



Business Plan

Approval of Business Plan for Multi-Year Control Period
from FY 2019-20 to FY 2021-22

Petition No. 260/2018

For

Electricity Department, Transmission Division,
UT of Dadra and Nagar Haveli

16 November 2018

JOINT ELECTRICITY REGULATORY COMMISSION

For the State of Goa and Union Territories,

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List of abbreviations

Abbreviation	Full Form
Act	The Electricity Act, 2003
ATE	Appellate Tribunal of Electricity
CAGR	Compound Annualized Growth rate
Capex	Capital Expenditure
CEA	Central Electricity Authority
CGS	Central Generating Stations
COD	Commercial Operation Date
CTU	Central Transmission Utility
Cr	Crores
D/C	Double Circuit
ED	Electricity Department
EHT	Extra High Tension
FY	Financial Year
GFA	Gross Fixed Assets
HT	High Tension
IEX	Indian Energy Exchange Limited
IPP	Independent Power Producer
ISTS	Inter State Transmission System
JERC	Joint Electricity Regulatory Commission for the state of Goa and Union Territories
LT	Low Tension
MCLR	Marginal Cost of funds based Lending Rate
MU	Million Units
MYT	Multi Year Tariff
NTPC	NTPC Ltd.
O&M	Operation and Maintenance
PLF	Plant Load Factor
POSOCO	Power System Operation Corporation Limited
PPA	Power Purchase Agreement
REC	Renewable Energy Certificate
RLDC	Regional Load Despatch Centre
RoW	Right of Way
RPO	Renewable Purchase Obligation
SERC	State Electricity Regulatory Commission
SLDC	State Load Despatch Center
SOP	Standard of Performance
SS	Substation
T&D	Transmission & Distribution
TVS	Technical Validation Session
UI	Unscheduled Interchange
UT	Union Territory

Before the
Joint Electricity Regulatory Commission
For the State of Goa and Union Territories, Gurugram

QUORUM

Shri. M. K. Goel (Chairperson)

Smt. Neerja Mathur (Member)

Petition No. 260/2018

In the matter of

Approval of Business Plan for Multi-Year Control Period from FY 2019-20 to FY 2021-22.

And in the matter of

Electricity Department, Transmission Division, Dadra and Nagar Haveli Petitioner

ORDER

- a) This Order is passed in respect of the Petition filed by the Electricity Department, Transmission Division, Dadra and Nagar Haveli for approval of its Business Plan for the Multi-Year Control Period of three years commencing from 01 April 2019 to 31 March 2022.
- b) In exercise of the powers conferred on it by sub-Section (2) of Section 181 read with Section 36, Section 39, Section 40, Section 51, Section 61, Section 62, Section 63, Section 64, Section 65 and Section 86 of the Electricity Act, 2003 (36 of 2003) and all other powers enabling it in this behalf, the Joint Electricity Regulatory Commission for the State of Goa and Union Territories (except Delhi) after previous publication, issued Joint Electricity Regulatory Commission for the State of Goa and Union Territories (Generation, Transmission and Distribution Multi Year Tariff) Regulations, 2018 on 10 August 2018.
- c) In terms of Regulation 8.1 and 16 of the aforesaid Regulations, the Petitioner has filed a Petition for approval of its Business Plan for three years Control Period i.e. from FY 2019-20 to FY 2021-22 with details for each year of the Control Period before the Commission.
- d) After receiving the Petition, the Commission scrutinized the contents of the Petition and called for further information/data, wherever required, in the form of deficiency notes so as to take a prudent view of the Petition. Comments/objections/suggestions were also invited from the stakeholders and public hearing was conducted. All the comments/objections/suggestions made by the stakeholders in both written or verbal mode are taken into consideration.
- e) Based on the information/documents submitted by the Petitioner and keeping in view the provisions of the Electricity Act, 2003 and the relevant Regulations framed thereunder, the Commission hereby approves the Business Plan for the Control Period from FY 2019-20 to FY 2021-22 by way of this Order, which covers the capital investment plan, performance targets, fixation of Transmission loss trajectory etc.
- f) The Petitioner is now directed to submit the Multi Year Tariff Petition for the Control Period on or before 30 November 2018, in terms of Regulation 9 of the aforesaid Regulations.

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- g) Ordered as above, read with attached document giving detailed reasons, grounds and conditions. Copy of this Order be sent to the Petitioner, CEA and the Administration of UT of Dadra and Nagar Haveli.

Sd/-

Neerja Mathur
(Member)

Sd/-

M.K. Goel
(Chairperson)

JOINT ELECTRICITY REGULATORY COMMISSION
(For the State of Goa and Union Territories)

Place: Gurugram

Date: 16 November 2018

1. Chapter 1: Introduction

1.1. Joint Electricity Regulatory Commission

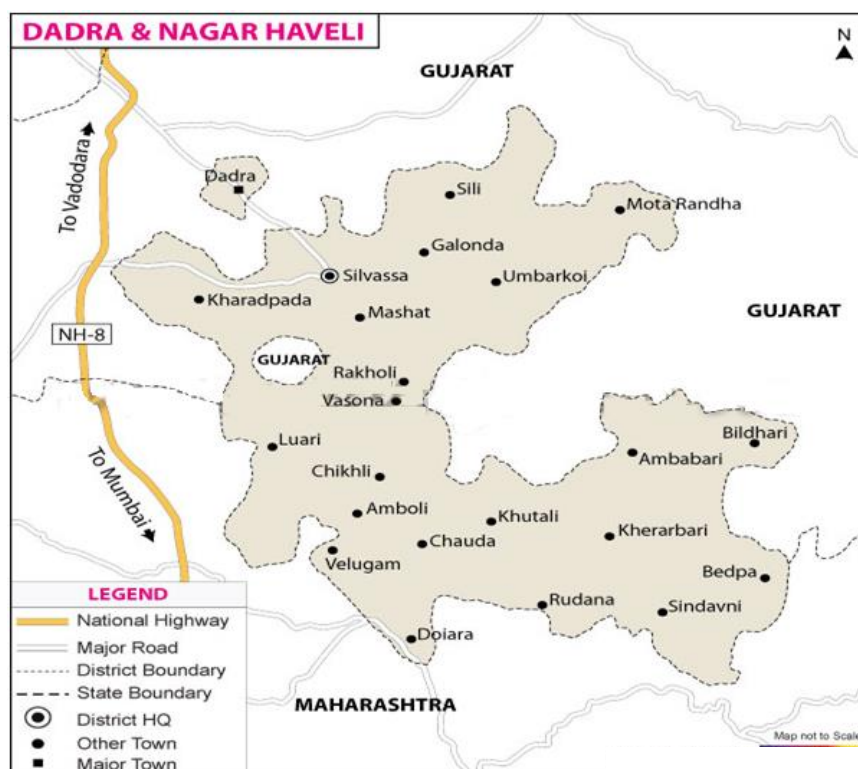
In exercise of powers conferred by the Electricity Act 2003, the Central Government constituted a Joint Electricity Regulatory Commission for all the Union Territories except Delhi to be known as “Joint Electricity Regulatory Commission for the Union Territories” vide notification no. 23/52/2003-R&R dated 2 May 2005. Later with the joining of the State of Goa, the Commission came to be known as “Joint Electricity Regulatory Commission for the State of Goa and Union Territories” (hereinafter referred to as “JERC” or “Commission”) vide notification no. 23/52/2003-R&R (Vol. II) dated 30 May 2008.

JERC is an autonomous body responsible for regulation of the Power Sector in the State of Goa and the Union Territories of Andaman & Nicobar Islands, Lakshadweep, Chandigarh, Daman & Diu, Dadra & Nagar Haveli and Puducherry, consisting of generation, transmission, distribution, trading and use of electricity. Its primary objective includes taking measures conducive to the development of the electricity industry, promoting competition therein, protecting interest of consumers and ensuring supply of electricity to all areas.

1.2. Union Territory of Dadra and Nagar Haveli

The Union Territory of Dadra and Nagar Haveli (hereinafter referred to as “UT”) is spread over 491 sq. km, has 72 villages with a population of 3, 42,853 as per Census 2011. The natural attractions of this region have made it a popular tourist destination in the Western region of India. Additionally, due to liberalized policies of Central Government of tax benefits, the State has also developed into a highly industrial area.

The rapid development of the Territory has led to a tremendous increase in the demand for power. Currently, 97% of total sales are to HT and LT industrial consumers. The present average demand of this territory is 740 MW to 760 MW and peak demand is 801 MW. The UT has also achieved 100% electrification and 100% metering which further contributes to the increasing demand for power.



1.3. Electricity Department, Transmission Division, UT of Dadra and Nagar Haveli

The Dadra and Nagar Haveli Electricity Reforms Transfer Scheme 2013 was notified by the Administration of Dadra and Nagar Haveli vide notification no. 1-1(594) ELE/2013/697 dated 7 March 2013. Further, the Administration vide notification no. 1-1(656)/ELE/2012/700 dated 8 March 2013 for implementing the Dadra and Nagar Haveli Electricity Reforms Transfer Scheme 2013 notified the effective date as 1 April 2013.

As per the Clause 4(1) of the notified transfer scheme:

“Subject to the provision of this scheme on and with effect from such date as may be notified by the Administration as effective date of transfer:

(a) The functions of Distribution and associated divisions of department as set out in Schedule A shall stand out and vested with DNH Power Distribution Corporation Limited without any further act or things to be done by the Administration or the Company or any other person.”

As per the Schedule ‘B’ of the notified Transfer Scheme, the assets at 66/11 kV and below have been transferred to DNHPDCL.

Further, as per para at serial no. 8:

“(8) The functions, duties, personnel, assets , liabilities and proceedings as set out in schedule ‘C’ shall not be transferred to the company and vest with the Electricity Department.”

As per Schedule ‘C’:

“Unless otherwise specified by the Administration, the assets, liabilities, personnel and proceedings in relation to following shall not be transferred to the Company:

- 1. Function of generation of electricity except non-conventional source of energy.*
- 2. Functions of transmission of electricity.*
- 3. Functions of policy making, Planning and Coordination.*
- 4. Functions which are not transferred to the Company under this scheme.”*

Accordingly, the Electricity Department, Transmission Division of Dadra and Nagar Haveli (hereinafter referred to as “ED-DNH Transmission”) has been entrusted with the function of transmission of electricity in its license area.

Existing Transmission Network

The present transmission system of ED-DNH Transmission consists of 36.88 circuit km of 220 kV double circuit (D/C) lines. At present, the State gets power from 400/220 kV Substation of POWERGRID Vapi and 400/200 kV Kala Substation of POWERGRID (DNH).

The details of the transformation capacity of ED-DNH Transmission are as follows:

Table 1: Transformation Capacity of ED-DNH Transmission

Sl. No.	Sub-station	Configuration	Total
1	220 kV Kharadpada Sub-Station	2 x 100 + 2 x 160 MVA	520 MVA
2	220 kV Khadoli Sub-Station	3 x 160 MVA	480 MVA
3	220kV Switching Stations at Sayli and New Kharadpada and Bhilosa	03 Nos	--
	TOTAL Capacity (220kV Level)		1000 MVA

1.4. Multi Year Tariff Regulations, 2018

The Commission notified the Joint Electricity Regulatory Commission for the State of Goa and Union Territories (Generation, Transmission and Distribution Multi Year Tariff) Regulations, 2018 on 10 August 2018. The said Regulations have been hereinafter referred to as the “JERC MYT Regulations”. As per Clause 2.1.17 of these Regulations, the “Control Period” is defined as multi-year period comprising of three financial years from FY 2019-20 to FY 2021-22.

These Regulations are applicable to all the generation companies, transmission and distribution licensees in the State of Goa and Union Territories of Andaman & Nicobar Islands, Lakshadweep, Chandigarh, Daman & Diu, Dadra & Nagar Haveli and Puducherry.

1.5. Filing and admission of Petition for Multi-Year Business Plan for FY 2019-22

As per Clause 8.1 of the JERC MYT Regulations, the Petitioner is required to file for approval of the Commission, its Business Plan for three years Control Period i.e. from FY 2019-20 to FY 2021-22 with details for each year of the Control Period.

The ED-DNH Transmission submitted the current Petition for approval of ‘Business Plan for MYT Control Period FY 2019-20 to FY 2021-22’ vide letter no. DNH/ELE/TRANS/2018/20/287 dated 6 September 2018.

After initial scrutiny/analysis, the Petition on Business Plan for the Control Period FY 2019-20 to FY 2021-22 was admitted on 7 September 2018 and was numbered as Petition no. 260/2018.

1.6. Interaction with the Petitioner

A preliminary scrutiny/analysis of the Petition was conducted and certain deficiencies were observed. Accordingly, deficiency notes were issued to the Petitioner. Further, additional information/clarifications were solicited from the Petitioner as and when required. The Petitioner submitted its response on the issues through various letters/emails. The following table provides the list of interactions with the Petitioner along with the dates:

Table 2: Interactions with the Petitioner

S. No	Subject	Date
1	Admission of the Petition by the Commission	07.09.2018
2	Deficiency Note issued by the Commission	12.09.2018
3	Replies to Deficiency Note received by the Commission	18.09.2018
4	Second Deficiency Note issued by the Commission	11.10.2018
5	“Note on the Transmission System of UT of Dadra & Nagar Haveli” and status update note on “Recommendations of Comprehensive system study of Transmission Network for UT of D&NH” submitted by the Petitioner	13.11.2018, 15.11.2018

The Order has referred at numerous places to various actions taken by the “Commission”. It may be mentioned for the sake of clarity that the term “Commission,” except for the Hearing and Orders, denotes the Secretariat of the Commission responsible for carrying out technical due diligence and validation of data of the Petitions filed by the utilities, obtaining and analyzing information/clarifications received from the utilities, and submitting relevant issues for consideration of the Commission.

1.7. Public Hearing Process

The Commission directed the Petitioner to publish the summary of the Business Plan proposal in the abridged form to ensure public participation. The public notices were published by the Petitioner for inviting objections/suggestions from the stakeholders on the Business Plan Petition:

Table 3: Public Notices published by the Petitioner

Sr.No.	Date	Name of Newspaper	Language
1	22.09.2018	UT Today	English

The Petitioner also uploaded the Petition on its website (www.dnh.nic.in) for inviting objections and suggestions on the Petition. Interested parties/stakeholders were requested to file their objections / suggestions on the Petition to the Commission with a copy to the Petitioner on or before September 25, 2018. The Commission has also uploaded the copy of the Petition on its website to facilitate the stakeholders.

The Commission received written objections/ suggestions on the Petition. The Commission forwarded these to the Petitioner for communicating its response. The Petitioner has generally agreed to address all the issues raised by the stakeholders under intimation to the Commission.

The Commission also published Public Notices in the leading newspapers as tabled below, giving due intimation to the stakeholders, consumers and the public at large about the Public Hearing to be conducted by the Commission on September 25, 2018 from 10 AM onwards at Silvassa.

Table 4: Public Notices published by the Commission

S.No.	Date	Name of Newspaper	Language
1	08.09.2018, 21.09.2018	Indian Express	English
2	08.09.2018, 21.09.2018	Nishpaksha Jansansar	Hindi
3	08.09.2018, 21.09.2018	Gujarat Samachar	Gujarati

The Commission has examined the issues and concerns raised by the stakeholders in writing and / or voiced by them. The major issues raised by the Stakeholders, the responses of the Petitioner thereon and the views of the Commission, have been summarized in Chapter 2 of this Order.

1.8. Organization of the Order

This Order is organized in the following Chapters:

- **Chapter 1** of the Order provides the background and brief description of the Territory, Utility and Regulatory process undertaken by the Commission.
- **Chapter 2** of the Order provides the summary of various suggestions and objections raised by the stakeholders, followed by the response of the Petitioner and the views of the Commission on these issues.
- **Chapter 3** discusses the submissions of the Petitioner in its Business Plan Petition and the Commission's views thereon.

2. Chapter 2: Stakeholder Consultations

2.1. Regulatory Process

The Public Hearing was held on 25 September 2018 at Silvassa in respect of Business Plan Petition for Control Period from FY 2019-20 to FY 2021-22. During the Public Hearing, stakeholders presented their views in person before the Commission. All the participants from the public, who had not submitted written objections earlier, were also given an equal opportunity to present their views/suggestions in respect of the Petition.

2.2. Suggestions/ Objections of the Stakeholders, Response of the Petitioner and Commission's Views

The Commission appreciates the efforts of various stakeholders in providing their suggestions / comments / observations to make the Electricity Transmission Sector responsive and efficient. The Commission has noted the concerns of all stakeholders and has tried to address them to the extent possible in the subsequent sections and/or through directives. The submissions of the Stakeholders, response of the Petitioner and views of the Commission are summarized below:

2.2.1. Transmission Loss trajectory

Stakeholder comments

- Capex for 220 kV line network expansion needs to be included for increasing connectivity with different sources of incoming power to strengthen and improve power reliability/quality and reduce losses.

Petitioner's response

- The Petitioner has responded that the scheme proposed by it for establishment of 2x160 MVA, 220/66 kV Vagchipa Sub-Station with associated 220 kV Lines is planned to be operational by FY 2019-20. This scheme, along with another planned by the CTU shall be able to take care of anticipated demand of UT till 2022.

Commission's View

- The Commission observes that, based on the Petitioner's submission, a 220/66 kV Vagchipa Sub-Station with associated 220 kV lines is planned to be operational by FY 2019-20 (detailed in section 3.4.1 of this Order). The Commission also observes from Petitioner's submission that such scheme, along with another scheme planned by the CTU, shall be sufficient to cater to anticipated power demand of the UT upto the year 2022. Further, the Commission directs the Petitioner to conduct a fresh Intra State Load Flow Study to assess if there is a further need for 220 kV line network expansion, in order to improve reliability and reduce losses.

2.2.2. Capital Investment plan

Stakeholder comments

- **Establishment of 2x160 MVA, 220/66 kV Vagchipa Sub-Station with associated 220 kV Lines:** Utility to provide reason for over 38% increase in cost overrun from approved cost of INR 55.07 Cr to revised cost of INR 76.11 Cr, along with approved and revised timelines and any revenue loss due to such delays

- **New schemes:** Utility to provide scheme wise justification for capital expenditure, technically and commercially along with the rate of return / payback period.
- **Upgradation and Modernization of existing 220/66 kV Kharadpada Sub-Station by replacing existing circuit breakers and providing SCADA system:** Utility to provide justification for unreasonable delay in implementing the scheme over a period of three years.

Petitioner's response

- The Petitioner has responded to look into the matter appropriately.

Commission's View

- The Commission has considered the total cost of INR 65.43 Cr, which was approved in its Tariff Order dated 30 January 2018, in respect of the ongoing scheme (Establishment of 2x160 MVA, 220/66 kV Vagchipa Sub-Station with associated 220 kV Lines). The Commission has also directed the Petitioner to submit CEA's approval for the escalation in cost to INR 76.11 Cr.
- The Commission observes that the Petitioner has submitted the DPRs for the proposed new schemes and has also provided justification for proposing the said schemes. The same has been detailed in section 3.4.1 of this Order.

3. Chapter 3: Approval of the various components of the Business Plan Petition for the Multi-Year Control Period FY 2019-20 to FY 2021-22

3.1. Introduction

This Chapter deals with the key aspects of the Business Plan Petition submitted by the Petitioner, and is structured as below.

- Transmission System-Demand projections and Capacity
- Transmission Loss trajectory
- Capital Investment Plan
- Manpower Plan

In the subsequent sections, the Commission has recorded Petitioner's submissions and analyzed the same. The Commission has subsequently recorded its reasoning while approving each of the components.

3.2. Transmission System-Demand projections and Capacity

3.2.1. Monthly Peak and Average Demand

Petitioner's submission

The Petitioner's submission of month wise actual peak and average demand for FY 2015-16, FY 2016-17, FY 2017-18 and for five months of FY 2018-19 are as given below:

Table 5: Month wise actual peak and average demand for FY 2015-16

Sr. No	Month	Peak Demand (MW)	Average Demand (MW)
1	Apr-15	723.41	678.64
2	May-15	711.30	659.16
3	Jun-15	710.14	654.92
4	Jul-15	718.18	668.92
5	Aug-15	706.10	654.26
6	Sep-15	713.39	667.92
7	Oct-15	730.72	661.60
8	Nov-15	719.46	628.26
9	Dec-15	699.49	638.29
10	Jan-16	695.64	642.84
11	Feb-16	721.39	677.05
12	Mar-16	858.72	673.42

Table 6: Month wise actual peak and average demand for FY 2016-17

Sr. No	Month	Peak Demand (MW)	Average Demand (MW)
1	Apr-16	728.56	687.43
2	May-16	741.39	694.76
3	Jun-16	757.81	710.86
4	Jul-16	750.17	693.04
5	Aug-16	745.14	685.78
6	Sep-16	765.12	714.11
7	Oct-16	775.96	705.39
8	Nov-16	752.84	664.49
9	Dec-16	716.01	642.91
10	Jan-17	729.47	673.45
11	Feb-17	741.14	697.36
12	Mar-17	739.28	681.41

Table 7: Month wise actual peak and average demand for FY 2017-18

Sr. No	Month	Peak Demand (MW)	Average Demand (MW)
1	Apr-17	754.37	702.90
2	May-17	751.72	696.39
3	Jun-17	748.95	696.46
4	Jul-17	781.07	674.46
5	Aug-17	743.18	694.87
6	Sep-17	758.14	702.65
7	Oct-17	767.72	686.18
8	Nov-17	774.28	711.46
9	Dec-17	767.45	716.93
10	Jan-18	779.01	719.58
11	Feb-18	775.78	732.78
12	Mar-18	777.47	717.68

Table 8: Month wise actual peak and average demand for FY 2018-19

Sr. No	Month	Peak Demand (MW)	Average Demand (MW)
1	Apr-18	814.53	731.83
2	May-18	790.15	725.88
3	Jun-18	801.46	739.35
4	Jul-18	778.68	720.39
5	Aug-18	813.52	742.62

The Petitioner has also submitted that as per 19th Electric Power Survey, the peak load of the UT shall reach 1300 MW by the end of FY 2021-22.

Commission's Analysis

The Commission notes that the Petitioner has submitted month wise actual peak and average demand for FY 2015-16, FY 2016-17, FY 2017-18 and for five months of FY 2018-19, but has not submitted month wise projections for the upcoming Control Period. The Commission has therefore projected the peak and average demand based on historical trends on monthly basis for the upcoming Control Period. In respect of projections of peak and average

demand for the months of April to August, the Commission has considered the CAGR from FY 2015-16 to FY 2018-19. In respect of projections of peak and average demand for the months of September to March, the Commission has considered the CAGR from FY 2015-16 to FY 2017-18. Further, the Commission has considered FY 2018-19 as the base year by using actual data for the months of April to August and revised estimates for the months of September to March based on FY 2017-18 data. Accordingly, the peak and average demand projected by the Commission based on historical trends for the upcoming Control Period is given in the following tables:

Table 9: Projections of Peak Demand by the Commission for the upcoming Control Period based on historical data

Sr. No	Month	CAGR Considered		Projections of Peak Demand (MW)		
		Duration	Rate	FY 2019-20	FY 2020-21	FY 2021-22
1	April	4-year	4.03%	847.36	881.50	917.03
2	May		3.57%	818.36	847.57	877.83
3	June		4.11%	834.40	868.69	904.40
4	July		2.73%	799.94	821.78	844.21
5	August		4.83%	852.81	894.00	937.18
6	September	3-year	3.09%	805.72	830.61	856.28
7	October		2.50%	806.59	826.75	847.42
8	November		3.74%	833.28	864.44	896.77
9	December		4.75%	842.09	882.09	923.99
10	January		5.82%	872.33	923.09	976.82
11	February		3.70%	834.25	865.12	897.13
12	March		-4.85%	703.88	669.75	637.26

Table 10: Projections of Average Demand by the Commission for the upcoming Control Period based on historical data

Sr. No	Month	CAGR Considered		Projections of Average Demand (MW)		
		Duration	Rate	FY 2019-20	FY 2020-21	FY 2021-22
1	April	4-year	2.55%	750.49	769.63	789.25
2	May		3.27%	749.62	774.13	799.44
3	June		4.12%	769.81	801.53	834.55
4	July		2.50%	738.40	756.86	775.78
5	August		4.31%	774.63	808.01	842.84
6	September	3-year	2.57%	739.23	758.23	777.71
7	October		1.84%	711.66	724.76	738.09
8	November		6.42%	805.74	857.47	912.52
9	December		5.98%	805.24	853.39	904.42
10	January		5.80%	805.47	852.19	901.62
11	February		4.03%	793.03	824.99	858.24
12	March		3.23%	764.79	789.49	814.99

The Commission notes that Petitioner has also submitted that as per 19th Electric Power Survey, the peak load of the UT shall reach 1300 MW by the end of FY 2021-22. The Commission notes that projections carried out by it

based on historical trends yield a peak demand of ~977 MW in FY 2021-22, which is much less than the peak demand estimate submitted by the Petitioner for FY 2021-22.

3.2.2. Demand Forecast for the Control Period

Petitioner's submission

The Petitioner has submitted that DNH Power Distribution Corporation Ltd. (DNHPDCL) is its only long-term open access customer. As DNHPDCL distributes electricity to all the consumers of the UT of Dadra and Nagar Haveli, the Petitioner has relied on the sales projections of DNHPDCL to forecast the increase in Petitioner's system load for the upcoming Control Period. The Petitioner has submitted that present average demand of this territory is 740 to 760 MW and peak demand is 801 MW. The Petitioner has also submitted that as per 19th Electric Power Survey, the peak load of the UT shall reach 1300 MW by the end of FY 2021-22. The Petitioner has submitted the energy sales used for the upcoming Control Period in the following table:

Table 11: Energy sales projected by the Petitioner for the upcoming Control Period

Sales (MU)	FY 18-19	FY 19-20	FY 20-21	FY 21-22
	RE	Projected	Projected	Projected
Total Sales	6,092.41	6,462.50	6,855.42	7,272.59

The Petitioner has also submitted that for meeting these requirements, DNHPDCL's power purchase plan is based on ~1040.25 MW of tie up from various Central Generating Stations and SECI by FY 2021-22.

Commission's Analysis

The Commission notes the Petitioner's submission that its demand forecast would depend upon DNHPDCL's projections, DNHPDCL being its only long-term open access customer. The Petitioner has quoted DNHPDCL's sales projections and power purchase tie up projections, but has not quoted the connected load forecast. The Commission in its Business Plan Order for the upcoming Control Period for DNHPDCL has projected for FY 2021-22, energy sales of 6725.73 MUs and a corresponding power purchase plan based on ~1100.34 MW of tie up from various Central Generating Stations and SECI.

The Commission notes that the submissions of connected load of DNHPDCL are given in the following table:

Table 12: DNHPDCL's submission on projection of Connected Load for upcoming MYT Control Period

Connected Load (MVA)	FY 2017-18 (Unaudited Actual)	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
		RE	Projected	Projected	Projected
Total Connected Load	1417.04	1484.89	1558.85	1636.58	1718.27

The projections of connected load approved by the Commission for DNHPDCL in its Business Plan Order for the upcoming Control Period are given below:

Table 13: Connected Load projections approved by the Commission for DNHPDCL for the upcoming MYT Control Period

Connected Load (MVA)	Revised Estimate	Approved Projections		
	Base Year	Control Period		
	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
Total Connected Load	1,445.88	1,475.41	1,505.66	1,536.67

DNHPDCL's projection of connected load is ~1718 MVA and power purchase tie up of ~1040 MW by FY 2021-22. The projections approved by the Commission in DNHPDCL's Business Plan Order for FY 2021-22 are connected load of ~1537 MVA and power purchase tie up of ~1100 MW, which is less than that projected by DNHPDCL.

3.2.3. Transmission System Capacity

Petitioner's submission

In response to the information sought by the Commission, the Petitioner has submitted a “Note on the Transmission System of UT of Dadra & Nagar Haveli”, which is backed up by “Comprehensive System Study of Transmission Network for UT of Dadra & Nagar Haveli” prepared by POWERGRID (March 2016) and a note providing the update on the system study.

The Petitioner has also submitted in the “Note on the Transmission System of UT of Dadra & Nagar Haveli” that with the completion of 220/66 kV 2x160 MVA substation at Vaghchhipa, which is likely by June 2019 and 220 kV line from New Vapi-II (POWERGRID) substation to 220 kV Sayali switching station (to be taken up by CTU), the Petitioner will be able to cater to anticipated power demand of the UT upto the year 2022.

Commission's Analysis

The Commission observes that as per the “Comprehensive System Study of Transmission Network for UT of Dadra & Nagar Haveli” prepared by POWERGRID (March 2016), load flow study was carried out for current and 2021-22 timeframe and the existing / planned system of DNH was found to be inadequate to handle the anticipated demand of 1300 MW by FY 2021-22. The study evolved various schemes, including New Sub-Station near Vapi / Ambheti and a number of System Strengthening schemes at 220 kV level.¹

The Commission has observed that in respect of system strengthening schemes, the Petitioner has only proposed 220/66 kV 2x160 MVA substation at Vaghchhipa in its capital investment plan. While replying to Commission's queries, the Petitioner has submitted the status update in respect of the schemes recommended by the POWERGRID's report for transmission system of the UT which is summarized in the table below:

Table 14: Status update by the Petitioner in respect of the schemes recommended by the POWERGRID's March 2016 report for transmission system of the UT²

S.No.	System Strengthening Scheme Details	Remarks
1	New Sub-Station near Vapi / Ambheti	
	Establishment of 2x500 MVA, 400/220 kV Sub-Station at Vapi / Ambheti (Vapi – II) Vapi II to Sayli 220 kV D/C line (high capacity)	Ministry of Power has appointed PFC consulting Limited (PFCCL) as the Bid Process Coo-coordinator for the purpose of Selection of Bidder as Transmission Service Provider (TSP) to establish transmission system for “Western Region Strengthening Scheme – XIX (WRSS-XIX) through tariff based competitive bidding process for following works
	LILO of KAPP – Vapi 400 kV D/C line at Vapi / Ambheti (New) Sub-Station Vapi / Ambheti (New) – New Kharadpada 220 kV D/C line (high capacity)	The work will be taken up as Regional project under supervision of CEA
2	Strengthening required at 220 kV level	
	LILO of Vaghchhipa – Khadoli 2nd 220 kV line at Sayli Sub-Station	<ul style="list-style-type: none"> As there is a new high capacity 220 kV D/C line proposed at Sayli SS from Vapi – II and hence this will meet the contingency. Also there is a space constraint at 220 kV Sayli SS for construction of new 220 kV bays.
	Kala(PG) – Khadoli 220kV 2nd D/C line (New)	<ul style="list-style-type: none"> There a wild life sanctuary area on the route from 400/220 kV Kala to 220 kV Khadoli SS. There is a severe RoW issues on this route due to the wild life sanctuary. Considering the wild life sanctuary area, it is not possible to lay another 220 kV D/C Kala – Khadoli line. New 220 kV Vapi - II to Sayli line will be erected and hence the 220 kV 2nd Kala – Khadoli D/C line is dropped
	Kharadpada –New Kharadpada 220kV 2nd D/C line (New)	<ul style="list-style-type: none"> There is a space constraint at 220 kV New Kharadpada SS as well as Kharadpada SS for construction of new 220 kV bays.

¹ Page No. 26, “Comprehensive System Study of Transmission Network for UT of Dadra & Nagar Haveli” prepared by POWERGRID (March 2016)

² Status update in respect of the schemes recommended by “Comprehensive System Study of Transmission Network for UT of Dadra & Nagar Haveli” prepared by POWERGRID (March 2016), as furnished by the Petitioner

S.No.	System Strengthening Scheme Details	Remarks
		<ul style="list-style-type: none"> Also after commissioning of Vaghchhipa Sub-Station, the load of Kharadpada SS will be reduced up to 50 % of present loading. Hence the contingency for 220 kV line will be met with existing lines at Kharadpada SS.
	Conversion of New Kharadpada – 220 kV switching substation into 2x160 MVA	<ul style="list-style-type: none"> One of the major 66 kV consumer of Kharadpada SS has switched over to 220 kV level at 220 kV Switching Station at Bhilosa. Moreover, after commissioning of Vaghchhipa Sub-Station the load of Kharadpada SS will be reduced up to 50% hence the proposal for installation of 2 x 160 MVA transformers at New Kharadpada SS has not been considered. Also, there is a space constraint at 220 kV New Kharadpada SS.
	Augmentation of transformation capacity at 220/66 kV Vaghchhipa ss by 1 x 160 MVA (3rd ICT)	<ul style="list-style-type: none"> The construction work of Vaghchhipa Sub-Station will be completed in June 2019 and after its commissioning the loading of 220 kV Vaghchhipa and 220 kV Kharadpada SS will meet the n-1 contingency at both the Sub-Stations. Also looking at the load forecasting of DNHPDCL, the proposal for augmentation of Vaghchhipa Sub-Station with 160 MVA transformer (3rd ICT) will be explored later on.

The Commission observes that the peak demand for FY 2021-22 projected by the Commission is 976.82 MW, which is lower than 1300 MW used by POWERGRID in the load flow study (based on 19th Electric Power Survey). The Commission notes from the Petitioner's submissions that as per the Petitioner, with the completion of 220/66 kV 2x160 MVA substation at Vaghchhipa, which is likely by June 2019 and 220 kV line from New Vapi-II (POWERGRID) substation to 220 kV Sayali switching station (to be taken up by CTU), the Petitioner will be able to cater to the anticipated power demand of the UT upto 2022.³

The Commission also directs the Petitioner to conduct a fresh Intra State Load Flow Study to assess if there is any further need for 220 kV network augmentation and submit a compliance report for Commission's consideration before the commencement of upcoming Control Period.

3.3. Transmission Loss trajectory

Petitioner's submission

The Petitioner submits that the system improvement works executed every year under the plan schemes as well as increase in energy sales quantum at higher voltages has resulted in the reduction of transmission losses. The Transmission loss trajectory proposed by the Petitioner for the upcoming Control Period (from substation-to-substation) is given in the following table:

Table 15: Transmission loss trajectory proposed by the Petitioner for the upcoming Control Period (from substation-to-substation)

Sr. No.	From Substation-To-Substation	2019-20	2020-21	2021-22
1	220 kV New K'pada-K'pada CKT-1	0.27%	0.26%	0.25%
2	220 kV New K'pada-K'pada CKT-2	0.24%	0.23%	0.22%
3	400 kV Kala- 220 kV Khadoli CKT-1	2.0%	1.8%	1.5%
4	400 kV Kala- 220 kV Khadoli CKT-2	0.6%	0.5%	0.4%
5	220 kV Sayli – Khadoli	0.1%	0.1%	0.1%
6	400 kV Kala-220 New K'pada CKT-1	1.0%	0.8%	0.7%
7	400 kV Kala-220 New K'pada CKT-2	1.5%	1.3%	1.2%

The Petitioner has informed that the overall Transmission Loss for FY 2017-17 is 0.31% and has proposed the overall Transmission Loss trajectory as given in the following table:

³ "Note on the Transmission System of UT of Dadra & Nagar Haveli"

Table 16: Transmission loss (%) trajectory proposed by the Petitioner for upcoming Control Period

Particular	FY 2019-20	FY 2020-21	FY 2021-22
Transmission loss (%)	0.31%	0.31%	0.31%

Commission's analysis

The transmission loss for the system in FY 2015-16 and FY 2016-17 based on the Energy Audit reports submitted by the Petitioner, along with the data for FY 2017-18 submitted separately is given below:

Table 17: Transmission loss (%) for the system in FY 2015-16, FY 2016-17 & FY 2017-18

Particular	FY 2015-16	FY 2016-17	FY 2017-18 ⁴
Transmission loss (%)	0.337%	0.61%	0.31%

The Petitioner has not submitted the data for FY 2018-19 and has proposed a constant transmission loss for the upcoming Control Period, which is the same as transmission loss for FY 2017-18. The Commission notes that though the Petitioner has submitted improvement in transmission loss from substation to substation, no improvement has been proposed in the Utilities' overall transmission loss. The Commission opines that reduction in losses for each segment of the transmission system should lead to a reduction in the overall system's transmission loss. In view of the above, the Commission approves following Transmission Loss trajectory for the upcoming Control Period (FY 2019-20 – FY 2021-22):

Table 18: Transmission loss (%) trajectory approved by the Commission for upcoming Control Period

Particular	FY 2019-20	FY 2020-21	FY 2021-22
Transmission loss (%)	0.31%	0.30%	0.30%

3.4. Capital Investment Plan

3.4.1. Details of capital expenditure and capitalisation

Summary of scheme wise capital expenditure and capitalisation

Petitioner's submission

The summary of capital expenditure projections and capitalisation schedule for the upcoming Control Period is given in the following table:

Table 19: Capital expenditure plan and capitalisation schedule proposed by the Petitioner for the upcoming Control Period

Sr. No.	Name of Scheme	Total Estimated amount (INR Cr)	Proposed Expenditure (INR Cr)				Capitalisation schedule
			2019-20	2020-21	2021-22	Total	
Ongoing scheme(s)							
A1	Establishment of 2x160 MVA, 220/66 kV Vagchipa Sub-Station with associated 220 kV Lines	55.07 (Original estimated cost)	31.77	0.00	0.00	31.77	2019-20
New schemes							

⁴ As informed by the Petitioner in "Note on the Transmission System of UT of Dadra & Nagar Haveli"

Sr. No.	Name of Scheme	Total Estimated amount (INR Cr)	Proposed Expenditure (INR Cr)				Capitalisation schedule
			2019-20	2020-21	2021-22	Total	
B1	Upgradation and Modernization of existing 220/66 kV Kharadpada Sub-Station by replacing existing circuit breakers and providing SCADA system	15.75	5.00	5.00	5.75	15.75	FY 2021-22
B2	Upgradation and Modernization of existing 220 kV Switching Sub-Station New Kharadpada by providing SCADA system	1.45	1.45	-	-	1.45	FY 2019-20
	Total		38.22	5.00	5.75	48.97	

Commission's analysis

The Commission appreciates the Petitioner's efforts to upgrade and modernize its existing transmission system. However, the Commission observes that the Petitioner has not informed the Commission regarding the execution and completion of the schemes undertaken by it in the existing Control Period on a quarterly basis. The Commission opines that Petitioner should do all efforts to ensure that it informs the Commission about the status of each scheme on a quarterly basis as per Clause 8.5 (f) of the JERC MYT Regulations:

"The Licensee shall submit a report for every quarter detailing the progress of the capital expenditure and capitalisation undertaken against that proposed in the Capital Investment Plan, on or before the last Day of the month succeeding the respective quarter for review by the Commission."

If the Petitioner consistently fails to meet the approved capital expenditure and capitalisation during each quarter or if the Petitioner fails to provide the above reports on time, the Commission would be constrained to reduce the approved capital expenditure and capitalisation.

Overall approach of the Commission

In respect of the ongoing scheme, the Commission has compared the capital expenditure and capitalisation submitted by the Petitioner with that approved by the Commission in its Tariff Order dated 30 January 2018. Any discrepancies in the scheme wise estimated capital expenditure and capitalisation vis-à-vis that approved for FY 2018 – 19 have been factored in while determining the capital expenditure for the Control Period. In respect of the proposed new schemes, the Commission has compared capital expenditure and capitalisation proposed by the Petitioner with DPRs submitted by the Petitioner along with the Business Plan petition and replies to Deficiency Notes. Based on the Petitioner's submissions and the overall approach discussed herein, the scheme wise analysis of proposed capital expenditure plan by the Commission is as given in subsequent sections.

A1. Establishment of 2x160 MVA, 220/66 kV Vagchipa Sub-Station with associated 220 kV Lines

Petitioner's submission

The capital expenditure details w.r.t. ongoing scheme(s) submitted by the Petitioner is given below:

Table 20: Capital expenditure details submitted by the Petitioner for ongoing scheme(s)

Sl. No.	Name of Scheme	Original Estimated cost as per CEA approval (INR Cr)	Revised Cost Estimate (Approx.) (INR Cr)	Expenditure to be incurred up to March 2019	Proposed Expenditure (INR Cr)		
					2019-20	2020-21	2021-22
A1	Establishment of 2x160 MVA, 220/66 kV Vagchipa Sub-	55.07	76.11	44.34	31.77	0.00	0.00

Sl. No.	Name of Scheme	Original Estimated cost as per CEA approval (INR Cr)	Revised Cost Estimate (Approx.) (INR Cr)	Expenditure to be incurred up to March 2019	Proposed Expenditure (INR Cr)		
					2019-20	2020-21	2021-22
	Station with associated 220 kV Lines						
	Total	55.07	76.11	44.34	31.77	0.00	0.00

The Petitioner in its reply to the Deficiency Note issued by the Commission also submitted that the above scheme was approved by Ministry of Home Affairs in March 2015. The implementation of said scheme was awarded to POWERGRID on deposit basis and on turnkey basis. The Petitioner has further added that Revised Cost Estimate (RCE) provided by POWERGRID was INR 76.11 Cr, as the initial cost in DPR was estimated in the year 2012 based on the cost indices of 2012. The bid for the work was issued on 30 December 2016 i.e. almost four years after preparation of DPR. The Petitioner has also submitted that the Petitioner is yet to obtain CEA's approval for RCE.

Commission's analysis

The Commission observes that in its Tariff Order (TO) dated 30 January 2018, the Commission had approved a capital expenditure of INR 65.43 Cr, which is INR 10.36 Cr more than originally approved cost of INR 55.07 Cr, for the said scheme while considering Petitioner's declaration that CEA approval for cost overrun was under process. The Commission notes that the Petitioner is yet to obtain the necessary CEA approval for the INR 10.36 Cr escalation reported during the last tariff period. The Commission also notes that now the cost estimate has further escalated to INR 76.11 Cr and the CEA approval is still not in place. **Accordingly, the Commission retains its approval of INR 65.43 Cr as the scheme cost, pending the receipt of relevant CEA approvals. The Commission also directs the Petitioner to furnish proper reasoning for the delay and cost escalation, failing which the Commission shall be constrained to reconsider its approval.**

The Commission notes that cost of INR 20.80 Cr was incurred till FY 2016 - 17 from the last Tariff Order. The Petitioner has not submitted the actual expenditure incurred during FY 2017-18 and FY 2018-19 till date. However, the Petitioner has submitted that capital expenditure of INR 44.34 Cr is planned to be incurred by March 2019. Since the total capital expenditure of INR 44.34 Cr is within the cumulative capital expenditure of INR 65.43 Cr approved by the Commission in its Tariff Order dated 30 January 2018, **the Commission approves the balance capital expenditure of INR 21.09 Cr for FY 2019-20, subject to the Petitioner submitting requisite CEA approval within 30 days of this order.**

With respect to capitalization, the Commission notes that the Petitioner has not provided details of actual capitalisation till date and the proposed capitalisation schedule for the upcoming Control Period. The Commission also notes that the Petitioner had proposed partial capitalisation of this scheme during FY 2017-18 and FY 2018-19 in its Tariff Petition of FY 2018-19, which was approved by the Commission as INR 23.85 Cr for FY 2018-19. **Therefore, subject to Petitioner furnishing further details of capitalisation and necessary CEA approvals within 30 days of this order, the Commission approves the balance capitalisation of INR 41.58 Cr for the upcoming Control Period.**

The summary of capital expenditure approved for the upcoming Control Period is given in the following table:

Table 21: Summary of capital expenditure approved for establishment of 2x160 MVA, 220/66 kV Vagchipa Sub-Station with associated 220 kV Lines for the upcoming Control Period

Sl. No.	Scheme(s)	Total cost approved in TO ⁵ (INR Cr)	Expenditure to be incurred up to March 2019 (INR Cr)	Approved (INR Cr)			
				FY 2019-20	FY 2020-21	FY 2021-22	Total
A1	Establishment of 2x160 MVA, 220/66 kV Vagchipa Sub-Station with associated 220 kV Lines	65.43	44.34	21.09	-	-	21.09

Table 22: Summary of capitalisation approved for establishment of 2x160 MVA, 220/66 kV Vagchipa Sub-Station with associated 220 kV Lines for the upcoming Control Period

Sl. No.	Scheme(s)	Capitalisation till FY 2018-19 approved in TO ⁵ (INR Cr)	Approved (INR Cr)			
			FY 2019-20	FY 2020-21	FY 2021-22	Total
A1	Establishment of 2x160 MVA, 220/66 kV Vagchipa Sub-Station with associated 220 kV Lines	23.85	41.58	-	-	41.58

Therefore, the Commission approves a total capital expenditure of INR 21.09 Cr and total capitalisation of INR 41.58 Cr for the upcoming Control Period.

B1. Upgradation and Modernization of existing 220/66 kV Kharadpada Sub-Station by replacing existing circuit breakers and providing SCADA system

Petitioner's Submission

The Petitioner has submitted that the 220/66 kV Kharadpada substation was commissioned in the year 2002. The Petitioner further adds that the current circuit breakers work on hydraulic oil pressure mechanism which is an obsolete technology. Therefore, spares and service for these breakers are not available. Further, the Petitioner further adds that control and relay panels of Kharadpada substation are of obsolete technology as well and face similar issues as that of the current circuit breakers. Therefore, these relay panels are planned to be replaced by a new microprocessor based relays & panels for 220 kV & 66 kV with integration of SCADA system for better monitoring and getting real time data for SLDC.

The Petitioner in its reply to the Deficiency Note issued by the Commission has also submitted that the Chief Engineer of ED-DNH has accorded technical approval for the above scheme.

The capital expenditure and capitalisation schedule proposed by the Petitioner for the above scheme is as given below:

Table 23: Capital expenditure and capitalisation schedule proposed by the Petitioner for establishment of new 66/11 kV Sub Station at village Sayali, with associated 66 kV underground line schemes

Sl. No.	Name of Scheme	Total estimated amount (INR Cr)	Proposed Expenditure (INR Cr)			Capitalisation Schedule (INR Cr)
			FY 2019-20	FY 2020-21	FY 2021-22	
B1	Upgradation and Modernization of existing 220/66 kV Kharadpada Sub-Station by replacing existing circuit breakers and providing SCADA system	15.75	5.00	5.00	5.75	FY 2021-22

⁵ Tariff Order dated 30 January 2018

Commission's Analysis

The Commission appreciates the Petitioner's efforts to upgrade and modernize its existing transmission system. The Commission also notes that there is a mismatch between capital expenditure schedule proposed by the Petitioner and the capital expenditure schedule specified in the DPR. The work was planned to start in the second quarter of FY 2018-19 and was to be completed by FY 2019-20 (as per the schedule in DPR). However, the Commission opines that the work was delayed due to uncontrollable factors and therefore approves the capital expenditure schedule proposed by the Petitioner. As regards the capitalisation, the Commission approves the capitalisation schedule submitted by the Petitioner.

The summary of capital expenditure and capitalisation approved for the upcoming Control Period is given in the following tables:

Table 24: Capital expenditure approved by the Commission for Upgradation and Modernization of existing 220/66 kV Kharadpada Sub-Station

Sl. No.	Name of Scheme	Approved Expenditure (INR Cr)			
		FY 2019-20	FY 2020-21	FY 2021-22	Total
B1	Upgradation and Modernization of existing 220/66 kV Kharadpada Sub-Station by replacing existing circuit breakers and providing SCADA system	5.00	5.00	5.75	15.75

Table 25: Capitalisation schedule approved by the Commission for Upgradation and Modernization of existing 220/66 kV Kharadpada Sub-Station

Sl. No.	Name of Scheme	Approved Capitalisation (INR Cr)			
		FY 2019-20	FY 2020-21	FY 2021-22	Total
B1	Upgradation and Modernization of existing 220/66 kV Kharadpada Sub-Station by replacing existing circuit breakers and providing SCADA system	-	-	15.75	15.75

Therefore, the Commission approves a total capital expenditure of INR 15.75 Cr and total capitalisation of INR 15.75 Cr for the upcoming Control Period.

B2. Upgradation and Modernization of existing 220 kV Switching Sub-Station at Kharadpada by providing SCADA system

Petitioner's Submission

The Petitioner has submitted that the new 220 kV Kharadpada substation was commissioned in the year 2015, with inbuilt SCADA compatible relays. The Petitioner adds that installing the SCADA system in the substation will ensure better monitoring and help obtain real time data for SLDC operations. In addition, the Petitioner has submitted that there is a possibility of reducing the O&M costs for this sub-station by remote operations from Kharadpada substation.

The Petitioner in its reply to the Deficiency Note issued by the Commission has also submitted that the Chief Engineer of ED-DNH has accorded technical approval for the above scheme.

The capital expenditure and capitalisation schedule proposed by the Petitioner for the above scheme is as given in the following table:

Table 26: Capital expenditure and capitalisation schedule proposed by the Petitioner for Upgradation and Modernization of existing 220 kV Switching Sub-Station New Kharadpada by providing SCADA system

Sl. No.	Name of Scheme	Total estimated amount (INR Cr)	Proposed Expenditure (INR Cr)			Capitalisation Schedule (INR Cr)
			FY 2019-20	FY 2020-21	FY 2021-22	
B2	Upgradation and Modernization of existing 220 kV Switching Sub-Station at Kharadpada by providing SCADA system	1.45	1.45	-	-	FY 2019-20

Commission's Analysis

The Commission appreciates the Petitioner's efforts to upgrade and modernize its existing transmission system. The Commission also notes that there is a mismatch between capital expenditure schedule proposed by the Petitioner and the capital expenditure schedule specified in the DPR. The work was planned to start in the third quarter of FY 2018-19 and was to be completed by FY 2019-20 (as per the schedule in DPR). However, the Commission opines that the work was delayed due to uncontrollable factors and therefore approves the capital expenditure schedule proposed by the Petitioner. As regards the capitalisation, the Commission approves the capitalisation schedule submitted by the Petitioner.

The capital expenditure and capitalisation approved for the upcoming Control Period is given in the following table:

Table 27: Capital expenditure approved by the Commission for Upgradation and Modernization of existing 220 kV Switching Sub-Station New Kharadpada by providing SCADA system

Sl. No.	Name of Scheme	Approved Expenditure (INR Cr)			
		FY 2019-20	FY 2020-21	FY 2021-22	Total
B2	Upgradation and Modernization of existing 220 kV Switching Sub-Station at Kharadpada by providing SCADA system	1.45	-	-	1.45

Table 28: Capitalisation schedule approved by the Commission for Upgradation and Modernization of existing 220 kV Switching Sub-Station New Kharadpada by providing SCADA system

Sl. No.	Name of Scheme	Approved Capitalisation (INR Cr)			
		FY 2019-20	FY 2020-21	FY 2021-22	Total
B2	Upgradation and Modernization of existing 220 kV Switching Sub-Station at Kharadpada by providing SCADA system	1.45	-	-	1.45

Therefore, the Commission approves a total capital expenditure of INR 1.45 Cr and total capitalisation of INR 1.45 Cr for the upcoming Control Period.

Summary of capital expenditure approved by the Commission

The summary of capital expenditure approved by the Commission for the upcoming Control Period is given in the following table:

Table 29: Summary of capital expenditure approved by the Commission for the upcoming Control Period

Sr. No.	Name of Scheme	Approved Expenditure (INR Cr)			
		FY 2019-20	FY 2020-21	FY 2021-22	Total
Ongoing scheme(s)					
A1	Establishment of 2x160 MVA, 220/66 kV Vagchipa Sub-Station with associated 220 kV Lines	21.09	-	-	21.09
New schemes					
B1	Upgradation and Modernization of existing 220/66 kV Kharadpada Sub-Station by replacing existing circuit breakers and providing SCADA system	5.00	5.00	5.75	15.75
B2	Upgradation and Modernization of existing 220 kV Switching Sub-Station at Kharadpada by providing SCADA system	1.45	-	-	1.45
	Total	27.54	5.00	5.75	38.29

Therefore, the Commission approves a total capital expenditure of INR 38.29 Cr for the upcoming Control Period.

Summary of capitalisation approved by the Commission

The summary of capitalisation approved by the Commission for the upcoming Control Period is given in the following table:

Table 30: Summary of capitalisation approved by the Commission for the upcoming Control Period

Sr. No.	Name of Scheme	Approved Capitalisation (INR Cr)			
		FY 2019-20	FY 2020-21	FY 2021-22	Total
Ongoing scheme					
A1	Establishment of 2x160 MVA, 220/66 kV Vagchipa Sub-Station with associated 220 kV Lines	41.58	-	-	41.58
New Schemes					
B1	Upgradation and Modernization of existing 220/66 kV Kharadpada Sub-Station by replacing existing circuit breakers and providing SCADA system	-	-	15.75	15.75
B2	Upgradation and Modernization of existing 220 kV Switching Sub-Station at Kharadpada by providing SCADA system	1.45	-	-	1.45
	Total	43.03	-	15.75	58.78

Therefore, the Commission approves a total capitalisation of INR 58.78 Cr for the upcoming Control Period.

3.4.2. Funding Plan

Petitioner's submission

For all the proposed ongoing and new schemes, the Petitioner has submitted that the fund and budgetary allocation will be undertaken by UT Administration under plan scheme.

Commission's analysis

The Petitioner can only consider equity up to 30% of the capital cost and the balance in excess of 30% shall be treated as normative debt as per provision 26.2 of the JERC MYT Regulations:

“Provided also that if the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as a normative loan for the Licensee for determination of tariff:”

Based on the analysis of proposed funding for each of the schemes and the MYT Regulations stated above, the approved funding plan is given in the table below:

Table 31: Approved funding plan for the upcoming Control Period

Sr. No.	Sources of Funds	FY 2019-20	FY 2020-21	FY 2021-22	Total
A	Total Capital Expenditure in INR Cr	27.54	5.00	5.75	38.29
B	Debt (%)	70%	70%	70%	70%
C	Equity (%)	30%	30%	30%	30%
D	Normative Debt (INR Cr) (B x A)	19.28	3.50	4.025	26.80
E	Equity (INR Cr) (C x A)	8.26	1.50	1.725	11.49

3.5. Manpower Plan

Petitioner’s submission

The Petitioner has submitted that there is no plan to hire new staff for the upcoming Control Period.

Commission’s Analysis

As the Petitioner has no plans for recruitment, the Commission does not have any observation on the same.