Business Plan for MYT Control Period FY 2016-17 to FY 2018-19

Submitted to:

Joint Electricity Regulatory Commission for the State of Goa & Union Territories

Submitted By:

Electricity Department of UT Chandigarh

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CHAPTER 1: INTRODUCTION

BACKGROUND

1.1 Chandigarh is a union territory in India which spreads over an area of 114 sq. km. The total population of Chandigarh as per 2011 census was 10,55,450 with population density being 9252 persons per sq. km. The Electricity Department of Chandigarh is deemed licensee under Section 14 of Electricity Act 2003 and is responsible for supply of uninterrupted & quality power to all categories of consumers in Chandigarh at the most economical rates. The department is engaged in the procurement, transmission and distribution of electricity to the various consumer categories in the Union Territory of Chandigarh. It does not have its own power generation station and completely rely on the Central Sector Generating Stations (CSGS) in Northern Region to meet its energy demand.

1.2 The table below gives an overview of present transmission and distribution infrastructure of Chandigarh electricity department as of 31.03.15

Table 1: Present Infrastructure

Particulars	Length (Kms)
220 KV Feeders	108
66 KV Feeders	151
33 KV Feeders	28
11 KV Feeders	898
LT Lines	1259
Distribution Transformers (Nos)	1885
Street Light Points (Nos)	19246
66 KV S/S	13
220 KV S/S	1
33 KV S/S	5

1.3 The key duties being discharged by Chandigarh Electricity Department are:

- Laying and operating of such electric line, sub-station and electrical plant that is primarily maintained for the purpose of distributing electricity in the area of supply of Chandigarh Electricity Department, notwithstanding that such line, sub-station or electrical plant are high pressure cables or overhead lines or associated with such high pressure cables or overhead lines; or used incidentally for the purpose of transmitting electricity for others, in accordance with Electricity Act. 2003 or the Rules framed there under.

- Operating and maintaining sub-stations and dedicated transmission lines connected there with as per the provisions of the Act and the Rules framed there under.
- Arranging, in-coordination with the Generating Company(ies), for the supply of electricity required within the boundary of the UT and for the distribution of the same in the most economical and efficient manner;
- Supplying electricity, as soon as practicable to any person requiring such supply, within its competency to do so under the said Act;
- Preparing and carrying out schemes for distribution and generally for promoting the use of electricity within the State.

1.4 The present power allocation of Chandigarh is approximately 320 MW from various generating stations including 84 MW from BBMB. The current demand is primarily dependent on the domestic and commercial which contributed approx. 77% to the total sales of CED in FY 14-15.

OBJECTIVE OF BUSINESS PLAN

1.5 The Joint Electricity Regulatory Commission (JERC) for the State of Goa and Union Territories, in exercise of powers conferred by sub section (1) of section 181 and clauses (zd), (ze) and (zf) of sub section (2) of section 181, read with sections 61, 62,83 and 86, of the Electricity Act 2003 (36 of 2003) and all other powers enabling it in this behalf, has issued the Joint Electricity Regulatory Commission for the State of Goa and Union Territories (Multi Year Distribution Tariff) Regulations, 2014, hereinafter referred to as "MYT Regulations".

1.6 As per the Regulations, the Distribution Licensee were required to file a Business Plan for Control Period of three financial years from April 1, 2015 to March 31, 2018, which shall comprise but not be limited to detailed category-wise sales and demand projections, power procurement plan, capital investment plan, financing plan and physical targets before the Hon'ble Commission as part of the Tariff Filing before the beginning of the Control Period. However, the Control Period was postponed by a year and the revised Control Period was notified as April 1, 2016 to March 31, 2019.

1.7 Accordingly, the Chandigarh Electricity Department is hereby filing the Business Plan for the Control Period (FY 2016-17 to FY 2018-19) based on the available data for the FY 2014-15 and previous financial years.

1.8 The Chandigarh Electricity Department has prepared the Business Plan taking into the consideration the various existing internal factors and external business environment affecting the business.

1.9 The key objectives of this business plan are:

- Providing a tool for strategic planning and management - The primary objective of the Business Plan is to analyze and anticipate the future requirements and strategically plan for the requisite capital investments, means of financing the schemes and various associated costs and document them which would serve as an effective tool for monitoring and execution of future works. It is

important to project the growth in transmission and distribution network infrastructure commensurate with the energy demand required for fuelling the economic growth targets of the UT.

- Meeting the regulatory compliance of submission of a business plan as mandated by the Joint Electricity Regulatory Commission, MYT Regulations, 2014
- Support in decision making leading to better Operational Efficiency: The Business Plan is prepared so as to be useful for the Management, associated stakeholders, the Hon'ble Commission and various government bodies. The future projections in the Plan would help the department in decision making and taking proactive actions, and thus improving the overall operational efficiency of the transmission and distribution network infrastructure

1.10 The Chandigarh Electricity Department submits that the Business plan being a dynamic document may need to be updated at periodic intervals taking into account the changes in the internal and external environment and these changes would be intimated to the Hon'ble Commission from time to time

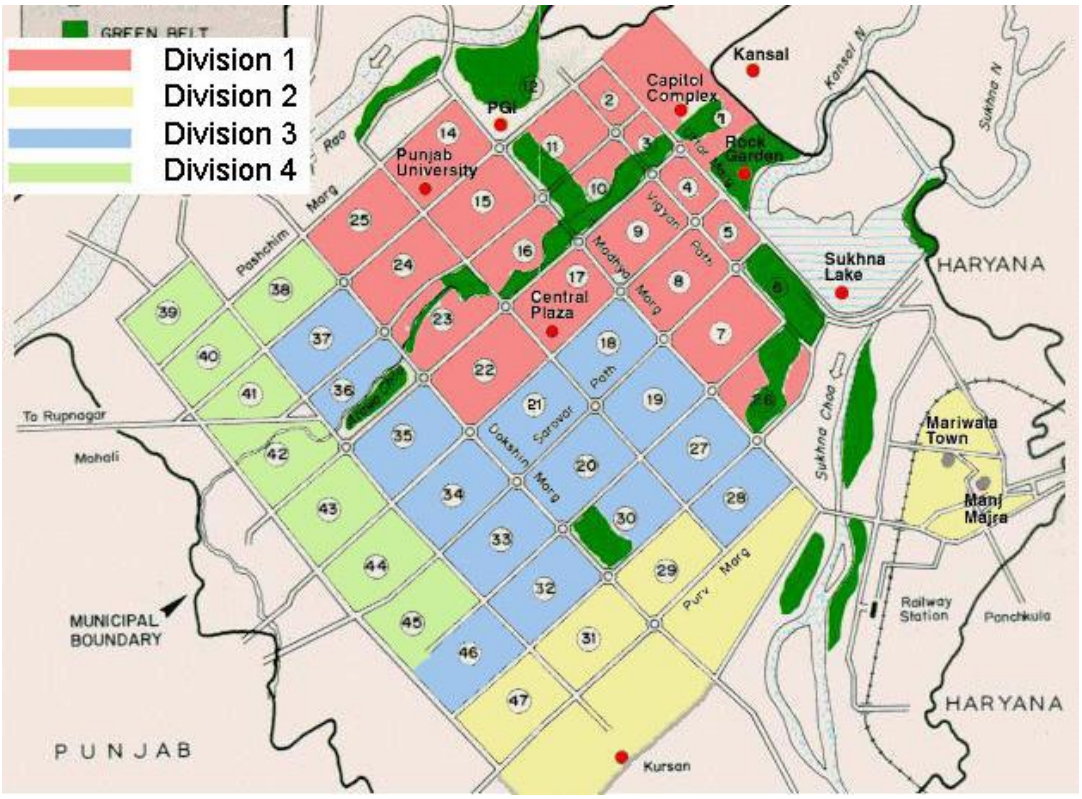
CHAPTER 2: ABOUT ELECTRICITY DEPARTMENT CHANDIGARH

2.1 Union Territory of Chandigarh came into existence with effect from 01/11/1966 after re-organization of erstwhile state of Punjab. The Local Distribution of electricity in Chandigarh was taken over by the Chandigarh Administration from the PSEB on 2nd May, 1967 and is responsible for Transmission and Distribution of power supply up to consumer's door-step for making quality and continuous power supply available to each and every resident.

AREA SERVED

2.2 Chandigarh comprises of an area of 114 sq. km. For operational purpose the area has been divided into 4 divisions.

Figure 1: Map of Area Served



ORGANIZATIONAL STRUCTURE

2.3 The Electricity Operation Circle is headed by Superintending Engineer along with four Executive Engineers with the employee strength of 1014 (As of 31.03.15).

POWER DEMAND AND SUPPLY

2.4 Electricity Operation Circle is responsible for arranging power from various sources (as Chandigarh does not have its own source) and distribution and transmission thereof to all type of consumers. Power is being purchased from various central generating stations including NTPC, NHPC, NPCIL, BBMB, SJVNL, etc.

2.5 The present power entitlement to Chandigarh Electricity Department is 320 MW. The peak demand for last year touched 395 MW (FY 14-15) and it is anticipated to reach 406 MW in FY 15-16. For FY 2016-17, FY 17-18 and FY 18-19, the peak demand is projected to be 426 MW, 450 MW and 475 MW (As per 18th EPS).

GRID DETAILS

2.6 Power supply to the Chandigarh is received mainly through the following three lines:

a. 220 kv Sub Station at Kishangarh Manimajra through 220KV double circuit Chandigarh-Nalagarh line of Power Grid,

b. 66 KV Chandigarh-Mohali line at 66 KV Substation Sector-52 and Sector-39

c. Chandigarh-Dhulkot 66 KV line at Sector-28 Substation.

2.7 Further there are 13 nos. 66kv, Sub-station in Chandigarh and 5 nos. 33KV substations details of which are provided in the table below:

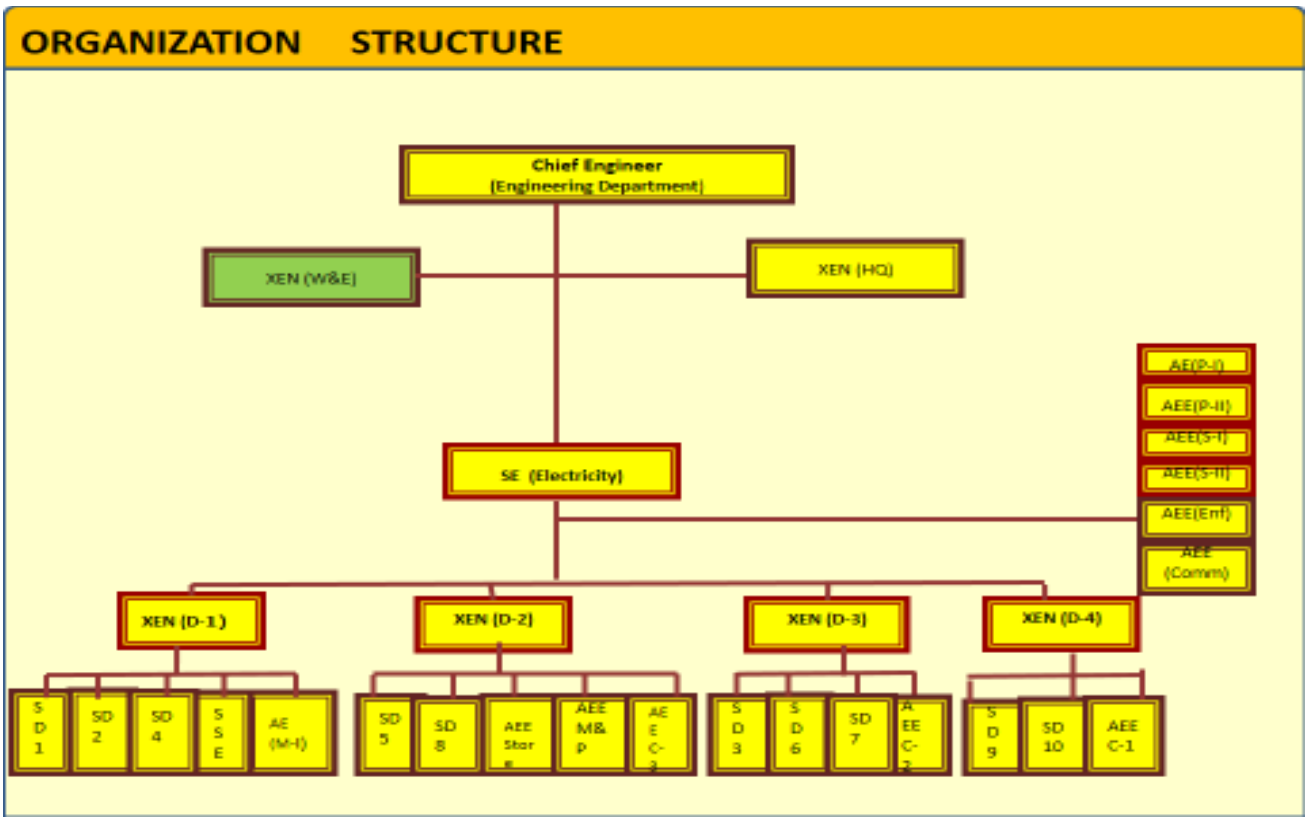
Table 2: Substation Details

S. No	Substation	Voltage Level (KV)	Installed Capacity (MVA)
220 KV Substations			
1.	Kishangarg	220/66 KV	300 MVA
66 KV Substations			
2.	B.B.M.B Sector-28	66/33/11 KV	93.5 MVA
3.	Sector-52	66/33/11 KV	107.5 MVA
4.	Sector-56	66/11 KV	40 MVA

5.	Sector-39	66/11 KV	52.5 MVA
6.	Sector-12	66/11 KV	50 MVA
7.	Sector-1	66/11 KV	25 MVA
8.	Ind. Area Ph. 1	66/11 KV	57.5 MVA
9.	Ind. Area Ph. 2	66/11 KV	45 MVA
10.	Sector-32	66/11 KV	45 MVA
11.	I.T. Park M/Majra	66/11 KV	60 MVA
12.	Sector-47	66/11 KV	40 MVA
13.	Mani-Majra	66/11 KV	40 MVA
14.	Sector-18	66/11 KV	45 MVA
33 KV Substations			
15.	Sector-17	33/11 KV	43.5 MVA
16.	Sector-18	33/11 KV	24.5 MVA
17.	Sector-34	33/11 KV	25 MVA
18.	Sector-37	33/11 KV	10 MVA
19.	Ind.Area Ph.1	33/11 KV	12 MVA

ORGANIZATION STRUCTURE: ROLES AND RESPONSIBILITIES

2.8 Electricity Department is part of the Administration of Union Territory of Chandigarh & headed by the Superintending Engineer. Day to day work related to functioning of the Department is looked by the Executive Engineer (Elect.) at Division level. Under Division there are 10 Sub Division headed by the Assistant Executive Engineer/Assistant Engineer. Executive Engineer at Division Office is also helped by Technical Section, Establishment Section and Account Section headed by the Accountant. At lower level there are Junior Engineers who look after the Operation & Maintenance work of their respected assigned areas and report to their respected Assistant Executive Engineer.


ORGANIZATION STRUCTURE
Chief Engineer
(Engineering Department)
XEN (W&E)
XEN (HQ)
SE (Electricity)
AE(P-I)
AEE(P-II)
AEE(S-I)
AEE(S-II)
AEE(Enf)
AEE (Comm)
XEN (D-1)
XEN (D-2)
XEN (D-3)
XEN (D-4)
SD 1
SD 2
SD 4
SSE
AE (M-I)
SD 5
SD 8
AEE Stor e
AEE M&P
AE E C-2
SD 3
SD 6
SD 7
AEE C-2
SD 9
SD 10
AEE C-1

CHAPTER 3: SALES AND LOAD GROWTH PROJECTIONS

LOAD GROWTH

3.1 The Table given below summarizes the growth in sanctioned load over the past 5 years. The highest growth of 6.91% (CAGR) from 2010-11 to 2014-15 has been observed in the Commercial category. Overall growth for the UT has been 5.2%.

All Figures are in KW

Table 3: Past Load Growth

Category	2009-10 Actual	2010-11 Actual	2011-12 Actual	2012-13 Actual	2013-14 Actual	2014-15 Actual (Unaudited)	2015-16 Approved
Domestic	609933	609,926	658,690	731236	773459	794926	831894
Commercial	274628	301,758	318,272	326156	360348	383574	401556
Large Supply	65937	65026	65763	64023	69671	71762	71530
Medium Supply	53566	55564	57603	59811	62011	65907	67046
Small Power	18484	18500	18652	18754	19015	19268	19437
Agriculture	1006	737	675	707	715	722	733
Public Lighting	2966	5039	5455	5583	5791	5956	6089
Bulk Supply	42977	28745	30378	41303	41299	41464	45428
Others Temporary Supply	8763	24741	27840	5672	4229	3510	4187
Total	1078260	1110035	1183328	1253245	1336539	1387088	1447898

3.2 To project the load growth for the different consumer categories 5 year CAGR has been considered for the domestic, commercial, large supply, Medium supply and small power and public lighting. However, for the agriculture and public lighting nominal growth rate of 2% and 3% has been considered. The CAGR along with projected load for the control period has been given in the table below:

Table 4: Projected Load Growth

All Figures are in kW

Category	CAGR Used	2015-16 Projected	2016-17 Projected	2017-18 Projected	2018-19 Projected
Domestic	5%	834672	876406	920226	966238
Commercial	6%	406588	430983	456842	484253
Large Supply	2%	73197	74661	76155	77678

Category	CAGR Used	2015-16 Projected	2016-17 Projected	2017-18 Projected	2018-19 Projected
Medium Supply	4%	68543	71285	74136	77102
Small Power	1%	19461	19655	19852	20050
Agriculture	1%	729	737	744	751
Public Lighting	2%	6075	6197	6321	6447
Bulk Supply	0%	41464	41464	41464	41464
Others Temporary Supply	0%	3510	4187	4187	4187
Total	5%	1454240	1525574	1599926	1678169

CONSUMER GROWTH

3.3 The Table below summarizes the category wise growth in consumers over the past 5 years.

Table 5: Past Consumer Growth

Category	2009-10 Actual	2010-11 Actual	2011-12 Actual	2012-13 Actual	2013-14 Actual	2014-15 Actual (Unaudited)	2015-16 Approved
Domestic	167,208	168,429	170,364	172,549	174407	183211	183166
Commercial	24,420	24,837	25,359	20,309	21447	22143	21970
Large Supply	102	102	104	101	105	108	105
Medium Supply	884	1,042	1,076	1,116	1154	1,197	1,235
Small Power	1,409	1,286	1,291	1,285	1285	1,275	1,281
Agriculture	167	133	122	123	122	121	120
Public Lighting	568	678	775	807	846	886	941
Bulk Supply	258	286	348	503	529	592	620
Others Temporary Supply	266	751	903	922	737	620	628
Total	**195,282**	**197544**	**200342**	**197715**	**200632**	**210153**	**210066**

3.4 The CAGR along with the projected consumer growth for the control period has been given in the table below. The growth in domestic category consumers has been considered at 3% based on the average CAGR growth over past five years. The growth in commercial category consumers has been considered at 2% in line with the past 5 years CAGR.

3.5 With respect to the industrial and agriculture consumers, there has been limited increase in number of consumers in the area of UT of Chandigarh. Accordingly growth in number of Large power, Small power and Agriculture categories has been considered to be NIL as there has been limited increase or

even decline in the no of consumers in these categories during the past five years. Further, the growth in Medium Power and Public Lighting consumer categories has been considered at 4% and 5%, respectively keeping in view the trend for past 3 years.

Table 6: Projected Consumer Growth

Category	CAGR Used	2015-16 Projected	2016-17 Projected	2017-18 Projected	2018-19 Projected
Domestic	3%	188707	194369	200200	206206
Commercial	2%	22586	23038	23498	23968
Large Supply	0%	108	108	108	108
Medium Supply	4%	1245	1295	1346	1400
Small Power	0%	1275	1275	1275	1275
Agriculture	0%	121	121	121	121
Public Lighting	5%	930	977	1026	1077
Bulk Supply	0%	592	592	592	592
Others Temporary Supply	0%	620	620	620	620
Total		**216184**	**222394**	**228786**	**235367**

ENERGY SALES GROWTH

3.6 The Table below presents the category-wise energy sales for the past six years. The overall growth in sales has been 3.56% p.a., mainly contributed by increase in the domestic and bulk supply categories.

Table 7: Past Sales Growth

All Figures are in MUs

Category	2009-10 Actual	2010-11 Actual	2011-12 Actual	2012-13 Actual	2013-14 Actual	2014-15 Actual (Unaudited)	2015-16 Approved
Domestic	471.9	518.00	525.79	586.54	608.24	719.63	732.44
Commercial	440.5	398.00	417.36	397.54	446.18	489.40	493.55
Large Supply	141.4	140	128.72	137.5	123.94	115.03	101.66
Medium Supply	116.5	89	103.71	103.84	104.53	106.30	97.90
Small Power	20.7	21	22.02	20.11	20.36	19.57	18.97
Agriculture	1	2	1.27	1.4	1.46	1.67	1.63
Public Lighting	15.1	17	17.45	21.98	21.20	21.88	20.49
Bulk Supply	57.7	73	74.67	87.34	86.56	86.51	83.42

Category	2009-10 Actual	2010-11 Actual	2011-12 Actual	2012-13 Actual	2013-14 Actual	2014-15 Actual (Unaudited)	2015-16 Approved
Others Temporary Supply	10.5	27	10.5	8.79	7.68	6.78	5.69
Total	**1,275.30**	**1285**	**1301.48**	**1365.04**	**1420.16**	**1566.77**	**1555.75**

3.7 The table given below summarizes the projections of category wise energy sales for the Control Period (FY 2016-17 to FY 2018-19) along with the CAGR used for projections.

Domestic Category Consumers: As can be witnessed that from the data presented in the table above, the 3 year, 2 year and 1 year CAGR for the domestic category sales has been in double digit growth rate of 11%, 10.8% and 18.3%, respectively, considering the increased average consumption and the increase in number of domestic consumers. Accordingly, for projection of sales in the domestic category has been done considering an increase of 10% year-on-year.

Commercial category consumer: While the CAGR for commercial consumer sales has been a nominal 2.1%, the y-o-y sales during the last two years has been considerably higher with 12.2% and 9.7%. This is primarily due to increased commercial activities in the region. However, considering the substantial increase in the past two years and the revision of base, CED considered an escalation of 5% y-o-y on the FY 2014-15 provisional actual sales to project the sales for commercial category during the Control Period.

Large, Medium and Small Supply: It is observed that for large, medium and small power supply consumer category, the increase in consumption is either very marginal (medium power supply) or even negative (as witnessed in case of large supply and Small power consumer category). This trend can be attributed to the fact that new industries are not being set up in the area served by CED, also the number of industrial consumers have remained same / declined in the last few years. Therefore, for the purpose of projection of sales during the Control Period, no sales growth is considered for Large Supply and Small Power consumer category and a nominal growth rate of 1% has been considered in case of Medium Supply consumer category.

Agriculture Category: The CAGR of sales for 1 to 5 years has been in the range of -4.4% to 14.2% for this category reflecting no specific trend in the category sales. Also, the no. of consumers for this

category has declined in the past years. Therefore, a growth rate of 5% y-o-y in sales for agriculture consumer category has been considered for the control period.

Public Lighting Category: No specific trend is observed in the past four to five year of sales in this category. Therefore, CED has considered an increase of 3% y-o-y for projecting the sales for the Control Period in line with the increase in sales of 3.2% during FY 2014-15.

Other Temporary Supply: Sales in this category has been declining during the past five years. Since no trend is observed in this category, CED has considered constant sales equal to the FY 2014-15 actual sales for the Control Period.

Based on the assumptions and methodology detailed above, the projected sales for FY2015-16 and for the Control Period FY 2016-17 to FY 2018-19 is summarized in table below:

Table 8: Projected Sales Growth

All Figures are in MUs

Category	Used CAGR	2015-16 Projected	2016-17 Projected	2017-18 Projected	2018-19 Projected
Domestic	10%	791.59	870.75	957.83	1053.61
Commercial	5%	513.87	539.57	566.54	594.87
Large Supply	0%	115.03	115.03	115.03	115.03
Medium Supply	1%	107.36	108.43	109.52	110.61
Small Power	0%	19.57	19.57	19.57	19.57
Agriculture	5%	1.75	1.84	1.93	2.03
Public Lighting	3%	22.54	23.21	23.91	24.62
Bulk Supply	0%	86.51	86.51	86.51	86.51
Others Temporary Supply	0%	6.78	6.78	6.78	6.78
Total		**1665.00**	**1771.69**	**1887.62**	**2013.64**

CHAPTER 4: POWER AVAILABILITY

POWER ALLOCATION

4.1 Since Chandigarh Electricity Department does not have any generation capacity of its own, it relies entirely on the allocation of power from the Central Generating Stations including NTPC, NHPC, BBMB, NJPC, etc. The current firm and unallocated power allocation from the various Central Generating Stations have been considered as per the recent revised allocation statement issued by Northern Regional Power Committee against the Ministry of Power letter No. 3/1/2015-OM dated 04.06.2015. The revised allocation statement has been provided at Annexure 1.

4.2 For the Control Period, it is expected that the allocations from various central generating stations shall remain the same for Chandigarh Electricity Department. The details of the plants and the capacity allocated to Chandigarh are as given below:

Table 9: Existing Power Allocation to Chandigarh Electricity Department

S. No	Organization	Name of Project	Type	Capacity	Total Avg Entitlement in %	Entitlement in MW
1	NTPC	Anta	Gas	419.33	1.830	7.67
2		Auraiya	Gas	663.00	1.190	7.89
3		Dadri GPP	Gas	829.78	0.910	7.55
4		Dadri II TPP	Coal	980.00	0.260	2.55
5		Kahalgaon II	Coal	1,500.00	0.200	3.00
6		Rihand I	Coal	1,000.00	1.240	12.40
7		Rihand II	Coal	1,000.00	1.050	10.50
8		Rihand III	Coal	1,000.00	0.825	8.25
9		Singrauli	Coal	2,000.00	0.240	4.80
10		Unchahar I	Coal	420.00	0.570	2.39
11		Unchahar II	Coal	420.00	0.990	4.16
12		Unchahar III	Coal	210.00	0.760	1.60
13		Jhajjar (Aravali)	Coal	1,500.00	0.320	4.80
14		Koldam	Hydel	800	1.375	11.00
15	NHPC	Chamera I	Hydel	540.00	3.900	21.06
16		Chamera II	Hydel	300.00	1.440	4.32
17		Chamera III	Hydel	120.00	1.241	1.49

S. No	Organization	Name of Project	Type	Capacity	Total Avg Entitlement in %	Entitlement in MW
18		Dhauliganga	Hydel	290.00	1.360	3.94
19		Dulhasti	Hydel	390.00	1.110	4.33
20		Parbathi III	Hydel	520.00	1.240	6.45
21		Salal	Hydel	690.00	0.270	1.86
22		Sewa II	Hydel	120.00	1.470	1.76
23		Tanakpur	Hydel	94.00	1.280	1.20
24		Uri-I	Hydel	480.00	0.600	2.88
25		Uri II	Hydel	240.00	0.600	1.44
26	NPCIL	NAPP	Nuclear	440.00	1.760	7.74
27		RAPP (#3 and #4)	Nuclear	440.00	0.792	3.48
28		RAPP(#5 and #6)	Nuclear	440.00	1.720	7.57
29	SJVNL	NATHPA JHAKRI	Hydel	1,500.00	0.950	14.25
30		RAMPUR (U Q)	Hydel	412.00	0.390	1.61
31	BBMB	BBMB 3.5 %	Hydel	4,900.00	3.500	171.50
32		BBMB 1 LU	Hydel	-	-	1 LU per day
33		BBMB 10 LU	Hydel	-	-	10 LU per day
34		PONG	Hydel	396.00	3.500	12.60
35		DEHAR	Hydel	990.00	3.500	34.65
36	THDC	Koteshwar	Hydel	400.00	0.780	2.80
37		Tehri	Hydel	1,000.00	1.020	9.40

4.3 Based on above entitlement and reasonable assumptions as detailed below from the various generators, the expected availability of energy for the control period has been projected.

PROJECTIONS FOR POWER PROCUREMENT FROM CENTRAL GENERATING STATIONS AND SHARED STATION

4.4 NTPC: The net energy generated from the generating stations of NTPC has been estimated by considering average PLF of past three years and normative auxiliary consumption as per CERC Tariff Regulations. Based upon the generated energy from each plant and its corresponding entitlement to the UT of Chandigarh, the unit availability has been calculated.

Based on the recent commission of Koldam hydro generating station, 11 MW of entitlement of CED has been considered for the Control Period.

4.5 NHPC: The energy generated from the generating stations of NHPC has been estimated by considering design energy of the corresponding stations. Based upon the energy generated by each plant and its corresponding entitlement to the UT of Chandigarh, the unit availability has been calculated.

4.6 NPCIL: The energy generated from the generating stations of NPCIL has been estimated by considering average PLF of past three years. Based upon the generated energy from each plant and its corresponding entitlement to the UT of Chandigarh, the unit availability has been calculated.

4.7 SJVNL: The estimation of energy generated from the Naptha Jhakri generating station has been done based upon the average generation of past three years while for the Rampur hydro station it is estimated by considering design energy of the power plant. Based upon the generated energy from each plant, the unit availability to the UT of Chandigarh has been calculated.

4.8 BBMB: The UT of Chandigarh has been allocated fix quota of 1LU and 10 LU per day from the BBMB plant. In addition to that 3.5% of the plant capacity has been allocated to the UT of Chandigarh. The unit availability has been considered based upon the average generation of past three years. Similarly the estimation of unit generation from Pong and Dehar power plant has been done considering average generation of past three years.

4.9 THDC: The unit generation from the Koteshawar and Tehri plants has been estimated based upon the average generation of past three years while the energy available to the UT of Chandigarh for the Control Period has been calculated based upon the entitlement.

4.10 Based on the above assumptions and methodology, the power availability to CED from various generating stations during the Control Period is as summarized below:

Table 10: Power Available from Central Generating Stations during the Control Period

S. No	Name of Project	FY 2016-17	FY 2017-18	FY 2018-19
	NTPC Stations			
1	Anta	34.29	34.29	34.29
2	Auraiya	23.98	23.98	23.98
3	Dadri GPP	30.45	30.45	30.45
4	Dadri II TPP	16.92	16.92	16.92
5	Kahalgaon II	17.94	17.94	17.94
6	Rihand I	84.08	84.08	84.08
7	Rihand II	70.04	70.04	70.04
8	Rihand III	55.03	55.03	55.03
9	Singrauli	34.70	34.70	34.70
10	Unchahar I	16.64	16.64	16.64
11	Unchahar II	28.90	28.90	28.90
12	Unchahar III	11.09	11.09	11.09
13	Jhajjar (Aravali)	19.49	19.49	19.49
	Koldam	42.84	42.84	42.84
	NHPC Stations			

14	Chamera I	64.16	64.16	64.16
15	Chamera II	21.34	21.34	21.34
16	Chamera III	13.59	13.59	13.59
17	Dhauliganga	15.25	15.25	15.25
18	Dulhasti	20.91	20.91	20.91
19	Parbathi III	24.21	24.21	24.21
20	Salal	8.24	8.24	8.24
21	Sewa II	7.76	7.76	7.76
22	Tanakpur	5.73	5.73	5.73
23	Uri-I	15.34	15.34	15.34
24	Uri II	6.66	6.66	6.66
	NPCIL Stations			
25	NAPP	43.19	43.19	43.19
26	RAPP (#3 and #4)	23.62	23.62	23.62
27	RAPP(#5 and #6)	51.31	51.31	51.31
	Others			
28	NATHPA JHAKRI	65.89	65.89	65.89
29	RAMPUR (U Q)	7.24	7.24	7.24
30	BBMB 3.5 %	188.71	188.71	188.71
31	BBMB 1 LU	36.50	36.50	36.50
32	BBMB 10 LU	365.00	365.00	365.00
33	PONG	57.38	57.38	57.38
34	DEHAR	111.19	111.19	111.19
35	Koteshwar	10.13	10.13	10.13
36	Tehri	34.63	34.63	34.63
	Annual Total	**1,684.34**	**1,684.34**	**1,684.34**

RENEWABLE PURCHASE OBLIGATION

4.11 Apart from the above allocations from central generating stations, CED shall also procure power from roof-top solar power plants as covered under the power procurement from renewable energy segment and balance power shall be required to be procured from bilateral agreements. As per the JERC for State of Goa and UTs (Procurement of Renewable Energy) Regulations, 2010 and First Amendment Regulations 2014, the Hon'ble Commission under Regulation 1 of JERC (Procurement of Renewable Energy) Regulations has specified Renewable Purchase Obligation (RPOs) targets for all Distribution Licensees/ obligated entities for FY 2010-11 to FY 2021-22.

4.12 The RPO targets for the control period to be achieved by the CED during the Control Period as specified in the Regulations is as follows:

Table 11: RPO Obligation

FY	Solar RPO (%)	Non-Solar RPO (%)
2016-17	1.15	2.80
2017-18	1.50	2.80
2018-19	1.85	2.80

4.13 The Chandigarh Electricity Department submits that it intends to meet the RPO as per the directions of the Hon'ble Commission in the MYT Control period as well. CED has planned to meet the Solar RPO partially from the purchase of solar power from roof-top projects within the UT of Chandigarh (both Net metering mode and Gross metering mode) while the balance solar obligation is proposed to be met through purchase of Renewable Energy Certificates (REC's).

4.14 Further, CED submits that in absence of any non-solar power plants within the UT of Chandigarh, the Non-Solar RPO compliance shall be completely met by purchase of non-solar REC's.

4.15 The summary of projected Solar and Non-Solar compliance by CED during the Control Period is summarized in the table below:

Table 12: Units to be Purchase under RPO

Solar Obligation	**2016-17**	**2017-18**	**2018-19**
Solar RPO (In %)	1.15%	1.50%	1.85%
Projected Sales	1,771.69	1,887.62	2,013.64
Total Power to be Procured to meet Solar Obligation (In MU)	20.37	28.31	37.25
Breakup of Sources for Solar RPO Compliance			
Power planned to be procured from NET Metering Mode (In MW)	5	8	12
Power planned to be procured from NET Metering Mode (In MU's)	7.008	11.2128	16.8192
Power planned to procure from Gross Metering Mode (In MW)	2	5	10
Power planned to procure from Gross Metering Mode (In MU's)	2.8032	7.008	14.016
RPO to be met with REC (In MU's)	10.56	10.09	6.42
Non Solar Obligation	**2016-17**	**2017-18**	**2018-19**
Non Solar RPO (In %)	2.80%	2.80%	2.80%
Projected Sales (In MU's)	1,771.69	1,887.62	2,013.64
Total Power to be Procured to meet Non Solar Obligation (In MU's)	49.61	52.85	56.38

4.16 The cost of power procurement from solar power plant has been estimated as below for the control period. Based on the current scenario a gradual decrease in the range of 3%-4% in price of solar power has been considered for the period.

Table 13: Cost of Solar Power Purchase (Gross Metering Mode)

Particulars	2016-17	2017-18	2018-19
Cost of Solar power (Rs/Unit)	8.4	8.2	7.9

4.17 The cost of solar power purchase from net metering mode has been estimated as below. The cost is arrived at after considering the fact that the net metering consumer will consume approx. 3/4th of the power generated while the rest of the power generated will be injected in the grid. In such a scenario the CED shall pay the net metering user for the units injected in to the grid while the RPO compliance will be met for the power generated by the net metering consumer, resulting in reduced effective cost from the net metering mode. The consumption/export may vary from consumer to consumer.

Table 14: Cost of Solar Power Purchase (Net Metering Mode)

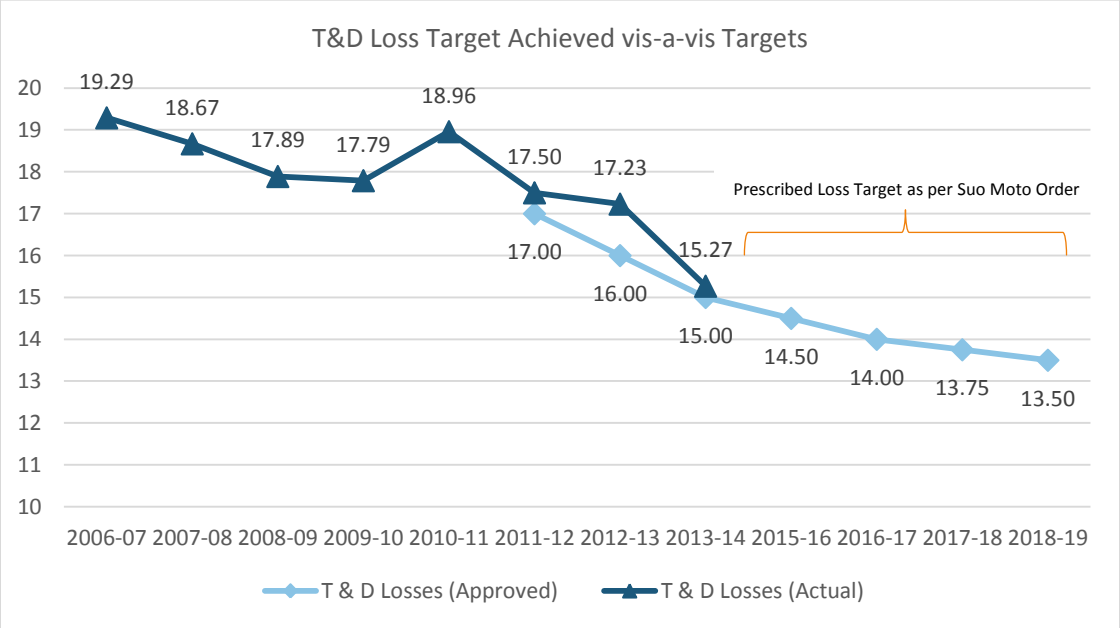
Particulars	2016-17	2017-18	2018-19
Cost of Solar power (Rs/Unit)	3.5	3.5	3.5

CHAPTER 5: T&D LOSS TRAJECTORY AND ENERGY BALANCE

T&D LOSS TRAJECTORY FOR THE CONTROL PERIOD

5.1 It is submitted that CED has been constantly endeavoring to reduce its T&D losses. As per the actual information for past years, CED has been able to reduce its losses from 24.22% in FY 2003-04 to 15.27% in FY 2013-14. Further, CED submits that the system improvement and augmentation works executed each year under the planned schemes have resulted in the reduction of T&D losses in its distribution area.

5.2 CED over the years has constantly been able to reduce the T & D losses barring 2010-11.



5.3 As can be observed from the above graph, CED has been successful in maintaining the T&D losses within 20% in spite of having a consumer profile where majority of the consumers are LT category consumers. CED has achieved T & D loss level of 15.27% for the FY 2013-14. While in future CED intends to make every effort needed to achieve the loss targets set up the Commission, CED requests the Commission to set realistic targets in light of the fact that the current loss levels of CED are very low and reduction of losses below the current levels shall be difficult considering the majority of

consumers connected at LT levels. Further, it is submitted that in States like Delhi and Himachal Pradesh where the loss levels are below 15%, the respective Regulatory Commissions have provided loss reduction which are more realistic and aligned with the actual loss level of the discoms.

Table 15: Approved Loss Reduction for Other States

State	Loss reduction approved by the Commission during the Control period
Himachal Pradesh	0.20% each year
Delhi	0.25% each year

5.4 In addition the Hon'ble Commission had initiated suo-moto proceedings and had issued an Order dated 5th May 2014 in petition no 76/2012. As per the Order, the following T&D loss trajectory for Chandigarh has been specified by the Hon'ble Commission:

Table 16: Loss Target for UT of Chandigarh approved by Hon'ble Commission

Loss %	FY 14-15	FY 15-16	FY 16-17
T&D Losses (ED –Chandigarh)	15.00%	14.50%	14.00%

5.5 Therefore, in view of the target specified by the Hon'ble Commission vide Order dated 5th May 2014, CED has retained the T&D loss target approved by the Hon'ble Commission for FY 2016-17. Further, CED proposes 0.25% reduction each year in T&D loss target for the balance period of the Control Period in view of the difficultly in loss reduction below 15% as detailed in paras above. The T&D loss target proposed by CED is as below and the Hon'ble Commission is request to approve the same:

Table 17: T&D Loss Trajectory for the Control Period

Loss %	FY 16-17	FY 17-18	FY 18-19
T&D Losses	14.00%	13.75%	13.50%

ENERGY BALANCE & ADDITIONAL POWER PURCHASE

5.6 Based on the projected Energy Requirement and availability within the UT of Chandigarh and proposed T&D loss levels, the table below presents the Energy Balance for the control period:

Table 18: Energy Balance

Particulars	2016-17	2017-18	2018-19
Energy Requirement			
Energy Sales (MU's)	1,771.69	1,887.62	2,013.64

Particulars	2016-17	2017-18	2018-19
T&D Loss%	14.00%	13.75%	13.50%
Loss (MU's)	288.42	300.92	314.27
Total Energy Required at UT Periphery (MU's)	**2,060.11**	**2,188.54**	**2,327.91**
Energy Available			
Units Procured	1,684.34	1,684.34	1,684.34
Inter-State Transmission Loss	3.00%	3.00%	3.00%
Transmission Loss (MU's)	50.53	50.53	50.53
Net Energy Available at UT Periphery	**1,633.81**	**1,633.81**	**1,633.81**
Power Available within UT			
Power planned to be procured from NET Metering Mode (In MU's)	7.01	11.21	16.82
Power planned to procure from Gross Metering Mode (In MU's)	2.80	7.01	14.02
Total Energy Available	**1,643.62**	**1,652.03**	**1,664.64**
Demand Supply (Gap) / Surplus	**(416.49)**	**(536.52)**	**(663.26)**

5.7 As per the above projection for energy balance, it is observed that CED shall face energy deficit of 416 MU's, 536 MU's and 663 MU's during the three years of the control period.

5.8 It is submitted that in view of the projected deficit in power availability, CED has planned to procure 40 MW of additional power from Rampur Hydro power plant in Himachal Pradesh. In this regard, CED has has been accorded approval, to give consent to Government of Himachal Pradesh to draw 40MW of power from Rampur Hydro Electric Power Plant. In view of the additional power available from Rampur (40 MW), the revised energy balance for CED during the Control Period shall be as follow:

Table 19: Planned Additional Power

Additional Power	2016-17	2017-18	2018-19
From Rampur (40MW)	180.15	180.15	180.15
Revised Demand Supply (Gap) / Surplus	**(236.34)**	**(356.37)**	**(483.11)**

5.9 CED proposes to meet the balance deficit during the Control Period through power purchase through bilateral agreement / exchange. The Hon'ble Commission is requested to approve the above energy balance for CED.

CHAPTER 6: MANPOWER PLANNING

6.1 Currently there are 1780 sanctioned posts of different categories in the Chandigarh Electricity Department. In 1997, a case for additional 287 posts was sent to Govt. of India which sanctioned 1855 posts for CED. However being a financial matter, the approval of Joint Electricity Regulatory Commission for Goa & UTs (JERC) was sought by the CED. JERC directed the CED to carry out detailed manpower study according to future load growth in Chandigarh. Accordingly, M/s Deloitte Touche Tohmatsu Pvt. Ltd. was appointed as Consultant to conduct the Manpower Study and delegation of power. The Manpower Study was challenged by UT Powermen Union and the Electricity Department which has been dismissed by the Hon'ble Commission. The Commission in its Order dated 29.12.2014 has approved the following manpower for Chandigarh Electricity Department.

Table 20: Phase-I manpower (Till retirement of existing employees)

Manpower Requirement for CED	Sanctioned	As-Is Manpower at CED	Total Proposed	Proposed In-house	Proposed Outsourced
Executives (AEE/AE & above)	30	22	59	59	0
Non-Executives (JE & below)	1584	903	1317	991	326
Non-Executives – Group D	166	114	114	114	0
Total	**1780**	**1039**	**1490**	**1164**	**326**

Table 21: Phase-II manpower (Final approval)

Manpower Requirement for CED	Sanctioned	As-Is Manpower at CED	Total Proposed	Proposed In-house	Proposed Outsourced
Executives (AEE/AE & above)	30	22	59	59	0
Non-Executives (JE & below)	1584	903	1323	756	567
Non-Executives – Group D	166	114	108	4	104
Total	**1780**	**1039**	**1490**	**819**	**671**

6.2 Existing post under Phase-I Manpower will continue till the retirement of existing employees and ultimately the future posts should be filled as per Phase-II manpower. The organizational structure is to be divided into three verticals i.e. Commercial, Distribution (operation & maintenance), Power System (33KV & above) headed by SE. Finance & Administration along with the three verticals is to be put under one Chief Engineer. Number of posts of Executives (Assistant Engineer & above) is to be increased from 30 to 59 on regular basis and number of posts of Non-executive (JE & below) including Group-D is to be reduced from 1750 to 1431 with further direction that 760 posts should be filled up on regular basis and 671 on outsource basis.

6.3 Further the Commission has approved one additional post of Chief Engineer to implement the National Policy on Renewable energy as generation from solar system is getting nation-wide thrust. Moreover, in view of the implement of SCADA system required to be undertaken by CED the requirement for an additional Chief Engineer was justified. CED has been moving towards the process of hiring the staff as approved by the Hon'ble Commission and desires to add the required employees as also approved by the Hon'ble Commission above.

6.4 While there were a few clarifications with respect to the Hon'ble Commission's Order dated 29.12.2014 which were clarified by the CED through its various correspondence with the Hon'ble Commission. This had led to some delay in the recruitment process. However, post all clarifications from the Hon'ble Commission, CED proposes to add all the employees as approved by the Hon'ble Commission by the first year of the Control Period. In this respect, CED has already sought approval for addition of employees with the Ministry pf Power, Government of India vide its letter dated 14.07.15.

6.5 The CED has planned to carry out recruitment for 70 posts in the ensuing year and intends to carry out recruitment for vacant positions vis-à-vis JERC approved posts during the first year of the Control Period. The table below presents the current status of the employee strength (01.04.15) and future manpower planning for the Control Period:

Table 22: Present Employee Strength

Sr. No.	Particulars	Ensuing Projections 2015-16	Ensuing Year Projection 2016-17	Ensuing Year Projection 2017-18	Ensuing Year Projection 2018-19
1	No. of employees as on 1st April	1014	1028	1455	1455
2	No. of employees added during the year	70	463**	35**	36**

3	Total number of employees (1+2)	1084	1491	1491	1491
4	Number of employees retired/retiring during the year	56	36	36	42
5	Number of employees at the end of the year (3-4)	1028	1455	1455	1499

*** Recruitment planned by CED in subsequent year of the control period to fill the gap between actual and approved strength.*

6.6 The details of the 70 posts to be filled in the ensuing year is as follows:

Table 23: Recruitment Planned for the Year FY15-16

Sr. No.	Category	No of Posts
1	Lower Division Clerk (LDC)	42
2	Steno-Typist	04
3	Junior Engineer	23
4	Internal Auditor	01
	Total	**70**

MANPOWER TRAINING AND RE-SKILLING

6.7 With the rapidly expanding system and advent of new technology, it becomes all the important to develop the skill set of the employees of the transmission and distribution utility. The CED acknowledges the fact that improving knowledge base is an ever evolving process and thus has initiated the process to impart refresher training to its employees. As per the proposal, which is currently in the initial phase, CED shall conduct a training program for 50 ALM's (Assistant Line Man) at National Power Training Institute, Faridabad. The details of the proposal has been attached as Annexure 2.The table below presents the estimated cost of the training program:

Table 24: Manpower Training Cost

Sr. No.	Program	Cost (In Rs Lakhs)
1	Residential	47.31
2	Non-Residential	28.34

6.8 In view of the additional cost involved in providing the trainings to the employees, CED requests the Hon'ble Commission to approve the associated cost and allow recovered of the same in the tariff.

SAFETY MEASURES

6.9 In order to ensure safety of its manpower, the safety measures prescribed under Indian Electricity rules, Safety, Electricity Supply Regulations 2010 notified by CEA and Joint Electricity Regulatory Commission (Distribution Code Regulation 2010) needs to be adhered to by the utility. Accordingly to comply with the safety measures directed by the commission the CED intends to engage consultants to examine all the Rules and Regulations in the force and suggest way forward. The consultant shall require to analyze existing safety standards, tool kits and practices being followed by the department. In coherence with its study and various safety regulation in place the consultant shall come out with suitable safety tool kits/ equipment required to carry out operation and maintenance of distribution network. In this regard the CED has already issued Expression of Interest and intends to complete the process soon. The details of the proposal has been attached as Annexure 3.

6.10 The proposed expenditure to be incurred on safety measures and procurement of safety materials such as personal protective gear and other equipment other for its manpower is as below:

Table 25: Proposed Expenditure on Safety Measures

Particulars	2016-17	2017-18	2018-19
Proposed Expenditure (In Rs Lakh)	15	20	25

CHAPTER 7: CAPITAL INVESTMENT PLAN

7.1 As per the MYT Regulations 2014, the Distribution Licensee is required to file the Business Plan for Control Period of three financial years from April 1, 2016 to March 31, 2019, which shall comprise but not be limited to detailed category-wise sales and demand projections, power procurement plan, capital investment plan, financing plan and physical targets before the Hon'ble Commission as part of the Tariff Filing before the beginning of the Control Period.

7.2 Based upon the above mandate the CAPEX Plan proposals (scheme wise) for FY 16-17 to FY 18-19 under the MYT Control Period FY 2016-19 have been formulated by Chandigarh Electricity Department in order to enable better planning, budgeting and monitoring at macro & micro levels. The capital expenditure plan has been separately prepared into two categories:

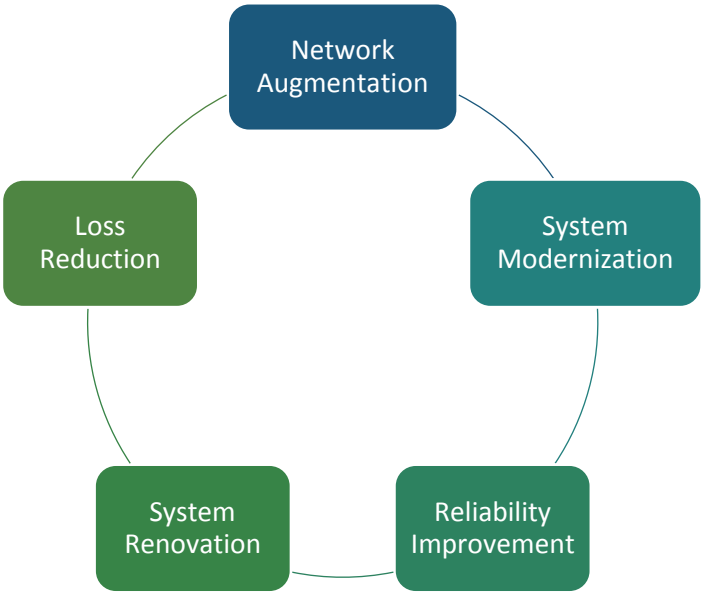
- Capital Investment Plan for 66 KV and above works
- Capital Investment Plan for 11 KV and below works

7.3 Chandigarh Electricity Department has prepared the cap-ex plan taking into consideration all the factors which would affect the operations of the company. The cap-ex plan includes the details of various capital expenditure schemes in the identified areas and their respective estimates for each year of the MYT control period from FY16-17 to FY18-19.

7.4 The capital investments of Chandigarh Electricity Department can largely be categorized in following areas:

- Investments in New Transmission Infrastructure to support the demand requirements or power evacuation from generation projects.
- System augmentation and strengthening including renovation and modernization to maintain the performance of the existing system and to deter investments.

The figure below provides a wider overview of the capital investment avenues planned by the Chandigarh Electricity Department.



7.5 Since capital investment is an ongoing activity for any transmission and distribution licensee, CED has categorized the schemes under the followings two categories i.e. On-going schemes and new schemes. The year wise details of proposed capital expenditure under the two categories has been furnished a below. The details of the Cap-ex schemes has been attached as Annexure 4.

NEW SCHEMES:

CED has planned for six new 66kV schemes in view of the system up-gradation requirement and improvement of reliability. The details of the new 66kV capital schemes along with the investment rationale and their approval status is provided in table below:

Table 26: 66 KV New Schemes proposed for the Control Period

Sr. No.	66KV New Scheme	Total Exp. (In lakhs)
1	Providing 1x30MVA 66/11KV additional Power TF At 66kv Grid Sub Station Sec-39 UT Chd	522.61
Scheme Details	The new 66/11 KV Power transformer is proposed to replace the existing damaged Power Transformer (T-1). The installation of new transformer will help in meeting present and future load growth of the area. *Rationale:* The scheme will help in improving service reliability to the consumers of the area and to meet Standards of Performance of JERC.	
Approval Status	Under Process	
2	Replacement of 14 Nos. MOCB with SF6, Breakers at 66KV Grid	514

Sr. No.	66KV New Scheme	Total Exp.
	Substation Sector-52 and Sector –12 UT Chandigarh.	
Scheme Details	The 66KV MOCB's and 11KV OCB's at both the S/Stns have outlived their life due to extensive uses and ageing, Under the scheme, it has been proposed to replace MOCB with SF6, Breakers and OCB's with 11KV VCB's at 66 KV Grid substation. *Rationale:* They scheme is aimed at improving system reliability and system up-gradation.	
Approval Status	Under Process	
3	Conversion of existing 33KV Sub Station Sector-18 to 66KV Sub Station Sector-18 by Providing GIS 2x20MVA, 66/11KV Power Transformer along with 66 kV associated 66 kV T/L with underground cable from 66 kV Sector-26 to 66 kV Sector 18.	2729
Scheme Details	The existing three transformer installed at 33kV Sector-18 substation are more than 34 years old and have well passed beyond their useful life. The said transformers are not only overloaded but also have become obsolete. Under the scheme, it has been proposed to convert existing 33 kV GSS Sector 18 to 66 kV GIS GSS by installing 2*20 MVA, 66/11 kV, three power transformers along with 66 kV associated T/L with underground cable. *Rationale:* Under the scheme the CED intends carry out system augmentation to help it cater growing demand. Also the construction of a GIS substation will go a long way towards system modernization since Gas Insulated Substation can prove to be a bane for CED as it operates in the UT of Chandigarh where cost of land proves to be very high. It is also pertinent to mention it here that GIS Substation have very reliability and need minimal maintenance.	
Approval Status	Under Process	
4	Providing 2x20MVA, 66 / 11KV Gas Insulated Sub Station at Sector-26 UT Chandigarh along with 66 KV D/C line from 66 kV I.T park to 66KV Grid Sub Station Sector-26 UT Chandigarh.	3698
Scheme Details	The power transformers installed at nearby 66 KV BBMB Grid Substation Sector are very old and completed useful life of 25 years. Load is considerably increasing on transformers day by day. It has been proposed to construct a 66KV GIS Grid substation at Diesel Power House, Sector-26 along with underground cable from 66 KV I.T. Park Grid Substation. *Rationale:* Under the scheme the CED intends to carry out system augmentation and modernization. Also the construction of GIS substation will help in improving system reliability.	
Approval Status	Under Process	
5	Providing 66 KV Transmission Line along with associated 66 KV line bays to upcoming 66 KV Grid Substation at Raipur Kalan UT Chandigarh	1103
Scheme Details	To cope up with present as well as future load demand of upcoming area of Industrial Area Phase–III at Raipur Kalan and to meet emergency break down conditions, power transformers needs to be allotted. It has been proposed to provide 66 KV transmission line to upcoming 66 KV grid substation along with associated 66 KV Line Bays at Raipur Kalan Sub Station *Rationale:* The scheme is a part of system augmentation being carried out by CED to cater	

Sr. No.	66KV New Scheme	Total Exp.
	increased load on its network.	
Approval Status	Under Process	
6	Execution of laying of 66 KV U/G Cable from Sector 32 Grid Sub Station to Sector 34 Grid Sub Station, Chandigarh.	854
Scheme Details	There is heavy overloading on the existing 33/11 KV Power Transformers installed at 33 KV Grid substation Sec. 34 and 66/33 KV Power Transformers installed at 66 KV Sector 52 during summer season. Rotational power are done to safeguard the overloaded Power Transformers. In order to feed the 66kV Grid Substation under construction at Sector 34, the 66 KV underground cable with 4x1Cx630sqmm Copper conductor has been planned from Sec-32 to Sec-34 G/S/Station. Under the scheme, it has been proposed to build 66 KV transmission line with underground cable in RCC cable trench from sec-32 substation to sec-34 G/STN (new). *Rationale:* The scheme intends to augment transmission network of CED to help it meet peak demand. Also, the laying of new line will prove to be helpful in providing better service to the consumers of CED.	
Approval Status	Under Process	

66KV ONGOING SCHEMES

7.6 The table below provides the information about 66 KV ongoing works. The table provides details about each individual scheme as well as original cost of the project.

Table 27: 66 KV Ongoing Capital Expenditure Works for the Control Period

Sr. No.	Ongoing Schemes of 66 KV	Total Exp. (In lakhs)
1	Turnkey execution of 66 KV Transmission Line from T-off point to the proposed 66 KV Grid Substation in Institutional Area, Village Sarangpur, Chandigarh.	311.75
Scheme Details	To meet the rising load demand of the consumers of Rural Area of Vill. Sarangpur, it has been proposed that 66 KV Transmission Line from T-off point to the proposed 66 KV Grid Substation in Institutional Area, Village Sarangpur, Chandigarh will be erected. *Rationale:* The scheme aims to improve service reliability and system decongestion.	
2	Turnkey Execution for two Nos. 66 KV Line bays at 66/11 KV Grid Substation in Institutional Area, Village Sarangpur, U.T., Chandigarh.	117.75

Sr. No.	Ongoing Schemes of 66 KV	Total Exp. (In lakhs)
Scheme Details	To meet the rising load demand of the consumers of Rural Area of Village Sarangpur, it has been proposed that two Nos. 66 KV Line bays at 66/11 KV Grid Substation in Institutional Area, Village Sarangpur, U.T., Chandigarh. *Rationale:* The scheme aims to improve service reliability and system decongestion.	
3	Providing 2x20MVA 66/11KV Grid Sub-Station in the Institutional Area of Village Sarangpur in UT Chandigarh	989.01
Scheme Details	In order to meet the increase in load demand due to upcoming Housing/Institutional Projects in area and to provide better and reliable service to the consumers of adjoining sectors of Vill. Sarangpur, Chandigarh it has been proposed to provide 2x20 MVA T/F 66/11 KV Grid Substation *Rationale:* The scheme aims to render services to the upcoming domestic/commercial load in the area. The scheme is part of the CED's plan to provide quality and uninterrupted supply to its consumers by improving its system capacity in line with the growing demand.	
4	Providing 2x20MVA, 66/11KV Grid Sub-Station at Raipur Kalan.	974.15
Scheme Details	It is proposed to provide 2x20MVA 66/11KV Grid S/Stn. at Raipur Kalan to meet the increased load demand. *Rationale*: Under the scheme the CED intends to carry out system augmentation to meet the load growth.	
5	Up-gradation of Transformation Capacity at 66/11 KV S/ Stn. by replacing existing 2X12.5 MVA with 2 X 20 MVA T/F, 66/11 KV T/F and shifting and re-installation of 2X12.5 MVA T/S at existing 66/11 KV S/Stn. at Civil Sectt. Sec. 1 and Sec.12. Chd.	712.1
Scheme Details	It is proposed to Up-grade transformation capacity at 66/11KV Grid Sub-Station, Information Technology Park by replacing existing 2x12.5MVA 66/11KV Transformers with 2x20MVA, 66/11KV Trans-formers and shifting & reinstallation of 2x12.5MVA Transformer at existing 66KV Grid Sub-Station, Civil Secretariat. Sector 1 & Sector 12, Chandigarh. *Rationale*: The scheme is part of CED's system augmentation planning to help it meet rise in demand. The improved transformation capacity will lead to improved service quality and reliability.	
6	Up-gradation of existing 33 KV Grid Sub Station to 66 KV voltage level by providing 1 X 30 MVA, 66/11 KV power transformer along with associated transmission line Sec. 34-C Chandigarh.	722.11
Scheme Details	It is proposed to Upgrade the existing 33KV Grid Sub-station to 66KV voltage level by providing 1x30MVA, 66/11KV power transformer along with associated transmission line in Sector 34-C, Chandigarh. *Rationale*: The scheme is meant to provide necessary transmission infrastructure in order to cater the increased commercial load in the area.	
7	Prov. New 66/11 KV 16/20 MVA Power Transformer on existing bay at	302.47

Sr. No.	Ongoing Schemes of 66 KV	Total Exp. (In lakhs)
	66Kv/11KV Grid S/Stn. Sector-47, Chd	
Scheme Details	To meet the rising load demand of Sector-46, 47, 48, 49, 30, 31 etc. Chandigarh it has been proposed to provide new 66/11 KVA, //16/20 MVA T/F on existing bay at 66KV S/Stn. Sec.47, Chandigarh. *Rationale*: The scheme is meant for system augmentation which will help in providing reliable and quality supply to the consumers of the area.	
8	Providing 11KV automatic capacitor bank at various existing 66KV Grid S/Stn., in Chandigarh.	979.65
Scheme Details	It is proposed to maintain the power factor and for this purpose automatic power factor control relays has to be installed and an amount of Rs.50 lac has been proposed in the second control period. *Rationale*: The scheme is specifically prepared to improve network parameters. The improvement in power factor will help in better load management and keeping the system the system healthy	
9	Conversion of existing 66 KV S/C Transmission Line and Underground Cable from 220 KV Substation, Kishangarh to Sector -12, Chandigarh to D/C Transmission Line.	737.11
Scheme Details	To meet with the growing load and due to coming of 66 KV Sarangpur substation, it has become necessary to provide 66 KV Double Circuit on Monopole Transmission Poles. It has been proposed to convert 66 kV S/C transmission line and underground cable from 220 KV Kishangarh Substation to Sector 12, Chandigarh to D/C transmission line. *Rationale*: The existing transmission system require urgent augmentation of Transmission Line infrastructure to meet additional load coming on the line due to augmentation of existing and upcoming grid substations.	

CAPITAL EXPENDITURE SCHEMES FOR 11 KV

7.7 The details of Capital Investment Plan for 11 KV and below works is as below:

7.8 The Cap-ex Plan proposal (Scheme wise) for FY 2016-17 to 2018-19 under the MYT control period FY-2016-19 have been formulated by Electricity Department UT Chandigarh keeping in view various parameters that come into play to ensure better supply of power to end consumers.

7.9 The table below provides the information about 11 KV ongoing and proposed works as well as estimated cost on such works to be incurred during the control period

Table 28: 11 KV Capital Expenditure Works for the Control Period

Sr. No.	Ongoing Schemes of 11 KV	Total Exp. (In lakhs)
1	General Service Connection (GSC) and Industrial Service Connection (ISC) and other normal development	700.00
Scheme Details	Provide additional distribution network with transformer centers & associated HT/LT service lines for arranging power supply to various categories of HT&LT consumers. *Rationale:* Network and system expansion to help serve new consumers.	
2	Strengthening of distribution system by Providing 11 kV Underground power distribution system	530.00
Scheme Details	The various U/G system shall be laid in different parts of UT Chandigarh during the control period. This will provide relief to the existing system. The scheme will provide alternate 11 kV feeders from other nearby 66/11 kV S/Stns. *Rationale:* The scheme intends to provide U/G cable power distribution system and removing O/H lines to render uninterrupted and stable power supply to urban, rural and industrial areas of UT Chandigarh. The scheme is part of planned system augmentation	
3	Strengthening of distribution system by providing/Augmentation 11/.400 KV, 315/200/100 KVA Distribution Transformers along with LT ACB	653.00
Scheme Details	Installation of the 315 kVA /100 kVA distribution transformers in the vicinity of the UT Chandigarh. The distribution transformers shall be installed at different locations specifically at load centers *Rationale:* To provide reliable power, proper voltage to the prospective consumers. The LT lines shall automatically be reduced	
4	Providing and Augmentation of the LT O/H ACSR conductors	47.00
Scheme Details	To provide /augment the LT Overhead conductor in the vicinity of the UT Chandigarh. Further the old LT O/H ACSR conductors shall be replaced with the new one of suitable capacity in phased manner. *Rationale:* The augmentation of LT O/H ACSR conductor shall reduce the technical losses. The proposed replacement of old LT O/H conductor aims to improve the reliability of power	

	supply.	
5	Providing 11 kV /LT Aerial Bunched Cables	400.00
	To provide the HT/LT Aerial Bunched cable in UT Chandigarh in the phased manner. This HT ABC cable shall be provided in thickly plantation/forest area *Rationale:* To reduce the breakdowns/faults thereby improving reliability of power in the respective area.	
6	Providing improved, Special tools, testing equipment, office equipment etc.	262.00
Scheme Details	To provide the special tools /testing equipment, office equipment etc. in the various sections of the electricity deptt. of UT Chandigarh. It is proposed that the computers to various sections shall be provided so as to smoothen the working of various offices. Further, the 3 phase 100 Amps six position test bench for testing of the energy meters at the M&P lab, relay testing set with AVTS software along with the laptop computer system and essential accessories and testing software CDs/DVDs for M&P wing, has been proposed to be completed. *Rationale:* The CED intends to improve its functionality thus its services to the consumer. The new equipment will help in plugging gaps in services. The relay testing kits proposed are part of system modernization and will help in maintaining accuracy of relays.	
7	Improvement by augmentation and development of 66/11 kV existing Substations and 11 kV Indoor substations	193.00
Scheme Details	The scheme will provide the replacement of old MOCB with SF6 breakers, Replacement of old and obsolete panels, and other allied equipment etc. The battery charger along with battery bank (VRLA) and DCDB at 66 kV Grid Substations at Ind. Area Phase I, Phase II and Sector 47 has also been proposed to be replaced as the same has completed their useful life. *Rationale:* The scheme is designed keeping in mind system augmentation and upgradation.	
8	Installation of LT Shunt Capacitors on the existing distribution transformers	157.00

Scheme Details	The LT shunt capacitors shall be provided in different areas keeping in view the load profile as well as power factor in the respective areas. *Rationale:* The system is designed to improve the voltage profile and power factor which further will reduce the distribution losses to some extent.	
9	Replacement of the electro mechanical meters to static meters.	118.00
Scheme Details	To replace all the electro mechanical meters with the static meters as per the guidelines of Central Electricity Authority (CEA). The replacement program has been scheduled during the control period. *Rationale:* The scheme is aimed at system modernization.	

SCHEME WISE PROPOSED CAPITAL EXPENDITURE FOR THE CONTROL PERIOD

7.10 Since the above schemes shall be implemented during the Control period, the year wise break-up of the various schemes during the Control period is provided in the table below:

Table 29: Proposed Capital Expenditure for 66 KV New Schemes

Sr. No.	66 kV New Schemes	Original Project Cost (Rs Lacs)	Proposed Expenditure (Rs Lakh)		
			2016-17	2017-18	2018-19
1	Providing 1x30MVA 66/11KV additional Power TF At 66kv Grid Sub Station Sec-39 UT Chd	522.61	300	222	
2	Replacement of 14 Nos. MOCB with SF6, Breakers at 66KV Grid Substation Sector-52 and Sector –12 UT Chandigarh.	514	400	114	
3	Conversion of existing 33KV Sub Station Sector-18 to 66KV Sub Station Sector-18 by Providing GIS 2x20MVA, 66/11KV Power Transformer along with 66 kV associated 66 kV T/L with underground cable from 66 kV Sector-26 to 66 kV Sector 18.	2729	409	1364	956
4	Providing 2x20MVA, 66 / 11KV Gas Insulated Sub Station at Sector-26 UT Chandigarh along with 66 KV D/C line from 66 kV I.T park to 66KV Grid Sub Station Sector-26 UT Chandigarh.	3698	554	1849	1295
5	Providing 66 KV Transmission Line along with associated 66 KV line bays to upcoming 66 KV Grid Substation at Raipur Kalan UT Chandigarh	1103	165	551	387

6	Execution of laying of 66 KV U/G Cable from Sector 32 Grid Sub Station to Sector 34 Grid Sub Station, Chandigarh.	854	256.2	341.6	256.2
	Total	**9420.6**	**2084.2**	**4441.6**	**2894.2**

7.11 With respect to the ongoing schemes, it is submitted that Chandigarh Electricity Department is in process of implementing these schemes for system improvement. The following table provides details of the project cost of such schemes and expenditure which has already being incurred on these schemes up to FY 2014-15.

Table 30: Ongoing Scheme's Original Cost and Incurred Expenditure

Sr. No.	66 KV Ongoing Works	Original Project Cost (Rs Lacs)	Expenditure Up to 14-15
1	Turnkey execution of 66 KV Transmission Line from T-off point to the proposed 66 KV Grid Substation in Institutional Area, Village Sarangpur, Chandigarh.	311.75	194.76
2	Turnkey Execution for 2 Nos. 66 KV Line bays at 66/11 KV Grid Substation in Institutional Area, Village Sarangpur, U.T., Chd.	117.75	17.66
3	Providing 2x20MVA 66/11KV Grid Sub-Station in the Institutional Area of Village Sarangpur in UT Chandigarh.	989.01	948
4	Providing 2x20MVA, 66/11KV Grid Sub-Station at Raipur Kalan	974.15	895.97
5	Up-gradation of Transformation Capacity at 66/11 KV S/ Stn. by replacing existing 2X12.5 MVA with 2 X 20 MVA T/F, 66/11 KV T/F and shifting and re-installation of 2X12.5 MVA T/S at existing 66/11 KV S/Stn. at Civil Sectt. Sec. 1 and Sec.12. Chd	712.1	656.81
6	Up-gradation of existing 33 KV Grid Sub Station to 66 KV voltage level by providing 1 X 30 MVA, 66/11 KV power transformer alongwith associated transmission line Sec. 34-C Chandigarh	722.11	626.74
7	Prov. New 66/11 KV 16/20 MVA Power Transformer on existing bay at 66Kv/11KV Grid S/Stn. Sector-47, Chd.	302.47	220.47
8	Providing 11KV automatic capacitor bank at various existing 66KV Grid S/Stn., in Chandigarh.	979.65	901.31
9	Conversion of existing 66 KV S/C Transmission Line and Underground Cable from 220 KV Substation, Kishangarh to Sector -12, Chandigarh to D/C Transmission Line.	737.11	200
	Total	**5108.99**	**4461.72**

7.12 It is submitted that with respect to few of the ongoing schemes there were issues with respect to approvals, etc. on account of which limited expenditure could be under taken. However, CED plans to implement these schemes during the Control Period. The table below presents the proposed capital expenditure on these ongoing schemes during the control period.

Table 31: Proposed Capital Expenditure for 66 KV Ongoing Scheme

Sr. No.	66 KV Ongoing Works	Proposed Expenditure (Rs Lakh)		
		2016-17	2017-18	2018-19
1	Turnkey execution of 66 KV Transmission Line from T-off point to the proposed 66 KV Grid Substation in Institutional Area, Village Sarangpur, Chandigarh.	53.49	53.49	
2	Turnkey Execution for 2 Nos. 66 KV Line bays at 66/11 KV Grid Substation in Institutional Area, Village Sarangpur, U.T., Chd.	27.02	27.02	36.03
3	Providing 2x20MVA 66/11KV Grid Sub-Station in the Institutional Area of Village Sarangpur in UT Chandigarh.	21.01	0	0
4	Providing 2x20MVA, 66/11KV Grid Sub-Station at Raipur Kalan	48.18	0	0
5	Up-gradation of Transformation Capacity at 66/11 KV S/ Stn. by replacing existing 2X12.5 MVA with 2 X 20 MVA T/F, 66/11 KV T/F and shifting and re-installation of 2X12.5 MVA T/S at existing 66/11 KV S/Stn. at Civil Sectt. Sec. 1 and Sec.12. Chd	20	15.29	0
6	Up-gradation of existing 33 KV Grid Sub Station to 66 KV voltage level by providing 1 X 30 MVA, 66/11 KV power transformer alongwith associated transmission line Sec. 34-C Chandigarh	85.37	0	0
7	Prov. New 66/11 KV 16/20 MVA Power Transformer on existing bay at 66Kv/11KV Grid S/Stn. Sector-47, Chd.	82	0	0
8	Providing 11KV automatic capacitor bank at various existing 66KV Grid S/Stn., in Chandigarh.	58.34	0	0
9	Conversion of existing 66 KV S/C Transmission Line and Underground Cable from 220 KV Substation, Kishangarh to Sector -12, Chandigarh to D/C Transmission Line.	200	337.11	
	Total	**595.42**	**432.9**	**36.03**

7.13 In addition to the 66kV schemes, CED is also undertaking 11kV works which are primarily intended for strengthening of the distribution network and shall be useful in improving the reliability and voltage profile of the distribution network for the end consumers. The proposed schemes (details of which are provided above) and capital expenditure to be undertaken over the control period is as below:

Table 32: Proposed Capital Expenditure for 11 KV Schemes

Sr. No.	11 kV Works	Proposed Expenditure (Rs Lakh)		
		2016-17	2017-18	2018-19
1	General Service Connection (GSC) and Industrial Service Connection (ISC) and other normal development	230	240	230
2	Strengthening of distribution system by Providing 11 kV Underground power distribution system	180	180	170.0
3	Strengthening of distribution system by providing/Augmentation 11/.400 KV, 315/200/100 KVA Distribution Transformers along with LT ACB	220	220	213.3
4	Providing and Augmentation of the LT O/H ACSR conductors	10	10	26.7
5	Providing 11 kV /LT Aerial Bunched Cables	130	140	130.0
6	Providing improved metering system, communication , Special tools , testing equipment, Vehicles, sky lift, safety devices office equipment etc.	90	90	81.7
7	Improvement and augmentation of 66/11 kV existing Substations and 11 kV Indoor substations	60	60	73.3
8	Installation of LT Shunt Capacitors on the existing distribution transformers	50	60	46.7
9	Replacement of the electro mechanical meters to static meters.	60	0	58.3
	Total	**1030**	**1000**	**1030**

CAPITALIZATION SCHEDULE

7.14 For 66kV new and ongoing schemes, CED has proposed the capitalization considering the estimated date of commissioning of these schemes.

7.15 With respect to the 11kV schemes, 100% capitalization of the amount proposed in the concerned year for schemes such as General Service connections and industrial service connections, augmentation distribution transformers and LT OH conductors, installation of shunt capacitors and replacement of electro-mechanical meters has been considered.

7.16 Scheme-wise and year-wise proposed capitalization for the Control Period is summarized in Table below:

Table 33: Capitalization Schedule

Sr. No.	Name of Scheme	Capitalization		
		2016-17	2017-18	2018-19
A	**66 KV Ongoing Works**			

Sr. No.	Name of Scheme	Capitalization		
		2016-17	2017-18	2018-19
1	Turnkey execution of 66 KV Transmission Line from T-off point to the proposed 66 KV Grid Substation in Institutional Area, Village Sarangpur, Chandigarh.		311.75	
2	Turnkey Execution for 2 Nos. 66 KV Line bays at 66/11 KV Grid Substation in Institutional Area, Village Sarangpur, U.T., Chd.	0	0	120
3	Providing 2x20MVA 66/11KV Grid Sub-Station in the Institutional Area of Village Sarangpur in UT Chandigarh.	989.01		
4	Providing 2x20MVA, 66/11KV Grid Sub-Station at Raipur Kalan	974.15		
5	Up-gradation of Transformation Capacity at 66/11 KV S/ Stn. by replacing existing 2X12.5 MVA with 2 X 20 MVA T/F, 66/11 KV T/F and shifting and re-installation of 2X12.5 MVA T/S at existing 66/11 KV S/Stn. at Civil Sectt. Sec. 1 and Sec.12. Chd	0	712.11	0
6	Up-gradation of existing 33 KV Grid Sub Station to 66 KV voltage level by providing 1 X 30 MVA, 66/11 KV power transformer alongwith associated transmission line Sec. 34-C Chandigarh	722.11		
7	Prov. New 66/11 KV 16/20 MVA Power Transformer on existing bay at 66Kv/11KV Grid S/Stn. Sector-47, Chd.	302.47		
8	Providing 11KV automatic capacitor bank at various existing 66KV Grid S/Stn., in Chandigarh.	979.65		
9	Conversion of existing 66 KV S/C Transmission Line and Underground Cable from 220 KV Substation, Kishangarh to Sector -12, Chandigarh to D/C Transmission Line.		737.11	
	Total	**3967.39**	**1760.97**	**120**
B	**66 kV New Schemes**			
1	Providing 1x30MVA 66/11KV additional Power TF At 66kv Grid Sub Station Sec-39 UT Chd		522.61	
2	Replacement of 14 Nos. MOCB with SF6, Breakers at 66KV Grid Substation Sector-52 and Sector –12 UT Chandigarh.		514	
3	Conversion of existing 33KV Sub Station Sector-18 to 66KV Sub Station Sector-18 by Providing GIS 2x20MVA, 66/11KV Power Transformer along with 66 kV associated 66 kV T/L with underground cable from 66 kV Sector-26 to 66 kV Sector 18.			2729
4	Providing 2x20MVA, 66 / 11KV Gas Insulated Sub Station at Sector-26 UT Chandigarh along with 66 KV D/C line from 66 kV I.T park to 66KV Grid Sub Station Sector-26 UT Chandigarh.			3698

Sr. No.	Name of Scheme	Capitalization		
		2016-17	2017-18	2018-19
5	Providing 66 KV Transmission Line along with associated 66 KV line bays to upcoming 66 KV Grid Substation at Raipur Kalan UT Chandigarh			1103
6	Execution of laying of 66 KV U/G Cable from Sector 32 Grid Sub Station to Sector 34 Grid Sub Station, Chandigarh.			854
	Total	**0.0**	**1036.6**	**8384.0**
C	**11 kV Works**			
1	General Service Connection (GSC) and Industrial Service Connection (ISC) and other normal development	230	240	230
2	Strengthening of distribution system by Providing 11 kV Underground power distribution system	108	180	174
3	Strengthening of distribution system by providing/Augmentation 11/.400 KV, 315/200/100 KVA Distribution Transformers along with LT ACB	220	220	213.3
4	Providing and Augmentation of the LT O/H ACSR conductors	10	10	26.7
5	Providing 11 kV /LT Aerial Bunched Cables	78	136	134
6	Providing improved metering system, communication , Special tools , testing equipment, Vehicles, sky lift, safety devices office equipment etc.	54.0	90.0	85.0
7	Improvement and augmentation of 66/11 kV existing Substations and 11 kV Indoor substations	36	60	68
8	Installation of LT Shunt Capacitors on the existing distribution transformers	50	60	46.7
9	Replacement of the electro mechanical meters to static meters.	60	0	0
	Total	**846**	**996**	**977.67**

7.17 The table below presents overview of the planned capital expenditure and capitalization schedule over the first control period.

Table 34: Year Wise Overall Capital Expenditure and Capitalization

Particulars (In Rs Lakh)	2016-17	2017-18	2018-19
Capital Expenditure	3709.6	5874.5	3960.2
Capitalization	4813.4	3793.6	9481.7

PHYSICAL TARGET ACHIEVEMENT FOR THE CONTROL PERIOD

7.18 In accordance with the proposed capitalization schedule, CED expects to roll out infrastructure as presented in the table below:

Table 35: Expected Physical Target Achievement for the control period

Year	Distribution Transformer		New Sub-Stations (66/11KV)		Lines (In KM's)		
	Nos.	kVA	Nos.	MVA	LT	11KV	66KV
2016-17	62	14000	0	0	5	0	0
2017-18	62	14000	4	150	5	4	2
2018-19	65	15000	3	110	10	3	21

STATUS OF TENDER PROCESSING FOR SUPPLY/SERVICES

7.19 All activities to prepare DNIT, Tender & their execution is done by Central Executing Agencies such as PGCIL, NESCL etc. as their own level as per GFR-126. The normal lead time to complete the work is 18 to 24 Months after award of work.

STATUS OF ROW OR LAND ACQUISITION

7.20 The ROW is provided by Chief Architect, Department of Urban Planning when it is required to execute the work. The ROW of following works is under approval:

- Turnkey execution of 66 KV Transmission Line from T-off point to the proposed 66 KV Grid Substation in Institutional Area, Village Sarangpur, Chandigarh.
- Conversion of existing 66 KV S/C Transmission Line and Underground Cable from 220 KV Substation, Kishangarh to Sector -12, Chandigarh to D/C Transmission Line.

CHAPTER 8: FINANCING OF THE CAPITAL SCHEMES

8.1 The entire capital expenditure incurred by CED had been funded through equity infusion by GOI through budgetary support without any external borrowings. There is no loan borrowings by the Chandigarh Electricity Department for the capital expenditure.

8.2 As per the Regulation 24 of MYT Regulations, any equity deployed in excess of 30% of the capital cost of the project is required to be treated a normative loan. Since the entire capital expenditure in the various schemes shall be infused by the Government of India, CED requests the Hon'ble Commission to consider the funding of the various schemes in line with the Regulation 24 and provide approval for the same.

8.3 The breakup of the financing of the capital expenditure undertaken during the Control Period is provided in table below:

Table 36: Proposed Funding Details

Particulars	FY 2016-17 (In Rs Lakhs)	FY 2017-18 (In Rs Lakhs)	FY 2018-19 (In Rs Lakhs)
Proposed Capital Expenditure	3709.6	5874.5	3960.2
Actual Funding			
100% Equity from GoI	3709.6	5874.5	3960.2
Proposed Funding in line with Regulation 24 (b) fof JERC MYT Regulations			
Equity (30%)	1,112.9	1,762.4	1,188.1
Debt (Normative Debt in excess of 30% equity)	2,596.7	4,112.2	2,772.1
Total Funding	**3709.6**	**5874.5**	**3960.2**

TIE-UP OF FUNDS FOR THE APPROVED PROJECT COST

8.4 The 66 kV & above work are executed by the Central Executing Agencies such as PGCIL, NESCL etc. as "Deposit Work" on cost plus basis and funds with respect to these projects are deposited by

the Chandigarh Administration. The competent authority allocate the funds under 4801 Plan Head to CED.

CHAPTER 9: OTHER INITIATIVES

ENERGY EFFICIENCY AND DEMAND SIDE MANAGEMENT

9.1 Regulation 5 of the JERC for the state of Goa and Union Territories (Multi Year Distribution Tariff) Regulations, 2014 states that

"The Distribution Licensees shall project the power purchase requirement after considering effect of target set for the Energy Efficiency (EE) and Demand Side Management (DSM) schemes."

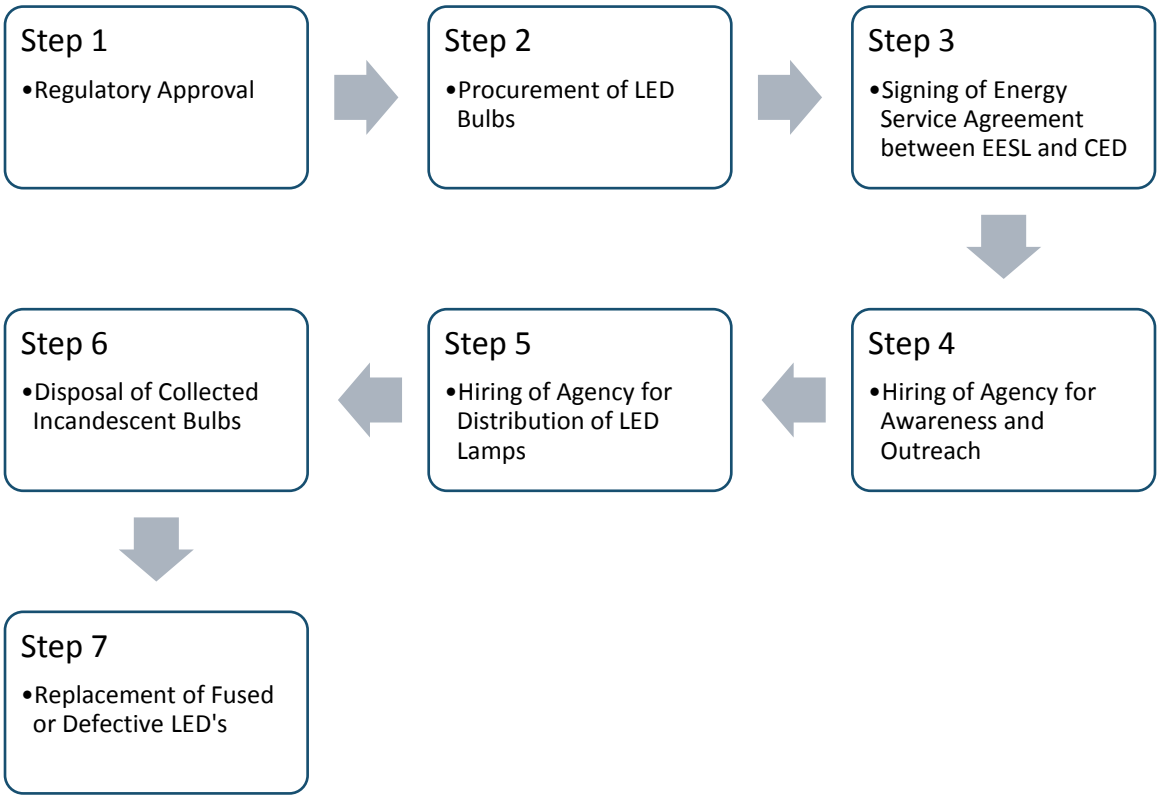
9.2 In view of the large and growing domestic consumption within the distribution area, CED proposes to implement Efficient Lighting Program by distribution of LED bulbs in the UT of Chandigarh as a part of Demand Side Management Activity, through an Energy Service Company (ESCO), M/s. Energy Efficiency Services Limited, New Delhi.

9.3 Under the scheme, M/s EESL will provide 3 numbers of LED bulbs each to approximately 1.81 Lakhs domestic consumers. An estimation of the savings and expenditure proposed by M/s EESL is provided in the table below:

Table 37: Estimated Savings and Expenditure for Energy Efficiency Program

No of LED's to be replaced	5.43 Lakhs
Expected annual energy savings	12.56 MU's
Expected reduction of installed load	11.95 MW
Estimated Capital Expenditure	Rs 5.71 Crores
Estimated cost savings to CED per year	Rs 4.3 Crores

9.4 M/s EESL has also assisted UT of Puducherry in undertaking a similar DSM initiative which has also been approved by the Hon'ble Commission. CED also plans to emulate this DSM measure in the Control Period and request an in principal approval from the Hon'ble Commission for going ahead with the proposal. An action plan for the aforementioned scheme is as below:



The Secretary Engineering has proposed M/s EESL for development of a detailed plan including program design, implementation methodology, financing and payment mechanism, etc. CED requests the Hon'ble Commission provide in-principal approval for the program in order to enable CED to initiate development of the program with M/s EESL and submit the detailed plan to Hon'ble Commission for approval. The details of the proposal has been attached as Annexure 5.

AVAILABILITY OF WHEELING BUSINESS AND SUPPLY BUSINESS

9.5 Regulation 7 of the Joint Electricity Regulatory Commission for the state of Goa and Union Territories (Multi Year Distribution Tariff) Regulations, 2014 states

"The commission shall approve a trajectory while approving the business plan for certain variables having regard to the reorganization, restructuring and development of the electricity industry in the State, provided that the variable for which a trajectory may be indicated by the licensee include, but are not limited to, Operation & Maintenance expense norms, supply availability and wire availability and distribution losses."

9.6 In this regard, it is submitted that the Chandigarh Electricity Department is currently operating as an integrated department within the Administration of UT of Chandigarh. Therefore, the Transmission and

Distribution business is being carried out by CED as an integrated business and also the accounts were not being prepared as per the commercial principles.

9.7 Post the issuance of directives of the Hon'ble Commission in its various Orders, CED has initiated preparation of audited accounts as per commercial principles. A chartered accountant firm has been appointed to prepare and audit the accounts of CED as per standard accounting practices. Currently, audit of FY 2011-12 accounts have been completed while the audit of FY 2012-13 accounts is under process. Further, CED has taken up corporatization and the matter is under active consideration.

9.8 In view of the fact that the CED is still to segregate its transmission and distribution functions, it is submitted that segregation and monitoring the parameters of the distribution business under wires and retail supply functions is very difficult at the moment. Therefore, it is requested that the Hon'ble Commission should provide separate targets/ trajectories for wheeling and retail supply business only once CED has separated its transmission and distribution functions.

9.9 Further, with respect to setting of O&M targets for transmission and distribution functions as well, it is submitted that pending the availability of audited accounts as well as separation of transmission and distribution functions, it is difficult to provide O&M targets for the transmission and distribution business. CED requests the Hon'ble Commission to allow the O&M expenses for CED based on the actual O&M expenses incurred in the past years until the segregation of transmission and distribution functions and completion of audit of CED accounts for past years.

CGRF Expense Details

9.10 The details of the expense incurred over CGRF for the FY14-15 is provided as below:

Table 38: CGRF Expense Details

Sr No	Item	Amount (In Rs)
1	Salary	1131245
2	Petty Expenditure i.e. Newspaper bill, Stationary	40082
3	Refreshment Charges	22053
4	Total	1193390

Furthermore the administration has proposed to shift the office of CGRF to Sector-19, UT Chandigarh which can function independently, as such there may be increased expenditure over last year due to various charges and office contingency.

9.11 It is also submitted that expenditure amounting to Rs. 421960 has been approved for the appointment of Ombudsman which shall be part of CGRF expense during the control period.

Smart Grid Initiative

9.12 CED has initiated work towards development of smart grid project in the UT of Chandigarh. In this regard initial discussions have been held with M/s POWERGRID to work out the modalities and

procedure to start the project. Also, approval has been sought for the same from the Chief Engineer, Chandigarh. The project shall be carried out in phased manner for which all the baseline data has been provided and detailed proposal is still awaited from POWERGRID. CED shall submit all requisite information with respect to smart grid investment post finalization of the report of POWERGRID for approval of the Hon'ble Commission.

UNIFIED LOAD DISPATCH CENTER

9.13 The CED intends to develop unified load dispatch center in UT Chandigarh for which the matter has been taken up with M/s POWERGRID who has requested to choose the option as to whether the investment is to be made by CED or the investment is to be made by POWERGRID itself. Further in case the investment is to be made by POWERGRID on tariff based competitive bidding, the CED shall reimburse the same on monthly basis as per the tariff determined by the CERC. The detailed proposal/agenda shall be submitted to the Telecommunication, SCADA & Telemetry (tesT) committee/ ULDC scheme monitoring group (USMG) after internal approvals of the Administration. CED shall submit the details of the project and estimated cost with respect to development of the unified load dispatch center to the Hon'ble Commission post approval and finalization of the scheme details.

-sd-
Superintending Engineer
Electricity Operation Circle
U.T. Chandigarh