Before
UTTARAKHAND ELECTRICITY REGULATORY COMMISSION
Petition No. 67 of 2025

In the Matter of:

Investment Approval for DPR of "Construction of 400/220 kV GIS Substation, Roorkee along with Construction of LILO of 400 kV Puhana (Roorkee)-Muzaffarnagar Line at proposed 400 kV substation Roorkee".

And

In the Matter of:

Power Transmission Corporation of Uttarakhand Limited (PTCUL)
Vidyut Bhawan, Near ISBT Crossing,
Saharanpur Road, Majra,
Dehradun

.....**Petitioner**

Coram

Shri M.L. Prasad	**Chairman**
Shri Anurag Sharma	**Member (Law)**
Shri Prabhat Kishor Dimri	**Member (Technical)**

Date of Order: **November 10, 2025**

ORDER

This Order relates to the Petition filed by Power Transmission Corporation of Uttarakhand Ltd. (hereinafter referred to as "PTCUL" or "the Petitioner") vide letter No. 1812/Dir. (Operations)/PTCUL/ dated 26.10.2024 seeking for "Construction of 400/220 kV GIS Substation, Roorkee along with Construction of LILO of 400 kV Puhana (Roorkee)-Muzaffarnagar Line at proposed 400 kV substation Roorkee" under Para 11 of Transmission Licence. [Licence No. 1 of 2003].

1. Background

1.1. In the aforesaid Petition, the Petitioner has submitted the following proposal for investment approval:

Particulars	Substation Transformer Capacity (MVA)/ Length of the Line (KM)	Project Cost including IDC as per DPR (in Crore)
Construction of 400/220 kV GIS Substation, Roorkee	2 x 500 MVA (400/220 kV)	377.14
Construction of LILO of 400 kV Puhana (Roorkee)-Muzaffarnagar Line at proposed 400 kV GIS Substation Roorkee	4.5 KM	327.44
	Total	**704.58**

1.2. The Petitioner has submitted a copy of the extract of Minutes of 94th meeting of the Board of Directors (BoD) of PTCUL held on 26.09.2024, wherein the Petitioner's Board has approved the Corporation's aforesaid proposals as stated below:

> *"After consideration, the Board passed following resolution unanimously.*
>
> *RESOLVED THAT the consent of the Board be and is hereby accorded to approve the revised Detailed Project Repot for Construction of 400/220 kV GIS Substation, Roorkee along with Construction of LILO of 400 kV Puhana (Roorkee)-Muzaffarnagar Line at proposed 400 kV substation Roorkee at a total scheme cost of Rs. 704.58 Cr. with IDC and Rs. 652.99 Cr. without IDC.*
>
> *Resolved Further That the DPR submitted and approved in the 92nd Board meeting held on 27/08/2024 vide agenda item no. 92.74 on the same project shall be treated as null & void and shall be deemed to have been withdrawn by the management.*
>
> *RESOLVED FURTHER THAT the aforesaid revised DPR is submitted to Hon'ble UERC for investment approval.*
>
> *RESOLVED FURTHER THAT Managing Director, Director (Operations) or any other functional Director jointly and severally are hereby authorized to sign, seal and certifies all the documents, petitions and all other legal paper that might be required for sending the proposal for investment approval for signing all clarifications and to do all other such legal acts may be necessary to be acted upon in furtherance of the investment approval.*

RESOLVED FURTHER THAT the Managing Director and/or Director (Finance) and /or Company Secretary be and are hereby jointly and severally authorized to approach to REC/PFC/NABARD/HUDCO/ Nationalized Banks and other financial institution as they deem fit and proper and tie-up the loan component with a debt equity ratio of 70:30."

1.3. To justify the need of the proposed work, the Petitioner has submitted as follows:

i. Director (Operation), UPCL through letter no. 5163/Dir (Operation)/UPCL/T-38 dated 28/12/2023 requested PTCUL for construction of the aforesaid substation.

ii. In the 90th BoD meeting, it has been decided that proposal of 400/220 kV S/s at Landhora should be dropped from the route of ADB funding due to technical and financial constraints and considered for alternate route of funding at a suitable site in region for which specific proposal have to be brought before the Board separately.

iii. In the 9th Coordination forum meeting, UPCL has put up the agenda w.r.t. PTCUL to expedite the Construction of above work.

iv. The tender for construction of 220 kV S/s Manglore has already been awarded which was proposed to be fed from 400 kV S/s Landhora. To supply reliable power to the upcoming 220 KV S/s Manglore and to relief the already loaded substation Roorkee a 400 kV S/s at existing 220 kV S/s Roorkee is natural and most feasible solution.

v. The domestic and industrial load in Roorkee and its vicinity is increasing rapidly. Roorkee falls in the Kumbh and Kanwar Mela zone and is also connected to 220 kV Substation SIDCUL, Haridwar, 132 KV S/S Laksar, 132 KV S/S Manglore, 132 KV S/S Bhagwanpur, 132 KV S/S Chudiyala.

vi. Existing 220 kV substation Roorkee is currently fed from 220 kV Roorkee-Puhana (PGCIL) line, which is running on 90% load capacity and 220 kV Roorkee-Nara line through which only limited load can be drawn.

vii. New 220/132/33 kV substation in Manglore is also under construction and has to be energized through LILO of 220 kV Roorkee-Nara line. 132 kV substations Laksar and Manglore are also fed from Roorkee substation.

viii. To meet the increasing load demand of Roorkee/nearby areas, religious importance, to boost industrial development and construction of 220/132/33 kV substation Manglore, following substation and associated transmission line have been proposed-

- 400/220 kV GIS Substation, Roorkee
- LILO of 400 kV Puhana (Roorkee)-Muzaffarnagar line at proposed 400/220 KV GIS substation, Roorkee

ix. Presently there is Restriction of power flow (appox. 80 MW) from 220 KV Roorkee-Nara line from UPPTCL

x. During outage of 220 KV Roorkee-Nara lines, 220 KV Roorkee-Puhana line got overloaded which resulted into load shedding in Roorkee area.

xi. This Proposed 400 kV S/s Roorkee will reduce dependency on 220 KV Roorkee-Nara line and will overcome high loading 220 KV Roorkee-Puhana line.

xii. This Proposed 400 kV S/s Roorkee will increase the TTC (Total Transfer Capacity) limit for import of power from the Northern Grid.

xiii. Fulfill the power demand of Roorkee, Manglore, Laksar, Bhagwanpur, Chudiyala and adjacent areas.

xiv. To meet future domestic and industrial demand of Roorkee and nearby area.

xv. To create additional source of power for existing 220 KV S/S Roorkee, proposed 220 kV S/s Manglore, 132 kV S/s Laksar, Bhagwanpur and 132 kV S/s Chudiyala.

xvi. To reduce load dependency on 220 KV Roorkee-Nara line. And to achieve N-1 contingency.

xvii. To Strengthen Transmission Network of 220 kV and 132 kV in Roorkee region.

1.4. In the present Petition, Petitioner has submitted that the required land for the proposed work is available at existing 220 kV S/S Roorkee.

1.5. The Petitioner in its Petition has mentioned that the estimated cost proposed in the DPR has been prepared on the basis of the PTCUL's SoR 2024-25.

1.6. The Petitioner in its Petition has enclosed the Bar chart for the project with an execution period of 24 months from the date of award of the contract. Further,

the Petitioner under the financial analysis has projected an IRR of 14.40% with breakeven in the 10th year of operations.

1.7. On examination of the proposal submitted by the Petitioner, certain queries were raised on the deficiencies/shortcomings observed in the Petition, which were communicated to the Petitioner vide the Commission's letter dated 14.10.2025. In response to the queries, the Petitioner, through its letter dated 21.10.2025 submitted the reply to the Commission. The queries and respective replies are as follows:

S.N.	Commission Query	PTCUL Reply
1-	**Justification by PTCUL for the Proposed 400 kV Substation at Ramnagar, Roorkee.** The proposal for establishing a 400kV substation at Ramnagar, Roorkee, is primarily justified by PTCUL based on: • The request from the Distribution Utility, • The need to provide connectivity to the upcoming 220 kV Mangalore substation, • The requirement to relieve the existing 220kV Roorkee substation and associated 132 kV substations, • The necessity to manage increasing load on the 220 kV Roorkee-Puhana line.	*Apart from Hon'ble UERC has mentioned, PTCUL submits as follows.* *Power Transmission Corporation of Uttarakhand Limited (PTCUL) submits this comprehensive justification report in response to the observations made by the **Hon'ble Uttarakhand Electricity Regulatory Commission (UERC)** regarding the proposal for establishment of a **400/220 kV Substation at Ramnagar, Roorkee**. The proposed substation is an integral component of the **long-term transmission system expansion plan** of Uttarakhand and is envisioned to address multiple operational, technical and reliability concerns in the western grid section of the state. This proposal aligns with the broader objectives of the **Uttarakhand Transmission Network Planning**, ensuring uninterrupted, reliable, and quality power supply to domestic, commercial and industrial consumers.* *The project aims to:* • *Strengthen the **northern transmission corridor** of the Northern Region,* • *Relieve the load on existing 220 kV corridors (Roorkee–Puhana–Nara),* • *Provide reliable power to upcoming industrial areas, mini **industrial clusters near Roorkee and Mangalore**,* • *Ensure **redundancy and reliability (N–1 contingency compliance)** in the local grid network, and* • *Facilitate **future interconnection** with regional grid nodes at 400 kV level.*

	In this context, the following observations are made:	• *To cater the long term demand of UPCL, increase in TTC and ATC and green energy RE integration.* *PTCUL acknowledges the valuable comments of Hon'ble UERC and submits the following* ***point-wise justification*** *addressing each of the issues raised.*
a)	The 220 kV Mangalore substation is planned to be connected through a LILO (Line-In Line-Out) of the 220 kV Roorkee-Nara line and not through the proposed 400/220 kV line. Therefore, direct connectivity with the proposed 400 kV substation does not appear relevant for this substation.	*In this regard, PTCUL clarifies that under the finalized network configuration, the* ***220 kV side of the proposed 400/220 kV Ramnagar (Roorkee) Substation*** *shall be* ***directly connected to the existing 220 kV main bus of the Roorkee Substation****.* *Upon implementation of this configuration, the* ***220 kV Mangalore Substation*** *will receive its power* ***through the proposed 400/220 kV Ramnagar Substation****, which will act as the* ***primary feeding and regulating node*** *for the Mangalore load centre.* *This arrangement will:* • *Ensure* ***reliable power flow and improved voltage stability*** *for the Mangalore area,* • *Provide* ***redundancy*** *to the existing Roorkee–Nara corridor, and* • *Facilitate* ***future integration*** *with other 400 kV nodes in the northern grid.* *Accordingly, the proposed 400 kV substation is not only relevant but essential for strengthening the 220 kV Mangalore substation's long-term power supply reliability and network stability.*
b)	Considering the increasing load on the 220 kV Roorkee-Puhana line, PTCUL has already filed a petition for replacing the existing conductor with equivalent HTLS (High Temperature Low Sag) conductor. As per PTCUL's submission, this upgrade would nearly double the line's capacity and address the	*It is submitted that this HTLS reconductoring work is being undertaken* ***to augment the existing corridor's transfer capability*** *and to ensure short-term load relief for the 220 kV system. However, this upgradation* ***cannot serve as a substitute*** *for the establishment of the proposed* ***400/220 kV Ramnagar (Roorkee) Substation****, due to the following reasons:* 1. ***Network Redundancy and Reliability:*** *Even after HTLS enhancement, the 220 kV Roorkee–Puhana line will continue to operate as a* ***single corridor*** *without alternative power paths. Any outage or maintenance on this line would still lead to heavy stress on the remaining 220 kV network. The new 400 kV node at Ramnagar is therefore required to*

	constraints posed by 220 kV Roorkee-Nara line as well.	***create an additional high-capacity feed point*** *and to ensure N–1 contingency compliance in the western grid.* 2. ***Purpose and Time Horizon:*** *The HTLS upgradation primarily addresses* ***thermal constraints*** *on the Roorkee–Puhana corridor and provides only an incremental increase in line capacity (approximately 1.8 times). It does not add new transformation capacity at the 400/220 kV level, which is essential for future load growth and network redundancy.* *Hence, while the HTLS replacement project strengthens the existing network by enhancing its short-term operational margins, it cannot serve as an alternative to the proposed 400 kV Ramnagar Substation. The new substation remains essential to ensure sustained system reliability, grid stability, and to enhance the TTC and ATC of the Uttarakhand transmission network in the long term.*
c)	While UPCL's concern regarding the availability of sufficient transmission capacity for the upcoming load is valid, it appears that this concern is being addressed solely through the proposal of a new 400 kV substation, without exploring whether the same objective could be achieved through alternate or other more cost-effective means. In light of the above observations, PTCUL is required to provide a comprehensive and substantiated justification for the necessity of a new 400 kV substation in the area.	*PTCUL acknowledges the Hon'ble Commission's observation that the concern regarding the availability of adequate transmission capacity appears to be addressed primarily through the proposal of a new 400 kV substation, and that alternate or more cost-effective means may also be explored.* *In this regard, PTCUL respectfully submits the following clarifications:* ***1. Comprehensive System Planning Undertaken*** *Prior to finalizing the proposal for the* ***400 kV Ramnagar (Roorkee) Substation****, PTCUL undertook a comprehensive* ***system planning and alternative evaluation study*** *in consultation with the* ***State Load Dispatch Centre (SLDC)*** *and the* ***GO. No. 553/I(2)/2024/05-05/2024 Dated 02.09.2024****.* *Multiple options were analyzed, including:* • *Upgradation of existing 220 kV corridors (Roorkee–Puhana, Roorkee–Nara, Bhagwanpur–Haridwar),* • *Addition of parallel 220 kV circuits, and*

		• *Enhanced interconnection with nearby substations such as **Puhana (PGCIL)** and **Muzaffarnagar (UPPTCL)**.* *The outcome of the study indicated that while these alternatives could provide **short-term operational relief**, none could adequately meet the **medium- to long-term load growth requirements beyond FY 2030**. Therefore, augmentation to the **400 kV voltage level** was deemed technically essential for ensuring grid reliability and future scalability.* ***2. Local-Level Possibilities and Bay Utilization at Puhana Substation*** *Before finalizing the location of the 400 kV substation at Roorkee (Ramnagar), **local-level alternatives** were also carefully explored. The **400/220 kV Puhana Substation** of PGCIL has a total of **six bays** at the 220 kV level, out of which **four bays have already been utilized by PTCUL**. The **remaining two spare 220 kV bays** have been **earmarked for the upcoming 220 kV Substation at Raipur (Bhagwanpur)** for which the investment approval alongwith **Detailed Project Report (DPR) on cost plus approach/RTM** is already is **under consideration for investment approval** before the Hon'ble Commission.* *It may also be noted that, in earlier planning stages, the possibility of utilizing these **two remaining 220 kV bays** for direct connectivity with the existing **220 kV Roorkee Substation** was explored. However, this option was **dropped** due to **severe Right-of-Way (RoW) constraints** in the densely populated stretch between Puhana and Roorkee and the resulting **excessively high project cost** and time overrun associated with new line construction.* ***3. Limitations of 220 kV Network Expansion*** *Expansion of the 220 kV network in the **Roorkee–Mangalore–Bhagwanpur corridor** faces critical limitations such as:* • ***Severe RoW constraints** due to rapid urbanization,*

		• ***Limited availability of corridor width*** *for additional circuits, and* • ***High technical losses and voltage instability*** *under heavy loading conditions.* *The 400 kV voltage level provides a* ***higher power transfer capability****, improved* ***voltage regulation****, and lower* ***transmission losses****, making it a more sustainable and scalable solution.* ***4. Integrated Planning for Future Growth*** *The proposed* ***400 kV Roorkee (Ramnagar) Substation*** *is not a standalone project but an integral part of the* ***Uttarakhand Transmission Network Plan****, which aims to progressively upgrade the state's transmission backbone from 220 kV to 400 kV in a phased manner. The* ***Roorkee–Mangalore–Haridwar industrial corridor*** *has been identified as a* ***critical load centre*** *that necessitates such high-voltage integration to meet upcoming domestic, commercial, and industrial power demands.* *In view of the above, PTCUL respectfully submits that multiple alternatives – including local interconnections, bay utilization, and 220 kV network strengthening – were thoroughly evaluated. However, due to RoW challenges, technical constraints, and limited long-term benefits, the establishment of the* ***400 kV Ramnagar (Roorkee) Substation*** *emerged as the* ***most technically robust, operationally reliable, and economically justified solution*** *to ensure sustained grid reliability and uninterrupted power supply*
2-	**Possibility of additional Connectivity through 400/220 kV Puhana or Muzaffarnagar Substation**	
a)	The 400/220 kV Puhana substation, owned by PGCIL is	*The concern regarding optimal utilization of the existing 400/220 kV Puhana substation has been*

	located within Uttarakhand and has a capacity of lX500 + 2X315 MVA. However, PTCUL's attached proposed SLD shows the Puhana substation capacity as only 2X315 MVA. Notably, there are spare 220 kV bays available at the Puhana substation for PTCUL's use. Therefore, why has the possibility of establishing an additional 220 kV circuit between Puhana and Roorkee not been considered to enhance connectivity and ensure N-1 contingency compliance? Furthermore, wouldn't it be more prudent to first optimize the utilization of the existing substation, possibly seeking augmentation upto its full capacity before planning the construction of a new substation?	*carefully examined. In this context, the following points are submitted for consideration:* ***1. Existing Loading and Capacity Correction at Puhana Substation*** *PTCUL acknowledges that the capacity details of the Puhana substation mentioned as* ***2x315 MVA*** *in the earlier documentation were inadvertently outdated. The* ***400/220 kV Puhana Substation****, owned and operated by* ***PGCIL****, was initially commissioned with* ***2x315 MVA*** *transformers. Subsequently,* ***PGCIL has augmented the capacity*** *by replacing one of the 315 MVA transformers with a* ***500 MVA unit****, resulting in the* ***current configuration of 1x500 MVA + 1x315 MVA*** *at the 400/220 kV level. It may also be noted that this substation is already* ***operating near its optimal loading****, catering to increasing demand from the interconnected networks of* ***Western Uttar Pradesh and adjoining Uttarakhand****. The present load pattern and power exchange levels indicate that further utilization of capacity from this node would have limited headroom without compromising system security margins.* ***2. Utilization of 2 Nos. Spare 220 kV Bays*** *Before finalizing the location of the 400 kV substation at Ramnagar, Roorkee,* ***local-level alternatives*** *were also carefully explored. The* ***400/220 kV Puhana Substation*** *of PGCIL has a total of* ***six bays*** *at the 220 kV level, out of which* ***four bays have already been utilized by PTCUL****. The* ***remaining two spare 220 kV bays*** *have been* ***earmarked for the upcoming 220 kV Substation at Raipur (Bhagwanpur)****,.*

		It may also be noted that, in earlier planning stages, the possibility of utilizing these ***two remaining 220 kV bays*** *for direct connectivity with the existing* ***220 kV Roorkee Substation*** *was explored. However, this option was* ***dropped*** *due to* ***severe Right-of-Way (RoW) constraints*** *in the densely populated stretch between Puhana and Roorkee and the resulting* ***excessively high project cost and time overrun*** *associated with new line construction.* ***3. Technical Limitations in Creating an Additional 220 kV Circuit to Roorkee*** *The possibility of establishing a new 220 kV interconnection between* ***Puhana and Roorkee*** *was duly explored during the planning stage. However, the proposal was found* ***practically not feasible*** *due to the following reasons:* • ***Severe Right-of-Way (RoW) constraints*** *exist along the densely populated Puhana–Roorkee corridor, with significant urban and industrial development limiting corridor expansion.* • *The* ***existing 220 kV transmission route is already congested****, leaving insufficient space for the construction of another double-circuit line.* • *Any new RoW acquisition would face* ***major social, environmental, and cost challenges****, potentially leading to prolonged project delays and significant escalation in expenditure.* ***4. Need for a Dedicated 400/220 kV Substation at Ramnagar, Roorkee*** *While the Puhana substation is being utilized optimally within its technical and operational limits,* ***further augmentation or connectivity extension*** *from this node would not fully address the* ***future***

		reliability, redundancy, and N-1 contingency requirements *of the Roorkee–Mangalore zone.* *Therefore, the establishment of the proposed* ***400/220 kV Ramnagar, Roorkee Substation*** *is considered inevitable for ensuring long-term* ***system stability***, ***enhanced reliability***, *and* ***adequate transmission capacity*** *to support the projected load growth in Western Uttarakhand and to enhance TTC & ATC.*
b)	Additionally, clarification is needed on whether PTCUL has explored the feasibility of leveraging the 400/220 kV Muzaffarnagar substation of UPPTCL. This could include creating a new 220 kV bay at Muzaffarnagar substation and establishing connectivity with the existing220kVRoorkee and the upcoming 220 kV Mangalore substations, or considering the possibility of a LILO of any existing lines emanating from Muzaffarnagar substation. These alternatives could significantly enhance the reliability of power supply in the Roorkee area,	*In reference to the Hon'ble Commission's observation regarding the possibility of utilizing the 400/220 kV Muzaffarnagar substation of UPPTCL to strengthen the power supply to the Roorkee region, PTCUL respectfully submits the following clarification:* 1. ***Jurisdictional and Operational Limitations:*** *The 400/220 kV Muzaffarnagar substation falls under the jurisdiction and operational control of* ***UPPTCL (Uttar Pradesh Power Transmission Corporation Ltd.)***, *which primarily caters to the load centers within Uttar Pradesh. Any new interconnection from this substation into Uttarakhand's transmission network would require* ***inter-state coordination, regulatory approval, and power transfer agreements*** *between the two state utilities, which involve complex technical, operational, and commercial considerations. At present, no such mutual arrangement or spare capacity allocation has been finalized between UPPTCL and PTCUL.* 2. ***Availability of Capacity and Connectivity Constraints:*** *The* ***400/220 kV Muzaffarnagar Substation****, owned and operated by* ***UPPTCL****, is already* ***heavily loaded*** *in meeting the power demand of its own supply region in Western Uttar Pradesh. Preliminary discussions and network data analysis indicate that the substation's*

	potentially with lower capital expenditure and fewer associated challenges compared to constructing a new 400 kV substation. PTCUL is directed to conduct a detailed study on these options and any other feasible alternatives and to submit a comprehensive report accordingly.	***existing 220 kV system is operating close to its capacity**, leaving **very limited scope for establishing additional 220 kV circuits** towards Uttarakhand without undertaking major system augmentation. Furthermore, it is pertinent to highlight that **power flow from the Muzaffarnagar end is already constrained by UPPTCL** even on the **existing 220 kV Nara line**, owing to limited margin and network loading conditions. This demonstrates that the Muzaffarnagar node itself is under operational stress and **faces local power scarcity issues**, particularly during peak demand periods. In such a situation, **dependence on the Muzaffarnagar substation** for strengthening Uttarakhand's transmission connectivity would not be technically prudent or reliable. Instead, developing an **independent 400/220 kV grid node within Uttarakhand at Ramnagar, Roorkee** is essential to ensure **adequate power availability, grid stability, and long-term reliability** of the Northern Uttarakhand network.* 3. ***Technical and Reliability Considerations:** While interconnecting through Muzaffarnagar could theoretically provide an alternate source, it would result in a **long radial line**, exposing the Roorkee–Manglore region to potential voltage regulation issues and higher transmission losses. From a reliability and system-strengthening standpoint, establishing a **400/220 kV substation within Uttarakhand's own network** (at Roorkee–Ramnagar) provides a technically superior and more stable configuration, ensuring redundancy and minimizing dependency on an external state's transmission assets.* 4. *The proposed project was deliberated in the **39th Consultation Meeting for Evolving Transmission Schemes in the Northern Region**, held on **28thJuly2025**, with participation from **CTUIL, NRLDC, CEA, UPPTCL, and PTCUL** MoM dated 28.07.2025 circulated vide CTUIL letter No.*

		CTU/N/00/CMETS_NR/39 Dated 08.09.2025 *is also endorsed to Director (W&P), UPPTCL.* *The proposed* ***400/220 kV Ramnagar, Roorkee substation*** *within Uttarakhand's network remains the most viable, technically sound, and long-term sustainable solution for meeting regional reliability and load growth requirements. Accordingly, PTCUL has not considered Muzaffarnagar-based connectivity in the current proposal, and the same is justified on technical, operational, and strategic grounds.*
3-	**Location and Type of Substation (GIS vs AIS)** It is observed that:	
a)	A 400 kV substation, being a major grid-level asset, is typically designed to cater to the load requirements of a wide area. Hence, it need not necessarily be located in the immediate vicinity of the load centre.	*In this context, the following points are submitted for kind consideration:* 1. ***Technical Justification for Location Selection:*** *The proposed 400/220 kV substation at Ramnagar, Roorkee has been strategically planned considering its proximity to* ***existing Roorkee S/s and upcoming 220 kV substations*** *such as Mangalore. Locating the 400 kV source in this area will reduce the loading and dependency on long 220 kV corridors, improve voltage profile, and enhance system reliability in this rapidly growing industrial and residential region.* 2. ***Load Concentration and Future Growth:*** *The* ***Roorkee–Manglore–Laksar belt*** *has witnessed significant growth in power demand due to industrial expansion, private mini industrial cluster, and upcoming infrastructure projects. Placing a 400 kV substation in this zone ensures* ***localized 400 kV injection****, thereby minimizing technical losses, improving efficiency, and providing flexibility for future 220 kV and 132 kV expansions.* 5. ***Network Optimization and Redundancy:*** *Although a 400 kV substation serves a wide area, its siting must ensure* ***balanced network***

		loading *and* ***N-1 contingency compliance****. The Roorkee (Ramnagar) location has been selected to create a strong interconnection between existing 400 kV nodes (Puhana and Muzzaffarnagar) while simultaneously providing redundancy for the southern Haridwar zone. This supports both regional and state-level grid stability. It is pertinent to mention here that consumption of Distt: Haridwar & US Nagar is 65% of the total power consumption of the state.* *Therefore, proposed 400 kV substation has wider role to play in the economic growth of Uttarakhand. The* ***proposed location at Ramnagar, Roorkee*** *has been chosen after evaluating load density, network configuration, RoW feasibility, and long-term system strengthening requirements.*
b)	PTCUL has proposed a GIS (Gas Insulated Substation) at Ramnagar without disclosing the basis for opting GIS over AIS (Air Insulated Substation), it could presumably be due to land constraints.	*It is submitted that the proposal for establishing a* ***Gas Insulated Substation (GIS)*** *at Ramnagar, Roorkee has been made after careful evaluation of land availability, site conditions, and technical feasibility. The justification for selecting GIS over AIS is as follows:* 1. ***Utilization of Existing Land at 220 kV Roorkee Substation:*** *The proposed 400/220 kV substation is being constructed* ***within the available premises of the existing 220 kV Roorkee substation****. No separate land acquisition or purchase is being undertaken for this project. The adjoining area does not have adequate vacant land suitable for large-scale expansion required for an* ***Air Insulated Substation (AIS)*** *layout. Therefore, to optimally utilize the existing limited land, a* ***compact GIS configuration*** *has been selected.* 2. ***Land Constraint and Site Limitation:*** *An AIS setup requires a much larger footprint due to wider electrical clearances and physical spacing requirements between equipment. The available area at the Roorkee site is* ***insufficient to accommodate an AIS*** *even with optimized layout design. Moreover, the surrounding land is already developed, and acquisition is not feasible due to* ***urban buildup and high land costs****.*

		3. ***Technical and Reliability Advantages:*** *The GIS design ensures* ***high reliability and operational safety****, as all high-voltage equipment is enclosed and insulated in SF_6 gas compartments, making the system immune to dust, pollution, moisture, and external weather effects. This is particularly beneficial for Roorkee's environment, where high humidity and pollution levels can affect AIS performance.* 4. ***GIS has advantage over AIS as far running O&M cost in concerned.*** *In view of the above, the choice of* ***GIS technology*** *for the 400/220 kV Ramnagar, Roorkee substation is fully justified. It is driven by* ***land constraints****,* ***non-availability of adjacent land****, and the need to* ***utilize existing 220 kV Roorkee substation land*** *efficiently.*
c)	There are concerns regarding the Right of Way (RoW) in the highly populated Ramnagar, Roorkee area, making it difficult to lay and expand 400 kV and 220 kV transmission lines.	*In view of the RoW challenges, the proposed scheme has been carefully designed with specific technical measures to mitigate RoW limitations, as detailed below:* 1. ***Use of 400 kV XLPE Underground Cable:*** *To address these constraints, a portion of the 400 kV transmission line in the vicinity of the substation will be* ***implemented using 400 kV XLPE underground cable****. This approach eliminates the need for additional overhead line RoW near the populated area, ensuring technical feasibility, operational safety, and minimal public disturbance.* 2. ***Utilization of Existing 132 kV Line Corridor:*** *For the some stretch, where feasible, the project will* ***utilize the corridor of an existing 132 kV transmission line****, which will be* ***converted to a multi-circuit tower configuration****. This will enable accommodation of the new 400 kV line without requiring separate RoW, thereby minimizing land acquisition, environmental impact, and social inconvenience.* *In view of the high level of urbanization around the Roorkee (Ramnagar) site, the proposed scheme – incorporating* ***400 kV XLPE cable sections and use of existing 132 kV corridors with multi-circuit towers*** *– represents a* ***technically sound, RoW-efficient, and sustainable*** *solution for developing the required 400 kV and 220 kV connectivity. Considering the shorter*

		length of LILO and availability of land, proposed project shall be commissioned at the earliest will contribute to economic growth of the state.
d)	The proposed project cost, including the GIS substation and approximately 4.5km of 400 kV cable, is over Rs. 700 Crores, this is multiple times higher than a conventional AIS based system.	*We have explored revenue and private land options in coordination with Distt. and local administration but did not find the required land in Haridwar & Roorkee area. So it is justified considering the* ***site-specific constraints, reliability requirements, and long-term benefits*** *associated with the project.* 1. ***Land Constraints and Urban Location:*** *The project is being developed* ***within the existing 220 kV Roorkee substation premises****, where* ***land availability is extremely limited*** *and no additional area is feasible for expansion. The* ***GIS technology*** *has been adopted to make optimal use of the available land, as an* ***AIS configuration is technically unviable*** *in the given space conditions. The higher capital cost of GIS is therefore an unavoidable outcome of urban land limitations and site-specific necessity.* 2. ***Enhanced Reliability and Operational Benefits:*** *A* ***GIS (Gas Insulated Switchgear)*** *system offers* ***superior reliability, reduced maintenance requirements, minimal outage risk, and higher system availability****, particularly in* ***pollution-prone and space-constrained urban environments****. Although the* ***initial capital cost*** *of a GIS substation is comparatively higher than that of an* ***AIS (Air Insulated Switchgear)*** *system, its* ***operational and maintenance costs are significantly lower****. Over the long term, this results in* ***substantial savings through reduced maintenance expenditure, lesser downtime, and minimal land-related liabilities****, making the GIS system* ***more economical and cost-effective in lifecycle terms****. Thus, while the upfront investment is higher, the* ***overall cost of ownership over the project's lifespan*** *remains favorable, ensuring both* ***technical reliability and financial prudence****.* 3. ***Strategic and Long-Term Value:*** *The 400/220 kV Ramnagar, Roorkee substation is a* ***strategic investment*** *aimed at providing reliable power supply to the* ***Roorkee–Manglore–Laksar industrial corridor****,*

		supporting future load growth, and ensuring ***N-1 contingency compliance****.* *In view of the above, GIS-based configuration alongwith underground cable is* ***justified.***
e)	The cramped location of the substation may limit future expansion, both in terms of space for additional bays and Right of Way (RoW) availability.	*It is respectfully submitted that the proposed* ***400/220 kV Roorkee (Ramnagar) GIS substation*** *has been carefully planned with due consideration to both* ***current load requirements*** *and* ***anticipated future expansion****. The following points clarify the position:* ***1. Modular Design of GIS Configuration:*** *The proposed substation employs a* ***Gas Insulated Substation (GIS)*** *design, which inherently supports* ***modular expansion****. Additional bays and associated equipment can be incorporated in the future within the* ***same building structure*** *by extending bus sections or utilizing* ***pre-planned spare bays****. Moreover, in the present design itself,* ***adequate space provisions will be reserved within the same GIS building*** *to facilitate* ***future expansion at both 400 kV and 220 kV levels****, as and when system growth or load demand necessitates it. This approach ensures that* ***future augmentation can be accommodated*** *without major civil alterations.* ***2. Efficient Space Utilization within Existing Premises:*** *The project utilizes the* ***existing 220 kV Roorkee substation premises****, ensuring maximum optimization of available land through compact equipment layout and vertical arrangements. The layout has been prepared keeping in view* ***future demand projections*** *and allowing adequate provision for at least* ***one stage of expansion****.*
	In view of these issues, PTCUL is directed to revisit its proposal and assess the feasibility of locating the substation at a different, less congested area where:	*In response to the directive to reassess the feasibility of locating the proposed 400 kV substation at an alternate site, the following points are respectfully submitted for consideration:* *1.* ***Land available is the most suitable in terms of technical feasibility & RoW Constraints:*** *The proposed* ***400 kV Ramnagar, Roorkee GIS substation*** *is being established* ***within the premises of the existing 220 kV***

	a) AIS technology can be considered (to reduce costs), b) RoW constraints are minimal, c) Future expansion requirement possibilities are not restricted.	***Roorkee substation**. This allows the new 400 kV system to be directly integrated with the **existing 220 kV main bus**, thereby eliminating the requirement for construction of any new 220 kV interconnecting transmission lines.* *This co-location significantly **reduces Right-of-Way (RoW) challenges**, avoids land acquisition for new corridors, minimizes cost and environmental impact, and enhances operational efficiency. Conversely, if the 400 kV substation were to be established at a different location, it would necessitate acquisition of land, laying of new 220 kV lines for interconnection – leading to fresh RoW issues, higher costs, and greater implementation time.* 2. ***Non-availability of Alternate Land in the Roorkee & Haridwar area:** No suitable government land parcel is available adjacent to the existing substation, and acquiring new land in the densely developed Roorkee–Ramnagar area would be difficult, time-consuming, and financially prohibitive due to high land values and habitation density.* 3. ***Technical Advantage of Present Location:** The existing 220 kV site already has established transmission infrastructure, making it technically ideal for direct 400 kV–220 kV interconnection. This ensures strong grid integration with minimum additional works.* 4. ***Adoption of GIS Technology Due to Space Constraints:** Given the space limitations at the existing substation, **Gas-Insulated Substation (GIS)** technology has been adopted. GIS enables compact layout within the available area while ensuring high reliability, safety, and minimal maintenance – making it the only feasible solution under current site conditions.*

		5. ***RoW and Urbanization Mitigation:*** *The area around Roorkee (Ramnagar) is now heavily urbanized, leaving limited corridors for overhead transmission expansion. To overcome this, the scheme incorporates* ***400 kV XLPE underground cables near the substation*** *and utilizes the* ***corridor of existing 132 kV lines through multi-circuit towers****. This hybrid approach effectively addresses RoW and space constraints.* 6. ***Feasibility of Relocation:*** *Relocating the substation to a new site would involve construction of long 400 kV and 220 kV lines, major RoW acquisition, and forest clearances, leading to* ***significant cost escalation, project delay, and higher transmission losses****. Hence, such relocation would not be technically or economically justified.* 7. ***Provision of spare for 2 nos.*** *bays are kept within the premises.* *Establishing the* ***400 kV Ramnagar, Roorkee GIS substation*** *within the existing 220 kV substation premises is the most* ***technically sound, cost-effective, and RoW-efficient*** *solution. This approach eliminates the need for new 220 kV corridors, makes optimal use of existing infrastructure, and ensures reliable long-term grid strengthening for the Roorkee–Haridwar load center.*
4-	**Technical Concerns Regarding GIS at 400 kV Level** PTCUL must provide its technical and operational assessment of using a GIS (Gas Insulated Substation) at the 400 kV level, especially considering the following:	*In reference to the observation regarding the use of* ***Gas Insulated Substation (GIS)*** *technology at the 400 kV level, PTCUL respectfully submits the following clarifications and justifications:*

a)	GIS systems are complex and offer limited flexibility for local maintenance.	***Acknowledgement of the Concern*** *Gas Insulated Substation (GIS) system comprises of the sealed equipment, high-precision SF_6 compartments, compact layout, and modular design require specialised maintenance practices. Local routine maintenance may thus involve higher technical skill, specific spare parts, and specialised diagnostic tools.* • *The GIS design proposed includes **modular bays** and **spare bay provisions**, which enable faster replacement of faulty sections rather than full refurbishment.* • *OEM service contracts and maintenance frameworks are in place, ensuring access to specialised spares and expert support when required.* • *PGCIL ISTS Rolling Plan mentions existing and planned GIS substations at 400 kV and higher voltage levels, for example: a scheme at Vadodara (Gujarat) 765/400/220 kV GIS substation augmentation. In light of the foregoing, the concern of "limited flexibility for local maintenance" is duly recognised including UPPTCL and other STU's are constructing 400 kV GIS S/S in metro & semi metro cities.* • *The Indian transmission sector (including PGCIL) has already implemented GIS at 400 kV and above, indicating that the specialised maintenance aspect is manageable and operationally proven.* • *Given the space constraints, reliability needs, and long-term benefits in the Roorkee–Ramnagar context, the choice of GIS remains technically justified despite the higher complexity.* • ***Annual Maintenance and OEM Service Agreements:*** *PTCUL maintains comprehensive Annual Maintenance Contracts (AMCs) and long-term service agreements with reputed Original Equipment Manufacturers (OEMs) such as **Siemens, Hitachi Energy, GE Power, CGL, Toshiba, Hyosung and Schneider Electric**, all of whom have a proven operational facility well established in India.*
b)	In case of a malfunction, repair	*It is submitted that while **Gas Insulated Substations (GIS)** do involve specialized components and require trained personnel for major*

	and restoration can take significantly longer due to the specialized nature of components and expertise required.	*repairs, modern GIS systems are designed with* ***high reliability and modularity*** *to minimize downtime in case of any malfunction. The following points clarify the mitigation measures adopted by PTCUL:* 1. ***High Reliability and Low Failure Rate:*** o *Modern GIS installations have an* ***exceptionally low probability of failure****, with* Mean Time Between Failures (MTBF) *far exceeding that of conventional AIS systems.* o *PTCUL's existing operational experience with* ***GIS substations at 132 kV & 220 kV levels*** *indicates* ***no major outages*** *due to equipment malfunction to date.* 2. ***Modular Bay Design for Quick Restoration:*** o *The GIS equipment is of* ***modular configuration****, allowing isolation of the faulty section and* ***restoration of supply through unaffected modules****.* o *This modular design ensures that* ***only the faulty bay or component*** *needs to be taken out of service, without affecting the overall operation of the substation.* 3. ***OEM Support and Spares Management:*** • ***Annual Maintenance and OEM Service Agreements:*** *PTCUL maintains comprehensive Annual Maintenance Contracts (AMCs) and long-term service agreements with reputed Original Equipment Manufacturers (OEMs) such as* ***Siemens, Hitachi Energy, GE Power, CGL, Toshiba, Hyosung and Schneider Electric****, all of whom have a proven operational facility well established in India.* • ***Availability of Local Service Infrastructure:*** *These OEMs have established* ***regional service centers and technical teams*** *strategically located in major cities in India. This ensures prompt deployment of field engineers and availability of spares in case of any operational exigency.* • ***Critical Spares and SF_6 Gas Handling Facilities:*** *PTCUL will maintains essential spare modules such as circuit breaker poles, isolator drives, control cards, and SF_6 gas handling kits at key GIS substations across the state.*

		• ***Guaranteed Response Time:*** *As per AMC provisions, OEMs are contractually obligated to provide* ***on-site technical support within 24–48 hours*** *of fault reporting. In many cases, remote diagnostic support is also available through SCADA-integrated monitoring, enabling faster fault localization and restoration.* • ***Ensured Continuity of Operations:*** *This structured arrangement of OEM support, critical spares management, and trained local staff ensures that even though GIS technology is more sophisticated,* ***its operational reliability and maintainability are fully secured****, thereby minimizing downtime and ensuring uninterrupted system availability.* 4. ***Trained GIS Personnel:*** o *PTCUL has a dedicated team of* ***trained engineers and technicians*** *certified by GIS manufacturers for operation, maintenance, and fault rectification at 132 kV & 220 kV levels.* o *Continuous skill upgradation and hands-on training programs are conducted to ensure readiness for any eventuality.* *Therefore, while GIS technology does require specialized maintenance,* ***adequate systems and safeguards are already in place*** *within PTCUL to ensure* ***minimal outage duration*** *and* ***prompt restoration****. Considering its superior reliability, compactness, and suitability for urban conditions, GIS remains the* ***technically and operationally justified*** *choice for the proposed 400 kV Roorkee Substation.*
c)	GIS requires high-cost spares and specialized staff for operations and maintenance. PTCUL must clearly state and establish the choice of GIS over AIS is technically and commercially justified	*In response to the observation concerning the higher cost of GIS technology and the requirement for specialized staff and spares, PTCUL respectfully submits the following:* 1. ***Technical Rationale for GIS Adoption:*** *The proposed* ***400 kV Ramnagar, Roorkee substation*** *is being established* ***within the existing 220 kV substation premises****. Under these constraints,* ***Gas Insulated Substation (GIS)*** *occupies* ***nearly 75% less space*** *than an* ***Air Insulated Substation (AIS)*** *of equivalent capacity.* 2. ***Operational and Reliability Considerations:*** *GIS provides superior reliability and safety*

	and in the larger public interest.	*compared to AIS, particularly under the **dense urban environment of Roorkee**, which is prone to dust, pollution, and limited clearances.* o *Routine maintenance requirements are significantly reduced, and **online monitoring systems** allow early detection of any abnormalities.* o *PTCUL already has operational experience with **GIS substations at 132 kV & 220 kV and** trained personnel are available for its operation and upkeep.* 3. ***Addressing Cost and Spares Concern:** It is acknowledged that GIS systems involve higher **initial capital cost** and require **specialized spares**. However, this higher upfront investment is offset by long-term advantages:* o ***Lower life-cycle cost:** Minimal maintenance, negligible outages, and longer equipment life reduce the overall cost of ownership.* o ***Safety and reliability benefits** ensure uninterrupted power to critical urban and industrial consumers, minimizing socio-economic losses due to outages.* 4. ***Availability of Specialized Staff and Support:*** *PTCUL maintains trained GIS operation and maintenance teams, supported by **OEM service contracts** ensuring availability of technical expertise and critical spares. The modular design of GIS allows **replacement of defective modules** without significant system downtime.* 5. ***Public Interest and Commercial Justification:*** *The decision to adopt GIS at the 400 kV level has been taken in **larger public interest**, ensuring:* o *Reliable and uninterrupted power supply to Roorkee–Haridwar urban and industrial load centers.* o *Minimal land and RoW disturbance in a heavily developed region.* o *Enhanced safety, system stability, and long-term sustainability. Thus, while the initial cost of GIS is higher than AIS, the **overall techno-economic assessment** confirms that the **GIS option is more viable, practical, and beneficial** for the public in*

		the long run. *The selection of **GIS over AIS** for the proposed 400 kV Roorkee substation is **technically and commercially justified**, considering severe space constraints, RoW challenges, and the need for long-term reliability and safety. The decision ensures **optimal asset utilization**, **minimum environmental and social impact**, and serves the **larger public interest** by ensuring secure and efficient power supply to the growing Roorkee–Haridwar area.*
5-	**Technical Documentation** PTCUL is required to submit the following documentation to support the cost estimates:	
a)	The proposed Single Line Diagram (SLD) of the substation indicating number of bays proposed and availability of land for future expansion.	*Proposed Substation SLD is enclosed.*
b)	Line route charts indicating tower requirements, distances, cable lengths, and other relevant design parameters base upon which the estimate has been prepared.	*Proposed Line route chart is enclosed.*
6-	**Equity Investment and Financial** Planning PTCUL has proposed an equity investment	

	of approximately <211 Crores, which is a substantial outlay. Therefore, it must submit:	
a)	Detailed sources of equity funding,	*GoU has already made GO No. 553/I(2)/2024/05-05/2024 dated 02.09.202. It is to inform that the entire equity investment of Rs. 211 crores (approx.) shall not be required at one time. It shall be required in staggered manner as per the progress of the project, during the entire completion schedule of the project.* *The year-wise equity requirement against the above project will be demanded from Government of Uttarakhand (GoU) through State Budget by submitting Annual Plan, as it has been done for all earlier projects.* *It is also to inform that the above project is already approved in the Uttarakhand Transmission Network Planning by GoU.*
b)	Supporting documents such as board approvals, government consent, or fund allocation letters,	
c)	Clear assurance from the concerned regarding equity in fusion for the project.	
	Similarly, for the debt component**, PTCUL must submit:**	
a)	Details of loan lie-ups or indicative term sheets	*The debt component against above subject project was sanctioned by REC under Scheme no. UA-TD-TRM-118-2025-19424 and PFC under loan no. 09303095 (copy of REC & PFC sanction letter with terms & conditions enclosed).*
b)	Supporting documentation from financial institutions confirming intent or approval to finance the project.	
7-	**Effectiveness of Load Flow Study and** status **of Sanctions and**	*PTCUL submits that the **load flow study** for the proposed **400/220 kV GIS Substation, Ramnagar, Roorkee** has been carried out considering the overall system strengthening requirement of the **Haridwar & Roorkee & Laksar power areas**, in*

	Approvals from Central Agencies: PTCUL has submitted a load flow study based on local inputs provided by the SE (PI), Roorkee, wherein load flows have been analyzed at the local level considering the proposed site and connectivity. However, a 400 kV transmission line is a significant and critical asset, necessitating a broader and more comprehensive study. This should include considerations related to its location, current flow, voltage regulation, overall impact on the wider network, and future downstream connectivity rather than such local assessment which does not reflect the best and most effective assessment for establishment of the substation of this scale. Additionally, such a project would require various sanctions and approvals from central agencies such as the CEA, PowerGrid, UPPTCL, etc. Therefore, PTCUL	*alignment with the long-term transmission plan of Uttarakhand.* 1. ***Comprehensive Nature of Load Flow Study:*** o *The study undertaken by PTCUL is not limited to local parameters but considers the **regional power flow patterns**, **anticipated demand growth**, and **network contingencies** across the southern transmission zone of the state.* o *Inputs are taken from all concern for **field verification, site suitability assessment, and connectivity validation** with the existing 220 kV Roorkee substation.* o *The proposed Roorkee 400 kV substation is strategically planned to **reduce loading on existing 220 kV lines**, enhance **voltage stability**, and ensure **N-1 contingency compliance** for the regional grid.* 2. ***CEA Review and In-Principle Approval:** The proposed project was deliberated during the **39th Consultation Meeting for Evolving Transmission Schemes in the Northern Region**, held on **28thJuly2025**, with participation from **CTUIL, NRLDC, CEA, UPPTCL, and PTCUL** MoM dated 28.07.2025 circulated vide CTUIL letter No. **CTU/N/00/CMETS_NR/39 Dated 08.09.2025** is also endorsed to Director (W&P), UPPTCL. The proposal was found to be **technically in order** during this review. Subsequently, the project was **discussed in detail with the Central Electricity Authority (CEA)** in a dedicated meeting held on **26th September2025**, wherein **all queries raised by CEA were addressed and CEA also concurred to the proposal**.*

	must clarify whether any prior clearances or approvals from these central agencies and other concerned authorities are required as this aspect has not been addressed in the Petition. Furthermore, clearly specify the lime within which the aforementioned approvals will be obtained.	
8-	Request for Cost Plus Approval Vs. TBCB Mechanism In its petition, PTCUL has provided certain justifications to seek a waiver from the Tariff Based Competitive Bidding (TBCB) mechanism mandated by the regulations and has instead sought approval under the Cost Plus mechanism. In light of the above, PTCUL is required to submit any additional justifications, if any, in support of its request for such an exemption.	*In reference to the observation regarding PTCUL's request for approval under the **Cost Plus mechanism** instead of the **Tariff Based Competitive Bidding (TBCB)** route, PTCUL respectfully submits the following additional justifications in support of its request:* 1. *Government of Uttarakhand (GoU) vide Order no. 553/I (2)/2024/05- 05/2024 dated 02.09.2024 has released 'Uttarakhand Transmission Network Planning' in the larger public interest of the people of Uttarakhand to be implemented through PTCUL in phased manner. 400kV S/s Roorkee along with associated line is also part of 'Uttarakhand Transmission Network Planning' as a High Priority Projects.* 2. *Hon'ble Chief Minister, Uttarakhand during review meeting held on dated 02.07.2024 (copy enclosed) directed to submit a proposal for approval from the competent level to increase the cost limit of projects to be implemented by PTCUL to ₹ 1000 Crore.* 3. *Secretary (Energy), GoU vide letter dated 22.07.2024 (copy enclosed) requested the Hon'ble Commission to exempt the 08 nos. projects including 400 kV Roorkee S/s which is of critical nature and Govt. of Uttarakhand intend to develop above project through Cost Plus/RTM approach via PTCUL. Further, GoU requested to*

		the Hon'ble Commission to kindly accord approval for these Critical Transmission Projects considering them as special case using its inherent powers, in the interest of State. 4. *As per direction of Hon'ble Chief Minister, Principal Secretary (Energy), GoU vide letter dated 15.10.2024 (copy enclosed) requested Hon'ble Commission to increase the Threshold Limit for development of Intra-state Transmission System up to ₹1000 Crores through PTCUL on cost plus/RTM approach and above ₹1000 Crore (Rupees One Thousand Crore), the development of Intra-State Transmission System may be allowed through TBCB mode.* 5. *MD, PTCUL, Principal Secretary (Energy)/Secretary (Energy), GoU and Chief Secretary, GOU & Chairperson, PTCUL vide several correspondence requested Hon'ble UERC to increase the Threshold limit upto ₹ 1000 Crore to implement the Transmission Projects through PTCUL. In the several letters including letter no. 337/I(2)/2025-07(03)-06/2019 dated 27.05.2025 addressed to Hon'ble Chairman, UERC by Principal Secretary (Energy), GoU under section 108 of the Electricity Act, 2003 has given several relevant reasons to consider the request to execute the projects under cost plus/RTM approach. (copy of correspondence enclosed)* 6. *As per MoM of joint meeting held on dated 05.12.2024 (copy of MoM enclosed) under Chairmanship of Secretary (Energy), GoU between all three corporations, PTCUL, UJVN Ltd., UPCL and Hon'ble UERC, the matter of increasing threshold limit was discussed and Hon'ble UERC informed that for implementation of projects above ₹ 100 Crore PTCUL may submitted project-wise proposal along with justification before Hon'ble Commission through petition.* 7. *As per above direction, PTCUL vide Letter No.1812/ Dir. (Operations)/PTCUL/UERC dated 26.10.2024 submitted petition along with justification for implementation of above project through Cost Plus Approach*

		8. ***Nature of the Project – System Strengthening within Existing Network:*** *The proposed* ***400 kV Ramnagar, Roorkee GIS substation*** *is not a new transmission project requiring creation of entirely new corridors or greenfield infrastructure, but rather a* ***system-strengthening project within the existing 220 kV Roorkee substation premises****, aimed at improving reliability, redundancy, and supply security for the Roorkee–Haridwar load center. As per existing regulatory practices,* ***intra-state system strengthening projects*** *implemented within the utility's network are generally executed under the* ***Cost Plus mechanism****, particularly when they involve brownfield integration and existing asset augmentation.* 9. ***Technical Complexity and Site-Specific Constraints:*** o *The project involves* ***retro-fitting of a 400 kV GIS within an operating 220 kV substation****, requiring precise engineering coordination and phased execution without major interruption to ongoing power supply.* o *Such* ***site-constrained, high-voltage GIS works*** *demand detailed design customization, safety considerations, and real-time interface management with existing equipment conditions that are typically* ***unsuitable for competitive bidding****, where standard designs and greenfield execution are preferred.* 10. ***Absence of Readily Available Land and Need for Integrated Execution:*** *The substation is being developed* ***within the existing 220 kV premises****, with no additional land purchase or external corridor development. Consequently, project scope, cost, and design are closely integrated with PTCUL's existing operational assets and standards. These conditions make* ***execution through Cost Plus mode*** *more appropriate to ensure technical compatibility and timely completion.* 11. ***Urgency and Strategic Importance:*** *The 400 kV Roorkee (Ramnagar) substation is* ***critical for load growth and reliability*** *in the*

		rapidly developing Roorkee–Haridwar–SIDCUL industrial region. The project's timely commissioning is essential to ensure ***N-1 contingency compliance****, voltage stability, and uninterrupted power to key industrial, institutional, and residential consumers.* ***12.*** *Government wishes to grant investment approval to PTCUL on RTM/Cost Plus approach under Section 108 of Indian Electricity Act 2003. PTCUL has trained and experienced team of Engineers with State of Art Technology in construction of new Substations. PTCUL is well conversant with the topography of Himalayan terrain of Uttarakhand. PTCUL has wide network of 66 KV and above voltage level which needs to be strengthened to cater the increasing demand of rapid urbanization, industrialization and large number of floating population in terms of pilgrimage and tourist visiting Char Dham, Kumbh, other religious & adventure and tourism destinations of Kumaon & Garhwal region of state. .* *In view of the above, PTCUL submits that the* ***Cost Plus mechanism*** *is the most appropriate approach to implement this project for system strengthening, given its* ***brownfield nature, technical complexity, urgency, and public interest considerations****. Accordingly, the Hon'ble Commission is requested to accord approval of the project* ***under the Cost Plus regulatory framework.***

2. Commission's Observations, Views and Directions:

2.1. From the submissions made in the Petition alongwith documents on record and subsequent filings by the Petitioner, the Commission observes the following:

2.1.1 With respect to the present proposal, it is observed that the Commission vide its Order dated 26.04.2022, had accorded investment approval for establishment of a 400 kV AIS Substation at Landhora along with its associated transmission line, intended to cater to the load requirements of Roorkee and Haridwar areas for the next ten (10) years and to provide N-1 contingency to the 220 kV Substation at Roorkee.

Subsequently, PTCUL, vide its letter dated 01.02.2023 filed a Petition with revised DPR to change the configuration of the said Substation from AIS to GIS citing land constraints, and sought approval of the Commission in this regard. The Commission, after due consideration, vide its Order dated 12.04.2023, approved the revised Detailed Project Report (DPR) for establishment of a 400 kV GIS Substation at Landhora in place of the earlier approved AIS configuration.

Thereafter, in the instant Petition, the Petitioner has submitted before the Commission as under:

"…

In the 90th BoD meeting, it has been decided that proposal of 400/220 kV S/s at Landhora should be dropped from the route of ADB funding due to technical and financial constraints and considered for alternate route of funding at a suitable site in region for which specific proposal have to be brought before the Board separately."

Consequent to the above, the Petitioner has now submitted the present proposal before the Commission seeking approval for construction of a 400/220 kV GIS Substation at Roorkee in lieu of the earlier approved 400/220 kV GIS Substation at Landhora.

2.1.2 With regard to the need of the proposed work of construction of 400 kV S/s Roorkee, the Petitioner has submitted that the primary aim of the proposed work is to:

a) Strengthen the northern transmission corridor of Uttarakhand.
b) To create the additional source of power for existing 220 kV S/s Roorkee, 132 kV S/s Laksar, Bhagwanpur, Chudiyala and proposed 220 kV S/s Mangalore.
c) Relieve the load on existing 220 kV corridors (Roorkee-Puhana-Nara).
d) Provide reliable power to upcoming industrial area, mini-industrial clusters near Roorkee and Mangalore.
e) Ensure redundancy and reliability (N-1 contingency) in the local grid network of Roorkee area. Particularly, during the outage of 220 kV Roorkee-Puhana line

f) Facilitate future inter-connection with regional grid notes at 400 kV level.
g) To cater the long-term demand of UPCL, increase in TTC and ATC limit for the Uttarakhand.
h) Improve the RE integration in large scale for the Roorkee and near-by area.

Further, the Petitioner has submitted that prior to finalising the proposal for the 400 kV Roorkee S/s, it analysed the multiple options like (a) Upgradation of existing 220 kV corridors (Roorkee-Puhana, Roorkee-Nara, Bhagwanpur-Haridwar), (b) Addition of parallel 220 kV circuits and (c) Enhance inter-connection with nearby substations such as Puhana (PGCIL) and Muzaffarnagar (UPPTCL) for relieving the future load requirement of Roorkee area. The outcome of the study indicated that while these alternatives could provide short-term operational relief, none could adequately meet the medium- to long-term growth requirements beyond FY 2030 and only the development of 400 kV S/s has become deemed technically essential for ensuring grid reliability and to cater future load scalability of the Roorkee area.

In this regard, the Commission observes that the proposed 400 kV Substation at Roorkee is envisaged as a strategic system-strengthening measure aimed at meeting the long-term power demand of Roorkee and its adjoining areas. The Commission notes that the Petitioner has analysed the various alternative options—such as upgradation of existing 220 kV corridors, addition of parallel circuits, or enhancement of interconnections with nearby substations and the Petitioner has found that, while these alternatives may provide limited and short-term operational relief, but are inadequate to address the projected load growth and system reliability requirements beyond FY 2030.

The Commission further notes that the Roorkee region is witnessing rapid urbanisation, industrial expansion, and increasing demand from residential, commercial, and institutional sectors, which necessitate a robust and scalable transmission infrastructure. Establishment of a 400 kV substation at Roorkee would not only enhance the reliability and stability of

the grid in the region but also provide adequate capacity for future load growth and facilitate improved power supply to downstream 220 kV and 132 kV networks including 220 kV SIDCUL, Haridwar S/s having enormous industrial load.

Accordingly, the Commission is of the considered view that the development of the 400 kV Substation at Roorkee is justified and constitutes a long-term, sustainable solution for catering to the future load demand and ensuring grid reliability of Roorkee and nearby areas.

2.1.3 With regard to the availability of land, the Petitioner has submitted that the land for the proposed substation is available within the premises of the existing 220 kV Roorkee substation, therefore, no separate land acquisition or purchase is required to be undertaken for this project. The land for the proposed 400 kV S/s is selected in such a manner within the premises of existing 220 Roorkee S/s, that the proposed 400 kV S/s will be directly integrated to 220 kV main bus, thereby eliminating the requirement for construction of any new 220 kV inter-connecting transmission lines. Further, during the discussions, the officers of PTCUL submitted that the total available land at the existing 220 kV Roorkee substation is around 5 hectares, while the actual requirement of land for development of the proposed 400 kV GIS substation is only about 3 hectares. Hence, the available land is adequate for the construction of the proposed 400 kV GIS substation as well as for any future expansion including bays etc. that may be required at the said location. In this regard, the Commission is of the view that the selection of land within the premises of 220 kV S/s Roorkee is technically and economically prudent, as it reduces right-of-way (RoW) challenges, minimizes land and environmental impacts, and enhances operational efficiency and reliability of the transmission network. Hence, the Commission finds the proposed utilization of available land within the existing 220 kV Roorkee Substation premises to be appropriate from planning and operational perspective, PTCUL shall ensure that the availability of land mentioned above does not get diminished.

2.1.4 With regard to the selection of GIS over AIS, the Petitioner has submitted that they have explored the revenue as well as private land options in

coordination with district and local administration but did not find the required land in Haridwar and Roorkee area, hence, to address the urgency of requirement of the project, the Petitioner has selected the limited land available in the vicinity of 220 kV S/s Roorkee for the construction of proposed 400 kV Roorkee GIS S/s, since development of AIS S/s is not feasible. Therefore, to optimally utilise the existing limited land at 220 kV Roorkee S/s, a GIS configuration has been selected. Also, selection of GIS design ensures high reliability and operational safety for high voltage equipment as well as ensure the scope for the future expansion of the S/s. In this regard, the Commission is of the view that considering the availability of limited land in the existing 220 kV Roorkee S/s, the selection of GIS technology seems to be justified which would also enable provision for future expansion due to lesser utilization of land.

2.1.5 Regarding the LILO connectivity, the Petitioner has proposed the line length of 4.5 KM (3.7 KM Overhead + 0.7 KM Underground) required for the LILO connectivity from the 400 kV Puhana (Roorkee)-Muzaffarnagar Line. The Commission observes that the Petitioner has proposed partial undergrounding of the 400 kV LILO line associated with the proposed 400 kV Substation at Roorkee, citing right-of-way and corridor constraints in the vicinity of the substation. However, the Petitioner has not furnished details regarding the technology to be adopted and the related safety measures for laying the underground cable, as required under the prevailing Guidelines/Rules/Regulations/Codes issued by the Central Government or the Central Electricity Authority (CEA). Accordingly, the Commission is of the view that the Petitioner shall ensure compliance with and adopt the most appropriate and applicable Guidelines/Rules/Regulations/Codes issued by the Central Government/CEA in this regard.

Further, the Commission directs the Petitioner to furnish detailed information within 03 months from the date of this Order regarding the technology proposed to be adopted and the safety measures to be ensured for laying of the 400 kV underground cable portion of the LILO line. The Petitioner shall ensure that the design, construction, installation, testing and operation of the underground portion are carried out strictly in accordance with the applicable Guidelines/Rules/Regulations/Codes

issued by the Central Government and the Central Electricity Authority (CEA). The Petitioner shall adopt the most suitable and compliant standards in this regard and submit confirmation thereof to the Commission.

2.1.6 With regard to completion program/schedule of the proposed substation and the associated 400 kV line, the Commission takes cognizance of various projects namely 220 kV Baram, 132 kV Simli, 132 kV Lohaghat etc. in the past under execution or executed by PTCUL wherein due to various controllable and uncontrollable reasons, Petitioner has failed to complete both the substation and associated line works simultaneously resulting in a situation where either the line is complete and substation has not come up or vice-versa. The Commission feels that such eventuality adversely affects recovery of transmission charges of the PTCUL and the foremost reason for such loss is that the project program/schedule of both substation as well associated lines are either not coherent or these schedules are being followed up independently without any proper coordination, which speaks about lack of proper project execution procedures of PTCUL. Such eventuality cannot be ruled out even in the development of this substation, therefore, **the Commission directs the Petitioner to devise project program schedule/PERT-CPM chart of the Substation and the associated line works as a consolidated program taking due care that the associated line of the substation is scheduled as a critical activity in the entire program, in order to synchronise the completion schedule of both the works.**

2.1.7 With regard to the approval for the LILO connectivity, the Petitioner submitted that the proposed project was discussed during the 39th Consultation Meeting for Evolving Transmission Schemes in the Northern Region, held on 28th July 2025, with participation from CTUIL, NRLDC, CEA, UPPTCL, and PTCUL, the MoM dated 28.07.2025 of the same has been circulated by CTUIL vide its letter No. CTU/N/00/CMETS_NR/39 Dated 08.09.2025 with endorsement to Director (W&P), UPPTCL, in which the proposal for LILO connectivity has been found to be technically in order/feasible during the review. Subsequently, the project was discussed in detail with the Central Electricity Authority (CEA) in a dedicated meeting

held on 26th September 2025, wherein all queries raised by CEA were addressed and CEA also concurred to the proposal.

However, PTCUL has not submitted any approval letter received from CTU/PGCIL/UPPTCL regarding the LILO connectivity from 400 kV Puhana-Muzaffarnagar line. Though, the approval of the connectivity is pre-requisite for proposing such projects, however, considering the Minutes of Meeting (MoMs) discussed herein above, **the Commission is of the view that the Petitioner shall issue LoA only after getting necessary approval.**

2.1.8 The Petitioner w.r.t. the financing of the project has submitted the letter from REC and PFC, wherein, REC vide its letter dated 18.08.2025 & PFC vide its letter dated 03.09.2025, has agreed to grant loan assistance of Rs. 493.21 Crore, which constitutes 70% of the total DPR cost for the proposed project. However, regarding the equity portion, PTCUL has not provided any supporting documents from Government of Uttarakhand, but as stated that the entire equity of Rs. 211 Crore which will be funded by Government of Uttarakhand, shall be required in staggered manner based on the phase-wise capital expenditure as per the progress of project during the entire completion schedule of the project, therefore, the year wise equity requirement against the above project will be demanded from Government of Uttarakhand (GoU) through State budget by submitting annual plan to the GoU, as it has been done for all earlier projects. **In this regard, the Commission is of the view that Petitioner shall ensure to obtain an undertaking/approval from GoU regarding infusion of required equity before issuance of Letter of Award (LoA) for the proposed work.**

2.1.9 In the instant Petition, the Petitioner has sought approval for development of above project through Cost Plus Approach instead of Tariff Based Competitive Bidding (TBCB), in support of the same following justification has been provided by the Petitioner:

"1. Critical Nature of Project: -

In the 90th BoD (Annexure-2) it has decided that proposal of 400/220 kV S/s at Landhora should be dropped from the route of ADB funding due to technical and financial constraints and considered for alternate route of funding at a suitable site in region for which specific proposal have to be brought before the Board separately. Tender for construction of 220 kV S/s Manglore has already been

awarded which was proposed to be fed from 400 kV S/s Landhora. To supply reliable power to upcoming 220 kV S/s Manglore and to relief already loaded 220 kV substation, Roorkee a 400 kV S/s at existing 220 kV S/s Roorkee is natural and most feasible solution.

As the domestic and adjacent industrial load in vicinity of Roorkee is increasing rapidly. Roorkee falls in the Kumbh and Kawar mela zone and also connected to 220 kV Sub-station, SIDCUL, Haridwar and 132 kV Substation, Jawalapur through 132 kV Lines. Existing 220 kV Substation Roorkee is currently feeded through 220 kV Roorkee-Nara line & 220 kV Roorkee-Puhana (PGCIL) line, which are running on their 90% load capacity.

A new 220/132/33 kV Sub-station in Manglore is also under construction and has to be energized through LILO of 220 kV Roorkee-Nara line. 132 kV Sub-station, Laksar and Manglore are also feeded from Roorkee Sub-station.

Keeping in view the increasing load demand of Roorkee/Nearby areas, Religious importance, To boost industrial development and Construction of 220/132/33 kV Sub-station, Manglore following Sub-station and associated transmission line have been proposed-

400/220 kV Sub-station, Roorkee

LILO of 400 kV Puhana-Muzaffarnagar line at proposed 400/220 kV Sub-station, Roorkee.

2. Ownership Issue: -

This project is envisaged to provide relief to existing 220/132 kV Substation Roorkee and associated 220 kV and 132 kV lines running on full capacity. As TBCB mode has involvement of third party, so getting the implementation of above project through TBCB mode may lead to ownership issues.

3. Critical Project and Interface issues: -

As the area of Roorkee is crowded with Residential buildings. Hence ROW issues may rise. As PTCUL is existing Transmission licensee and involved in Construction of various Transmission projects in State. PTCUL is resolving various ROW issues with the help of Local Administration and residents effectively. TBCB mode has involvement of third party, so getting the implementation of above project through TBCB mode may lead to severe ROW issues. Also it may take long time therefore it is not suitable for urgent strategically critical projects, procedural delays and complications in TBCB mode could jeopardize the timely completion of the project. As TBCB mode is totally price

oriented process, may affect the quality of project which will affect the complete transmission network of PTCUL

4. Advantage and Experience of PTCUL: -

PTCUL being the State Transmission Utility rendering its service since formation of Uttarakhand is well conversant with people of the state, their culture and human nature and can better connect for Sustainable development. In medium and long term PICUL will play crucial role and serve as backbone of power sector by meeting the demand of both consumer as well as Generator in the state.

5. Role in Industrial Development and Power Evacuation: -

Due to possibility of huge industrial development and establishment of Solar Power Plants in the state in upcoming years, PTCUL may require to develop Transmission Network for providing uninterrupted and good quality power supply to the industrial consumer."

With regard to the above request made by Petitioner and the justifications, the Commission has noted that, the Petitioner vide its earlier correspondences dated 08.01.2024, 30.01.2024, 19.03.2024 and 06.05.2024 has already submitted the similar request, on which the Commission vide its letter dated 03.05.2024 has clarified the Petitioner that the limit specified for TBCB is adequate for the State.

Subsequently, Secretary (Energy), Government of Uttarakhand (GoU) vide its letter dated 22.07.2024 informing the Commission that it is intending to develop proposed 400 kV S/s Roorkee and 07 nos. of other critical Transmission System Projects through PTCUL, which are above threshold limit (beyond 100 Crores) of the amount allowed in the Commission's MYT Regulations, 2022.

In response to aforesaid letter, the Commission vide its letter dated 30.08.2024 has informed the Secretary, Energy, GoU as follows:

"…

In this regard, I have been directed to inform you, that the Commission will decide whether, to proceed with the development of the remaining aforesaid projects through the cost-plus mode or TBCB on case to case bases, as and when the Petition seeks exemption under special provision provided in appendix-vi of the amended MYT Regulations, 2022, is filed in accordance with the provisions of the UERC

(Conduct of Business) Regulations, 2014 specifying clearly the ground and justification for the same."

Before taking up the grounds and justification given by the Petitioner, the Commission feel it necessary to take into consideration the background of the amendment including Appendix VI of the MYT Regulations, 2022. In order to align the prevalent Regulations with the National Tariff Policy and MoP, GoI guidelines on TBCB, the Commission amended the MYT Regulations, 2022 and after due deliberation and consideration laid down the threshold limit of Rs. 100 Core (Rupees One Hundred Crore), above which all Intra-State Transmission System (new and augmentation) costing Rs. 100 Core (Rupees One Hundred Crore) or more shall be developed by State Govt./STU through Tariff Based Competitive Bidding in accordance with the competitive bidding guidelines notified by the Central Government from time to time.

However, provisions of the Appendix VI of the amended MYT Regulations, 2022 has provided exception in certain case specified therein for development of any Intra-State Transmission System above Threshold Limit through cost plus approach, the same is being reproduced hereunder:

> *"4. In case the State Govt./STU intends to develop any Intra-State Transmission System above the threshold limit through cost plus approach due to some specific reasons such as projects is of critical nature or the Project may lead to ownership or interface issues, the State Govt/STU shall obtain prior approval of the Commission for the same."*

Since, the exemption provided in the Regulations have been sought by the Petitioner, it is relevant to take into the grounds, on the basis of which exemption can be granted, which as evident from above are due to reason of ownership or interface issue and when the project is of critical nature. In the present matter it is relevant to reiterate the sequence of pre-development activities undertaken by PTCUL with regard to the establishment of a 400 kV Substation in the Roorkee area. In the year 2022, considering the increasing load demand in Roorkee and Haridwar and to ensure compliance with the N-1 contingency criteria at the 220 kV level, PTCUL filed the Petition dated 13.01.2022, seeking approval for the development of a 400 kV Substation at

Landhora (Roorkee), as approved by its Board of Directors in the 78th meeting held on 29.12.2021 and the Commission accorded the approval on 26.04.2022. Initially, PTCUL had proposed the establishment of a 400 kV AIS Substation at Landhora (Roorkee). However, due to non-availability of the requisite land parcel for development of the AIS Substation, PTCUL revised its plan from AIS to GIS configuration. Accordingly, PTCUL filed another Petition dated 01.02.2023 for approval of revised DPR for development of a 400 kV GIS Substation at Landhora (Roorkee), as approved by its Board of Directors in the 83rd meeting held on 26.12.2022.

Considering the justification submitted by PTCUL for revising the proposal from AIS to GIS, the Commission accorded its approval for development of the 400 kV GIS Substation at Landhora (Roorkee) on 12.04.2023. However, despite the reduced land requirement for the GIS configuration, PTCUL could not arrange the required land parcel at Landhora. Consequently, PTCUL placed the matter before its Board, and in the 90th meeting of the Board of Directors, it was decided to drop the proposal for development of the 400 kV Substation at Landhora. The relevant submission of PTCUL in the instant Petition is reproduced below:

> *"…*
>
> *In the 90th BoD meeting, it has been decided that proposal of 400/220 kV S/s at Landhora should be dropped from the route of ADB funding due to technical and financial constraints and considered for alternate route of funding at a suitable site in region for which specific proposal have to be brought before the Board separately."*

Since, the need was already established as per the demand of the industrial consumers in Roorkee & Haridwar area w.r.t. the reliability and availability of supply for augmentation of the transmission network of Roorkee and nearby area, also these concerns of industrial consumers were brought by UPCL & PTCUL before the Commission in the 9th Coordination Forum Meeting, wherein, inter-alia urgency of this 400 kV S/s in the vicinity of Roorkee was found to be necessary. Accordingly, later in the 94th board meeting of PTCUL, the revised DPR for construction of 400/220 kV GIS S/s Roorkee was approved by its BoD, accordingly, PTCUL vide its letter dated

26.10.2024 has filed the instant Petition for approval of construction of 400/220 kV GIS S/s Roorkee within the premises of existing 220 kV S/s Roorkee, which in a way mitigated land and RoW issues to a larger extent.

In view of the foregoing initiation taken up by Petitioner towards the taking up of work as approved and taking cognizance of the background of pre-development activities undertaken by PTCUL, who has not only conceptualized the 400 kV GIS Substation at Roorkee but has also been diligently pursuing its implementation, the Commission observes that the Petitioner has made significant efforts and progress towards the development of the said Substation and started acted upon the approved work and has now submitted a comprehensive proposal for establishing the 400 kV Substation finally on its own land in the vicinity of the existing 220 kV Substation, Roorkee, when no other appropriate land could be finalized even after much effort. In such a situation, if the present proposal were to be handed over to any other agency or developer for implementation on the land identified and owned by PTCUL, it cannot be said for certain, the involvement of a third party in the execution of the project potentially will not give rise to ownership-related complications. Further, since the existing transmission infrastructure of PTCUL in the Roorkee and nearby areas—comprising 220 kV and 132 kV lines and substations—is already operating at its full capacity, the involvement of a third party in developing the proposed 400 kV Substation and its associated transmission lines may also lead to interface and operational coordination issues. Hence, as a special case, the Commission finds the justification for seeking exemption and to allow the Petitioner to undertake the development of the 400 kV GIS S/s Roorkee by itself under the Cost-Plus mode in accordance with Section 62 of the Electricity Act, 2003 has substance.

The Commission is of the view that although the Petitioner has failed to establish the ground of exemption of the Project from the TBCB mode on the basis of critical nature of the project, however, the possibility of ownership/interface issues cannot be absolutely ruled out. Therefore, in view of the above and in order to eradicate any potential issues of

ownership/interface, the Commission finds the request of the Petitioner justified.

Further, the Commission considering the fact that GoU has considered this project as of critical nature and has requested for its exemption from TBCB route in accordance with the MYT Regulations, therefore, the Commission is of the view that the Petitioner should make all possible efforts to obtain financial assistance in the form of grant covering either the entire capital cost or maximum grant from State Govt. and/or Central Govt. scheme/funds specially the PDF fund which was in-fact created for such purposes.

2.1.10 Although, Considering the peculiar situation and issues involved in the present matter the Commission has accepted the request of Petitioner for exemption, however, the same shall not be a precedence for any such other matters, the Commission feels a need to draw attention of PTCUL to Appendix VI of MYT Regulations, 2024 which specifies the threshold limit for development of Intra State transmission system through Tariff Based Competitive Bidding (TBCB) as Rs. 100 Crore. In case Petitioner is interested to develop any project considering its vast expertise and advantage over the other competitors in executing the works in Uttarakhand as stated by PTCUL in its submissions, the Commission feels that the Petitioner itself can participate in the bidding held under TBCB mode like PGCIL participates in inter State projects, wherein Bidding is carried out by nominated Bid Process Coordination Committee (BPC) viz. PFC, REC etc. which is responsible for managing and coordinating the entire tender and bidding process for power transmission to ensure that the process is transparent, fair, and competitive, ultimately selecting the best value bidder.

It is relevant in this regard to draw attention of the Petitioner to the provisions of revised Tariff Policy, 2016, which inter-alia states the following*: "Further, intra-state transmission projects shall be developed by State Government through competitive bidding process for projects costing above a threshold limit which shall be decided by SERCs".*

At present PTCUL has submitted numerous investment approvals proposals before the Commission, amongst which many proposals exceed

the threshold limit for TBCB specified by the Commission, as already stated the exemption granted in the present matter is on special consideration and should not be taken in generalized manner as there are inherent and explicit benefits for opting the TBCB mode apart from the fact that in the cases provided for, it is mandated by the Provisions of the Regulations. Granting exemptions readily would frustrate not only the objectives but also the regulatory mandate and therefore should not be taken up lightly before incorporating the provisions specified in Appendix VI of MYT Regulations, 2022, a detailed study was got conducted and after considering the stakeholders views and thorough discussions and benefits in the matter, the same was amended.

Considering the fact that even after passage of more than 03 years incorporation of the said provisions in the Regulations no procedure/framework has been laid down, **therefore the Commission feels a need to direct the GoU/State Transmission Utility (STU) to urgently prepare a framework for carrying out works under the TBCB in next 03 months from the date of the Order, as exceptions from the Regulations or the intent of the National Tariff Policy cannot be allowed on a regular basis. The same has also been expressed by the Commission in its earlier communications to GoU, in this regard.**

2.2. The Petitioner has considered the Price Contingencies @ 6.8%, Contingency @ 3% and Project Overheads @ 5% in the DPR. In this regard, in order to maintain uniformity with recent investment approvals, **the Commission has not considered Price Contingencies @ 6.8% and instead it has calculated the total project cost by considering the contingency @ 3% and project overheads @ 5% based on the past practice of the Commission.**

Further as the issue of SoR revisions is presently under deliberation before the Commission, the rates considered in SoR of FY 2024-25 cannot be considered as final and accordingly the estimates based on these rates are also provisional in nature. Hence, the Commission after finalization on the issue of SoR, based upon its finding shall carry out the strict prudence check of the cost incurred and financing thereof in accordance with the conditions of Licence and MYT Regulations at the time of scrutiny of ARR.

2.3. The Investment approval for the project titled "400/220 kV (2x315 MVA) GIS Substation Landhora and its associated lines for inclusion in the Transmission Project of PTCUL Transmission Plan under UTSDIP Scheme under ADB Funding in place of 400/220 kV AIS Substation Landhora and its associated lines" was accorded by the Commission vide Order dated 12.04.2023. PTCUL has now requested investment approval for a new proposal titled "Construction of 400/220 kV GIS Substation, Roorkee along with Construction of LILO of 400 kV Puhana (Roorkee)-Muzaffarnagar Line at proposed 400 kV substation Roorkee". **In this regard, since the Petitioner did not act upon the earlier approval granted by the Commission, and the present approval is granted subsequent to the Order dated 12.04.2023 superseding the earlier approval.**

2.4. Based on the above, the Commission hereby grants in-principle approval of provisional cost of Rs. 607.47 Crore (including IDC) towards the works proposed for "Construction of 400/220 kV GIS Substation, Roorkee along with Construction of LILO of 400 kV Puhana (Roorkee)-Muzaffarnagar Line at proposed 400 kV substation Roorkee" subject to the fulfilment of terms and conditions mentioned below:

(i) The Petitioner should go for the competitive bidding for obtaining most economical prices from the bidders.

(ii) All the loan conditions as may be laid down by the funding agency in their detailed sanction letter are strictly complied with.

(iii) The Petitioner shall ensure to obtain an undertaking/approval from GoU regarding infusion of required equity before issuance of Letter of Award (LoA) for the proposed work.

(iv) The Petitioner shall, endeavour to obtain funding of grant for the project from the State Govt./Central Govt. Schemes/Funds and within one month of the Order, submit letter or any such documentary evidence in support of its claim for grant agreed by either from the State Government or through Central Govt. Schemes/Funds in respect of the proposed project specially PDF created for such purposes.

(v) After completion of the aforesaid projects, the Petitioner shall submit the completed cost and financing of the projects.

(vi) The Petitioner shall not award LoA unless all the clearances from the concerned entities viz. CTU/PGCIL/Forest etc. are obtained.

(vii) The Commission directs the GoU/State Transmission Utility (STU) to urgently prepare a framework for carrying out works under the TBCB in next 03 months from the date of the Order.

(viii) The Petitioner to furnish detailed information within 03 months from the date of this Order regarding the technology proposed to be adopted and the safety measures to be ensured for laying of the 400 kV underground cable portion of the LILO line.

(ix) The Petitioner to devise project program schedule/PERT-CPM chart of the Substation and the associated line works as a consolidated program taking due care that the associated line of the substation is scheduled as a critical activity in the entire program, in order to synchronise the completion schedule of both the works.

(x) The cost of servicing the project cost shall be allowed in the Annual Revenue Requirement of the petitioner after all assets are capitalized and subject to prudence check of cost incurred.

2.5. The approval is given subject to the above conditions and on the basis of submissions and statement of facts made by the Petitioner in the Petition under affidavit, therefore, violations of the condition and in case any information provided, if at any time, later on, is found to be incorrect, incomplete or relevant information was not disclosed, and which materially affects the basis for granting the approvals, in such cases the Commission may cancel the approval or refuse to allow the expenses incurred in the ARR/True-up apart from initiating plenary action.

Ordered accordingly.

Prabhat Kishor Dimri	**(Anurag Sharma)**	**(M.L. Prasad)**
Member (Technical)	**Member (Law)**	**Chairman**