



Business Plan

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

Petition No. 263/2018

For

Lakshadweep Electricity Department

21 December, 2018

JOINT ELECTRICITY REGULATORY COMMISSION

For the State of Goa and Union Territories,

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List of abbreviations

Abbreviation	Full Form
A&G	Administrative and General
Act	The Electricity Act, 2003
APR	Annual Performance Review
ARR	Aggregate Revenue Requirement
ATE	Appellate Tribunal of Electricity
CAGR	Compound Annualized Growth rate
Capex	Capital Expenditure
CEA	Central Electricity Authority
CGS	Central Generating Stations
Cr	Crores
DG	Diesel Generator
Discom	Distribution Company
FY	Financial Year
GoI	Government of India
HT	High Tension
JERC	Joint Electricity Regulatory Commission for the state of Goa and Union Territories
kVA	Kilo Volt Ampere
kWh	Kilo Watt Hour
LED	Lakshadweep Electricity Department
LT	Low Tension
MoP	Ministry of Power
MU	Million Units
MW	Mega Watt
MYT	Multi Year Tariff
NTPC	National Thermal Power Corporation
O&M	Operation and Maintenance
PLF	Plant Load Factor
PPA	Power Purchase Agreement
REC	Renewable Energy Certificate
RPO	Renewable Purchase Obligation
SECI	Solar Energy Corporation of India Limited
SERC	State Electricity Regulatory Commission
T&D	Transmission & Distribution
TVS	Technical Validation Session
UI	Unscheduled Interchange
UT	Union Territory
YoY	Year on Year

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

QUORUM

Sh. M. K. Goel (Chairperson)

Smt. Neerja Mathur (Member)

Petition No.263/2018

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

Lakshadweep Electricity Department (LED) Petitioner

ORDER

- a) This order is passed in respect of the petition filed by the Lakshadweep Electricity Department for approval of its Business Plan for the MYT 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 41, 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 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.
- 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 the 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 have been 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 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, sales forecast, power procurement plan, performance targets, fixation of T&D loss trajectory etc.

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- f) **The Petitioner is now directed to submit the Multi Year Tariff Petition for the Control Period at the earliest, in terms of Multi Year Tariff Regulations.**
- g) Ordered as above, read with attached document giving detailed reasons, grounds and conditions.
- h) Copy of this Order be sent to the Petitioner, CEA and the Administration of UT of Lakshadweep.

Sd/-
Neerja Mathur
(Member)

Sd/-
M.K. Goel
(Chairperson)

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

Place: Gurugram

Date: 21 December 2018

1 Chapter 1: Introduction

1.1 Joint Electricity Regulatory Commission (JERC) Formation

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 May 2, 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 May 30, 2008.

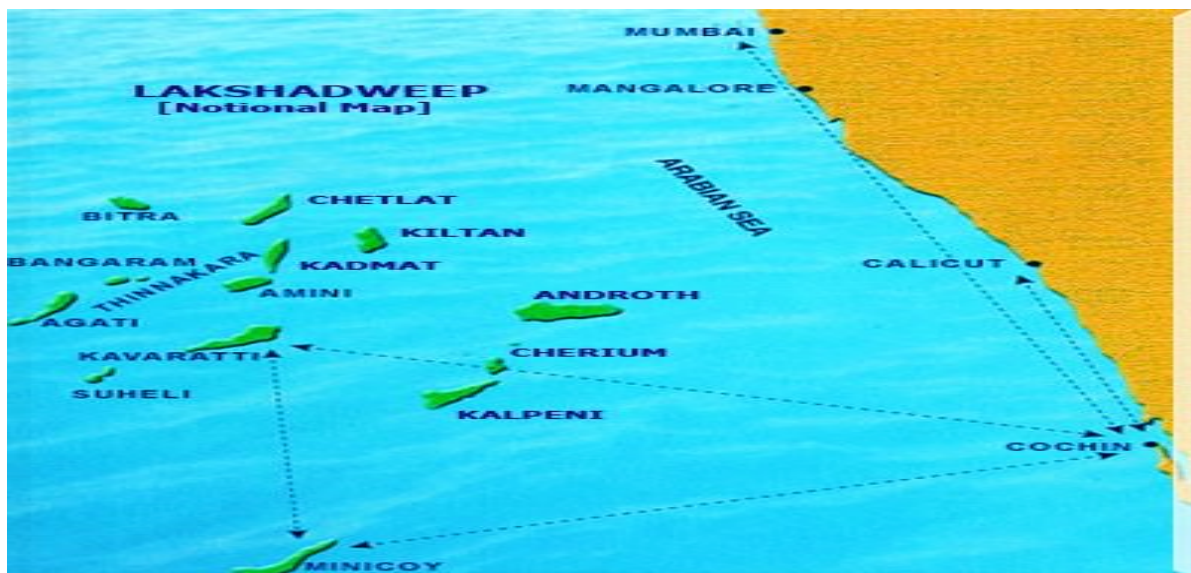
The JERC is an autonomous body responsible for regulation of the Power Sector in the State of Goa and the Union Territories of Andaman & Nicobar Islands, Lakshadweep Island, Chandigarh, Daman & Diu, Dadra & Nagar Haveli and Puducherry, consisting of generation, transmission, distribution, trading and 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 Lakshadweep Islands

Lakshadweep Islands is a group of islands in the Laccadive Sea, 200 to 440 km off the southwestern coast of India. The Union Territory (UT) of Lakshadweep is an archipelago consisting of 12 atolls, three reefs and five submerged banks, with a total of about thirty-nine islands and islets. It is a uni-district Union Territory with an area of 32 Sq. Kms and is comprised of ten inhabited islands, 17 uninhabited islands attached islets, four newly formed islets and 5 submerged reefs. The inhabited islands are Kavaratti, Agatti, Amini, Kadmat, Kiltan, Chetlat, Bitra, Andrott, Kalpeni and Minicoy. As per the 2011 Indian census, the population of the Union Territory was 64473. The main occupation of the people is fishing and coconut cultivation with tuna being the main item of export.

Electrification of Lakshadweep Islands was initiated during the second Five Year Plan. Minicoy was the first island electrified in 1962 followed by Kavaratti Island in 1964, then Amini and Andrott in 1965 and 1966 respectively. Bitra was the last island electrified in 1982. Initially power supply was limited to 6-12 hours till 1982 to 1983 except in Kavaratti where 24 hours power supply was provided from 1964 itself. Round the clock power supply is provided in all islands since 1983.

Lakshadweep islands comprises of an area of 32 sq. kms. For operational purpose the area has been divided into 1 division and 10 sub-divisions. Pictorial view of the Islands is given below:



1.3 Lakshadweep Electricity Department (LED)

Lakshadweep Electricity Department (hereinafter referred to as “LED” or “Utility” or “Petitioner”) is solely responsible for power supply in the Union territory. Power requirement of LED is met by own generating station only.

Starting with a modest capacity of 51.6 kW in 1962 from two Diesel Generating Sets, the generating capacity of Lakshadweep Electricity Department has grown over the years to meet the demand of the people in the Islands. Since, the diesel generating sets were the only source of power, diesel has to be transported from Calicut (Kerala) in barrels. These barrels are transported in cargo barges to the Islands and stored for use. To alleviate this problem of transportation, oil storage facilities at Kavaratti and Minicoy Islands are under installation.

Due to geographical & topographical peculiarities of these islands including separation by sea over great distances there is no single power grid for the entire electrified Islands and instead separate generating units caters independently to power requirements of individual Islands.

The Petitioner is operating and maintaining power generation, transmission & distribution system network in these islands for providing electric power supply to general public. It implements various Planned & Non-Planned schemes for augmentation of DG Generating Capacity, establishment of new power houses and Transmission & Distribution infrastructure. LED is also functioning as a Nodal Agency for implementing renewable energy program of the Ministry of New & Renewable Energy (MNRE) on these islands. Presently, LED is headed by an executive Engineer, along with one Assistance Executive Engineer, ten Assistance Engineers and around thirty-three Junior Engineers for carrying out the task of power generation, transmission & distribution to the general public including schemes under renewable energy sources.

The key duties being discharged by LED are:

- Laying and operating of such electric lines and sub-stations that are primarily maintained for the purpose of distributing electricity in the area of Lakshadweep Islands, notwithstanding that such lines and sub-station 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.
- Generation of electricity 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;
- Preparation and implementation of schemes for distribution and generally for promoting the use of electricity within the UT.

The present Installed Capacity of LED is 23.39 MW from various generating sources. The Peak demand for last year touched 10MW (FY 2017-18) and is anticipated by LED to reach 12 MW in FY 2018-19. The peak demand projected by LED is 15 MW, 16MW and 18 MW for FY 2019-20, FY 2020-21 and FY 2021-22 respectively (As per 18th EPS of CEA).

The table below gives an overview of present generation, transmission and distribution infrastructure of LED.

Table 1: Electricity Department at a glance (FY 2017-18)

S. No.	Particulars	Details
1	Total Installed Capacity	23.39 MW
1(a)	Diesel Generation	21.24 MW
1 (b)	Solar Generation	2.15 MW
2	No. of Power Houses	20 Nos (11 Nos of Diesel power plant, 09 Nos of solar power plant)
3	HT Line	111.95 kms

S. No.	Particulars	Details
4	LT Line	321.86 kms
5	Distribution Transformer	106 Nos.
6	Street Light Points (No.)	8989

1.4 Electricity Regulatory Process in Lakshadweep Islands

The Commission had issued the first Multi-Year Order for “Approval of Business Plan for Multi-Year Control Period FY 2016-17 to FY 2018-19” on 31 March 2016 in respect of LED.

1.5 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 the 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 and 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.

1.6 Filing and admission of Petition for Multi-Year Business Plan from FY 2019-20 to FY 2021-22

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

LED submitted the current Petition via email for approval of ‘Business Plan for MYT Control Period from FY 2019-20 to FY 2021-22’ on 28 August, 2018. The hard copy of the same was received by the Commission on 13 September, 2018.

After initial scrutiny/analysis, the Petition (Soft Copy) on Business Plan for the Control Period FY 2019-20 to FY 2021-22 was admitted on 4 September, 2018 and was marked as Petition no. 263/2018.

1.7 Interaction with the Petitioner

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 analysing information/clarifications received from the utilities, and submitting relevant issues for consideration of the Commission.

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	Receipt of Petition by the Commission	August 28, 2018
2	Admission of the Petition by the Commission	September 4, 2018
3	Deficiency note issued by the Commission	September 17, 2018
4	Reply to the Deficiency Note received by the Commission	October 03, 2018

1.8 Public Hearing Process

In the absence of publication of regular newspapers in the UT of Lakshadweep, the Commission directed the Petitioner to make public announcements and to advertise in the local cable network giving wide publicity to the Public Hearing mentioning the date, time and venue.

The Petitioner also uploaded the Petition on its website (<http://lakpower.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 14 December, 2018. The Commission has also uploaded the copy of the Petition on its website to facilitate the stakeholders.

During the Public Hearing, the issues and concerns raised by the stakeholders in writing and/or voiced by them have been examined by the Commission. The major issues discussed, the responses of the Petitioner thereon and the views of the Commission, have been summarized in Chapter 2.

1.9 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 a Summary of various suggestions and objections raised by the stakeholders, followed by the response of the Petitioner and the rulings of the Commission on these issues.
- **Chapter 3** of the Order discusses the submissions of the Petitioner in its Business Plan Petition and the Commission's views thereon.

2 Chapter 2: Stakeholder Consultation

2.1 Regulatory Process

The Public Hearing was held on 19 December 2018 at Calicut University Centre, Kavarrati Island in respect of the Multi-Year Business Plan Petition for the 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 comments earlier, were also given an equal opportunity to present their views/ suggestions/objections in respect of the Petition. The list of objectors is attached as Annexure 1 to this order.

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

The Commission appreciates the efforts of various stakeholders for providing suggestions / comments / observations and making the Power Sector responsive and efficient. The details of issues raised by the Stakeholders, response of the Petitioner thereon and the views of the Commission on the same are as follows:

2.2.1 Installation of Small-Scale Biomass Power Plants

Stakeholder Comments:

- Stakeholders submitted that the LED may explore the option for installation of small-scale Biomass plants in other major islands also besides the proposed installation of Rooftop Solar, small wind turbines and a Biomass plant by NTPC in Andrott.

Petitioner's Response:

- Based on the discussion with NTPC, the installation of Biomass plant in Andrott island is on a trial basis. On successful installation and operation of the Biomass Plant in Andrott island, similar plants will also be installed in other islands as well.

Commission's View:

- The Commission appreciates the suggestion of the stakeholders and directs the Petitioner to explore the possibility of installation of small-scale biomass power plants, which will aid the Petitioner in procuring low cost power and will help it in complying with the RPO approved by the Commission.

2.2.2 Alternative options for installation of Floating Solar power plants in the Lakshadweep Water

Stakeholder Comments:

- Stakeholder submitted that the installation of floating solar power plant in lagoon should only be considered after successful trial of a pilot project in any one of the island. Also, in lieu of the floating solar plants, ground mounted plant on eastern side jetty on the four major islands where land is available be explored, as Lakshadweep water is subject to precarious conditions like heavy wind, frequent cyclones and 4-5 month long exposure to South west monsoon. Stakeholder further added that installation of ocean thermal energy conversion power plant be explored by the Petitioner in Lakshadweep Island.

Petitioner's Response:

- In respect of the floating Solar Plants, SECI has already conducted a detailed study of the situation and conditions in the Lakshadweep Islands and considered all the factors in their feasibility report. The suggestion of stakeholder with respect to installation of ocean thermal energy conversion power plant will be considered and appropriate action will be taken accordingly.

Commission's View:

- The Commission appreciates the suggestion of the stakeholders and directs the Petitioner to explore the possibility of installation of land mounted solar plants and other feasible sources of generation which will aid the Petitioner in complying with the RPO regulations approved by the Commission.

2.2.3 Use of wooden poles in installation of proposed street lights

Stakeholder Comments:

- Stakeholder submitted that the Petitioner has proposed to install 1600 street lights during the second control period. However, considering the environmental condition of the Lakshadweep islands it is suggested that wooden poles may be used, as the same will not be subjected to rusting and will have a longer life as compared to the iron poles.

Petitioner's Response:

- As the teak wood or good quality wood is not available in the Islands and bringing the same from mainland to islands will be costly, so the Petitioner has not considered this suggestion.

Commission's View:

- The Commission has noted the submission of the stakeholder and response of the Petitioner and in this regard directs the Petitioner to explore the feasibility of the above suggestion.

2.2.4 Publicity of Public Hearing

Stakeholder Comments:

- Stakeholder submitted that publicity of the Public Hearing is not done in a proper manner. Hence majority of the public is unaware and unable to differentiate between the Public Hearing for the Business Plan and MYT Tariff Petition.

Petitioner's Response:

- The Petitioner has not submitted any response to the same.

Commission's View:

- The Commission has noted the submission of the stakeholders and directs the Petitioner to adopt various available means of publicity so as to ensure wider reach across all islands in future and to publicise the purpose of Public Hearing clearly.

3 Chapter 3: Approval of the various components of the Multi-Year business plan petition for the 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.

- Forecast of Number of Consumers, Connected Load and Sales for the Control Period
- Intra-State Transmission and Distribution (T&D) loss
- Power Procurement Plan
- Capital Investment Plan
- Manpower Plan

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

3.2 Forecast of Number of Consumers, Connected Load and Sales for the Control Period

3.2.1 Overall approach

Petitioner's submission

The Petitioner has considered past years' CAGRs to forecast the number of consumers, connected load and sales for FY 2018-19 during the upcoming Control Period. Due to abnormal trends in some categories, the Petitioner has resorted to using normalized CAGR rates or assuming a subjective rate for projections. The Petitioner has also considered impact of external factors like increase in energy efficient LED lighting etc. while projecting sales for some consumer categories.

Summary of the past data and the CAGR considered by the Petitioner for each category for projecting number of consumers, connected load and sales and historical Year on Year growth and CAGR is as given in the Tables below:

Table 3: Summary of category-wise No. of Consumers and Growth Rate considered by the Petitioner for Projections

Number of Consumers	Actuals						CAGR			
	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	5 Year	3 year	1 Year	Considered
Domestic	16302	17169	17761	18670	19316	19729	3.89%	3.56%	2.14%	3.89%
Commercial	1922	2036	2114	2207	2313	2402	4.56%	4.35%	3.85%	4.56%
Govt. Connection	1067	1104	1075	1184	1197	1218	2.68%	4.25%	1.75%	2.68%
Industrial	321	317	321	334	345	356	2.09%	3.51%	3.19%	2.09%
HT Consumers	-	-	-	4	5	6	-	22.47%	20.00%	22.47%
Public Lighting	73	73	73	75	75	76	0.81%	1.35%	1.33%	0.81%

Number of Consumers	Actuals						CAGR			
	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	5 Year	3 year	1 Year	Considered
Temporary	-	-	-	234	274	160		-	-41.61%	0%
Total	19685	20699	21344	22708	23525	23947				

Table 4: Summary of category-wise Connected Load (kVA) and Growth Rate Considered by Petitioner for Projections

Connected Load (kVA)	Actuals						CAGR			
	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	5 Year	3 year	1 Year	Considered
Domestic	76039	77981	79597	81502	83647	85601	2.40%	2.45%	2.34%	2.40%
Commercial	2907	13733	14302	14482	15158	15817	40.33%	3.41%	4.35%	3.41%
Govt. Connection	11723	7446	7273	7769	7845	8021	-7.31%	3.32%	2.24%	3.32%
Industrial	3022	3168	3273	3452	3581	3708	4.17%	4.24%	3.53%	4.17%
HT Consumers	351	351	351	452	452	520	8.16%	13.97%	15.12%	8.16%
Public Lighting	264	264	266	285	285	296	2.32%	3.67%	3.88%	2.32%
Temporary	-	-	0	0	37	66		2.45%	79.72%	5.00%
Total	94306	102943	105063	107941	111005	114029				

Table 5: Summary of category-wise Sales (MU) and Growth Rate Considered by Petitioner for Projections

Sales (MU)	Actuals						CAGR			
	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	5 Year	3 year	1 Year	Considered
Domestic	27.23	29.65	33.57	34.09	35.02	35.90	5.68%	2.26%	2.50%	5.68%
Commercial	1.84	2.25	2.45	2.54	2.73	2.87	9.28%	5.35%	5.06%	5.35%
Govt. Connection	7.42	7.83	6.89	12.59	10.74	8.01	1.54%	5.15%	25.43%	1.54%
Industrial	0.39	0.42	0.42	0.40	0.42	0.43	1.80%	0.50%	2.18%	1.80%
HT Consumers	-	-	-	0.26	0.41	0.53	-	27.33%	28.31%	27.33%
Public Lighting	1.07	1.17	0.81	0.61	0.61	0.64	-9.67%	-7.39%	4.69%	0.00%
Temporary	0.05	0.05	0.12	0.13	0.14	0.09	13.20%	-8.16%	35.17%	0.00%
Total	38.00	41.37	44.26	50.62	50.08	48.46				

The Petitioner's projection of number of consumers, connected load and sales for the FY 2018-19 and the upcoming Multi-Year Control Period, are as given in the tables below:

Table 6: Petitioner's submission on projection of Number of Consumers for upcoming Multi-Year Control Period

Number of Consumers	Actual (Unaudited)	CAGR Considered	Base Year (Estimated)	Projections		
				FY 2018-19	FY 2019-20	FY 2020-21
Domestic	19729	3.89%	20496	21294	22122	22982
Commercial	2402	4.56%	2512	2626	2746	2871

Number of Consumers	Actual (Unaudited)	CAGR Considered	Base Year (Estimated)	Projections		
Consumer Category	FY 2017-18		FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
Govt. Connection	1218	2.68%	1251	1284	1319	1354
Industrial	356	2.09%	363	371	379	387
HT Consumers	6	22.47%	7	9	11	14
Public Lighting	76	0.81%	77	77	78	78
Temporary	160	0%	160	160	160	160
Total	23947		24866	25821	26814	27846

Table 7: Petitioner's submission on projection of Connected Load for upcoming Multi-Year Control Period

Connected Load (kVA)	Actual (Unaudited)	CAGR Considered	Base Year (Estimated)	Projections		
Consumer Category	FY 2017-18		FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
Domestic	85601	2.40%	87653	89754	91906	94109
Commercial	15817	3.41%	16357	16916	17493	18090
Govt. Connection	8021	3.32%	8287	8561	8845	9139
Industrial	3708	4.17%	3862	4024	4191	4366
HT Consumers	520	8.16%	562	608	658	711
Public Lighting	296	2.32%	303	310	317	325
Temporary	66	5%	70	73	77	81
Total	114029		117094	120246	123488	126821

Table 8: Petitioner's submission on projection of Sales for upcoming Multi-Year Control Period

Sales (MU)	Actual (Unaudited)	CAGR Considered	Base Year (Estimated)	Projections		
Consumer Category	FY 2017-18		FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
Domestic	35.90	5.68%	37.94	40.09	42.38	44.78
Commercial	2.87	5.35%	3.02	3.18	3.36	3.53
Govt. Connection	8.01	1.54%	8.13	8.26	8.38	8.51
Industrial	0.43	1.80%	0.43	0.44	0.45	0.46
HT Consumers	0.53	27.33%	0.67	0.86	1.09	1.39
Public Lighting	0.64	0.00%	0.64	0.64	0.64	0.64
Temporary	0.09	0.00%	0.09	0.09	0.09	0.09
Total	48.46		50.93	53.57	56.39	59.41

Commission's Analysis

The Commission sought the details of pending applications for new connections along with corresponding connected load/contract demand from the Petitioner. The Petitioner has failed to submit the same.

The Commission in its Tariff Order dated March 19, 2016 for FY 2018-19 had directed the Petitioner to provide the island-wise, month-wise and slab-wise detailed breakup of number of consumers, connected load and energy sales under each consumer category for the last five years. Further the Petitioner was directed to maintain and submit monthly island-wise information for category-wise sales, number of consumers, connected load, T&D losses, plant -wise generation, fuel cost on quarterly basis. The Petitioner has only submitted the Island-wise

generation capacity available to meet the demand and has not submitted the other details. **The Commission again directs the Petitioner to submit the island-wise information for category wise sales, number of consumers, connected load, peak load, T&D losses, plant-wise generation on monthly basis and fuel cost in each Plant for all the years within 30 days from the issuance of this Order.**

The overall approach of the Commission for projecting the number of consumers, connected load and sales for FY 2018-19 and the upcoming Multi-Year Control Period is described below:

- The Base Year considered by the Petitioner is FY 2018-19 and the same is in line with the JERC MYT Regulations. The Commission has also considered FY 2018-19 as the Base Year for carrying out projections. The values for FY 2018-19 have been arrived at by considering relevant growth rates approved by the Commission for respective categories and applying the same to FY 2017-18 values.
- The Growth rates considered by the Petitioner for projecting number of consumers, load and sales are based primarily on historical CAGRs. The Commission has determined growth rates separately for each consumer category based on past trends and other relevant parameters given below:
 - Year on Year (YoY) growth
 - CAGR (multiple periods)
 - Specific (per-consumer) consumption
 - Energy efficiency measures

3.2.2 Category-wise analysis

The historical Year on Year growth and CAGR for number of consumers is as shown in the following Table:

Table 9: Historical Year-on-Year growth and CAGR for Number of Consumers

No. of Consumers	Y-o-Y Growth for Number of Consumers					CAGR			
	FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	5 year	4 year	3 year	2 year
Domestic	5.3%	3.4%	5.1%	3.5%	2.1%	3.89%	3.54%	3.56%	2.80%
Commercial	5.9%	3.8%	4.4%	4.8%	3.8%	4.56%	4.22%	4.35%	4.32%
Govt. Connection	3.5%	-2.6%	10.1%	1.1%	1.8%	2.68%	2.49%	4.25%	1.43%
Industrial	-1.2%	1.3%	4.0%	3.3%	3.2%	2.09%	2.94%	3.51%	3.24%
HT Consumers	-	-	-	25.0%	20.0%	-	-	22.47%	22.47%
Public Lighting	0.0%	0.0%	2.7%	0.0%	1.3%	0.81%	1.01%	1.35%	0.66%

The historical Year on Year growth and CAGR for Connected Load is as shown in the following Table:

Table 10: Historical Year-on-Year growth and CAGR for Connected Load

Connected Load (kVA)	Y-o-Y Growth for Connected Load					CAGR			
	FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	5 year	4 year	3 year	2 year
Domestic	2.6%	2.1%	2.4%	2.6%	2.3%	2.40%	2.36%	2.45%	2.48%

Connected Load (kVA)	Y-o-Y Growth for Connected Load					CAGR			
	FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	5 year	4 year	3 year	2 year
Commercial	372.4%	4.1%	1.3%	4.7%	4.3%	40.3%	3.60%	3.41%	4.51%
Govt. Connection	-36.5%	-2.3%	6.8%	1.0%	2.2%	-7.31%	1.87%	3.32%	1.61%
Industrial	4.8%	3.3%	5.4%	3.8%	3.5%	4.17%	4.01%	4.24%	3.64%
HT Consumers	0.0%	0.0%	28.6%	0.0%	15.1%	8.16%	10.30%	13.97%	7.29%
Public Lighting	0.0%	0.7%	7.3%	0.0%	3.9%	2.32%	2.91%	3.67%	1.92%

The historical Year on Year growth and CAGR for Sales is as shown in the following Table:

Table 11: Historical Year-on-Year growth and CAGR for Sales

Sales (MU)	Y-o-Y Growth for Sales					CAGR			
	FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	5 year	4 year	3 year	2 year
Domestic	8.9%	13.2%	1.5%	2.7%	2.5%	5.68%	4.90%	2.26%	2.62%
Commercial	22.3%	8.9%	3.7%	7.5%	5.1%	9.30%	6.27%	5.42%	6.30%
Govt. Connection	5.5%	-12.0%	82.7%	-14.7%	-25.4%	1.54%	0.57%	5.15%	-20.2%
Industrial	7.7%	0.0%	-4.8%	5.0%	2.4%	1.97%	0.59%	0.79%	3.68%
HT Consumers	-	-	-	57.7%	29.3%	-	-	27.33%	42.77%
Public Lighting	9.3%	-30.8%	-24.7%	0.0%	4.9%	-9.77%	-14.0%	-7.55%	2.43%

The historical data given above, along with other parameters, as applicable, have been used for category wise analysis as described below.

Domestic

Petitioner's submission

The Petitioner has considered the CAGR of last 5 years for projecting the number of consumers, connected load and sales for domestic category. Accordingly, the Petitioner has used a growth rate of 3.89% (Refer Table 3), 2.40% (Refer Table 4) and 5.68% (Refer Table 5) for number of consumers, connected load and sales respectively.

Commission's analysis

The Commission notes that the CAGR considered by the Petitioner for projecting the number of consumers and connected load appears to be appropriate considering the trends observed in the past. The Commission observes that the Petitioner has proposed a CAGR of 3.89% in number of consumers, which translates into additions of ~767 connections in FY 2018-19 and ~797 connections in FY 2019-20. The Commission has analysed the connections data for previous years and observed that the new connections in FY 2014-15, FY 2015-16, FY 2016-17 and FY 2017-18 were 592, 909, 646 and 413 respectively. Hence the new connections projections of the Petitioner appears to be in line with past trends and the Commission approves the proposed CAGR in number of consumers. For load growth, the Commission observes that the YoY growth rate has been stable since FY 2013-14 (in range of 2.6% to 2.3%). Therefore, in view of historical trends, the Commission approves the proposed CAGR of 2.40%.

The Commission has analysed the specific (per consumer) consumption and observes that the same has moderately decreased (from 1890 in FY 2014-15 to 1819 in FY 2017-18). Based on the Petitioner submission the energy sales have been reduced due to replacement of incandescent/ CFL bulbs to energy efficient LED bulbs. However, the Commission observes that the 5-year CAGR of sales for the category is 5.68%, which is due to corresponding increase in number of consumers by 3.89% (5 year CAGR). The Commission therefore approves growth in sales at 5.68%.

The growth rates approved by the Commission are as below.

Table 12: Growth rates approved by the Commission for Domestic category

Consumer Category	Growth in no. of consumers		Load growth		Sales growth	
	CAGR submitted	CAGR approved	CAGR submitted	CAGR approved	CAGR submitted	CAGR approved
Domestic	3.89%	3.89%	2.40%	2.40%	5.68%	5.68%

Commercial

Petitioner's submission

The Petitioner has considered the CAGR of last 5 years for projecting the number of consumers for commercial category. For projecting the connected load and sales for commercial category the Petitioner has considered the CAGR of last 3 years. Accordingly, the Petitioner has used considered growth rate of 4.56% (Refer Table 3), 3.41% (Refer Table 4) and 5.35% (Refer Table 5) for projecting number of consumers, connected load and sales respectively.

Commission's analysis

The Commission is of the opinion that CAGR considered by the Petitioner for projecting number of consumers and connected load are consistent with the trends observed in the past. Therefore, the Commission has approved the growth rates for number of consumers and connected load as submitted by the Petitioner. The Commission observes that the Petitioner has done a computational error while calculating the 3 years CAGR of Sales, which works out to be 5.42% instead of 5.35%. The Commission has analysed the specific (per consumer) consumption and observes the same has moderately increasing (from 1158 in FY 2014-15 to 1195 in FY 2017-18). Based on the analysis of the consumer growth and sales per consumer, the Commission finds appropriate to consider the 4-year CAGR of 6.27% rather than considering 5-year CAGR of 9.30% which is significantly high. The growth rates approved by the Commission are as below.

Table 13: Growth rates approved by the Commission for Commercial category

Consumer Category	Growth in no. of consumers		Load growth		Sales growth	
	CAGR submitted	CAGR approved	CAGR submitted	CAGR approved	CAGR submitted	CAGR approved
Commercial	4.56%	4.56%	3.41%	3.41%	5.35%	6.27%

Govt. Connection

Petitioner's submission

The Petitioner has considered the CAGR of last 5 years for projecting the number of consumers and sales for Govt. connection category. For projecting the connected load for Govt. Connection category, the Petitioner has considered the CAGR of last 3 years. Accordingly, the Petitioner has used a growth rate of 2.68% (Refer Table 3), 3.32% (Refer Table 4) and 1.54% (Refer Table 5) for projecting number of consumers, connected load and sales respectively.

Commission's analysis

It is observed that though the CAGR of last 5 years for number of consumers and sales is positive but CAGR of connected load for last 5 years is negative and hence the Petitioner has considered 5 years CAGR for number of consumers and sales and 3 years CAGR for connected load. The Commission is of the opinion that CAGR considered by the Petitioner for projecting number of consumers and connected load for Govt. Connection category and sales are consistent with the trends observed in the past data. Therefore, the Commission has approved the growth rates as submitted by the Petitioner. The growth rates approved by the Commission are as given in the following table:

Table 14: Growth rates approved by the Commission for Govt. Connection category

Consumer Category	Growth in no. of consumers		Load growth		Sales growth	
	CAGR submitted	CAGR approved	CAGR submitted	CAGR approved	CAGR submitted	CAGR approved
Govt. Connection	2.68%	2.68%	3.32%	3.32%	1.54%	1.54%

Industrial

Petitioner's submission

The Petitioner has considered the CAGR of past 5 -years for projecting the number of consumers, connected load and sales for industrial category. Accordingly, the Petitioner has used a growth rate of 2.09% (Refer Table 3), 4.17% (Refer Table 4) and 1.80% (Refer Table 5) for number of consumers, connected load and sales respectively.

Commission's analysis

The Commission is of the opinion that CAGR considered by the Petitioner for projecting connected load for Industrial category are consistent with the trends observed in the past data. Therefore, the Commission has approved the growth rates as submitted by the Petitioner. In respect of number of connections the Commission observes that the YoY growth of the industrial consumer is consistent over the last 3 years. Therefore, the Commission opines that CAGR of 3 years of 3.51% growth rate is appropriate for projecting the number of consumers.

In regard to sales, the Commission observes that the Petitioner has done a computational error while calculating the CAGR of 5 Years, which works out to be 1.97% instead of 1.80%. The Commission approves the CAGR of last 5 years of 1.97% growth rate for sales of the industrial category. The growth rates approved by the Commission are as given in the following table:

Table 15: Growth rates approved by the Commission for Industrial category

Consumer Category	Growth in no. of consumers		Load growth		Sales growth	
	CAGR submitted	CAGR approved	CAGR submitted	CAGR approved	CAGR submitted	CAGR approved
Industrial	2.09%	3.51%	4.17%	4.17%	1.80%	1.97%

HT Consumer

Petitioner's submission

The Petitioner submitted that the consumption in this category is very less and accounts for around 1% of total consumption. The Petitioner has considered the CAGR of past 3- year for projecting the number of consumers and sales for HT Consumer category. For forecasting connected load for HT Consumer, the Petitioner has considered the growth rate of CAGR of last 5 years. Accordingly, the Petitioner has used a growth rate of 22.47% (Refer Table 3), 8.16% (Refer Table 4) and 27.33% (Refer Table 5) for number of consumers, connected load and sales respectively.

Commission's analysis

Based on the actual data submitted by the Petitioner, it is observed that the Petitioner has provided the numbers of consumers and sales data only from FY 2015-16 onwards and not from FY 2012-13 while the connected load data is provided from FY 2012-13. The Commission observed that the number of consumers in FY 2015-16, FY 2016-17 and FY 2017-18 were 4, 5 and 6 respectively. In the absence of proper data for previous years, the Commission is of the view that is appropriate to consider the moderate growth rate of 10.00% for projecting number of consumer and sales for the upcoming Control Period. The growth rates approved by the Commission are as below.

Table 16: Growth rates approved by the Commission for HT Consumer category

Consumer Category	Growth in no. of consumers		Load growth		Sales growth	
	CAGR submitted	CAGR approved	CAGR submitted	CAGR approved	CAGR submitted	CAGR approved
HT Consumer	22.47%	10.00%	8.16%	8.16%	27.33%	10.00%

Public Lighting

Petitioner's submission

The Petitioner has considered the CAGR of last 5 years for projecting the number of consumers and connected load for public lighting category. However, the Petitioner has not considered any increase in sales and has considered the sales for FY 2017-18 for the upcoming control period. Accordingly, the Petitioner has used a growth rate of 0.81% (Refer Table 3), 2.32% (Refer Table 4) and 0.00% (Refer Table 5) for number of consumers, connected load and sales respectively.

Commission's analysis

The Commission observes that the YoY growth of number of consumers and connected load is inconsistent during the last 3 years. However, the Commission finds it appropriate to consider CAGR of last 3 years for projecting the number of consumers and connected load for public lighting category. The Commission is of the view that the approach adopted by the Petitioner is not correct as the Petitioner has considered the growth in number of consumers and connected load, but the Petitioner has not considered any growth for projecting sales. For projecting sales, the Commission approves the growth rate as per 2-year CAGR for projecting sales in public lighting category as the 5 year CAGR, 4 year CAGR and 3 year CAGR of sales is negative. The growth rates approved by the Commission are as below.

Table 17: Growth rates approved by the Commission for Public Lighting category

Consumer Category	Growth in no. of consumers		Load growth		Sales growth	
	CAGR submitted	CAGR approved	CAGR submitted	CAGR approved	CAGR submitted	CAGR approved
Public Lighting	0.81%	1.35%	2.32%	3.67%	0.0%	2.43%

Temporary Connection

Petitioner's submission

The Petitioner has not considered any growth (0% CAGR) for projecting the number of consumers and sales for Temporary Connection category and kept the same as that of FY 2017-18. However, for projecting the connected load, the Petitioner has considered a normative growth rate of 5.00% for the upcoming control period. Accordingly, the Petitioner has used a growth rate of 0.00% (Refer Table 3), 5.00% (Refer Table 4) and 0.00% (Refer Table 5) for number of consumers, connected load and sales respectively.

Commission's analysis

The Commission observes that the Temporary Connection category does not follow any particular trend, so the Commission has considered a 0% growth rate for projecting number of consumers, connected load and sales.

Table 18: Growth rates approved by the Commission for Temporary Connection category

Consumer Category	Growth in no. of consumers		Load growth		Sales growth	
	CAGR submitted	CAGR approved	CAGR submitted	CAGR approved	CAGR submitted	CAGR approved
Temporary Connection	0.00%	0.00%	5.00%	0.00%	0.00%	0.00%

3.2.3 Projections of Number of Consumers approved by the Commission

The summary of the projections of number of consumers approved by the Commission for the upcoming Control Period based on approved CAGRs is given in the following table:

Table 19: Consumer growth projections approved by the Commission for the upcoming Control Period

Number of Consumers	CAGR Approved	Estimated	Approved Projections		
		Base Year	Control Period		
Consumer Category		FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
Domestic	3.89%	20496	21294	22122	22982
Commercial	4.56%	2512	2626	2746	2871
Govt. Connection	2.68%	1251	1284	1319	1354
Industrial	3.51%	368	381	395	409
HT Consumers	10.00%	7	7	8	9
Public Lighting	1.35%	77	78	79	80
Temporary Connection	0.00%	160	160	160	160
Total		24871	25831	26828	27865

3.2.4 Projections of Connected Load approved by the Commission

The summary of the projections of connected load approved by the Commission for the upcoming Control Period based on approved CAGRs is given in the following table:

Table 20: Load growth projections approved by the Commission for the upcoming Control Period

Connected Load (kVA)	CAGR Approved	Estimated	Approved Projections		
		Base Year	Control Period		
Consumer Category		FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
Domestic	2.40%	87653	89754	91906	94109
Commercial	3.41%	16357	16916	17493	18090
Govt. Connection	3.32%	8287	8561	8845	9139
Industrial	4.17%	3862	4024	4191	4366
HT Consumers	8.16%	562	608	658	711
Public Lighting	3.67%	307	318	330	342
Temporary Connection	0.00%	66	66	66	66
Total		117095	120248	123490	126824

3.2.5 Projections of Sales approved by the Commission

The summary of the projections of sales approved by the Commission for the upcoming Control Period based on approved CAGRs is given in the following table:

Table 21: Sales growth projections approved by the Commission for the upcoming Control Period

Sales (MU)	CAGR Approved	Estimated	Approved Projections		
		Base Year	Control Period		
Consumer Category		FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
Domestic	5.68%	37.94	40.10	42.38	44.78
Commercial	6.27%	3.05	3.24	3.44	3.66
Govt. Connection	1.54%	8.13	8.26	8.39	8.52
Industrial	1.97%	0.44	0.45	0.46	0.46
HT Consumers	10.00%	0.58	0.64	0.71	0.78
Public Lighting	2.43%	0.66	0.67	0.69	0.70
Temporary Connection	0.00%	0.09	0.09	0.09	0.09
Total		50.89	53.45	56.15	59.00

3.3 Transmission & Distribution (T&D) losses

Petitioner's submission

The Petitioner has submitted that it has been constantly endeavoring to reduce its T&D losses. Further the Petitioner submitted that it has been able to reduce the loss level from 15.93% in FY 2012-13 to 13.10% in FY 2017-18. This reduction in T&D losses in its distribution area is due to the system improvement and augmentation work executed each year under the planned schemes.

The actual distribution losses incurred by the Petitioner is as given below:

Table 22: Actual T&D losses (%)

FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18
15.93%	15.94%	13.75%	13.75%	13.40%	13.10%

The Petitioner submitted that in future it shall make efforts to achieve the loss targets set by the Commission and also requested the Commission to set realistic targets in view of the fact that the current loss level is very low and reduction of loss below the current level shall be difficult. Accordingly, the Petitioner proposed 0.25% reduction in each year in T&D loss target for the Control Period in view of difficulty in loss reduction below 13.00%. The T&D loss trajectory proposed by the Petitioner for FY 2018-19 and the upcoming Control Period is as given below:

Table 23: T&D loss (%) trajectory proposed by the Petitioner for the upcoming Control Period

Base Year	Projections		
FY 2018-19 (Estimated)	FY 2019-20	FY 2020-21	FY 2021-22
13.00%	12.75%	12.50%	12.25%

Commission's analysis

The T&D losses approved by the Commission for the existing Control Period (FY 2016-17 to FY 2018-19) vis-à-vis T&D losses achieved by the Petitioner during the same period is given in the following table:

Table 24: T&D losses approved by the Commission in the existing Control Period vis-à-vis T&D losses achieved by the Petitioner

	T&D loss (%)	
	Approved	Actuals (A)/ Estimate (E)
FY 2016-17	13.25%	13.40% (A)
FY 2017-18	12.75%	13.10% (A)
FY 2018-19	12.25%	13.00% (E)

The Commission is of the view that the Petitioner has been gradually putting in efforts for reduction of T&D Loss and for underachievement vis-a-vis the normative loss it has already been penalised during the Control period from FY 2016-17 to FY 2018-19. The Commission opines that the T&D losses for FY 2019-20 to FY 2021-22 to be approved by keeping 13.00% as base for FY 2018-19 and thereby reducing the 0.25% during each year of the upcoming Control Period FY 2019-20 to FY 2021-22. The T&D loss trajectory approved by the Commission for the upcoming Control Period is given below:

Table 25: T&D loss trajectory approved by the Commission in the upcoming Control Period

	FY 2019-20		FY 2020-21		FY 2021-22	
	Petitioner's submission	Approved by Commission	Petitioner's submission	Approved by Commission	Petitioner's submission	Approved by Commission
T&D loss trajectory (%)	12.75%	12.75%	12.50%	12.50%	12.25%	12.25%

3.4 Power Procurement Plan

3.4.1 Energy Requirement

Petitioner's submission

The Petitioner has submitted the projection of energy requirement at the periphery by grossing up the retail sales projections with T&D loss trajectory proposed by the Petitioner. The summary of the energy requirement as estimated by the Petitioner is as given below:

Table 26: Energy requirement as estimated by the Petitioner for the upcoming Control Period

Energy Requirement	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
	Actual	Estimated	Projected	Projected	Projected
Energy Sales (MU)					
LT Supply	47.94	50.26	52.71	55.29	58.02
HT Supply	0.53	0.67	0.86	1.09	1.39
Total Energy Sales (MU)	48.46	50.93	53.57	56.39	59.41
Overall T&D Losses (%)	13.10%	13.00%	12.75%	12.50%	12.25%
Overall T&D Losses (MU)	7.31	7.61	7.83	8.05	8.29
Total Energy Requirement (MU)	55.77	58.54	61.40	64.44	67.70

Commission's analysis

Based on the sales projections approved by the Commission in *Table 21* and the T&D losses approved by the Commission in *Table 25*, the energy requirement of LED estimated by the Commission for the upcoming Control Period is as given below:

Table 27: Energy requirement of LED approved by the Commission

Particulars	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
	Estimated	Projected	Projected	Projected
Energy Sales	50.89	53.45	56.15	59.00
Overall T&D Losses (%)	13.00%	12.75%	12.50%	12.25%
Overall T&D Losses (MU)	7.60	7.81	8.02	8.24
Total Energy Requirement	58.50	61.26	64.17	67.23

3.4.2 Power Generation Quantum

Petitioner's submission

The Petitioner has submitted that the energy requirement of LED is met from own generation. There is no availability of power from Central Generating Station (CGS) or from other sources/ open market/ power exchanges etc. The present scenario is likely to continue and is projected that energy requirement for FY 2019-20, FY 2020-21 and FY 2021-22 shall be met by own generation.

The Petitioner has projected the total power generation for the control period as given below.

Table 28: Details of the power generation for control period FY 2019-20 to FY 2021-22

Particulars	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
	Estimated	Projected	Projected	Projected
Power Purchase (MU)	-	-	-	-
Own Generation (MU)	58.54	61.40	64.44	67.70
Total (MU)	58.54	61.40	64.44	67.70

Commission's Analysis

As per Regulation 12.1 of the MYT Regulations, 2018, power purchase is an uncontrollable parameter. Thus, the power purchase has to be revisited every year by the Commission based on the audited accounts.

The Commission vide the deficiency note, sought to submit from the Petitioner the estimate of quantity of electricity supply from own generation including solar for Lakshadweep as a whole and separately island wise. In response to the same the Petitioner submitted the Island wise sources of own generation as shown in the table below:

Table 29: Details of the power generation submitted by the Petitioner

Particulars	FY 2019-20		FY 2020-21		FY 2021-22	
	Installed Capacity (kW)	Net Generation (MU)	Installed Capacity (kW)	Net Generation (MU)	Installed Capacity (kW)	Net Generation (MU)
Minicoy	4360	9.09	4360	9.54	4360	10.02
Kavaratti	3960	14.55	4710	15.27	5460	16.05
Amini	3500	6.03	3500	6.33	3500	6.65
Andrott	3220	9.37	3220	9.84	3220	10.34
Kalpeni	2600	4.36	2600	4.57	2600	4.81
Agatti	2450	7.52	3200	7.89	3950	8.29
Kadmat	2160	4.87	2160	5.11	2160	5.37
Kiltan	1580	3.37	1580	3.53	1580	3.71
Chetlat	1100	1.75	1100	1.84	1100	1.93
Bitra	480	0.32	480	0.34	480	0.36
Bangram	230	0.16	230	0.17	230	0.18
Total	25640	61.40	27140	64.44	28640	67.70

3.4.3 Energy Balance

Petitioner's submission

The energy balance for FY 2017-18 and FY 2018-19 and the upcoming Control Period as estimated by the Petitioner is as given below:

Table 30: Energy Balance as estimated by the Petitioner

Energy Balance	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
	Actual	Estimated	Projected	Projected	Projected
Energy Sales (MU)					
LT Supply	47.94	50.26	52.71	55.29	58.02
HT Supply	0.53	0.67	0.86	1.09	1.39
Total Energy Sales	48.46	50.93	53.57	56.39	59.41
Overall T&D Losses (%)	13.10%	13.00%	12.75%	12.50%	12.25%
Overall T&D Losses (MU)	7.31	7.61	7.83	8.05	8.29
Total Energy Requirement (MU)	55.77	58.54	61.40	64.44	67.70
Energy Availability at Periphery					
Power Purchase (MU)	-	-	-	-	-
Own Generation (MU)	55.77	58.54	61.40	64.44	67.70
Total Energy Availability (MU)	55.77	58.54	61.40	64.44	67.70
Energy Surplus/ Gap	-	-	-	-	-

Commission’s analysis

The energy balance for the upcoming Control Period based on the Commission’s analysis is given below:

Table 31: Energy Balance projections approved by the Commission

Energy Balance	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
	Actual	Estimated	Projected	Projected
Total Energy Sales (MU)	50.89	53.45	56.15	59.00
Overall T&D Losses (%)	13.00%	12.75%	12.50%	12.25%
Overall T&D Losses (MU)	7.60	7.81	8.02	8.24
Total Energy Requirement (MU)	58.50	61.26	64.17	67.23
Energy Availability at Periphery				
Power Purchase (MU)	-	-	-	-
Own Generation (MU)	58.50	61.26	64.17	67.23
Total Energy Availability (MU)	58.50	61.26	64.17	67.23
Energy Surplus/ Gap (MU)	-	-	-	-

3.4.4 Renewable Purchase Obligation (RPO)

Petitioner’s submission

The Renewable Purchase Obligation (RPO) for the Utilities has been specified by the Commission vide JERC for State of Goa & Union Territories (Procurement of Renewable Energy), 2010, First Amendment Regulations, 2014, Second Amendment Regulations, 2015, and Third Amendment Regulations, 2016.

The Petitioner submitted that it intends to meet RPO as per the directions of the Commission in the MYT Control Period and has planned to meet the Solar RPO from the generation of own solar power plants. Further it submits that in absence of any non-solar power plants, the Petitioner shall not be able to meet the RPO towards non-solar.

Further the Petitioner submitted that to promote the use of renewable power in Lakshadweep, it plans to purchase solar power from SECI. It has initiated a study to make a road map for sourcing 100% energy requirement of LED through renewable energy sources for all islands to mitigate the diesel consumption.

The Petitioner has submitted that to meet RPO it has initiated the following actions as mentioned below:

- Development of floating solar power projects.
- Repowering of existing ground mounted solar projects
- Development of roof top solar power projects
- Development of small-scale wind turbines
- Employing Battery energy storage to manage the renewable power generated on tandem with load requirement and DG sets.

The Petitioner submitted that, apart from the above it has also a proposal to purchase power from NTPC where they will design, develop and commission concentrated solar thermal agro-waste biomass system for power and portable water production in Andrott island.

The summary of projected Solar and Non-Solar RPO for the Control Period as submitted by the Petitioner is as given below.

Table 32: Units to be Purchased under RPO

Description	FY 2019-20	FY 2020-21	FY 2021-22
Solar Obligation			
Solar RPO (%)	4.70%	6.10%	8.00%
Projected sales (MU)	53.57	56.39	59.41
Total power to be procured to meet solar Obligation (MU)	2.52	3.44	4.75
Non -Solar Obligation			
Non-solar RPO (%)	6.80%	8.00%	9.00%
Total power to be procured to meet non-solar Obligation (MU)	3.64	4.51	5.35
Total power to be procured to meet solar and non-solar RPO	6.16	7.95	10.10

Commission's analysis

The Commission has made note of the submission of the Petitioner and expects the Petitioner to comply with regard to RPO. The Commission directs the Petitioner to comply with the entire RPO target irrespective of Solar or Non-Solar Sources. Actual compliance in respect of the pending RPO obligations would be reviewed at the time of true-up of the respective years and supporting details such as purchase of RECs, bills from solar/non-solar plants for the respective years must be submitted alongside during the MYT filing.

In view of the sales projections approved by the Commission in section 3.2.5 , the Commission approves the RPO obligation for each year of the Control Period based on the JERC (Procurement of Renewable Energy) Regulations, 2010 and subsequent amendments thereof, as shown below:

Table 33: RPO obligation approved by the Commission

Description	FY 2019-20	FY 2020-21	FY 2021-22
Sales (MU)	53.45	56.15	59.00
RPO Obligation (%)			
Solar	4.70%	6.10%	8.00%
Non-Solar	6.80%	8.00%	9.00%
RPO Obligation for the Year (MU)			
Solar	2.51	3.42	4.72
Non-Solar	3.63	4.49	5.31
Total Solar & non-solar (MU)	6.15	7.92	10.03

3.5 Capital Investment Plan

3.5.1 Details of capital expenditure and capitalisation

Ongoing scheme(s)

Petitioner's submission

The Petitioner has submitted that all the capital expenditures will be completed within a year and hence there are no such ongoing schemes in the upcoming Control Period.

New scheme(s)

Petitioner's submission

The Petitioner has submitted that it plans to carry out capital expenditure during the Control Period for augmentation and expansion of its capacity and to reduce the transmission and distribution losses in the system. LED has undertaken significant capital expenditure during previous control period FY 2016-17 to FY 2018-19 and has plans to implement schemes for development of infrastructure during the upcoming control period of FY 2019-20 to FY 2021-22. The capital expenditure 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 FY 2019-20 to FY 2021-22.

The capital expenditure plan envisaged will also assist in reducing system losses. The Petitioner has planned for 17 new 11kV schemes in view of system upgradation requirement and improvement of reliability. The Capex plan has been formulated keeping in view of various parameters that come into play to ensure better supply of power to end consumers.

A Summary of capital expenditure projections and capitalisation schedule of new schemes for the upcoming Control Period is given below.

Table 34: Capital expenditure plan and Capitalisation schedule proposed by the Petitioner for the upcoming Control Period

Sr. No.	Name of Scheme	Proposed Expenditure (Rs. Cr)				Capitalisation Schedule
		FY 2019-20	FY 2020-21	FY 2021-22	Total	
1	Installation/ Augmentation/Replacement of 750 kW DG Generating capacity	3.00	2.00	2.00	7.00	FY 2021-22
2	Replacement of old panel board at Kadmat substation	0.50	0.00	0.00	0.50	FY 2019-20
3	Improvement & augmentation of 1000 kVA step-up Transformer at 11 kV existing substation	0.50	0.00	0.00	0.50	FY 2019-20
4	Improvement & augmentation of 250 kVA step-down Transformer at 11 kV existing system.	0.50	0.00	0.00	0.50	FY 2019-20
5	Ring main unit in distribution transformer.	0.50	0.50	0.50	1.50	FY 2021-22
6	Laying of HT cable	0.50	0.75	0.50	1.75	FY 2021-22
7	Laying of new cables line and also replacement of old and defective cables.	0.15	0.20	0.15	0.50	FY 2021-22

Sr. No.	Name of Scheme	Proposed Expenditure (Rs. Cr)				Capitalisation Schedule
		FY 2019-20	FY 2020-21	FY 2021-22	Total	
8	LT line/ Domestic and Commercial service connections	0.06	0.10	0.06	0.22	FY 2021-22
9	LT line/Industrial service connections.	0.04	0.05	0.04	0.13	FY 2021-22
10	Supply of 11 kV/LT cables	0.50	1.00	0.50	2.00	FY 2021-22
11	Requirement of RCC slab for cable laying work.	0.50	0.50	0.70	1.70	FY 2021-22
12	Supply of street light pole and street light set	0.50	1.00	0.40	1.90	FY 2021-22
13	Installation and replacement of distribution boxes	0.60	1.00	0.75	2.35	FY 2021-22
14	Installation of smart meters/energy meters.	1.00	0.50	0.50	2.00	FY 2021-22
15	Conversion of existing overhead HT/LT lines into underground cables.	0.50	0.50	0.50	1.50	FY 2021-22
16	Improvement and augmentation of power house/line tools	0.15	0.25	0.15	0.55	FY 2021-22
17	Construction and installation of oil storage facility	0.50	2.00	1.00	3.50	FY 2021-22
	Total	10.00	10.85	8.25	29.10	

The overview of the capital expenditure and capitalisation plan proposed by the Petitioner for the upcoming Control Period is as given in the table below:

Table 35: Year-Wise Capital Expenditure and Capitalisation as proposed by the Petitioner

Particulars (Rs. Cr.)	FY 2019-20	FY 2020-21	FY 2021-22
Capital Expenditure	10.00	10.85	8.25
Capitalisation	10.00	10.85	8.25

Commission's analysis

The Commission has observed that the Petitioner has done a summation error while calculating the total proposed expenditure of Rs. 10.85 Crore and Rs. 8.25 Crore in FY 2020-21 and FY 2021-22 respectively, while the correct total of proposed capital expenditure for FY 2020-21 and FY 2021-22 are Rs. 10.35 Crore and Rs 7.75 Crore respectively and the Commission has considered the same.

The Commission has analysed actual achievement of capital expenditure and capitalisation of the Petitioner vis-à-vis that approved by the Commission in the previous Business plan of MYT control period from FY 2016-17 to FY 2018-19 as given below.

Table 36: Capital expenditure achieved by the Petitioner vis-à-vis approved by the Commission

Particulars	FY 2016-17		FY 2017-18		FY 2018-19		Total		% Achievement
	Approved	Actual	Approved	Actual	Approved	Estimated	Approved	Actual/Estimated	
Capital Expenditure (Rs. Cr)	17.70	6.00	18.95	6.51	14.60	16.00	51.25	28.51	55.63%

Table 37: Capitalisation achieved by the Petitioner vis-à-vis approved by the Commission

Particulars	FY 2016-17		FY 2017-18		FY 2018-19		Total		% Achievement
	Approved	Actual	Approved	Actual	Approved	Estimated	Approved	Actual/Estimated	
Capitalisation (Rs. Cr)	17.70	6.00	18.95	6.51	14.60	16.00	51.25	28.51	55.63%

The Commission observes that the Petitioner has achieved only 55.63% of approved capital expenditure and approved capitalisation for MYT control period of FY 2016-17 to FY 2018-19.

The Commission sought detailed justification for the capital expenditure being substantially lower than the approved capital expenditure for the respective years. The Petitioner in response submitted that the electricity department has executed the schemes as per the budgetary allocation from the Government for the respective years.

The Commission further sought detailed justification for the estimated capital expenditure being higher than the approved capital expenditure for FY 2018-19. The Petitioner in response submitted that the projected capital expenditure for FY 2018-19 is based on the Capex approved by the Commission increased by estimated escalation in price variation and additional works which are essential but not included in the approved Capex.

The Commission vide deficiency note sought detailed justification and cost benefit analysis of various proposed scheme. However, the Petitioner has failed to submit the same.

Overall approach of the Commission

For the upcoming Control Period, the Commission has compared capital expenditure and capitalisation proposed by the Petitioner with the details 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.

1. Installation/ Augmentation/ Replacement of 750 kW DG Sets

Petitioner's Submission

The Petitioner submitted that the planned installation of 3 Nos of 750 kW new DG generating capacity are as follows:

- Minicoy – 1 DG set (750 kW)
- Agatti – 1 DG set (750 kW)
- Kavaratti – 1 DG Sets (2 x 750 kW)

The Petitioner also submitted that the augmentation / replacement of DG sets at various islands are as follows:

- Kalpeni – 1 DG set (750 kW)
- Amini – 1 DG set (750 kw)
- Agatti – 2 DG Sets (2 x 750 kW)

The Petitioner submitted that the proposed scheme will help to meet future load demand due to growth of consumer and is also required due to derating of DG sets on account of ageing for cost effectiveness.

The Petitioner in its reply to the Deficiency Note raised by the Commission, submitted that the LED sources its power requirement from own DG sets & solar generating plants. The Operational area of LED is spread across 10 islands which are not connected to the grid and these generating stations are functioning independently. Therefore, available capacity and requirement is to be assessed for every island separately. It is important to maintain sufficient capacity to meet the base & peak load of individual islands apart from maintaining spare capacity to meet the requirement in case of breakdown of any DG set. Further, most of the DG sets are very old and require to be phased out. Hence augmentation/replacement of four DG sets of 750 kW capacity at Kalpeni, Amini and Agatti is proposed.

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

Table 38: Installation/ Augmentation/ Replacement of 750 kW DG Sets.

Name of Scheme	Total estimated amount (Rs. Cr)	Proposed (Rs. Cr)			Capitalisation Schedule
		FY 2019-20	FY 2020-21	FY 2021-22	
Installation/ Augmentation/ Replacement of 750 kW DG Sets	7.00	3.00	2.00	2.00	FY 2021-22

Commission's Analysis

The Commission observes that the energy requirement of LED is met from its own generation as there is no availability of power from Central Generating Station (CGS) or from other sources. Based on the Petitioner response to the deficiency note it can be observed that the old DG sets have phased out.

Considering the expected growth across the islands and for maintaining of smooth and reliable supply of electricity across the islands, the Commission opines that proposed capital expenditure against the proposed scheme is appropriate. The Commission, thus approves the capital expenditure as proposed by the petitioner for the upcoming Control Period.

The Summary of capital expenditure and capitalisation approved for this scheme is given below.

Table 39: Capital expenditure approved by the Commission for Installation/ Augmentation/ Replacement of 750 kW DG Sets

Name of Scheme	Approved Expenditure (Rs. Cr)			
	FY 2019-20	FY 2020-21	FY 2021-22	Total
Installation/ Augmentation/ Replacement of 750 kW DG Sets	3.00	2.00	2.00	7.00

Table 40: Capitalisation schedule approved by the Commission for Installation/ Augmentation/ Replacement of 750 kW DG Sets

Name of Scheme	Approved Capitalisation (Rs. Cr)			
	FY 2019-20	FY 2020-21	FY 2021-22	Total
Installation/ Augmentation/ Replacement of 750 kW DG Sets	3.00	2.00	2.00	7.00

Therefore, the Commission approves a total capital expenditure of Rs. 7.00 Cr and total capitalisation of Rs. 7.00 Cr for the upcoming Control Period. The Commission directs the Petitioner to submit Detailed Project Report (DPR) along with the justification and cost benefit analysis of the proposed scheme within 30 days from the issuance of this Order.

2. Replacement of old panel board in Kadmat substation

Petitioner's Submission

The Petitioner has proposed replacement of old panel board and other allied equipment in Kadmat substation. The Proposed scheme will help in continuous and reliable distribution of electricity. The capital expenditure and capitalisation schedule proposed by the Petitioner for the above scheme is as given below.

Table 41: Capital expenditure and capitalisation schedule proposed by the Petitioner for Replacement of old panel board in Kadmat substation

Name of Scheme	Total estimated amount (Rs. Cr)	Proposed (Rs. Cr)			Capitalisation Schedule
		FY 2019-20	FY 2020-21	FY 2021-22	
Replacement of old panel board in Kadmat substation	0.50	0.50	0.00	0.00	FY 2019-20

Commission's Analysis

The Commission is of the view that the replacement of old panel board is an essential activity for improvement of reliability and availability of the distribution infrastructure. The Commission, thus, approves the capital expenditure as proposed by the Petitioner for the Control Period.

The Summary of capital expenditure and capitalisation approved for this scheme is given below.

Table 42: Capital expenditure approved by the Commission for Replacement of old panel board in Kadmat substation

Name of Scheme	Approved Expenditure (Rs. Cr)			
	FY 2019-20	FY 2020-21	FY 2021-22	Total
Replacement of old panel board in Kadmat substation	0.50	0.00	0.00	0.50

Table 43: Capitalisation schedule approved by the Commission for Replacement of old panel board in Kadmat substation

Name of Scheme	Approved Capitalisation (Rs. Cr)			
	FY 2019-20	FY 2020-21	FY 2021-22	Total
Replacement of old panel board in Kadmat substation	0.50	0.00	0.00	0.50

Therefore, the Commission approves a total capital expenditure of Rs. 0.50 Cr and total capitalisation of Rs. 0.50 Cr for the upcoming Control Period.

3. Improvement & augmentation of 1000 kVA step-up Transformer at 11 kV existing substation

Petitioner's Submission

The Petitioner has proposed improvement and augmentation of 3 Nos. of 1000 KVA transformer at 11 kV existing sub-station including HT/LT Panels on the existing distribution transformers at Chetlat, Kiltan and Agatti. The Proposed scheme will help to meet the increasing load demand due to growth of consumer and also for replacement of defective transformer so as to reduce T&D loss.

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

Table 44: Capital expenditure and capitalisation schedule proposed by the Petitioner for Improvement & augmentation of 1000 kVA step-up Transformer at 11 kV existing substation

Name of Scheme	Total estimated amount (Rs. Cr)	Proposed (Rs. Cr)			Capitalisation Schedule
		FY 2019-20	FY 2020-21	FY 2021-22	
Improvement & augmentation of 1000 kVA step-up Transformer at 11 kV existing substation	0.50	0.50	0.00	0.00	FY 2019-20

Commission's Analysis

The Commission is of view that improvement and augmentation of transformers is an ongoing and essential activity for catering to future load growth as well as improvement of reliability of supply. The Commission, thus, approves the capital expenditure as proposed by the Petitioner for the Control Period.

The Summary of capital expenditure and capitalisation approved for this scheme is given below.

Table 45: Capital expenditure approved by the Commission for Improvement & augmentation of 1000 kVA step-up Transformer at 11 kV existing substation

Name of Scheme	Approved Expenditure (Rs. Cr)			
	FY 2019-20	FY 2020-21	FY 2021-22	Total
Improvement & augmentation of 1000 kVA step-up Transformer at 11 kV existing substation	0.50	0.00	0.00	0.50

Table 46: Capitalisation schedule approved by the Commission for Improvement & augmentation of 1000 kVA step-up Transformer at 11 kV existing substation

Name of Scheme	Approved Capitalisation (Rs. Cr)			
	FY 2019-20	FY 2020-21	FY 2021-22	Total
Improvement & augmentation of 1000 kVA step-up Transformer at 11 kV existing substation	0.50	0.00	0.00	0.50

Therefore, the Commission approves a total capital expenditure of Rs. 0.50 Cr and total capitalisation of Rs. 0.50 Cr for the upcoming Control Period.

4. Improvement & augmentation of 250 kVA step-down Transformer at 11 kV existing system

Petitioner's Submission

The Petitioner has proposed the scheme for improvement and Augmentation of 9 no's of 250 kVA Transformer at 11 kV existing sub-station including HT/LT Panels on the existing distribution transformers at Amini, Andrott, Kavaratti, Minicoy, Agatti, Chetlat, Kalpeni and Kiltan. The Proposed scheme will help to meet the increasing load demand due to growth of consumer and also for replacement of defective transformer so as to reduce T&D loss.

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

Table 47: Capital expenditure and capitalisation schedule proposed by the Petitioner for Improvement & augmentation of 250 kVA step-down Transformer at 11 kV existing system

Name of Scheme	Total estimated amount (Rs. Cr)	Proposed (Rs. Cr)			Capitalisation Schedule
		FY 2019-20	FY 2020-21	FY 2021-22	
Improvement & augmentation of 250 kVA step-down Transformer at 11 kV existing system	0.50	0.50	0.00	0.00	FY 2019-20

Commission's Analysis

The Commission is of view that improvement and augmentation of transformers is an ongoing and essential activity for catering to future load growth as well as improvement of reliability of supply. The Commission, thus, approves the capital expenditure as proposed by the Petitioner for the Control Period.

The Summary of capital expenditure and capitalisation approved for this scheme is given below.

Table 48: Capital expenditure approved by the Commission for Improvement & augmentation of 250 kVA step-down Transformer at 11 kV existing system

Name of Scheme	Approved Expenditure (Rs. Cr)			
	FY 2019-20	FY 2020-21	FY 2021-22	Total
Improvement & augmentation of 250 kVA step-down Transformer at 11 kV existing system	0.50	0.00	0.00	0.50

Table 49: Capitalisation schedule approved by the Commission for Improvement & augmentation of 250 kVA step-down Transformer at 11 kV existing system

Name of Scheme	Approved Capitalisation (Rs. Cr)			
	FY 2019-20	FY 2020-21	FY 2021-22	Total
Improvement & augmentation of	0.50	0.00	0.00	0.50

Name of Scheme	Approved Capitalisation (Rs. Cr)			
	FY 2019-20	FY 2020-21	FY 2021-22	Total
250 kVA step-down Transformer at 11 kV existing system				

Therefore, the Commission approves a total capital expenditure of Rs. 0.50 Cr and total capitalisation of Rs. 0.50 Cr for the upcoming Control Period.

5. Ring Main unit in distribution transformer

Petitioner's Submission

The Petitioner has proposed the scheme for installation of 19 nos of ring main unit in distribution transformer at Amini, Kavarratti, Minicoy, Agatti, Chetlat, Kalpeni, Kadmath and Kiltan. The proposed scheme will provide redundancy of electricity supply, so that availability of supply will be increased to meet JERC recommendation. The capital expenditure and capitalisation schedule proposed by the Petitioner for the above scheme is as given below.

Table 50: Capital expenditure and capitalisation schedule proposed by the Petitioner for Ring Main unit in distribution transformer

Name of Scheme	Total estimated amount (Rs. Cr)	Proposed (Rs. Cr)			Capitalisation Schedule
		FY 2019-20	FY 2020-21	FY 2021-22	
Ring Main unit in distribution transformer	1.50	0.50	0.50	0.50	FY 2021-22

Commission's Analysis

The Commission is of view that installation of ring main unit in distribution transformer is an essential activity which will improve the distribution system reliability and availability. The Commission, thus, approves the capital expenditure as proposed by the Petitioner for the Control Period.

The Summary of capital expenditure and capitalisation approved for this scheme is given below.

Table 51: Capital expenditure approved by the Commission for Ring Main unit in distribution transformer

Name of Scheme	Approved Expenditure (Rs. Cr)			
	FY 2019-20	FY 2020-21	FY 2021-22	Total
Ring Main unit in distribution transformer	0.50	0.50	0.50	1.50

Table 52: Capitalisation schedule approved by the Commission for Ring Main unit in distribution transformer

Name of Scheme	Approved Capitalisation (Rs. Cr)			
	FY 2019-20	FY 2020-21	FY 2021-22	Total
Ring Main unit in distribution transformer	0.50	0.50	0.50	1.50

Therefore, the Commission approves a total capital expenditure of Rs. 1.50 Cr and total capitalisation of Rs. 1.50 Cr for the upcoming Control Period.

6. Laying of HT cable line

Petitioner's Submission

The Petitioner has proposed the scheme for laying HT cable line in the phased manner in all the island i.e. 10 km each year. The proposed scheme will help to provide transmission of power from power house (Step up Transformer) to distribution transformer (Step down transformer) installed at new places. The capital expenditure and capitalisation schedule proposed by the Petitioner for the above scheme is as given below.

Table 53: Capital expenditure and capitalisation schedule proposed by the Petitioner for laying of HT cable line

Name of Scheme	Total estimated amount (Rs. Cr)	Proposed (Rs. Cr)			Capitalisation Schedule
		FY 2019-20	FY 2020-21	FY 2021-22	
Laying of HT cable line	1.75	0.50	0.75	0.50	FY 2021-22

Commission's Analysis

The Commission is of view that being an HT network, laying of HT cable for consumers is an ongoing and essential activity which helps in reducing the losses and also increases the reliability of power supply. The Commission, thus, approves the capital expenditure as proposed by the Petitioner for the Control Period.

The Summary of capital expenditure and capitalisation approved for this scheme is given below.

Table 54: Capital expenditure approved by the Commission for laying of HT cable line

Name of Scheme	Approved Expenditure (Rs. Cr)			
	FY 2019-20	FY 2020-21	FY 2021-22	Total
Laying of HT cable line	0.50	0.75	0.50	1.75

Table 55: Capitalisation schedule approved by the Commission for laying of HT cable line

Name of Scheme	Approved Capitalisation (Rs. Cr)			
	FY 2019-20	FY 2020-21	FY 2021-22	Total
Laying of HT cable line	0.50	0.75	0.50	1.75

Therefore, the Commission approves a total capital expenditure of Rs. 1.75 Cr and total capitalisation of Rs. 1.75 Cr for the upcoming Control Period.

7. Laying of new cable line and replacement of old & defective cable

Petitioner's Submission

The Petitioner has proposed the scheme for laying of new cable line and also replacement of old and defective cable in all the island. The proposed scheme will help for fulfilling an increasing load demand and to decrease the repair and maintenance cost for the existing defective cable line.

Table 56: Capital expenditure and capitalisation schedule proposed by the Petitioner for laying of new cable line and replacement of old & defective cable

Name of Scheme	Total estimated amount (Rs. Cr)	Proposed (Rs. Cr)			Capitalisation Schedule
		FY 2019-20	FY 2020-21	FY 2021-22	
Laying of new cable	0.50	0.15	0.20	0.15	FY 2021-22

Name of Scheme	Total estimated amount (Rs. Cr)	Proposed (Rs. Cr)			Capitalisation Schedule
		FY 2019-20	FY 2020-21	FY 2021-22	
line and replacement of old & defective cable					

Commission's Analysis

The Commission is of view that laying of new cable line and replacement of old & defective cable is an ongoing and essential activity for catering to future load growth as well as improvement of reliability of supply. The Commission, thus, approves the capital expenditure as proposed by the Petitioner for the Control Period.

The Summary of capital expenditure and capitalisation approved for this scheme is given below.

Table 57: Capital expenditure approved by the Commission for laying of new cable line and replacement of old & defective cable

Name of Scheme	Approved Expenditure (Rs. Cr)			
	FY 2019-20	FY 2020-21	FY 2021-22	Total
Laying of new cable line and replacement of old & defective cable	0.15	0.20	0.15	0.50

Table 58: Capitalisation schedule approved by the Commission for laying of new cable line and replacement of old & defective cable

Name of Scheme	Approved Capitalisation (Rs. Cr)			
	FY 2019-20	FY 2020-21	FY 2021-22	Total
Laying of new cable line and replacement of old & defective cable	0.15	0.20	0.15	0.50

Therefore, the Commission approves a total capital expenditure of Rs. 0.50 Cr and total capitalisation of Rs. 0.50 Cr for the upcoming Control Period.

8. LT line/ domestic and commercial connection

Petitioner's Submission

The Petitioner has proposed the scheme for new Service connection to 600 nos. of LT line/ Domestic and Commercial Consumers. The proposed scheme will help to provide new service connections to domestic and commercial consumers and also for replacement of defective lines.

Table 59: Capital expenditure and capitalisation schedule proposed by the Petitioner for LT line/domestic and commercial connection

Name of Scheme	Total estimated amount (Rs. Cr)	Proposed (Rs. Cr)			Capitalisation Schedule
		FY 2019-20	FY 2020-21	FY 2021-22	
LT line/ domestic and commercial connection	0.22	0.06	0.10	0.06	FY 2021-22

Commission's Analysis

The Commission is of view that new service connections of LT line /Domestic and commercial consumer and replacement of defective lines is an ongoing activity. The Commission, thus, approves the capital expenditure as proposed by the Petitioner for the Control Period.

The Summary of capital expenditure and capitalisation approved for this scheme is given below.

Table 60: Capital expenditure approved by the Commission for Lt line/domestic and commercial connection

Name of Scheme	Approved Expenditure (Rs. Cr)			
	FY 2019-20	FY 2020-21	FY 2021-22	Total
LT line/ domestic and commercial connection	0.06	0.10	0.06	0.22

Table 61: Capitalisation schedule approved by the Commission for Lt line/domestic and commercial connection

Name of Scheme	Approved Capitalisation (Rs. Cr)			
	FY 2019-20	FY 2020-21	FY 2021-22	Total
LT line/ domestic and commercial connection	0.06	0.10	0.06	0.22

Therefore, the Commission approves a total capital expenditure of Rs. 0.22 Cr and total capitalisation of Rs. 0.22 Cr for the upcoming Control Period.

9. LT line/ Industrial connection

Petitioner's Submission

The Petitioner has proposed the scheme for new Service connection to 15 nos. of LT line/Industrial consumers. The proposed scheme will help to provide new service connections to industrial consumers and also for replacement of defective lines.

Table 62: Capital expenditure and capitalisation schedule proposed by the Petitioner for Lt line/Industrial connection

Name of Scheme	Total estimated amount (Rs. Cr)	Proposed (Rs. Cr)			Capitalisation Schedule
		FY 2019-20	FY 2020-21	FY 2021-22	
LT line/ Industrial connection	0.13	0.04	0.05	0.04	FY 2021-22

Commission's Analysis

The Commission is of view that new service connections of LT line /Industrial consumer and replacement of defective lines is an ongoing activity. The Commission, thus, approves the capital expenditure as proposed by the Petitioner for the Control Period.

The Summary of capital expenditure and capitalisation approved for this scheme is given below.

Table 63: Capital expenditure approved by the Commission for LT line/Industrial connection

Name of Scheme	Approved Expenditure (Rs. Cr)			
	FY 2019-20	FY 2020-21	FY 2021-22	Total
LT line/ Industrial connection	0.04	0.05	0.04	0.13

Table 64: Capitalisation schedule approved by the Commission for LT line/Industrial connection

Name of Scheme	Approved Capitalisation (Rs. Cr)			
	FY 2019-20	FY 2020-21	FY 2021-22	Total
LT line/ Industrial connection	0.04	0.05	0.04	0.13

Therefore, the Commission approves a total capital expenditure of Rs. 0.13 Cr and total capitalisation of Rs. 0.13 Cr for the upcoming Control Period.

10. Supply of 11kV/LT cable

Petitioner's Submission

The Petitioner has proposed the scheme for supply of 45 km of 11kV/LT cable throughout the Island in a phased manner. The proposed scheme will help to provide new service connections and also for replacement of defective cables.

Table 65: Capital expenditure and capitalisation schedule proposed by the Petitioner for supply of 11kV/LT cable

Name of Scheme	Total estimated amount (Rs. Cr)	Proposed (Rs. Cr)			Capitalisation Schedule
		FY 2019-20	FY 2020-21	FY 2021-22	
Supply of 11kV/LT cable	2.00	0.50	1.00	0.50	FY 2021-22

Commission's Analysis

The Commission is of the view that the scheme for supply of 45km of 11kV/LT cable through-out the Island is an ongoing activity to cater to the future load growth as well as improvement of reliability of supply. The Commission, thus, approves the capital expenditure as proposed by the Petitioner for the Control Period.

The Summary of capital expenditure and capitalisation approved for the upcoming Control Period is given below.

Table 66: Capital expenditure approved by the Commission for supply of 11kV/LT cable

Name of Scheme	Approved Expenditure (Rs. Cr)			
	FY 2019-20	FY 2020-21	FY 2021-22	Total
Supply of 11kV/LT cable	0.50	1.00	0.50	2.00

Table 67: Capitalisation schedule approved by the Commission for supply of 11kV/LT cable

Name of Scheme	Approved Capitalisation (Rs. Cr)			
	FY 2019-20	FY 2020-21	FY 2021-22	Total
Supply of 11kV/LT cable	0.50	1.00	0.50	2.00

Therefore, the Commission approves a total capital expenditure of Rs. 2.00 Cr and total capitalisation of Rs. 2.00 Cr for the upcoming Control Period.

11. Requirement of RCC slab for cable laying work

Petitioner's Submission

The Petitioner has proposed the scheme for installation of 60,000 nos. of RCC slab for cable laying work for all islands. The proposed scheme will help to smoothen the installation and repairing of cables to minimise the cable fault due to improper digging by water authorities and telephone authorities.

Table 68: Capital expenditure and capitalisation schedule proposed by the Petitioner for Requirement of RCC slab for cable laying work

Name of Scheme	Total estimated amount (Rs. Cr)	Proposed (Rs. Cr)			Capitalisation Schedule
		FY 2019-20	FY 2020-21	FY 2021-22	
Requirement of RCC slab for cable laying work	1.70	0.50	0.50	0.70	FY 2021-22

Commission's Analysis

The Commission is of the view that the RCC slab is essential for laying of cables and will also reduce the cable faults due to improper digging. The RCC slab will provide protection to the cable and ensure to maintain the reliability of the system by avoiding the unnecessary fault occurrences. The Commission, thus, approves the capital expenditure as proposed by the Petitioner for the Control Period.

The Summary of capital expenditure and capitalisation approved for this scheme is given below.

Table 69: Capital expenditure approved by the Commission for requirement of RCC slab for cable laying work

Name of Scheme	Approved Expenditure (Rs. Cr)			
	FY 2019-20	FY 2020-21	FY 2021-22	Total
Requirement of RCC slab for cable laying work	0.50	0.50	0.70	1.70

Table 70: Capitalisation schedule approved by the Commission for Requirement of RCC slab for cable laying work

Name of Scheme	Approved Capitalisation (Rs. Cr)			
	FY 2019-20	FY 2020-21	FY 2021-22	Total
Requirement of RCC slab for cable laying work	0.50	0.50	0.70	1.70

Therefore, the Commission approves a total capital expenditure of Rs. 1.70 Cr and total capitalisation of Rs. 1.70 Cr for the upcoming Control Period.

12. Supply of street light pole and street light sets

Petitioner's Submission

The Petitioner has proposed the scheme for supply of 1,600 nos. of street light pole and street light sets. The proposed scheme will help in saving of energy by replacing it with LED type street lights.

Table 71: Capital expenditure and capitalisation schedule proposed by the Petitioner for supply of street light pole and street light sets

Name of Scheme	Total estimated amount (Rs. Cr)	Proposed (Rs. Cr)			Capitalisation Schedule
		FY 2019-20	FY 2020-21	FY 2021-22	
Supply of street light pole and street sets	1.90	0.50	1.00	0.40	FY 2021-22

Commission's Analysis

The Commission is of the view that the scheme to supply 1,600 nos. street light pole and street light sets by replacing with LED type street lights shall have potential energy saving and efficient use of energy. The Commission, thus, approves the capital expenditure as proposed by the Petitioner for the Control Period.

The Summary of capital expenditure and capitalisation approved for this scheme is given below.

Table 72: Capital expenditure approved by the Commission for supply of street light pole and street light sets

Name of Scheme	Approved Expenditure (Rs. Cr)			
	FY 2019-20	FY 2020-21	FY 2021-22	Total
Supply of street light pole and street sets	0.50	1.00	0.40	1.90

Table 73: Capitalisation schedule approved by the Commission for supply of street light pole and street light sets

Name of Scheme	Approved Capitalisation (Rs. Cr)			
	FY 2019-20	FY 2020-21	FY 2021-22	Total
Supply of street light pole and street sets	0.50	1.00	0.40	1.90

Therefore, the Commission approves a total capital expenditure of Rs. 1.90 Cr and total capitalisation of Rs. 1.90 Cr for the upcoming Control Period.

13. Installation and replacement of distribution boxes

Petitioner's Submission

The Petitioner has proposed the scheme for installation and replacement of 2,500 nos. of distribution boxes. The proposed scheme will help to reduce the distribution losses and to provide easy electricity service connections.

Table 74: Capital expenditure and capitalisation schedule proposed by the Petitioner for installation and replacement of distribution boxes

Name of Scheme	Total estimated amount (Rs. Cr)	Proposed (Rs. Cr)			Capitalisation Schedule
		FY 2019-20	FY 2020-21	FY 2021-22	
Installation and replacement of distribution boxes	2.35	0.60	1.00	0.75	FY 2021-22

Commission's Analysis

The Commission is of the view that the scheme for installation and replacement of 2,500 nos. of distribution boxes is an essential activity which helps in smooth functioning and increasing the reliability of supply in the island. The Commission, thus, approves the capital expenditure as proposed by the Petitioner for the Control

Period.

The Summary of capital expenditure and capitalisation approved for this scheme is given below.

Table 75: Capital expenditure approved by the Commission for installation and replacement of distribution boxes

Name of Scheme	Approved Expenditure (Rs. Cr)			
	FY 2019-20	FY 2020-21	FY 2021-22	Total
Installation and replacement of distribution boxes	0.60	1.00	0.75	2.35

Table 76: Capitalisation schedule approved by the Commission for installation and replacement of distribution boxes

Name of Scheme	Approved Capitalisation (Rs. Cr)			
	FY 2019-20	FY 2020-21	FY 2021-22	Total
Installation and replacement of distribution boxes	0.60	1.00	0.75	2.35

Therefore, the Commission approves a total capital expenditure of Rs. 2.35 Cr and total capitalisation of Rs. 2.35 Cr for the upcoming Control Period. The Commission directs the Petitioner to submit the complete details of scheme in the form of Detailed Project Report including the life of existing distribution boxes which are to be replaced, Cost Benefit Analysis within 30 days from the issuance of this Order.

14. Installation of Smart Meter/Energy Meters

Petitioner's Submission

The Petitioner has proposed the scheme for installation of 4,500 nos. of smart meters/energy meters in Kavaratti and 4,000 nos. for Minicoy. The proposed scheme will help to improve the collection and billing efficiency.

Table 77: Capital expenditure and capitalisation schedule proposed by the Petitioner for installation of smart meters/energy meters

Name of Scheme	Total estimated amount (Rs. Cr)	Proposed (Rs. Cr)			Capitalisation Schedule
		FY 2019-20	FY 2020-21	FY 2021-22	
Installation of smart meters/energy meters	2.00	1.00	0.50	0.50	FY 2021-22

Commission's Analysis

The Commission is of the view that installation of smart meters/ energy meters is an essential activity for smooth functioning and proper energy accounting. The Commission, thus, approves the capital expenditure as proposed by the Petitioner for the Control Period.

The Summary of capital expenditure and capitalisation approved for the upcoming Control Period is given below.

Table 78: Capital expenditure approved by the Commission for installation of smart meters/energy meters

Name of Scheme	Approved Expenditure (Rs. Cr)			
	FY 2019-20	FY 2020-21	FY 2021-22	Total
Installation of smart meters/energy meters	1.00	0.50	0.50	2.00

Table 79: Capitalisation schedule approved by the Commission for installation of smart meters/energy meters

Name of Scheme	Approved Capitalisation (Rs. Cr)			
	FY 2019-20	FY 2020-21	FY 2021-22	Total
Installation of smart meters/energy meters	1.00	0.50	0.50	2.00

Therefore, the Commission approves a total capital expenditure of Rs. 2.00 Cr and total capitalisation of Rs. 2.00 Cr for the upcoming Control Period. The Commission directs the Petitioner to submit Detailed Project Report (DPR) along with the justification and cost benefit analysis of the proposed scheme within 30 days from issuance of this Order.

15. Conversion of existing overhead HT/LT lines into underground cables

Petitioner's Submission

The Petitioner has proposed the scheme for conversion of overhead HT/LT lines into underground cables 10km each year, which will help to reduce the losses and faults thereby increasing the reliability of power supply in all the island. The proposed scheme will help to give the supply to new and existing consumer so that interruption in supply is minimised and T&D loss will be reduced.

Table 80: Capital expenditure and capitalisation schedule proposed by the Petitioner for conversion of existing overhead HT/LT lines into underground cables

Name of Scheme	Total estimated amount (Rs. Cr)	Proposed (Rs. Cr)			Capitalisation Schedule
		FY 2019-20	FY 2020-21	FY 2021-22	
Conversion of existing overhead HT/LT lines into underground cables	1.50	0.50	0.50	0.50	FY 2021-22

Commission's Analysis

The Commission is of the view that laying underground cables will be helpful in providing better service to the consumers by increasing the reliability and availability of the power system. The Commission, thus, approves the capital expenditure as proposed by the Petitioner for the Control Period.

The Summary of capital expenditure and capitalisation approved for this scheme is given below.

Table 81: Capital expenditure approved by the Commission for conversion of existing overhead HT/LT lines into underground cables

Name of Scheme	Approved Expenditure (Rs. Cr)			
	FY 2019-20	FY 2020-21	FY 2021-22	Total
Conversion of existing overhead HT/LT lines into underground cables	0.50	0.50	0.50	1.50

Table 82: Capitalisation schedule approved by the Commission for conversion of existing overhead HT/LT lines into underground cables

Name of Scheme	Approved Capitalisation (Rs. Cr)			
	FY 2019-20	FY 2020-21	FY 2021-22	Total
Conversion of existing overhead HT/LT lines into underground cables	0.50	0.50	0.50	1.50

Therefore, the Commission approves a total capital expenditure of Rs. 1.50 Cr and total capitalisation of Rs. 1.50 Cr for the upcoming Control Period.

16. Improvement and augmentation of power house/line tools

Petitioner's Submission

The Petitioner has proposed the scheme for improvement and augmentation of power house/line tools in all islands. The proposed scheme will help in minimising the maintenance of power system and maximising the running efficiency.

Table 83: Capital expenditure and capitalisation schedule proposed by the Petitioner for improvement and augmentation of power house/line tools

Name of Scheme	Total estimated amount (Rs. Cr)	Proposed (Rs. Cr)			Capitalisation Schedule
		FY 2019-20	FY 2020-21	FY 2021-22	
Improvement and augmentation of power house/lines tools	0.55	0.15	0.25	0.15	FY 2021-22

Commission's Analysis

The Commission is of the view that improvement and augmentation of power house/line tools in all islands is an essential activity for maximising the operational efficiency. The Commission, thus, approves the capital expenditure as proposed by the Petitioner for the Control Period.

The Summary of capital expenditure and capitalisation approved for this scheme is given below.

Table 84: Capital expenditure approved by the Commission for improvement and augmentation of power house/line tools

Name of Scheme	Approved Expenditure (Rs. Cr)			
	FY 2019-20	FY 2020-21	FY 2021-22	Total
Improvement and augmentation of power house/lines tools	0.15	0.25	0.15	0.55

Table 85: Capitalisation schedule approved by the Commission for improvement and augmentation of power house/line tools

Name of Scheme	Approved Capitalisation (Rs. Cr)			
	FY 2019-20	FY 2020-21	FY 2021-22	Total
Improvement and augmentation of power house/lines tools	0.15	0.25	0.15	0.55

Therefore, the Commission approves a total capital expenditure of Rs. 0.55 Cr and total capitalisation of Rs. 0.55 Cr for the upcoming Control Period.

17. Construction and installation of oil storage facility

Petitioner's Submission

The Petitioner has proposed the scheme of new construction and installation of oil storage facility at Amini island. The Petitioner further submitted that the installation of oil storage facility was already completed in Kavaratti however oil storage facility was not installed at Minicoy due to some legal issues. The present mode of transportation of oil is through 200 lit HSD oil barrel hence the transportation cost is high. Oil storage facility shall facilitate to store bulk oil in the oil tanker, hence there will be significant saving in transportation cost.

Table 86: Capital expenditure and capitalisation schedule proposed by the Petitioner for construction and installation of oil storage facility.

Name of Scheme	Total estimated amount (Rs. Cr)	Proposed (Rs. Cr)			Capitalisation Schedule
		FY 2019-20	FY 2020-21	FY 2021-22	
Construction and installation of oil storage facility	3.50	0.50	2.00	1.00	FY 2021-22

Commission's Analysis

The Commission notes the submission of the Petitioner and is of view that the utility is primarily dependent on the generation through the DG sets only, the capital expenditure towards oil storage facilities is essential for ensuring the availability of continuous HSD supply with less transportation cost. The Commission, thus, approves the capital expenditure as proposed by the Petitioner for the Control Period.

The Summary of capital expenditure and capitalisation approved for this scheme is given below.

Table 87: Capital expenditure approved by the Commission for construction and installation of oil storage facility.

Name of Scheme	Approved Expenditure (Rs. Cr)			
	FY 2019-20	FY 2020-21	FY 2021-22	Total
Construction and installation of oil storage facility	0.50	2.00	1.00	3.50

Table 88: Capitalisation schedule approved by the Commission for construction and installation of oil storage facility.

Name of Scheme	Approved Capitalisation (Rs. Cr)			
	FY 2019-20	FY 2020-21	FY 2021-22	Total
Construction and installation of oil storage facility	0.50	2.00	1.00	3.50

Therefore, the Commission approves a total capital expenditure of Rs. 3.50 Cr and total capitalisation of Rs. 3.50 Cr for the upcoming Control Period. The Commission directs the Petitioner to submit the updated status of the oil storage facility at Minicoy as well as the cost benefit analysis of the proposed storage facility with regard to reduction in transportation cost along within 30 days from issuance of this Order.

SUMMARY OF CAPITAL EXPENDITURE APPROVED BY THE COMMISSION

The Commission observes that the Petitioner has incurred actual capital expenditure of Rs. 28.51 Crore in the previous Control Period (FY 2016-17 to FY 2018-19) against the approved capital expenditure of Rs. 51.25 Crore. The Petitioner, for the upcoming control period (FY 2019-20 to FY 2021-22) has proposed capital expenditure of Rs. 28.10 Crore which is lower than the actual capital expenditure incurred in the previous Control Period. Hence the Commission has approved capital expenditure of all the 17 new schemes as proposed by the Petitioner for the upcoming Control Period.

However, as discussed earlier, the Petitioner has done a summation error while calculating the total proposed capital expenditure of Rs. 10.85 Crore and Rs. 8.25 Crore in FY 2020-21 and FY 2021-22 respectively, while the correct total of proposed capital expenditure for FY 2020-21 and FY 2021-22 are Rs. 10.35 Crore and Rs 7.75 Crore respectively which has been entirely approved by the Commission.

A Summary of capital expenditure approved by the Commission for the upcoming Control Period is given below.

Table 89: Summary of capital expenditure approved by the Commission for the upcoming Control Period

Sr. No.	Name of Scheme	Approved Expenditure (Rs. Cr)			
		FY 2019-20	FY 2020-21	FY 2021-22	Total
New Schemes					
1	Installation/ Augmentation/Replacement of 750 kW DG Generating capacity	3.00	2.00	2.00	7.00
2	Replacement of old panel board at Kadmat substation	0.50	0.00	0.00	0.50
3	Improvement & augmentation of 1000 kVA step-up Transformer at 11 kV existing substation	0.50	0.00	0.00	0.50
4	Improvement & augmentation of 250 kVA step-down Transformer at 11 kV existing system.	0.50	0.00	0.00	0.50
5	Ring main unit in distribution transformer.	0.50	0.50	0.50	1.50
6	Laying of HT cable	0.50	0.75	0.50	1.75
7	Laying of new cables line and also replacement of old and defective cables.	0.15	0.20	0.15	0.50
8	LT line/ Domestic and Commercial service connections	0.06	0.10	0.06	0.22
9	LT line/Industrial service connections.	0.04	0.05	0.04	0.13
10	Supply of 11 kV/LT cables	0.50	1.00	0.50	2.00
11	Requirement of RCC slab for cable laying work.	0.50	0.50	0.70	1.70
12	Supply of street light pole and street light set	0.50	1.00	0.40	1.90

Sr. No.	Name of Scheme	Approved Expenditure (Rs. Cr)			
		FY 2019-20	FY 2020-21	FY 2021-22	Total
13	Installation and replacement of distribution boxes	0.60	1.00	0.75	2.35
14	Installation of smart meters/energy meters.	1.00	0.50	0.50	2.00
15	Conversion of existing overhead HT/LT lines into underground cables.	0.50	0.50	0.50	1.50
16	Improvement and augmentation of power house/line tools	0.15	0.25	0.15	0.55
17	Construction and installation of oil storage facility	0.50	2.00	1.00	3.50
	Total Capital Expenditure	10.00	10.35	7.75	28.10

Therefore, the Commission approves a total capital expenditure of Rs. 28.10 Cr for the upcoming Control Period.

Regulation 8.5 (f) of the JERC MYT Regulations, 2018 in this regard stipulates as follows:

“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.”

The Commission directs the Petitioner to submit a quarterly report for every quarter on actual capital expenditure and capitalisation starting from first quarter of FY 2019-20.

3.5.1.1 Summary of capitalisation approved by the Commission

A Summary of capitalisation approved by the Commission for the upcoming Control Period is as follows:

Table 90: Summary of capitalisation approved by the Commission for the upcoming Control Period

Sr. No.	Name of Scheme	Approved Capitalisation (Rs. Cr)			
		FY 2019-20	FY 2020-21	FY 2021-22	Total
New Schemes					
1	Installation/ Augmentation/Replacement of 750 kW DG Generating capacity	3.00	2.00	2.00	7.00
2	Replacement of old panel board at Kadmat substation	0.50	0.00	0.00	0.50
3	Improvement & augmentation of 1000 kVA step-up Transformer at 11 kV existing substation	0.50	0.00	0.00	0.50
4	Improvement & augmentation of 250 kVA step-down Transformer at 11 kV existing system.	0.50	0.00	0.00	0.50
5	Ring main unit in distribution transformer.	0.50	0.50	0.50	1.50
6	Laying of HT cable	0.50	0.75	0.50	1.75

Sr. No.	Name of Scheme	Approved Capitalisation (Rs. Cr)			
		FY 2019-20	FY 2020-21	FY 2021-22	Total
7	Laying of new cables line and also replacement of old and defective cables.	0.15	0.20	0.15	0.50
8	LT line/ Domestic and Commercial service connections	0.06	0.10	0.06	0.22
9	LT line/Industrial service connections.	0.04	0.05	0.04	0.13
10	Supply of 11 kV/LT cables	0.50	1.00	0.50	2.00
11	Requirement of RCC slab for cable laying work.	0.50	0.50	0.70	1.70
12	Supply of street light pole and street light set	0.50	1.00	0.40	1.90
13	Installation and replacement of distribution boxes	0.60	1.00	0.75	2.35
14	Installation of smart meters/energy meters.	1.00	0.50	0.50	2.00
15	Conversion of existing overhead HT/LT lines into underground cables.	0.50	0.50	0.50	1.50
16	Improvement and augmentation of power house/line tools	0.15	0.25	0.15	0.55
17	Construction and installation of oil storage facility	0.50	2.00	1.00	3.50
	Total Capitalisation	10.00	10.35	7.75	28.10

Therefore, the Commission approves a total capitalisation of Rs. 28.10 Cr for the upcoming Control Period.

3.5.2 Funding Plan

Petitioner's submission

The Petitioner has submitted that the entire capital expenditure incurred has been funded through equity infusion by Government of India (GoI) through budgetary support without any external borrowings. There are no loan borrowings by the Petitioner for the capital expenditure.

Further, the Petitioner submitted that as per Regulation 24 of MYT Regulations, 2018, any equity deployed in excess of 30% of the capital cost of the project, is required to be treated as normative loan. Since the entire capital expenditure in various schemes shall be infused by the GoI, the Petitioner requested the Commission to consider the funding of various schemes in accordance with Regulation 24 of MYT Regulations, 2018 and approve the same. The breakup of the financing of the capital expenditure during the upcoming Control period is as given in the table below:

Table 91: Proposed funding details for the upcoming Control Period

Particulars	FY 2019-20	FY 2020-21	FY 2021-22
Proposed Capital Expenditure	10.00	10.85	8.25
Actual Funding			

Particulars	FY 2019-20	FY 2020-21	FY 2021-22
100% Equity from GoI	10.00	10.85	8.25
Proposed Funding in line with Regulation 24 (b) of JERC MYT Regulations, 2018.			
Equity (30%)	3.00	3.25	2.47
Debt (Normative Debt in excess of 30% Equity)	7.00	7.59	5.77
Total Funding	10.00	10.85	8.25

Commission's analysis

Based on the capital expenditure approved by the Commission, the approved funding details is given in the table below:

Table 92: Approved funding plan for the upcoming Control Period

Particulars	FY 2019-20	FY 2020-21	FY 2021-22
Approved Capital Expenditure	10.00	10.35	7.75
Actual Funding			
100% Equity from GoI	10.00	10.35	7.75

The Commission has approved the funding as 100% Equity from GoI as proposed by the Petitioner. However, for computing the various components of ARR in MYT Order, the Commission will consider the Debt and Equity percentage as per Regulation 24 of MYT Regulations, 2018 and any equity deployed in excess of 30% of the capital cost of the project will be treated as normative loan.

3.6 Other Expenditure

3.6.1 Expenses related to Training of manpower

Petitioner's submission

The Petitioner plans to conduct/arrange training programs every year of the upcoming Control Period for different categories of employees to develop the skill set of the employees of the transmission and distribution utility. The Petitioner has estimated the cost with respect to the training programs as given in the table below:

Table 93: Manpower training cost proposed by the Petitioner

Particulars	FY 2019-20 Rs. in Lakh	FY 2020-21 Rs. in Lakh	FY 2021-22 Rs. in Lakh
Residential	-	-	-
Non-Residential	15.00	16.00	18.00

Commission's Analysis

The Commission directs the Petitioner to submit the complete details of proposed expenditure under this head including the basis for arriving at the amount and the initiatives planned along with the MYT Petition. Further, the Petitioner should also submit the details of actual expenditure under this head in last three years.

3.6.2 Expenses related to Safety of manpower

Petitioner's submission

The Petitioner, in order to ensure safety of its manpower has proposed expenditure towards procurement of safety materials such as firefighting equipment's and cap shoes gloom etc., for its manpower. The Petitioner has estimated the cost with respect to the safety measures as given in the table below:

Table 94: Safety Measures expenditure proposed by the Petitioner

Particulars	FY 2019-20 Rs. in Lakh	FY 2020-21 Rs. in Lakh	FY 2021-22 Rs. in Lakh
Safety Measures	10.00	8.00	8.00

Commission's Analysis

The Commission directs the Petitioner to submit the complete details of proposed expenditure under this head including the basis for arriving at the amount and the initiatives planned in the MYT Petition. Further, the Petitioner should also submit the details of actual expenditure under this head in last three years.

3.7 Manpower Plan

Petitioner's submission

The Petitioner has forecasted the number of employees based on the retirements and recruitments for the Control Period from FY 2019-20 to FY 2021-22. The forecasted number of employees submitted by the Petitioner is as given in the table below:

Table 95: Projections of number of employees as submitted by Petitioner

Particulars	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
No. of employees as on 1 st April	322	328	348	357
No. of employees added during the year	29	36	28	48
Total number of employees	351	364	376	405
Number of employees retired/retiring during the year	23	16	19	13
Number of employees at the end of the year	328	348	357	392

Commission's Analysis

The Commission had sought the level wise number of employees the Petitioner plans to recruit during the Control Period. However, the Petitioner failed to provide the desired information.

Further, the Commission also sought the manpower assessment plan for determining the proposed additional manpower. However, the Petitioner failed to submit the desired information. In absence of these details, the Commission is not in a position to approve the proposed recruitment at this stage. The Commission directs the Petitioner to submit the following details in the MYT Petition:

-
- Break-up of proposed employee addition at various levels during the Control Period.
 - Manpower assessment plan for determining the proposed additional manpower.
 - Steps taken for the proposed employees' recruitment during the Control period
 - Actual manpower addition during FY 2016-17, FY 2017-19 and FY 2018-19 (Till October 2018) vis-à-vis approved figures in the Order on Business Plan.
 - Concrete action plan for the manpower addition during the upcoming Control Period.

Based on the above submissions, the Commission shall take an appropriate view on the approval of Manpower Plan in its MYT Order.

Annexure 1: List of Objectors/Stakeholders

The following is the list of the stakeholders who have submitted objections/ suggestions:

Sl. No.	Name of Stakeholder	Representation (in Writing)	Representation (in Person)
1	Mr. A. Misbah, Ex-Member CGRF, Kavarrati	✓	✓
2	Mr. Sayed Abdullah Koya, Kavarrati	X	✓
3	Mr. K. K. Kunhi Krishnan, Chairman CGRF, Kavarrati	X	✓
4	Mr. Asif Ali, Kavarrati	X	✓