Claimed for ALL the assets covered in the present petition.	NA
Appendix -1	Details of Asset-wise and Vendor-wise liability	NA

(E. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

Summary of Tariff										PART-III FORM-1	
Name of the Transmission Element: 400 kV Substation Srinagar (Asset-I: 400/220 kV 02x03x105 ICT, 220/132 kV 02x160 MVA ICT along with bays) (Deemed ISTS) under UIIP Scheme - Group A											
S.No.	Particulars	Form No.	2019-20	2020-21	2021-22	2022-23	2023-24				
1	2	3	4	5	6	7	8				
1	Depreciation	10A	656.45	657.72	658.41	659.69	660.96				
2	Interest on Loan	9E	0.00	0.00	0.00	0.00	0.00				
3	Return on Equity	8	722.08	724.22	725.39	727.53	729.69				
4	Interest on Working Capital	11	40.81	38.86	36.90	37.61	43.79				
5	O & M Expenses	2	460.87	477.39	494.16	511.78	529.21				
	Total AFC		1880.21	1898.19	1914.85	1936.61	1963.65				
(Petitioner)											


 (Er. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL





Summary of Asset Level Cost									
PART-III FORM-1A									
Name of the Transmission Element: 400 kV Substation Srinagar (Asset-I: 400/220 kV 02x03x105 ICT, 220/132 kV 02x160 MVA ICT along with bays) (Deemed ISTS) under UITP Scheme - Group A									
(Amount in Rs. Lakh)									
A) Summary of Capital Cost, Means of Finance of the Asset									
Particular	i) Apportioned Approved Cost		II) Summary of Actual / Projected Capital Cost						
	as per IA	As per RCE	As on 1.4.2019	2019-20 (Actual)	2020-21 (Actual)	2021-22 (Actual)	2022-23 (Actual)	2023-24 (Actual)	as on 31.03.2024
Land (Freehold Land)									0
Land (Leasehold)			312.35						312.35
Building & Civil Works			861.95	45.70	30.28	11.20	65.06	11.31	1025.49
Transmission Line			0.00						0.00
Sub-Station			11330.33						11330.33
PLCC			287.92						287.92
Total Capital Cost as per Books									0.00
Less: Liability									0.00
Add: Discharge of Liability									0.00
Total Capital Cost			12792.55	45.70	30.28	11.20	65.06	11.31	12956.09
Equity	0	0	3837.75	13.71	8.08	3.35	19.52	3.39	3886.83
Debt	0	0	8954.78	31.99	21.20	7.84	45.54	7.92	9069.27

[Signature]

(Er. ILLA CHANDRA)

Chief Engineer

(Commercial & Regulatory)
PTCUL

[Signature]

Category	39.2	40.84
number of bays is inclusive of line bays, ICT bays, reactor bays etc. Each ICT bays, line bays, reactor bays shall be considered separately for purpose of O&M expenses.		

4) Summary of O&M Expenses claim

S. No	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
	A) Normative O&M					
1	Transmission line					
2	Substation	460.87	477.39	494.16	511.76	529.21
3	Communication System	0.00	0.00	0.00	0.00	0.00
	Total Normative O&M	460.87	477.39	494.16	511.76	529.21
	B) O&M Claimed under Regulation 3s (3)(C)					
1	Security Expenses	0.00	0.00	0.00	0.00	0.00
2	Actual Capital Spares consumed	0.00	0.00	0.00	0.00	0.00
3	Total O&M	460.87	477.39	494.16	511.76	529.21

Note: The security expenses and Capital Spares are to be submitted on estimated basis for the purpose of O&M expenses, in case of additional security deployed, the petitioner shall indicate the same. The actual security and Capital Spares expenses to be provided at the time of true up



Petitioner

(Er: ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL



PART-III FORM-3							
Normative parameters considered for tariff computation							
Name of the Transmission Element: 400 kV Substation Srinagar (Asset-I: 400/220 kV 02x03x105 ICT, 220/132 kV 02x160 MVA ICT along with bays) (Deemed ISTS) under UITP Scheme - Group A							
Particulars	Unit (1)	(2)	2019-20 (3)	2020-21 (4)	2021-22 (5)	2022-23 (6)	2023-24 (7)
Base Rate of Return on Equity	%		15.50%	15.50%	15.50%	15.50%	15.50%
Effective tax rate ²	%		17.47%	17.47%	17.47%	17.47%	17.47%
Target Availability	%		98.00%	98.00%	98.00%	98.00%	98.00%
Normative O&M per 400kV bay	Rs. Lakh		32.15	33.28	34.45	35.66	36.91
Normative O&M per 220 kV bay	Rs. Lakh		22.51	23.30	24.12	24.96	25.84
Normative O&M per MVA (400 kV)	Rs. Lakh		0.36	0.37	0.38	0.40	0.41
Normative O&M per MVA (220 kV)	Rs. Lakh		0.25	0.25	0.26	0.27	0.28
Spares for WC as % of O&M	%		15	15	15	15	15
Receivables in Days for WC	Days		45	45	45	45	45
Bank Rate as on first day of financial year ³	%		12.05%	11.25%	10.50%	10.50%	12.00%
Lapsed life as on 01.04.2019 and beginning of every year (in completed years)	No. of years		2.00	3.00	4.00	5.00	6.00

[Signature]

(Petitioner)

(ET. ILLA CHANDRA)

Chief Engineer
(Commercial & Regulatory)
PTCUL

[Signature]

Actual Cash Expenditure and Financial Package upto 1.4.2019

PART-III
FORM-6

Name of the Transmission Element: 400 kV Substation Srinagar (Asset-I: 400/220 kV 02x03x105 ICT, 220/132 kV 02x160 MVA ICT along with bays) (Deemed ISTS) under UTP Scheme - Group A

(Rupees in Lakh)

B) Financial package

	Financial Package as Approved			Financial Package as on 1.4.2019			As Admitted on COD	
	Currency and Amount		3	Currency and Amount		5	Currency and Amount	
1	2			4			6	7
Loan-I								
Loan-II								
and so on								
Total Loans	INR		16162.61	INR		8954.78	INR	
Equity-								
Foreign								
Domestic								
Total Equity	INR		6926.83	INR		3837.76	INR	
Debt : Equity Ratio								
Total Cost	INR		23089.44	INR		12792.54972	INR	
Add Cap.	Debt		Equity	Actual Debt		Actual Equity	Debt	
Add cap for 2019-20					31.99	13.71		
Add cap for 2020-21					21.20	9.08		
Add cap for 2021-22					7.84	3.36		
Add cap for 2022-23					45.54	19.52		
Add cap for 2023-24					7.92	3.39		
Total Capital Cost with add cap.					12956.09			



(Fr. II (Petitioner) DRA)

Chief Engineer
(Commercial & Regulation)
PTCUL


Statement of Additional Capitalisation after COD

Name of the Transmission Element: 400/220 kV Substation Srinagar (Asset-I: 400/220 kV 02x03x105 ICT, 220/132 kV 02x160 MVA ICT along with bays) (Deemed ISTS) under UTP Scheme - Group A

A) ACE for the year : 2019-20 (Actual)

Particulars	Addition into Gross Block as per books of Account during the year	Less: Deductions during the year towards				Add: Discharge of earlier admitted liability	ACE on cash basis for tariff purpose	Admitted Cost in final tariff' (Rs Lakh)
		Grants Received (if any)	Asset pertaining to other business (if any)	Other Deduction (if any)	Less: Un-discharged liability included in (2-4-5)			
1	2	3	4	5	6	7	8=(2-3-4-5-6+7)	
Land (Freehold)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Land (Leasehold)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Building, Civil Work	45.70	0.00	0.00	0.00	0.00	0.00	45.70	
Transmission Line	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Sub-Station	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
PLCC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Total	45.70	0.00	0.00	0.00	0.00	0.00	45.70	

ACE for the year : 2020-21 (Actual)

Particulars	Addition into Gross Block as per books of Account during the year	Less: Deductions dr. the year towards				Add: Discharge of earlier admitted liability	ACE on cash basis for tariff purpose	Admitted Cost in final tariff' (Rs Lakh)
		Grants Received (if any)	Asset pertaining to other business (if any)	Other Deduction (if any)	Less: Un-discharged liability included in (2-4-5)			
1	2	3	4	5	6	7	8=(2-3-4-5-6+7)	
Land (Freehold)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Land (Leasehold)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Building, Civil Work	30.28	0.00	0.00	0.00	0.00	0.00	30.28	
Transmission Line	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Sub-Station	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
PLCC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Total	30.28	0.00	0.00	0.00	0.00	0.00	30.28	
							0.00	

ACE for the year : 2021-22 (Actual)

Particulars	Addition into Gross Block as per books of Account during the year	Less: Deductions dr. the year towards				Add: Discharge of earlier admitted liability	ACE on cash basis for tariff purpose	Admitted Cost in final tariff' (Rs Lakh)
		Grants Received (if any)	Asset pertaining to other business (if any)	Other Deduction (if any)	Less: Un-discharged liability included in (2-4-5)			
1	2	3	4	5	6	7	8=(2-3-4-5-6+7)	
Land (Freehold)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Land (Leasehold)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Building, Civil Work	11.20	0.00	0.00	0.00	0.00	0.00	11.20	
Transmission Line	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Sub-Station	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
PLCC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Total	11.20	0.00	0.00	0.00	0.00	0.00	11.20	

905

(E. ILLA CHANDRA)

Chief Engineer
(Commercial & Regulatory)
PTCUL

ACE for the year : 2022-23 (Actual)

Particulars	Addition into Gross Block as per books of Account during the year	Less: Deductions dr. the year towards					Add: Discharge of earlier admitted liability	ACE on cash basis for tariff purpose	Admitted Cost in final tariff ¹ (Rs Lakh)
		Grants Received (if any)	Asset pertaining to other business (if any)	Other Deduction (if any)	Less: Un-discharged liability included in (2-4-5)	6			
1	2	3	4	5	6			8=(2-3-4-5-6+7)	
Land (Freehold)	0.00	0.00	0.00	0.00	0.00		0.00	0.00	
Land (Leasehold)	0.00	0.00	0.00	0.00	0.00		0.00	0.00	
Building, Civil Work	65.06	0.00	0.00	0.00	0.00		0.00	65.06	
Transmission Line	0.00	0.00	0.00	0.00	0.00		0.00	0.00	
Sub-Station	0.00	0.00	0.00	0.00	0.00		0.00	0.00	
PLCC	0.00	0.00	0.00	0.00	0.00		0.00	0.00	
Total	65.06	0.00	0.00	0.00	0.00		0.00	65.06	

ACE for the year : 2023-24 (Actual)

Particulars	Addition into Gross Block as per books of Account during the year	Less: Deductions dr. the year towards					Add: Discharge of earlier admitted liability	ACE on cash basis for tariff purpose	Admitted Cost in final tariff ¹ (Rs Lakh)
		Grants Received (if any)	Asset pertaining to other business (if any)	Other Deduction (if any)	Less: Un-discharged liability included in (2-4-5)	6			
1	2	3	4	5	6			8=(2-3-4-5-6+7)	
Land (Freehold)	0.00	0.00	0.00	0.00	0.00		0.00	0.00	
Land (Leasehold)	0.00	0.00	0.00	0.00	0.00		0.00	0.00	
Building, Civil Work	11.31	0.00	0.00	0.00	0.00		0.00	11.31	
Transmission Line	0.00	0.00	0.00	0.00	0.00		0.00	0.00	
Sub-Station	0.00	0.00	0.00	0.00	0.00		0.00	0.00	
PLCC	0.00	0.00	0.00	0.00	0.00		0.00	0.00	
Total	11.31	0.00	0.00	0.00	0.00		0.00	11.31	

B) Regulation wise ACE claim on Cash basis

Regulation No.	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Reg. 24	ACE within the original scope and upto the cut-off date.					
24 (1) (a)	Un-discharged liabilities recognized to be payable at a future					
24 (1) (b)	Works deferred for execution					
24 (1) (c)	Procurement of initial capital spares					
24 (1) (d)	Liabilities to meet award of arbitration etc.					
24 (1) (e)	Change in law or compliance of any existing law					

[Signature]

[Signature]

(E. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

B) Regulation wise ACE claim on Cash basis							
Regulation No.	Particulars		2019-20	2020-21	2021-22	2022-23	2023-24
24 (1) (f)	Force Majeure events						
Total under Regulation 24							
Reg. 25	ACE within the original scope and after the cut-off date						
25 (1) (a)	Liabilities to meet award of arbitration etc.						
25 (1) (b)	Change in law or compliance of any existing law						
25 (1) (d)	Liability for works executed prior to the cut-off date		45.70	30.28	11.20	65.06	11.31
25 (1) (e)	Force Majeure events						
25 (1) (f)	Liability for works admitted by the Commission after the cut-off						
Total under Regulation 25							
Reg. 26	ACE beyond the original scope:						
26 (1) (a)	Liabilities to meet award of arbitration etc.						
26 (1) (b)	Change in law or compliance of any existing law;						
26 (1) (c)	Force Majeure Events;						
26(1) (d)	Need for higher security and safety of the plant....						
Total under Regulation 26							
27 (4)	R&M for extension of life beyond the originally recognized useful life (with the consent of Long Term Customers)						
Total ACE claimed for tariff							
Total Admitted ACE during Final tariff ¹ .			45.70	30.28	11.20	65.06	11.31

[Signature]

(Er. J. J. ANDRA)

Chief Engineer
(Commercial & Regulatory)
PTCUL

[Signature]

	Actual/Projected					Admitted				
Financial Year (Starting from COD)	2019-20	2020-21	2021-22	2022-23	2023-24	2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6	7	8	9	10	11
Amount capitalised in Work/Equipment	45.70	30.28	11.20	65.06	11.31	0.00	191.64	-6.03	-51.82	0.00
Financing Details										
Loan-1	31.99	21.20	7.84	45.54	7.92	0.00	134.15	-4.22	-36.27	0.00
Total Loan	31.99	21.20	7.84	45.54	7.92	0.00	134.15	-4.22	-36.27	0.00
Equity	13.71	9.08	3.36	19.52	3.39	0.00	57.49	-1.81	-15.55	0.00
Internal Resources										
Others										
Total	45.70	30.28	11.20	65.06	11.31	0.00	191.64	-6.03	-51.82	0.00

(Petitioner)
(E. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

PART-III
FORM 8

Calculation of Return on Equity at Normal Rate

Name of the Transmission Element: 400 KV Substation Srinagar (Asset-I: 400/220 KV 02x03x105 ICT, 220/132 KV 02x160 MVA ICT along with bays)
(Deemed ISTS) under UTP Scheme - Group A

(Amount in Rs. Lakh)

S. No	Particulars	As on 01-04-2019 / as on COD whichever is later	2019- 20	2020- 21	2021- 22	2022- 23	2023- 24
(1)	(2)		(3)	(4)	(5)	(6)	(7)
	No. of Days in the year		366	365	365	365	366
	No. of days for which tariff claimed		366.00	365.00	365.00	365.00	366.00
1	Opening Normative Equity	-	3837.76	3851.47	3860.56	3863.92	3883.44
2	Less: Adjustment in Equity*		0.00	0.00	0.00	0.00	0.00
3	Adjustment during the year		0.00	0.00	0.00	0.00	0.00
4	Net Opening Equity (Normal)		3837.76	3851.47	3860.56	3863.92	3883.44
5	Add: Increase in Equity due to addition during the year/period		13.71	9.08	3.36	19.52	3.39
6	Less: Decrease due to de-capitalisation during the year		0.00	0.00	0.00	0.00	0.00
7	Add: Increase due to discharges during the year/period		0.00	0.00	0.00	0.00	0.00
8	Closing Normative Equity		3851.47	3860.56	3863.92	3883.44	3886.83
9	Average Normative Equity		3844.62	3856.02	3862.24	3873.68	3885.13
11	Rate of Return on Equity (Base Rate)		15.50%	15.50%	15.50%	15.50%	15.50%
13	Effective tax rate / MAT rate for the respective years		17.47%	17.47%	17.47%	17.47%	17.47%
14	Rate of Return on Equity (Pre Tax)		18.78%	18.78%	18.78%	18.78%	18.78%
15	Return on Equity on project cost till Cutoff date		722.08	724.22	725.39	727.53	729.69

[Signature]

(E. ILLA CHANDRA)
(Petitioner)
Chief Engineer

(Commercial & Regulatory)
PTCUL

[Signature]

Calculation of Depreciation Rate on original project cost
Name of the Transmission Element: 400 kV Substation Srinagar (Asset-I: 400/220 kV 02x03x105 ICT, 220/132 kV 02x160 MVA ICT along with bays) (Deemed ISTS) under UTP Scheme - Group A

(Amount in Rs. Lakh)

S. No.	Name of the Assets ¹	Gross Block as on 1.4.2019 and addition during the year	Depreciation Rates as per CERC's Depreciation Rate Schedule	Depreciation Amount for 2019-20
	1	2	3	4= Col.2 X Col.3
1	Land (Leasehold)	312.35	3.34%	10.43
2	Building & Civil	884.80	3.34%	29.55
3	Transmission Line	0.00	5.28%	0.00
4	Sub-Station	11330.33	5.28%	598.24
5	PLCC	287.92	6.33%	18.23
	TOTAL	12817.40		656.45
	Weighted Average Rate of Depreciation (%)			5.12%

S. No.	Name of the Assets ¹	Gross Block as on 1.4.2020 and addition during the year	Depreciation Rates as per CERC's Depreciation Rate Schedule	Depreciation Amount for 2020-21
	1	2	3	4= Col.2 X Col.3
1	Land (Leasehold)	312.35	3.34%	10.43
2	Building & Civil Works	922.79	3.34%	30.82
3	Transmission Line	0.00	5.28%	0.00
4	Sub-Station	11330.33	5.28%	598.24
5	PLCC	287.92	6.33%	18.23
	TOTAL	12855.39		657.72
	Weighted Average Rate of Depreciation (%)			5.12%

S. No.	Name of the Assets ¹	Gross Block as on 1.4.2021 and addition during the year	Depreciation Rates as per CERC's Depreciation Rate Schedule	Depreciation Amount for 2021-22
	1	2	3	4= Col.2 X Col.3
1	Land (Leasehold)	312.35	3.34%	10.43
2	Building & Civil Works	943.53	3.34%	31.51
3	Transmission Line	0.00	5.28%	0.00
4	Sub-Station	11330.33	5.28%	598.24
5	PLCC	287.92	6.33%	18.23
	TOTAL	12876.13		658.41
	Weighted Average Rate of Depreciation (%)			5.11%

(E. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

S. No.	Name of the Assets ¹	Gross Block as on 1.4.2022 and addition during the year	Depreciation Rates as per CERC's Depreciation Rate Schedule	Depreciation Amount for 2022-23
	1	2	3	4= Col.2 X Col.3
1	Land (Leasehold)	312.35	3.34%	10.43
2	Building & Civil Works	981.65	3.34%	32.79
3	Transmission Line	0.00	5.28%	0.00
4	Sub-Station	11330.33	5.28%	598.24
5	PLCC	287.92	6.33%	18.23
	TOTAL	12914.26		659.69
	Weighted Average Rate of Depreciation (%)			5.11%

S. No.	Name of the Assets ¹	Gross Block as on 1.4.2023 and addition during the year	Depreciation Rates as per CERC's Depreciation Rate Schedule	Depreciation Amount for 2023-24
	1	2	3	4= Col.2 X Col.3
1	Land (Leasehold)	312.35	3.34%	10.43
2	Building & Civil Works	1019.84	3.34%	34.06
3	Transmission Line	0.00	5.28%	0.00
4	Sub-Station	11330.33	5.28%	598.24
5	PLCC	287.92	6.33%	18.23
	TOTAL	12952.44		660.96
	Weighted Average Rate of Depreciation (%)			5.10%


 (Er. ILLUMINANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL





Name of the Transmission Element: 400 kV Substation Srinagar (Asset-I: 400/220 kV 02x03x105 ICT, 220/132 kV 02x160 MVA ICT along with bays)
(Deemed ISTS) under UTP Scheme - Group A

(Amount in Rs. Lakhs)

Statement of Depreciation									
S. No.	Particulars	As on 01-04-2019 / COD	2019-20	2020-21	2021-22	2022-23	2023-24		
I	No. of Days in the year		366	365	365	365	366		
II	No. of days for which tariff claimed								
	Life at the beginning of year								
1.1	Weighted Average useful Life of the Asset/Project		23	22	21	20	19		
1.2	Lapsed weighted average useful life of the asset/project (in Completed no. of Year).		2	3	4	5	6		
1.3	Balance weighted average useful life of the asset/project (in Completed no. of Years)								
	Capital Base								
1.4	Opening Capital Cost		12792.55	12838.25	12879.73	12879.73	12944.78		
1.5	Additional Capital Expenditure dr. the year		45.70	30.28	11.20	65.06	11.31		
1.6	De-Capitalisation during the year								
1.7	Closing Capital Cost		12838.25	12868.53	12879.73	12944.78	12956.09		
1.8	Average Capital Cost		12815.40	12853.39	12874.13	12912.26	12950.44		
1.9	Freehold land included in 1.8		0.00	0.00	0.00	0.00	0.00		
1.10	Asset having NIL Salvage value included in 1.8		0.00	0.00	0.00	0.00	0.00		
1.11	Asset having 10% Salvage value included in 1.8		12838.25	12868.53	12879.73	12944.78	12956.09		
1.12	Depreciable value (1.10+ 90% of 1.11)		11554.42	11581.68	11591.75	11650.31	11660.48		
	Depreciation for the period and Cum. Depreciation.								
1.13	Weighted Average Rate of depreciation		5.12%	5.12%	5.11%	5.11%	5.10%		
1.14	Depreciation (for the period)		656.45	657.72	658.41	659.69	660.96		
1.15	Depreciation (annualised)		656.45	657.72	658.41	659.69	660.96		
1.16	Cumulative depreciation at the beginning of the period		1738.93	2395.38	3053.10	3711.52	4371.20		
1.17	Less: Adj. of Cum.dep. pertaining to the decapitalised asset.								
1.18	Cumulative depreciation at the end of the period		2395.38	3053.10	3711.52	4371.20	5032.16		


(E. ILLA CHANDRA)
(Petitioner)
Chief Engineer
(Commercial & Regulatory)
PTCUL

Part-III
Form-11

Calculation of Interest on Working Capital
Name of the Transmission Element: 400 kV Substation Srinagar (Asset-I: 400/220 kV 02x03x105 ICT, 220/132 kV 02x160 MVA ICT along with bays) (Deemed ISTS) under UTP Scheme - Group A

(Amount in Rs. Lakh)

S. No.	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
I	No. of Days in the year	366	365	365	365	366
II	No. of days for which tariff claimed	366	365	365	365	366
1	O & M Expenses - one month	38.41	39.78	41.18	42.65	44.10
2	Maintenance Spares 15% of O&M Expenses	69.13	71.61	74.12	76.77	79.38
3	Receivables equivalent to 45 days of AFC	231.17	234.02	236.08	238.76	241.43
4	Total Working Capital	338.71	345.41	351.38	358.18	364.91
5	Bank rate as on 01.04.2019 or as on 01st April of the COD year, whichever is later.	12.05%	11.25%	10.50%	10.50%	12.00%
6	Interest on Working Capital	40.81	38.86	36.90	37.61	43.79


(Pt. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL





TARIFF FILING FORMS (TRANSMISSION & COMMUNICATION SYSTEM) FOR DETERMINATION OF TARIFF

PART-III Annexure-I

INDEX

PART-III

Checklist of Forms and other information/ documents for tariff filing for
Transmission System& Communication System

Form No.	Title of Tariff Filing Forms (Transmission& Communication System)	Tick
FORM- 1	Summary of Tariff	✓
FORM- 1A	Summary of Asset level cost	✓
FORM-2	Details of Transmission Lines and Substations and Communication System covered in the project scope and O&M for instant asset	✓
FORM-3	Normative parameters considered for tariff computations	✓
FORM- 4	Abstract of existing transmission assets/elements under project, Determination of Effective COD and Weighted Average Life for single AFC for the project as whole.	NA
FORM- 4A	Statement of Capital cost	NA
FORM- 4B	Statement of Capital Works in Progress	NA
FORM- 4C	Abstract of Capital Cost Estimates and Schedule of Commissioning for the New Project/Element	NA
FORM-5	Element wise Break-up of Project/Asset/Element Cost for Transmission System or Communication System	NA
FORM-5A	Break-up of Construction/Supply/Service packages	NA
FORM-5B	Details of all the assets covered in the project	NA
FORM- 6	Actual Cash Expenditure and Financial Package up to COD	✓
FORM- 7	Statement of Additional Capitalisation after COD	✓
FORM- 7A	Financing of Additional Capitalisation	✓
FORM- 7B	Statement of Additional Capitalisation during five year before the end of the useful life of the project.	NA
FORM- 8	Calculation of Return on Equity	✓
FORM-8A	Details of Foreign Equity	NA
FORM-9	Details of Allocation of corporate loans to various transmission elements	NA
FORM-9A	Details of Project Specific Loans	NA
FORM-9B	Details of Foreign loans	NA
FORM-9C	Calculation of Weighted Average Rate of Interest on Actual Loans	NA
FORM-9D	Loans in Foreign Currency	NA
FORM-9E	Calculation of Interest on Normative Loan	NA
FORM- 10	Calculation of Depreciation Rate on original project cost	✓
FORM- 10A	Statement of Depreciation	✓
FORM- 10B	Statement of De-capitalisation	NA
FORM- 11	Calculation of Interest on Working Capital	✓
FORM- 12	Details of time over run	NA
FORM- 12A	Incidental Expenditure during Construction	NA
FORM- 12B	Calculation of IDC & Financing Charges	NA
FORM- 13	Details of Initial spares	NA
FORM- 14	Non-Tariff Income	NA
FORM- 15	Summary of issue involved in the petition	NA
FORM A	Summary of Capital Cost & Annual Fixed Cost (AFC) Claimed for ALL the assets covered in the present petition.	NA
Appendix -1	Details of Asset-wise and Vendor-wise liability	NA

Shub
(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

Summary of Tariff										PART-III FORM-1	
Name of the Transmission Element: 400 kV Substation Srinagar (Asset-I: 400/220 kV 02x03x105 ICT, 220/132 kV 02x160 MVA ICT along with bays) (Deemed ISTS) under UTP Scheme - Group B											
S.No.	Particulars	Form No.	2019-20	2020-21	2021-22	2022-23	2023-24				
1	2	3	4	5	6	7	8				
1	Depreciation	10A	53.91	54.01	54.07	54.18	54.28				
2	Interest on Loan	9E	0.00	0.00	0.00	0.00	0.00				
3	Return on Equity	8	59.30	59.48	59.57	59.75	59.93				
4	Interest on Working Capital	11	1.70	1.60	1.49	1.49	1.71				
5	O & M Expenses	2	0.00	0.00	0.00	0.00	0.00				
	Total AFC		114.91	115.09	115.13	115.42	115.92				

[Signature]

(Petitioner)
(Er. J. L. DRA)

Chief Engineer
(Commercial & Regulatory)
PTCUL

[Signature]

Summary of Asset Level Cost

Name of the Transmission Element: 400 KV Substation Srinagar (Asset-I: 400/220 KV 02x03x105 ICT, 220/132 KV 02x160 MVA ICT along with bays) (Deemed ISTS) under UTP Scheme - Group B										(Amount in Rs. Lakh)
A) Summary of Capital Cost, Means of Finance of the Asset										
Particular	i) Apportioned Approved Cost	As per RCE	As on 1.4.2019	2019-20 (Actual)	2020-21 (Actual)	2021-22 (Actual)	2022-23 (Actual)	2023-24 (Actual)	as on 31.03.2024	
Land (Freehold Land)										0.00
Land (Leasehold)			25.64							25.64
Building & Civil Works			70.85	3.75	2.48	0.92	5.34	0.93		84.28
Transmission Line			0.00							0.00
Sub-Station			930.47							930.47
PLCC			23.64							23.64
Total Capital Cost as per Books										0.00
Less: Liability										0.00
Add: Discharge of liability										0.00
Total Capital Cost			1050.59	3.75	2.48	0.92	5.34	0.93		1064.03
Equity	0	0	315.18	1.13	0.75	0.28	1.60	0.28		319.21
Debt	0	0	735.42	2.63	1.74	0.64	3.74	0.65		744.82

[Signature]
 (Er. JILLAJA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL

Normative parameters considered for tariff computation

Name of the Transmission Element: 400 KV Substation Srinagar (Asset-I: 400/220 KV 02x03x105 ICT, 220/132 KV 02x160 MVA ICT along with bays) (Deemed ISTS) under UITP Scheme - Group B

Particulars	Unit	2019-20 (3)	2020-21 (4)	2021-22 (5)	2022-23 (6)	2023-24 (7)
Base Rate of Return on Equity	%	15.50%	15.50%	15.50%	15.50%	15.50%
Effective tax rate ²	%	17.47%	17.47%	17.47%	17.47%	17.47%
Target Availability	%	98.00%	98.00%	98.00%	98.00%	98.00%
Spares for WC as % of O&M	%	15	15	15	15	15
Receivables in Days for WC	Days	45	45	45	45	45
Bank Rate as on first day of financial year ³	%	12.05%	11.25%	10.50%	10.50%	12.00%
Lapsed life as on 01.04.2019 and beginning of every year(in completed years)	No. of years	2.00	3.00	4.00	5.00	6.00

(Petitioner)

(E. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL

Actual Cash Expenditure and Financial Package upto 1.4.2019							PART-III FORM-6	
Name of the Transmission Element: 400 kV Substation Srinagar (Asset-I: 400/220 kV 02x03x105 ICT, 220/132 kV 02x160 MVA ICT along with bays) (Deemed ISTS) under UTP Scheme - Group B								
B) Financial package								
1		Financial Package as Approved		Financial Package as on 1.4.2019		As Admitted on COD		
		Currency and Amount		Currency and Amount		Currency and Amount		
		2	3	4	5	6	7	
Loan-I								
Loan-II								
and so on								
Total Loans		INR	16162.61	INR	735.42	INR		
Equity-								
Foreign								
Domestic								
Total Equity		INR	6926.83	INR	315.18	INR		
Debt : Equity Ratio								
Total Cost		INR	23089.44	INR	1050.594767	INR		
Add Cap.			Debt	Equity	Actual Debt	Actual Equity	Debt	
Add cap for 2019-20					2.63		1.13	
Add cap for 2020-21					1.74		0.75	
Add cap for 2021-22					0.64		0.28	
Add cap for 2022-23					3.74		1.60	
Add cap for 2023-24					0.65		0.28	
Total Capital Cost with add cap.					1064.03			

(Petitioner)
(**ER. ILECHANDRA**)
Chief Engineer
(Commercial & Regulatory)
PTOUL

Statement of Additional Capitalisation after COO

PART-III

A) ACE for the year : 2019-20 (Actual)

Particulars	Addition into Gross Block as per books of Account during the year					Less: Deductions dr. the year towards		Add: Discharge of earlier admitted liability	ACE on cash basis for tariff purpose	Admitted Cost in final tariff ¹ (Rs Lakh)
	Grants Received (if any)	Asset pertaining to other business (if any)	Other Deduction (if any)	Less: Un-discharged liability included in (2-4-5)						
1	2	3	4	5	6	7			B=(2-3+4-5-6+7)	
Land (Freehold Land)	0.00	0.00	0.00	0.00	0.00	0.00			0.00	
Land (Leasehold)	0.00	0.00	0.00	0.00	0.00	0.00			0.00	
Building, Civil Work	3.75	0.00	0.00	0.00	0.00	0.00			3.75	
Transmission Line	0.00	0.00	0.00	0.00	0.00	0.00			0.00	
Sub-Station	0.00	0.00	0.00	0.00	0.00	0.00			0.00	
PLCC	0.00	0.00	0.00	0.00	0.00	0.00			0.00	
Total	3.75	0.00	0.00	0.00	0.00	0.00			3.75	

ACE for the year : 2020-21 (Actual)

Particulars	Addition into Gross Block as per books of Account during the year					Less: Deductions dr. the year towards		Add: Discharge of earlier admitted liability	ACE on cash basis for tariff purpose	Admitted Cost in final tariff ¹ (Rs Lakh)
	Grants Received (if any)	Asset pertaining to other business (if any)	Other Deduction (if any)	Less: Un-discharged liability included in (2-4-5)						
1	2	3	4	5	6	7			B=(2-3+4-5-6+7)	
Land (Freehold Land)	0.00	0.00	0.00	0.00	0.00	0.00			0.00	
Land (Leasehold)	0.00	0.00	0.00	0.00	0.00	0.00			0.00	
Building, Civil Work	2.49	0.00	0.00	0.00	0.00	0.00			2.49	
Transmission Line	0.00	0.00	0.00	0.00	0.00	0.00			0.00	
Sub-Station	0.00	0.00	0.00	0.00	0.00	0.00			0.00	
PLCC	0.00	0.00	0.00	0.00	0.00	0.00			0.00	
Total	2.49	0.00	0.00	0.00	0.00	0.00			2.49	

ACE for the year : 2021-22 (Actual)

Particulars	Addition into Gross Block as per books of Account during the year					Less: Deductions dr. the year towards		Add: Discharge of earlier admitted liability	ACE on cash basis for tariff purpose	Admitted Cost in final tariff ¹ (Rs Lakh)
	Grants Received (if any)	Asset pertaining to other business (if any)	Other Deduction (if any)	Less: Un-discharged liability included in (2-4-5)						
1	2	3	4	5	6	7			B=(2-3+4-5-6+7)	
Land (Freehold Land)	0.00	0.00	0.00	0.00	0.00	0.00			0.00	
Land (Leasehold)	0.00	0.00	0.00	0.00	0.00	0.00			0.00	
Building, Civil Work	0.92	0.00	0.00	0.00	0.00	0.00			0.92	
Transmission Line	0.00	0.00	0.00	0.00	0.00	0.00			0.00	
Sub-Station	0.00	0.00	0.00	0.00	0.00	0.00			0.00	
PLCC	0.00	0.00	0.00	0.00	0.00	0.00			0.00	
Total	0.92	0.00	0.00	0.00	0.00	0.00			0.92	

17/9

(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCL

ACE for the year : 2022-23 (Actual)									
Particulars	Addition into Gross Block as per books of Account during the year					Less: Deductions dr. the year towards			
	Grants Received (if any)	Asset pertaining to other business (if any)	Other Deduction (if any)	Less: Un-discharged liability included in (2-4-5)		Add: Discharge of earlier admitted liability	ACE on cash basis for tariff purpose		Admitted Cost in final tariff (Rs Lakh)
1	2	3	4	5	6	7	8=(2+3+5-6+7)		
Land (Freehold Land)	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Land (Leasehold)	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Building, Civil Work	5.34	0.00	0.00	0.00	0.00	0.00	5.34		
Transmission Line	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Sub-Station	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
PLCC	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Total	5.34	0.00	0.00	0.00	0.00	0.00	5.34		

ACE for the year : 2023-24 (Actual)									
Particulars	Addition into Gross Block as per books of Account during the year					Less: Deductions dr. the year towards			
	Grants Received (if any)	Asset pertaining to other business (if any)	Other Deduction (if any)	Less: Un-discharged liability included in (2-4-5)		Add: Discharge of earlier admitted liability	ACE on cash basis for tariff purpose		Admitted Cost in final tariff (Rs Lakh)
1	2	3	4	5	6	7	8=(2+3+5-6+7)		
Land (Freehold Land)	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Land (Leasehold)	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Building, Civil Work	0.93	0.00	0.00	0.00	0.00	0.00	0.93		
Transmission Line	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Sub-Station	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
PLCC	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Total	0.93	0.00	0.00	0.00	0.00	0.00	0.93		

B) Regulation wise ACE claim on Cash basis					
Regulation No.	Particulars				
Reg. 24	ACE within the original scope and upto the cut-off date.				
24 (1) (a)	Un-discharged liabilities recognized to be payable at a future				
24 (1) (b)	Works deferred for execution				
24 (1) (c)	Procurement of initial capital spares				
24 (1) (d)	Liabilities to meet award of arbitration etc.				
24 (1) (e)	Change in law or compliance of any existing law.				


(ER. ILA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL

B) Regulation wise ACE claim on Cash basis						
Regulation No.	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
24 (1) (i)	Force Majeure events					
Total under Regulation 24						
Reg. 25	ACE within the original scope and after the cut-off date					
25 (1) (a)	Liabilities to meet award of arbitration etc.					
25 (1) (b)	Change in law or compliance of any existing law					
25 (1) (c)	Liability for works executed prior to the cut-off date	3.75	2.48	0.92	5.34	0.93
25 (1) (d)	Force Majeure events					
25 (1) (e)	Liability for works admitted by the Commission after the cut-off					
Total under Regulation 25						
Reg. 26	ACE beyond the original scope:					
26 (1) (a)	Liabilities to meet award of arbitration etc.					
26 (1) (b)	Change in law or compliance of any existing law;					
26 (1) (c)	Force Majeure Events;					
26 (1) (d)	Need for higher security and safety of the plant. ...					
Total under Regulation 26						
27 (4)	R&M for extension of life beyond the originally recognized useful life (with the consent of Long Term Customers)					
Total ACE claimed for tariff						
Total Admitted ACE during Final tariff.						
		3.75	2.48	0.92	5.34	0.93



(E. ILLA CHANDRA)

Chief Engineer
(Commercial & Regulatory)
PTCUL



Financing of Additional Capitalisation

Name of the Transmission Element: 400 kV Substation Srinagar (Asset-I: 400/220 kV 02x03x105 ICT, 220/132 kV 02x160 MVA ICT along with bays) (Deemed ISTS) under UTP Scheme - Group B

Part-III
Form 7A

		Actual						Admitted				(Amount in Rs. Lakh)
		2019-20	2020-21	2021-22	2022-23	2023-24	2019-20	2020-21	2021-22	2022-23	2023-24	
Financial Year (Starting from COD)												
1		2	3	4	5	6	7	8	9	10	11	
Amount capitalised in Work/Equipment		3.75	2.49	0.92	5.34	0.93		15.77	-0.5	-4.26		
Financing Details												
Loan-1		2.63	1.74	0.64	3.74	0.65		11.04	-0.35	-2.98		
Total Loan		2.63	1.74	0.64	3.74	0.65		11.04	-0.35	-2.98		
Equity		1.13	0.75	0.28	1.60	0.28		4.73	-0.15	-1.28		
Internal Resources												
Others												
Total		3.75	2.49	0.92	5.34	0.93		15.77	-0.50	-4.26		

[Handwritten signature]

[Handwritten signature]
(Er. II. CHANDRA)
(Petitioner)
Chief Engineer
(Commercial & Regulatory)
PTCUL

PART-III
FORM 8

Calculation of Return on Equity at Normal Rate

Name of the Transmission Element: 400 kV Substation Srinagar (Asset-I: 400/220 kV 02x03x105 ICT, 220/132 kV 02x160 MVA ICT along with bays) (Deemed ISTS) under UITP Scheme - Group B

(Amount in Rs. Lakh)

S. No	Particulars	As on 01-04-2019 / as on COD whichever is later	2019- 20	2020- 21	2021- 22	2022- 23	2023- 24
(1)	(2)		(3)	(4)	(5)	(6)	(7)
	No. of Days in the year		366	365	365	365	366
	No. of days for which tariff claimed		366.00	365.00	365.00	365.00	366.00
1	Opening Normative Equity	-	315.18	316.30	317.05	317.33	318.93
2	Less: Adjustment in Equity*		0.00	0.00	0.00	0.00	0.00
3	Adjustment during the year		0.00	0.00	0.00	0.00	0.00
4	Net Opening Equity (Normal)		315.18	316.30	317.05	317.33	318.93
5	Add: Increase in Equity due to addition during the year/period		1.13	0.75	0.28	1.60	0.28
6	Less: Decrease due to de-capitalisation during the year		0.00	0.00	0.00	0.00	0.00
7	Add: Increase due to discharges during the year/period		0.00	0.00	0.00	0.00	0.00
8	Closing Normative Equity		316.30	317.05	317.33	318.93	319.21
9	Average Normative Equity		315.74	316.68	317.19	318.13	319.07
11	Rate of Return on Equity (Base Rate)		15.50%	15.50%	15.50%	15.50%	15.50%
13	Effective tax rate / MAT rate for the respective years		17.47%	17.472%	17.47%	17.47%	17.47%
14	Rate of Return on Equity (Pre Tax)		18.782%	18.782%	18.78%	18.78%	18.78%
15	Return on Equity on project cost till Cutoff date (Pre Tax)		59.30	59.48	59.57	59.75	59.93

(E. ILL CHANDRA)
(Petitioner)
Chief Engineer

(Commercial & Regulatory)
PTCUL

Calculation of Depreciation Rate on original project cost
Name of the Transmission Element: 400 kV Substation Srinagar (Asset-I: 400/220 kV 02x03x105 ICT, 220/132 kV 02x160 MVA ICT along with bays) (Deemed ISTS) under UTP Scheme - Group B

S. No.	Name of the Assets ¹	Gross Block as on 1.4.2019 and addition during the year	Depreciation Rates as per Schedule	Depreciation Amount for 2020-21
1	Land (Leasehold)	25.64	3.34%	0.86
2	Building & Civil Works	72.72	3.34%	2.43
3	Transmission Line	0.00	5.28%	0.00
4	Sub-Station	930.47	5.28%	49.13
5	PLCC	23.64	6.33%	1.50
	TOTAL	1052.47		53.91
	Weighted Average Rate of Depreciation (%)			5.12%

S. No.	Name of the Assets ¹	Gross Block as on 1.4.2020 and addition during the year	Depreciation Rates as per Schedule	Depreciation Amount for 2021-22
1	Land (Leasehold)	25.64	3.34%	0.86
2	Building & Civil Works	75.84	3.34%	2.53
3	Transmission Line	0.00	5.28%	0.00
4	Sub-Station	930.47	5.28%	49.13
5	PLCC	23.64	6.33%	1.50
	TOTAL	1055.59		54.01
	Weighted Average Rate of Depreciation (%)			5.12%

S. No.	Name of the Assets ¹	Gross Block as on 1.4.2021 and addition during the year	Depreciation Rates as per Schedule	Depreciation Amount for 2022-23
1	Land (Leasehold)	25.64	3.34%	0.86
2	Building & Civil Works	77.55	3.34%	2.59
3	Transmission Line	0.00	5.28%	0.00
4	Sub-Station	930.47	5.28%	49.13
5	PLCC	23.64	6.33%	1.50
	TOTAL	1057.29		54.07
	Weighted Average Rate of Depreciation (%)			5.11%

(Er. ILLA CHANDRA)

Chief Engineer
(Commercial & Regulatory)

S. No.	Name of the Assets ¹	Gross Block as on 1.4.2022 and addition during the year	Depreciation Rates as per CERC's Depreciation Rate Schedule	Depreciation Amount for 2022-23
	1	2	3	4 = Col.2 X Col.3
1	Land (Leasehold)	25.64	3.34%	0.86
2	Building & Civil Works	80.68	3.34%	2.69
3	Transmission Line	0.00	5.28%	0.00
4	Sub-Station	930.47	5.28%	49.13
5	PLCC	23.64	6.33%	1.50
	TOTAL	1060.43		54.18
	Weighted Average Rate of Depreciation (%)			5.11%

S. No.	Name of the Assets ¹	Gross Block as on 1.4.2023 and addition during the year	Depreciation Rates as per CERC's Depreciation Rate Schedule	Depreciation Amount for 2023-24
	1	2	3	4 = Col.2 X Col.3
1	Land (Leasehold)	25.64	3.34%	0.86
2	Building & Civil Works	83.82	3.34%	2.80
3	Transmission Line	0.00	5.28%	0.00
4	Sub-Station	930.47	5.28%	49.13
5	PLCC	23.64	6.33%	1.50
	TOTAL	1063.57		54.28
	Weighted Average Rate of Depreciation (%)			5.10%



Petitioner

(E. ILLA CHANDRA)

Chief Engineer
(Commercial & Regulatory)
PTCUL

Name of the Transmission Element: 400 kV Substation Srinagar (Asset-I: 400/220 kV 02x03x105 ICT, 220/132 kV 02x160 MVA ICT along with bays)
(Deemed ISTS) under UTP Scheme - Group B

Part-III
Form 10A

(Amount in Rs. Lakh)

Statement of Depreciation									
S. No.	Particulars		As on 01-04-2019	2019-20	2020-21	2021-22	2022-23	2023-24	
I	No. of Days in the year			366	365	365	365	366	
II	No. of days for which tariff claimed								
	Life at the beginning of year								
1.1	Weighted Average useful Life of the Asset/Project.			23	22	21	20	19	
1.2	Lapsed weighted average useful life of the asset/project (in Completed no. of Year).			2	3	4	5	6	
1.3	Balance weighted average useful life of the asset/project (in Completed no. of Years)								
	Capital Base								
1.4	Opening Capital Cost			1050.59	1054.35	1056.83	1057.75	1063.10	
1.5	Additional Capital Expenditure dr. the year			3.75	2.49	0.92	5.34	0.93	
1.6	De-Capitalisation during the year								
1.7	Closing Capital Cost			1054.35	1056.83	1057.75	1063.10	1064.03	
1.8	Average Capital Cost			1052.47	1055.59	1057.29	1060.43	1063.56	
1.9	Freehold land included in 1.8			0.00	0.00	0.00	0.00	0.00	
1.10	Asset having NIL Salvage value included in 1.8			0.00	0.00	0.00	0.00	0.00	
1.11	Asset having 10% Salvage value included in 1.8			1054.35	1056.83	1057.75	1063.10	1064.03	
1.12	Depreciable value (1.10+ 90% of 1.11)			948.91	951.15	951.98	956.79	957.62	
	Depreciation for the period and Cum. Depreciation.								
1.13	Weighted Average Rate of depreciation			5.12%	5.12%	5.11%	5.11%	5.10%	
1.14	Depreciation (for the period)			53.91	54.01	54.07	54.18	54.28	
1.15	Depreciation (annualised)			53.91	54.01	54.07	54.18	54.28	
1.16	Cumulative depreciation at the beginning of the period			132.15	186.06	240.08	294.15	348.32	
1.17	Less: Adj. of Cum.dep. pertaining to the decapitalised asset.								
1.18	Cumulative depreciation at the end of the period			186.06	240.08	294.15	348.32	402.60	


(E. L. GUANDRA)
(Petitioner)

Chief Engineer
(Commercial & Regulatory)
PTCUL





Calculation of Interest on Working Capital

Name of the Transmission Element: 400 kV Substation Srinagar (Asset-I: 400/220 kV 02x03x105 ICT, 220/132 kV 02x160 MVA ICT along with bays) (Deemed ISTS) under UTP Scheme - Group B

**Part-III
Form-11**

(Amount in Rs. Lakh)

S. No.	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
I	No. of Days in the year	366	365	365	365	366
II	No. of days for which tariff claimed	366	365	365	365	366
1	O & M Expenses - one month	-	-	-	-	-
2	Maintenance Spares 15% of O&M Expenses	-	-	-	-	-
3	Receivables equivalent to 45 days of AFC	14.13	14.19	14.19	14.23	14.25
4	Total Working Capital	14.13	14.19	14.19	14.23	14.25
5	Bank rate as on 01.04.2019 or as on 01st April of the COD year, whichever is later.	12.05%	11.25%	10.50%	10.50%	12.00%
6	Interest on Working Capital	1.70	1.60	1.49	1.49	1.71

[Signature]

(Petitioner)

(Er. ILLA CHANDRA)

Chief Engineer

(Commercial & Regulatory)

PTCUL

[Signature]

TARIFF FILING FORMS (TRANSMISSION & COMMUNICATION SYSTEM) FOR DETERMINATION OF TARIFF

PART-III Annexure-I

INDEX
Checklist of Forms and other information/ documents for tariff filing for
Transmission System& Communication System

PART-III

Form No.	Title of Tariff Filing Forms (Transmission& Communication System)	Tick
FORM- 1	Summary of Tariff	✓
FORM- 1A	Summary of Asset level cost	✓
FORM-2	Details of Transmission Lines and Substations and Communication System covered in the project scope and O&M for instant asset	✓
FORM-3	Normative parameters considered for tariff computations	✓
FORM- 4	Abstract of existing transmission assets/elements under project, Determination of Effective COD and Weighted Average Life for single AFC for the project as whole.	NA
FORM- 4A	Statement of Capital cost	NA
FORM- 4B	Statement of Capital Works in Progress	NA
FORM- 4C	Abstract of Capital Cost Estimates and Schedule of Commissioning for the New Project/Element	NA
FORM-5	Element wise Break-up of Project/Asset/Element Cost for Transmission System or Communication System	NA
FORM-5A	Break-up of Construction/Supply/Service packages	NA
FORM-5B	Details of all the assets covered in the project	NA
FORM- 6	Actual Cash Expenditure and Financial Package up to COD	✓
FORM- 7	Statement of Additional Capitalisation after COD	✓
FORM- 7A	Financing of Additional Capitalisation	✓
FORM- 7B	Statement of Additional Capitalisation during five year before the end of the useful life of the project.	NA
FORM- 8	Calculation of Return on Equity	✓
FORM-8A	Details of Foreign Equity	NA
FORM-9	Details of Allocation of corporate loans to various transmission elements	NA
FORM-9A	Details of Project Specific Loans	NA
FORM-9B	Details of Foreign loans	NA
FORM-9C	Calculation of Weighted Average Rate of Interest on Actual Loans	NA
FORM-9D	Loans in Foreign Currency	NA
FORM-9E	Calculation of Interest on Normative Loan	NA
FORM- 10	Calculation of Depreciation Rate on original project cost	✓
FORM- 10A	Statement of Depreciation	✓
FORM- 10B	Statement of De-capitalisation	NA
FORM- 11	Calculation of Interest on Working Capital	✓
FORM- 12	Details of time over run	NA
FORM- 12A	Incidental Expenditure during Construction	NA
FORM- 12B	Calculation of IDC & Financing Charges	NA
FORM- 13	Details of Initial spares	NA
FORM- 14	Non-Tariff Income	NA
FORM- 15	Summary of issue involved in the petition	NA
FORM A	Summary of Capital Cost & Annual Fixed Cost (AFC) Claimed for ALL the assets covered in the present petition.	NA
Appendix -1	Details of Asset-wise and Vendor-wise liability	NA


(E. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL

Summary of Tariff									
Name of the Transmission Element: 400 kV Substation Srinagar (Asset-I: 400/220 kV 02x03x105 ICT, 220/132 kV 02x160 MVA ICT along with bays) (Deemed ISTS) under UTP Scheme - Group C									
S.No.	Particulars	Form No.	2019-20	2020-21	2021-22	2022-23	2023-24	PART-III FORM-1	
1	2	3	4	5	6	7	8		
1	Depreciation	10A	131.56	131.81	131.95	132.21	132.46		
2	Interest on Loan	9E	0.00	0.00	0.00	0.00	0.00		
3	Return on Equity	8	144.70	145.13	145.37	145.80	146.23		
4	Interest on Working Capital	11	6.84	6.50	6.15	6.24	7.25		
5	O & M Expenses	2	61.71	63.94	66.20	68.48	70.96		
	Total AFC		344.81	347.38	349.67	352.73	356.90		


(Petitioner)

(E. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL



Summary of Asset Level Cost.									
PART-III FORM-1A									
Name of the Transmission Element: 400 KV Substation Srinagar (Asset-I: 400/220 KV 02x03x105 ICT, 220/132 KV 02x160 MVA ICT along with bays)									
(Deemed IS IS) under UTP Scheme - Group C									
A) Summary of Capital Cost, Means of Finance of the Asset									
Particular	i) Apportioned Approved Cost		ii) Summary of Actual / Projected Capital Cost						
	as per IA	As per RCE	As on 1.4.2019	2019-20 (Actual)	2020-21 (Actual)	2021-22 (Actual)	2022-23 (Actual)	2023-24 (Actual)	as on 31.03.2024
Land (Freehold Land)									0
Land (Leasehold)			62.59						62.59
Building & Civil Works			172.74	9.16	6.07	2.24	13.04	2.27	205.51
Transmission Line			0.00						0.00
Sub-Station			2270.60						2270.60
PLCC			57.70						57.70
Total Capital Cost as per Books									0.00
Less: Liability									0.00
Add: Discharge of liability									0.00
Total Capital Cost			2563.62	9.16	6.07	2.24	13.04	2.27	2596.40
Equity	0	0	769.09	2.75	1.82	0.67	3.91	0.68	778.92
Debt	0	0	1794.54	6.41	4.25	1.57	9.13	1.59	1817.48


 Petitioner
 (E. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL

Details of Transmission Lines, Substations and Communication System covered in the project scope and O&M for instant asset											PART-III FORM-2																					
Name of the Transmission Element: 400 kV Substation Srinagar (Asset-I: 400/220 kV 02x03x105 ICT, 220/132 kV 02x160 MVA ICT along with bays) [Deemed ISTS] under UTP Scheme - Group C																																
2. Substations:																																
S.N. o.	Name of Sub-station	Type of Substation (Conventional/ Greenfield/ ownfield/ GIS/HVDC terminal/HVD C Back to Back)	Voltage level kV	No. of transformers / Reactors/S VC etc. (with capacity)	No. of Bays				MVA Capacity			Covered in the present Petition																				
					765 kV	400kV	220 kV	132 kV & Below	765 kV	400 kV	220 kV	132 kV & Below	Date of Commercial operation	Yes/No	If No, Petition No.																	
1	Srinagar Substation: 220 kV bays • 1 No. 160 MVA, 220/132 kV ICT-I (HV Side)																															
2	Srinagar Substation: 220/132 kV ICT-Ia • 1 No. 160 MVA, 220/132 kV ICT-II																															
Summary:																																
400 kV Sub-station																																
O&M Expenses for the Substations covered in the instant petition																																
Normative rate of O&M as per Regulation (Rupees in Lakh)																																
No. of units																																
O&M Claimed (Rupees in Lakh)																																
220 kV Sub-station																																
O&M Expenses for the Substations covered in the instant petition																																
Normative rate of O&M as per Regulation (Rupees in Lakh)																																
No. of units																																
O&M Claimed (Rupees in Lakh)																																
400 kV ICT																																
O&M Expenses for the Substations covered in the instant petition																																
Normative rate of O&M as per Regulation (Rupees in Lakh)																																
No. of units																																
O&M Claimed (Rupees in Lakh)																																
220 kV ICT																																
O&M Expenses for the Substations covered in the instant petition																																
Normative rate of O&M as per Regulation (Rupees in Lakh)																																
No. of units																																
O&M Claimed (Rupees in Lakh)																																
<table border="1"> <thead> <tr> <th>2019-20</th> <th>2020-21</th> <th>2021-22</th> <th>2022-23</th> <th>2023-24</th> </tr> </thead> <tbody> <tr> <td>32.16</td> <td>35.28</td> <td>34.45</td> <td>35.96</td> <td>36.91</td> </tr> <tr> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> </tr> </tbody> </table>													2019-20	2020-21	2021-22	2022-23	2023-24	32.16	35.28	34.45	35.96	36.91	0	0	0	0	0	0	0	0	0	0
2019-20	2020-21	2021-22	2022-23	2023-24																												
32.16	35.28	34.45	35.96	36.91																												
0	0	0	0	0																												
0	0	0	0	0																												
<table border="1"> <thead> <tr> <th>2019-20</th> <th>2020-21</th> <th>2021-22</th> <th>2022-23</th> <th>2023-24</th> </tr> </thead> <tbody> <tr> <td>22.51</td> <td>23.30</td> <td>24.12</td> <td>24.96</td> <td>25.84</td> </tr> <tr> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> </tr> <tr> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> </tr> </tbody> </table>													2019-20	2020-21	2021-22	2022-23	2023-24	22.51	23.30	24.12	24.96	25.84	1	1	1	1	1	0	0	0	0	0
2019-20	2020-21	2021-22	2022-23	2023-24																												
22.51	23.30	24.12	24.96	25.84																												
1	1	1	1	1																												
0	0	0	0	0																												
<table border="1"> <thead> <tr> <th>2019-20</th> <th>2020-21</th> <th>2021-22</th> <th>2022-23</th> <th>2023-24</th> </tr> </thead> <tbody> <tr> <td>0.358</td> <td>0.371</td> <td>0.384</td> <td>0.398</td> <td>0.411</td> </tr> <tr> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> </tr> </tbody> </table>													2019-20	2020-21	2021-22	2022-23	2023-24	0.358	0.371	0.384	0.398	0.411	0	0	0	0	0	0	0	0	0	0
2019-20	2020-21	2021-22	2022-23	2023-24																												
0.358	0.371	0.384	0.398	0.411																												
0	0	0	0	0																												
0	0	0	0	0																												
<table border="1"> <thead> <tr> <th>2019-20</th> <th>2020-21</th> <th>2021-22</th> <th>2022-23</th> <th>2023-24</th> </tr> </thead> <tbody> <tr> <td>0.245</td> <td>0.254</td> <td>0.263</td> <td>0.272</td> <td>0.282</td> </tr> <tr> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> </tr> <tr> <td>39.2</td> <td>40.64</td> <td>42.08</td> <td>43.52</td> <td>45.12</td> </tr> </tbody> </table>													2019-20	2020-21	2021-22	2022-23	2023-24	0.245	0.254	0.263	0.272	0.282	1	1	1	1	1	39.2	40.64	42.08	43.52	45.12
2019-20	2020-21	2021-22	2022-23	2023-24																												
0.245	0.254	0.263	0.272	0.282																												
1	1	1	1	1																												
39.2	40.64	42.08	43.52	45.12																												

Note: 1. Number of bays is inclusive of line bays, ICT bays, reactor bays etc. Each ICT bays, line bays, reactor bays shall be considered separately for purpose of O&M expenses.
2. The MVA Capacity shall exclude the capacity of reactor, FSE, Stat Com


(E. ILIA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL

4) Summary of O&M Expenses claim

S. No	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
A) Normative O&M						
1	Transmission line	-	-	-	-	-
2	Substation	61.71	63.94	66.20	68.48	70.96
3	Communication System	0.00	0.00	0.00	0.00	0.00
	Total Normative O&M	61.71	63.94	66.20	68.48	70.96
B) O&M Claimed under Regulation 35 (3)(C)						
1	Security Expenses	0.00	0.00	0.00	0.00	0.00
2	Actual Capital Spare consumed	0.00	0.00	0.00	0.00	0.00
3	Total O&M	61.71	63.94	66.20	68.48	70.96

Note: The security expenses and Capital Spares are to be submitted on estimated basis for the purpose of O&M expenses. In case of additional security deployed, the petitioner shall indicate the same. The actual security and Capital Spares expenses to be provided at the time of true up


Petitioner

(ET. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL




PART-III FORM-3							
Normative parameters considered for tariff computation							
Name of the Transmission Element: 400 KV Substation Srinagar (Asset-I: 400/220 KV 02x03x105 ICT, 220/132 KV 02x160 MVA ICT along with bays) (Deemed ISTS) under UTP Scheme - Group C							
Particulars	(1)	Unit (2)	2019-20 (3)	2020-21 (4)	2021-22 (5)	2022-23 (6)	2023-24 (7)
Base Rate of Return on Equity		%	15.50%	15.50%	15.50%	15.50%	15.50%
Effective tax rate ²		%	17.47%	17.47%	17.47%	17.47%	17.47%
Target Availability		%	98.00%	98.00%	98.00%	98.00%	98.00%
Normative O&M per MVA		Rs. Lakh	0.245	0.254	0.263	0.272	0.282
Normative O&M per bay		Rs. Lakh	22.51	23.30	24.12	24.96	25.84
Spares for WC as % of O&M		%	15	15	15	15	15
Receivables in Days for WC		Days	45	45	45	45	45
Bank Rate as on first day of financial year ³		%	12.05%	11.25%	10.50%	10.50%	12.00%
Lapsed life as on 01.04.2019 and beginning of every year(in completed years)		No. of years	2.00	3.00	4.00	5.00	6.00

(Petitioner)

(E. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

Actual Cash Expenditure and Financial Package upto 1.4.2019

PART-III
FORM- 6

Name of the Transmission Element: 400 kV Substation Srinagar (Asset-I: 400/220 kV 02x03x105 ICT, 220/132 kV 02x160 MVA ICT along with bays) (Deemed ISTS) under UITP Scheme - Group C

(Rupees in Lakh)

B) Financial package

	Financial Package as Approved		Financial Package as on 1.4.2019		As Admitted on COD	
	Currency and Amount		Currency and Amount		Currency and Amount	
1	2	3	4	5	6	7
Loan-I						
Loan-II						
and so on						
Total Loans	INR	16162.61	INR	1794.54	INR	
Equity-						
Foreign						
Domestic						
Total Equity	INR	6926.83	INR	769.09	INR	
Debt : Equity Ratio						
Total Cost	INR	23089.44	INR	2563.625	INR	
Add Cap.	Debt	Equity	Actual Debt	Actual Equity	Debt	Equity
Add cap for 2019-20			6.41	2.75		
Add cap for 2020-21			4.25	1.82		
Add cap for 2021-22			1.57	0.67		
Add cap for 2022-23			9.13	3.91		
Add cap for 2023-24			1.59	0.68		
Total Capital Cost with add cap.			2596.40			


 (Petitioner)

 (Er. ILLA CHAUDHARY)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL

PART-III

Statement of Additional Capitalisation after CQI

Name of the Transmission Element: 400 KV Substation Srinagar (Asset-I: 400I220 KV 02x03x105 ICT, 220I132 KV 02x160 MVA ICT along with bays) (Deemed ISTS) under UTP Scheme - Group C

ACE for the year : 2019-20 (Actual)									
Particulars	Addition into Gross Block as per books of Account during the year			Less: Deductions dr. the year towards			Other Deduction (If any)	Discharge of earlier undisbursed	ACE on cash basis for tariff purpose
	2	3	4	5	6	7	8	9	10
Land (Freehold)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Land (Leasehold)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building, Civil Work	9.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.16
Transmission Line	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sub-Station	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PLCC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	9.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.16
ACE for the year : 2020-21 (Actual)									
Particulars	Addition into Gross Block as per books of Account during the year			Less: Deductions dr. the year towards			Other Deduction (If any)	Discharge of earlier undisbursed	ACE on cash basis for tariff purpose
	2	3	4	5	6	7	8	9	10
Land (Freehold)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Land (Leasehold)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building, Civil Work	6.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.07
Transmission Line	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sub-Station	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PLCC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	6.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.07
ACE for the year : 2021-22 (Actual)									
Particulars	Addition into Gross Block as per books of Account during the year			Less: Deductions dr. the year towards			Other Deduction (If any)	Discharge of earlier undisbursed	ACE on cash basis for tariff purpose
	2	3	4	5	6	7	8	9	10
Land (Freehold)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Land (Leasehold)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building, Civil Work	2.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.24
Transmission Line	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sub-Station	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PLCC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	2.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.24
ACE for the year : 2022-23 (Actual)									
Particulars	Addition into Gross Block as per books of Account during the year			Less: Deductions dr. the year towards			Other Deduction (If any)	Discharge of earlier undisbursed	ACE on cash basis for tariff purpose
	2	3	4	5	6	7	8	9	10
Land (Freehold)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Land (Leasehold)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building, Civil Work	13.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.04
Transmission Line	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sub-Station	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PLCC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	13.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.04
ACE for the year : 2023-24 (Actual)									
Particulars	Addition into Gross Block as per books of Account during the year			Less: Deductions dr. the year towards			Other Deduction (If any)	Discharge of earlier undisbursed	ACE on cash basis for tariff purpose
	2	3	4	5	6	7	8	9	10
Land (Freehold)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Land (Leasehold)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building, Civil Work	2.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.27
Transmission Line	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sub-Station	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PLCC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	2.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.27

(E. L. CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

B) Regulation wise ACE claim on Cash basis						
Regulation No.	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Reg. 24	ACE within the original scope and upto the cut-off date.					
24 (1) (a)	Un-discharged liabilities recognized to be payable at a future					
24 (1) (b)	Works deferred for execution					
24 (1) (c)	Procurement of initial capital spares					
24 (1) (d)	Liabilities to meet award of arbitration etc.					
24 (1) (e)	Change in law or compliance of any existing law					
B) Regulation wise ACE claim on Cash basis						
Regulation No.	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
24 (1) (f)	Force Majeure events					
Total under Regulation 24						
Reg. 25	ACE within the original scope and after the cut-off date					
25 (1) (a)	Liabilities to meet award of arbitration etc.					
25 (1) (b)	Change in law or compliance of any existing law					
25 (1) (c)	Liability for works executed prior to the cut-off date					
25 (1) (d)	Force Majeure events	9.16	6.07	2.24	13.04	2.27
25 (1) (e)	Liability for works admitted by the Commission after the cut-off					
Total under Regulation 25						
Reg. 26	ACE beyond the original scope:					
26 (1) (a)	Liabilities to meet award of arbitration etc.					
26 (1) (b)	Change in law or compliance of any existing law					
26 (1) (c)	Force Majeure Events					
26 (1) (d)	Need for higher security and safety of the plant....					
Total under Regulation 26						
27 (4)	R&M for extension of life beyond the originally recognized useful life (with the consent of Long Term Customers)	9.16	6.07	2.24	13.04	2.27
Total ACE claimed for tariff						
Total Admitted ACE during Final tariff						

(Petitioner)

(Dr. ILLA CHANDRA)

Chief Engineer

(Commercial & Regulatory)

PTCUL

Financing of Additional Capitalisation

Name of the Transmission Element: 400 kV Substation Srinagar (Asset-I: 400/220 kV 02x03x105 ICT, 220/132 kV 02x160 MVA ICT along with bays) (Deemed ISTS) under UTP Scheme - Group C

Part-III
Form 7A

		Actual/Projected						Admitted				(Amount in Rs. Lakh)
Financial Year (Starting from COD)		2019-20	2020-21	2021-22	2022-23	2023-24	2019-20	2020-21	2021-22	2022-23	2023-24	
1			2	3	4	5	7	8	9	10	11	
Amount capitalised in Work/Equipment		9.16	6.07	2.24	13.04	2.27	0	38.4	-1.21	-10.38	0	
Financing Details												
Loan		6.41	4.25	1.57	9.13	1.59	0.00	26.88	-0.85	-7.27	0.00	
Total Loan		6.41	4.25	1.57	9.13	1.59	0.00	26.88	-0.85	-7.27	0.00	
Equity		2.75	1.82	0.67	3.91	0.68	0.00	11.52	-0.36	-3.11	0.00	
Internal Resources												
Others												
Total		9.16	6.07	2.24	13.04	2.27	0.00	38.40	-1.21	-10.38	0.00	

NE

UJ

(Signature)

(Petitioner)
(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

PART-III
FORM 8

Calculation of Return on Equity at Normal Rate

Name of the Transmission Element: 400 kV Substation Srinagar (Asset-I: 400/220 kV 02x03x105 ICT, 220/132 kV 02x160 MVA ICT along with bays) (Deemed ISTS) under UTP Scheme - Group C

(Amount in Rs. Lakh)

S. No	Particulars	As on 01-04- 2019 / as on COD whichever is later	2019- 20	2020- 21	2021- 22	2022- 23	2023- 24
(1)	(2)		(3)	(4)	(5)	(6)	(7)
	No. of Days in the year		366	365	365	365	366
	No. of days for which tariff claimed		366.00	365.00	365.00	365.00	366.00
1	Opening Normative Equity	-	769.09	771.83	773.66	774.33	778.24
2	Less: Adjustment in Equity*		0.00	0.00	0.00	0.00	0.00
3	Adjustment during the year		0.00	0.00	0.00	0.00	0.00
4	Net Opening Equity (Normal)		769.09	771.83	773.66	774.33	778.24
5	Add: Increase in Equity due to addition during the year/period		2.75	1.82	0.67	3.91	0.68
6	Less: Decrease due to de-capitalisation during the year		0.00	0.00	0.00	0.00	0.00
7	Add: Increase due to discharges during the year/period		0.00	0.00	0.00	0.00	0.00
8	Closing Normative Equity		771.83	773.66	774.33	778.24	778.92
9	Average Normative Equity		770.46	772.75	773.99	776.28	778.58
11	Rate of Return on Equity (Base Rate)		15.50%	15.50%	15.50%	15.50%	15.50%
13	Effective tax rate / MAT rate for the respective years		17.47%	17.472%	17.47%	17.47%	17.47%
14	Rate of Return on Equity (Pre Tax)		18.782%	18.782%	18.78%	18.78%	18.78%
15	Return on Equity on project cost till current date (Pre Tax)		144.70	145.13	145.37	145.80	146.23

(Petitioner)
Chief Engineer
(Commercial & Regulation)
PTCUL

2

Calculation of Depreciation Rate on original project cost

Name of the Transmission Element: 400 kV Substation Srinagar (Asset-I: 400/220 kV 02x03x105 ICT, 220/132 kV 02x160 MVA ICT along with bays) (Deemed ISTS) under UITP Scheme - Group C

(Amount in Rs. Lakh)

S. No.	Name of the Assets ¹	Gross Block as on 1.4.2019 and addition during the year	Depreciation Rates as per Schedule	Depreciation Amount for 2020-21
1	Land (Leasehold)	62.59	3.34%	2.09
2	Building & Civil Works	177.31	3.34%	5.92
3	Transmission Line	0.00	5.28%	0.00
4	Sub-Station	2270.60	5.28%	119.89
5	PLCC	57.70	6.33%	3.65
	TOTAL	2568.44		131.55
	Weighted Average Rate of Depreciation (%)			5.12%

S. No.	Name of the Assets ¹	Gross Block as on 1.4.2020 and addition during the year	Depreciation Rates as per Schedule	Depreciation Amount for 2021-22
1	Land (Leasehold)	62.59	3.34%	2.09
2	Building & Civil Works	184.93	3.34%	6.18
3	Transmission Line	0.00	5.28%	0.00
4	Sub-Station	2270.60	5.28%	119.89
5	PLCC	57.70	6.33%	3.65
	TOTAL	2576.05		131.81
	Weighted Average Rate of Depreciation (%)			5.12%

S. No.	Name of the Assets ¹	Gross Block as on 1.4.2021 and addition during the year	Depreciation Rates as per Schedule	Depreciation Amount for 2022-23
1	Land (Leasehold)	62.59	3.34%	2.09
2	Building & Civil Works	189.08	3.34%	6.32
3	Transmission Line	0.00	5.28%	0.00
4	Sub-Station	2270.60	5.28%	119.89
5	PLCC	57.70	6.33%	3.65
	TOTAL	2580.21		131.95
	Weighted Average Rate of Depreciation (%)			5.11%

(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

S. No.	Name of the Assets ¹	Gross Block as on 1.4.2022 and addition during the year	Depreciation Rates as per CERC's Depreciation Rate Schedule	Depreciation Amount for 2022-23
	1	2	3	4= Col.2 X Col.3
1	Land (Leasehold)	62.59	3.34%	2.09
2	Building & Civil Works	196.72	3.34%	6.57
3	Transmission Line	0.00	5.28%	0.00
4	Sub-Station	2270.60	5.28%	119.89
5	PLCC	57.70	6.33%	3.65
	TOTAL	2587.85		132.20
	Weighted Average Rate of Depreciation (%)			5.11%

S. No.	Name of the Assets ¹	Gross Block as on 1.4.2023 and addition during the year	Depreciation Rates as per CERC's Depreciation Rate Schedule	Depreciation Amount for 2023-24
	1	2	3	4= Col.2 X Col.3
1	Land (Leasehold)	62.59	3.34%	2.09
2	Building & Civil Works	204.38	3.34%	6.83
3	Transmission Line	0.00	5.28%	0.00
4	Sub-Station	2270.60	5.28%	119.89
5	PLCC	57.70	6.33%	3.65
	TOTAL	2595.50		132.46
	Weighted Average Rate of Depreciation (%)			5.10%


 Petitioner
(Er. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PT

g

W

(Amount in Rs. Lakh)

Statement of Depreciation								
S. No.	Particulars	As on 01-04-2019 / COD	2019-20	2020-21	2021-22	2022-23	2023-24	
I	No. of Days in the year		366	365	365	365	366	
II	No. of days for which tariff claimed							
	Life at the beginning of year							
1.1	Weighted Average useful Life of the Asset/Project.		23	22	21	20	19	
1.2	Lapsed weighted average useful life of the asset/project (in Completed no. of Year).		2	3	4	5	6	
1.3	Balance weighted average useful life of the asset/project (in Completed no. of Years)							
	Capital Base							
1.4	Opening Capital Cost		2563.62	2572.78	2578.85	2581.10	2594.13	
1.5	Additional Capital Expenditure dr. the year		9.16	6.07	2.24	13.04	2.27	
1.6	De-Capitalisation during the year							
1.7	Closing Capital Cost		2572.78	2578.85	2581.10	2594.13	2596.40	
1.8	Average Capital Cost		2568.20	2575.82	2579.97	2587.61	2595.27	
1.9	Freehold land included in 1.8		0.00	0.00	0.00	0.00	0.00	
1.10	Asset having NIL Salvage value included in 1.8		0.00	0.00	0.00	0.00	0.00	
1.11	Asset having 10% Salvage value included in 1.8		2572.78	2578.85	2581.10	2594.13	2596.40	
1.12	Depreciable value (1.10+ 90% of 1.11)		2315.50	2320.97	2322.99	2334.72	2336.76	
	Depreciation for the period and Cum. Depreciation.							
1.13	Weighted Average Rate of depreciation		5.12%	5.12%	5.11%	5.11%	5.10%	
1.14	Depreciation (for the period)		131.56	131.81	131.95	132.21	132.46	
1.15	Depreciation (annualised)		131.56	131.81	131.95	132.21	132.46	
1.16	Cumulative depreciation at the beginning of the period							
1.17	Less: Adj. of Cum.dep. pertaining to the decapitalised asset.		347.43	478.99	610.80	742.75	874.95	
1.18	Cumulative depreciation at the end of the period		478.99	610.80	742.75	874.95	1007.41	

[Signature]

(Er. Petitioner)

Chief Engineer

(Commercial & Reg.)

2 JUL

[Signature]

[Signature]

Calculation of Interest on Working Capital

Name of the Transmission Element: 400 kV Substation Srinagar (Asset-I: 400/220 kV 02x03x105 ICT, 220/132 kV 02x160 MVA ICT along with bays) (Deemed ISTS) under UTP Scheme - Group C

**Part-III
Form-11**

(Amount in Rs. Lakh)

S. No.	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
I	No. of Days in the year	366	365	365	365	366
II	No. of days for which tariff claimed	366	365	365	365	366
1	O & M Expenses - one month	5.14	5.33	5.52	5.71	5.91
2	Maintenance Spares 15% of O&M Expenses	9.26	9.59	9.93	10.27	10.64
3	Receivables equivalent to 45 days of AFC	42.40	42.83	43.11	43.49	43.88
4	Total Working Capital	56.79	57.75	58.56	59.47	60.44
5	Bank rate as on 01.04.2019 or as on 01st April of the COD year, whichever is later.	12.05%	11.25%	10.50%	10.50%	12.00%
6	Interest on Working Capital	6.84	6.50	6.15	6.24	7.25



(Petitioner)

(ET. ILLA CHANDRA)

Chief Engineer

(Commercial & Regulatory)

PTCUL




TARIFF FILING FORMS (TRANSMISSION & COMMUNICATION SYSTEM) FOR DETERMINATION OF TARIFF

PART-III Annexure-I

INDEX

PART-III

Checklist of Forms and other information/ documents for tariff filing for
Transmission System& Communication System

Form No.	Title of Tariff Filing Forms (Transmission& Communication System)	Tick
FORM- 1	Summary of Tariff	✓
FORM- 1A	Summary of Asset level cost	✓
FORM-2	Details of Transmission Lines and Substations and Communication System covered in the project scope and O&M for instant asset	✓
FORM-3	Normative parameters considered for tariff computations	✓
FORM- 4	Abstract of existing transmission assets/elements under project, Determination of Effective COD and Weighted Average Life for single AFC for the project as whole.	NA
FORM- 4A	Statement of Capital cost	NA
FORM- 4B	Statement of Capital Works in Progress	NA
FORM- 4C	Abstract of Capital Cost Estimates and Schedule of Commissioning for the New Project/Element	NA
FORM-5	Element wise Break-up of Project/Asset/Element Cost for Transmission System or Communication System	NA
FORM-5A	Break-up of Construction/Supply/Service packages	NA
FORM-5B	Details of all the assets covered in the project	NA
FORM- 6	Actual Cash Expenditure and Financial Package up to COD	✓
FORM- 7	Statement of Additional Capitalisation after COD	✓
FORM- 7A	Financing of Additional Capitalisation	✓
FORM- 7B	Statement of Additional Capitalisation during five year before the end of the useful life of the project.	NA
FORM- 8	Calculation of Return on Equity	✓
FORM-8A	Details of Foreign Equity	NA
FORM-9	Details of Allocation of corporate loans to various transmission elements	NA
FORM-9A	Details of Project Specific Loans	NA
FORM-9B	Details of Foreign loans	NA
FORM-9C	Calculation of Weighted Average Rate of Interest on Actual Loans	NA
FORM-9D	Loans in Foreign Currency	NA
FORM-9E	Calculation of Interest on Normative Loan	NA
FORM- 10	Calculation of Depreciation Rate on original project cost	✓
FORM- 10A	Statement of Depreciation	✓
FORM- 10B	Statement of De-capitalisation	NA
FORM- 11	Calculation of Interest on Working Capital	✓
FORM- 12	Details of time over run	NA
FORM- 12A	Incidental Expenditure during Construction	NA
FORM- 12B	Calculation of IDC & Financing Charges	NA
FORM- 13	Details of Initial spares	NA
FORM- 14	Non-Tariff Income	NA
FORM- 15	Summary of issue involved in the petition	NA
FORM A	Summary of Capital Cost & Annual Fixed Cost (AFC) Claimed for ALL the assets covered in the present petition.	NA
Appendix -1	Details of Asset-wise and Vendor-wise liability	NA


 (Er. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL

Summary of Tariff

Name of the Transmission Element: 400 kV Substation Srinagar (Asset-I: 400/220 kV 02x03x105 ICT, 220/132 kV 02x160 MVA ICT along with bays) (Deemed ISTS) under UTP Scheme-Group D

PART-III
FORM-1

S.No.	Particulars	Form No.	2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6	7	8
1	Depreciation	10A	0.00	9.99	26.25	26.30	26.35
2	Interest on Loan	9E	0.00	0.00	0.00	0.00	0.00
3	Return on Equity	8	0.00	10.90	28.67	28.75	28.84
4	Interest on Working Capital	11	0.00	1.02	2.55	2.62	3.07
5	O & M Expenses	2	0.00	17.75	48.24	49.92	51.68
	Total AFC		0.00	39.65	105.72	107.59	109.94



(Petitioner)

(**ER. ILLA CHANDRA**)

Chief Engineer
(Commercial & Regulatory)
PTCUL



Summary of Asset Level Cost										PART-III FORM-1A
Name of the Transmission Element: 400 KV Substation Srinagar (Asset-I: 400/220 KV 02x03x105 ICT, 220/132 KV 02x160 MVA ICT along with bays)										(Amount in Rs. Lakh)
A) Summary of Capital Cost, Means of Finance of the Asset										
Particular	i) Apportioned Approved Cost		ii) Summary of Actual / Projected Capital Cost							
	as per IA	As per RCE	As on COD (13.11.2020)	2019-20 (Actual)	2020-21 (Actual)	2021-22 (Actual)	2022-23 (Actual)	2023-24 (Actual)	as on 31.03.2024	
Land (Freehold Land)									0	
Land (Leasehold)			13.25						13.25	
Building & Civil Works			23.76		1.14	0.42	2.45	0.43	28.20	
Transmission Line			0.00						0.00	
Sub-Station			458.33						458.33	
PLCC			12.21						12.21	
Total Capital Cost as per Books									0.00	
Less: Liability									0.00	
Add: Discharge of liability									0.00	
Total Capital Cost			507.55	0.00	1.14	0.42	2.45	0.43	511.99	
Equity	0	0	152.27	0.00	0.34	0.13	0.74	0.13	153.60	
Debt	0	0	355.29	0.00	0.80	0.30	1.72	0.30	358.40	

[Signature]

Petitioner

(ET. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

[Signature]

[Signature]

Details of Transmission Lines, Substations and Communication System covered in the project scope and O&M for instant asset										PART-III FORM-2		
Name of the Transmission Element: 400 KV Substation Srinagar (Asset-I: 400/220 KV 02x03x105 ICT, 220/132 KV 02x160 MVA ICT along with bays) (Deemed ISTS) under UTP Scheme-Group D												
2. Substations:												
S.No.	Name of Sub-station	Type of Substation (Conventional/ Greenfield/Br ownfield/ GIS/HVDC terminal/HVD C Back to Back)	Voltage level KV	No. of transformers / Reactors/S VC etc. (with capacity)	No. of Bays			MVA Capacity			Covered in the present Petition	
					765 KV	400KV	220 KV	132 KV & Below	400 KV	220 KV	132 KV & Below	Date of Commercial operation
1	Srinagar Substation: 220 KV Bays + 2 Nos 220 KV D/C Khandukhal (Srinagar) - Baranwari Line Bays						2					
Summary:												
400 KV Sub-station												
O&M Expenses for the Substations covered in the instant petition												
Normal rate of O&M as per Regulation (Rupees in Lakh)												
No. of units												
O&M Claimed (Rupees in Lakh)												
220 KV Sub-station												
O&M Expenses for the Substations covered in the instant petition												
Normal rate of O&M as per Regulation (Rupees in Lakh)												
No. of units												
O&M Claimed (Rupees in Lakh)												
400 KV ICT												
O&M Expenses for the Substations covered in the instant petition												
Normal rate of O&M as per Regulation (Rupees in Lakh)												
No. of units												
O&M Claimed (Rupees in Lakh)												
220 KV ICT												
O&M Expenses for the Substations covered in the instant petition												
Normal rate of O&M as per Regulation (Rupees in Lakh)												
No. of units												
O&M Claimed (Rupees in Lakh)												
Note 1. Number of bays is inclusive of line bays, ICT bays, reactor bays etc. Each ICT bays, line bays, reactor bays shall be considered separately for purpose of O&M expenses.												
2. The MVA Capacity shall exclude the capacity of reactor, FSE, Stat Com												


(ER. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL

4) Summary of O&M Expenses claim

S. No	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
	A) Normative O&M					
1	Transmission line	-	-	-	-	-
2	Substation	0	17.75	48.24	49.92	51.68
3	Communication System	0.00	0.00	0.00	0.00	0.00
	Total Normative O&M	-	17.75	48.24	49.92	51.68
	B) O&M Claimed under Regulation 35 (3)(C)					
1	Security Expenses	0.00	0.00	0.00	0.00	0.00
2	Actual Capital Spare consumed	0.00	0.00	0.00	0.00	0.00
3	Total O&M	0.00	17.75	48.24	49.92	51.68

Note: The security expenses and Capital Spares are to be submitted on estimated basis for the purpose of O&M expenses. In case of additional security deployed, the petitioner shall indicate the same. The actual security and Capital Spares expenses to be provided at the time of true up


Petitioner

(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

Normative parameters considered for tariff computation

Name of the Transmission Element: 400 kV Substation Srinagar 400 kV Substation Srinagar (Asset-I: 400/220 kV 02x03x105 ICT, 220/132 kV 02x160 MVA ICT along with bays) (Deemed ISTS) under UITP Scheme - Group D

Particulars (1)	Unit (2)	2020-21 (4)	2021-22 (5)	2022-23 (6)	2023-24 (7)
Base Rate of Return on Equity	%	15.50%	15.50%	15.50%	15.50%
Effective tax rate ²	%	17.47%	17.47%	17.47%	17.47%
Target Availability	%	98.00%	98.00%	98.00%	98.00%
Normative O&M per bay	Rs. Lakh	23.30	24.12	24.96	25.84
Spares for WC as % of O&M	%	15	15	15	15
Receivables in Days for WC	Days	45	45	45	45
Bank Rate as on first day of financial year ³	%	11.25%	10.50%	10.50%	12.00%
Lapsed life as on 01.04.2019 and beginning of every year (in completed years)	No. of years	0.00	1.00	2.00	3.00

2019

(Petitioner)

(E. ILLA CHANDRA)

Chief Engineer

(Commercial & Regulatory)

PTCUL

Actual Cash Expenditure and Financial Package upto 1.4.2019

PART-III
FORM- 6

Name of the Transmission Element: 400 kV Substation Srinagar (Asset-I: 400/220 kV 02x03x105 ICT, 220/132 kV 02x160 MVA ICT along with bays) (Deemed ISTS) under UITP Scheme-Group D

(Rupees in Lakh)

B) Financial package

	Financial Package as Approved		Financial Package as on COD		As Admitted on COD	
	Currency and Amount		Currency and Amount		Currency and Amount	
1	2	3	4	5	6	7
Loan-I						
Loan-II						
and so on						
Total Loans	INR	16162.61	INR	355.29	INR	
Equity-						
Foreign						
Domestic						
Total Equity	INR	6926.83	INR	152.27	INR	
Debt : Equity Ratio						
Total Cost	INR	23089.44	INR	507.5527	INR	0
Add Cap.	Debt	Equity	Actual Debt	Actual Equity	Debt	Equity
Add cap for 2020-21			0.80	0.34		
Add cap for 2021-22			0.30	0.13		
Add cap for 2022-23			1.72	0.74		
Add cap for 2023-24			0.30	0.13		
Total Capital Cost with add cap.			511.99			

[Signature]

(Petitioner)

(Er. ILLA CHANDR
Chief Engineer
(Commercial & Regulation)
PTCUL

[Signature]

[Signature]

[Signature]

Statement of Additional Capitalisation after COD

PART-III

A) ACE for the year : 2020-21 (Actual)

Particulars	Less: Deductions dr. the year towards					Add: Discharge of earlier admitted liability	ACE on cash basis for tariff purpose	Admitted Cost in final tariff ¹ (Rs Lakh)
	1	2	3	4	5			
Land (Freehold Land)		0.00	0.00	0.00	0.00	0.00	0.00	
Land (Leasehold)		0.00	0.00	0.00	0.00	0.00	0.00	
Building, Civil Work		1.14	0.00	0.00	0.00	0.00	1.14	
Transmission Line		0.00	0.00	0.00	0.00	0.00	0.00	
Sub-Station		0.00	0.00	0.00	0.00	0.00	0.00	
PLCC		0.00	0.00	0.00	0.00	0.00	0.00	
Total		1.14	0.00	0.00	0.00	0.00	1.14	

ACE for the year : 2021-22 (Actual)

Particulars	Less: Deductions dr. the year towards					Add: Discharge of earlier admitted liability	ACE on cash basis for tariff purpose	Admitted Cost in final tariff ¹ (Rs Lakh)
	1	2	3	4	5			
Land (Freehold Land)		0.00	0.00	0.00	0.00	0.00	0.00	
Land (Leasehold)		0.00	0.00	0.00	0.00	0.00	0.00	
Building, Civil Work		0.42	0.00	0.00	0.00	0.00	0.42	
Transmission Line		0.00	0.00	0.00	0.00	0.00	0.00	
Sub-Station		0.00	0.00	0.00	0.00	0.00	0.00	
PLCC		0.00	0.00	0.00	0.00	0.00	0.00	
Total		0.42	0.00	0.00	0.00	0.00	0.42	

ACE for the year : 2022-23 (Actual)

Particulars	Less: Deductions dr. the year towards					Add: Discharge of earlier admitted liability	ACE on cash basis for tariff purpose	Admitted Cost in final tariff ¹ (Rs Lakh)
	1	2	3	4	5			
Land (Freehold Land)		0.00	0.00	0.00	0.00	0.00	0.00	
Land (Leasehold)		0.00	0.00	0.00	0.00	0.00	0.00	
Building, Civil Work		2.45	0.00	0.00	0.00	0.00	2.45	
Transmission Line		0.00	0.00	0.00	0.00	0.00	0.00	
Sub-Station		0.00	0.00	0.00	0.00	0.00	0.00	
PLCC		0.00	0.00	0.00	0.00	0.00	0.00	
Total		2.45	0.00	0.00	0.00	0.00	2.45	


(ER. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL

ACE for the year : 2023-24 (Actual)									
Particulars	Addition into Gross Block as per books of Account during the year						Less: Deductions during the year towards		
	1	2	3	4	5	6	7	8	9
Land (Freehold Land)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Land (Leasehold)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building, Civil Work		0.43	0.00	0.00	0.00	0.00	0.00	0.43	0.00
Transmission Line		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sub-Station		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PLCC		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		0.43	0.00	0.00	0.00	0.00	0.00	0.43	0.00

B) Regulation wise ACE claim on Cash basis									
Regulation No.	Particulars								
Reg. 24	ACE within the original scope and upto the cut-off date.								
24 (1) (a)	Undischarged liabilities recognized to be payable at a future								
24 (1) (b)	Works deferred for execution								
24 (1) (c)	Procurement of initial capital spares								
24 (1) (d)	Liabilities to meet award of arbitration etc.								
24 (1) (e)	Change in law or compliance of any existing law								
Total under Regulation 24									
Reg. 25	ACE within the original scope and after the cut-off date								
25 (1) (a)	Liabilities to meet award of arbitration etc.								
25 (1) (b)	Change in law or compliance of any existing law								
25 (1) (c)	Liability for works executed prior to the cut-off date								
25 (1) (d)	Force Majeure events								
25 (1) (e)	Liability for works admitted by the Commission after the cut-off								
Total under Regulation 25									
Reg. 26	ACE beyond the original scope:								
26 (1) (a)	Liabilities to meet award of arbitration etc.								
26 (1) (b)	Change in law or compliance of any existing law,								
26 (1) (c)	Force Majeure Events;								
26 (1) (d)	Need for higher security and safety of the plant....								
Total under Regulation 26									
27 (4)	R&M for extension of life beyond the originally recognized useful life (with the consent of Long Term Customers)								
Total ACE claimed for tariff									
Total Admitted ACE during Final tariff									

200-
(Petitioner)

(Er. ILLA CHANDRA)

Chief Engineer

(Commercial & Safety)

Financing of Additional Capitalisation

Name of the Transmission Element: (Asset-I: 400/220 kV 02x03x105 ICT, 220/132 kV 02x160 MVA ICT along with bays) (Deemed ISTS) under UTP Scheme - Group D)

Part-III
Form 7A

		Admitted Cost in previous tariff order						(Amount in Rs. Lakh)	
Financial Year (Starting from COD)		2020-21	2021-22	2022-23	2023-24	2020-21	2021-22	2022-23	2023-24
1		3	4	5	6	8	9	10	11
Amount capitalised in Work/Equipment		1.14	0.42	2.45	0.43	2.73	-0.23	-1.97	0.00
Financing Details									
Loan		0.80	0.30	1.72	0.30	1.91	-0.16	-1.38	0.00
Total Loan		0.80	0.30	1.72	0.30	1.91	-0.16	-1.38	0.00
Equity		0.34	0.13	0.74	0.13	0.82	-0.07	-0.59	0.00
Internal Resources									
Others									
Total		1.14	0.42	2.45	0.43	2.73	-0.23	-1.97	0.00

Shakti

(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

11/5
9
11/1

PART-III
FORM 8

Calculation of Return on Equity at Normal Rate

Name of the Transmission Element: 400 kV Substation Srinagar (Asset-I: 400/220 kV 02x03x105 ICT, 220/132 kV 02x160 MVA ICT along with bays) (Deemed ISTS) under UTP Scheme-Group D

(Amount in Rs. Lakh)

S. No	Particulars	As on 01-04- 2019 / as on COD whichever is later	2019- 20	2020- 21	2021- 22	2022- 23	2023- 24
(1)	(2)		(3)	(4)	(5)	(6)	(7)
	No. of Days in the year		366	365	365	365	366
	No. of days for which tariff claimed		0.00	365.00	365.00	365.00	366.00
1	Opening Normative Equity	-	0.00	152.27	152.61	152.73	153.47
2	Less: Adjustment in Equity*		0.00	0.00	0.00	0.00	0.00
3	Adjustment during the year		0.00	0.00	0.00	0.00	0.00
4	Net Opening Equity (Normal)		0.00	152.27	152.61	152.73	153.47
5	Add: Increase in Equity due to addition during the year/period		0.00	0.34	0.13	0.74	0.13
6	Less: Decrease due to de-capitalisation during the year		0.00	0.00	0.00	0.00	0.00
7	Add: Increase due to discharges during the year/period		0.00	0.00	0.00	0.00	0.00
8	Closing Normative Equity		0.00	152.61	152.73	153.47	153.60
9	Average Normative Equity		0.00	152.44	152.67	153.10	153.53
11	Rate of Return on Equity (Base Rate)		15.50%	15.50%	15.50%	15.50%	15.50%
13	Effective tax rate / MAT rate for the respective years		17.47%	17.472%	17.47%	17.47%	17.47%
14	Rate of Return on Equity (Pre Tax)		18.782%	18.782%	18.78%	18.78%	18.78%
15	Return on Equity on project cost till Cutoff date (Pre Tax)		0.00	10.90	28.67	28.75	28.84

Note: 1 Adjustment of equity as per Proviso to Regulation 18(3) of 2019 Tariff Regulations. 2. In respect to Equity infusion the Generating Company is required to substantiate with supporting documents such as board resolutions, balance sheet/ reconciliation statement with balance sheet.

(Petitioner)

(Er. ILLA CHANDRA)

Chief Engineer

(Commercial & Regulatory)

PTOUL

Calculation of Depreciation Rate on original project cost

Name of the Transmission Element: 400 KV Substation Srinagar (Asset-I: 400/220 KV 02x03x105 ICT, 220/132 KV 02x160 MVA ICT along with bays) (Deemed ISTS) under UITP Scheme-Group D

(Amount in Rs. Lakh)

S. No.	Name of the Assets ¹	Gross Block as on COD and addition during the year	Depreciation Rates as per CERC's Depreciation Rate Schedule	Depreciation Amount for 2020-21
	1	2	3	4= Col.2 X Col.3
1	Land (Leasehold)	13.25	3.34%	0.44
2	Building & Civil	24.33	3.34%	0.81
3	Transmission Line	0.00	5.28%	0.00
4	Sub-Station	458.33	5.28%	24.20
5	PLCC	12.21	6.33%	0.77
	TOTAL	508.12		26.23
	Weighted Average Rate of Depreciation (%)			5.16%

S. No.	Name of the Assets ¹	Gross Block as on 1.4.2021 and addition during the year	Depreciation Rates as per CERC's Depreciation Rate Schedule	Depreciation Amount for 2021-22
	1	2	3	4= Col.2 X Col.3
1	Land (Leasehold)	13.25	3.34%	0.44
2	Building & Civil Works	25.11	3.34%	0.84
3	Transmission Line	0.00	5.28%	0.00
4	Sub-Station	458.33	5.28%	24.20
5	PLCC	12.21	6.33%	0.77
	TOTAL	508.90		26.25
	Weighted Average Rate of Depreciation (%)			5.16%

Shruti
(ER. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

S. No.	Name of the Assets ¹	Gross Block as on 1.4.2022 and addition during the year	Depreciation Rates as per CERC's Depreciation Rate Schedule	Depreciation Amount for 2022-23
	1	2	3	4= Col.2 X Col.3
1	Land (Leasehold)	13.25	3.34%	0.44
2	Building & Civil Works	26.55	3.34%	0.89
3	Transmission Line	0.00	5.28%	0.00
4	Sub-Station	458.33	5.28%	24.20
5	PLCC	12.21	6.33%	0.77
	TOTAL	510.34		26.30
	Weighted Average Rate of Depreciation (%)			5.15%

S. No.	Name of the Assets ¹	Gross Block as on 1.4.2023 and addition during the year	Depreciation Rates as per CERC's Depreciation Rate Schedule	Depreciation Amount for 2023-24
	1	2	3	4= Col.2 X Col.3
1	Land (Leasehold)	13.25	3.34%	0.44
2	Building & Civil Works	27.99	3.34%	0.93
3	Transmission Line	0.00	5.28%	0.00
4	Sub-Station	458.33	5.28%	24.20
5	PLCC	12.21	6.33%	0.77
	TOTAL	511.78		26.35
	Weighted Average Rate of Depreciation (%)			5.15%


 Petitioner
(Er. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL






(Amount in Rs. Lakh)

Statement of Depreciation							
S. No.	Particulars	As on 01-04-2019 / COD	2019-20	2020-21	2021-22	2022-23	2023-24
I	No. of Days in the year		366	365	365	365	366
II	No. of days for which tariff claimed						
Life at the beginning of year							
1.1	Weighted Average useful Life of the Asset/Project.		0	25	24	23	22
1.2	Lapsed weighted average useful life of the asset/project (in Completed no. of Year).		0	0	1	2	3
1.3	Balance weighted average useful life of the asset/project (in Completed no. of Years)						
Capital Base							
1.4	Opening Capital Cost			507.55	508.69	509.12	511.57
1.5	Additional Capital Expenditure dr. the year		0.00	1.14	0.42	2.45	0.43
1.6	De-Capitalisation during the year						
1.7	Closing Capital Cost		0.00	508.69	509.12	511.57	511.99
1.8	Average Capital Cost		0.00	508.12	508.90	510.34	511.78
1.9	Freehold land included in 1.8		0.00	0.00	0.00	0.00	0.00
1.10	Asset having NIL Salvage value included in 1.8		0.00	0.00	0.00	0.00	0.00
1.11	Asset having 10% Salvage value included in 1.8		0.00	508.69	509.12	511.57	511.99
1.12	Depreciable value (1.10+ 90% of 1.11)		0.00	457.82	458.20	460.41	460.79
Depreciation for the period and Cum. Depreciation.							
1.13	Weighted Average Rate of depreciation		5.16%	5.16%	5.16%	5.15%	5.15%
1.14	Depreciation (for the period)		0.00	9.99	26.25	26.30	26.35
1.15	Depreciation (annualised)		0.00	26.23	26.25	26.30	26.35
1.16	Cumulative depreciation at the beginning of the period		0.00	0.00	9.99	36.24	62.54
1.17	Less: Adj. of Cum.dep. pertaining to the decapitalised asset.						
1.18	Cumulative depreciation at the end of the period		0.00	9.99	36.24	62.54	88.89

[Signature]
(Petitioner)

(ET. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)

Calculation of Interest on Working Capital

Name of the Transmission Element: 400 kV Substation Srinagar (Asset-I: 400/220 kV 02x03x105 ICT, 220/132 kV 02x160 MVA ICT along with bays) (Deemed ISTS) under UTP Scheme-Group D

**Part-III
Form-11**

(Amount in Rs. Lakh)

S. No.	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
I	No. of Days in the year	366	365	365	365	366
II	No. of days for which tariff claimed	366	138	365	365	366
1	O & M Expenses - one month	-	3.88	4.02	4.16	4.31
2	Maintenance Spares 15% of O&M Expenses	-	6.99	7.24	7.49	7.75
3	Receivables equivalent to 45 days of AFC	-	12.84	13.03	13.26	13.52
4	Total Working Capital	-	23.71	24.29	24.91	25.58
5	Bank rate as on 01.04.2019 or as on 01st April of the COD year, whichever is later.	12.05%	11.25%	10.50%	10.50%	12.00%
6	Interest on Working Capital	-	1.02	2.55	2.62	3.07

[Signature]

(Petitioner)

(Er. ILA CHANDRA)

**Chief Engineer
(Commercial & Regulatory)
PTCUL**

[Signature]

[Signature]

**TARIFF FILING FORMS (TRANSMISSION&
COMMUNICATION SYSTEM)
FOR DETERMINATION OF TARIFF
PART-III
Annexure-I**

INDEX

PART-III

Checklist of Forms and other information/ documents for tariff filing for
Transmission System& Communication System

Form No.	Title of Tariff Filing Forms (Transmission& Communication System)	Tick
FORM- 1	Summary of Tariff	Filled
FORM- 1A	Summary of Asset level cost	Filled
FORM-2	Details of Transmission Lines and Substations and Communication System covered in the project scope and O&M for instant asset	Filled
FORM-3	Normative parameters considered for tariff computations	Filled
FORM- 4	Abstract of existing transmission assets/elements under project, Determination of Effective COD and Weighted Average Life for single AFC for the project as whole.	NA
FORM- 4A	Statement of Capital cost	NA
FORM- 4B	Statement of Capital Works in Progress	NA
FORM- 4C	Abstract of Capital Cost Estimates and Schedule of Commissioning for the New Project/Element	NA
FORM-5	Element wise Break-up of Project/Asset/Element Cost for Transmission System or Communication System	NA
FORM-5A	Break-up of Construction/Supply/Service packages	NA
FORM-5B	Details of all the assets covered in the project	NA
FORM- 6	Actual Cash Expenditure and Financial Package up to COD	Filled
FORM- 7	Statement of Additional Capitalisation after COD	NA
FORM- 7A	Financing of Additional Capitalisation	NA
FORM- 7B	Statement of Additional Capitalisation during five year before the end of the useful life of the project.	NA
FORM- 8	Calculation of Return on Equity	Filled
FORM-8A	Details of Foreign Equity	NA
FORM-9	Details of Allocation of corporate loans to various transmission elements	NA
FORM-9A	Details of Project Specific Loans	NA
FORM-9B	Details of Foreign loans	NA
FORM-9C	Calculation of Weighted Average Rate of Interest on Actual Loans	NA
FORM-9D	Loans in Foreign Currency	NA
FORM-9E	Calculation of Interest on Normative Loan	NA
FORM- 10	Calculation of Depreciation Rate on original project cost	Filled
FORM- 10A	Statement of Depreciation	Filled
FORM- 10B	Statement of De-capitalisation	NA
FORM- 11	Calculation of Interest on Working Capital	Filled
FORM- 12	Details of time over run	NA
FORM- 12A	Incidental Expenditure during Construction	NA
FORM- 12B	Calculation of IDC & Financing Charges	NA
FORM- 13	Details of Initial spares	NA
FORM- 14	Non-Tariff Income	NA
FORM- 15	Summary of issue involved in the petition	NA
FORM A	Summary of Capital Cost & Annual Fixed Cost (AFC) Claimed for ALL the assets covered in the present petition.	NA
Appendix -1	Details of Asset-wise and Vendor-wise liability	NA

(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

Summary of Tariff									
Name of the Transmission Element: Asset-II: 1x80 MVar Reactor									
S.No.	Particulars	Form No.	2019-20	2020-21	2021-22	2022-23	2023-24		
1	2	3	4	5	6	7	8		
1	Depreciation	10A	35.40	35.40	35.40	35.40	35.40		
2	Interest on Loan	9E	0.00	0.00	0.00	0.00	0.00		
3	Return on Equity	8	37.78	37.78	37.78	37.78	37.78		
4	Interest on Working Capital	11	2.50	2.38	2.27	2.31	2.70		
5	O & M Expenses	2	32.15	33.28	34.45	35.66	36.91		
	Total AFC		107.84	108.85	109.90	111.16	112.79		

PART-III
FORM-1


(Petitioner)

(**ER. ILLA CHANDRA**)
Chief Engineer
(Commercial & Regulatory)
PTCUL



Summary of Asset Level Cost										PART-III FORM-1A
Name of the Transmission Element: Asset-II: 1x80 MVAR Reactor										(Amount in Rs. Lakh)
A) Summary of Capital Cost, Means of Finance of the Asset										
Particular	i) Apportioned Approved Cost		ii) Summary of Actual / Projected Capital Cost							
	as per IA	As per RCE	As on COD	2019-20 (Actual)	2020-21 (Actual)	2021-22 (Actual)	2022-23 (Actual)	2023-24 (Actual)	as on 31.03.2024	
Land (Freehold Land)									0	
Land (Leasehold)									0.00	
Building & Civil Works									0.00	
Transmission Line									0.00	
Sub-Station			670.52						670.52	
PLCC									0.00	
Total Capital Cost as per Books									0.00	
Less: Liability									0.00	
Add: Discharge of liability									0.00	
Total Capital Cost			670.52	0.00	0.00	0.00	0.00	0.00	670.52	
Equity	0	0	201.16	0.00	0.00	0.00	0.00	0.00	201.16	
Debt	0	0	469.36	0.00	0.00	0.00	0.00	0.00	469.36	

8/8

Petitioner

(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTOUL

9

11/2

Details of Transmission Lines, Substations and Communication System covered in the project scope and O&M for instant asset										PART-III FORM-2																									
Name of the Transmission Element: Asset-II: 1x80 MVA/ Reactor																																			
2. Substations:																																			
S.N o.	Name of Sub-station	Type of Substation (Conventional/ Greenfield/ ownfield/ GIS/HVDC terminal/HVD C Back to Back)	Voltage level kV	No. of transformers / Reactors/S VC etc. (with capacity)	No. of Bays			MVA Capacity				Covered in the present Petition																							
					765 kV	400kV	220 kV	132 kV & Below	765 kV	400 kV	220 kV	132 kV & Below	Date of Commercial operation	Yes/No	IF No. Petition No.																				
1	Srinagar Substation: 400 kV Bays + 1 No. 80 MVA/ Bus Reactor						1																												
Summary:																																			
400 kV Sub-station																																			
O&M Expenses for the Substations covered in the instant petition																																			
Normative rate of O&M as per Regulation (Rupees in Lakh)																																			
No. of units																																			
O&M Claimed (Rupees in Lakh)																																			
Note 1. Number of bays is inclusive of line bays, ICT bays, reactor bays etc. Each ICT bays, line bays, reactor bays shall be considered separately for purpose of O&M expenses. 2. The MVA Capacity shall exclude the capacity of reactor, FSE, Stat Com																																			
<table border="1"> <thead> <tr> <th></th> <th>2019-20</th> <th>2020-21</th> <th>2021-22</th> <th>2022-23</th> <th>2023-24</th> </tr> </thead> <tbody> <tr> <td>32.15</td> <td>33.28</td> <td>34.45</td> <td>35.66</td> <td>36.91</td> <td></td> </tr> <tr> <td>1.00</td> <td>1.00</td> <td>1.00</td> <td>1.00</td> <td>1.00</td> <td></td> </tr> <tr> <td>32.15</td> <td>33.28</td> <td>34.45</td> <td>35.66</td> <td>36.91</td> <td></td> </tr> </tbody> </table>													2019-20	2020-21	2021-22	2022-23	2023-24	32.15	33.28	34.45	35.66	36.91		1.00	1.00	1.00	1.00	1.00		32.15	33.28	34.45	35.66	36.91	
	2019-20	2020-21	2021-22	2022-23	2023-24																														
32.15	33.28	34.45	35.66	36.91																															
1.00	1.00	1.00	1.00	1.00																															
32.15	33.28	34.45	35.66	36.91																															

4) Summary of O&M Expenses claim

S. No	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
A) Normative O&M						
1	Transmission line	-	-	-	-	-
2	Substation	32.15	33.28	34.45	35.66	36.91
3	Communication System	0.00	0.00	0.00	0.00	0.00
	Total Normative O&M	32.15	33.28	34.45	35.66	36.91
B) O&M Claimed under Regulation 35 (3)(c)						
1	Security Expenses	0.00	0.00	0.00	0.00	0.00
2	Actual Capital Spare consumed	0.00	0.00	0.00	0.00	0.00
3	Total O&M	32.15	33.28	34.45	35.66	36.91

Note: The security expenses and Capital Spares are to be submitted on estimated basis for the purpose of O&M expenses. In case of additional security deployed, the petitioner shall indicate the same. The actual security and Capital Spares expenses to be provided at the time of true up

904

Petitioner

(E. ILLA CHANDRA)

Chief Engineer

(Commercial & Regulatory)

PTCUL

PART-III FORM-3						
Normative parameters considered for tariff computation						
Name of the Transmission Element: Asset-II: 1x80 MVAR Reactor						
Particulars	Unit	2019-20 (3)	2020-21 (4)	2021-22 (5)	2022-23 (6)	2023-24 (7)
Base Rate of Return on Equity	(1) (2)					
Effective tax rate ²	%	15.50%	15.50%	0.00%	15.50%	15.50%
Target Availability	%	17.47%	17.47%	17.47%	17.47%	17.47%
Normative O&M per bay	%	98.00%	98.00%	98.00%	98.00%	98.00%
Spares for WC as % of O&M	Rs. Lakh	32.15	33.28	34.45	35.66	36.91
Receivables in Days for WC	%	15	15	15	15	15
Bank Rate as on first day of financial year ³	Days	45	45	45	45	45
Lapsed life as on 01.04.2019 and beginning of every year (in completed years)	%	12.05%	11.25%	10.50%	10.50%	12.00%
	No. of years	2.00	3.00	4.00	5.00	6.00

(Petitioner)

(E. ILLA CHANDRA)

Chief Engineer

(Commercial & Regulatory)

PTCUL





Actual Cash Expenditure and Financial Package upto 1.4.2019

PART-III
FORM- 6

Name of the Transmission Element: Asset-II: 1x80 MVar Reactor

(Rupees in Lakh)

B) Financial package

	Financial Package as Approved		Financial Package as on COD		As Admitted on COD	
	Currency and Amount		Currency and Amount		Currency and Amount	
1	2	3	4	5	6	7
Loan-I						
Loan-II						
and so on						
Total Loans	INR		INR	469.36	INR	9021.19
Equity-						
Foreign						
Domestic						
Total Equity	INR		INR	201.16	INR	3866.22
Debt : Equity Ratio						
Total Cost	INR		INR	670.52	INR	12887.41
Add Cap.	Debt	Equity	Actual Debt	Actual Equity	Debt	Equity
Add cap for 2021-22			0.00	0.00		
Add cap for 2022-23			0.00	0.00		
Add cap for 2023-24			0.00	0.00		
Total Capital Cost with add cap.			670.52			


(Petitioner)

(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL







PART-III
FORM 8

Calculation of Return on Equity at Normal Rate

Name of the Transmission Element: Asset-II: 1x80 MVAR Reactor

(Amount in Rs. Lakh)

S. No	Particulars	As on 01-04- 2019 / as on COD whichever is later	2019- 20	2020- 21	2021- 22	2022- 23	2023- 24
(1)	(2)		(3)	(4)	(5)	(6)	(7)
	No. of Days in the year		366	365	365	365	366
	No. of days for which tariff claimed		366.00	365.00	365.00	365.00	366.00
1	Opening Normative Equity		201.16	201.16	201.16	201.16	201.16
2	Less: Adjustment in Equity*		0.00	0.00	0.00	0.00	0.00
3	Adjustment during the year		0.00	0.00	0.00	0.00	0.00
4	Net Opening Equity (Normal)		201.16	201.16	201.16	201.16	201.16
5	Add: Increase in Equity due to addition during the year/period		0.00	0.00	0.00	0.00	0.00
6	Less: Decrease due to de-capitalisation during the year		0.00	0.00	0.00	0.00	0.00
7	Add: Increase due to discharges during the year/period		0.00	0.00	0.00	0.00	0.00
8	Closing Normative Equity		201.16	201.16	201.16	201.16	201.16
9	Average Normative Equity		201.16	201.16	201.16	201.16	201.16
11	Rate of Return on Equity (Base Rate)		15.50%	15.50%	15.50%	15.50%	15.50%
13	Effective tax rate / MAT rate for the respective years		17.47%	17.472%	17.47%	17.47%	17.47%
14	Rate of Return on Equity (Pre Tax)		18.782%	18.782%	18.78%	18.78%	18.78%
15	Return on Equity on project cost till Cutoff date (Pre Tax)		37.78	37.78	37.78	37.78	37.78

(Petitioner)
(F. ILLA CHANDRA)

Chief Engineer
(Commercial & Regulatory)
PTCUL

PART-III
FORM 10

Calculation of Depreciation Rate on original project cost
Name of the Transmission Element: Asset-II: 1x80 MVA Reactor

S. No.	Name of the Assets ¹	Gross Block as on 1.4.2019 and addition during the year	Depreciation Rates as per CERC's Depreciation Schedule	Depreciation Amount for 2020-21
1	Substation	670.52	3	4= Col.2 X Col.3
	TOTAL		5.28%	35.40
	Weighted Average Rate of Depreciation (%)			5.28%

S. No.	Name of the Assets ¹	Gross Block as on 1.4.2020 and addition during the year	Depreciation Rates as per CERC's Depreciation Schedule	Depreciation Amount for 2020-21
1	Substation	670.52	3	4= Col.2 X Col.3
	TOTAL		5.28%	35.40
	Weighted Average Rate of Depreciation (%)			5.28%

S. No.	Name of the Assets ¹	Gross Block as on 1.4.2021 and addition during the year	Depreciation Rates as per CERC's Depreciation Schedule	Depreciation Amount for 2021-22
1	Substation	670.52	3	4= Col.2 X Col.3
	TOTAL		5.28%	35.40
	Weighted Average Rate of Depreciation (%)			5.28%

S. No.	Name of the Assets ¹	Gross Block as on 1.4.2022 and addition during the year	Depreciation Rates as per CERC's Depreciation Schedule	Depreciation Amount for 2022-23
1	Substation	670.52	3	4= Col.2 X Col.3
	TOTAL		5.28%	35.40
	Weighted Average Rate of Depreciation (%)			5.28%

S. No.	Name of the Assets ¹	Gross Block as on 1.4.2023 and addition during the year	Depreciation Rates as per CERC's Depreciation Schedule	Depreciation Amount for 2023-24
1	Substation	670.52	3	4= Col.2 X Col.3
	TOTAL		5.28%	35.40
	Weighted Average Rate of Depreciation (%)			5.28%

2024
E. ILLA CHANDRA
Chief Engineer
(Commercial & Regulatory)
PTCUL

	TOTAL			
	Weighted Average Rate of Depreciation (%)			5.28%


 Petitioner
(Er. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL





Name of the Transmission Element: Asset-II: 1x80 MVAR Reactor

(Amount in Rs. Lakh)

S. No.	Particulars	As on 01-04-2019 / COD	2019-20	2020-21	2021-22	2022-23	2023-24
I	No. of Days in the year		366	365	365	365	366
II	No. of days for which tariff claimed						
	<i>Life at the beginning of year</i>						
1.1	Weighted Average useful Life of the Asset/Project.		23	22	21	20	19
1.2	Lapsed weighted average useful life of the asset/project (in Completed no. of Year).		2	3	4	5	6
1.3	Balance weighted average useful life of the asset/project (in Completed no. of Years)						
	Capital Base						
1.4	Opening Capital Cost		670.52	670.52	670.52	670.52	670.52
1.5	Additional Capital Expenditure dr. the year		0.00	0.00	0.00	0.00	0.00
1.6	De-Capitalisation during the year						
1.7	Closing Capital Cost		670.52	670.52	670.52	670.52	670.52
1.8	Average Capital Cost		670.52	670.52	670.52	670.52	670.52
1.9	Freehold land included in 1.8		0.00	0.00	0.00	0.00	0.00
1.10	Asset having NIL Salvage value included in 1.8		0.00	0.00	0.00	0.00	0.00
1.11	Asset having 10% Salvage value included in 1.8		670.52	670.52	670.52	670.52	670.52
1.12	Depreciable value (1.10+ 90% of 1.11)		603.47	603.47	603.47	603.47	603.47
	Depreciation for the period and Cum. Depreciation.						
1.13	Weighted Average Rate of depreciation		5.28%	5.28%	5.28%	5.28%	5.28%
1.14	Depreciation (for the period)		35.40	35.40	35.40	35.40	35.40
1.15	Depreciation (annualised)		35.40	35.40	35.40	35.40	35.40
1.16	Cumulative depreciation at the beginning of the period		15.81	51.21	86.62	122.02	157.42
1.17	Less: Adj. of Cum.dep. pertaining to the decapitalised asset.						
1.18	Cumulative depreciation at the end of the period		51.21	86.62	122.02	157.42	192.83

(Er. III (Petitioner) DRA)

Chief Engineer
(Commercial & Regulatory)
PTCUL

Calculation of Interest on Working Capital
Name of the Transmission Element: Asset-II: 1x80 MVAR Reactor

(Amount in Rs. Lakh)

S. No.	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
I	No. of Days in the year	366	365	365	365	366
II	No. of days for which tariff claimed	366	365	365	365	366
1	O & M Expenses - one month	2.68	2.77	2.87	2.97	3.08
2	Maintenance Spares 15% of O&M Expenses	4.82	4.99	5.17	5.35	5.54
3	Receivables equivalent to 45 days of AFC	13.26	13.42	13.55	13.70	13.87
4	Total Working Capital	20.76	21.18	21.59	22.02	22.48
5	Bank rate as on 01.04.2019 or as on 01st April of the COD year, whichever is later.	12.05%	11.25%	10.50%	10.50%	12.00%
6	Interest on Working Capital	2.50	2.38	2.27	2.31	2.70



(Petitioner)
(Er. III R. K. Sharma)

Chief Engineer
(Commercial & Regulatory)
PTCUL





INDEX		PART-III
Checklist of Forms and other information/ documents for tariff filing for Transmission System & Communication System		
Form No.	Title of Tariff Filing Forms (Transmission & Communication System)	Tick
FORM- 1	Summary Sheet	✓
FORM-1A	Summary of Asset level cost	✓
FORM-2	Details of Transmission Lines and Substations and Communication System covered in the project scope and O&M for instant asset	✓
FORM-3	Normative parameters considered for tariff computations	✓
FORM- 4	Abstract of existing transmission assets/elements under project, Determination of Effective COD and Weighted Average Life for single AFC for the project as whole	✓
FORM- 4A	Statement of Capital cost	NA
FORM- 4B	Statement of Capital Works in Progress	NA
FORM- 4C	Abstract of Capital Cost Estimates and Schedule of Commissioning for the New Project/Element	NA
FORM-5	Element wise Break-up of Project/Asset/Element Cost for Transmission System or Communication System	NA
FORM-5A	Break-up of Construction/Supply/Service packages	NA
FORM-5B	Details of all the assets covered in the project	NA
FORM- 6	Actual Cash Expenditure and Financial Package upto COD	✓
FORM- 7	Statement of Additional Capitalisation after COD	✓
FORM- 7A	Financing of Additional Capitalisation	NA
FORM- 7B	Statement of Additional Capitalisation claimed during five year before the end of the useful life of the Project	NA
FORM- 8	Calculation of Return on Equity	✓
FORM-8A	Details of Foreign Equity	NA
FORM-9	Details of Allocation of corporate loans to various transmission elements	NA
FORM-9A	Details of Project Specific Loans	NA
FORM-9B	Details of Foreign loans	NA
FORM-9C	Calculation of Weighted Average Rate of Interest on Actual Loans	✓
FORM-9D	Loans in Foreign Currency	NA
FORM-9E	Calculation of Interest on Normative Loan	✓
FORM- 10	Calculation of Depreciation Rate on original project cost	✓
FORM- 10A	Statement of Depreciation	✓
FORM- 10B	Statement of De-capitalisation	✓
FORM- 11	Calculation of Interest on Working Capital	✓
FORM- 12	Details of time over run	NA
FORM- 12A	Incidental Expenditure during Construction	NA
FORM- 12B	Calculation of IDC & Financing Charges	NA
FORM- 13	Details of Initial spares	NA
FORM- 14	Non-Tariff Income	NA
FORM- 15	Summary of issue involved in the petition	✓
FORM A	Summary of Capital Cost & Annual Fixed Cost (AFC) Claimed for ALL the assets covered in the present petition	✓
Note1: Electronic copy of the petition (in words format) and detailed calculation as per these formats (in excel format) and any other information submitted has to be uploaded in the e-filing website and shall also be furnished in pen drive/flash drive.		






 (Er. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL

Summary Sheet
Name of the Petitioner: Power Transmission Corporation of Uttarakhand Limited
Name of the Region: Northern Region

PART-III
FORM- 1

Name of the Transmission Element: 400 kV Substation Srinagar (Deemed ISTS) under UTP Scheme

(Amount in Rs. Lakh)							
S. No.	Particulars	Form No.	2024-25	2025-26	2026-27	2027-28	2028-29
1	2	3	4	5	6	7	8
1	Depreciation	10A	964.63	946.14	904.50	906.91	928.53
2	Interest on Loan	9E	1.54	7.62	13.35	14.33	24.19
3	Return on Equity	8	1009.25	1017.38	1017.38	1016.19	1038.56
4	Interest on Working Capital	11	64.40	68.16	67.84	69.78	72.92
5	O & M Expenses	2	812.30	855.27	899.48	946.35	997.46
	Total AFC		2852.12	2894.58	2902.55	2953.56	3061.66


Petitioner
(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

Summary of Asset Level Cost

**PART-III
FORM- 1A**

Name of the Petitioner: Power Transmission Corporation of Uttarakhand Limited
Name of the Region: Northern Region
Name of the Transmission Element: 400 kV Substation Srīnagar (Deemed ISTS) under UIIP Scheme

(Amount in Rs. Lakh)

A) Summary of Capital Cost, Means of Finance of the Asset		II) Summary of Actual / Projected Capital Cost						
Particular	I) Apportioned Approved Cost		As on 01-04-2024					As on 31.03.2029
	as per /A	As per RCE	2024-25 (Actual)	2025-26 (Actual)	2026-27 (Projected)	2027-28 (Projected)	2028-29 (Projected)	
Land (Freehold Land)								0
Land (Leasehold)			413.83	0.00	0.00	0.00	0.00	413.83
Building & Civil Works			1343.48	67.55	228.52	114.18	30.31	1833.07
Transmission Line			0.00	0.00	0.00	0.00	0.00	0.00
Sub-Station			15627.02	58.40	0.00	0.00	0.00	16454.3
PLCC			381.47	0.00	0.00	0.00	0.00	381.47
Batteries			33.23	28.00	0.00	0.00	0.00	61.23
Total Capital Cost as per Books	0	0	17799.03	153.95	228.52	114.18	30.31	19143.90
Less: Liability								
Equity			5339.71	46.19	68.56	34.25	9.09	5743.17
Debt			12459.32	107.77	159.96	79.93	21.22	13400.73


 Petitioner
(Er. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL

2. Substations:

S. No.	Name of Sub-station	Type of Substation (Greenfield/Brownfield/ GIS/HVDC Back to Back)	Voltage level KV	No. of transformers (with capacity)*	MVA MVA Capacity				Date of Commercial operation	Covered in the present Petition	
					765 KV	400 KV	220 KV	132 KV & Below		Yes	If No, Petition No.
1	Srinagar Substation: 400 KV bays • 2 Nos, 315 MVA, 400/220 KV/ICT-I & II (HV Side) • 2 Nos 400 KV/D/C Khandukhal (Srinagar) - GVK Line bays • 1 No. 80 MVAR Bus Reactor Bay • 2 Nos, 315 MVA, 400/220 KV/ICT-I & II (LV Side) • 1 No, 160 MVA, 400/220 KV/ICT-I (HV Side) Srinagar Substation: 220 KV bays • 1 No, 160 MVA, 220/132 KV/ICT-I (HV Side) Srinagar Substation: 220 KV Bays • 2 Nos, 220 KV/D/C Khandukhal (Srinagar) - Baranwari Line bays					5					
2	Srinagar Substation: 400/220 KV ICTs • 2 Nos, 315 MVA, 400/220 KV/ICT-I & II Srinagar Substation: 220/132 KV/ICTs • 1 No, 160 MVA, 220/132 KV/ICT-I Srinagar Substation: 220/132 KV/ICTs • 1 No, 160 MVA, 220/132 KV/ICT-II 1 No. 80 MVAR Reactor			2			315				
3				2				160			
4				1			80				

400 KV Sub-station bays

O&M Expenses for the Substations covered in the instant petition											
No. of units											
Normative rate of O&M as per Regulation (Rupees in Lakh)											
O&M Claimed (Rupees in Lakh)											
220 KV Sub-station bays											
O&M Expenses for the Substations covered in the instant petition											
No. of units											
Normative rate of O&M as per Regulation (Rupees in Lakh)											
O&M Claimed (Rupees in Lakh)											
132 KV and below Sub-station											
O&M Expenses for the Substations covered in the instant petition											
No. of units											
Normative rate of O&M as per Regulation (Rupees in Lakh)											
O&M Claimed (Rupees in Lakh)											
400 KV ICT											
O&M Expenses for the Substations covered in the instant petition											
No. of units											
Normative rate of O&M as per Regulation (Rupees in Lakh)											
O&M Claimed (Rupees in Lakh)											
220 KV ICT											
O&M Expenses for the Substations covered in the instant petition											
No. of units											
Normative rate of O&M as per Regulation (Rupees in Lakh)											
O&M Claimed (Rupees in Lakh)											

(Er. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL

4) Summary of O&M Expenses claim

S. No		Particulars		2024-25	2025-26	2026-27	2027-28	2028-29
		A) Normative O&M						
1	Transmission line							
2	Substation							
3	Communication System			541.53	570.18	599.85	630.6	664.97
Total Normative O&M								
		B) O&M Claimed under Regulation 35 (3)(C)						
1	Security Expenses							
2	Actual Capital Spare consumed ¹							
3	Insurance Premium Paid ²			1.5	1.5	1.5	1.5	1.5
Multiplier of 1.5 (on account of hilly areas)				612.295	855.27	859.475	946.35	957.455
Total O&M								

Note: The security expenses and Capital Spares are to be submitted on estimated basis for the purpose of O&M expenses. In case of additional security deployed, the petitioner shall indicate the same. The actual security and Capital Spares expenses to be provided at the time of true up.

1. List of Capital Spares to be provided at the time of true up. Further, no Capital Spares individually costing upto Rs. 10 lakh shall be claimed.
2. At the time of determination of tariff Insurance Premium shall be estimated which shall be subject to true up on the basis of actuals.


(Petitioner)
(Er. ILIA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

Normative Parameters considered for Tariff Computation

Name of the Petitioner: Power Transmission Corporation of Uttarakhand Limited

Name of the Region: Northern Region

Name of the Transmission Element: 400 kV Substation Srinagar (Deemed ISTS) under UTP Scheme

**PART-III
FORM- 3**

Particulars		Unit	Existing 2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
-1		-2	-3	-4	-5	-6	-7	-8
Base Rate of Return on Equity		%		15.50	15.50	15.50	15.50	15.50
Tax Rate		%		17.47%	17.47%	17.47%	17.47%	17.47%
Effective Tax Rate ²		%		17.47%	17.47%	17.47%	17.47%	17.47%
Target Availability		%		98%	98%	98%	98%	98%
Normative O&M per 400 kV Bay		Rs. Lakh		44.30	46.62	49.07	51.65	54.35
Normative O&M per 220 kV Bay		Rs. Lakh		31.01	32.63	34.35	36.15	38.04
Normative O&M per MVA		Rs. Lakh		0.393	0.414	0.435	0.4575	0.483
Spares for WC as % of O&M		%		15%	15%	15%	15%	15%
Receivables in Days for WC		Days		45	45	45	45	45
Reference Rate as on first day of financial year ³		%		11.90%	12.25%	11.95%	11.95%	11.95%
Lapsed life as on 01.04.2024 and beginning of every year(in completed years)		No. of years		7	8	9	10	11


(Er. ILIYA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL





(Rs. in lakh)

C) Computation of Effective COD for determining lapsed useful life of the project as whole.

Asset No.	Asset 1 - Group A	Asset 1 - Group B	Asset 1 - Group C	Asset 1 - Group D	Asset-II	Total
	a	b	c	d	e	f = (b+c+d+e+f)
1) Actual COD of the Asset.	31-07-2016	14-10-2016	03-08-2016	13-11-2020	20-10-2018	13-11-2020
2) COD considered for tariff purpose (i)	31-07-2016	14-10-2016	03-08-2016	13-11-2020	20-10-2018	13-11-2020
3) No. of days between the COD of the asset considered for tariff and the COD of the Project (days)		1566	1491	0	755	
4) True up Capital Cost as on 31-03-2024 (in Lakh)		12956.09	1054.03	511.99	670.52	
5) Weight of the Cost of an asset (in %)		72.79%	5.96%	2.86%	3.77%	
6) Weighted days = (3x5)		1139.91	89.13	0.00	28.44	
7) Effective COD = (i.e. COD of the Project - Total Weighted days)						19-10-2016

Note:

- i) COD of the Asset considered for tariff: This normally refers the actual COD of the project. In case commission had admitted clubbing of the assets if any in previous tariff period, then the COD considered for such clubbed assets for tariff purpose has to be considered here (eg. Notional COD)
- ii) No. of days from the COD of the Project: It refers the distance between the COD considered for tariff for the individual Asset and the COD of the Project. This has been computed by (COD of the individual Asset) - COD of the Project
- iii) COD of the Project = The COD of the last asset of the Project.
- iv) Weight of the Cost of an asset = It refers the proportion (i.e. weight) of individual assets cost on comparing the Total capital cost of the project. It has to be computed by (True up cost of concerned asset as on 31.03.2024/Total of true up cost of all the assets) x 100
- v) Weighted days: This is the product of the Weight of the Cost of an asset and the distance from its COD to the COD of the Project.

D) Weighted Average useful Life of the Project as whole

Particulars	Capital Cost as on 01-04-2024 after true up of 2014-19					Useful life / Extended life	Weighted Cost
	Asset 1 b	Asset 2 c	Asset 3 d	Asset 4 e	and so on f		
Freehold Land						h	i = (g)x(h)
Leasehold Land						25	10,345.75
Building & Other Civil Works						25	33,587.05
Transmission Line						35	
Sub-Station Equipment						25	3,60,675.50
PLCC						7	2,670.29
Batteries						11	365.53
Total							4,37,644.12
							25 Years

Weighted Average life = Total Weighted Cost/Total Combine Cost. (Rounded off to get complete year)

E) Lapsed weighted average useful life of the project & Balance weighted average Useful life

This refers to the No. of completed years from the Effective COD till the last day of the previous tariff period (i.e. 31.03.2024)

i) Effective COD	19-10-2016
ii) Last day of the previous tariff control period	30/3/2024
iii) No. of Completed years lapsed as on 01.04.2024 (ii-i)	7
iv) Remaining useful life (in year) (WAL-lapsed year)	16

Note: i) The petitioner has to maintain the identity of the individual assets. In consolidation petitions, the petitioner has to maintain and provide the details of individual assets, like description, actual COD, effective COD, cut-off date, admitted capital cost, O&M Expenses etc. The petitioner has to make all claims of additional capital expenditure or de-capitalization for the project, along with Auditor certificate by clearly mentioning the individual assets to which the claim has been made. Accordingly, the relevant tariff forms should show the individual asset wise breakup. 2) This form is required to be submitted when the project is commissioned prior to 01.04.2024 (i.e. the last element of the project commissioned prior to 01.04.2024. 3) The No. of completed year can be arrived by the excel function viz. YEARFRAC(01-03-2024 Effective COD) and ignore the fraction if any from the result.

(E. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

Name of the Petitioner: Power Transmission Corporation of Uttarakhand Limited
Name of the Region: Northern Region
Name of the Transmission Element: 400 KV Substation Srinagar (Deemed ISTS) under UTP Scheme

Actual Cash Expenditure and Financial Package upto COD

Part-III
Form-6

B) Financial package

(Amount in Rs.
Lakh)

1	Financial Package as Approved Currency and Amount \$		Financial Package as on 1.4.2024 Currency and Amount \$		As Admitted on 1.4.2024 Currency and Amount \$	
	2	3	4	5	6	7
Loan-I						
Loan-II						
and so on						
Total Loans	INR			12459.32		
Equity-						
Foreign						
Domestic						
Total Equity	INR			5339.71		
Debt : Equity Ratio	INR					
Total Cost	INR			17799.03		
Add Cap.						
Add cap for 2024-25						
Add cap for 2025-26						
Add cap for 2026-27						
Add cap for 2027-28						
Add cap for 2028-29						
Total Capital Cost with add cap.				572.54	245.37	19143.90


(Petitioner)
(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

GOD

A) ACE for the year 2024-25 (Amount in Rs. Lakh)

Particulars	Addition into Gross Block as per books of Account during the year		Less: Deductions of, the year towards				Add: Discharge of earlier admitted liability	ACE on cash basis for tariff purpose	Admitted Cost in final tariff (Rs Lakh)
	Grants Received (if any)	Assets pertaining to other business (if any)	Other Deduction included in (2-4.5)	Less: Un-discharged liability included in (2-4.5)	Less: Discharged liability included in (2-4.5)	Less: Discharged liability included in (2-4.5)			
1	2	3	4	5	6	7	8	9	10
Land (Freehold Land)	0	0	0	0	0	0	0	0	0
Land (Leasehold)	0	0	0	0	0	0	0	0	0
Building Civil Work	67.55	0	0	0	0	0	0	67.55	0
Transmission Line	0	0	0	0	0	0	0	0	0
Sub-Station	56.4	0	0	0	0	0	0	56.4	0
PLCC	0	0	0	0	0	0	0	0	0
Batteries	28.20	0	0	0	0	0	0	28.20	0
Total	153.15	0	0	0	0	0	0	153.15	0

B) ACE for the year 2025-26

Particulars	Addition into Gross Block as per books of Account during the year		Less: Deductions of, the year towards				Add: Discharge of earlier admitted liability	ACE on cash basis for tariff purpose	Admitted Cost in final tariff (Rs Lakh)
	Grants Received (if any)	Assets pertaining to other business (if any)	Other Deduction included in (2-4.5)	Less: Un-discharged liability included in (2-4.5)	Less: Discharged liability included in (2-4.5)	Less: Discharged liability included in (2-4.5)			
1	2	3	4	5	6	7	8	9	10
Land (Freehold Land)	0	0	0	0	0	0	0	0	0
Land (Leasehold)	0	0	0	0	0	0	0	0	0
Building Civil Work	228.52	0	0	0	0	0	0	228.52	0
Transmission Line	0	0	0	0	0	0	0	0	0
Sub-Station	0	0	0	0	0	0	0	0	0
PLCC	0	0	0	0	0	0	0	0	0
Batteries	228.52	0	0	0	0	0	0	228.52	0
Total	457.04	0	0	0	0	0	0	457.04	0

C) ACE for the year 2026-27

Particulars	Addition into Gross Block as per books of Account during the year		Less: Deductions of, the year towards				Add: Discharge of earlier admitted liability	ACE on cash basis for tariff purpose	Admitted Cost in final tariff (Rs Lakh)
	Grants Received (if any)	Assets pertaining to other business (if any)	Other Deduction included in (2-4.5)	Less: Un-discharged liability included in (2-4.5)	Less: Discharged liability included in (2-4.5)	Less: Discharged liability included in (2-4.5)			
1	2	3	4	5	6	7	8	9	10
Land (Freehold Land)	0	0	0	0	0	0	0	0	0
Land (Leasehold)	0	0	0	0	0	0	0	0	0
Building Civil Work	114.18	0	0	0	0	0	0	114.18	0
Transmission Line	0	0	0	0	0	0	0	0	0
Sub-Station	0	0	0	0	0	0	0	0	0
PLCC	0	0	0	0	0	0	0	0	0
Batteries	0	0	0	0	0	0	0	0	0
Total	114.18	0	0	0	0	0	0	114.18	0

D) ACE for the year 2027-28

Particulars	Addition into Gross Block as per books of Account during the year		Less: Deductions of, the year towards				Add: Discharge of earlier admitted liability	ACE on cash basis for tariff purpose	Admitted Cost in final tariff (Rs Lakh)
	Grants Received (if any)	Assets pertaining to other business (if any)	Other Deduction included in (2-4.5)	Less: Un-discharged liability included in (2-4.5)	Less: Discharged liability included in (2-4.5)	Less: Discharged liability included in (2-4.5)			
1	2	3	4	5	6	7	8	9	10
Land (Freehold Land)	0	0	0	0	0	0	0	0	0
Land (Leasehold)	0	0	0	0	0	0	0	0	0
Building Civil Work	30.31	0	0	0	0	0	0	30.31	0
Transmission Line	0	0	0	0	0	0	0	0	0
Sub-Station	0	0	0	0	0	0	0	0	0
PLCC	0	0	0	0	0	0	0	0	0
Batteries	30.31	0	0	0	0	0	0	30.31	0
Total	60.62	0	0	0	0	0	0	60.62	0

(Er. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL

304-
 9
 10/1

Calculation of Return on Equity at Normal Rate

**PART-III
FORM 8**

Name of the Petitioner: Power Transmission Corporation of Uttarakhand Limited
 Name of the Region: Northern Region
 Name of the Transmission Element: 400 kV Substation Srinagar (Deemed ISTS) under UITP Scheme

(Amount in Rs. Lakh)

Particulars	As on 01-04-2024	2024-25	2025-26	2026-27	2027-28	2028-29
No. of Days in the year		365	365	365	366	365
No. of days for which tariff claimed						
1 Opening Normative Equity	5339.71	5339.71	5348.11	5348.11	5348.11	5348.11
2 Less: Adjustment in Equity*		0.00	0.00	0.00	0.00	0.00
3 Adjustment during the year		0.00	0.00	0.00	0.00	0.00
4 Net Opening Equity (Normal)		5339.71	5348.11	5348.11	5348.11	5348.11
5 Add: Increase in Equity due to addition during the year/period		18.37	0.00	0.00	0.00	245.37
7 Less: Decrease due to de-capitalisation during the year		9.97	0.00	0.00	0.00	0.00
8 Add: Increase due to discharges during the year/period		0.00	0.00	0.00	0.00	0.00
9 Closing Normative Equity		5348.11	5348.11	5348.11	5348.11	5593.48
10 Average Normative Equity		5343.91	5348.11	5348.11	5348.11	5470.80
11 Rate of Return on Equity (Base Rate)		15.50%	15.50%	15.50%	15.50%	15.50%
12 Effective tax rate / MAT rate for the respective years		17.47%	17.47%	17.47%	17.47%	17.47%
13 Rate of Return on Equity (Pre Tax)		18.78%	18.78%	18.78%	18.78%	18.78%
14 Return on Equity on project cost till Cutoff date (Pre Tax)		1003.67	1004.46	1004.46	1004.46	1027.50

Particulars	As on 01-04-2024	2024-25	2025-26	2026-27	2027-28	2028-29
No. of Days in the year		365	365	365	366	365
No. of days for which tariff claimed						
1 Opening Normative Equity (Reg 30 Proviso)		0.00	37.79	106.34	140.60	149.69
2 Less: Adjustment in Equity*		0.00	0.00	0.00	0.00	0.00
3 Adjustment during the year		0.00	0.00	0.00	0.00	0.00
4 Net Opening Equity (Normal)(Reg 30 Proviso)		0.00	37.79	106.34	140.60	149.69
5 Add: Increase in Equity due to addition during the year/period (under Regulation 26)		37.79	68.56	34.25	9.09	0.00
6 Closing Normative Equity (Reg 30 Proviso)		37.79	106.34	140.60	149.69	149.69
7 Average Normative Equity (Reg 30 Proviso)		37.79	87.45	87.42	79.39	74.84
8 Rate of Return on Equity (Base Rate) (Reg 30 Proviso)		12.20%	12.20%	12.20%	12.20%	12.20%
9 Effective tax rate / MAT rate for the respective years		17.47%	17.47%	17.47%	17.47%	17.47%
10 Rate of Return on Equity (Pre Tax) (Reg 30 Proviso)		14.78%	14.78%	14.78%	14.78%	14.78%
11 Return on Equity on project cost till Cutoff date (Pre Tax) (Reg 30 Proviso)		5.59	12.93	12.92	11.74	11.06
12 Total		1009.25	1017.38	1017.38	1016.19	1038.56

(Petitioner)
(Er. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL

Calculation of Weighted Average Rate of Interest on Actual Loans

Name of the Petitioner: Power Transmission Corporation of Uttarakhand Limited

Name of the Region: Northern Region

Name of the Transmission Element: 400 kV Substation Srinagar (Deemed ISTS) under UITP Scheme

Part-III

Form-9C

(Amount in Rs. Lakh)

Particulars	2024-25	2025-26	2026-27	2027-28	2028-29
1	3	4	5	6	7
ADB					
Gross loan - Opening	13742.33	13742.33	13742.33	13742.33	13742.33
Cumulative repayments of Loans up to previous year		0.00	916.16	1832.31	2748.47
Net loan - Opening	13742.33	13742.33	12826.17	11910.02	10993.86
Add: Drawl(s) during the Year	0.00	0.00	0.00	0.00	0.00
Less: Repayment (s) of Loans during the year	0.00	916.16	916.16	916.16	916.16
Net loan - Closing	13742.33	12826.17	11910.02	10993.86	10077.71
Average Net Loan	13742.33	13284.25	12368.09	11451.94	10535.78
Rate of Interest on Loan on annual basis	0.00	0.00	0.00	0.00	0.00
Interest on loan	0.00	0.00	0.00	0.00	0.00
SASCI					
Gross loan - Opening	0.00	83.74	83.74	83.74	83.74
Cumulative repayments of Loans upto previous year	0.00	0.00	0.07	0.14	0.21
Net loan - Opening	0.00	83.74	83.67	83.60	83.53
Add: Drawl(s) during the Year	83.74	0.00	0.00	0.00	0.00
Less: Repayment (s) of Loans during the year	0.00	0.07	0.07	0.07	0.07
Net loan - Closing	83.74	83.67	83.60	83.53	83.46
Average Net Loan	41.87	83.71	83.64	83.57	83.50
Rate of Interest on Loan on annual basis	6.50%	6.50%	6.50%	6.50%	6.50%
Interest on loan	2.72	5.44	5.44	5.43	5.43
REC					
Gross loan - Opening	0.00	0.00	206.50	206.50	206.50
Cumulative repayments of Loans up to previous year	0.00	0.00	0.00	0.00	0.00
Net loan - Opening	0.00	0.00	206.50	206.50	206.50
Add: Drawl(s) during the Year	0.00	206.50	0.00	0.00	0.00
Less: Repayment (s) of Loans during the year	0.00	0.00	0.00	0.00	0.14
Net loan - Closing	0.00	206.50	206.50	206.50	206.36
Average Net Loan	0.00	103.25	206.50	206.50	206.43
Interest on loan	0.00%	8.97%	8.97%	8.97%	8.97%
Interest on loan	0.00	9.26	18.52	18.52	18.52
SBI MCLR (Projected Addcap)					
Gross loan - Opening	0.00	0.00	0.00	79.93	101.14
Cumulative repayments of Loans up to previous year	0.00	0.00	0.00	0.00	0.00
Net loan - Opening	0.00	0.00	0.00	79.93	101.14
Add: Drawl(s) during the Year	0.00	0.00	79.93	21.22	572.54
Less: Repayment (s) of Loans during the year	0.00	0.00	0.00	0.00	0.00
Net loan - Closing	0.00	0.00	79.93	101.14	673.68
Average Net Loan	0.00	0.00	39.96	90.53	387.41
Interest on loan	0.00%	8.70%	8.70%	8.70%	8.70%
Interest on loan	0.00	0.00	3.48	7.88	33.70
Summary					
Gross loan - Opening	13742.33	13826.07	14032.57	14112.49	14133.71
Cumulative repayments of Loans up to previous year	0.00	0.00	916.22	1832.45	2748.67
Net loan - Opening	13742.33	13826.07	13116.34	12280.04	11385.04
Add: Drawl(s) during the Year	83.74	206.50	79.93	21.22	572.54
Less: Repayment (s) of Loans during the year	0.00	916.22	916.22	916.22	916.36
Net loan - Closing	13826.07	13116.34	12280.04	11385.04	11041.21
Average Net Loan	13784.20	13471.21	12698.19	11832.54	11213.12
Weighted Average rate of Interest	0.02%	0.11%	0.22%	0.27%	0.51%
Interest on loan	2.72	14.70	27.44	31.83	57.65


(Er. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL

Calculation of Interest on Normative Loan
Name of the Petitioner: Power Transmission Corporation of Uttarakhand Limited
Name of the Region: Northern Region
Name of the Transmission Element: 400 kV Substation Srinagar (Deemed ISTS) under UTP Scheme

Part-III
Form-9E

S. No.	Particulars	As on 01-04-2024 / as on COD whichever is later	2024-25	2025-26	2026-27	2027-28	2028-29
	No. of Days in the year		365	365	365	366	365
	No. of days for which tariff claimed						
1	Gross Normative loan – Opening	12459.32	12,459.32	12,590.35	12,750.31	12,830.24	12,851.46
2	Cumulative repayment of Normative Loan upto previous year		4223.67	5211.57	6157.70	7062.20	7969.11
3	Net normative loan – Opening		8,235.65	7,378.78	6,592.61	5,768.04	4,882.35
4	Addition in Normative loan towards the ACE		131.03	159.96	79.93	21.22	572.54
5	Adjustment of Normative Gross loan pertaining to the decapitalised asset.		23.26	0	0	0	0
6	Normative Repayments of Normative Loan during the year		964.63	946.14	904.50	906.91	928.53
7	Adjustment of Cum. repayment pertaining to the decapitalised asset.		13.45	0	0	0	0
8	Net Normative loan – Closing		7,392.23	6,592.61	5,768.04	4,882.35	4,526.35
9	Average Normative Loan		7,813.94	6,985.69	6,180.32	5,325.19	4,704.35
10	Weighted average Rate of Interest of actual Loans		0.02%	0.11%	0.22%	0.27%	0.51%
11	Interest on Normative loan		1.54	7.62	13.35	14.33	24.19

(Amount in Rs. Lakh)

(Er. ILA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

Calculation of Depreciation Rate on original project cost

Name of the Petitioner: Power Transmission Corporation of Uttarakhand Limited

Name of the Region: Northern Region

Name of the Transmission Element: 400 kV Substation Srinagar (Deemed ISTS) under UTP Scheme

Form-10

(Amount in Rs. Lakh)

S. No.	Name of the Assets ¹	Gross Block as on 1.04.2024 and addition during the year	Depreciation Rates as per CERC's Depreciation Rate Schedule ²	Depreciation Amount for 2024-25
	1	2	3	4= Col.2 X Col.3
1	Land (Leasehold)	413.83	3.34%	13.82
2	Building & Civil Works	1377.26	3.34%	46.00
3	Transmission Line	0.00	5.28%	0.00
4	Sub-Station	15656.22	5.28%	826.65
5	PLCC	381.47	15.00%	57.22
6	Batteries	47.23	9.50%	4.49
	TOTAL	17876.01		948.18
	Weighted Average Rate of Depreciation (%)			5.30%

S. No.	Name of the Assets ¹	Gross Block as on 1.04.2025 and addition during the year	Depreciation Rates as per CERC's Depreciation Rate Schedule ²	Depreciation Amount for 2025-26
	1	2	3	4= Col.2 X Col.3
1	Land (Leasehold)	413.83	3.34%	13.82
2	Building & Civil Works	1525.29	3.34%	50.94
3	Transmission Line	0.00	5.28%	0.00
4	Sub-Station	15685.42	5.28%	828.19
5	PLCC	381.47	15.00%	47.36
6	Batteries	61.23	9.50%	5.82
	TOTAL	18067.24		946.14
	Weighted Average Rate of Depreciation (%)			5.24%

S. No.	Name of the Assets ¹	Gross Block as on 1.04.2026 and addition during the year	Depreciation Rates as per CERC's Depreciation Rate Schedule ²	Depreciation Amount for 2026-27
	1	2	3	4= Col.2 X Col.3
1	Land (Leasehold)	413.83	3.34%	13.82
2	Building & Civil Works	1696.64	3.34%	56.67
3	Transmission Line	0.00	5.28%	0.00
4	Sub-Station	15685.42	5.28%	828.19
5	PLCC	381.47	15.00%	0.00
6	Batteries	61.23	9.50%	5.82
	TOTAL	18238.59		904.50
	Weighted Average Rate of Depreciation (%)			4.96%

S. No.	Name of the Assets ¹	Gross Block as on 1.04.2027 and addition during the year	Depreciation Rates as per CERC's Depreciation Rate Schedule ²	Depreciation Amount for 2027-28
	1	2	3	4= Col.2 X Col.3
1	Land (Leasehold)	413.83	3.34%	13.82
2	Building & Civil Works	1768.89	3.34%	59.08
3	Transmission Line	0.00	5.28%	0.00
4	Sub-Station	15685.42	5.28%	828.19
5	PLCC	381.47	15.00%	0.00
6	Batteries	61.23	9.50%	5.82
	TOTAL	18310.84		906.91
	Weighted Average Rate of Depreciation (%)			4.95%

S. No.	Name of the Assets ¹	Gross Block as on 1.04.2028 and addition during the year	Depreciation Rates as per CERC's Depreciation Rate Schedule ²	Depreciation Amount for 2028-29
	1	2	3	4= Col.2 X Col.3
1	Land (Leasehold)	413.83	3.34%	13.82
2	Building & Civil Works	1808.56	3.34%	60.41
3	Transmission Line	0.00	5.28%	0.00
4	Sub-Station	16069.86	5.28%	848.49
5	PLCC	381.47	15.00%	0.00
6	Batteries	61.23	9.50%	5.82
	TOTAL	18734.95		928.53
	Weighted Average Rate of Depreciation (%)			4.96%


(Er. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL
 -309-

Statement of Depreciation

Name of the Petitioner: Power Transmission Corporation of Uttarakhand Limited
 Name of the Region: Northern Region
 Name of the Transmission Element: 400 KV Substation Srinagar (Deemed ISTS) under UTP Scheme

Part-III
Form-10A

(Amount in Rs. Lakh)

Statement of Depreciation								Amount in Rs. Lakhs
S. No.	Particulars	As on 01-04-2024 / as on COD whichever is later	2024-25	2025-26	2026-27	2027-28	2028-29	
I	No. of Days in the year		365	365	365	366	365	
II	No. of days for which tariff claimed							
	Life at the beginning of year							
1.1	Weighted Average useful Life of the Asset/Project.		18	17	16	15	14	
1.2	Lapsed weighted average useful life of the asset/project (in Completed no. of Year).		7	8	9	10	11	
1.3	Balance weighted average useful life of the asset/project (in Completed no. of Years)							
Capital Base								
1.4	Opening Capital Cost		17799.03	17952.98	18181.50	18295.68	18325.99	
1.5	Additional Capital Expenditure dr. the year		187.17	228.52	114.18	30.31	817.91	
1.6	De-Capitalisation during the year		-33.22					
1.7	Closing Capital Cost		17952.98	18181.50	18295.68	18325.99	19143.90	
1.8	Average Capital Cost		17876.01	18067.24	18238.59	18310.84	18734.95	
1.9	Freehold land included in 1.8		0.00	0.00	0.00	0.00	0.00	
1.1	Asset having NIL Salvage value included in 1.8		0.00	0.00	0.00	0.00	0.00	
1.11	Asset having 10% Salvage value included in 1.8		17876.01	18067.24	18238.59	18310.84	18734.95	
1.12	Depreciable value (1.10+ 90% of 1.11)		16088.41	16260.52	16414.73	16479.75	16861.45	
Depreciation for the period and Cum. Depreciation.								
1.13	Weighted Average Rate of depreciation		5.30%	5.24%	4.96%	4.95%	4.96%	
1.14	Unrecovered Depreciation		16.46					
1.15	Depreciation (for the period)		964.63	946.14	904.50	906.91	928.53	
1.16	Depreciation (annualised)		964.63	946.14	904.50	906.91	928.53	
1.17	Cumulative depreciation at the beginning of the period		6531.08	7482.26	8428.40	9332.89	10239.80	
1.18	Less: Adj. of Cum. dep. pertaining to the de-capitalised asset.		13.45					
1.19	Cumulative depreciation at the end of the period		7482.26	8428.40	9332.89	10239.80	11168.34	

[Handwritten signature]

(Er. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL

Petitioner

Statement of De-capitalisation

Name of the Petitioner: Power Transmission Corporation of Uttarakhand Limited
Name of the Region: Northern Region
Name of the Transmission Element: 400 KV Substation Srinagar (Deemed ISTS) under UTP Scheme

Part-II
Form-10B

S. No.	Category	Date of Decapitalisation	Details of the Asset Decapitalised	Date / Year of capitalisation of asset/equipment being decapitalised	Original Capital Cost admitted for tariff for the asset being decapitalised	Debt Equity ratio considered on for tariff on the Capital cost at (5)	Cumulative Depreciation corresponding to decapitalised asset up to the date of decapitalisation	Cumulative Repayment of Loan corresponding to decapitalised asset up to the date of decapitalisation	Details of Petition in which the tariff of the asset being decapitalised was approved by Commission (Specify All the Pet. No. & Order date, Project name, Asset No for all the periods starting from its COD till date)
1		2024-25	Batteries		33.23	70:30	13.45	13.45	80/TT/2016 and 186/TT/2024

Notes: Category include

1. Replacement due to no usable condition like destroyed, completed useful life etc.
2. Replacement due to change in law.
3. Inter Unit transfer (transfer outside of the project)
4. Asset not put to use








(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL

Calculation of Interest on Working Capital

Name of the Petitioner: Power Transmission Corporation of Uttarakhand Limited

Name of the Region: Northern Region

Name of the Transmission Element: 400 kV Substation Srinagar (Deemed ISTS) under UJTP Scheme

Part-III

Form-11

(Amount in Rs. Lakh)

S. No.	Particulars	As on 01-04-2024 / as on COD whichever is later	2024-25	2025-26	2026-27	2027-28	2028-29
I	No. of Days in the year		365	365	365	365	365
II	No. of days for which tariff claimed						
1	O & M Expenses - one month		67.69	71.27	74.96	76.86	83.12
2	Maintenance Spares 15% of O&M Expenses		121.84	128.29	134.92	141.95	149.62
3	Receivables equivalent to 45 days of AFC		351.63	356.87	357.85	363.14	377.46
4	Total Working Capital		541.17	556.43	567.73	563.96	610.20
5	Reference rate as on 01.04.2024 or as on 01st April of the COD year, whichever is later.		11.90%	12.25%	11.95%	11.95%	11.95%
6	Interest on Working Capital		64.40	68.16	67.84	68.78	72.92

[Signature]

[Signature]

[Signature]

(Petitioner)

(Er. ILLA CHANDRA)

Chief Engineer

(Commercial & Regulatory)

PTCUI

Summary of issue involved in the petition

Name of the Petitioner: Power Transmission Corporation of Uttarakhand Limited

Name of the Region: Northern Region

Name of the Transmission Element: 400 kV Substation Srinagar (Deemed ISTS) under UITP Scheme

Part-III
Form-15

1. Name of the Petitioner	Power Transmission Company of Ut		
2. Petition Category	True-up and Determination		
3. Tariff Period	2019-24 and 2024-29		
4. Name of the Project	400 kV Substation Srinagar) (Deemed ISTS) under UITP Scheme		
5. Investment Approval date			
6. SCOD of the Project	26-05-2012		
7. Actual COD of the project	19-10-2016		
8. Whether entire scope is covered in the present petition.	Yes		
9. No. of Assets covered in instant petition	5		
10. No. of Assets having time over run	5		
11. Estimated Project Cost as per IA	0		
12. Is there any RCE? if so, provide the date	Yes		
13. Revised Estimated Project Cost (if any)	0		
14. Completion cost for all the assets covered in the instant petition.	19143.90		
15. No. of Assets covered in instant petition and having cost overrun.	0		
16	Prayer in brief: - 1) Approve the true-up Transmission Tariff for 2019-24 block and transmission tariff for 2024-29 block for the assets covered under this petition. 2) Approve the Completion cost and additional capitalization incurred during 2019-24 and allow the actual/projected additional capitalization during 2024-29. 3) Allow the petitioner to recover the shortfall or refund the excess Annual Fixed Charges, on account of Return on Equity due to change in applicable Minimum Alternate/Corporate Income Tax rate as per the Income Tax Act, 1961 (as amended from time to time) of the respective financial year directly without making any application before the Commission as provided in Tariff Regulation 2019 and Tariff regulations 2024. 4) Approve the reimbursement of expenditure by the beneficiaries towards petition filing fee, and expenditure on publishing of notices in newspapers in terms of Regulation 94 (1) Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2024, and other expenditure (if any) in relation to the filing of petition. 5) Allow the petitioner to bill and adjust impact on Interest on Loan due to change in Interest rate on account of floating rate of interest applicable during 2024-29 period. 6) Allow the petitioner to bill and recover RLDC fees and charges, separately from the respondents in terms of Regulation 94 (3) and (4) Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2024. 7) Allow the petitioner to file a separate petition before Hon'ble Commission for claiming the overall security expenses and consequential IOWC on that security expenses. 8) Allow the petitioner to file a separate petition before Hon'ble Commission for claiming the overall insurance expenses and consequential IOWC on that insurance expenses. 9) Allow the petitioner to file a separate petition before Hon'ble Commission for claiming the overall capital spares at the end of tariff block as per actual. 10) Allow the Petitioner to bill and recover GST on Transmission Charges separately from the respondents, if GST on transmission is levied at any rate in future. Further, any taxes including GST and duties including cess etc. imposed by any statutory/Govt./municipal authorities shall be allowed to be recovered from the beneficiaries. 11) Allow condonation of any inadvertent omissions/errors/shortcomings and permit Petitioner to add/change/modify/alter this filing and make further submissions as may be required at future date. and pass such other relief as Hon'ble Commission deems fit and appropriate under the circumstances of the case and in the interest of justice		
17	Key details and any Specific issue involved		
18	Respondents		
	Name of Respondents		
	1	Power Grid Corporation of India Ltd (CTU)	4
	2	Ajmer Vidyut Vitran Nigam Limited,	5
	3	Jaipur Vidyut Vitran Nigam Limited	


(Er. ILLA CHANDRA)
 Chief Engineer
 (Commercial & Regulatory)
 PTCUL

Summary of Capital Cost & Annual Fixed Cost (AFC) Claimed for ALL the assets covered in the present petition.

Name of the Petitioner: Power Transmission Corporation of Uttarakhand Limited
 Name of the Region: Northern Region
 Name of the Transmission Element: 400 kV Substation Srinagar (Deemed ISTS) under UTP Scheme

Part-III
Form-A

Summary of Capital Cost & Annual Fixed Cost (AFC) Claimed for ALL the assets covered in the present petition.														
Name of the Petitioner		Power Transmission Corporation of Uttarakhand Limited												
Tariff Period		2024-29												
Name of the Transmission Project		400 kV Substation Srinagar (Deemed ISTS) under UTP Scheme												
E-COD of the Project (if entire scope of project is completed)		19-10-2016												
Rupees in lakh														
A) Summary of Capital Cost as on COD and Additional Capital Expenditure claimed for all the assets covered in the instant petition.														
S. No.	Asset No.	COD	Cut-off Date	i) Apportioned Approved Cost		ii) Summary of Actual / Projected Capital Cost							Capital Cost as on Cut-off Date	
				As per Investment approval	As per RCE	As on 1.4.2024	2024-25	2025-26	2026-27	2027-28	2028-29	Capital Cost as on 31.03.2029		
1	Combined Asset	19-10-2016	2 31-03-2019	3 0	4 0	5 17/99.03199	6 153.95	7 228.52	8 114.18	9 30.31	10 817.91	11=(5+6+7+8+9+10) 19143.90199	12	
Total Capital Cost Claimed														
B) Summary of Annual Fixed Cost (AFC) claimed for all the assets covered in the instant petition.														
S. No.	Asset No.	Asset Name and its location												
1	Combined Asset	400 kV Substation Srinagar (Deemed ISTS) under UTP Scheme												
		2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33	2033-34	2034-35	2035-36	2036-37
		2852.12	2894.58	2902.55	2953.56	3061.66								
Total AFC for all the Assets		2852.12	2894.58	2902.55	2953.56	3061.66								

Note: 1) The purpose of this form is to summarise the Capital cost & AFC claimed for all the assets covered in the instant petition.

[Signature]

[Signature]

[Signature]

[Signature]
(Petitioner)

(Er. ILLA CHANDRA)
Chief Engineer
(Commercial & Regulatory)
PTCUL