

**BEFORE**  
**CHHATTISGARH STATE ELECTRICITY REGULATORY COMMISSION**

**PETITION NO. -----**

**PETITIONER:** CHHATTISGARH STATE POWER  
TRANSMISSION COMPANY LTD,  
***3<sup>rd</sup> FLOOR, SEWA BHAVAN,***  
***RAIPUR.***

**In the matter of:**

Approval of ADDITIONAL CAPITAL INVESTMENT PLAN for the  
control period from FY 2016-17 to FY 2020-21

September 2019

Chief Engineer (Commercial & Regulatory Affairs)

CSPTCL: Raipur

# Introduction

Chhattisgarh State Electricity Board (CSEB) was a part of the erstwhile Madhya Pradesh Electricity Board (MPEB) till 2000. It became a separate entity on the formation of the State of Chhattisgarh. The Board functioned as unified entity till December 2008 when the State Government notified a transfer scheme in pursuance of the provisions of part XIII (Sections 131 and 133) of the Electricity Act, 2003 for unbundling it with effect from 1 January 2009. The transfer scheme resulted in the formation of five successor entities for undertaking the functions of the erstwhile Board viz.

- a. Chhattisgarh State Power Holding Company Limited (CSPHCL)
- b. Chhattisgarh State Power Generation Company Limited (CSPGCL)
- c. Chhattisgarh State Power Transmission Company Limited (CSPTCL)
- d. Chhattisgarh State Power Distribution Company Limited (CSPDCL)
- e. Chhattisgarh State Power Trading Company Limited (CSPTraCL)

The functions of generation, transmission, distribution and trading have been allocated to the respective successor entities. All these companies have been envisaged as the wholly owned subsidiaries of Chhattisgarh State Power Holding Company Limited. Chhattisgarh State Power Transmission Company Limited (CSPTCL) as mentioned above has been formed for undertaking the 'transmission function' of CSEB. CSPTCL started operations on 1<sup>st</sup> January 2009. As per Section 39 of Electricity Act, 2003, CSPTCL being a STU is responsible for the following broadly activities:

- a. To undertake transmission of electricity through intra-state transmission system
- b. To discharge all functions of planning and coordination related to intra-state transmission system
- c. To ensure development of an efficient, coordinated and economical system of intra-state transmission line for smooth flow of electricity from a generating station to load centre
- d. To provide non-discriminatory open access of its transmission system for use by any licensee or generating company or any other consumer etc.

According to Clause 7 of CSERC MYT Regulations, 2015, "The generating company, STU/ transmission licensee, SLDC and distribution licensee shall file for approval of the Commission a capital investment plan by 31<sup>st</sup> October 2015. The capital investment plan should cover the entire control period, with details for each year of the control period."

In compliance to above, CSPTCL had filed a petition no. 101 of 2015 (M) before Hon'ble CSERC for approval of Capital Investment Plan (in short CIP) for the control period FY 2016-17 to 2020-21. Hon'ble CSERC vide their order dated 26.03.2016 had approved the CIP in respect of CSPTCL.

**1. BRIEF DETAILS OF CAPITAL INVESTMENT APPROVED THROUGH ORDER DATED 26.03.2016:-**

2. Capital investment approved by Hon'ble CSERC vide their order dated 26.03.2016 in respect of CSPTCL CIP for FY 2016-17 to 2020-21 under various schemes are tabulated below :-

Particulars	Scheme Provision in Rs Crs	Expenditure Incurred up to FY 15	Capital Expenditure in Rs Crs Considered in Control Period					
			FY 16	FY 17	FY 18	FY 19	FY 20	FY 21
<b>SPILL OVER WORKS</b>	1977.15	137.45	369.54	477.92	324.35	178.75	52.41	54.20
<b>NEW Normal Development Works</b>	1719.2	0	0	409	427	426.2	268	135
<b>TOTAL</b>	<b>3696.35</b>	<b>137.45</b>	<b>369.54</b>	<b>886.92</b>	<b>751.35</b>	<b>604.95</b>	<b>320.41</b>	<b>189.20</b>

**Remark:-**

- i- Total expenditure proposed for 400/220 KV substation Bilaspur and its associated transmission lines that is Rs. 325.63 Crs approved in Business Plan FY 2010-13 and kept under review is included in the spillover scheme provision given in the table, however no expenditure is allowed under the control period for the same.
- ii- Total expenditure proposed for 220/132 KV substation Rakhi and its associated transmission lines of Rs. 132 Crs are included in the spillover scheme provision given in the table, however expenditure is allowed under the control period from FY 21 with completion target by beyond FY 21.

**3. Brief Progress of capital works approved under CIP FY 2016-21 :-**

**(a) Spill Over Works Scheme:-**

- i- Work of construction/commissioning of 400/220KV substation, Jagdalpur & its associated transmission lines has been completed and commissioned.
- ii- Work of construction/commissioning of **three** no. 220/132KV substation at Gerwani, Borjhara & Jagdalpur along with its associated transmission lines has been completed. Work of construction/commissioning of **one** no. 220/132KV substation at Narayanpur along with its associated transmission lines is under progress and shall be completed by September 2019. Construction activities of one no 220/132KV substation at Rakhi could not be started due to reason stated as above.
- iii- Out of 15 numbers 132/33KV substations , work of construction/commissioning of 14 numbers 132KV substation has been completed except 132KV substation at Bijapur which shall be completed by March 2020.

**(b) New Normal Development Works –**

- i- Work of construction/commissioning of two no. 220/132KV substation at Dharsiwa & at Kawardha along with its associated transmission lines has been completed. Work of construction/commissioning of one no. 220/132KV substation at Bilaspur along with its associated transmission lines is under progress and shall be completed by December 2019. One number 220/132KV substation Parsada along with its associated transmission lines has been deferred.
- ii- Out of 17 numbers 132/33KV substations, work of construction/commissioning of 08 numbers 132KV substation have been completed. From the remaining 9 nos. substations and its associated transmission lines, the status is as under:-
- a- Up-gradation of approved 2 nos. 132KV substation namely Daldalseoni & Dharamjaygarh to 220KV is being proposed through instant petition.
- b- Land acquisition, administrative approval, tender etc is under progress for 05 nos 132KV substations namely Indagaon ,Chhawani(Bhilai), Baijalpur, Janakpur & Sarora .
- c- Two nos substations namely 132KV Nagarnar & Raoghat has been deferred.
- iii- Other capital works related to system improvement works covered in spill over & new ND schemes like second circuiting of existing EHV lines, augmentation of transformers, commissioning of additional transformers etc, it is to state that some of them has been completed, few are under progress and for balance works are being taken up.

**(c) Additional Capital Works approved by Hon’ble Commission during Current Control Period:-**

Apart from the above during the instant control period that is FY 2016-17 to FY 2020-21, as per the requirement of CSPDCL and field offices of CSPTCL, detailed proposal of certain other capital works were submitted to Hon’ble Commission for approval time to time and the same were approved by the Hon’ble Commission. These works are also being included in the instant additional CIP petition to obtain the regulatory approval. The list of such works is being given hereunder for kind perusal.

SN	Particulars	Scheme Provisions in Rs Crs	Approval of Commission vide letter no and date	Remark
1	Strengthening of existing 132KV lines feeding power to Raipur area.	11.35	1632 dated 16.09.2016	Contract awarded & Work is under progress
2	132/33KV Substation, Udaipur& its associated transmission lines.	27.00	862 dated 08.06.2017	Contract awarded & Work is under progress
3	132/33KV substation, Kharmora) Distt Korba & its associated transmission lines.	27.98	414 dated 13.03.2018	Contract awarded & Work is under progress

4	Renovation of 132KV switchyard of old 100MW PH Korba East.	10.00	1179 dated 11.07.2018	Contract awarded & Work is under progress
5	132/33KV Substation, Indamara Distt RJN & its associated transmission lines.	31.00	1179 dated 11.07.2018	Tender is under process
6	132/33KV Substation, Khairagarh Distt RJN & its associated transmission lines.	43.00	1179 dated 11.07.2018	Tender is under process
7	132/33KV Substation, Mathkharora Distt Raipur & its associated transmission lines.	40.00	1179 dated 11.07.2018	Tender is to be issued
8	132/33KV Substation, Siltara-II Distt Raipur & its associated transmission lines.	21.94	431 dated 14.03.2018	Contract awarded & Work is under progress
9	Purchase of Arial Platform for maintenance work of EHV lines and substations.	26.10	1329 dated 15.09.2017	Order placed
10	LILO of 220KV Korba East –Siltara line at DSPM for evacuation of power from DSPM Power house Korba.	3.36	1641 dated 15.11.2016	Contract awarded & Work is under progress
11	132KV Manendragarh-Janakpur line for supply of 132KV substation Janakpur	100.00	already approved in CIP FY 2016-21 with scheme provision of Rs 36.50 Cr.	Proposed to start by FY 20 with completion target by FY 22.
	<b>Total</b>	<b>341.73</b>		

**(d) 400/220 KV Substation, Bilaspur(Dhardehi) & its associated transmission Lines:-**

Proposal for 400 KV substation Bilaspur & its associated transmission lines were approved by Hon'ble CSERC in the Business Plan FY 2010-13 under normal development scheme and the complete scheme was kept under review in their order dated 28.03.2011 in the matter of approval of additional BP FY 2010-13. This scheme was put up for approval twice during the control period FY 13-16 & FY 2016-21 but no expenditure is allowed. However, scheme provision for the said schemes is the part of the total scheme provisions approved under current control period capital investment plans. This scheme is a part of spill over works with scheme provision of Rs.325 Cr. CSPTCL through the current petition once again requests Hon'ble Commission to consider the submission made by CSPTCL in the past in this regard and allow the expenditure to start working on this scheme proposed to be started w.e.f. FY 2020-21 with completion target beyond FY 2020-21. Details of scheme provision along with expenditure proposed in above scheme are being given below for consideration.

S	Particulars	Scheme	Approx.	Expenditure proposed in Rs Crs during FY
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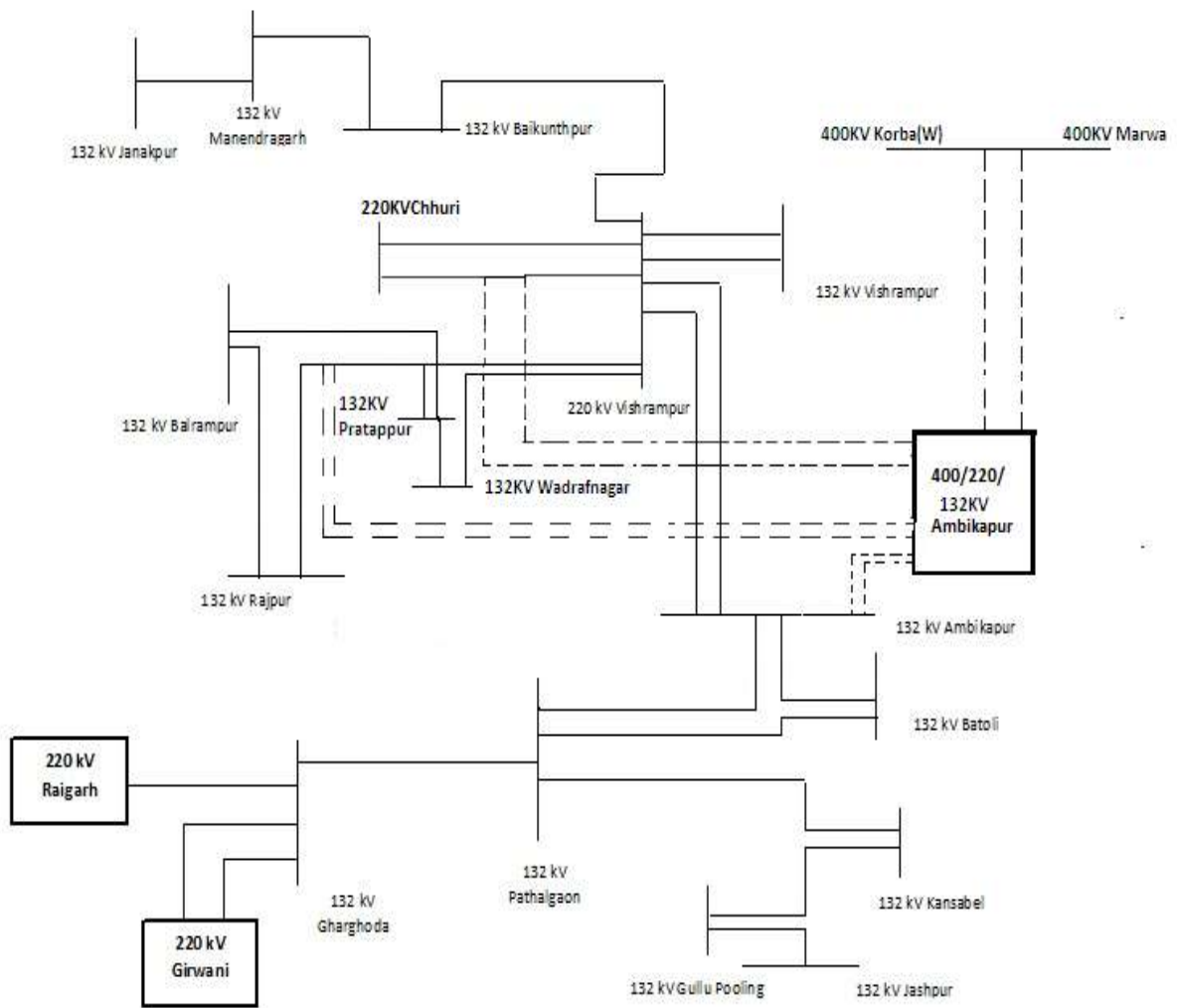
N		Provision in Rs Crs.	Line Length in Ckt KM/ S/s Capacity in MVA	FY 21	FY 22	FY 23	FY 24
1	400/220 KV S/S Bilaspur	126	2x315 MVA	15	50	50	11
2	LILO of 400KV Korba(W) - Raita	55	2x50= 100 KM	10	25	20	0
3	400 KV Bilaspur-Sipat DCDS Line	60	2x40= 80 KM	0	20	30	10
4	220 KV Bilaspur-Suhela DCDS Line + 2 No.220KV feeder Bay at Suhela	61.61	2x110= 220 KM	0	15	25	21.61
5	220 KV Bilaspur-Mopka DCDS Line + 2 No 220KV feeder bay at Mopka	22.40	2x40= 80 KM	0	6	10	6.4
	<b>Total</b>	<b>325.01</b>		<b>25</b>	<b>116</b>	<b>135</b>	<b>49.01</b>

#### **4. New Additional Capital Works proposed :-**

##### **A-400/220/132KV substation, Ambikapur & its associated transmission Lines:-**

220/132KV substation at Ambikapur along with its associated transmission line was proposed through the CIP FY 2016-21 petition but not approved. Presently 14 Numbers 132KV substations of Sarguja area are getting supply /inter connected through each other by way of 132KV circuits radiating from 220KV substation Raigarh & only 220KV substation Bishrampur (only one 220KV substation of Sarguja area). Therefore, looking to the 132KV existing substations of Sarguja area & their connectivity for getting supply, it would be appropriate to construct 400/220/132KV substation at Ambikapur/adjacent area as per the availability of required land and there after rearrangement of connectivity of said substation in order to maintain stable/reliable supply to the area and to meet out any emergency /contingencies including N-1 critaria. 400 KV supply to this substation shall be extended from LILO of 400 KV Korba (W) - Madwa line on Twin Moose.

Looking to future load growth at the areas getting supply from the above substations and to strengthen the transmission network in order to meet out any contingency, 400/220/132KV Ambikapur is being proposed through the current petition which shall be advantageous in improving voltage profile, reduction in T&D losses. This substation shall be feeding source to substations of Sarguja area which in turns strengthen the reliability/stability of supply. Single line diagram indicating connectivity of these 132KV EHV substations is being given below for kind perusal.



Details of scheme provision along with expenditure proposed in above scheme are being given below for consideration.

S N	Particulars	Scheme Provision in Rs Crs.	Approx. Line Length in Ckt KM/S/s Capacity in MVA	Expenditure proposed in RsCrs during FY			
				FY 21	FY 22	FY 23	FY 24
1	400/220/132 KV S/S Ambikapur	175	2x315 & 2x160 MVA	23	66	66	20
2	LILO of 400KV Korba W- Madwa (TM)/or 400KV DCDS TM line from Madawa PH	504	2x200= 400 KM	50	150	250	54

3	LILO of 220KV Chhuri-BishrampurCkt-I	45	2x40= 80 KM	8	16	16	5
4	LILO of 132 KV Rajpur-Pratappur Line	25	2x35= 70 KM	3	10	10	2
5	DCDS 132KV interconnector between 132KV Ambikapur and this 400/220/132KV S/s & 02 No. 132 kV feeder bay at 132KV Ambikapur	32	2x40= 80 KM	7	11	11	3
<b>Total</b>		<b>781</b>		<b>91</b>	<b>253</b>	<b>353</b>	<b>84</b>

The details of transformer capacity and maximum loading as on April-2019 is shown as below:-

S.N.	Name of Sub-station	Transformer Capacity (MVA)	Max. Loading (MW)
<b>220KV Sub-station</b>			
1	220KV S/s Chhuri	1 X 160	82
2	220KV S/s Bishrampur	2 X 160	290
		1X 40	30
3	220KV S/s Gerwani	1X 160	113
		2X 63	42
4	220KV S/s Raigarh	3X 160	362
		3 X 40	60
<b>132KV Sub-station</b>			
1	132 KV S/s Ambikapur	3X 40	61
2	132KV S/s Rajpur	1 X 40	19
3	132KV S/s Pratappur	1X 40	26
4	132KV S/s Wadrafnagar	1 X 40	14
5	132KV S/s Balrampur	1 X 20	16
6	132KV S/s Bishrampur	1 X 40+ 1X 20	35
7	132KV S/s Manendragarh	2 X 40	55
8	132KV S/s Baikunthpur	1 X 40+ 1X 20	31
9	132KV S/s Batoli	2 X 40	22

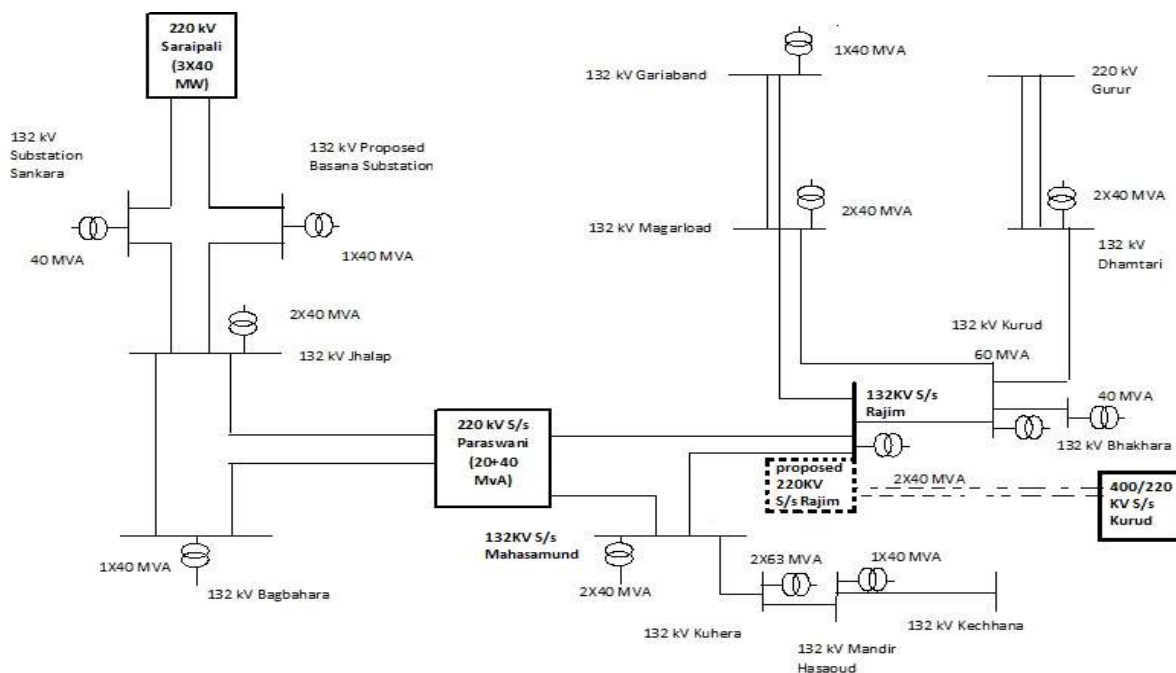


10	132KV S/s Kansabel	1 X 40	17
11	132KV S/s Jashpur	2 X20	24
12	132KV S/s Pathalgaon	1 X 40+ 1X 20	43
13	132KV S/s Gharghoda	2 X 40	42
14	132KV S/s Janakpur	1 X 40	Under construction

**B- Up-gradation of existing 132/33KV substation Rajim to 220/132/33 KV Substation Rajim:**

Presently 132 KV substation, Rajim is functioning with 3x40 MVA transformers (Total Load 81MW) and also having 132KV supply arrangement to existing 132KV substation Magarlod with 2x40MVA with transformers (Total Load 30MW) &132KV substation Gariaband with 1x40MVA transformer (Total Load 32MW) .

Single line diagram indicating existing inter-connectivity of these above mentioned sub stations along with other nearby substations are given below for kind perusal:-



A plain study of this single line diagram reveals that any contingency on 220KV part of 220KV substation Paraswani or on interconnecting lines may lead to cascade tripping which may cause total interruption to the area supplying power from the affected substations. Considering to the load growth in future to these area and to avoid cascade tripping etc., proposal for construction of 220 KV substation Rajim by upgrading existing 132 KV substation Rajim substation was being made under the petition for CIP FY 2016-21 with 220 KV supply arrangement from 400 KV substation Dhamtari(Kurud). But this substation could not be approved by Commission in the order issued on dated 26.03.2016. The matter was again raised through the review petition with

detailed justification but Commission again turn down the proposal. This substation may be beneficial with regard to the stability and also remain useful in case of contingency to Paraswani 220KV substation & its connected substations being connected with strong source that is 400KV Substation Dhamtari (Kurud). Therefore it is once again requested to consider this sub station construction along with its associated transmission lines

S N	Particulars	Scheme Provision in RsCrs.	Approx. Line Length in Ckt KM/S/s Capacity in MVA	Expenditure proposed in RsCrs during FY			
				FY 21	FY 22	FY 23	FY 24
1	Up gradation of existing 132 KV S/S Rajim to 220KV S/s	35	2x160 MVA	10	20	05	0
2	220 KV DCDS Rajim-Kurud Line	44.40	2x40= 80 KM	14.40	26	04	0
	<b>Total</b>	<b>79.40</b>		<b>24.4</b>	<b>46</b>	<b>09</b>	<b>0</b>

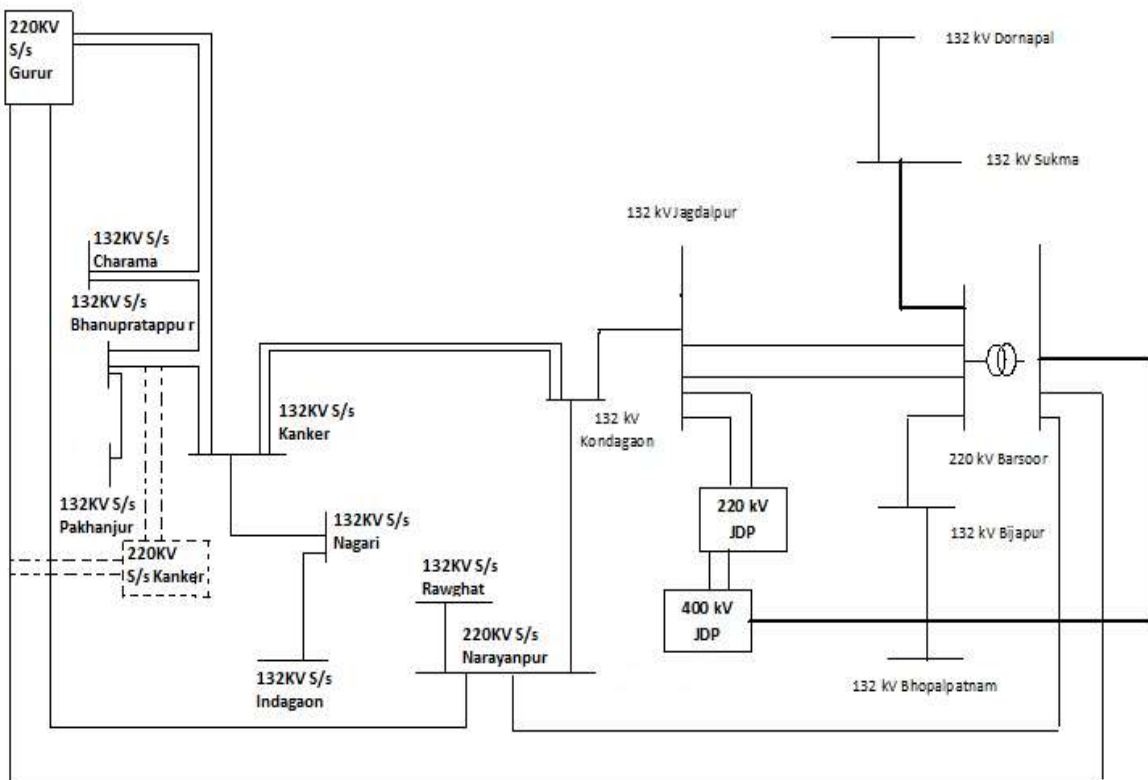
The details of transformer capacity and maximum loading as on April-2019 is shown as below:-

Sl. No.	Name of Sub-station	Transformer Capacity (MVA)	Max. Loading (MW)
<b>220KV Sub-station</b>			
1	220KV S/s Saraipalli	2X 160	242
		3X 40	78
2	220KV S/s Paraswani	2X 160	176
		2 X 40	24
3	220KV S/s Gurur	3X 160	342
		2 X 40	31
<b>132KV Sub-station</b>			
1	132 KV S/s Sakara	1X 63+ 1X 40	45
2	132KV S/s Basna	1X 40	20
3	132KV S/s Jhalap	2X 40	66
4	132KV S/s Baghbahara	2 X 40	40

5	132KV S/s Kuhera	2X 63	22
6	132KV S/s Mandir Hasoud	1X 40	30
7	132KV S/s Kachna	2X 63+ 1X40	121
8	132KV S/s Mahasamund	2X 40	60
9	132KV S/s Rajim	3X 40	81
10	132KV S/s Bhakhara	1X 40	18
11	132KV S/s Kurud	2X 40	33
12	132KV S/s Magarlod	2X 40	30
13	132KV S/s Gariyaband	1X 40	32
14	132KV S/s Dhamtari	2X 40	63

**C- 220KV Substation Kanker & its associated transmission lines:-**

This scheme was proposed in CIP FY 2016-21 petition in view of existing 132KV,220KV substations & proposed various substations in Bastar area. But this substation was not approved in the order issued on said petition on dated 26.03.2016. Single line diagram indicating existing, upcoming & proposed EHV substations inter-connectivity of Bastar area is as below:-



From the above single line diagram it is clear that in order to retain reliability & stability of supply to 132 KV EHV existing & future upcoming substations of Bastar area and also to meet out any contingency, construction of proposed 220/132KV substation Kanker is essential. This will improve the voltage profile, reduce the T&D losses & strengthen the network of LWE affected Bastar area which is having a large geographical area.

S N	Particulars	Scheme Provisio n in Rs Crs.	Approx. Line Length in Ckt KM/S/s Capacity in MVA	Expenditure proposed in Rs Crs during FY			
				FY 21	FY 22	FY 23	FY 24
1	220/132 kV S/s Kanker	50	2x160 & 2x40 MVA	16	27	07	0
2	LILO of 220 kV Gurur- Barsoor line	22.20	2x20= 40 KM	3.20	15	04	0
3	LILO of 132 kV existing Kanker - Bhanupratappur line	10.65	2x15 = 30 Km.	2.65	06	02	0
	<b>Total</b>	<b>82.85</b>		<b>21.85</b>	<b>48</b>	<b>13</b>	<b>0</b>

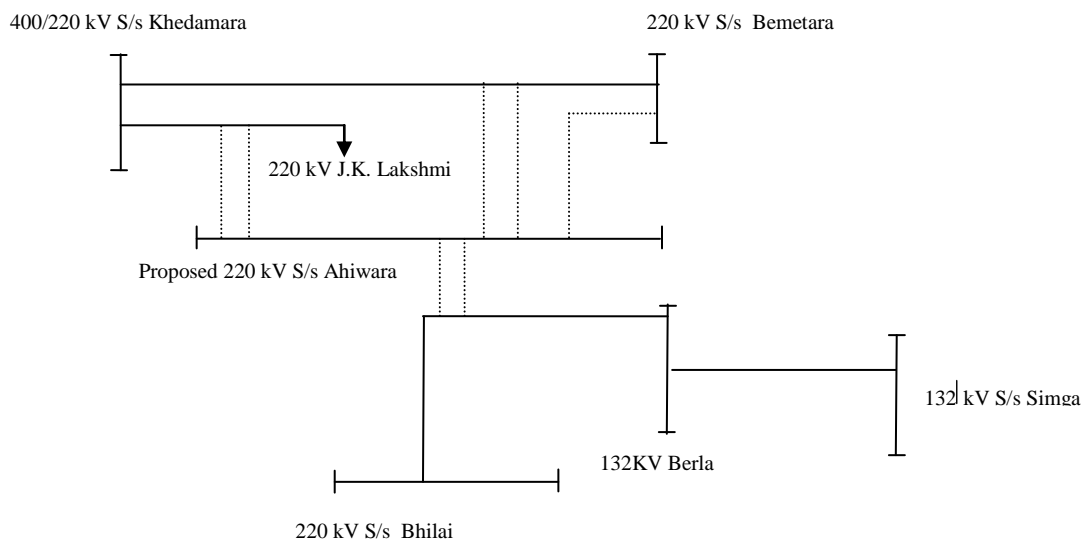
The details of transformer capacity and maximum loading as on April-2019 is shown as below:-

Sl. No.	Name of Sub-station	Transformer Capacity (MVA)	Max. Loading (MW)
<b>220KV Sub-station</b>			
1	220KV S/s Barsoor	1X160+ 1X120	172
		1X40	16
2	220KV S/s Gurur	3X 160	342
		2 X 40	31
3	220KV S/s Narayanpur	1x160 + 1x40	Under construction
4	220KV S/s Jagdalpur	1x160 + 1x40	Commissioned in Aug 19
<b>132KV Sub-station</b>			
1	132 KV S/s Nagari	1X 40	22
2	132KV S/s Kanker	2X40	69
3	132KV S/s Charama	1X 40	26

4	132KV S/s Jagdalpur	2X40+ 1X20	64
5	132KV S/s Bhanupratappur	2X40	23
6	132KV S/s Pakhanjur	1X 40	23
7	132KV S/s Kondagaon	1X 40	38
8	132KV S/s Sukma	1X 40	8
9	132KV S/s Dornapal	1X 40	3
10	132KV S/s Indagaon	1X 40	Under Construction
11	132KV S/s Nagarnar	1X 40	Deferred
12	132KV S/s Raoghat	1X 40	Deferred
13	132KV S/s Bijapur	1X 40	Under Construction

#### D- 220 kV Substation Ahiwara & its associated transmission lines:-

Presently the load of Ahiwara and nearby areas is feed from 220 kV Bhilai and Bemetara. CSPDCL has proposed this substation to improve the reliability/stability/voltage profile and increasing future load growth of Ahiwara and nearby areas it is necessary to construct 220/132/33 kV substation at Ahiwara. It is proposed to connect 220/132/33 kV substation Ahiwara from 400/220 kV substation Khedamara and 220 kV substation Bemetara by LILO of 220 kV Khedamara-Bemetara and 220 kV Khedamara-J.K. Lakshmi line of route length 43 Km and second circuiting of 220 kV line of route length 52 Km from 220/132 kV substation Bemetara to proposed 220/132 kV substation Ahiwara. LILO of 132 kV Bhilai-Berla feeder of route length 20 Km at 220/132/33 kV substation Ahiwara is proposed for proper reliability/stability/voltage profile of Ahiwara and nearby areas. This substation shall reduce the load of Power Transformers of 132KV Substation Bhilai & 132KV substation, Bemetara.



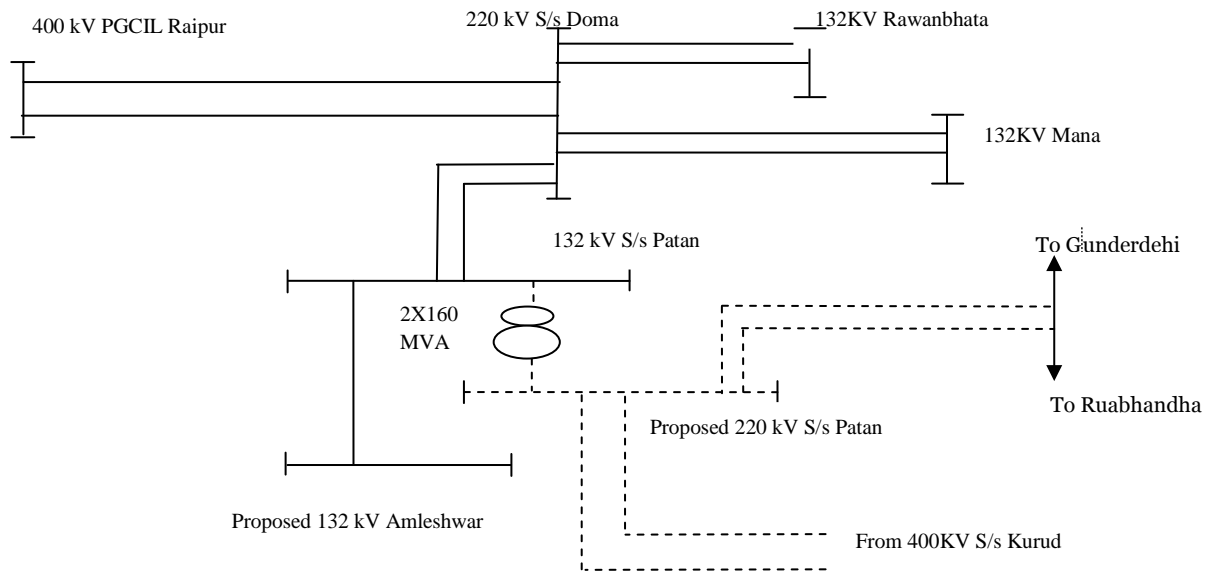
S N	Particulars	Scheme Provisio n in Rs Crs.	Approx. Line Length in Ckt KM/S/s Capacity in MVA	Expenditure proposed in Rs Crs during FY			
				FY 21	FY 22	FY 23	FY 24
1	220/132 KV S/S Ahiwara	50	2x160 & 2x40 MVA	16	27	07	0
2	LILO of 220 KV Khedamara-Bemetara Line & LILO of 220KV Khedamara-JK Lashmi Line at 220KV substation Ahiwara	1.11	1 KM	0.11	1.0	0	0
3	2 <sup>nd</sup> circuiting of 220KV Line from 220/132KV Substation Ahiwara to 220KV substation Bemetara + 1 No. 220KV feeder at 220 KV Bemetara	20.80	52 KM	10	10.8	0	0
4	LILO of 132 KV Bhilai- Berla Line at this substation	14.20	20 KM	4	10.2	0	0
	<b>Total</b>	<b>86.11</b>		<b>30.11</b>	<b>49</b>	<b>07</b>	<b>0</b>

The details of transformer capacity and maximum loading as on April-2019 is shown as below:-

Sl. No.	Name of Sub-station	Transformer (MVA)	Capacity	Max. Loading (MW)
<b>220KV Sub-station</b>				
1	220KV S/s Bemetara		2X 160	179
			2X 40	40
2	220KV S/s Bhilai		2X 160+ 3X125	408
<b>132KV Sub-station</b>				
1	132 KV S/s Berla		1X 40	23
2	132KV S/s Simga		1X 40+ 1X16	42

### E- 220 kV Substation Patan & its associated transmission lines:-

Distribution Company has proposed 132KV substation at Amleshwar to whom connectivity is feasible by laying 132KV DCDS line from existing 132KV Substation, Patan. Presently 132KV Patan substation is getting supply/connectivity from 220KV substation, Doma through a single circuit 132KV line. Amleshwar and rural areas of Durg district which is besides of MahadevGhat Raipur is developing very fast on account of development of new township causing huge load growth. Also load of Patan area is growing fast to improve the reliability/stability/voltage profile and increasing future load growth of Patan, Amleshwar and rural areas of Durg district, CSPDCL has proposed to construct 220/132kV substation at Patan that is upgradation of existing 132KV Substation Patan. It is proposed to connect 220/132kV substation Patan from 400/220 kV substation Kurud (Dhamtari) by construction of 220 kV DCDS line from Kurud (Dhamtari) to Patan. Also LILO of 132 kV Ruabandha-Gunderdehi feeder at 220/132 kV substation Patan is proposed for proper reliability/stability/voltage profile of Patan, Amleshwar and rural areas of Durg district.



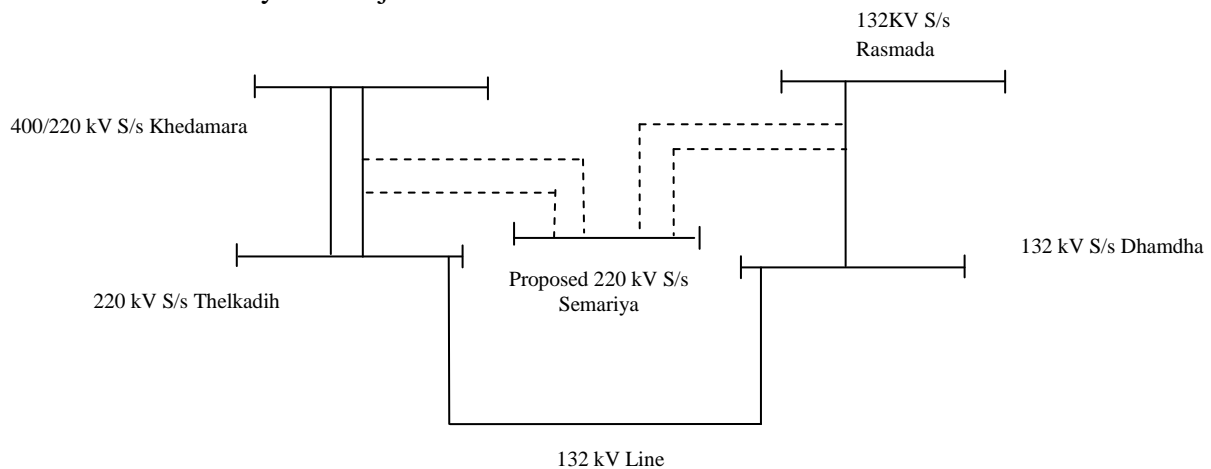
S N	Particulars	Scheme Provision in RsCrs.	Approx. Line Length in Ckt KM/S/s Capacity in MVA	Expenditure proposed in RsCrs during FY			
				FY 21	FY 22	FY 23	FY 24
1	220/132 KV S/S Patan	35	2x160	15	15	05	0
2	220 KV DCDS Line from 400KV Substation Kurud to 220KV Substation Patan + 2 No. 220KV feeder Bay at 400KV Substation Kurud	43.85	35 KM	17	20	6.85	0
3	LILO of 132 KV Ruabandha -Gunderdehi Line at this substation	25.56	36 KM	9	11	5.56	0
	<b>Total</b>	<b>104.41</b>		<b>41</b>	<b>46</b>	<b>17.41</b>	<b>0</b>

The details of transformer capacity and maximum loading as on April-2019 is shown as below:-

Sl. No.	Name of Sub-station	Transformer (MVA)	Capacity	Max. Loading (MW)
<b>220KV Sub-station</b>				
1	220KV S/s Doma	2X160		158
		2X 40		33
<b>132KV Sub-station</b>				
1	132 KV S/s Rawanbhata	1X63+ 1X40		70
2	132KV S/s Mana	2X40		33
3	132KV S/s Patan	1X 40		35
4	132KV S/s Amleshwar	2X40		Proposed

**F- 220 kV substation Semariya, Dhamdha& its associated transmission lines:-**

Presently the load of Semariya and nearby areas of Durg district are feed from 33 kV Litiya feeder emanating from 132 kV substation Dhamdha which is heavily loaded during paddy season. To improve the reliability/stability/voltage profile and increasing future load growth of Semariya and nearby areas of Durg district, CSPDCL has proposed to construct a 132KV substation at Semariya. To connect this substation from the existing substations & EHV line feasibility was checked and found that it is better to construct 220/132/33kV substation at Semaria in order to maintain reliable/stable supply and improvement of voltage profile of the area and adjacent existing 132KV substations. It is proposed to LILO of one circuit of 220 kV Khedamara-Thelkadih (Rajnandgaon line). Also LILO of 132 kV Dhamdha-Rasmada line at 220/132 kV substation Semariya is proposed for proper reliability/stability/voltage profile of Semariya and nearby areas of Durg district. Single line diagram indicating proposed substation and its connectivity with adjacent EHV substations shall be as below:-





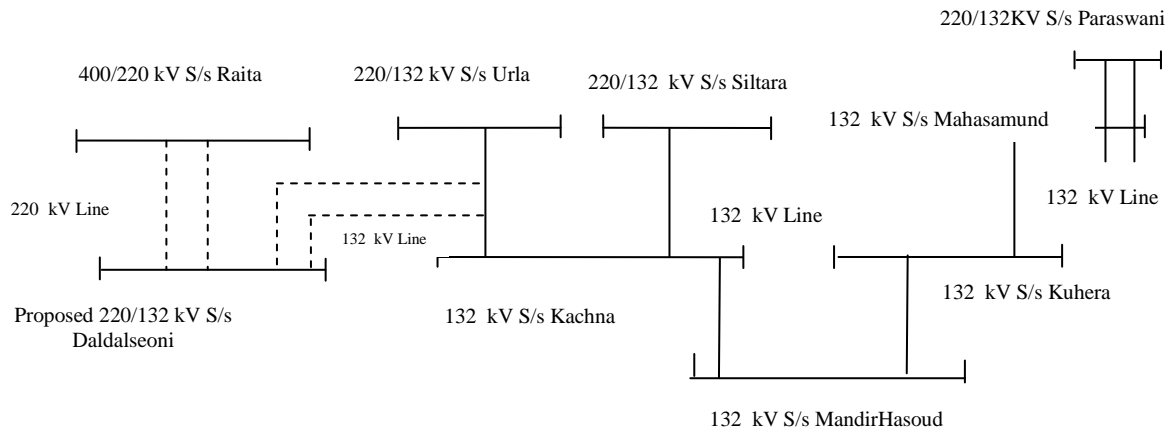
S N	Particulars	Scheme Provision in Rs Crs.	Approx. Line Length in Ckt KM/S/s Capacity in MVA	Expenditure proposed in Rs Crs during FY			
				FY 21	FY 22	FY 23	FY 24
1	220/132/33 KV S/S Semariya	50	2x160 +2x40 MVA	15	25	10	0
2	LILO of 220KV Thelkadih- Khedamara at 220KV Semariya	4.44	04 KM	1	3	0.44	0
3	LILO of 132 KV Dhamdha -Rasmada Line at this substation	7.10	10 KM	1.5	5	0.60	0
	<b>Total</b>	<b>61.54</b>		<b>17.5</b>	<b>33</b>	<b>11.04</b>	<b>0</b>

The details of transformer capacity and maximum loading as on April-2019 is shown as below:-

Sl. No.	Name of Sub-station	Transformer (MVA)	Capacity	Max. Loading (MW)
<b>220KV Sub-station</b>				
1	220KV S/s Thelkadih	2X160		176
		2X40		34
<b>132KV Sub-station</b>				
1	132 KV S/s Rasmada	2X40		29
2	132KV S/s Dhamdha	2X40		30

#### **G- 220 KV Substation Daldalseoni& its associated transmission lines:-**

Hon'ble Commission vide order dated 26.03.2016 in CIP FY 17 to FY 21 has already approved construction of 132/33 kV substation Daldalseoni along with associated 132 kV lines. Now looking to availability of land and to improve the reliability/stability/voltage profile and increasing future load growth of Raipur district and to avoid over loading of 132 kV substation Kachna, 132 kV substation Birgaon, 220 kV substation Siltara and 220 kV substation Urla construction of 220/132 kV substation Daldalseoni is necessary. It is proposed to construct 220 kV DCDS line of route length 30 Km from 400/220 kV substation Raita to 220 kV substation Daldalseoni and LILO of 132 kV Urla-Kachana line of route length 0.3Km at 220/132 kV substation Daldalseoni. Hon'ble Commission is requested to consider the proposal of 220KV substation Daldalseoni in place of approved 132KV substation Daldalseoni. Single line diagram indicating this substation and its connectivity with adjacent substations shall be as below:-



Proposed scheme provisions along with expenditure to be incurred during the financial years are as given below:-

S N	Particulars	Scheme Provision in Rs Cr.	Approx. Line Length in Ckt KM/S/s Capacity in MVA	Expenditure proposed in Rs Crs during FY			
				FY 21	FY 22	FY 23	FY 24
1	220/132/33 KV S/S Daldalseoni	55	2x160 +2x63 MVA	15	30	10	0
2	220KV DCDS Line from 400KV Substation Raita to this substation Daldalseoni +2 No. 220KV feeder Bay at 400KV S/S Raita	38.30	30 KM	8.3	18	12	0
3	LILO of 132 KV Urla - Kachana Line at this substation	0.71	01 KM	0.11	0.5	0.1	0
	<b>Total</b>	<b>94.01</b>		<b>23.41</b>	<b>48.5</b>	<b>22.1</b>	<b>0</b>

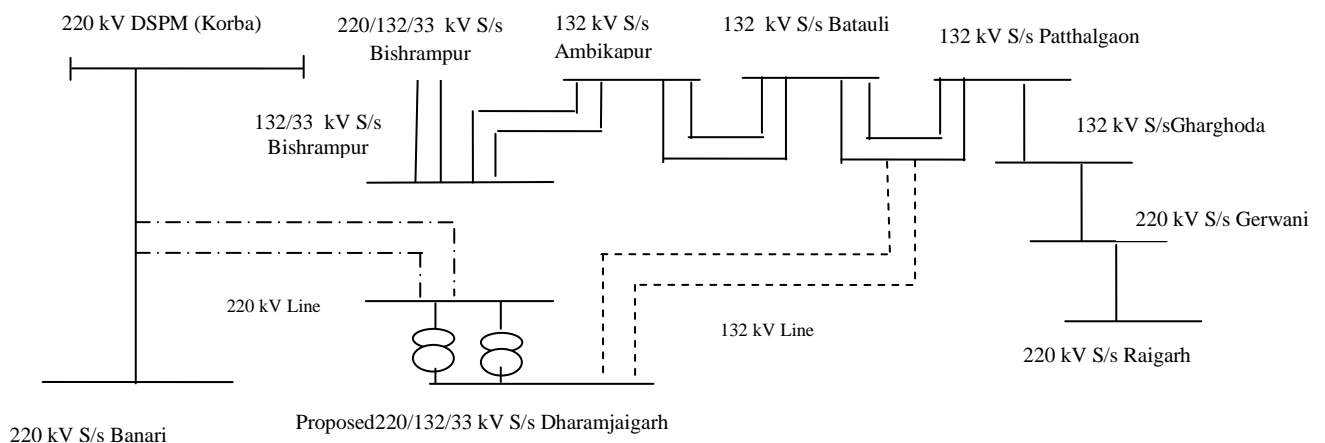
The details of transformer capacity and maximum loading as on April-2019 is shown as below:-

Sl. No.	Name of Sub-station	Transformer Capacity (MVA)	Max. Loading (MW)
<b>220KV Sub-station</b>			
1	220KV S/s Siltara	3X160	232
		1X63+ 3X40	142

2	220KV S/s Paraswani	2X 160	176
		2 X 40	24
3	220KV S/s Urla	3X160	387
		1X63+ 2X40	139
<b>132KV Sub-station</b>			
1	132KV S/s Kuhera	2X 63	22
2	132KV S/s Mandir Hasoud	1X 40	30
3	132KV S/s Kachana	2X 63+ 1X40	121
4	132KV S/s Mahasamund	2X 40	60

### H- 220 kV Substation Dharamjaigarh & Its associated transmission Lines :-

Hon'ble Commission vide order dated 26.03.2016 in CIP FY 17 to FY 21 has already approved construction of 132/33 kV substation Dharamjaigarh along with associated 132 kV lines. Now looking to availability of land and to improve the reliability/stability/voltage profile and increasing future load growth of Raigarh, Ambikapur and Jashpur district construction of 220/132 kV substation Dharamjaigarh is being proposed in place of approved 132KV substation Dharamjaygarh. It is proposed to construct LILO of 220 kV DSPM (Korba)-Banari line of route length 65 Km up to proposed 220/132 kV substation Dharamjaigarh and LILO of 132 kV Batauli-Patthalgaon line of route length 40 Km at 220/132 kV substation Dharamjaigarh. **Single line diagram indicating this substation and its connectivity with adjacent substations shall be as below:-**



Proposed scheme provision along with expenditure to be incurred during the financial years is as given below:-

S N	Particulars	Scheme Provision in Rs Crs.	Approx. Line Length in Ckt KM/S/s Capacity in MVA	Expenditure proposed in Rs Crs during FY			
				FY 21	FY 22	FY 23	FY 24
1	220/132/33 KV S/S Dharamjaygarh	50	2x160 +2x40 MVA	15	25	10	0
2	LILO of 220KV DSPM- Banari Line at 220KV substation <b>Dharamjaygarh</b>	77.70	70 KM	21.70	40	16	0
3	LILO of 132 KV Batauli - Pathalgaon Line at this substation	28.40	40 KM	8.40	12	8	0
	<b>Total</b>	<b>156.1</b>		<b>45.1</b>	<b>77</b>	<b>34</b>	<b>0</b>

The details of transformer capacity and maximum loading as on April-2019 is shown as below:-

Sl. No.	Name of Sub-station	Transformer (MVA)	Capacity	Max. Loading (MW)
<b>220KV Sub-station</b>				
1	220KV S/s Banari		2X 160	124
			1X 40	28
2	220KV S/s Bishrampur		2 X160	290
			1X 40	30
3	220KV S/s Gerwani		1X 160	113
			2X 63	42
4	220KV S/s Raigarh		3X 160	362
			3 X40	60
<b>132KV Sub-station</b>				
1	132 KV S/s Ambikapur		3X 40	61
2	132KV S/s Bishrampur		1 X 40+ 1X 20	35
3	132KV S/s Batoli		2 X40	22
4	132KV S/s Pathalgaon		1 X 40+ 1X 20	43
5	132KV S/s Gharghoda		2 X 40	42

**I- 220/132/33 KV Substation Guma/Bana/Kara (Distt Raipur)**

The Urla and Siltara industrial load growth centre has extensive industrial potential for new industries as well as capacity enhancement of existing industries. 220/132/33KV Sub-station Siltara ,Urla and Borjhara are mainly feeding power supply to industrial load growth centre Urla and Siltara as well as to major part of Capital city Raipur. The 220/132/33KV Sub-station Siltara has 09 No. 220KV feeder Bays 17 No. 132KV feeder Bays & 31 No. 33KV feeder bays and 220/132/33KV Sub-station Urla has 08 No. 220KV feeder Bays 15 No. 132KV feeder Bays &15 No. 33KV feeder bays. Therefore space is not available for extension of new 132KV and 33KV feeder bay at 220/132/33KV Sub-station Siltara and Urla for power supply to new industries as well as capacity enhancement of existing industries. Further, the loading of 220/132/33KV Borjhara substation has also reached up to its maximum capacity. The demand for new 132 KV &33KV feeder bay is increasing day by day, so for accommodating new industrial consumer by extension of addl. 132KV and 33 KV feeder bay, it is necessary to construct new 220/132/33KV substation at Guma/Bana/Kara (Distt Raipur) which will met the future load growth of industries and will improve the reliability/ stability Urla and Siltara growth centre.

It is proposed to connect 220/132/33 kV substation Guma/Bana/Kara by LILO of 220KVBorjhara-Bhilai line. This substation will feed power to newly proposed 132/33KV substation Metalpark (Siltara) in addition to Industrial Consumers.

S N	Particulars	Scheme Provision in Rs Crs.	Approx. Line Length in Ckt KM/S/s Capacity in MVA	Expenditure proposed in Rs Crs during FY			
				FY 21	FY 22	FY 23	FY 24
1	220/132/33 KV S/S Guma/Bana/Kara	55.2	2x160 MVA and 2X 63 MVA	15	30.2	10	0
2	220KV DCDS line from 220/132/33 KV S/S Ahiwara to 220/132/33 KV S/S Guma/Bana/Kara	27.75	25 KM	5	15	7.5	0
3	132 kV DCDS line from 220/132/33 KV S/S Guma/Bana/Kara to 132 kV S/s Sarora.	8.52	12 KM	2	5	1.52	0
	<b>Total</b>	<b>91.47</b>		<b>22</b>	<b>50.2</b>	<b>19.02</b>	<b>0</b>

The details of transformer capacity and maximum loading as on April-2019 is shown as below:-

Sl. No.	Name of Sub-station	Transformer Capacity (MVA)	Max. Loading (MW)
<b>220KV Sub-station</b>			
1	220KV S/s Bhilai	2X 160+ 3X125	408



## 5. Proposal of 132/33 KV Substations

### A- 132 kV substation Amleshwar, District Durg.

CSPDCL has proposed construction of 132KV substation Amleshwar District Durg. At Present supply to Amleshwar & nearby areas is fed through 33KV feeders emanating from 132/33KV Patan Substation. To meet out any contingency, construction of proposed 132/33 kV substation Amleshwar is essential. This will improve the voltage profile, reduce T&D losses and strengthen the network of Amleshwar& nearby areas.

S N	Particulars	Scheme Provision in Rs Crs.	Approx. Line Length in Ckt KM/S/s Capacity in MVA	Expenditure proposed in Rs Crs during FY			
				FY 21	FY 22	FY 23	FY 24
1	132/33 KV S/S Amaleshwar	21	2x40 MVA	3	9	9	0
2	132 KV DCDS Line from 132KV Substation Patan + 2 No. 132KV feeder Bay at 132KV Substation Patan	23.50	30 KM	4	10	9.5	0
	<b>Total</b>	<b>44.5</b>		<b>7</b>	<b>19</b>	<b>18.5</b>	<b>0</b>

### B- 132 kV substation Masturi / Malhar, Distt Bilaspur.

CSPDCL has proposed construction of 132KV substation Masturi / Malhar. At Present supply to Masturi & nearby areas is fed from 132/33 KV S/s Silpahri through 33 KV Masturi & 33 KV Malhar feeders having line length of 29 KM & 56 KM respectively. Maximum load on said feeders has reached up to 280 Amp & 260 Amp and calculated VR at tail end is 14.55 % & 36 % respectively. To meet out any contingency, construction of proposed 132/33 kV substation Masturi / Malhar is essential. This will improve the voltage profile, reduce T&D losses and strengthen the network of Masturi / Malhar & nearby areas.

S N	Particulars	Scheme Provision in Rs Crs.	Approx. Line Length in Ckt KM/S/s Capacity in MVA	Expenditure proposed in Rs Crs during FY			
				FY 21	FY 22	FY 23	FY 24
1	132/33 KV S/S Masturi/Malhar.	21	2x40 MVA	3	9	9	0
2	2 <sup>nd</sup> circuiting of 132KV Banari-Seorinarayan Line +1 No. 132KV feeder bay at each substation that is 220KV Substation Banari & 132KV substation seorinarayan.	7.96	19.205 KM	1.96	3	3	0
3	LILO of one circuit of Banari-Seorinarayan Line at 132KV substation Masturi/Malhar	23.43	33 KM	4	10	9.43	0
	<b>Total</b>	<b>52.39</b>		<b>8.96</b>	<b>22</b>	<b>21.43</b>	<b>0</b>

### C- 132 kV substation Baloda, District Janjgir-Champa

CSPDCL has proposed construction of 132KV substation Baloda. At Present supply to Baloda & nearby Khisora Khamriya areas & nearby areas is fed from 132/33 KV S/s Akaltara through 33 KV Baloda feeder having line length of 35 KM. Maximum load on this feeder has reached up to 270 Amp and calculated VR at tail end is 9.59 % . As such entire Baloda & nearby Khisora Khamriya areas are facing acute low voltage problem. To meet out any contingency, construction of proposed 132/33 kV substation Baloda & nearby Khisora Khamriya areas is essential. This will improve the voltage profile, reduce T&D losses and strengthen the network of Baloda & nearby Khisora Khamriya areas

S N	Particulars	Scheme Provision in Rs Crs.	Approx. Line Length in Ckt KM/S/s Capacity in MVA	Expenditure proposed in Rs Crs during FY			
				FY 21	FY 22	FY 23	FY 24
1	132/33 KV S/S Baloda	21	2x40 MVA	3	9	9	0
2	132 KV DCDS Line from 220KV Substation Banari + 2 No. 132KV feeder Bay at 220KV Substation Banari	22.18	21 KM	3.18	10	9	0
	<b>Total</b>	<b>43.18</b>		<b>6.18</b>	<b>19</b>	<b>18</b>	<b>0</b>

### D- 132 kV substation Betar, District Bemetara

CSPDCL has proposed construction of 132KV substation Betar to improve the reliability/ stability / Voltage profile of supply & to meet out increasing future load requirement of Dadhi, Betar & nearby areas. As such entire Dadhi, Betar & nearby areas are facing acute low voltage problem. To meet out any contingency, construction of proposed 132/33 kV substation Betar is essential. This will improve the voltage profile, reduce T&D losses and strengthen the network of Dadhi, Betar & nearby areas.

S N	Particulars	Scheme Provision in Rs Crs.	Approx. Line Length in Ckt KM/S/s Capacity in MVA	Expenditure proposed in Rs Crs during FY			
				FY 21	FY 22	FY 23	FY 24
1	132/33 KV S/S Betar	21	2x40 MVA	3	9	9	0
2	132 KV DCDS Line from 220KV Substation Kawadha + 2 No. 132KV feeder Bay at 220KV Substation Kawadha	27.05	35 KM	5	12	10.05	0
	<b>Total</b>	<b>48.05</b>		<b>8</b>	<b>21</b>	<b>19.05</b>	<b>0</b>

### E- 132 kV substation Keshkal, District Kanker :-

CSPDCL has proposed construction of 132KV substation Keshkal to improve the reliability/ stability / Voltage profile of supply & to meet out increasing future load requirement of Keshkal, Bastar & nearby areas. As such entire Keshkal & nearby areas are facing acute low voltage problem. To meet out any contingency, construction of proposed 132/33 kV substation Keshkal



is essential. This will improve the voltage profile, reduce T&D losses and strengthen the network of Keshkal & nearby areas.

S N	Particulars	Scheme Provision in Rs Crts.	Approx. Line Length in Ckt KM/S/s Capacity in MVA	Expenditure proposed in Rs Crs during FY			
				FY 21	FY 22	FY 23	FY 24
1	132/33 KV S/S Keshkal	21	2x40 MVA	3	9	9	0
2	LILO of 132 KV Kanker-Kondagaon Line.	27.05	35 KM	5	12	10.05	0
	<b>Total</b>	<b>48.05</b>		<b>8</b>	<b>21</b>	<b>19.05</b>	<b>0</b>

#### F- 132 KV Substation, Temari, District Bemetara:-

CSPDCL has proposed construction of 132/33KV substation Temri Tehsil Nawagarh, Distt. Bemetara to improve the reliability/ stability / Voltage profile of supply & to meet out increasing future load requirement of Temri & nearby areas of Nawagarh Tehsil. As such entire Temri & nearby areas of Nawagarh Tehsil are facing acute low voltage problem. To meet out any contingency, to maintain system security level of "N-1" "Single contingency for steady state operation", & to meet out increasing load requirement construction of proposed 132/33 kV substation 132/33KV substation Temri Tehsil Nawagarh, Distt. Bemetara is essential by construction of LILO of Simga-Chakarbhata line to 132 KV substation.

S N	Particulars	Scheme Provision in RsCrts.	Approx. Line Length in Ckt KM/S/s Capacity in MVA	Expenditure proposed in RsCrts during FY			
				FY 21	FY 22	FY 23	FY 24
1	132/33 KV S/S Temri Tehsil Nawagarh, Distt. Bemetara	21	2x40 MVA	6	15	0	0
2	LILO of 132KV Simga-Chakarbhata line	10.65	15 KM	4	6.65	0	0
	Total	31.65		10	21.65	0	0

#### G- 132KV Substation, Metal Park (Distt Raipur) :-

CSPDCL has proposed construction of 132/33KV substation Metal Park, Siltara. The Siltara growth centre is having industrial potential for new industries as well as capacity enhancement of existing industries. At present the space for addl. bay is not available at 220/132/33KV Substation Siltara for accommodating another consumer by extension of addl. bay which requires new EHV substation at Metal Park area of Siltara. The construction of 132KV substation Metal Park, Siltara will cater the load of EHV Urla, Siltara and Borjhara Substation also and will improve the reliability/ stability of industrial area.

S N	Particulars	Scheme Provision in Rs Crts.	Approx. Line Length in Ckt KM/S/s Capacity in MVA	Expenditure proposed in Rs Crs during FY			
				FY 21	FY 22	FY 23	FY 24

1	132/33 KV S/S Metal Park, Siltara	26.20	2x63 MVA	15	11.20	0	0
2	132KV DCDS line from 220KV S/s Bana+ 02 No. 132 kV feeder bay at 220KV S/s Bana	9.3	10KM	4.3	5	0	0
3	LILO of 132 KV Kuthrel-Bhilai Line.	14.20	20 KM	6.20	8	0	0
	<b>Total</b>	<b>49.7</b>		<b>25.5</b>	<b>24.2</b>	<b>0</b>	<b>0</b>

## 6. Transmission Line:-

### Construction of 132KV Manendragarh-Janakpur Line to charge the 132KV substation Janakpur :-

In the CIP FY 2016-21 order Hon'ble Commission has directed to explore the possibility of constructing LILO of Amarkantak-Morwa line for charging the 132KV substation Janakpur. As against proposal of construction of 132KV Manendragarh-Janakpur line. However Commission has allowed Rs 36.50 Crs as scheme provision for this. Matter was taken up with MP Transco but could not be metalized and hence it is decided to construct our own 132KV line that is 132KV DCDS Manendragarh-Janakpur line of about 82 Km length to connect with upcoming 132KV substation Janakpur. About 50KM forest is involved in between the said line and hence estimated cost of the line is increased to approximately Rs 100 Crs as against approved provision of Rs 36.5 Crs. It is requested to kindly consider the provision of Rs 100 Crs for construction said line as against approved provision of Rs 36.50 Crs.

## 7. Other System Improvement Works :-

In order to meet the requirement of proposed substations & to avoid overloading of lines of existing EHV substations and for improvement of reliability/stability of supply so as strengthen the grid system. Following Capital works is being proposed with regard to LILO of certain lines, construction of new lines and second circuiting of existing lines for kind consideration and approval of Hon'ble Commission.

SN	Particulars	Scheme Provision	Remark
1	Construction of Second circuiting of 132 kV Gharghoda-Gerwani line(RL- 25.442 Km.) and 02 No. 132 kV feeder bays.	9.83	To improve the reliability/ stability / Voltage profile of supply & to meet out increasing load requirement of 132KV S/s Ghaghoda, Patthalgaon, Kansabel & Jashpur Substations and also to maintain system security level of "N-1" "Single contingency for steady state operation", the 2nd circuiting of 132KV Gharghoda-Gerwani DCSS line is essential.
2	Construction of Second circuiting of 132KV Mungeli-Takhatpur line (RL- 36.234 Km.) and 02 No. 132 kV feeder bays.	13.07	to improve the reliability/ stability / Voltage profile of supply & to meet out increasing load requirement and also to maintain system security level of "N-1" "Single contingency for steady state operation", LILO of one

			circuit of 132KV DCDS Chakarbhata Kota line is proposed at 132KV S/s Takhatpur. 2nd Circuiting of 132KV Mungeli-Takhatpur line shall result in increased reliability of power supply to Thakhatpur, Kota and Chakarbhata Substations
3	Construction of LILO of one circuit of 132KV DCDS Chakarbhata Kota line from loc. No. 38 to 132KV Takhatpur (RL- 18 Km.) and 02 No. 132 kV feeder bays.	14.98	to improve the reliability/ stability / Voltage profile of supply & to meet out increasing load requirement, and also to maintain system security level of "N-1" "Single contingency for steady state operation",, LILO of one circuit of 132KV DCDS Chakarbhata Kota line from loc. No. 38 to is proposed at 132KV S/s Takhatpur which is connected through 220KVS/s Mungeli.
4	Construction of LILO of 132KV Bilaspur - Chakarbhata line at 220 kV S/s Bilaspur (RL- 29 Km.) and 02 No. 132 kV feeder bays.	22.79	to improve the reliability/ stability / Voltage profile of 132KV supply system of Bilaspur, Chakarbhata and areas of High Court of CG & to meet out increasing load requirement of these areas and also to maintain system security level of "N-1" "Single contingency for steady state operation",, LILO of 132KV Bilaspur - Chakarbhata line is proposed at under construction 220KV S/s Dhardehi
5	Construction of LILO of 132KV Bilaspur - Pathariya line from Loc. No. 36 to 220KV S/s Dhardehi (RL- 2.5 Km.) and 02 No. 132 kV feeder bays.	3.98	to improve the reliability/ stability / Voltage profile of 132KV supply system of Bilaspur, Pathariya and areas of High Court of CG & to meet out increasing load requirement of these areas, and also to maintain system security level of "N-1" "Single contingency for steady state operation",, LILO of 132KV Bilaspur - Pathariya line from Loc. No. 36 is proposed at 220KV S/s Dhardehi.
6	Construction of Second circuiting of 132KV Doma-Patan line (RL- 16.12 Km.) and 02 No. 132 kV feeder bays.	7.04	To improve the reliability/ stability / Voltage profile of supply & to meet out increasing load requirement and also to maintain system security level of "N-1" "Single contingency for steady state operation",, of the power from 132KV S/s Patan additional 132KV Connectivity from 220KV S/s Doma construction of Second circuiting of 132KV Doma-Patan line is required.
7	Construction of Second circuiting of Kawardha - Pandariya line (RL- 33 Km.) and 02 No. 132 kV feeder bays.	12.1	To improve the reliability/ stability / Voltage profile of supply and also to maintain system security level of "N-1" "Single contingency for steady state operation", & to meet out increasing load requirement 2nd circuiting of Kawardha - Pandariya line is required.

8	Construction of Second circuiting of 132 kV Mungeli-Pandariya line(RL- 38.54 Km.) and 02 No. 132 kV feeder bays.	13.76	To improve the reliability/ stability / Voltage profile of supply and also to maintain system security level of "N-1" "Single contingency for steady state operation", & to meet out increasing load requirement 2nd circuiting of Mungeli - Pandariya line is required.
9	Construction of Second circuiting of 132 kV Patthalgaon-Jashpur line (RL- 107 Km.) and 02 No. 132 kV feeder bays.	34.3	To improve the reliability/ stability / Voltage profile of supply and also to maintain system security level of "N-1" "Single contingency for steady state operation", & to meet out increasing load requirement 2nd circuiting of Patthalgaon-Jashpur line is required.
10	Construction of Second circuiting of 132 kV Pratappur-Balrampur line (RL- 60 Km.) and 02 No. 132 kV feeder bays.	20.2	To improve the reliability/ stability / Voltage profile of supply and also to maintain system security level of "N-1" "Single contingency for steady state operation", & to meet out increasing load requirement 2nd circuiting of Pratappur-Balrampur line is required.
11	Construction of LILO of one circuit of 132 kV DCDS line from Thelkadih-Dongargarh line to 132 KV substation Dongargaon (RL- 38 Km.) and 02 No. 132 kV feeder bays.	28.8	To improve the reliability/ stability / Voltage profile of supply and also to maintain system security level of "N-1" "Single contingency for steady state operation", & to meet out increasing load requirement of the power construction of LILO of one circuit of 132 kV DCDS line from Thelkadih-Dongargarh line to 132 KV substation Dongargaon is required.
12	Construction of LILO of one circuit of 220 kV DCDS line from PGCIL(Raipur)-Doma line at 220 KV substation Borjhara (RL- 20 Km.) and 02 No. 220 kV feeder bays.	24.4	To improve the reliability/ stability / Voltage profile of supply and also to maintain system security level of "N-1" "Single contingency for steady state operation of 220 kV substation Doma and Borjhara", & to meet out increasing load requirement of Raipur industrial area construction of LILO of one circuit of 220 kV DCDS line from PGCIL(Raipur)-Doma line at 220 KV substation Borjhara is required.

**8. Summary of additional capital works proposed through instant petition for approval of Hon'ble Commission:-**

SN	Particulars	Scheme Provisions in Rs Crs	Approval of Commission vide letter no and date	Remark
1	Strengthening of existing 132KV lines feeding power to Raipur area	11.35	1632 dated 16.09.2016	Work is under progress
2	132/33KV Substation, Udaipur	27.00	862 dated 08.06.2017	Work is under progress

3	132/33KV substation, Kharmora Distt Korba & its associated transmission lines	27.98	414	dated	13.03.2018	Work is under progress
4	Renovation of 132KV switchyard of old 100MW PH Korba East	10.00	1179	dated	11.07.2018	Work is under progress
5	132/33KV Substation, Indamara Distt RJN & its associated transmission lines	31.00	1179	dated	11.07.2018	Tendering under process
6	132/33KV Substation, Khairagarh Distt RJN & its associated transmission lines	43.00	1179	dated	11.07.2018	Tendering under process
7	132/33KV Substation, Mathkharora Distt Raipur & its associated transmission lines	40.00	1179	dated	11.07.2018	Tender is to be issued
8	132/33KV Substation, Siltara-II Distt Raipur & its associated transmission lines	21.94	431	dated	14.03.2018	Work is under progress
9	Purchase of Arial Platform for maintenance work of EHV lines	26.10	1329	dated	15.09.2017	Order placed
10	LILO of 220KV Korba East –Siltara line at DSPM for evacuation of power from DSPM Power house Korba	3.36	1641	dated	15.11.2016	Work is under progress
11	400KV Substation Bilaspur & its associated Transmission lines	325.01	Scheme Provision already approved in CIP FY 2016-21 order dated 26.03.2016			Request to allow to start the work from FY 2020-21 with completion target beyond FY 21.
12	400KV Substation Ambikapur & its associated Transmission lines	781	New Proposal through this petition.			Proposed to start the work from FY 2020-21 with completion target beyond FY 21
13	220 KV Substation Rajim & its associated transmission lines	79.4	New Proposal through this petition.			Proposed to start the work from FY 2020-21 with completion target beyond FY 21
14	220 KV Substation Kanker & its associated transmission lines	82.85	New Proposal through this petition.			Proposed to start the work from FY 2020-21 with completion target beyond FY 21
15	220 KV Substation Ahiwara & its associated transmission lines	86.11	New Proposal through this petition.			Proposed to start the work from FY 2020-21 with completion target beyond FY 21

16	220 KV Substation Patan & its associated transmission lines	104.41	New through petition.	Proposal this	Proposed to start the work from FY 2020-21 with completion target beyond FY 21
17	220 KV Substation Daldalseoni & its associated transmission lines	94.01	New through petition.	Proposal this	Proposed to start the work from FY 2020-21 with completion target beyond FY 21
18	220 KV Substation Semariya & its associated transmission lines	61.54	New through petition.	Proposal this	Proposed to start the work from FY 2020-21 with completion target beyond FY 21
19	220 KV Substation Dharamjaygarh & its associated transmission lines	156.1	New through petition.	Proposal this	Proposed to start the work from FY 2020-21 with completion target beyond FY 21
20	132 KV Substation Amleshwar & its associated transmission lines	44.5	New through petition.	Proposal this	Proposed to start the work from FY 2020-21 with completion target beyond FY 21
21	132 KV Substation Baloda & its associated transmission lines	43.18	New through petition.	Proposal this	Proposed to start the work from FY 2020-21 with completion target beyond FY 21
22	132 KV Substation Masturi/Malhar & its associated transmission lines	52.39	New through petition.	Proposal this	Proposed to start the work from FY 2020-21 with completion target beyond FY 21
23	132 KV Substation Betar & its associated transmission lines	48.05	New through petition.	Proposal this	Proposed to start the work from FY 2020-21 with completion target beyond FY 21
24	132 KV Substation Keshkal & its associated transmission lines	48.05	New through petition.	Proposal this	Proposed to start the work from FY 2020-21 with completion target beyond FY 21
25	Other System Improvement Works	205.25	New through petition.	Proposal this	Proposed to start the work from FY 2020-21 with completion target beyond FY 21
26	132KV Manendragarh-Janakpur line for supply of 132KV substation Janakpur	100.00	(already approved in CIP FY 2016-21 with scheme provision of Rs 36.50 Crs) as per revised estimate		Proposed to start by FY 20 with completion target by FY 22.

27	220/132/33 KV Substation, Bana/Guma/Kara and its associated transmission line	91.47	New Proposal through this petition.	Proposed to start the work from FY 2020-21 with completion target beyond FY 21
28	132/33 KV Substation, Temari and its associated transmission line	31.65	New Proposal through this petition.	Proposed to start the work from FY 2020-21 with completion target beyond FY 21
29	132/33 KV Substation, Metal Park and its associated transmission line	49.7	New Proposal through this petition.	Proposed to start the work from FY 2020-21 with completion target beyond FY 21
	<b>Total Expenditure in Rs Crs</b>	<b>2726.4</b>		

SN	Particulars	Total Scheme Provision in Rs Crs
1	400/220 KV Substations & its associated Transmission Lines	1106.01
2	220/132 KV Substations & its associated Transmission Lines	755.89
3	132/33 KV Substations & its associated Transmission Lines	608.44
4	Other System Improvement Works	256.06
	<b>Total</b>	<b>2726.40</b>

Detailed scheme provision along with expenditure proposed during the current control period & beyond the control period is as per the annexure enclosed with the petition.

#### **9. Approved Capital Worksdeferred :-**

- a- Following capital works already approved by Hon'ble Commission vide order dated 26.03.2016 in the matter of approval of capital investment Plan in respect of CSPTCL in petition no. 101 of 2015(M) has been deferred and shall be submitted again through next control period Capital Investment Plan Petition through spill over works scheme :

SN	Particulars	Scheme Provisions in Rs Crs
1	220 KV substation Rakhi & its associated transmission Line	132
2	LILO of 132KV Birgaon - Gudiyari line at 220KV substation Borjhara+ 2 No. feeder bay at Borjhara	16
3	220 KV substation Parsada & its associated transmission Line	173.50

4	132KV Substation Nagarnar & its associated transmission Line	40.50
5	132KV Substation Raoghat & its associated transmission Line	35.50
	<b>Total</b>	<b>397.50</b>

- b- All the deferred works as above approved in CIP FY 2016-17 shall be the part of CIP petition of next control period under spill over works scheme.
- c- All the proposed new capital works through instant petition are over & above the works approved by the Hon'ble Commission's order dated 26.03.2016 shall be started during FY 2020-21 and shall be the part of CIP petition of next control period (2021-26) under spill over works scheme.

10. After submission of the above proposals of capital work total scheme provision shall be as below:-

SN	Particulars	Total Scheme Provision in Rs Crs
1	Total Scheme provisions allowed in the CIP order dated 26.03.2016	3696.35
2	Less deferred capital works scheme provision	397.50
3	Less Scheme provisions of 132KV Daldalseoni & its associated transmission lines	44.00
4	Less Scheme provisions of 132KV Dharamjaygarh & its associated transmission lines	38.50
5	Total Scheme provisions proposed in the additional CIP for FY 2016-21	2726.4
6	Total Scheme provisions (as per 26.03.2016 order + proposed in this petition - deferred capital works scheme provision)	5942.75

11. Total expenditure during the control period along with scheme provision after proposal of capital works through instant Addl Capital investment Plan and approved CIP FY 2016-21 by Hon'ble CSERC vide their order dated 26.03.2016 in respect of CSPTCL shall be as given below :-

Particulars	Scheme Provision in Rs Crs	Expenditure Incurred up to FY 15	Capital Expenditure in Rs Crs Considered in Control Period					
			FY 16	FY 17	FY 18	FY 19	FY 20	FY 21
SPILL OVER WORKS	1977.15	137.45	369.54	477.92	324.35	178.75	52.41	54.20
NEW Normal Development	1719.2	0	0	409	427	426.2	268	135
proposed through Addl.	2726.4	0	0	0	0	0	82	809.99



CIP								
<b>TOTAL</b>	6422.75	137.45	369.54	886.92	751.35	604.95	402.41	999.19

**12. FUNDING OF CAPITAL WORKS :-**

Funding for the proposed capital works shall be met through obtain loan to the tune of 80% of scheme provision proposed against each from PFC/other financial institutions and balance 20% shall be met out through internal resources.

**13. CAPITALIZATION OF CAPITAL WORKS:-**

Capitalization on capital works shall be considered in the next tariff petition after approval by Hon'ble CSERC.

**14. PRAYER:**

CSPTCL requests the Hon'ble Commission to :-

1. Admit & approve the Capital Works proposed under the additional Capital Investment Plan for the control period FY 2016-21.
2. Condone any inadvertent omission/errors/shortcomings and permit the petitioner to add/change/modify/alter this filing and make further submissions as may be required at a future date.
3. Allow CSPTCL to submit necessary additional information required by the Commission during the processing of this petition.
4. And pass such other and further order as are deemed fit and proper in facts and circumstances of the case.

**Chief Engineer (C & RA)  
CSPTCL: Raipur**