

**Before  
UTTARAKHAND ELECTRICITY REGULATORY COMMISSION**

**Petition No. 34 of 2024**

**In the Matter of:**

Investment Approval for Construction of proposed 220/132/33 kV S/s Raipur (Bhagwanpur), Roorkee along with construction of associated lines (220 kV D/c Line from 400 kV substation, Puhana (PCGIL), Roorkee to proposed 220/132/33 kV S/s Raipur (Bhagwanpur), Roorkee & LILO Line of 132 kV Bhagwanpur-LSM line at proposed 220/132/33 kV S/s Raipur, Bhagwanpur, Roorkee).

And

**In the Matter of:**

Power Transmission Corporation of Uttarakhand Limited (PTCUL)  
'Vidyut Bhawan', Near ISBT, Majra,  
Dehradun.

.....**Petitioner**

**Coram**

**Shri M.L. Prasad**

**Member (Technical)/Chairman(I/c)**

**Shri Anurag Sharma**

**Member (Law)**

**Date of Order:      September 02, 2024**

**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. 1141/MD/PTCUL/UERC dated 18.04.2024 seeking Investment Approval for "Construction of proposed 220/132/33 kV S/s Raipur (Bhagwanpur), Roorkee along with construction of associated lines (220 kV D/c Line from 400 kV substation, Puhana (PCGIL), Roorkee to proposed 220/132/33 kV S/s Raipur (Bhagwanpur), Roorkee & LILO Line of 132 kV Bhagwanpur-LSM line at proposed 220/132/33 kV S/s Raipur, Bhagwanpur, 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:

S. N.	Particulars	Substation Transformer Capacity (MVA)/ Length of the Line (KM)	Project Cost including IDC as per DPR (in Crore)
(a)	Construction of proposed 220/132/33 kV S/s Raipur (Bhagwanpur), Roorkee along with construction of associated lines.	2x160 MVA (220/132 kV) 2x80 MVA (132/33 kV)	362.46
	220 kV D/c Line from 400 kV substation, Puhana (PCGIL), Roorkee to proposed 220/132/33 kV S/s Raipur (Bhagwanpur), Roorkee.	12 KM (220 kV D/C Overhead line) 1.5 KM (220 kV Underground Cable)	
	LILO Line of 132 kV Bhagwanpur-LSM line at proposed 220/132/33 kV S/s Raipur, Bhagwanpur, Roorkee.	7.5 KM (132 kV Overhead line) 1.0 KM (132 kV Underground Cable)	

1.2 The Petitioner has submitted a copy of the Extract of Minutes of 89th meeting of the Board of Directors (BoD) of PTCUL held on 04.03.2024, wherein the Petitioner's Board has approved the Corporation's aforesaid proposals with a debt-equity ratio of 70:30.

1.3 To justify the need for the proposed work in the aforesaid Petition, the Petitioner has submitted that:

- Director (Operation), UPCL, Dehradun vide letter No. 4580 / नि०(परिचालन) / उपाकालि दिनांक 17.11.2023 and letter no. 5163 / नि०(परिचालन) / उपाकालि / T-38 दिनांक 28.12.2023 has requested to construct a new 220/132/33 kV Sub-Station in Raipur (Bhagwanpur), Roorkee to improve availability and quality of power supply against increasing load demand of industries and for strengthening of 132 kV system of the 132 kV substation Bhagwanpur and adjoining area.
- Also, as per the investor meet and increasing Industrial load demand, 220/132/33 kV Substation has been proposed and after construction of above said proposed Substation, the following impacts may occur:

- i. The reliability of electricity supply will be improved and future Industrial load demand of Raipur/Bhagwanpur Industrial State will be meet out.
  - ii. The 132 kV network of Bhagwanpur and adjoining Roorkee area will be strengthened.
  - iii. 02 Nos. 220 kV bays available at 400/220 kV Substation, Puhana (PGCIL) will be utilized effectively, which is still non-utilized in the present scenario.
- 1.4 The Petitioner in its Petition has mentioned that rates for items have been taken from PTCUL SOR 2023-24 dated 29.12.2023 and rates not available in PTCUL SOR are taken from previous LOA, DPR and Budgetary offer.
- 1.5 The Petitioner in its Petition has enclosed the Bar chart for the project with an execution period of 36 months from the award of the contract. Further, the Petitioner under the financial analysis has projected an IRR of 14.07 % with breakeven in the 10th year of operations.
- 1.6 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 03.07.2024 and directed the Petitioner to submit its reply by 22.07.2024. In response to the aforesaid queries, the Petitioner through its letter dated 22.07.2024 submitted the reply to the Commission. The queries and respective replies are as follows:
- Query 1:** PTCUL in its Petition has submitted that the selection of land is under process for the proposed S/s. In this regard, PTCUL is required to clarify whether the acquisition of land is completed or not till date.
- Reply 1:** *Executive Engineer (Civil) Project vide his letter no. 90/EE (Civil) P/W-5 dated 10/07/2024 informed that the selection of land is under process.*
- Query 2:** PTCUL is required to submit the System Study Report prepared by it before proposing the aforesaid S/s for investment approval.
- Reply 2:** *System Study Report is enclosed herewith.*
- Query 3:** PTCUL is required to confirm forest clearances/railway crossing approval requirements, if any, for the proposed construction of "220 kV D/c Line from 400 kV substation, Puhana (PCGIL), Roorkee to proposed 220/132/33 kV S/s Raipur (Bhagwanpur), Roorkee" & "LILO Line of 132

kV Bhagwanpur-LSM line at proposed 220/132/33 kV S/s Raipur, Bhagwanpur, Roorkee”.

**Reply 3:** *There is no requirement of Forest Clearance/Railway crossing approval.*

**Query 4:** PTCUL in its Petition has submitted the block diagram for the proposed S/s. In this regard, PTCUL is required to furnish the following information:

- a. No. of 33/11 kV S/s in the Raipur (Bhagwanpur), Roorkee with load details (in amperes) proposed to be connected to the 220/132/33 kV S/s Raipur (Bhagwanpur), Roorkee.
- b. Furnish pre & post Project scenarios for all the above-mentioned S/s along with details of individual maximum load (in amperes) & submit the sub-Station layout/Single Line Diagram for the proposed S/s.
- c. With regard to the PTCUL submission pertaining to its proposal for 2x50 MVA T/F of 220/33 kV & 2x160 MVA T/F of 220/132 kV in the proposed 220 kV S/s, PTCUL is required to submit the rationale for proposing 02 nos. T/F of capacity as mentioned above for each 220/33 kV and 220/132 kV in the proposed S/s. Further, PTCUL is required to submit the details of nos. of 132 kV and 33 kV bay proposed in the 220/132/33 kV S/s Raipur (Bhagwanpur), Roorkee.
- d. PTCUL is required to represent the line length (in KM) among the interconnected sub-stations in the block diagram and submit the revised block diagram for the same.

**Reply 4:**

- a. *EE (EDD), UPCL, Bhagwanpur vide his letter No. 2995/वि०वि०ख०भ०/T-06/ 30370 दिनांक 19/07/2024 provided the No. of 33/11kV S/s in the Raipur (Bhagwanpur), Roorkee with load details.*
- b. *For Pre & Post scenarios for above mentioned substation load details are enclosed herewith. SLD for the proposed S/s is enclosed.*
- c. *Transformers were proposed based on letter No. 5163/नि०(परीचालन)/उपाकालि/T-38 दिनांक 28/12/2023 of Dir (0) UPCL. 7 Number of 132 kV Bays and 09 Number of 33 kV Bays is proposed in the 220/132/33kV Substation Raipur (Bhagwanpur).*

*d. Revised Block diagram along with line length is enclosed herewith.*

**Query 5:** PTCUL is required to submit the details of existing/prospective loads being fed/to be fed from the proposed 220/132/33 kV S/s Raipur (Bhagwanpur), Roorkee.

**Reply 5:** *Letter No 2995/वि०वि०ख०भ०/T-06/अ०अ० दिनांक 19/07/2024 of EE (EDD) UPCL, Bhagwanpur enclosed herewith.*

**Query 6:** PTCUL in its Petition has submitted the Annual Financial Charges Sheet for the proposed works, in this regard, PTCUL is required to provide the reason for consideration of IoWC @ 13.70%, whereas, in the recent Tariff Order for FY 2024-25 the Commission has approved the IoWC @ 11.30%. Subsequently, in case of any changes, PTCUL is required to submit the revised sheet of Annual Financial Charges, Financial analysis and Breakeven Point analysis (in soft copy/excel format).

**Reply 6:** *Annual Financial Charges sheet enclosed.*

**Query 7:** PTCUL in its Petition has not submitted the Cost Benefit Analysis of the project. In this regard, PTCUL is required to submit the Cost Benefit Analysis for the project.

**Reply 7:** *Cost Benefit Analysis of the Construction of proposed 220/132/33 kV S/s Raipur (Bhagwanpur), Roorkee along with construction of associated lines (220 kV D/C line from 400 kV substation, Puhana (PGCIL), Roorkee to proposed 220/132/33 kV S/s Raipur (Bhagwanpur). Roorkee & LILO line of 132 kV Bhagwanpur-LSM line at proposed 220/132/33 kV Raipur, Bhagwanpur, Roorkee). FIRR value of said project is 14.07% and WACC of above project is 9.41%. As the FIRR is greater than WACC. So the project is cost beneficial for PTCUL.*

**Query 8:** PTCUL in the BOD agenda has submitted that the cost considered for preparation of estimate is based on the reviewed SoR for FY 2023-24 approved on 08.12.2023 and further reviewed SoR approved on 29.12.2023. PTCUL is required to submit the reason for the review of two SoRs for FY 2023-24 in the span of 17 days and required to submit the revised SoRs for FY 2023-24 with the necessary documents/approvals.

**Reply 8:** *The cost considered for preparation of estimate is based on the reviewed SoR for FY 2023-24 approved on 08.12.2023 and further reviewed SoR approved on 29.12.2023. The review of two SORs for financial year 2023-24 as per direction of 87th Board. Board Resolved that "The said schedule of rates may further be revised based upon the actual rates that will be obtained in the tenders which are in the process of opening, in case the circumstances so warrant. The revised SOR for financial year 2023-24 with documents.*

1.7 On the reply submitted by the Petitioner, the Commission further raised the queries, which were communicated to the Petitioner vide the Commission's letter dated 01.08.2024 with the direction to the Petitioner to submit its reply by 16.08.2024. In response to the aforesaid queries, the Petitioner through its letter dated 16.08.2024 submitted the reply. The queries and respective replies are as follows:

**Query 1:** PTCUL at point no. 4(c) of its reply submitted that 07 nos. of 132 kV bays and 09 nos. of 33 kV bays in the 220/132/33 kV S/s Raipur (Bhagwanpur), in this regard, PTCUL is required to submit the details of load (in MW) to be connected to the proposed bays of 132 kV and 33 kV.

**Reply 1:** *Details of Load (in MW) proposed to be connected at 33 kV Bays, as provided by UPCL vide its letter No 2995/वि०वि०ख०भ०/T-06/अ०अ० दिनांक 19/07/2024 (Annexure -I), are as follows:-*

*Point No. 1 = 85-90 MVA (50 % load is shifted to proposed 220/132/33 kV S/s Raipur (Bhagwanpur), Roorkee)*

*Point No. 2 = 21 MVA +12.5 MVA (Future Load)*

*Point No. 3 = 12.5 MVA*

*Point No. 4 = 25 MVA (Future Load)*

*Point No. 5 = 15-20 MVA (Future Load)*

*Utilization details of 07 Nos. of 132 kV Bays are as follows: -*

*1. 02 Nos. Transformer Bays for 160 MVA T/F at 220/132 kV Voltage Level.*

*2. 02 Nos. Transformer Bays for 80 MVA T/F at 132/33 kV Voltage Level.*

*3. 02 Nos. of Line Bays [will be utilized for LILO of 132 kV Bhagwanpur-LSM Line].*

*4. 01 No. Bus Coupler Bay.*

**Query 2:** PTCUL at point no. 4(d) of its reply submitted the revised block diagram, in this regard, PTCUL is again required to submit the single-line diagram

representing the line length among the existing and proposed S/s on the SLD as enclosed on page no. 09 of the DPR.

**Reply 2:** *Updated Block Diagram along with Line Lengths is enclosed.*

**Query 3:** PTCUL is required to submit the revised cost-benefit analysis of the project depicting the energy to be handled w.r.t the capital cost of the project.

**Reply 3:** *Cost Benefit Analysis of the Construction of proposed 220/132/33 kV S/s Raipur (Bhagwanpur), Roorkee along with construction of associated lines (220 kV D/C line from 400 kV substation, Puhana (PGCIL), Roorkee to proposed 220/132/33 kV S/s Raipur (Bhagwanpur). Roorkee & LILO line of 132 kV Bhagwanpur-LSM line at proposed 220/132/33 kV Raipur, Bhagwanpur, Roorkee) depicting the energy to be handle with respect to the capital cost of the project.*

**Energy handled (per year) after commissioning of above project:**

= Total Capacity of Transformers in MVA x P. F. x L. F. x hours in year.

= 160x0.9x0.8x8760

=1009152MWh

=1009.152 GWh

*Therefore, additional energy of 1009.152 GWh shall be available for UPCL after construction of 220/132/33 kV S/s Raipur (Bhagwanpur), Roorkee substation which shall be utilized by UPCL considering its future load growth.*

**Query 4:** PTCUL is required to submit the basis of consideration of Price Contingency @ 6%, Project Overheads @ 5% & Centage and Contingency @ 8% with supporting documents. Also, PTCUL is required to submit the basis of consideration of freight charges @ 4% in the estimate.

**Reply 4:** *The basis of consideration of Price Contingency @6%, Project Overhead @5% & Centage and Contingency @ 8% with supporting documents. Also, PTCUL is required to submit the basis of consideration of freight charges @4% in the estimate. The document is enclosed.*

**Query 5:** PTCUL has proposed the supply of 02 nos. of 630 kVA (33/0.433 kV) T/F for the proposed S/s, in this regard, PTCUL is required to submit the justification for consideration of 02 nos. of 630 kVA T/F.

**Reply 5:** *02 NO. 630kVA 33/0.433kV Transformers are proposed for auxiliary supply of Substation and Residential colony with N-1 contingency.*

**Query 6:** PTCUL is required to submit the reason for proposing the LILO of 132 kV Bhagwanpur-LSM line for the 220 kV S/s and reason for considering of ACSR panther conductor for the LILO line.

**Reply 6:** *LILO of 132kV Bhagwanpur-LSM line is proposed to strengthen the existing 132kV System. As the existing line is constructed using ACSR panther conductor so that ACSR panther conductor is required to proposed for LILO line also.*

## **2. Commission's Observations, Views and Directions:**

2.1. Based on the submissions made in the Petition and subsequent submissions of the Petitioner, the Commission observed that:

2.1.1. Land for the proposed project has not been arranged/procured as on date and it is in search of land in nearby area from where the present load as well as the future demand would be catered. Although, the Commission is of the strong view that any investment proposal before it should only be placed once the land availability with adequacy for the project is acquired. However, taking a lenient view w.r.t. the critical load conditions of the existing 132/33 kV S/s and 33/11 kV S/s in the nearby areas and saturation of the network towards supplying the demand, the Commission is considering the proposal of the Petitioner subject to the condition that the process of land acquisition with all necessary clearances is obtained within 06 months from the date of this Order.

2.1.2. As stated by the Petitioner, the need of Forest clearance/Railway crossing approval is not required for execution of the project.

2.1.3. Regarding the connectivity from the 400 kV/220kV S/s Puhana (PGCIL), it has been stated in the Petition that 02 Nos., 220 kV Bays are allocated for PTCUL at the aforesaid S/s, which are to be utilized in accordance with the demand. As per UPCL's request for construction of new 220/33 kV S/s at Raipur (Bhagwanpur) for ensuring the availability and quality of power supply against the increasing load demand of industries and strengthening of 132 kV system of the nearby area, the Commission accepts the proposal for consideration.

2.1.4. To justify the need of the proposed works, it has been submitted that approximately 150 to 180 MVA load would come up on the proposed S/s as soon as it get commissioned. The said projection is based on the computation



that approximately 50 to 90 MVA load would be shifted from 132/33 kV Bhagwanpur S/s, 21 MVA would be shifted from 132/33 kV S/s Chudiyala, 15 to 20 MVA load of Shiv Jyoti industrial area Sikandarpur and approximately 25 MVA load would come up from the upcoming Lodhiwala industrial area. Further, it has also been stated that presently, 33/11 kV Feeders of these areas are overloaded and load in the Bhagwanpur area is expected to increase due to rapid industrialisation and development of new 33/11 kV S/s, which validate the requirement of the proposed 220/132/33 kV S/s Raipur (Bhagwanpur).

- 2.1.5. Construction of the LILO Line of 132 kV Bhagwanpur- LSM line at 220/132/33 kV S/s Raipur (Bhagwanpur) is being proposed for strengthening the 132 kV system as well as ensuring N-1 contingency at 132/32 kV S/s Bhagwanpur. The Commission finds the reasons proper for consideration of the proposal.
- 2.1.6. With regard to the Cost Benefit Analysis of the Project, the Petitioner's claims of Financial Internal Rate of Return (FIRR) of the said project is 14.07% and Weighted Average Cost of Capital (WACC) of the above project is 9.41%, as the FIRR is greater than the WACC hence, the project is beneficial for PTCUL. Further PTCUL in its later submission submitted the detailed calculation and claimed that additional energy of 1009.152 GWh shall be available for UPCL after construction of 220/132/33 kV S/s Raipur (Bhagwanpur), Roorkee substation which shall be utilized by UPCL considering its future load growth.
- 2.1.7. With regards to the consideration of contingencies in the estimate, the Petitioner provided that it considered the above provisions of contingencies as the same was done during the preparation of the DPR for ADB Financing. In this regard, the Commission opines that as the aforesaid project is a non-ADB project and therefore, the provisions applicable for the ADB financing do not apply to this project, therefore, the Commission does not find it prudent to allow the price contingency @ 6.8% in the absence of any other suitable justification by the Petitioner.
- 2.1.8. As per extract of Minutes of 89<sup>th</sup> meeting dated 04.03.2024 of the Board of Directors (BoD) of PTCUL, the BoD has approved the Corporation's aforesaid proposals with a debt-equity ratio of 70:30. With regard to the loan component, the BoD has authorised to approach the financial institutions viz. REC/PFC/NABARD/HUDCO/Banks etc. This *prima-facie* indicates that while

considering the proposal of Rs. 362.46 Crore (with IDC), the Board of Directors ignored Tariff Based Competitive Bidding (TBCB) as mode of execution and authorised the Petitioner's MD, Director (Finance) and Company Secretary to approach to the aforesaid Financial Institutions, meaning thereby that BoDs' has consented the execution through cost-plus approach. However, for the financing of the equity, nothing has been cited in the Petition.

2.2. The aforesaid proposal involves costs above Rs. 100 Crore and as per the provision in Appendix-VI of the amended MYT Regulations, 2022, which provides for the TBCB mode for projects of 100 Crores and above as under:

" ...

*1.The Commission considering the suggestions received on Consultation Paper on Determination of Threshold Limit for development of Intra-State Transmission System through Tariff Based Competitive Bidding hereby determines 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, a special provision is provided in the same aforesaid Regulations for allowing the project under cost plus approach as under:

" ...

*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 project 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."*

However, in the present Petition, the Petitioner didn't make any request under the aforesaid provision for allowing the project under a cost plus approach.

However, Secretary, GoU vide its letter dated 22.07.2024 informed the Commission that it intends to develop 08 nos. critical Transmission System Projects included the instant proposal through PTCUL, which had a threshold limit of Rs. 100 Crores .

In response to the above, the Commission vide its letter dated 30.08.2024 has informed the Secretary, GoU as under:

“ ...

*... 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 basis, 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.”*

2.3. Based on the above, the Commission hereby grants in-principle approval for the expenditure of Rs. 322.03 Crore only as per the table given below with the direction that the Petitioner should go ahead with the aforesaid works subject to fulfilment of the terms & conditions mentioned in Para 2.4 below:

S. No.	Particulars	Project Cost including IDC as per DPR (in Crore)	Cost considered by the Commission including IDC (in Crore)
(a)	Construction of proposed 220/132/33 kV S/s Raipur (Bhagwanpur), Roorkee along with construction of associated lines (220 kV D/c Line from 400 kV substation, Puhana (PCGIL), Roorkee to proposed 220/132/33 kV S/s Raipur (Bhagwanpur), Roorkee & LILO Line of 132 kV Bhagwanpur-LSM line at proposed 220/132/33 kV S/s Raipur, Bhagwanpur, Roorkee.	362.46	322.03

2.4. Terms and Conditions subject to which in-principle approval granted by the Commission are as follows:

- (i) The Petitioner should go for the competitive bidding as per the prevailing Regulations for obtaining most economical prices from the bidders.
- (ii) The Petitioner shall complete the process of land acquisition and obtain all necessary clearances within 06 months from the date of this Order, failing which the instant approval of aforesaid proposal shall stand automatically cancelled.

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.

**(Anurag Sharma)**  
**Member (Law)**

**(M.L. Prasad)**  
**Member (Technical)/Chairman(I/c)**