

Before
UTTARAKHAND ELECTRICITY REGULATORY COMMISSION
Petition No. 76 of 2025

In the Matter of:

Application seeking approval for investment on the following projects:

- (a) **Construction of new 2x5 MVA, 33/11 kV S/s at Pakhi, District-Chamoli along with its associated 33 kV & 11 kV lines.**
- (b) Construction of new 2x3.15 MVA, 33/11 kV S/s at Tola, District-Pauri (G) along with its associated 33 kV & 11 kV lines.
- (c) **Construction of new 2x5 MVA, 33/11 kV S/s at Sara, District-Dehradun along with its associated 33 kV & 11 kV lines.**
- (d) Construction of new 2x12.5 MVA, 33/11 kV S/s at Collectororate, District-U.S. Nagar along with its associated 33 kV & 11 kV lines.

And

In the Matter of:

Uttarakhand Power Corporation Ltd.,
Victoria Cross Vijeta Gabar Singh Urja Bhawan,
Kanwali Road, Dehradun.

...Petitioner

Coram

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

Date of Order: December 29, 2025

ORDER

This Order relates to the part (a) & part (c) of the Petition i.e. **(a) Construction of new 2x5 MVA, 33/11 kV S/s at Pakhi, District-Chamoli along with its associated 33 kV & 11 kV lines and (c) Construction of new 2x5 MVA, 33/11 kV S/s at Sara, District-Dehradun along with its associated 33 kV & 11 kV lines** filed by Uttarakhand Power Corporation Limited (hereinafter referred to as "UPCL" or "the Petitioner" or "the licensee") seeking approval of the Commission. Further, pertaining to the part (b) and part (d) of the Petition i.e. (b) Construction of new 2x3.15 MVA, 33/11 kV S/s at Tola, District-Pauri Garhwal along with its associated 33 kV & 11 kV lines and (d) Construction

of new 2x12.5 MVA, 33/11 kV S/s at Collectorate, District-U.S. Nagar along with its associated 33 kV & 11 kV lines shall be dealt through a separate Order.

Background

2. The Petitioner vide its letter No. 1289/D(P)/UPCL/UERC dated 17.06.2025 submitted its Petition for investment approval of four projects under the provisions of the Clause 11 of Distribution and Retail Supply Licence and Clause 40 of UERC (Conduct of Business) Regulations, 2014 read with relevant provision of the Electricity Act, 2003, and the Rules and Regulations made thereunder.
3. The Petitioner in its Petition under the facts of the case has submitted that:

“

- 1.1 *With a view to ensure reliable power supply, improved voltage profile and to meet future load growth, the applicant company has proposed the construction of 04 No. 33/11 kV S/s alongwith their associated 59.70 km., 33 kV and 50.50 km., 11 kV lines in the State of Uttarakhand. The estimated cost of the project is Rs. 51.34 Cr. The project is proposed to be implemented on partially turnkey basis.*
- 1.2 *The project shall be award within 06 months from the date of receipt of approval from Hon'ble Commission and the scheduled period of complication projects shall be 12 months from date of ward.*
- 1.3 *The details of substations and lines are as follows:*

S. No.	Name of the Project	District	Capacity (MVA)	Length of 33 kV Line (Km.)	Length of 11 kV Line (Km.)	Total Cost (Rs. in Lakh)
1	Construction of 33/11 kV S/s at Pakhi	Chamoli	2x5	25.00	13.40	1110.29
2	Construction of 33/11 kV S/s at Tola	Pauri Garhwal	2x3.15	28.00	19.00	1289.77
3	Construction of 33/11 kV S/s at Sara	Dehradun	2x5	1.70	4.00	897.86
4	Construction of 33/11 kV S/s at Collectorate	U.S. Nagar	2x12.5	5.00	14.10	1837.71
<i>Total</i>					59.70	50.50
<i></i>						5135.63

- 1.4 *The detailed project report showing examination of an economic technical system together with the outline of the work to be undertaken, the salient features and particulars demonstrating the need for investment alongwith relevant cost benefit analysis is enclosed herewith at Annexure-B.*

1.5 The project already been approved BoD of UPCL in its 123rd held on dated: 01-05-2025 true copy is enclosed herewith at Annexure-C for kind perusal Hon'ble Commission.

1.6 70% of proposed cost shall be met from financial institutions as loan and balance 30% from State Government as equity share."

4. The Petitioner alongwith its Petition has enclosed certified true copy of 123rd Board of Directors meeting dated 01.05.2025. The resolution passed by BoD states that:-

"ITEM NO. 123.10: Construction of 04 No. new 33/11 kV Substations along with their associated 33 kV and 11 kV line.

"RESOLVED THAT the approval of the Board be and is hereby accorded for Construction of 04 no. 33/11 kV Substation with total capacity of 51.30 MVA along with their approx. 59.70 km. associated 33 kV line and approx. 50.50 km 11 kV line with an estimated cost of Rs. 5135.63 Lakh proposed at the places Sara, Collectorate, Pakhi and Tola with a variation of ±10% in the total approved cost.'

Sl. No.	Description of work	Estimated cost of work (Rs. in Lac)			
		Sara	Collectorate	Pakhi	Tola
1	33/11 kV Sub-station	337.79	523.50	257.55	211.35
2	CR Building and other Civil Works	182.23	137.31	236.88	164.30
3	33 kV Bay	23.97	150.00	31.98	26.96
4	New 33 kV line	265.39	698.51	396.16	647.78
5	New 11 kV line	37.78	224.61	125.02	166.55
6	Interest During Construction (IDC)	50.70	103.78	62.70	72.83
TOTAL		897.86	1837.71	1110.29	1289.77
GRAND TOTAL				5135.63	

'RESOLVED FURTHER THAT 70% of the amount shall be met by arranging debt from the Financial Institution, M/S REC Ltd.'

'RESOLVED FURTHER THAT 30% of the amount shall be met by State Government as equity.'

'RESOLVED FURTHER THAT Director (Finance), UPCL be and hereby severally authorized to execute such deeds, documents and other writing as may be necessary or required for the purpose aforesaid.'

'RESOLVED FURTHER THAT the above proposal shall be subject to investment approval from Hon'ble UERC."

5. The Petitioner in its Petition under the Relief Sought has requested the Commission to:
 - "(i) *Take the petition on record;*
 - (ii) *Grant suitable opportunity to the applicant within a reasonable time frame to file additional material information that may be subsequently available and as may be required by the Hon'ble Commission;*
 - (iii) *Grant approval to process the tender of 33/11 kV Substations at Pakhi (Chamoli), Tola (Pauri Garhwal), Sara (Dehradun) and Collectorate (U.S. Nagar) as these S/s are required to be constructed for providing better power supply during the peak demand in view of heat wave observed last year and also to comply assurance given by Hon'ble Chief Minister to the local public during his visit of the area.*
 - (iv) *Grant approval for the investment on the project covering the construction of 04 No. 33/11 kV Substations alongwith their associated Lines.*

This Order deals with Part(a) and Part(c) of the Petition concerning substations proposed at namely Pakhi and Sara and the issues relevant to them are discussed below:

6. With regard to its proposal for Construction of 2x5 MVA, 33/11 kV Substation alongwith its associated 33 kV and 11 kV line and 01 No. bay at Pakhi, District-Chamoli, the Petitioner has furnished the justification as:-

"

At present, 33/11 kV Substation Kothiyalsain and Marwadi are feeding the area by existing 02 no. 11 kV feeders namely Pipalkoti emanating from 33/11 kV Substation Kothiyalsain and Helang emanating from 33/11 kV Substation Marwadi. These feeders are very long, pass through forest area in tough and remote hilly terrain and feeds several remote villages. Fault arising on a feeder branch trips the entire feeders thereby affecting various villages. To restore the supply the entire feeders has to be patrolled and all branches have to be individually inspected for restoration of supply, which is extremely time consuming and involves the entire line staff. Also, as these 11 kV feeders are heavily loaded; the problem of low voltage (about 8.5 kV-9.5 kV) is common in the connected region. As a result of this, approximately 4,000 consumers are affected due to inadequate power supply. The construction of proposed substations will result in smaller feeder sections emanating from new substation; consequently SAIFI/SAIDI & MAIFI as mandated in the regulations

will considerably improve and will be in-line with 24x7 power supply vision. This substation will also cater the expected future load growth. After commissioning of this substation, quantity and quality of supply shall improve sufficiently and revenue shall be realized from the consumers connected to this substation including revenue from addition of new consumers in future."

7. With regard to its proposal for Construction of 2x5 MVA, 33/11 kV Substation along with its associated 33 kV and 11 kV line and 01 No. bay at Sara, Selaqui-II, District-Dehradun, the Petitioner has furnished the justification as:-

"The surrounding region of Selaqui is experiencing rapid industrialization and 33/11 kV Substations Selaqui-I and Selaqui-II are heavily loaded. Therefore, in order to minimize the load of heavily loaded Selaqui-I and Selaqui-II Substations and cater to the increase in demand i.e. approx 5% per annum, owing to industrialization in nearby area, the construction of new 33/11 kV Substation Sara alongwith its associated 33 kV and 11 kV line has been proposed. Approx. 615 amp. load of existing 04 no. 11 kV feeders namely Sara-1, Sara-11, Rampur and Trioka emanating 33/11 kV S/s Selaqui-I and Selaqui-II will be shifted to the proposed substation. As a result of this, approximately 3,000 consumers will be benefitted with improved voltage, quantity and quality of 24x7 supplies and rural area like Hairpur, Bhauwala, Camp Road and Selaqui Town will get better supply and can meet future demand. After commissioning of this substation, quantity and quality of supply shall improve sufficiently and revenue shall be realized from the consumers connected to this substation including revenue from addition of new consumers in future."

8. On examination of the proposal made in the Petition & Detailed Project Report (DPR), certain deficiencies/infirmities were identified and accordingly, the Commission vide its letter No. 1034 dated 26.09.2025 directed the Petitioner to submit/furnish its reply on the same latest by 27.10.2025. In response to the deficiencies/infirmities raised by the Commission, Petitioner vide its letter No. 2596/Dir.(P)/UPCL dated 08.12.2025 submitted its point-wise reply. The deficiencies/infirmities raised by the Commission and point-wise reply of the Petitioner on the same as follows:

"

- (A) *General Points for all proposed 4 nos. 33/11 kV S/s namely Pakhi-Chamoli, Tola- Pauri, Sara-Dehradun and Collectorate-US Nagar:*

1. UPCL. is required to furnish details of land acquisition alongwith supporting documents in support of the proposed 33/11 kV Substations at Pakhi-Chamoli, Tola-Pauri, Sara-Dehradun and Collectorate-US Nagar.

Submission of UPCL:

The status of availability of land for the construction of the proposed 33/11 kV Substations are as follows:

S. No.	Name of Substation	District	Status of Land
1	Pakhi	Chamoli	Available
2	Tola	Pauri Garhwal	Available
3	Sara	Dehradun	Available
4	Collectorate	U.S. Nagar	<i>Land allocated earlier has been abandoned by District Administration. A supplementary petition is under preparation and shall be submitted shortly.</i>

The copy of land registry/supporting document is being enclosed...

2. UPCL is required to confirm regarding the requirement of forest, railway, PWD etc. clearance, if any, for the proposed works.

Submission of UPCL:

It is to bring to kind notice of Hon'ble Commission that neither railway crossing nor forest clearance will be involved for construction of lines for 33/11 kV Substations namely Pakhi and Sara as electric lines are already exist on routes of proposed lines. However, during the preliminary survey for proposed substation at Tola, it has come to notice that clearance from Forest/PWD may be required for construction of 33 kV line, for which detailed survey with concerned department shall be conducted after award of work.

3. UPCL is required to furnish the current status of tenders for the proposed works.

Submission of UPCL:

It is to bring to kind notice of Hon'ble Commission that tendering process for the proposed works has not been started yet.

4. UPCL is required to furnish the activity-wise project plan for the construction of proposed s/s alongwith its associated 33 kV & 11 kV networks in hard and soft copy.

Submission of UPCL:

The activity-wise project plan for the construction of proposed Substation alongwith its associated 33 kV & 11 kV is being enclosed ...

5. *UPCL is required to furnish layout diagram of all the proposed 33/11 kV Substations with overall dimensions and depicting transformers, incoming and outgoing feeders and control room etc.*

Submission of UPCL:

The layout diagram of all the proposed 33/11 kV Substations with overall dimensions and depicting transformers, incoming and outgoing feeders and control room etc is being enclosed...

6. *UPCL is required to submit the reasons for not proposing these substations under various centrally/state funded schemes viz. RDSS, ADB, SASCI etc.*

Submission of UPCL:

It is to bring to kind notice of Hon'ble Commission that some of the substations had been proposed under modernization component of RDSS Scheme but due to non-finalization of the sanction, the proposal had been sent to GoU for financial assistance under Special Assistance to States for Capital Investment(SASCI) is being enclosed ...

Further, in absence of clarity for financial sanction under SASCI Scheme, the projects have been proposed and approved through internal resources.

7. *UPCL is required to submit rationale for considering Annual Selling rate & Annual Purchase rate of 7.32 Rs/kWh & 5.03 Rs/kWh respectively in Cost Benefit Analysis (CBA) sheets of all proposed S/s.*

Submission of UPCL:

The average power purchase rate, Rs. 5.44 per unit and average selling price, Rs. 7.67 per unit have been taken from tariff order of UPCL for FY 2025-26 as approved by Hon'ble Commission. The revised cost benefit analysis of Pakhi, Tola & Sara Substations calculated on the basis of aforesaid rates is being enclosed ... However, a supplementary petition for collectorate substation is under preparation and shall be submitted shortly.

8. UPCL. is required to furnish the basis of cost estimates considered for the proposed works under the instant Petition.

Submission of UPCL:

It is to bring to kind notice of Hon'ble Commission that the cost estimates for the proposed works under the instant petition have been prepared on the basis of rates of centralized materials available in the SAP module of UPCL. The rates for decentralized material and labour portion has been taken as prevailing rates in the market and previous awarded contracts. The bifurcation of centralized, decentralized and labour cost is being enclosed ...

9. UPCL in CBR sheet namely 'Calculation of Annual Saving in line losses' of all works submitted the figure against "Total annual energy savings in Unit for 11 kV line with proposed system". In this regard, UPCL is required to submit the detail calculation alongwith rationale for considering the same in its all proposed works in soft (MS Excel Sheet) as well as hard copy.

Submission of UPCL:

It is to bring to kind notice of Hon'ble Commission that the 'Calculation of Annual Saving in line losses' of all works has been done by considering the redistribution of load and length of 11 kV feeders in pre and post scenario. The total annual energy saving is calculated by considering the total loss difference in pre and post scenario of the load condition. The detailed calculation of line losses is being enclosed ...

10. UPCL is required to submit pole section-wise diagram of the proposed 33 kV source network for the proposed substations in the instant Petition.

Submission of UPCL:

The pole section-wise diagram of the proposed 33 kV source network for the proposed substations is being enclosed ...

11. UPCL. is required to confirm that the HT Capacitor bank proposed in its proposals of proposed S/s have been proposed after detailed study in accordance with Regulation 3.12(1) of UERC (Distribution Code), 2018.

Submission of UPCL:

It is to apprise to Hon'ble Commission that HT capacitor bank proposed at Sara substation has been excluded from the estimates. A copy of revised estimate is being enclosed ...

(B) *Construction of new 2x5 MVA, 33/11 kV Substation at Pakhi, District-Chamoli alongwith its associated 33 kV & 11 kV lines:*

1. *UPCL in the line chart depicted that 33 kV source feeder emanates from 132/66/33 kV S/s Sringar to 33/11 kV S/s Kothiyalsain and further to 33/11 kV S/s Marwari. In this regard, UPCL is required to confirm the same.*

Further, UPCL, is required to submit Single Line Diagram of all 66 kV and 33/11 kV S/s that are being fed from 132/66/33 kV S/s Sringar alongwith the conductor type, length, loading & voltage profile considering pre and post scenario w.r.t construction of proposed 2x5 MVAS/s Pakhi and proposed 66 kV line from 132/66 kV S/s Simli to 66/33 KVS/s Karanprayag.

Submission of UPCL:

It is to bring to kind notice of Hon'ble Commission that the line chart submitted alongwith the DPR depicts that 66 kV source feeder emanates from 132/66/33 kV S/s Srinagar to 33/11 kV S/s Kothiyalsain and further to 33/11 kV S/s Marwari is in accordance with the present scenario.

The Single Line Diagram (SLD) of all 66 kV and 33/11 kV S/s that are being fed from 132/66 kV S/s Simli alongwith the conductor type, length, loading is being enclosed ... Voltage profile considering pre and post scenario w.r.t construction of proposed 33/11 kV S/s Pakhi is being enclosed ...

2. *UPCL in estimate (page no. 24 of DPR) has proposed '11 kV PVC Aluminium XLPE cable from T/F to incomer VCB' & '11 kV PVC Aluminium XLPE cable from outgoing VCB to outgoing feeder poles of sizes 3x185 sqmm & 3x240 sqmm respectively. In this regard, UPCL is required to furnish justification for selecting a lower 11 kV XLPE cable size from the transformer to incomer VCB as compared to the cable size proposed from outgoing VCB to outgoing feeder poles.*

Submission of UPCL:

It is to apprise to Hon'ble Commission that this was a typographical error and the same has been corrected in estimate. However, there is no change in overall cost of project. The copy of corrected estimate is being enclosed ...

3. *The estimate of 11 kV Pipalkoti feeder has not been submitted in the DPR. UPCL is required to submit the same.*

Submission of UPCL:

It is to apprise to Hon'ble Commission that the cost of 11 kV Pipalkoti feeder has already been taken in DPR. The copy of estimate of 11 kV Pipalkoti feeder is being enclosed ...

4. *Land development expenses of Rs. 1.80 cr. against SGR building (at page no. 74 of DPR) appears to be on the higher side. UPCL is required to submit rationale for the same.*

Submission of UPCL:

The land development works has been prepared according to actual site conditions for proposed substation on the basis of Delhi Schedule of Rates-2023. The rates from DSR are taken in accordance with the cost index. The index has multiplying factor for different locations of State. The land development work also includes R.R. walls, approach roads. The drawing and index of proposed land development works is being enclosed ...

5. *UPCL is required to submit that how the requirement of 'N-1' line contingency shall be ensured in the proposed 33/11 kV S/s at Pakhi in compliance with the Regulation 3.6(4) of UERC (Distribution Code) Regulations, 2018*

Submission of UPCL:

The 66/33/11 kV Substation, Kothiyalsain (Gopeshwar), the source of proposed Pakhi substation, already has N-1 contingency from two different sources, i.e 132/66 kV Substation Srinagar and 132/33 kV Substation Simli.

To fulfill the N-1 contingency requirement of the proposed Pakhi substation, one 33 kV circuit may be proposed from 33/11 kV Substation Joshimath, but this substation is in the sinking zone and a possibility for shifting it, is also being explored. Therefore, a 33 kV circuit may be proposed from 33/11 kV Substation Joshimath once its shifting is finalized.

6. UPCL in cost-benefit analysis has anticipated a new load of 41 Amp at 5 nos. 11 kV feeders of proposed 33/11 kV S/s Pakhi. In this regard, UPCL is required to submit category-wise details of anticipated and prospective new loads at each proposed 11 kV feeder. Further, UPCL is required to submit details of all anticipated and prospective new loads that would be seeking electricity connection at 11 kV.

Submission of UPCL:

It is to bring in kind notice of Hon'ble Commission that in cost benefit analysis new anticipated load of 41 Amp is taken purely on assumption basis while transferred load from 11 kV Pipalkoti feeder (46 Amp) which is currently being fed from 33/11 kV S/s Kothiyalsain have approximate proportion of 70% domestic and 30% commercial load and transferred 51 Amp. domestic load from 11 kV Helang feeder which is currently being fed from 33/11 kV S/s Marwari.

7. UPCL in 'Annual saving in line losses' sheet has computed energy loss in 18 Km long 33 kV line, however, in the instant Petition UPCL has proposed the construction of 25 Km long 33 kV line from 33/11 kVS/s Kothiyalsain to proposed 33/11 kV S/s Pakhi. UPCL is required to justify the same and submit the revised CBA sheets in hardcopy & softcopy, if required.

Submission of UPCL:

It is to bring in kind notice of Hon'ble Commission that earlier construction of 33 kV line was proposed from Birahi Hydro Project, a Private Power Generation with the length of 18 km. Accordingly the "Annual saving in line losses" were computed. Later in view the administrative complexity (due to the source substation being a private generator), the 33 kV line was re-proposed from 33/11 kV Substation, Kothiyalsain, so revised length of the line became 25 km. (The revised CBA is attached ...).

8. UPCL is required to submit the geological survey report of the identified site of hilly terrain for the proposed S/s at Pakhi.

Submission of UPCL:

The geological survey report of the site for the proposed substation at Pakhi is being enclosed ...

....

(D) *Construction of new 2x5 MVA, 33/11 kV Substation at Sara, District-Dehradun alongwith its associated 33 kV & 11 kV lines:*

1. *UPCL in its instant proposal has submitted that it has proposed construction of 3.6 Km 33 kV line from proposed 220/33 kVS/s Selaqui to proposed 33/11 kVS/s Sara under ADB projects. In this regard, UPCL is required to submit the status of proposed 220/33 kV S/s Selaqui and aforesaid 3.6 km 33 kV line. Further, UPCL is required to submit that why it has not proposed 33/11 kV S/s Sara under ADB project. Furthermore, UPCL is required to submit transformation capacity of 33/11 kV S/s Selaqui-1 & 33/11 kV 5/s Selaqui-11.*

Submission of UPCL:

It is to bring in kind notice of Hon'ble Commission that:

- *UPCL has requested to PTCUL to provide the status of construction of aforesaid substation on dated: 16-10-2025. PTCUL has informed telephonically that work for construction of 220/33 kV Substation Selaqui has been awarded. The construction of control room building is under progress.*
- *The work for construction of 3.6 Km. 33 kV line from above substation to proposed 33/11 kV Substation Sara has already been awarded under the undergrounning work of ADB Project. The construction work will be started shortly and line shall be used as N-1 contingency for proposed 33/11 kV S/s Sara.*
- *Due to financial constraint of ADB Project, substation at Sara has not been considered in the DPR.*
- *The substation has also been proposed in SASCI scheme in FY 24-25, but in absence of clarity for financial approval under the Scheme, the above works have been proposed and approved through internal resources.*
- *The transformation capacities for the 33/11 kV Substations Selaqui-I and Selaqui-II are 2x12.5 MVA each.*

2. UPCL is required to submit Single Line Diagram (SLD) of all the 33/11 kV S/s that are being fed from 220/33 kV S/s Jhajhara alongwith the conductor type, length, loading & voltage profile considering pre and post scenario w.r.t construction of proposed 33/11 kV S/s Sara and 220/33 kV 5/s Selaqui.

Submission of UPCL:

The Single Line Diagram (SLD) of all the 33/11 kV S/s that are being fed from 220/33 kV S/s Jhajhara alongwith the conductor type, length, loading and revised load diagram is being enclosed ... & voltage profile considering pre and post scenario w.r.t construction of proposed 33/11 kV S/s Sara is being enclosed ...

3. UPCL in its estimates has proposed 33 kV Aluminium 3Cx400 Sq. mm XLPE cable of total 4320 meters length (page 228 of DPR), however, in its proposal UPCL has proposed 1.5 Km 33 kV XLPE Cable. UPCL is required to justify the same.

Further, UPCL is required to submit the calculation sheet for considering 400 sqmm 33 kV XLPE cable considering the aspect of harmonic/inrush current tolerance, voltage variation & cable derations due to temperatures and type of laying in its calculation.

Submission of UPCL:

It is to bring to kind notice of Hon'ble Commission that to connect the 33/11 kV S/s Sara, a LILO arrangement from 33 kV Dhakrani-BoC line with one spare cable has been proposed. Distance between LILO point and substation is approx. 1500 meter therefore, total 5400 meter cable including loops has been proposed.

At page no. 228 of DPR laying of 4320 meter cable has been proposed by HDD/trenchless method however, balance laying of 1080 meter by manual method is mentioned in DPR at page no. 229.

The calculation sheet for considering 400 sq.mm. 33 kV XLPE cable considering the aspect of harmonic/inrush current tolerance, voltage variation & cable derations due to temperatures and type of laying is being enclosed ...

4. The base cost of the project as mentioned in 'Abstract of detailed estimate' at page no. 202 of DPR is not matching with the breakup of cost shown against work-wise estimates. Further, estimates mentioned against Schedules of "2x5 MVA 33/11 kC S/s Sara' are not matching with its abstract (page no. 211 of DPR). In this regard,

UPCL is required to submit the abstract of estimates with details against construction cost of 2x5 MVA 33/11 kV S/s', 'cost of 33 kV line' 'cost of 33 kV bay' 'cost of 11 kV feeder' and 'cost of SGR building duly crosschecked with the submitted item-wise estimates followed by other charges/cess/fees on the same in hard copy as well as in soft copy.

Submission of UPCL:

There are some typographical error in the estimate of 33 kV works. The corrected estimate of 33 kV works is being already enclosed ... The base cost as mentioned in abstract of detail estimate is included 33 kV, 11 kV and civil works. The 'Abstract of detailed estimate' at page no. 202 is summarized as below:

Name of work	Base cost (Rs.)	Page No.
33 kV works	6,16,77,641.00	as per Annexure-A9
11 kV works	33,51,268.00	241
Civil works	1,45,67,436.00	242
Total (Base Cost)	7,95,96,345.00	

5. The details of estimates submitted against 'construction of SGR building & land development work from page no. 246 to page no. 274 are not legible. UPCL is required to submit the legible copy of the same in hard as well as soft copy. Further, UPCL. is required to justify the cost of SGR building which appears to be on higher side.

Submission of UPCL:

It is to apprise to Hon'ble Commission that the size of proposed control room building is 21.23x11.90 meter and accordingly estimates have been framed based on Delhi Schedule of Rates-2023. . Further, the legible copy from page no. 246 to page no. 274 "construction of SGR building & land development work" is being enclosed ...

6. UPCL is required to clarify regarding the earthing system mechanism for the underground 33 kV systems and furnish schematic drawings in this regard.

Submission of UPCL:

The earthing system mechanism for the underground 33 kV systems and its schematic drawings is being enclosed ...

7. UPCL is required to confirm whether the onus of developing the electrical infrastructure in this industrial area lies with the Developer of Industrial area or with the DISCOM/UPCL. UPCL shall submit the relevant Order/Letter in this regard, if any.

Submission of UPCL:

It is to bring to kind notice of Hon'ble Commission that the current load in this industrial area is being fed from the existing electricity infrastructure available in its vicinity. With the development of this industrial area, the number of residential settlements, schools, hotels and commercial centres are gradually increasing. The Selaqui distribution subdivision itself has a load mix. of 68% Industrial and 32 % Non-Industrial load, which presents a glimpse of the load profile in the area. The proposed feeders that would emanate from the proposed 33/11 kV Substation Sara would also feed these nearby Non-industrial loads. The load of following 11 kV Feeders is expected to reduce after construction of the substation and its associated 11 kV feeders as illustrated in the table below:

S. No.	Name of Substation	Name of feeder	Expected load reduction at 11 kV (load to be shifted to new S/s) (Amp.)	Name of proposed S/s & feeder on which load is expected to be shifted
1	Selaqui-1	Trioka	75	SARA, Troika (11 kV)
2		Rampur	120	SARA, Rampur (11 kV)
3		Sara-1	105	SARA, Sai (11 kV) SARA, Red Burg (11 kV)
4		Sara-2	90	SARA, New (11 kV) SARA, Neopack (11 kV)

The land for the proposed substation is already available in this industrial area and is suitable in terms of location and access. Since finding a separate piece of land in the industrial area would be difficult in the current circumstances and as the existing load of this industrial area is already being fed from the existing electricity infrastructure available in its vicinity, it is patently evident that a 'else-where substation' or a 'no-substation' scenario may not make the existing situation better in terms of techno-economic merit. Hence the Hon'ble Commission is requested to consider the proposal for construction of the substation to remove the practical difficulty being faced in wake of the emerging circumstances."

Commission's Observations, Views & Directions: -

9. Based on the examination and analysis of the proposal & subsequent submissions made by the Petitioner before the Commission, the observations, views & directions of the Commission are as follows:

(1) The Petitioner in its instant Petition has proposed works amounting to a total estimated cost of Rs. 20.07 Cr., as detailed below:-

(i) Construction of new 2x5 MVA, 33/11 kV Substation at Pakhi, District-Chamoli alongwith its associated 25 km 33 kV & 13.40 km 11 kV lines and 01 no bay at Kothiyalsain. The Petitioner has estimated the cost of this project as Rs. 11.10 Cr., which was also approved by its Board of Directors in 123rd meeting held on 01.05.2025.

(ii) Construction of new 2x5 MVA, 33/11 kV Substation at Sara, District-Dehradun alongwith its associated 1.7 km 33 kV & 4 km 11 kV lines and 01 no. bay at Selaqui-II. The Petitioner has estimated the cost of this project as Rs. 8.97 Cr., which was also approved by its Board of Directors in 123rd meeting held on 01.05.2025.

(2) The Project specific observations, views and directions of the Commission are discussed hereunder: -

(A) **2x5 MVA, 33/11 kV S/s at Pakhi, District-Chamoli and its associated 33 kV & 11 kV lines**

(i) The Petitioner has submitted that presently the nearby areas of Pakhi are being supplied by 33/11 kV Substations at Kothiyalsain and Marwadi through two long 11 kV feeders namely Pipalkoti and Helang passing through remote forest terrain. Faults on any branch trip the entire feeder, disrupting supply to several villages and requiring extensive patrolling for restoration. Heavy loading also results in low voltage (8.5–9.5 kV), affecting about 4,000 consumers. The proposed substation at Pakhi will shorten feeder lengths and improve SAIFI/SAIDI/MAIFI indices as per regulations, supporting the 24x7 supply objective. The Petitioner has proposed

that 97 Amp of load at 11 kV from 33/11 kV S/s Marwari and 33/11 kV S/s Kothiyalsain would be transferred to proposed 33/11 kV S/s at Pakhi.

- (ii) The Petitioner in its submission dated 08.12.2025 furnished a Single Line Diagram depicting the power supply scenario and voltage profile considering pre and post scenario w.r.t. construction of proposed 2x5 MVA S/s Pakhi. The Petitioner has submitted the existing voltage drop of 8.57% & 14.64% at Pipalkoti & Helang feeders respectively would improve to 0.76% and 3.62% respectively post commissioning of the proposed 33/11 kV S/s at Pakhi. From the aforesaid submission of the Petitioner, it is projected that voltage Regulation at Pakhi and nearby areas would improve significantly post commissioning of the proposed 33/11 kV S/s at Pakhi.
- (iii) With regard to 'N-1' line contingency, the Commission has observed that the Petitioner in its submission dated 08.12.2025 stated that the provision of 'N-1' line contingency for the proposed 33/11 kV Substation Pakhi would be ensured through the 33/11 kV Substation Joshimath after its relocation. The Petitioner clarified that the existing Joshimath substation is situated in a sinking zone, and therefore, its shifting is under consideration. The Commission is of the view that the assurance of 'N-1' contingency is a critical reliability requirement, and the Petitioner must ensure that the proposed arrangement is technically feasible, timely, and aligned with the relocation plan of the Joshimath substation. The Commission further highlights that any delay or deviation in the shifting of the Joshimath substation may directly impact the reliability framework proposed for the Pakhi substation.
- (iv) The Petitioner has submitted that 70% of the proposed project cost shall be financed through loans from financial institutions, while the remaining 30% shall be contributed by the State Government as equity. Further, the Petitioner has estimated a construction period of 10 months for execution of the 2x5 MVA, 33/11 kV Substation at

Pakhi, District Chamoli, along with the associated 33 kV and 11 kV lines.

(v) With regard to the Cost Benefit Analysis (CBA), pursuant to the Commission's query on consideration of the 33 kV line length, average power purchase rate, and average selling price, the Petitioner has revised the CBA accordingly and submitted the updated details vide its submission dated 08.12.2025. The payback period and Internal Rate of Return (IRR) computed by the Petitioner for the proposed Substation at Pakhi are 9 years and 16.79% respectively which appears to be a decent financial proposition.

Further, upon pointing out a deficiency in the estimates regarding the use of a lower 11 kV XLPE cable size from the transformer to the incomer VCB as compared to the cable size proposed from the outgoing VCB to the feeder poles, the Petitioner, vide its submission dated 08.12.2025, clarified that the discrepancy was a typographical error and has since been corrected in the estimates. It also submitted that the overall project cost remains unchanged.

In this regard, the Commission cautions the Petitioner to exercise utmost diligence in the preparation of proposals. The Petitioner is advised to thoroughly verify all technical, financial, and documentary details before submitting the proposal to the Commission. Any oversight, inconsistency, or error such as those recently observed indicates inadequate scrutiny and may adversely affect the credibility of the submission. The Commission emphasizes that failure to ensure accuracy and completeness in future may render the proposal liable for rejection.

(vi) With regard to geological approval for the construction of proposed 33/11 kV S/s at Pakhi, the Petitioner in its submission dated 08.12.2025 has submitted the geological assessment report dated 06.01.2024 wherein the geologist has recommended the following:

“

5. Recommendations:

1. *Use of explosives for site development is to be avoided. Instead manual or mechanized excavation is to be done gently/cautiously in order to develop the site.*
2. *Construction of building should be carried on a deep and strong foundation (preferably on bed rock) as the bed rock outcrop is covered with OB. The construction ought to be done such that the whole building structure is monolithic (column-beam frame structure/raft foundation).*
3. *It is advised to conduct rock/soil testing in order to estimate the bearing capacity and ascertain ground deformability values at the site and design the building and its foundation accordingly on the basis of geo-technical parameters of the ground.*
4. *Proper drainage provisions are to be made sure around the construction site as the site area is covered with thick OB which during water saturation may tend to subside under the weight of the building structure, hence causing damage to the building.*
5. *It is advised to construct slope protection wall around the construction site laying its foundation preferably on bed rock.*
6. *It is advised to dispose the muck and debris on pre-identified muck disposal site.*
7. *As the construction site lies in seismic zone V of seismic zoning Map of India therefore, the buildings must be constructed according to proper earthquake resistant design.*
8. *All the construction activities ought to be carried out as per the standard codes of practice laid by the BIS and NBC.*

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In this regard, **the Commission directs the Petitioner to strictly adhere to the recommendations and observations of the geological survey report.** Any deviation from these observations or suggestions shall be undertaken only with the prior approval of the concerned geologist or a competent expert agency/authority.

The Commission emphasizes that the long-term safety and stability of the assets must be ensured.

(B) 2x5 MVA, 33/11 kV Substation at Sara, Dehradun and its associated 33/11 kV lines

(i) The Petitioner has submitted that rapid industrial growth in the Selaqui region has led to heavy loading of the existing 33/11 kV Substations Selaqui-I and Selaqui-II. To reduce this load and meet rising demand (about 5% annually), a new 33/11 kV Substation Sara with associated 33 kV and 11 kV lines is proposed. It submitted that load from four existing 11 kV feeders namely Sara-I, Sara-II, Rampur, and Trioka would be shifted to the new substation, benefiting nearly 3,000 consumers through improved voltage and more reliable 24x7 supply. Areas such as Hairpur, Bhauwala, Camp Road, and Selaqui town would receive better-quality power and be able to meet future demand and after commissioning of proposed 33/11 kV S/s at Sara, overall supply reliability and revenue from existing and upcoming consumers would improve.

In this context, the Commission observes that the Petitioner had initially proposed to shift a load of 615 A to the proposed substation at Sara. However, vide its submission dated 08.12.2025, the Petitioner has revised the load proposed to be shifted to 390 A. Further, the additional load has also been revised from 130 A to 30 A. Accordingly, the total load on the proposed 33/11 kV substation at Sara has been revised from the initially proposed 745 A to 420 A. Further, the Petitioner has estimated the load growth at 5%.

In this regard, the Commission observes that, at the time of commissioning, the proposed substation would already be loaded upto 80% of its installed capacity and, with the projected growth rate of 5%, the substation is likely to become overloaded within the next five years. However, planning should be undertaken in such a

manner that the proposed substation is capable of catering to the projected load for a period of at least ensuing fifteen years.

Therefore, the Commission is of the view that substation planning is required to be carried out with a long-term perspective, ensuring that the infrastructure remains adequate to cater to the projected demand for future load growth, without requiring premature augmentation. Accordingly, the Petitioner is cautioned that, in future, it shall undertake comprehensive load studies, accurately assess present and future demand, and plan substation capacity with due diligence by factoring in realistic growth projections, peak loading conditions, adequate contingency margins, and overall system reliability requirements.

- (ii) With regard to proposed LIFO arrangement, the Commission opines that the proposed LIFO arrangement on the 33 kV Dhakrani-BoC line must be executed with utmost diligence, strictly adhering to all technical standards & safety norms. The Petitioner shall ensure appropriate protection measures including relay coordination, breaker capacity verification, earthing adequacy, lightning protection, and insulation levels to avoid any operational or safety risk.
- (iii) The Petitioner, vide submission dated 08.12.2025, furnished a Single Line Diagram depicting the power supply scenario and voltage profile considering pre and post scenario w.r.t construction of proposed 2x5 MVA S/s Sara. The Petitioner has submitted the existing voltage drop of 8.61%, 7.43%, 4.57% & 5.04% at Rampur, Sara-1, Sara-2 & Trioka feeders respectively which would improve to 6.40%, 3.20%, 3.20% and 0.43% respectively post commissioning of the proposed 33/11 kV S/s at Sara. From the aforesaid submission of the Petitioner, it is projected that voltage Regulation at Sara and nearby areas would improve post commissioning of the proposed 33/11 kV S/s at Sara.

- (iv) With regard to 'N-1' line contingency for the proposed 33/11 kV S/s Sara, the Petitioner vide its submission dated 08.12.2025 submitted that it has awarded the work for construction of 3.6 Km. 33 kV line from 220/33 kV S/s Selaqui to proposed 33/11 kV S/s Sara under ADB project and N-1' line contingency at the proposed 33/11 kV S/s Sara would be ensured post commissioning of the aforesaid 33 kV line.
- (v) The Petitioner has submitted that 70% of the proposed project cost shall be financed through loans from financial institutions, while the remaining 30% shall be contributed by the State Government as equity. Further, the Petitioner has estimated a construction period of 09 months for execution of the 2x5 MVA, 33/11 kV Substation at Sara, District Dehradun, along with the associated 33 kV and 11 kV lines.
- (vi) With regard to the Cost-Benefit Analysis (CBA), the Petitioner, vide its submission dated 08.12.2025, has revised the CBA on account of revision in the loading of the proposed 33/11 kV substation, average power purchase rate, and average selling price. In its aforesaid revised submission dated 08.12.2025, the Petitioner has computed the payback period and the Internal Rate of Return (IRR) for the proposed substation at Sara as 9 years and 20.93%, respectively, which appears to be a decent financial proposition.
- (vii) Further, upon analyzing the Petitioner's revised submission dated 08.12.2025 regarding the sizing of the HT capacitor bank and the length of 400 sqmm 33 kV XLPE cable from the 33/11 kV Substation Selaqui to the proposed 33/11 kV Substation Sara, the Commission observed the following:
 - (a) The HT capacitor bank initially proposed at the 33/11 kV Substation Sara has been removed from the estimates.
 - (b) The cost of an additional 1,080 meters of 400 sqmm 33 kV XLPE cable (to be laid through manual method), over and

above the 4,320 meters already proposed through trenchless technology, has been included in the estimates. Moreover, Petitioner had erred while computing its cost estimate for trenchless cable laying and later in its submission dated 08.12.2025 revised its estimate for the same.

- (c) The overall project cost remains unchanged despite the deletion and addition of the aforesaid items.
- (d) The proposed 33/11 kV Substation Sara would be connected to the 33 kV Dhakrani-BoC line through a LILO arrangement.

In this regard, the Commission cautions the Petitioner to exercise utmost diligence while preparation of proposals. The Petitioner is cautioned to thoroughly verify all technical, financial, and documentary details before submitting the proposal before the Commission. Any oversight, inconsistency, or error such as those observed in the instant matter indicates inadequate scrutiny and may adversely affect the credibility of the submission. The Commission emphasizes that failure to ensure accuracy and completeness in future may render the proposal liable for rejection.

10. In light of the above, the Commission grants in-principle approval for the proposed “2x5 MVA, 33/11 kV Substation at Pakhi, District-Chamoli alongwith its associated 25 km 33 kV & 13.40 km 11 kV lines and 01 no bay at Kothiyalsain” and “2x5 MVA, 33/11 kV Substation at Sara, District-Dehradun alongwith its associated 1.7 km 33 kV & 4 km 11 kV lines and 01 no. bay at Selaqui-II” subject to strict fulfillment of terms & conditions as mentioned below:-

- (1) The Petitioner is directed to go for the competitive bidding for obtaining most economical prices from the bidders under the prevailing Rules & Regulations.
- (2) The Petitioner must submit the detailed sanctioned letter from the Financial Institution, if any, to the Commission as soon as they get approval for the same. All the loan conditions as may be laid down by the funding agency in their detailed sanction letter should be strictly complied with. However,

the Petitioner is directed to explore the possibility of swapping the loan with cheaper debt option.

- (3) The Petitioner to strictly adhere to the recommendations and observations of the geological survey report for the construction of 33/11 kV S/s at Pakhi. Any deviation from these observations or suggestions shall be undertaken only with the prior approval of the concerned geologist or a competent expert agency/authority.
- (4) The Commission may verify/check the proposed works to be executed by the Petitioner at any point of time during/post execution of the works from the perspective of not only substantiating that the assertions & commitments made by the Petitioner have been fully complied and correct, but also to assess Quality, Optimum utilization of resources, Benefits accrued from the proposed investments etc. as has been projected by the Petitioner.
- (5) Post execution of the project, the Petitioner shall submit the Project Completion Report to the Commission alongwith photographs, expenditure incurred/completed cost, financing of the Project and detailed analysis & calculations of the benefits accrued from the proposed investments etc.
- (6) The Petitioner shall comply to the following CEA and UERC Regulations and amendments thereof at every step of the Construction and Operation & Maintenance of the lines & Substation. The Petitioner shall also ensure the compliance of relevant standards, and the Project should be executed with safety and due diligence so that minimal incidents of break downs/fault occurrences/hindrances are faced during operation & maintenance:
 - (a) Central Electricity Authority (Safety requirements for construction, operation and maintenance of electrical plants and electric lines) Regulations, 2011.
 - (b) Central Electricity Authority (Technical Standards for Construction of Electrical Plants and Electric Lines) Regulations, 2022.

- (c) Central Electricity Authority (Measures relating to Safety and Electricity Supply) Regulations, 2023.
- (d) UERC (Distribution Code) Regulations, 2018.

(7) The Petitioner shall, within one month of the Order, submit letter from the State Government or any such documentary evidence in support of its claim for equity funding (if any) agreed by the State Government or any other source in respect of the proposed schemes.

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

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

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. In case of violations of any of the condition mentioned above or in case any information provided, if at any time, later on, found to be incorrect, incomplete or in case relevant information was not disclosed, that materially affects the basis for granting the approvals, in such cases, the Commission may cancel the approval or refuse to allow all or part of the expenses incurred in the ARR/True-up apart from initiating plenary action.

Ordered accordingly.

(Prabhat Kishor Dimri)
Member (Technical)

(Anurag Sharma)
Member (Law)

(M. L. Prasad)
Chairman