

**Before**

**UTTARAKHAND ELECTRICITY REGULATORY COMMISSION**

**Petition No.04 of 2015**

**Petition No.05 of 2015**

**In the Matter of:**

Approval of Capital Investments under Para 11 of the Transmission and Bulk Supply Licence for:

- (a) Investment Approval for increasing capacity of 220 kV S/s SIDCUL, Haridwar from 2x80 MVA (132/33 kV) to 2x80 MVA (132/33 kV)+1x50 MVA (220/33 kV).
- (b) Investment Approval for Construction of 132 kV overhead line from 220 kV S/s SIDCUL, Haridwar to 132 kV S/s Jwalapur and construction of 132 kV bays at both ends.
- (c) Investment Approval for construction of 132 kV S/s Chudiyala and LILO line.
- (d) Investment Approval for increasing capacity of 132/33 kV S/s Jwalapur from 2x40 MVA to 3x40 MVA.

**And**

**In the Matter of:**

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

**...Petitioner**

**Coram**

<b>Shri Subhash Kumar</b>	<b>Chairman</b>
<b>Shri C.S. Sharma</b>	<b>Member</b>
<b>Shri K.P. Singh</b>	<b>Member</b>

**Date of Order: 23<sup>rd</sup> July 2015**

**ORDER**

This Order relates to the Petitions filed by Power Transmission Corporation of Uttarakhand Ltd. (hereinafter referred to as "PTCUL" or "the Petitioner") seeking approval of the Commission for the investment of following works:

- (a) Investment Approval for increasing capacity of 220 kV S/s SIDCUL, Haridwar from 2x80 MVA (132/33 kV) to 2x80 MVA (132/33 kV)+1x50 MVA (220/33 kV).

- (b) Investment Approval for Construction of 132 kV overhead line from 220 kV S/s SIDCUL, Haridwar to 132 kV S/s Jwalapur and construction of 132 kV bays at both ends.
- (c) Investment Approval for construction of 132 kV S/s Chudiyala and LILO line.
- (d) Investment Approval for increasing capacity of 132/33 kV S/s Jwalapur from 2x40 MVA to 3x40 MVA.

The Investment Proposal in the matter of 'Construction of colony at 132 kV S/s Majra Campus, Dehradun' submitted to the Commission vide letter No. 06/Dir.(Projects)/PTCUL/UERC dated 07.01.2015 and admitted under Petition 4 of 2015 has not been included in this Order. As the same is being examined & would be dealt in the separate Order.

### **Background**

- 2. The Petitioner submitted proposals for capital investment of the works mentioned in the above para for approval of the Commission under Para 11 of Transmission and Bulk Supply Licence [Licence No. 1 of 2003] vide letter no. 1466 dated 02.12.2014, letter no. 1464 dated 02.12.2014, letter no. 06 dated 06.01.2015 and letter No.29 dated 14.01.2015.
- 3. The investment proposals of the Petitioner comprises of augmentation of existing Sub-Stations, construction of line, construction of new Sub-Station and associated work of the lines.
- 4. While the Petitions were being examined, the Petitioner vide its letter dated 24.04.2015 submitted revised DPRs of the following 03 proposals and has requested to consider these revised DPRs in place of the DPRs submitted earlier:
  - (i) Increasing capacity of 220 kV S/s SIDCUL, Haridwar from 2x80 MVA (132/33 kV) to 2x80 MVA (132/33 kV)+1x50 MVA (220/33 kV) (Augmentation of 220 kV S/s SIDCUL Haridwar).
  - (ii) Construction of 132 kV overhead line from 220 kV Substation SIDCUL, Haridwar to 132 kV Substation Jwalapur.
  - (iii) Construction of 132 kV Substation Chudiyala and its LILO Line.

5. The estimated cost of the works proposed by the Petitioner through the DPRs/revised DPRs submitted alongwith the Petitions is as follows:

**Table 1: Capital Cost proposed by the Petitioner in the DPRs and revised DPRs**

S. No.	Particulars	Transformer Capacity MVA	Length of Line (Km.)	Project Cost including IDC as per DPR (Rs. Crore)	Project Cost including IDC as per Revised DPR/submission (Rs. Crore)	Project cost considered by REC for funding the debt (Rs. Crore)
1	Augmentation of 220 kV S/s SIDCUL, Haridwar	2x80 MVA(132/33 kV) to 2x80 MVA(132/33 kV) + 1x50 MVA (220/33 kV)	-	7.48	9.20	7.48
2.	Construction of 132 kV over- head line from 220 kV S/s SIDCUL, Haridwar to 132 kV Substation Jwalapur and construction of 132 kV bays at both ends	-	4.2	2.67	6.77	6.77
3.	Construction of 132 kV S/s Chudiyala and its LILO Line	2x40 MVA	0.30	13.66	16.80	16.80
4.	Augmentation of 132 kV S/s Jwalapur	2x40 MVA to 3x40 MVA	-	4.32	6.34	4.32
			<b>Total</b>		<b>39.11</b>	

6. The Petitioner has submitted copy of extracts of the Minutes of Board Meetings of PTCUL wherein the Petitioner's Board has approved the Corporation's aforesaid proposals with a funding plan of 70% through loan assistance by financial institutions and balance 30% as equity proposed to be funded by GoU. However, the Petitioner did not submit any letter from the Government or any such documentary evidence entailing Government's commitment towards equity funding for the above proposal.

7. To justify the need of the works proposed in the above Petitions, the Petitioner submitted that:

**(a) Augmentation of 220 kV Substation SIDCUL, Haridwar from 2x80 MVA (132/33 kV) to 2x 80 MVA (132/33 kV)+1x 50 MVA (220/33 kV)**

The Petitioner stated that presently both 132/33 kV 80 MVA Transformers installed at the Substation were overloaded on account of which load shedding of around 25 MVA in SIDCUL, Bahadrabad and IP-4 industrial area of Haridwar is being carried out by UPCL. Further, around 25 MVA additional load is also expected to be added to the Sub-station through proposed 33 kV

sub-stations at Sector-3, Sector-11 of SIDCUL and Sahdevpur, Haridwar. Therefore, in order to meet out the existing load and the future load growth as stated above and also to cater the increased load envisaged on account of upcoming Ardh Kumbh Mela in 2016, augmentation of 220kV Substation SIDCUL, Haridwar is being proposed by installing 01 no. 220/33 kV, 50 MVA transformer.

With regard to loan assistance, it has been submitted by the Petitioner that REC has sanctioned a loan of Rs. 5.23 Crore @ 12% Interest rate against the total estimated cost of Rs. 7.48 Crore as per DPR. The Petitioner has further submitted the estimated cost of Rs. 9.20 Crore in the revised DPR.

**(b) Construction of 132 kV over head line from 220 kV substation SIDCUL, Haridwar to 132 kV Substation Jwalapur and construction of 132 kV bays at both ends.**

The Petitioner submitted that due to overloading of existing 132 kV line from 220 kV SIDCUL, Haridwar to 132 kV Jwalapur another 132 kV line from 220 kV SIDCUL, Haridwar to 132/33 kV Substation Jwalapur was being proposed. Also due to upcoming Ardh Kumbh Mela in 2016 there would be an increase in demand of the area. Thus, construction of proposed line would increase reliability of power to 132 kV S/s Bhupatwala, 132 kV Jwalapur Railway Substation, SIDCUL Industrial area, Urban and Rural areas of Haridwar. Construction of proposed line would also help in reliable power supply to Jwalapur during the low hydro generation (Low generation of Chilla PEP).

With regard to loan assistance, it has been submitted by the Petitioner that REC has sanctioned a loan of Rs. 5.372 Crore @ 12% Interest rate against the total estimated cost of Rs. 6.77 Crore as per revised DPR.

**(c) Construction of 2 X 40 MVA, 132 kV Substation Chudiyala and its LILO Line**

The Petitioner stated that 132 kV sub-station Bhagwanpur is overloaded and around 30-40 MW load shedding is being carried out during peak load conditions in and around Bhagwanpur area, due to which the Industries and public at large of the area were getting affected and over loading of transformers

as well as lines were resulting in high losses. Also, due to non-availability of space at Bhagwanpur, new 33 kV bays cannot be constructed, therefore, it is imperative to construct a new 132/33 kV sub-station at Chudiyala which would be charged through LILO from second circuit of existing nearby double circuit line which would provide relief to 132 kV sub-station Bhagwanpur.

With regard to loan assistance, the Petitioner has submitted that REC has sanctioned a loan of Rs. 11.76 Crore @ 12% Interest rate against total estimated cost of Rs. 16.80 Crore as per revised DPR.

**(d) Augmentation of 132 kV Sub-Station Jwalapur**

The Petitioner stated that augmentation of 132 kV Sub-Station Jwalapur was essential as both the existing 40 MVA transformers installed at the substation were overloaded. Therefore, it has been proposed to enhance the capacity of the 132/33 kV Jwalapur Substation from 2x40 MVA to 3x40 MVA to overcome the existing overload of this sub-station and also to meet the future load growth of this area on account of upcoming Ardh Kumbh Mela in 2016 thereby avoiding power cut, on account of the overloading of the Jwalapur S/s, for areas being fed from this substation.

With regard to loan assistance, the Petitioner has submitted that REC has sanctioned a loan of Rs. 3.02 Crore @ 12% Interest rate against the total estimated cost of Rs. 4.32 Crore as per DPR. The Petitioner has further submitted the estimated cost of Rs.6.34 Crore in the revised DPR.

**Commission's Analysis and views**

8. On examining the submissions made by the Petitioner in the proposals, the project-wise observations are as follows:

**(a) Augmentation of 220 kV Substation SIDCUL, Haridwar from 2 X 80 MVA (132/33 kV) to 2x80 MVA (132/33 kV)+1x50 MVA (220/33 kV).**

On analyzing the proposal for augmentation of 220 kV S/s SIDCUL and associated works and various submissions made from time to time in this regard, it has been observed that during the month of May and June 2015, in one

of the existing 80 MVA transformers the maximum load exceeded the rated current capacity of 350 Amp (Rated Current Capacity of 80 MVA on 132kV side) on most of the days while on the other 80 MVA transformer, the load touched nearly 350 Amp and also exceeded at times during the period.

Further, with regard to the submission of the Petitioner on load growth, it has been observed that at present the connected load to the S/s is 160 MVA, i.e. upto the maximum capacity of the S/s. The Commission also took cognizance of a letter of UPCL submitted alongwith the Petition, seeking augmentation on the basis of present load condition (Average load of 692 Amp on 132 kV side) and future load growth. Considering the existing load conditions, load growth projected by UPCL and based on the submissions made by the Petitioner, the Commission is of the view that installation of additional 50 MVA (220/33 kV) S/s would be necessary to relieve the load on the existing transformers and to cater the future load growth. Hence, the augmentation of 220 kV S/s SIDCUL from 2 X 80 (132/33 kV) to 2X 80 (132/33 kV)+1x50 (220/33 MVA) including 3 Nos. 33 kV Bays for investment approval appears reasonable.

It is, however observed that the Petitioner has not taken timely action allowing the load to build up to more than 100% of capacity. Petitioner is directed to ensure timely action for augmentation/creation of new capacity so that not only the existing consumers are not subjected to load shedding due to capacity constraints but also so that upcoming consumers get served promptly.

**(b) Construction of 132 kV overhead line from 220 kV substation SIDCUL, Haridwar to 132 kV Substation Jwalapur and construction of 132 kV bays at both ends.**

It has been observed that at present 132 kV Jwalapur S/s is getting supply mainly through 132 kV Chilla-Jwalapur line and 132 kV SIDCUL Jwalapur line. In the eventuality of low generation of Chilla HEP or closure of the Chilla HEP, the present 132 kV SIDCUL Jwalapur line gets overloaded as the same is incapable of catering the peak load of Jwalapur S/s.

Further, from the submission of the Petitioner, it has also been observed that the distribution licensee namely UPCL has also raised the issues of frequent load shedding it is forced to carry out due to constraint in existing transmission network of the Petitioner including overloading of 132/33 kV transformers at Jwalapur discussed below. Based on the above, the Commission is of the view that the augmentation of Jwalapur S/s is imperative and also for feeding the power to Jwalapur from 220 kV SIDCUL, Haridwar S/s construction of additional 132 kV line seems to be justified.

**(c) Construction of 2x40 MVA, 132 kV Substation Chudiyala and its LILO Line**

From the submissions of the Petitioner, it has been observed that due to overloading of 132 kV sub-station Bhagwanpur S/s, presently a load shedding of around 30-40 MW is being carried out for the protection and stability of the system. The connected load at the S/s is observed as 141.75 MVA against the existing capacity of 120 MVA (2x40 MVA+1x40 MVA). Besides this, it has also been submitted by the Petitioner that the upcoming load of the area due for release is 15.5 MVA. Hence, to overcome the constraints of the system, augmentation of the Bhagwanpur S/s seems to be justified. However, considering the submission of the Petitioner that there is a space constraint at Bhagwanpur S/s for additional Bay, proposal of the Petitioner for constructing a new S/s at Chudiyala appears to be appropriate.

**(d) Augmentation of 132 kV Sub-Station Jwalapur (from 2x40 MVA to 3x40 MVA).**

From the submission of the Petitioner, it has been observed that at present Jwalapur S/s is having 2x40 MVA capacity and the connected load at the S/s is 80 MVA. The maximum load observed on both the existing transformers after load shedding has touched upto 172 Amp (on 132 kV side) and on most of the days the maximum load remain beyond 150 Amp against the rated current of 175 Amp of 40 MVA transformer on 132 kV side. Further, the Petitioner has projected an upcoming load of 39 MVA in the area.

Hence, considering the existing load conditions of the S/s and future load growth, augmentation of the Jwalapur S/s seems to be justified.

9. From the analysis of existing load and upcoming load on all 132 kV S/s and lines, it is observed that the Substations and lines will be running almost on their full load capacity and the system is not in a position to meet out the N-1 contingency. The Commission, however, is agreeing to the investment proposals for carrying out the above works, keeping in view the urgent requirement.
10. On examination of the proposals, it has also been observed that while preparing the estimate for the revised DPRs, the Petitioner in addition to contingency and cost of establishment, audit & accounting has added quantity variation and cost escalation @ 20% and IDC in the estimate. In absence of any justified reasons for including quantity variation and cost variation, the Commission is not considering the same as of now.
11. Thus, the proposals submitted by the Petitioner for capital investment of Rs. 39.11 Crore, the Commission hereby grants in-principle approval for the investment of **Rs 29.69 Crore** only as per Table 2 given below with the direction that the Petitioner should go ahead with the aforesaid works subject to the fulfillment of the conditions mentioned below:

**Table 2: Cost considered by the Commission**

S. No.	Particulars	Transformer Capacity MVA	Proposed cost including IDC as per DPR/revised DPR (Rs. Crore)	Cost Considered by Commission (Rs. Crore)
1	Augmentation of 220kV S/s SIDCUL, Haridwar	2x80 MVA(132/33 kV) to 2x80 MVA(132/33 kV) + 1x50 MVA (220/33 kV)	9.20	6.43
2.	Construction of 132 kV overhead line from 220 kV substation SIDCUL, Haridwar to 132 kV Substation Jwalapur and construction of 132 kV bays at both ends	-	6.77	4.77
3.	Construction of 132 kV Substation Chudiyala and its LILO Line	2x40 MVA	16.80	14.06
4.	Augmentation of 132 kV substation Jwalapur	2x40 MVA to 3x40 MVA	6.34	4.43
	<b>Total</b>		<b>39.11</b>	<b>29.69</b>

- a) All the loan conditions as may be laid down by the funding agency in their detailed sanction letter are strictly complied with. However, the Petitioner is

directed to explore the possibility of swapping this loan with cheaper debt option available in the market.

- b) 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 agreed by the State Government or any other source in respect of the proposed schemes.
  - c) After completion of the aforesaid schemes, the Petitioner shall submit the completed cost and financing of the schemes.
  - d) 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.
12. The Petitioner is also directed to furnish within one month of this Order details of all substation having loading of 80% or more of the capacity and action plan for augmentation/new substation. Similarly details of overloaded lines and action plan to reduce loading of these lines be furnished.

**(K.P. Singh)**  
**Member**

**(C.S. Sharma)**  
**Member**

**(Subhash Kumar)**  
**Chairman**