

Before
UTTARAKHAND ELECTRICITY REGULATORY COMMISSION
Petition No. 46 of 2026

In the Matter of:

**Application seeking approval for the investment on the Project covering the
"Installation of 2.5 MVA, 33/0.433 kV & 33/11 kV Distribution Systems in Urban
Areas of Haldwani & Dehradun Towns."**

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: September 02, 2026

ORDER

This Order relates to the Petition filed by Uttarakhand Power Corporation Limited (hereinafter referred to as "UPCL" or "the Petitioner" or "the licensee") seeking approval of the Commission for the Project covering the 'Installation of 2.5 MVA, 33/0.433 kV & 33/11 kV Distribution Systems in Urban Areas of Haldwani & Dehradun Towns'.

Background

2. The Petitioner vide its letter No. 23/UPCL/D(O)/C-4 dated **02.01.2026** submitted its Petition for investment approval of the project 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:
"
(ii) *With a view to ensure reliable power supply, improved voltage profile and to meet future load growth, the applicant company has proposed the "Installation of 2.5 MVA, 33/0.433 kV & 33/11 kV Distribution Systems in Urban Areas of Haldwani & Dehradun Towns". In this regard proposal for installation of 15 No. Distribution*

Systems in Dehradun (Town) and 12 No. Distribution Systems in Haldwani (Town) amounting to Rs. 59.00 Cr. and Rs. 54.72 Cr. respectively was put forth before the Board in 126th BoD meeting for approval.

- (ii) The Board reviewed the proposal and accorded approval for installation of 2.5MVA, 33/0.433kV & 33/11kV Distribution Systems in Urban Areas of Haldwani & Dehradun Towns at 4 Locations each in Phase-1 amounting to Rs. 18.96 Cr. and Rs. 16.35 Cr. respectively. The details of the proposed locations are as follows:

Dehradun: -

Sl. No.	Division Name	Proposed location for installation of new 33/0.4 kV substation
33/0.4 kV Substation		
1.	Dehradun (South)	Turner Road
2.	Dehradun (Central)	Parade Ground
33/11 kV Substation		
3.	Dehradun (North)	Kunj Bhawan, Mussoorie
4.	Dehradun (North)	Near Max Hospital, Malsi

Haldwani: -

Sl. No.	Division Name	Proposed location for installation of new 33/11 kV substation
33/0.4 kV Substation		
1.	Haldwani (Town)	Thandi Sarak (inside Park area)
2.	Haldwani (Rural)	Kamaluwaganja Chauraha (Feeder-33 kV Kamaluwaganja)
33/11 kV Substation		
3.	Haldwani (Rural)	Eco Town (Feeder-33 kV Dhaulakhera)
4.	Haldwani (Rural)	Behind Susheela Tiwari Hospital

- (iii) The estimated cost of the project is Rs. 35.31 Crore., which will be met through loan (70%) from M/s REC/PFC/HUDCO and Equity (30%) from State Government. The project is proposed to be implemented on turnkey basis. The duration of completion of the project is 1 Year.

..."

4. The Petitioner alongwith its Petition has enclosed certified true copy of 126th Board of Directors meeting dated 04.12.2025. The resolution passed by BoD states that:-

"ITEM NO. 126.11: Installation of 2.5MVA, 33/0.433kV & 33/11kV Distribution Systems in Urban Areas of Haldwani & Dehradun Towns.

***"RESOLVED THAT* the approval of the Board be and is hereby accorded for installation of 2.5MVA, 33/0.433kV & 33/11kV Distribution Systems in Urban Areas of Haldwani & Dehradun Towns as recommended by the Audit Committee to be installed at 4 Locations initially in the Towns of Dehradun and Haldwani each in Phase-1, out of the DPR's of these town amounting to Rs. 16.35 Cr (4 Nos. Distribution System) & Rs. 18.96 Cr (4 Nos. Distribution System) respectively."**

5. The Petitioner in its Petition under the Relief Sought has requested the Commission to:
- "...

- (iii) Grant approval for the investment on the project covering the Installation of 2.5 MVA, 33/0.433 kV & 33/11 kV Distribution Systems in Urban Areas of Haldwani & Dehradun Towns.

..."

6. On examination of the submissions made in the Petition certain deficiencies/ infirmities were identified and accordingly, the Commission vide its letter No. 1879 dated 25.03.2026 directed the Petitioner to furnish its point-wise reply on the following latest by 24.04.2026: -

“

- (1) *The Commission vide its letter No. 1362 dated 04.12.2025 had categorically directed UPCL to include a standardized template of information in the BoD approval pertaining to investment approval and further had directed it to furnish the same alongwith the Petition seeking prior in-principle approval from the Commission. The Petitioner in the instant matter has not complied with the same. Therefore, UPCL is required to clarify in this regard and submit the desired information.*
- (2) *UPCL is required to furnish details regarding the land acquisition for all proposed 33/11 kV and 33/0.4 kV power centres in the instant Petition.*
- (3) *UPCL is required to confirm regarding Right of Way, forest clearances, and other necessary approvals for the proposed 33/11 kV and 33/0.4 kV Power Centres along with the associated underground and overhead lines in Dehradun and Haldwani towns.*
- (4) *UPCL is required to furnish the rationale for proposing specific rating of 2.5 MVA transformers for 33/0.4 kV & 33/11 kV power centres. Further, confirm whether the individual power centres have been proposed for catering the enhanced existing load or anticipated new load based on application received from the prospective consumers. If the reason is for prospective consumer loads, the details of the same is to be provided.*
- (5) *UPCL is required to furnish the general arrangement drawings of the proposed 33/11 kV and 33/0.4 kV substations in Haldwani and Dehradun, depicting the overall dimensions of the Power centres including transformers and the incoming and outgoing feeders.*
- (6) *UPCL is required to submit individual single-line diagram of the proposed works for the construction of 33/11 kV and 33/0.4 kV Power Centres in Haldwani and Dehradun for pre and post construction scenario covering following details: -*
 - (a) *Pre and post loading of 220/132/33 kV source substations feeding the proposed Power centres.*
 - (b) *Details of the incoming 33 kV lines including the type of conductor, length, and loading for the proposed 33/11 kV and 33/0.4 kV power centres at Dehradun and Haldwani including 33 kV & 11 kV RMUs.*
 - (c) *Details of all proposed outgoing 11 kV and 0.4 kV feeders emanating from the proposed 33/11 kV & 33/0.4 kV Power Centres at Haldwani and Dehradun including the type of conductor, length, prospective loads, DT ratings, B-type and C-type LT panels.*
 - (d) *Details of landmark where the power centre is proposed.*

- (7) UPCL is required to furnish cross sectional drawing of the underground cables alongwith the details of horizontal & vertical clearances between underground 33 kV, 11 kV, LT cables and the civil assets viz. water pipe, drainage pipes, gas pipes, sewerage, telephone etc. with details of depth of laying.
- (8) With regard to certain important provisions of the Central Electricity Authority (Technical Standards for Construction of Electrical Plants and Electric Lines) Regulations, 2022, UPCL is required to confirm the following w.r.t the proposed works:
-
- (a) Regulation 51 (3) provides that substations shall have adequate capacity to cater to load growth for at least 5 years. In this regard, UPCL is required to confirm the same based on the loading in 1st year of the individual project & subsequent annual load growth.
- (b) Regulation 51 (5) provides for 'N-1' contingency pertaining to transformer and different incomer sources for the instant proposal.
- (c) Regulation 55 (8)(a) provides that 'On load tap changing device shall be provided with transformer of 3.15 MVA and higher ratings. In this regard, UPCL is required to confirm the rationale for selecting On load tap changer for a power transformer & distribution transformer of 2.5 MVA rating.
- (d) Regulation 59 categorically provides that rated short time current rating of 33 kV breakers shall not be less than 25 kA for 1 second, whereas, UPCL has selected 3-way RMU with 21 kA for 3 second short circuit capacity. UPCL is required to confirm that the protection system for the proposed system shall conform to CEA Regulations.
- (9) UPCL is required to furnish the details of category-wise existing and proposed consumers (viz. no. of consumer & load in KW) to be catered through proposed individual Power Centre.
- (10) UPCL is required to confirm whether the U/G cables would be earthed at one end or both end for the proposed works in the instant Petition and confirm how the safety issues arising due to different earthing/bonding arrangements would be addressed especially w.r.t. ground potential rise at the unearthed end of the HT line. If earthed at both ends, UPCL shall confirm that the cable sizing has been done considering the aspects of circulating current.
- (11) With regard to the proposed 33 kV 11 kV & 0.4 kV lines, UPCL is required to furnish the following:

Conductor Proposed	Current Carrying Capacity of Cable In Amps	Deration factor for Ambient Temperature	Deration factor for Depth of laying	Deration factor due to Grouping of HT/LT UG lines	Derated current Capacity in Amps
33kV HT line 3Cx400sqmmXLPE					
11kV HT line 3Cx300sqmmXLPE					

Conductor Proposed	Current Carrying Capacity of Cable In Amps	Deration factor for Ambient Temperature	Deration factor for Depth of laying	Deration factor due to Grouping of HT/LT UG lines	Derated current Capacity in Amps
0.4kV 3.5Cx240sqmmXLPE					
0.4kV 3.5Cx150sqmmXLPE					

- (12) UPCL is required to furnish the data sheet for the proposed 2.5 MVA 33/11 kV power transformer, 2.5 MVA 33/0.4 kV distribution transformer, 33 kV RMU 3-way & 11 kV RMU 4-way.
- (13) With regard to the underground cable laying, UPCL has proposed three different cables laying methods namely Cable trench method, HDD method & conventional excavation method in HDPE pipe. In this regard, UPCL is required to specify the location where the aforesaid cable laying method would be used and the basis for quantity and cost estimate.
- (14) UPCL is required to furnish details of the protections (overcurrent, earth fault etc) proposed for the instant project. Further, UPCL is required to confirm regarding the status of metering at 33 kV & 11 kV ends of the power and distribution transformer proposed in the instant Petition from the perspective of energy audit/accounting.
- (15) UPCL is required to furnish details of challenges encountered during the execution of similar projects, if any, and explain how the distribution licensee plans to mitigate such issues in the instant project particularly with respect to safety & clearances, earthing arrangements and redundancy provisions. Further, furnish issues & challenges encountered by other utilities who have executed similar projects.
- (16) UPCL is required to submit the basis for quantity & cost estimates (duly tallying with latest approved SOR) for the works proposed in the instant Petition, further also furnish hard and soft copy of the same in MS excel format.
- (17) UPCL is required to submit the activity-wise time schedule for the completion of the instant project amounting to Rs. 35.31 Cr. covering activities viz. tendering, mobilization, Supply, Installation, Testing & Commissioning etc.
- (18) UPCL in the cost estimate provided with the DPR has considered a 15% business margin in the Bill of Materials. In this regard, UPCL is required to justify the rationale for considering 15% business margin in the instant Petition and provide documentary evidence in support of the same.
- (19) UPCL has furnished cost benefit analysis for the works amounting to Rs. 56.87 Cr. and 61.31 Cr. for Haldwani and Dehradun respectively. Whereas, the main Petition specifies works amounting to Rs. 18.96 Cr. and Rs. 16.35 Cr. for Haldwani and Dehradun respectively. In this regard, UPCL is required to submit the cost-benefit analysis for the specific works proposed in the instant Petition amounting to Rs. 35.31 crore and furnish the hard and soft copy in MS excel format.

(20) *With regard to the financing, UPCL has proposed 70% loan from REC/PFC/ HUDCO and 30% equity from GoU. UPCL is required to confirm regarding the approvals/sanction received against the same."*

7. In response to the above deficiencies/infirmities raised by the Commission, Petitioner vide its letter No. 3295/D(O)/UPCL/UERC/C-4 dated **12.06.2026** submitted its point-wise reply as follows:

"

1. *The desired information as per the prescribed format is being furnished...*
2. *The proposed 33/11 kV and 33/0.433 kV Distribution Systems are compact installations, each requiring approximately 6m x 4 m land. Given the minimal space requirement, no separate land acquisition is envisaged for these power centres. Instead, UPCL proposes to install these units on available spaces.*
3. *The project is planned within urban and densely populated areas of Dehradun and Haldwani and involves compact installations with minimal land requirement and routing largely along existing road alignments and utility corridors. Therefore, No RoW issues are anticipated & No forest clearance is required. Necessary statutory permissions, if required (such as municipal or local authority approvals), shall be obtained during execution.*

Accordingly, UPCL confirms that Right of Way issues, forest clearances, and other major approvals are not expected to pose any hindrance to the timely execution of the proposed works.

4. *As per CEA Guidelines for Specifications of Energy Efficient Outdoor Type Three Phase and Single-Phase Distribution Transformers, 2008, 2.5MVA is the highest standard capacity for distribution transformers. As the project is planned within urban and densely populated areas, the selection of 2.5 MVA distribution systems has been made based on initial field survey done by field officers to cater the maximum capacity within minimum space. Further, the power centres are proposed for both type of loads i.e. enhanced existing and anticipated new load. The same shall be finalized at the time of installation of power centres as per actual requirement.*
5. *General arrangement drawings of the proposed 33/11 kV and 33/0.4 kV Distribution Systems in Haldwani and Dehradun, depicting the overall dimensions of the Power centres including transformers and the incoming and outgoing feeder specifications...*
6. *Details are enclosed as ...*
7. *An indicative approved drawing for similar project as desired is hereby annexed ... Further, it is also pertinent to mention that for the project the same will be finalised in coordination with the successful bidder keeping in view of the best practices and local conditions. The relevant drawings in this regard will be finalised before execution of works.*

8.

- a) *The proposed power systems are not conventional type 33/11KV Substations. They have been proposed to cater maximum available capacity as distribution systems within urban and densely populated areas where land for conventional 33/11 KV substations is not available. Hence, there are high chances that these power centres will reach their maximum capacity within five years.*
 - b) *The proposed power centres will be connected in Ring main and thus will fulfil the N-1 contingency.*
 - c) *The provision of On Load Tap Changer (OLTC) for 2.5 MVA transformers has been considered based on the following technical rationale:*
 - (i) *The project involves urban load centres with fluctuating voltage conditions due to varying load demand.*
 - (ii) *OLTC ensures continuous voltage regulation without interruption, which is critical for sensitive and mixed-category consumers.*
 - (iii) *Though the rating is 2.5 MVA, the transformers are being used as a power center transformer, not a conventional Power/distribution transformer.*
 - (iv) *Extended Tapping Range with Fine Control: -*
 - (a) *The transformers are proposed with a tapping range of +5% to -15% on the HV side.*
 - (b) *The tap changer is provided with 1.25% step size, resulting in a total of 17 tap positions.*
 - (c) *Fine voltage regulation due to smaller step size*
 - (d) *Ability to closely match system voltage with desired output voltage*
 - (e) *Minimization of voltage fluctuations at LT side*
 - (v) *Provision of OLTC enhances:*
 - (a) *Voltage stability at downstream feeders*
 - (b) *Reduction in technical losses*
 - (c) *Improved quality of supply*
- Hence, the selection of OLTC is justified from system reliability and voltage control considerations, even though the rating is below 3.15 MVA*
- d) *The selection of 21 kA, 3-second rated RMUs has been made based on standard practices adopted in similar projects already executed and currently under execution by UPCL under RDSS and ADB funded schemes. The same rating has been widely used in comparable network conditions and has been found to be technically adequate and operationally reliable.*
9. *The power centres are proposed for enhanced existing and anticipated new load. The same shall be finalized at the time of installation of power centres as per actual requirement.*

10. In the proposed project, both ends of the cables are proposed for earthing through chemical earthing as per IS:3043 keeping in view of (i) Preventing electrical shock, (ii) Protecting against fault currents, (iii) Reducing risk of cable damage etc.

11. Current Carrying Capacity and Derating Factors for Proposed Underground Cables:

In compliance with the Commission's direction, UPCL hereby furnishes the current carrying capacity and applicable derating factors for the proposed 33 kV, 11 kV, and 0.4 kV underground cables as per IEC 60287, IS 7098 (Part-2), IS 1554 (Part-1), and CEA Technical Standards:

Conductor Proposed	Current Carrying Capacity of Cable (In Amps)	Deration Factor for Ambient Temperature	Deration Factor for Depth of Laying	Deration Factor due to Grouping of HT/LT UG Lines	Derated Current Capacity (In Amps)
33 kV HT Line 3Cx400 sq.mm XLPE (AI Conductor)	520 A	0.96 (35°C, Ref. 30°C)	0.97 (Depth: 1.2 m)	0.82 (Flat formation, 3 cables @ 0.3 m spacing)	~397 A
11 kV HT Line 3Cx300 sq.mm XLPE (AI Conductor)	470 A	0.96 (35°C, Ref. 30°C)	0.97 (Depth: 1.2 m)	0.82 (Flat formation, 3 cables @ 0.3 m spacing)	~359 A
0.4 kV LT Line 3.5Cx240 sq.mm XLPE (AI Conductor)	400 A	0.96 (35°C, Ref. 30°C)	0.98 (Depth: 0.9 m)	0.85 (Flat formation, 3 cables @ 0.25 m spacing)	~320 A
0.4 kV LT Line 3.5Cx150 sq.mm XLPE (AI Conductor)	305 A	0.96 (35°C, Ref. 30°C)	0.98 (Depth: 0.9 m)	0.85 (Flat formation, 3 cables @ 0.25 m spacing)	~244 A

...

12. DATA SHEET 2500KVA 33/11KV POWER TRANSFORMER

1.	Rated MVA (ONAN rating)	2.5 MVA
2.	No. of phases	3
3.	Type of Installation	Outdoor
4.	Frequency	50 Hz
5.	Cooling medium	Insulating oil
6.	Rates voltage: a) High voltage winding b) Low voltage winding	33 kV 11 kV
7.	Highest continuous system voltage a) HV Side b) LV side	36 kV 12 kV
8.	Type of tap changer	In Tank type On-load tap changer
9.	Range tapings	+5% to -15% steps of 1.25% each on HV winding
10.	Neutral terminal to be brought out	On LV side only
11.	Impedance on rated MVA at 75°C	6.25% with tolerance limits as per IS
12.	Type of insulation and insulation level	Uniform
13.	One minute power frequency withstand test (KV rms)	33 kV 11 kV 70 28

14.	Impulse withstand test voltage (KV Peak)	170	95
15.	Winding connection a) HV Side b) LV Side	Delta Star	
16.	Winding material	Electrolytic Copper-Current density not to exceed 2.4 Amp/mm ² in all windings.	
17.	Maximum Flux Density at Normal Voltage	1.60 Tesla	
18.	Maximum Flux Density at 112.% of Normal Voltage	1.90 Tesla	
19.	Vector group	Dyn 11	
20.	Type of cooling	ONAN	
21.	Neutral earthing	LV neutral shall be solidly earthed	
22.	No load losses at rated voltage and frequency (kW)	2.00 (max.)	
23.	Copper Losses at Principal Tap 75°C at (KW)	14.0 (max.)	
24.	Maximum Temperature Rise Over an Ambient of 45°C	(a) Temperature rise of top oil (Measured by thermometer)- 30°C (b) Temperature rise of winding (Measured by resistance)- 35°C	
25.	The maximum overall dimensions of the Transformers	(i) Overall Length-3500 MM (ii) Overall breadth-3500 MM (iii) Overall Height-4300 MM	

DATA SHEET 2500KVA 33/0.433 KV POWER TRANSFORMER

1.	Rated MVA (ONAN rating)	2.5 MVA	
2.	No. of phases	3	
3.	Type of Installation	Outdoor	
4.	Frequency	50 Hz	
5.	Cooling medium	Insulating oil	
6.	Rates voltage: a) High voltage winding b) Low voltage winding	33 kV 0.433 kV	
7.	Highest continuous system voltage a) HV Side b) LV side	36 kV 12 kV	
8.	Type of tap changer	In Tank type On-load tap changer	
9.	Range tapings	+5% to -15% steps of 1.25% each on HV winding	
10.	Neutral terminal to be brought out	On LV side only	
11.	Impedance on rated MVA at 75°C	6.25% with tolerance limits as per IS	
12.	Type of insulation and insulation level	Uniform	
13.	One minute power frequency withstand test (KV rms)	33 kV 70	0.433 kV 3
14.	Impulse withstand test voltage (KV Peak)	170	-

15.	Winding connection a) HV Side b) LV Side	Delta Star
16.	Winding material	Electrolytic Copper-Current density not to exceed 2.8 Amp/mm ² in all windings.
17.	Maximum Flux Density at Normal Voltage	1.50 Tesla
18.	Maximum No Load Losses in watts	2500W
19.	Vector group	Dyn 11
20.	Type of cooling	ONAN
21.	Neutral earthing	LV neutral shall be solidly earthed
22.	Max. Losses at 50% loading (Watts)	6342W
23.	Max. Losses at 100% loading (Watts)	18812W
24.	Maximum Temperature Rise Over an Ambient of 45°C	(a) Temperature rise of top oil (Measured by thermometer)- 30°C (b) Temperature rise of winding (Measured by resistance)- 35°C
25.	The maximum overall dimensions of the Transformers	(iv) Overall Length-3500 MM (v) Overall breath-3500 MM (vi) Overall Height-4200 MM

13. The HDD method will generally be adopted as the primary method due to its suitability in minimizing surface disruption, especially in urban or congested areas. However, the actual method of cable laying will be decided at the time of execution (i.e., HDD method, cable trench or conventional excavation) based on site conditions such as terrain, availability of space, and other practical constraints. Accordingly, the most suitable method will be adopted to ensure safe, efficient, and economical installation.

14. A comprehensive protection scheme has been provided to ensure complete safety of the transformers and associated system. On the 33 kV and 11 kV sides, protection is ensured through RMUs of latest specifications, equipped with suitable switching and protection against overcurrent and earth fault conditions.

On the LT side (0.433 kV), an LT Distribution Board (LTDB) with Air Circuit Breaker (ACB) is provided, offering protection against overload, short circuit, and earth faults, thereby ensuring full protection of the transformer from the LT side.

A proper earthing system has also been implemented, wherein separate earthing is provided for each protection device to ensure reliable operation. Additionally, three independent earth pits are provided for each transformer, typically for body, neutral, and lightning arrester earthing, ensuring effective dissipation of fault currents.

The RMUs and LTDB are of latest specifications complying with relevant standards. Suitable metering arrangements shall be provided to facilitate accurate energy accounting and audit.

15. UPCL is currently executing the project of undergrounding of LT/HT electrical network in Dehradun town under ADB scheme. The main issues faced are arrangement of

shutdown and public protest. Therefore, the work is being executed with proper planning and arrangement of shutdowns and adhering the issues of local public harmoniously. Moreover, this project very small project and covers only 4 locations in Dehradun town and 4 locations in Haldwani town. Hence, probability of arising of such issues is minimal in this project.

16. *The quantity considered is based on initial field survey done by field officers. The cost estimates have been based on Schedule of Rates (SOR) for the DPR for "UG with SCADA Automation", quotations obtained from manufacturers and previously awarded rates of UPCL for similar items/works. The detailed basis of quantity and cost estimates is furnished in hard and soft copy for kind perusal ...*
17. *Pert Chart of the Project is enclosed ...*
18. *The provision of a 15% business margin in the Bill of Materials (BoM) has been considered as per provisions made by the UPCL's competent committee vide Minutes of Meeting (MoM) dated 21.06.2024 ...*
19. *Earlier cost-benefit analysis for Rs. 56.87 crore (Haldwani) and Rs. 61.31 crore (Dehradun) was based on the initial DPR, wherein installation of 12 nos, and 15 nos. Distribution Centres in Haldwani and Dehradun respectively was proposed. Subsequently, the Board of Directors (BoD) reviewed the proposal and directed that the project be implemented in a phased manner. As per the directions of the BoD vide MoM dated 04.12.2025, only 4 nos. Distribution Centres each in Haldwani and Dehradun have been approved for installation in the initial phase.*

Accordingly, the scope of work and associated cost has been revised, and the present Petition reflects the reduced project cost of Rs. 35.31 crore.

The revised cost-benefit analysis corresponding is enclosed ... for kind perusal.

20. *Details are enclosed ..."*

8. On examination of the Petitioner's DPR and submission dated 12.06.2026, certain additional information/deficiencies/requirement were observed, which were forwarded to the Petitioner vide the Commission's letter dated 29.06.2026. The additional infirmities/deficiencies/requirement of additional information are mentioned below: -

"

- (1) *With regard to reply at point No. 6, UPCL is required to submit individual Single Line Diagrams (SLDs) for each proposed 33/11 kV and 33/0.415 kV substation, depicting the complete power supply arrangement from the source 220/132/33 kV substation up to the respective proposed substation. The SLDs shall clearly indicate all existing and proposed electrical infrastructure including 33 kV substations, RMUs, overhead & underground lines/cables and its type, length, power transformer capacities, existing and prospective loads on 33 kV incomer feeder and distribution transformer (DT) ratings (for proposed 33/11 kV S/s), so as to facilitate a proper evaluation of the proposal.*

Further, UPCL should ensure that the SLDs are not hand-drawn. The SLD shall be duly verified, signed and stamped by the concerned responsible officer of UPCL.

- (2) *With regard to reply at point No. 12, UPCL is required to furnish the data sheet for the proposed 33 kV RMU-3 way and 11 kV RMU-4 way.*
 - (3) *With regard to Point No. 9, the reply submitted by UPCL is vague and lacks the requisite details. In this context UPCL is required to confirm regarding the existing and future loads/consumers which would be catered through each proposed power centre.*
 - (4) *UPCL is required to furnish the details of each proposed 33/11 kV and 33/0.415 kV substations in the prescribed format ..."*
9. In compliance with the above, the Petitioner vide its letter No. 4089/D(D&P)/UPCL/UERC/C-4 dated 21.07.2026 submitted that: -
- "
- (1) *The desired information duly verified, signed and stamped by the concerned responsible officer of UPCL is being furnished herewith as ...*
 - (2) *DATA SHEET: 33kV RMU-3 WAY has been enclosed...*
 - (3) *The details are as furnished under Point No. 4. However, the actual load distribution and consumer details shall be finalized during execution.*
 - (4) *The required details of each proposed 33/11kV and 33/0.415 kV substation is being furnished herewith as ...*
- Apart from above, the revised CBA..., GA Drawing... and Market rates ... of the major items are also being enclosed for kind perusal. "*
10. Thereafter, the Commission, vide its Letter No. 570 dated 13.07.2026, directed Petitioner to make a Power Point Presentation (PPT) on 21.07.2026, covering the need & justification for the proposed works along with the techno-commercial aspects, the said PPT was rescheduled to 24.07.2026. Subsequently, the Petitioner made a PPT before the officers of the Commission on 24.07.2026. Thereafter, the Petitioner vide its email dated 24.07.26 furnished revised SLD for sub-station proposed at Eco Town and Susheela Tiwari Hospital.

Commission's Observations, Views & Directions: -

11. 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 'Installation of 2.5 MVA, 33/0.433 kV & 33/11 kV Distribution Systems in Urban Areas of Haldwani &

Dehradun Towns', comprising installation of **08 Nos. of new 2.5 MVA distribution substations, including 04 Nos. substations in Haldwani town and 04 Nos. substations in Dehradun town.** The total estimated cost of the proposed project is **Rs. 35.31 Cr.**, (including IDC and taxes) out of which **Rs. 18.96 Cr.** pertains to Haldwani town and **Rs. 16.35 Cr.** pertains to Dehradun town, which has been duly approved by its Board of Directors in its 126th meeting held on 04.12.2025. The details of the proposed locations for installation of new 2.5 MVA, 33/0.4 kV and 33/11 kV substations are as follows: -

A. Dehradun

Sl. No.	Division Name	Proposed location for installation of new 2.5 MVA 33/0.4 kV & 33/11 kV S/s	Total estimated cost of project in Cr.
2.5 MVA 33/0.4 kV Substation			Rs. 16.35 Crore
1.	Dehradun (South)	Turner Road	
2.	Dehradun (Central)	Parade Ground	
2.5 MVA 33/11 kV Substation			
3.	Dehradun (North)	Kunj Bhawan, Mussoorie	
4.	Dehradun (North)	Near Max Hospital, Malsi	

B. Haldwani

Sl. No.	Division Name	Proposed location for installation of new 2.5 MVA 33/0.4 kV & 33/11 kV S/s	Total estimated cost of project in Cr.
2.5 MVA 33/0.4 kV Substation			Rs. 18.96 Crore
1.	Haldwani (Town)	Thandi Sarak (inside Park area)	
2.	Haldwani (Rural)	Kathgharia, Chauraha (Feeder-33 kV Kamaluwaganja)	
2.5 MVA 33/11 kV Substation			
3.	Haldwani (Rural)	Eco Town (Feeder-33 kV Dhaulakhera)	
4.	Haldwani (Rural)	Behind Susheela Tiwari Hospital	

- (2) Besides above, the work-wise cost break-up of the proposed works under the instant Petition amounting to **Rs. 35.31 Cr.** are as follows: -

A. 2.5 MVA Distribution System in Dehradun

Sl. No.	Items	Unit	Qty.	Total Cost in Rs. Cr.
1.	Power Centre			
(i)	33/11 kV, 2.5MVA Power Transformer	No.	2.00	6.02

Sl. No.	Items	Unit	Qty.	Total Cost in Rs. Cr.
(ii)	33/0.4 kV, 2.5MVA Distribution Transformer	No.	2.00	6.28
2.	33 kV New UG cable			
(i)	33 KV UG TR-XLPE 3x400 Sq mm Double Ckt	Km.	0.64	0.88
3.	11 kV New UG cable			
(i)	11 KV UG TR-XLPE 3x300 Sq mm Double Ckt.	Km.	0.22	0.20
4.	0.433 KV LT XLPE Underground Cable			
(i)	LT line with 3.5x240 Sqmm TR-XLPE Underground Cable (Double Ckt)	Km.	0.90	0.58
(ii)	LT line with 3.5x150 Sqmm TR-XLPE Underground Cable (Double Ckt)	Km.	1.40	0.76
5.	LT Distribution Panels			
(i)	B-Type Panel	Nos.	3.00	0.14
(ii)	C-Type Panel	Nos.	5.00	0.02
	Sub-Total			14.89
	Contingency@3%			0.45
	Centage@2.5%			0.38
	Total			15.72
	IDC			0.63
	Grand Total			16.35

B. 2.5 MVA Distribution System in Haldwani

Sl. No.	Items	Unit	Qty.	Total Cost in Rs. Cr.
1.	Power Centre			
(i)	33/11 kV, 2.5MVA Power Transformer	No.	2.00	6.02
(ii)	33/0.4 kV, 2.5MVA Distribution Transformer	No.	2.00	6.28
2.	33 kV New UG cable			
(i)	33 KV UG TR-XLPE 3x400 Sq mm Double Ckt	Km.	1.40	1.92
3.	11 kV New UG cable			
(i)	11 KV UG TR-XLPE 3x300 Sq mm Double Ckt.	Km.	1.10	1.01
4.	0.433 KV LT XLPE Underground Cable			
(i)	LT line with 3.5x240 Sqmm TR-XLPE Underground Cable (Double Ckt)	Km.	1.10	0.71
(ii)	LT line with 3.5x150 Sqmm TR-XLPE Underground Cable (Double Ckt)	Km.	1.80	0.98
5.	LT Distribution Panels			
(i)	B-Type Panel	Nos.	6.00	0.29
(ii)	C-Type Panel	Nos.	12.00	0.05
	Sub-Total			17.26
	Contingency@3%			0.52
	Centage@2.5%			0.44
	Total			18.22
	IDC			0.73
	Grand Total			18.95

- (3) The Petitioner has proposed the 'Installation of new 2.5 MVA, 33/0.4 kV & 33/11 kV substations in the urban areas of Haldwani and Dehradun towns', considering the concentrated load growth due to rapid urbanization, increasing electricity demand, RoW and constraints in the existing distribution network. The proposed substations are required to facilitate load bifurcation from the existing 33/11 kV substations, thereby reducing the load of existing 33/11 kV S/s and also on the existing 11 kV feeders, improving voltage profile, and enhancing the overall operational performance of the distribution system. The proposed installations would also improve the reliability & quality of power supply and provide adequate infrastructure to cater to the anticipated future load growth in the respective urban areas. Further, the Petitioner has submitted that, due to scarcity of suitable land in urban areas & the prevailing high cost of land, installation of conventional type substations was not considered feasible. Accordingly, the Petitioner has proposed Compact Urban Power Centres (CUPCs), which require significantly lesser land area as compared to conventional substations.
- (4) With regard to the funding of the instant project, the Petitioner has submitted that the proposed project cost would be financed through a funding arrangement wherein, 70% of the total project cost would be met through loans availed from financial institutions i.e. M/s PFC/ REC/ HUDCO while the remaining 30% shall be contributed by the State Government in the form of equity contribution.
- (5) With regard to the cost-benefit analysis of the proposed works, the Petitioner in its PPT has submitted that the proposed project is economically viable and is expected to provide financial benefits over its useful life. The Petitioner has submitted that the proposed works for Dehradun town have an estimated Return on Investment (ROI) of 11.59% with a payback period of approx. 7 years 8 months. Further, for Haldwani town, the proposed works have an estimated ROI of 8.34% with a payback period of approx. 9 years 2 months. Although, the Petitioner has not provided a thorough justification alongwith the relevant documents to justify the same, However, considering that the present proposal is on Pilot Basis and the Commission is directing the Petitioner to prepare a detailed report as herein stated below therefore the Commission at present is

not considering these aspects comprehensively but directs the Petitioner to furnish justification alongwith relevant documents for establishing such facts in subsequent Petitions seeking investment approvals.

- (6) With regard to the technical perspective, the Petitioner has submitted that the proposed project would enhance the reliability of power supply, reduce the loading on the existing substations, cater to future load growth, improve customer satisfaction, and provide better aesthetics with reduced space requirements. The Commission observes that the proposed technical interventions are expected to strengthen the reliability & resilience of the distribution network in the Urban areas of Dehradun and Haldwani towns and support both existing and future load growth.

However, the Commission is of the view that the actual achievement of these benefits shall depend upon the effective implementation of the project, proper system operation and actual load conditions in the area. Therefore, the Petitioner is directed to ensure prudent execution and optimal operation of the proposed system to realize the intended benefits. Further, in this context, the Commission has observed that the instant proposal of the Petitioner is basically an option of meeting its existing & future load requirements in firefighting mode, such a situation has arisen due to lack of coordinated effort in seeking and obtaining appropriate piece of land upon growth of load in the distribution areas, the sole distribution licensee in the State is expected to conduct a long-term distribution system planning for its congested as well upcoming growing areas so that cost effective and long term solutions for serving the loads can be established, including availability of land through available means. As of now, the instant proposal appears to be an attempt for meeting immediate load requirements which do not appear to be prudent for the discom.

- (7) With regard to the statutory clearances required for construction of the proposed 2.5 MVA, 33/0.4 kV & 33/11 kV substations along with associated underground and overhead line, the Petitioner in its submission dated 12.06.2026, has submitted that the proposed work does not require clearances/approvals as the entire alignment is proposed to be laid along

existing road alignment and utility corridors and does not involve any new right-of-way, forest clearances and any other major approvals.

In this context, the Commission has observed that the Petitioner has envisaged incoming and outgoing feeders for the proposed S/s as underground cables. The Commission cautions the Petitioner that, prior to commencement of execution of the proposed underground line, a detailed route survey and site investigation should be carried out to finalize the alignment of underground cable routes considering site-specific constraints such as depth of laying, road crossing, clearance from the civic facilities, State Highway requirements, RoW availability and other field conditions.

The Petitioner is cautioned to ensure that, in case any deviation in alignment or any statutory requirement (forest, wildlife, State Highway or RoW clearance) is identified at the execution stage, the same should be obtained from the competent authority prior to undertaking the affected portion of the work, and no work should be executed in the absence of the applicable statutory clearance.

- (8) With regard to the availability of land for the proposed 2.5 MVA, 33/0.4 kV & 33/11 kV substations, the Petitioner, in its submission dated 12.06.2026, has submitted that the proposed distribution systems are based on a compact design approach and require only a limited area of approximately 6 m × 4 m for installation of each unit. The Petitioner has further submitted that, considering the limited space requirement of these compact power centers, no separate land acquisition is envisaged, and the installations shall be developed at suitable available locations/spaces identified by UPCL.

In this context, on examination of the GA drawing of the proposed 2.5 MVA compact sub-stations vis-à-vis the technical particulars of the transformers, the Commission has observed that the transformer height is more than the height of FRP enclosure proposed in the GA drawing. This *prima-facie* depicts callous approach of the Petitioner while planning the project.

The Commission is of the view that utilization of existing available land/space for installation of Compact Urban Power Centers (CUPCs) is a prudent approach, as it would facilitate timely implementation of the project &

avoid additional expenditure and delays associated with land acquisition. Further, the Commission emphasizes that the proposed CUPCs should be strategically located near the load centers/areas which they are intended to cater, so as to minimize the length of downstream distribution feeders, reduce technical losses, improve voltage profile and enhance the reliability & quality of power supply to consumers. The Petitioner should also ensure that the identified locations have adequate space for operation & maintenance activities.

- (9) With regard to the cost of FRP enclosure for the proposed 2.5 MVA S/s, it is observed that the same has been estimated as Rs. 24.51 Lakh per CUPC, which appears to be exorbitantly high for a 6x4 square meter space. By general estimation a good civil structure for the said space would cost approximately 5 lakhs. The estimation of the FRP enclosure for the aforesaid proposals appears on very high side and the Commission does not find it prudent to allow such exorbitant prices for the same.

The Petitioner is directed to conduct proper detailed engineering of the Civil/FRP/other technically suitable structure for the proposed Compact Urban Power Centers (CUPCs) as per the dimensions of the equipment taking all the safety clearances into consideration and prior to implementation, the Petitioner is directed to prudently judge the prices of FRP enclosure as per the prevailing market rates and decide to choose amongst FRP enclosure/ Civil/other technically suitable structure.

- (10) With regard to the overall cost of the proposed works, the cost appears to be on the higher side. On general scrutiny of base Supply cost of 2.5 MVA, 33/11 kV power transformer of **Rs. 58.4 Lakh (excluding taxes & others)** and 33 kV RMU 3 way of **Rs 56.10 Lakh (excluding taxes & others)** appear on very higher side. Such over estimation while preparing estimates is not conducive for the financial & commercial viability of the distribution business.
- (11) On examination of the Single Line Diagram (SLD) submitted by the Petitioner for the proposed 2.5 MVA 33/11 kV and 33/0.4 kV S/s in Urban areas of Dehradun and Haldwani, certain observations have been observed as mentioned below: -

(i) **2.5 MVA 33/11 kV S/s proposed at Max Hospital, Dehradun**

With regard to the proposed new 33/11 kV, 2.5 MVA substation near Max Hospital, the Petitioner has submitted that the existing 33/11 kV Dakpatti S/s is fed through an approximately 12 km long 33 kV overhead line constructed on AAAC covered conductor, emanating from 132/33 kV Purkul Substation. The existing 2 × 12.5 MVA, 33/11 kV Dakpatti Substation is presently catering to the load demand of Max Hospital, Malsi Road and adjoining areas. The proposed 33/11 kV substation near Max Hospital would be connected by tapping the existing 33 kV underground line emanating from the Dakpatti Substation. The tapping point for the proposed substation is located at an approximate distance of 50 metres from the existing 33 kV underground line thereby enabling connectivity of the proposed substation with the existing 33 kV network. Due to non-availability of land/ availability on very high market cost for construction of conventional substation in the area, the compact substation has been proposed.

(ii) **2.5 MVA 33/11 kV S/s proposed at Kunj Bhawan, Mussoorie**

With regard to the proposed new 33/11 kV, 2.5 MVA substation at Kunj Bhawan, the Petitioner has submitted that the existing 1×10 MVA, 33/11 kV Kunj Bhawan Substation is presently being fed from the existing 2×5 MVA, 33/11 kV Kyarkuli Substation through an approximately 2.8 km long 33 kV line. The existing Kunj Bhawan S/s is presently catering to the load demand of the Lal Bahadur Shastri National Academy of Administration (LBSNAA) & Mall Road area. The Petitioner has further submitted that the proposed 33/11 kV, 2.5 MVA substation at Kunj Bhawan would be connected by tapping the existing 33 kV line between the 33/11 kV Kyarkuli S/s and the 33/11 kV Kunj Bhawan S/s. The proposed tapping arrangement shall be executed through an approximately 80 m long 33 kV underground cable, which would connect the tapping point on the existing 33 kV line to the proposed Kunj Bhawan Substation, thereby providing connectivity of the proposed substation with the existing 33 kV network.

The proposed substation has been planned to meet the increasing electricity demand in the area and provide reliable & quality power supply in the area. Upon commissioning, the proposed substation shall cater to a part of the load presently being supplied through the existing 11 kV feeders emanating from the Kunj Bhawan Substation. Consequently, the loading on the existing 11 kV feeders as well as on the existing Kunj Bhawan Substation would be reduced, thereby creating additional capacity to accommodate future load growth. The Petitioner has further submitted that the existing Kunj Bhawan Substation, supplies power to the Lal Bahadur Shastri National Academy of Administration (LBSNAA) and is presently dependent on only one transformer of 1×10 MVA at the Kunj Bhawan S/s. Considering the national importance of the LBSNAA, the proposed 33/11 kV substation would provide an alternate source arrangement, thereby enhancing the reliability & quality of power supply.

(iii) **2.5 MVA 33/0.4 kV S/s proposed at Parade Ground, Dehradun**

With regard to the proposed new 33/0.4 kV substation at Parade Ground, the Petitioner has submitted that the existing 25 MVA, 33/11 kV Parade Ground Substation is being fed from the 132/33 kV Bindal S/s through an approx. 3.8 km long 33 kV underground feeder. The Petitioner has further submitted that the proposed 33/0.4 kV substation at Parade Ground would be connected through tapping the existing 33 kV Parade Ground feeder and has been planned to cater to the demand of the concentrated load area, including Parade Ground, Astley Hall, Police Headquarters, nearby market area, BJP Office and CDO Office. The Petitioner has also submitted that the proposed 33/0.4 kV substation shall supply power to the identified load centres through an LT network of approximately 600 metres. The Petitioner has further submitted that, considering the non-availability of adequate land in the urban area, high prevailing market cost of land, and increasing power demand in the concentrated load pocket, installation of a conventional type of substation is not considered feasible. Accordingly, the Petitioner has proposed installation of a Compact Urban Power Centre (CUPC), which

requires significantly lesser space compared to a conventional substation and enables installation close to the load centre.

(iv) **2.5 MVA 33/0.4 kV S/s at Turner Road, Dehradun**

With regard to the proposed new 33/0.4 kV substation at Turner Road, the Petitioner has submitted that the proposed substation is intended to cater to the concentrated demand of the identified areas, including Nissan Showroom, Vigilance Office, Shanti Vihar, Shivalik Enclave, Nursery and Kanhaiya Vihar. The Petitioner has also submitted that the proposed substation would be connected through a tapping arrangement from the existing 33 kV line on ACSR Panther conductor which is emanating from the 132/33 kV Majra Substation, thereby utilizing the existing 33 kV infrastructure for connectivity of the proposed substation. The proposed arrangement avoids the requirement of constructing a separate long 33 kV feeder and enables installation of the substation near the identified load centre. The proposed 33/0.4 kV substation would supply power to identified load centres through an LT network of approx. 1500 metres and improve voltage profile at the consumer end and enhance the reliability & quality of power supply in the surrounding areas. Further, the Petitioner in its PPT has submitted that the proposed LT network length would be revisited and finalised at the time of installation.

(v) **2.5 MVA 33/0.4 kV S/s at Thandi Sadak, Haldwani**

With regard to the proposed 33/0.4 kV S/s at Thandi Sadak, the Petitioner has submitted that the proposed substation is intended to cater to the concentrated load demand of the identified areas, including Budha Park, Gurudwara, Parakh Center, Saheed Park, Krishna Hospital and Bombay Hospital. Further, the Petitioner has also submitted that the proposed substation would be connected through a tapping arrangement from the existing 33 kV line on ACSR panther conductor emanating from the 132/33 kV Kathgodam S/s thereby utilizing the existing 33 kV infrastructure for connectivity of the proposed substation. The proposed arrangement avoids the requirement of constructing a

separate long 33 kV feeder and enables installation of the substation near the identified load centre. The Petitioner has proposed to construct an outgoing LT feeder network of approx. 800 meter for serving the existing LT network/load. Further, the Petitioner in its PPT has submitted that the proposed LT network length would be revisited and finalised at the time of installation.

(vi) **2.5 MVA 33/0.4 kV S/s at Kathgharia Chauraha, Haldwani**

With regard to the proposed 33/0.4 kV S/s at Kathgharia Chauraha, the Petitioner has submitted that the proposed substation is intended to cater to the concentrated LT load demand of the identified areas, including Kamaluwaganja road, Kaladungi road, Panyali road and Towards block. The Petitioner has also submitted that the proposed substation would be connected through 33 kV line emanating from the 2x12.5 MVA 33/11 kV Kathgharia S/s with the approx. length of 100 meter via D/C 3Cx400 sqmm cable. The Petitioner has proposed to construct an outgoing LT feeder network of approx. 1800 meter for serving the existing LT network/load. Further, the Petitioner in its PPT has submitted that the proposed LT network length would be revisited and finalised at the time of installation.

(vii) **Installation of 2.5 MVA 33/11 kV S/s at Eco Town, Haldwani**

With regard to the proposed new 33/11 kV, 2.5 MVA substation at Eco Town, the Petitioner has submitted that the proposed substation would be fed through the 33 kV Dhaulakhera feeder emanating from the existing 132/33 kV Kathgodam Substation. A tapping arrangement has been proposed from the existing 33 kV line for connectivity of the proposed substation through an approximately 100-meter-long 33 kV line. At present, the Eco Town area and its adjoining areas are being catered through the existing 33/11 kV TP Nagar Substation, which is presently loaded up to approximately 80% of its capacity. The proposed 2.5 MVA substation at Eco Town would facilitate bifurcation and transfer of the existing load from the TP Nagar Substation, thereby reducing its loading and improving the reliability and adequacy of power supply in

the area. The Petitioner has proposed to construct an outgoing 11 kV feeder network of approx. 1200 M for serving the existing network/load.

(viii) **2.5 MVA 33/11 kV S/s at Behind Susheela Tiwari Hospital, Haldwani**

With regard to the proposed new 33/11 kV, 2.5 MVA substation Behind Susheela Tiwari Hospital, the Petitioner has submitted that the proposed substation would be fed through 33 kV feeder emanating from the 220/33 kV Kamaluwaganja which feeds the existing 2×12.5 MVA TP Nagar S/s. A tapping arrangement has been proposed from the existing 33 kV Kamaluwaganja feeder for connectivity of the proposed substation through an approximately 150-meter-long 3CX400 sq.mm. 33 kV cable. The Petitioner has proposed to construct an outgoing 11 kV feeder network of approx. 40 M for serving the existing network/load.

(12) **Observations/Views of the Commission**

- (i) The Commission has observed that the Petitioner has proposed the instant proposal to create substations on **pilot basis** to ascertain the pros and cons of construction of smaller capacity compact-type distribution substation due to non-availability of adequate land/high land prices for establishing conventional-type substation. Accordingly, the instant proposal of 04 nos. sub-stations in Dehradun and 04 nos. sub-stations in Haldwani have been proposed in order to cater the existing and future load demand for concentrated load areas.

In this context, the Commission is of the view that compact-type substations are suitable for areas where space constraints exist and land prices for constructing conventional substations is high. Thus, installation of the compact sub-stations in such locations prima-facie appears to be a valuable proposition both from financial and technical perspective for catering the demands of concentrated loads.

- (ii) The Commission has observed that the load currently being supplied from the existing 33/11 kV substations would be shifted to the proposed 2.5 MVA, 33/11 kV & 33/0.4 kV substations. Further, the load of existing 11 kV feeders would also be divided and connected to the new 11 kV feeders of the proposed substations. This arrangement would reduce the

loading on existing substations and feeders, ensure better load distribution, improve voltage conditions, and enhance the reliability & quality of power supply in the respective areas.

- (iii) With regard to the location of the proposed Compact Urban Sub-Stations, the Commission is of the view that the location of the proposed substations plays an important role in ensuring efficient, reliable & quality power supply as any miscalculation by the Petitioner especially in case of proposed 33/0.4 kV sub-stations would result in increased I^2R losses, if LT network is not judiciously segregated. The Petitioner should prudently bifurcate the LT feeders in order to reduce the load resulting in reduced losses and improved voltage & quality of power supply. Considering the increasing and concentrated load growth in urban areas, the proposed substations should be strategically located near the identified load centres to ensure optimum utilization of the installed capacity, balanced load distribution, and improved reliability and quality of power supply.
- (iv) With regard to the proposed RMU integrated in the proposed CUPC, the Commission has observed that the Petitioner has proposed 3-way & 4-way RMU for incoming & outgoing feeder arrangements respectively in the instant project for the proposed 33/11 kV S/s. Whereas for 33/0.4 kV S/s, 3-way RMU are proposed for incoming feeder and for outgoing feeder LT distribution panel has been considered for providing flexibility, protection against fault conditions and improvement in reliability of supply in the concerned load areas.

In this context, it is prudent to highlight provisions of clause 1.4 (7) of the 'Electricity Distribution Network Planning Criteria', Central Electricity Authority (CEA), 2023 which provides that *"In urban areas where it is difficult to get sufficient land for establishment of new Grid Sub-station near load area, a Unitized sub-stations with one power transformers (33/11 kV or 22/11kV) may be planned near load center without conventional control room with provisions of Ring Main Units (RMUs) at incomer and outgoing feeders without compromising N-1 condition. The RMUs should be*

remotely controlled if SCADA is available. Each Unitized sub-station may get the power supply through RMU which may get in-feed supply from two separate Grid Sub-stations having 100% back up capacity for reliability purpose. The capacity of 11 kV feeders may also be designed such as to get full back up through RMUs from nearby feeders in case of any fault or emergency". In this regard, the Commission opines that the aforesaid guidelines provides that RMU-based Unitized Substations can be envisaged in areas having paucity of land for construction of conventional 33/11 kV S/s. Further, the guidelines provides for adequate alternate source arrangements having 'N-1' contingency provision to ensure uninterrupted & reliable power supply. Accordingly, the Commission finds it prudent to direct the Petitioner to ensure that adequate line contingency provision be kept at 33 kV or 11 kV or 0.4 kV level as the case may be in order to cater to the eventuality of fault/emergency. Moreover, integration of the unitized sub-stations with the SCADA be done for ensuring efficient operation and faster restoration of supply.

- (v) With regard to the usage of TR-XLPE (Tree Retardant Cross-Linked Polyethylene) insulated cables for the proposed underground network, the Commission has observed that TR-XLPE cables are suitable for underground distribution systems where ground water level is high. Considering the site conditions prevailing in Dehradun and Haldwani areas of moisture and temperature variations conditions, the Commission is of the view that TR-XLPE cables are suitable for the proposed sites, as they offer a longer service life and higher current-carrying capacity, thereby ensuring reliable and quality power supply.
- (13) With regard to the earthing system for undergrounding cable network, the Commission emphasizes that ensuring safety of Man & Material is of paramount importance. Accordingly, the Commission opines that the earthing of the underground cables should be given prime importance without compromising the current carrying capacity of the underground cables. Thus, adequate design margins should be kept while sizing of underground cables.

- (14) With regard to the existing and future load distribution, the Commission opines that in order to leverage the right potential of the Compact Urban Power Centers and making the proposition technically & financially viable, it is opportune to install proposed substations in areas with concentrated load preferably load within the vicinity of 100 meters. This would help in reducing the length of distribution feeders, minimize technical losses (I^2R) losses, reduce voltage drop, improve the reliability of power supply, and ensure efficient utilization of the distribution network.
- (15) The Commission has observed that the Petitioner had initially not submitted the BoD approval in the desired format along with the Petition. Despite the Commission's letter No. 1362 dated 04.12.2025 directing UPCL to submit the standardized investment approval format along with the Petitioner failed to comply with the said requirement.

Subsequently, upon seeking clarification in this regard, the Petitioner through its submission dated 12.06.2026, furnished the requisite information, wherein, a 'variation %age allowed' was depicted as 50% in the project cost.

In this regard, the Commission is of the view that in the BoD approval dated 04.12.2025 no variation was categorically allowed by the BoD. However, the Petitioner, in its submission dated 12.06.2026, has envisaged a variation of up to 50%, which does not appear to be consistent with the aforesaid BoD approval. Therefore, the Commission does not find it prudent to allow any variation as per submission dated 12.06.2026, as the same is not approved by BoD, accordingly, no variation in the project cost for the works proposed under the instant Petition has been allowed.

- (16) With regard to the capacity of power transformer, the Petitioner has proposed 2.5 MVA transformers, the same may attain higher loading levels in the near future due to anticipated load growth, thereby limiting the capacity margin of the proposed substations. The Commission opines that since the proposed substations are being planned in urban areas where availability of land is a constraint and installation of conventional type substations is not feasible, it would be prudent to utilize the available space effectively by considering a higher transformer capacity of 3.15 MVA especially for 33/11 kV S/s which

would offer a higher standard capacity and is also readily available as standard rating of transformer. This would certainly provide additional capacity margin and reduce the requirement of early augmentation.

Further, the Commission is of the view that adoption of a standard transformer rating of 3.15 MVA or higher capacity may also facilitate the Petitioner in maintaining uniformity in transformer inventory, spares management & operational practices, thereby improving ease of maintenance & system reliability. Although the same may involve marginal increase in cost and physical dimensions, the long-term benefits in terms of capacity availability and reliability justify consideration of such higher capacity transformers especially for 33/11 kV S/s.

Accordingly, the Commission advice the Petitioner to examine the feasibility of adopting 3.15 MVA transformers or higher capacity in place of 2.5 MVA transformers especially for 33/11 kV S/s, considering the aspects of capacity margin, standardization of transformer ratings, ease of inventory management and avoidance of premature augmentation in future.

- (17) With regard to the activity-wise implementation schedule, the Commission has observed that the Petitioner has proposed to complete the project within 12 months from the date of award of the contract. Considering the increasing load demand in the proposed areas and the objective of strengthening the distribution network, the Commission is of the view that timely implementation of the proposed works is essential for ensuring reliable & quality power supply to the consumers and for achieving the intended benefits of the proposed infrastructure augmentation. Accordingly, the Commission directs the Petitioner to adhere to the proposed implementation schedule and complete the project within the stipulated timeline. The Petitioner shall make all necessary arrangements to minimize the duration of shutdowns.
- (18) With regard to the instant proposal, the Commission has noted that the Petitioner envisages to execute the instant proposal on Pilot basis, thus, it is important that proper detailed report of each approved CUPC. i.e. 08 nos. is prepared after completion of works covering the techno-commercial aspects covering expenses incurred, pre & post scenario loadings and voltage profile

and benefits accrued from the investment. The Petitioner is directed to furnish the consolidated report (Pre & Post implementation) of all 08 nos. proposed CUPCs before its board with a copy to the Commission. Any future proposal on CUPC shall be initiated once all the pros & cons identified in the aforesaid consolidated report are back tested for the future proposals.

- (19) With regard to the consideration of the '15% business margin in the instant Petition', the Petitioner in its submission dated 12.06.2026 at point no. 18 mentioned that the provision of 15% business margin in the bill of material has been considered as per provisions made by UPCL's Competent Committee vide Minutes of Meeting (MoM) dated 21.06.2024. In this context, the Commission has observed that the aforesaid MoM pertains to loss reduction Works under RDSS, whereas, the instant proposal is financed through 70% Debt/30% Equity mode and is not applicable for the same. Further, on comparing the contents of the aforesaid MoM dated 21.06.2024 vis-à-vis the Petitioner's Office Memorandum (OM) dated 01.02.2025 (submitted in support of its claim for centage and contingency in other investment proposals), it is observed that the instant project qualifies for 3% contingency and 2.5% centage as per clause 1 of OM dated 01.02.2025. The Commission has observed that for similar projects requiring construction of sub-stations no provision for 15% Business Margin was considered in the Petitioner's previous proposals. Therefore, as of now, the Commission do not find any prudent reasoning to allow 15% business margin for the proposed works. Accordingly, the business margin@15% considered by the Petitioner in its estimates is being disallowed.
- (20) In light of the above, the Commission grants in-principle approval for the proposed "Installation of 2.5 MVA, 33/0.4 kV & 33/11 kV Distribution Systems in Urban Areas of Haldwani & Dehradun Towns" (**excluding Business margin @15% considered in the estimates**) subject to strict fulfillment of terms & conditions as mentioned below: -
- (i) The prices furnished for items proposed in the instant Petition appear to be on higher side. The Petitioner is directed to adopt the competitive bidding keeping the technical specification and qualifying criteria and by larger circulation of tender inviting notices in the pan India newspapers

so as to promote larger participation for obtaining most competitive prices from the bidders under prevailing Rules & Regulations.

- (ii) No variation in the project cost for the works proposed under the instant Petition will be allowed.
- (iii) No Business margin @15% considered in the estimates by the Petitioner is allowed.
- (iv) The Petitioner is directed to make its all efforts for seeking grant for the projects conceived as Pilot projects including the present proposal. The Petitioner is also directed to explore the possibility of swapping the loan with cheaper debt option.
- (v) The Petitioner is directed to conduct proper detailed engineering of the Civil/FRP/other technically suitable structure for the proposed Compact Urban Power Centers (CUPCs) as per the dimensions of the equipment taking all the safety clearances into consideration and prior to implementation, the Petitioner is directed to prudently judge the prices of FRP enclosure as per the prevailing market rates and decide to choose amongst FRP enclosure/Civil/other technically suitable structure.
- (vi) The Petitioner is directed to furnish the consolidated report (Pre & post implementation) of all 08 nos. proposed CUPCs before its board with a copy to the Commission. Any future proposal on CUPC shall be initiated once all the pros & cons identified in the aforesaid consolidated report are back tested for the future proposals.
- (vii) The Commission directs the Petitioner to furnish justification alongwith relevant documents for establishing Cost Benefit Analysis in subsequent Petitions seeking investment approvals.
- (viii) The Petitioner is directed to explore installation of dry type 33/0.4 kV & 33/11 kV power transformers which are much safe from fire & safety perspective, require less maintenance, has less environmental impact and are preferred for compact/indoor applications in comparison to oil type power transformers. Further, the Petitioner shall ensure that

metering & protection aspects are adequately covered and ensured for the proposed Compact Urban Power Centres.

- (ix) The Commission advises the Petitioner to examine the feasibility of adopting 3.15 MVA transformers or higher capacity in place of 2.5 MVA transformers especially for 33/ 11 kV Sub-stations, considering the aspects of capacity margin, standardization of transformer ratings, ease of inventory management and avoidance of premature augmentation in future.
- (x) 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.
- (xi) Prior to commencement of execution of the proposed underground line, a detailed route survey and site investigation should be carried out to finalize the alignment of underground cable routes considering site-specific constraints such as depth of laying, road crossing, clearance from the civic facilities, State Highway requirements, RoW availability and other field conditions. The Petitioner is cautioned to ensure that, in case any deviation in alignment or additional statutory requirement (forest, wildlife, NHAI, State Highway or RoW clearance) is identified at the execution stage, the same should be obtained from the competent authority prior to undertaking the affected portion of the work, and no work should be executed in the absence of the applicable statutory clearance.
- (xii) The Commission directs the Petitioner to ensure that the proposed substation sites are selected after proper technical evaluation, considering factors such as proximity to load centres, availability of approach roads, adequate right of way for incoming and outgoing feeders, proper site elevation to avoid waterlogging, and other

operational and safety requirements. The Petitioner should also ensure that availability of sufficient space for future expansion, maintenance activities, and safe operation of substation equipment in accordance with applicable technical standards and safety requirements.

- (xiii) The Petitioner shall ensure that the project is executed within the approved project cost. In case of any cost overrun arising due to any reason, including price variation, delay in execution, poor planning or any other circumstances, the same may not be allowed by the Commission during the prudence check.
- (xiv) The Commission directs the Petitioner to adhere to the proposed implementation schedule and complete the project within the stipulated timeline. The Petitioner shall make all necessary arrangements to minimize the duration of shutdowns.
- (xv) The Petitioner is directed to incorporate adequate defect liability provisions in its contract so that the concerned contractors may be bound to execute their works within time and with quality & efficiency.
- (xvi) 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.
- (xvii) The Petitioner shall comply with the following CEA and UERC Regulations and amendments thereof at every step of the Construction and Operation & Maintenance of the lines. 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 (Installation and Operation of Meters) Regulations, 2006.

- (b) Central Electricity Authority (Safety requirements for construction, operation and maintenance of electrical plants and electric lines) Regulations, 2011.
- (c) Central Electricity Authority (Technical Standards for Construction of Electrical Plants and Electric Lines) Regulations, 2022.
- (d) Central Electricity Authority (Measures relating to Safety and Electricity Supply) Regulations, 2023.
- (e) UERC (Distribution Code) Regulations, 2018.

(xviii) 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