



**Business Plan for
Lakshadweep Electricity Department
Administration of Lakshadweep**

For

Control Period

FY 2022-23 To FY 2024-25

Submitted by:

**Lakshadweep Electricity Department
Administration of Lakshadweep
December-2021**

GENERAL HEADINGS OF PROCEEDINGS

**BEFORE HON'BLE JOINT ELECTRICITY REGULATORY COMMISSION
FOR THE STATE OF GOA & UNION TERRITORIES**

FILE No: _____

CASE No: _____

IN THE MATTER OF

**Petition for Approval of Business Plan for 3 year MYT
Control Period From FY 2022-23 to 2024-25.**

AND

**IN THE MATTER OF
THEPETITIONER**

**Lakshadweep Electricity Department,
Kavaratti – 682555**

Petitioner

Lakshadweep Electricity Department (hereinafter referred to as "LED"), files Petition for Approval of Business Plan for 3-year MYT Control Period From FY 2022-23 to 2024-25.

AFFIDAVIT

**BEFORE HON'BLE JOINT ELECTRICITY REGULATORY COMMISSION
FOR THE STATE OF GOA & UNION TERRITORIES**

FILE No: _____

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IN THE MATTER OF

**Petition for Approval of Business Plan for 3-year
MYT Control Period From FY 2022-23 to 2024-25.**

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**IN THE MATTER OF THE
PETITIONER**

**Lakshadweep Electricity Department,
Kavaratti - 682555**

Petitioner

I, P.V Hassan S/o, Late M. Thangakoya (aged 59 years), Executive Engineer, Lakshadweep Electricity Department, U.T of Lakshadweep residing at Govt. Quarter, Kavaratti, Lakshadweep, the deponent named above do hereby solemnly affirm and state on oath as under: -

1. That the deponent is the Executive Engineer of Lakshadweep Electricity Department and is acquainted with the facts deposed to below.
2. I, the deponent named above do hereby verify that the contents of the accompanying petition are based on the records of Lakshadweep Electricity Department maintained in the ordinary course of business and believed by them to be true and I believe that no part of it is false and no material has been concealed there from.

Details of enclosures:

- a) Petition for Approval of Business Plan for 3-year MYT Control Period From FY 2022-23 to 2024-25

Vishal
06/01/22
EXECUTIVE ENGINEER (E.C.)
U.T. OF LAKSHADWEEP
KAVARATTI-002 595


For Lakshadweep Electricity Department

EXECUTIVE ENGINEER (E.C.)
U.T. OF LAKSHADWEEP
KAVARATTI-002 595
Petitioner

Place: Kavaratti, Lakshadweep,

Dated:

I, _____ Advocate, _____, do hereby declare that the person making this affidavit is known to me through the perusal of records and I am satisfied that he is the same person alleging to be deponent himself.

Advocate

Solemnly affirmed before me on this day of2021 at a.m. /p.m. by the deponent who has been identified by the aforesaid Advocate. I have satisfied myself by examining the deponent that he understood the contents of the affidavit which has been read over and explained to him. He has also been explained about section 193 of Indian Penal Code that whoever intentionally gives false evidence in any of the proceedings of the Commission or fabricates evidence for purpose of being used in any of the proceedings shall be liable for punishment as per law.

**BEFORE HON'BLE JOINT ELECTRICITY REGULATORY COMMISSION
FOR THE STATE OF GOA & UNION TERRITORIES**

FILE No: _____

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IN THE MATTER OF

Petition for Approval of Business Plan for 3-year MYT
Control Period From FY 2022-23 to 2024-25.

AND

**IN THE MATTER OF THE
PETITIONER**


Lakshadweep Electricity Department,
Kavaratti-682555, U.T. of Lakshadweep.

Petitioner

PETITIONER, UNDER JOINT ELECTRICITY REGULATORY COMMISSION FOR THE STATE OF GOA AND UNION TERRITORIES (MULTI YEAR TARIFF) REGULATIONS, 2021 READ WITH JERC (CONDUCT OF BUSINESS), REGULATIONS, 2009 FILES FOR INITIATION OF PROCEEDINGS BY THE HON'BLE COMMISSION FOR APPROVAL OF BUSINESS PLAN FOR 3 YEAR MYT CONTROL PERIOD FROM FY 2022-23 to 2024-25 OF LAKSHADWEEP ELECTRICITY DEPARTMENT (HEREIN AFTER REFERRED TO AS "LED").

LAKSHADWEEP ELECTRICITY DEPARTMENT RESPECTFULLY SUBMITS:

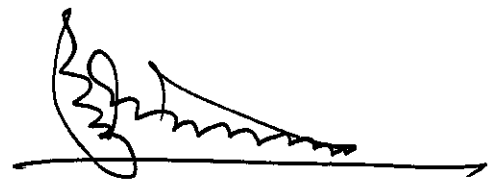
1. The Petitioner, Lakshadweep Electricity Department has been allowed to function as Distribution Utility for UT of Lakshadweep.
2. Pursuant to the enactment of the Electricity Act, 2003, LED is required to submit its Aggregate Revenue Requirement (ARR) and Tariff Petitions as per procedures outlined in section 61, 62 and 64, of EA 2003, and the governing regulations thereof.


EXECUTIVE ENGINEER
U.T. OF LAKSHADWEEP
KAVARATTI-682555

3. The Joint Electricity Regulatory Commission For The State Of Goa And Union Territories (Multi Year Tariff) Regulations, 2021 requires the LED to file Business Plan, for Control Period of three financial years from April 1, 2022 to March 31, 2025, which shall comprise but not be limited to detailed category-wise sales and demand projections, power procurement plan, capital investment plan, financing plan and physical targets.
4. Further, the regulation requires that, based on the Business Plan as approved by the Commission by order, submits the forecast of Aggregate Revenue Requirement and expected revenue from tariff, for the Control Period by a Petition.
5. LED has submitted its Business Plan for Control Period of three financial years from April 1, 2022 to March 31, 2025 for approval of the Hon'ble Commission on the basis of the principles outlined in tariff regulations notified by the Joint Electricity Regulatory Commission.
6. LED prays to the Hon'ble Commission to admit the attached Business Plan for Control Period of three financial years from April 1, 2022 to March 31, 2025 and would like to submit that:

PRAYERS TO THE HON'BLE COMMISSION:

1. The petition provides, inter-alia, LED's approach for formulating the present petition, the broad basis for projections used, summary of the proposals being made to the Hon'ble Commission, performance of LED in the recent past, and certain issues impacting the performance of LED in the Licensed Area.
2. Broadly, in formulating the Business Plan for Control Period of three financial years from April 1, 2022 to March 31, 2025, the principles specified by the Joint Electricity Regulatory Commission For The State Of Goa And Union Territories (Multi Year Tariff) Regulations, 2021 ("Tariff Regulations") have been considered as the basis.
3. In order to align the thoughts and principles behind the Business Plan, LED respectfully seeks an opportunity to present their case prior to the finalization of the Business Plan. LED believes that such an approach would go a long way towards providing a fair treatment to all the stakeholders and may eliminate the need for a review or clarification.
4. LED may also be permitted to propose suitable changes to the Business Plan and the mechanism of meeting the revenue on further analysis, prior to the final approval by the Hon'ble Commission.



COOPERATIVE ENGINEER (Ele)
U.T. OF LAKSHADWEEP
SAMARAKATTI-682 555

In view of the above, the petitioner respectfully prays that Hon'ble Commission may:

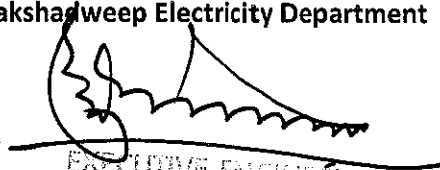
- Approve the Business Plan for Control Period of three financial years from April 1, 2022 to March 31, 2025 for LED formulated in accordance with the guidelines outlined as per the regulation of Joint Electricity Regulatory Commission relating to Distribution Licensee and the principles contained in Tariff Regulations;
- Condone any inadvertent delay/ omissions/ errors/ rounding off differences/shortcomings and LED may please be permitted to add/ change/ modify/ alter the petition;
- Permit LED to file additional data/ information as may be necessary;
- Pass such further and other orders, as the Hon'ble Commission may deem fit and proper, keeping in view the facts and circumstances of the case.

Lakshadweep Electricity Department

Petitioner

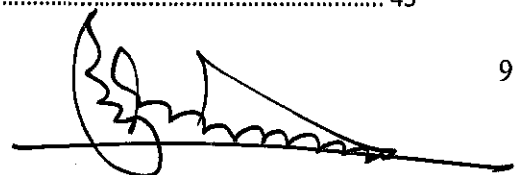
Place: Kavaratti, Lakshadweep

Dated: 06/01/2022


EXECUTIVE ENGINEER
U.T. OF LAKSHADWEEP
KAVARATTI-692 001

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KAVARATI-002

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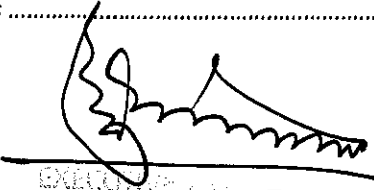

 EXECUTIVE CHIEF
 U.T. OF LARSA
 KAVARATTI DISTRICT

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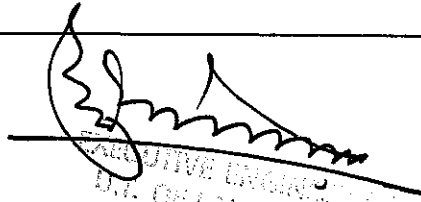
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EXECUTIVE ENGINEER
U.T. OF LAKSHADWEEP
KAVARATTI-682 505


List of abbreviations

Abbreviation	Full Form
A&G	Administrative and General
ACoS	Average Cost of Supply
Act	The Electricity Act, 2003
APR	Annual Performance Review
ARR	Aggregate Revenue Requirement
ATE	Appellate Tribunal of Electricity
BPL	Below Poverty Line
CAGR	Compound Annualized Growth rate
Capex	Capital Expenditure
CEA	Central Electricity Authority
CERC	Central Electricity Regulatory Commission
CGRF	Consumer Grievance Redressal Forum
CGS	Central Generating Stations
COD	Commercial Operation Date
Cr	Crores
Discom	Distribution Company
LED	Lakshadweep Electricity Department
FY	Financial Year
GFA	Gross Fixed Assets
HT	High Tension
JERC	Joint Electricity Regulatory Commission for the state of Goa and Union Territories
LT	Low Tension
MU	Million Units
MYT	Multi Year Tariff
NFA	Net Fixed Assets
NTPC	National Thermal Power Corporation
O&M	Operation and Maintenance


EXECUTIVE ENGINEER
D.T. OF LAKSHADWEEP
KAWRAH 15-07-2024

*Petition for Approval of Business Plan for the for 3-year MYT Control Period
from FY 2022-23 to 2024-25*

Abbreviation	Full Form
PLF	Plant Load Factor
PLR	Prime Lending Rate
PPA	Power Purchase Agreement
R&M	Repair and Maintenance
REC	Renewable Energy Certificate
RoE	Return on Equity
RPO	Renewable Purchase Obligation
SBI PLR	SBI Prime Lending Rate
SOP	Standard of Performance
T&D Loss	Transmission & Distribution Loss
SECI	Solar Energy Corporation of India Ltd
UT	Union Territory


EXECUTIVE ENGINEER (P)
U.T. OF LAKSHADWEEP
KORVAATTI-632 504

CHAPTER 1: INTRODUCTION

1.1 BACKGROUND

1.1.1 Lakshadweep Electricity Department (“LED”) is responsible for power supply in the union territory. Power requirement of LED is met by own generation station only.

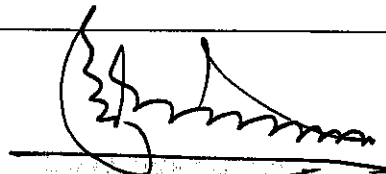
Lakshadweep Islands is a group of islands in the Laccadive Sea, 200 to 440 km (120 to 270 mi) off the southwestern coast of India. The Union Territory (UT) of Lakshadweep is an archipelago consisting of 12 atolls, three reefs and five submerged banks, with a total of about thirty-nine islands and islets. 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. At the 2011 Indian census, the population of the Union Territory was 64,473. 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 1982-83 except in Kavaratti where 24 hours power supply was provided from 1964 itself. Round the clock power supply is provided in all the Islands since 1983.

1.1.2 The table below gives an overview of present transmission and distribution infrastructure of LED as of 31.03.21

Table 1: Present Infrastructure

Particulars	Quantity
11 KV Feeders (In Kms)	112
LT Lines (In Kms)	351
HT Lines (In Kms)	112
Distribution Transformers (Nos)	109
Street Light Points (Nos)	8,321
11 KV S/S (Nos)	9



1.1.3 The key duties being discharged by LED are:

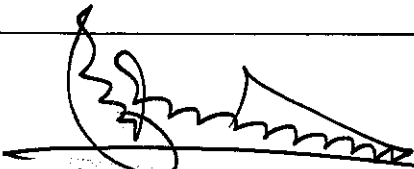
- ❖ Laying and operating of such electric line, sub-station and electrical plant that is primarily maintained for the purpose of distributing electricity in the area of Lakshadweep Islands, notwithstanding that such line, sub-station or electrical plant are high pressure cables or overhead lines or associated with such high-pressure cables or overhead lines; or used incidentally for the purpose of transmitting electricity for others, in accordance with Electricity Act. 2003 or the Rules framed there under.
- ❖ Operating and maintaining sub-stations and dedicated transmission lines connected there with as per the provisions of the Act and the Rules framed there under.
- ❖ 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;
- ❖ Preparing and carrying out schemes for distribution and generally for promoting the use of electricity within the UT.

1.1.4 The present power availability of Lakshadweep Administration is approximately 27.606 MW from various generating stations. The current demand is primarily dependent on the domestic and commercial which contributed approx. 80% to the total sales of LED in FY 20-21.

1.2 OBJECTIVE OF BUSINESS PLAN


1.2.1 The Joint Electricity Regulatory Commission (JERC) for the State of Goa and Union Territories, in exercise of powers conferred by sub section (1) of section 181 and clauses (zd), (ze) and (zf) of sub section (2) of section 181, read with sections 61, 62,83 and 86, of the Electricity Act 2003 (36 of 2003) and all other powers enabling it in this behalf, has issued the Joint Electricity Regulatory Commission for the State of Goa and Union Territories (Multi Year Tariff) Regulations, 2021, hereinafter referred to as "MYT Regulations".

1.2.2 As per the Regulations, the Distribution Licensee were required to file a Business Plan for Control Period of three financial years from April 1, 2022 to March 31, 2025, which shall comprise but not be limited to detailed category-wise sales and demand projections, power procurement plan, capital investment plan, financing plan and physical targets before the Hon'ble Commission as part of the Tariff Filing before the beginning of the Control Period.


EXECUTIVE ENGINEER (G&S)
P.L.C. OF LAKSHADWEEP
KORORALATH-001 UD&S

***Petition for Approval of Business Plan for the for 3-year MYT Control Period
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- 1.2.3 Accordingly, the LED is hereby filing the Business Plan for the Control Period (FY 2022-23 to FY 2024-25) based on the available data for the FY 2020-21 and previous financial years.
- 1.2.4 The LED has prepared the Business Plan taking into the consideration the various existing internal factors and external business environment affecting the business.
- 1.2.5 The key objectives of this business plan are:
- ❖ Providing a tool for strategic planning and management - The primary objective of the Business Plan is to analyse and anticipate the future requirements and strategically plan for the requisite capital investments, means of financing the schemes and various associated costs and document them which would serve as an effective tool for monitoring and execution of future works. It is important to project the growth in transmission and distribution network infrastructure commensurate with the energy demand required for fuelling the economic growth targets of the UT.
 - ❖ Meeting the regulatory compliance of submission of a business plan as mandated by the Joint Electricity Regulatory Commission, MYT Regulations, 2021
 - ❖ Support in decision making leading to better Operational Efficiency: The Business Plan is prepared so as to be useful for the Management, associated stakeholders, the Hon'ble Commission and various government bodies. The future projections in the Plan would help the department in decision making and taking proactive actions, and thus improving the overall operational efficiency of the transmission and distribution network infrastructure.
- 1.2.6 The LED submits that the Business plan being a dynamic document may need to be updated at periodic intervals taking into account the changes in the internal and external environment and these changes would be intimated to the Hon'ble Commission from time to time.

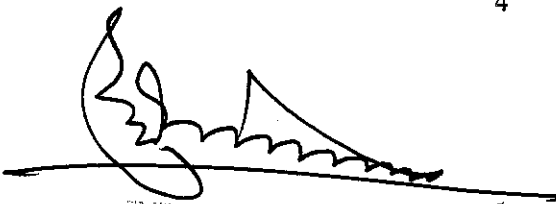

U.T. OF LAKSHADWEEP
ELECTRICITY DEPARTMENT

1.3 REVIEW OF PREVIOUS CONTROL PERIOD

- 1.3.1 Lakshadweep Electricity Department submitted the petition for approval of Business Plan for the MYT control period FY 2019-20 to FY 2021-22 vide petition no. 293/2018 dated 28th August, 2018. The Hon'ble Commission after considering the petition and views of all the stake holders issued the Business Plan Order on 21st December, 2018. The Hon'ble Commission in its order had approved various parameters as required by the MYT Regulations, 2018. Lakshadweep Electricity Department has made efforts to achieve the targets/trajectories as set out by the Hon'ble Commission. The yearly performances have been submitted for approval of the Commission vide APRs for the FY 2019-20 & FY 2020-21. The Hon'ble Commission has already passed order in respect of the above petitions. LED shall be submitting the APR for the FY 2021-22 & True-up petition for the FY 2017-18 to FY 2018-19 along with the MYT petition for the next control period FY 2022-23 to FY 2024-25.
- 1.3.2 The subsequent sections provide the highlights of the targets & achievements on various parameters as approved in the Business Plan & MYT petition for the control period FY 2019-20 to FY 2021-22.
- 1.3.3 **Capital Investment Plan** - The Hon'ble Commission in the Business Plan for the MYT control period of the FY 2019-20 to FY 2021-22 had approved the Capital Investment Plan for each of the years of the control period. The year wise capital expenditure approved and actual expenditure is provided in the table below:

Table 2: Comparison of Capital Investment Plan for Previous Business Plan (Rs. In Crores)

Particulars	2019-20		2020-21		2021-22	
	Approved in Business Plan Order	Actual (Unaudited)	Approved in Business Plan Order	Actual (Unaudited)	Approved in Business Plan Order	Estimated
Capital Expenditure (Rs. in Crores)	10.00	12.00	10.35	1.68	7.75	9.50


EXECUTIVE ENGINEER (E/c)
U.T. OF LAKSHADWEEP
KAWARATTI-687 555

**Petition for Approval of Business Plan for the for 3-year MYT Control Period
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- 1.3.4 **Capitalisation** - The year wise capitalization for the FY 2019-20 & 2020-21 & estimated capitalization for the FY 2021-22 vis-à-vis capitalization schedule approved is provided in the table below:

Table 3: Comparison of Capitalization for Previous Business Plan (Rs. In Crores)

Particulars	2019-20		2020-21		2021-22	
	Approved in Business Plan Order	Actual	Approved in Business Plan Order	Actual (Unaudited)	Approved in Business Plan Order	Estimated
Capitalisation (Rs. in Crores)	10.00	12.00	10.35	1.68	7.75	9.50

- 1.3.5 **T&D Loss Trajectory** - The year wise distribution loss for the FY 2019-20 & 2020-21 & estimated distribution loss for the FY 2021-22 vis-à-vis approved distribution loss trajectory is provided in the table below:

Table 4: Comparison of T&D Loss for Previous Business Plan

Particulars	2019-20		2020-21		2021-22	
	Approved in Business Plan Order	Actual	Approved in Business Plan Order	Actual (Unaudited)	Approved in Business Plan Order	Estimated
T& D Loss	12.75%	13.54%	12.50%	11.63%	12.25%	11.50%

- 1.3.6 **Sales Forecast** - The year wise sales for various categories of consumers for the FY 2019-20 & 2020-21 & estimated sales for the FY 2021-22 vis-à-vis approved sales is provided in the table below:

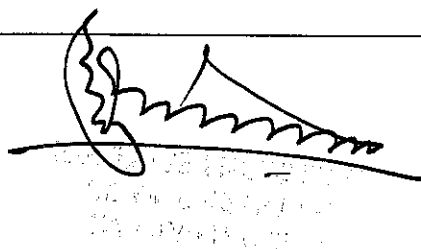



Table 5: Comparison of Energy Sales for Previous Business Plan *(In MUs)*

Category	2019-20		2020-21		2021-22	
	Approved in Business Plan Order	Actual (Unaudited)	Approved in Business Plan Order	Actual (Unaudited)	Approved in Business Plan Order	Estimated
Domestic	40.10	35.59	42.38	40.35	44.78	41.73
Commercial	3.24	3.12	3.44	3.31	3.66	3.49
Govt. Connection	8.26	7.60	8.39	7.28	8.52	7.64
Industrial	0.45	0.36	0.46	0.37	0.46	0.39
HT Consumers	0.64	0.81	0.71	0.88	0.78	0.93
Public Lighting	0.67	0.81	0.69	0.82	0.70	0.82
Temporary Connection	0.09	0.14	0.09	0.09	0.09	0.09
Total	53.45	48.42	56.15	53.10	59.00	55.09

1.3.7 **No. of Consumers** - The year wise no. of consumers for various categories of consumers for the FY 2019-20 & 2020-21 & estimated no. of consumers for the FY 2021-22 vis-à-vis approved no. of consumers is provided in the table below:

Table 6: Comparison of No. of Consumer for Previous Business Plan *(In No.)*

Category	2019-20		2020-21		2021-22	
	Approved in Business Plan Order	Actual	Approved in Business Plan Order	Actual (Unaudited)	Approved in Business Plan Order	Estimated
Domestic	21,294	20,003	22,122	20,254	22,982	20,587
Commercial	2,626	2,885	2,746	3,422	2,871	3,736
Govt. Connection	1,284	1,296	1,319	1,173	1,354	1,209
Industrial	381	345	395	352	409	356
HT Consumers	7	8	8	9	9	11
Public Lighting	78	75	78	76	80	76
Temp. Connection	160	225	160	136	160	136
Total	25,831	24,837	26,828	25,422	27,865	26,111


 EXECUTIVE ENGINEER (S) /
 D.T. OF LAKSHADWEEP /
 KAVARATTI-082 005

**Petition for Approval of Business Plan for the for 3-year MYT Control Period
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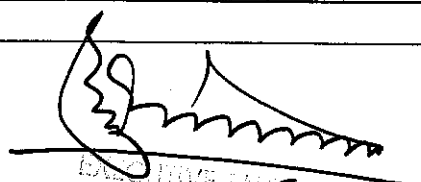
1.3.8 **Connected Load** - The year wise connected load for various categories of consumers for the FY 2019-20 & 2020-21 & estimated connected load for the FY 2021-22 vis-à-vis approved connected load is provided in the table below:

Table 7: Comparison of Connected Load for Previous Business Plan (In kVA.)

Category	2019-20		2020-21		2021-22	
	Approved in Business Plan Order	Actual	Approved in Business Plan Order	Actual (Unaudited)	Approved in Business Plan Order	Estimated
Domestic	89,754	90,294	91,906	92,032	94,109	94,297
Commercial	16,916	12,240	17,493	8,213	18,090	8,357
Govt. Connection	8,561	7,503	8,845	12,026	9,139	12,156
Industrial	4,024	3,723	4,191	3,658	4,366	3,700
HT Consumers	608	728	658	923	711	967
Public Lighting	318	277	330	284	342	284
Temp. Connection	66	275	66	273	66	273
Total	120,248	115,040	123,390	1,17,409	126,824	1,20,034

Table 8: Comparison of R&M Expenses Norms for Previous Business Plan


Particulars	FY 2019-20 Actual	FY 2020-21 Actual		FY 2021-22 Estimated
		Unaudited	Unaudited	
GFA (Rs. in Crores)	186.41	188.09	188.09	197.59
R&M Expenses (Rs. in Crores)	12.70	11.30	11.30	13.21
R&M Expenses (In %)	6.81%	6.01%	6.01%	6.68%


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 KAVARATTI

CHAPTER 2: ABOUT LAKSHADWEEP ELECTRICITY DEPARTMENT

5.3 VISION AND MISSION STATEMENT

- 2.1.1 Starting with modest capacity of 51.6 kilo Watts in 1962 from two Diesel Generating Sets, the generating capacity of Lakshadweep Electricity Department has grown up over the years with increase in demand. The power generated has been steadily increasing 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 initially at Kavaratti and Minicoy Islands are under final stage of commissioning.
- 2.1.2 Due to the geographical & topographical peculiarities of these islands including separation by sea over great distances there is no single power grid for the entire electrified island and instead a power house caters independently to the power requirements of area/islands.
- 2.1.3 The Electricity Department is operating and maintain power generation, transmission & distribution system network in these islands for providing electric power supply to general public and implements various schemes for augmentation of DG Generating Capacity and establishment of new power houses and T&D Systems. This department is also functioning as a Nodal Agency for implementing renewable energy program of the Ministry of New & Renewable Energy in these islands. Presently, the department is headed by an Executive Engineer, associated with one Assistant Executive Engineer, ten Assistant Engineers & around Thirty-three JEs for carrying out the task of power generation, transmission & distribution to the general public including schemes under non-conventional energy sources.



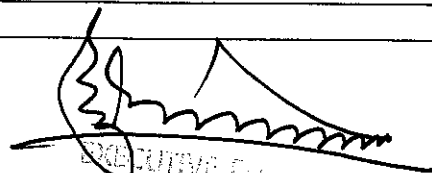
EXECUTIVE ENGINEER (G.S.)
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2.1.4 The salient features about development of electric power supply in these islands are provided below:

ELECTRICITY DEPARTMENT AT A GLANCE (2020-21)

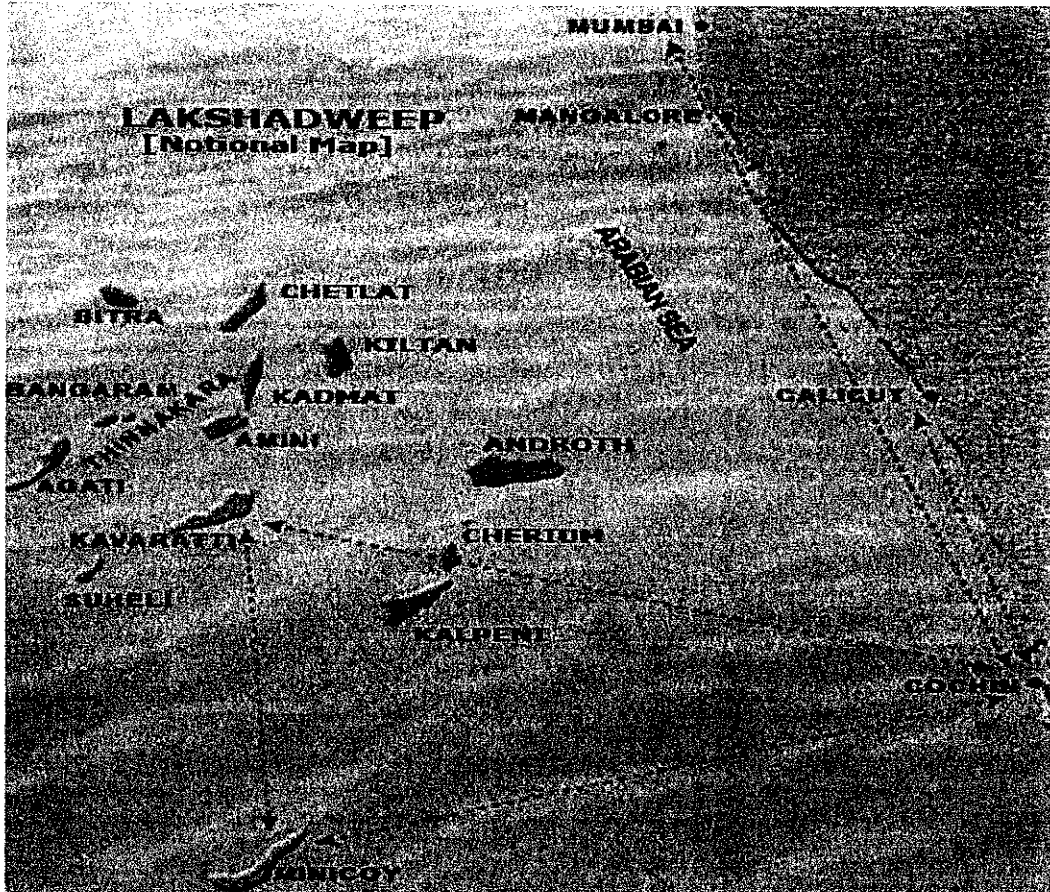
Total Installed capacity	:	27.606 MW (26.566 MW Diesel, 1.040 MW solar)
No. of Power Houses	:	17 Nos { (11 nos. Diesel Power Plant and 06 nos. solar power plants) }
Total Staff strength (filled)	:	336 Nos
HT line	:	112 Kms
LT line	:	351 Kms
Distribution Transformers	:	109 Nos.
No. of consumers	:	25,422 Nos.
Annual unit generation	:	60.43 MU
Total unit sent out	:	60.09 MU
Total unit sold	:	53.10 MU
T&D loss	:	11.63%
No. of site offices	:	11 Nos.


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2.2 AREA SERVED

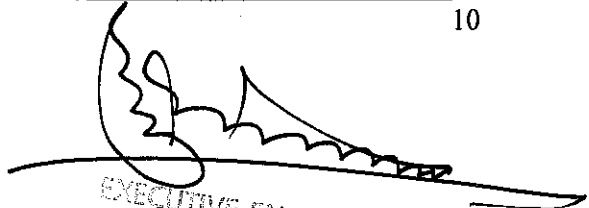
2.2.1 Lakshadweep Islands comprises of an area of 32 sq. kms. For operational purpose the area has been divided into 1 division and 10 sub-divisions.

Figure 1: Map of Area Served

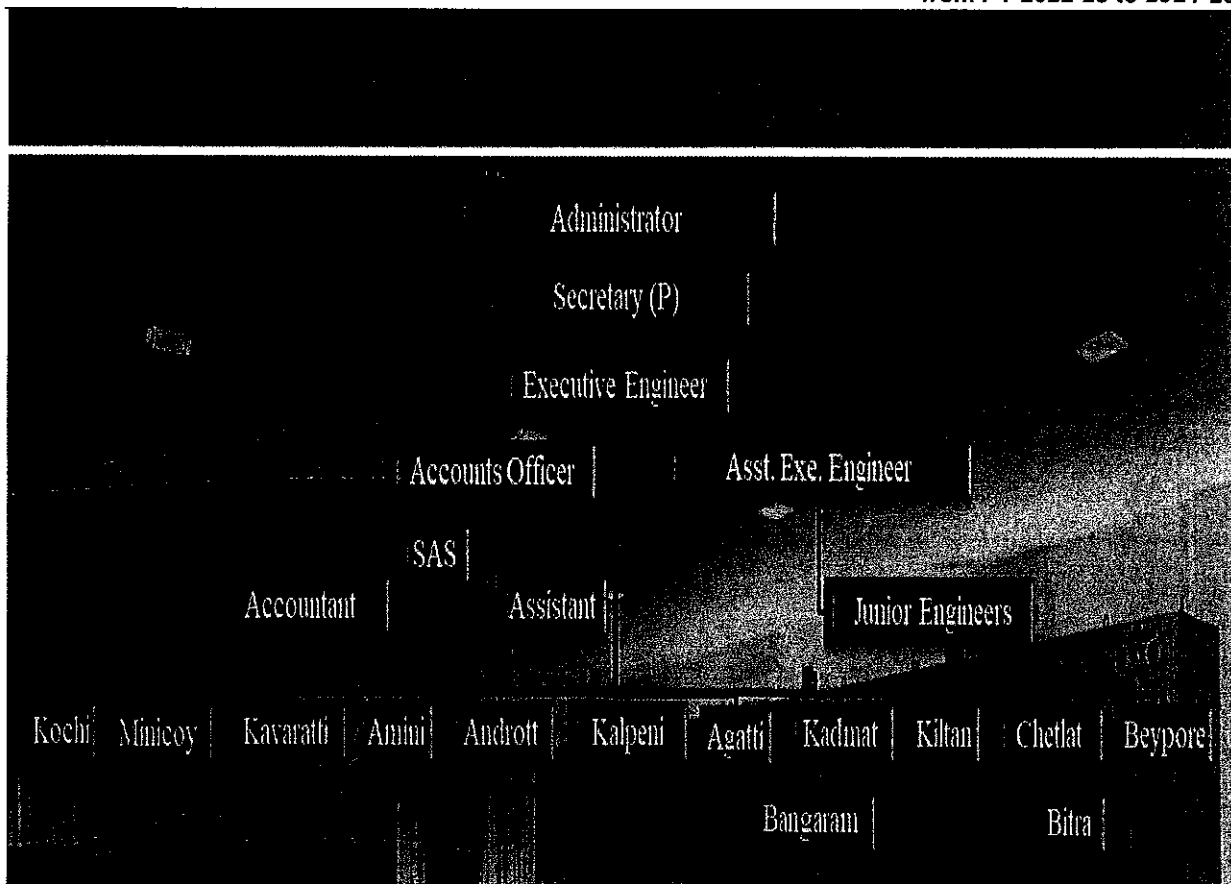


2.3 ORGANIZATIONAL STRUCTURE

2.3.1 The Electricity Operation Circle is headed by Executive Engineer along with one Assistant Executive Engineer and ten Assistant Engineers with the employee strength of 336 (As of 31.03.21).


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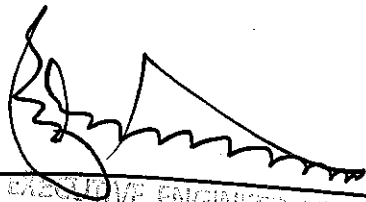
2.4 HUMAN RESOURCES

2.4.1 Currently there are 405 sanctioned posts of different categories in the LED. However, being a financial matter, the approval of Lakshadweep Administration was sought by the LED. JERC directed the LED to carry out detailed manpower study according to future load growth in LED. Accordingly, LED conducted the manpower study and submitted the report to the JERC. The details of manpower is provided in the table below.

Table 9: Manpower Strength

Manpower Requirement for LED	Sanctioned	As-Is Manpower At LED	Total Proposed	Proposed In-House	Proposed Outsourced
Executives (AEE/AE & above)	12	9	1	1	Nil
Non-Executives (JE & below)	301	253	50	50	Nil
Ministerial	92	74	18	18	Nil
Total	405	336	69	69	Nil

2.4.2 The LED has planned to carry out recruitment for 69 posts in the current and next 3 years. The table below presents the current status of the employee strength (01.04.21) and future manpower planning for the Control Period:


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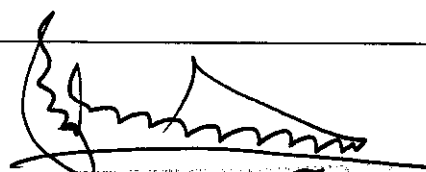
Table 10: Present Employee Strength

Sr. No.	Particulars	Ensuing Projections 2021-22	Ensuing Year Projection 2022-23	Ensuing Year Projection 2023-24	Ensuing Year Projection 2024-25
1	No. of employees as on 1 st April	336	336	336	344
2	No. of employees added during the year	13	24	17	15
3	Total number of employees (1+2)	349	360	353	359
4	Number of employees retired/retiring during the year	13	24	9	15
5	Number of employees at the end of the year (3-4)	336	336	344	344

2.4.3 The details of the 69 posts to be filled in the ensuing 3 years is as follows:


Table 11: Recruitment Planned

Sr. No.	Category	No of Posts.
1	Executive Engineer	1
2	Junior Engineer (Ele)	4
3	Chargeman/ Electrician/ Mechanic/ Meter Mechanic/ Cable Jointer & similar grade	4
4	Operator/Meter Reader/ Senior Lineman	5
5	Tracer	1
6	Engine Driver/Oilman & Similar grades	36
7	Ministerial Staff	18
	Total	69


 EXECUTIVE ENGINEER
 U.T. OF LAKSHADWEEP
 KAWARATTA

MANPOWER TRAINING AND RE-SKILLING

2.5 With the rapidly expanding system and advent of new technology, it becomes all the important to develop the skill set of the employees of the transmission and distribution utility. The LED acknowledges the fact that improving knowledge base is an ever-evolving process and thus has planned to impart refresher training to its employees vide various training programs.



EXECUTIVE ENGINEER (E&D)
LAKSHADWEEP ELECTRICITY DEPARTMENT
KALPIKOTTA

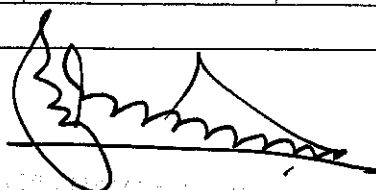
2.4.4 SAFETY MEASURES

2.4.4.1 In order to ensure safety of its manpower, the safety measures prescribed under Indian Electricity rules, Safety, Electricity Supply Regulations 2010 notified by CEA and Joint Electricity Regulatory Commission (Distribution Code Regulation 2010) needs to be adhered to by the utility. Accordingly, to comply with the safety measures directed by the commission the LED intends to examine all the Rules and Regulations in the force and suggest way forward. The LED shall analyze existing safety standards, tool kits and practices being followed by the department. To comply with the safety regulation in place, LED shall come out with suitable safety tool kits/ equipment required to carry out operation and maintenance of distribution network.

2.4.4.2 The proposed expenditure to be incurred on safety measures and procurement of safety materials such as firefighting equipment's and cap shoes gloom etc for its manpower is as below:

Table 12: Proposed Expenditure on Safety Measures

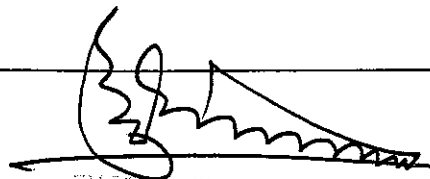
Particulars	2022-23	2023-24	2024-25
Proposed Expenditure (In Rs Lakh)	10.00	8.00	8.00



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2.5 TECHNOLOGICAL INITIATIVES

- 2.5.1 LED has taken various IT & Technological initiatives for improvement of system working & efficiency. The Lakshadweep Electricity Department is the first Department in the U.T. to have a working Local Area Network and a Mail Server. Now the entire subordinate offices of the Department have been provided with sufficient computers, Local Area Network, dedicated internet connection and thus virtually interconnected each other.
- 2.5.2 The Ministry of Non-Conventional Energy Sources has identified Lakshadweep Electricity Department as one of the beneficiaries to their scheme "TIFAD" (Technology Information Forecasting Assessment and Databank) during 1998-99. Under the scheme, the Department received financial assistance from the Ministry to set up Renewable Energy NET (RENET) by installing a VSAT (FTDMA), Server and a Client Computer along with one 2 KVA UPS. The VSAT system has installed in the Electricity Division Office, Kavaratti during 04/2000. Later, VSAT connection has been extended to all the offices in the Lakshadweep Islands by Lakshadweep Administration.
- 2.5.3 Department has switched over to web-based applications from the year 2007 for extending various online facilities to its consumers and to have a real time monitoring of the activities of the Department.
- 2.5.4 The CSI-Nihilent e-Governance award 2006-07 for the best e-Governed Department category was jointly awarded to Department of Electricity, Lakshadweep and Department of Health and family welfare, Government of Gujarat for the achievements they had in implementing e-Governance applications in their respective Departments.
- 2.5.5 Web Portal & EBCMS thoroughly revamped and POWERLAK launched introducing online services like online applications and subsequent workflow for all services during 2014 March. SMS services and e-mail services were integrated
- 2.5.6 E-Payment services of Bill collections started in February 2015
- 2.5.7 POWERLAK Services' mobile app for consumer fraternity launched On 15 August 2017.
- 2.5.8 POWERLAK Reader App introduced for surprise check readings in Feb 2018. The app reads the readings from consumer premises and sync the same with server.
- 2.5.9 POWERLAK Reader APP introduced for 100% consumer readings in Aug 2018. The app reads the readings from consumer premises and sync the same with server with geo-tagging.
- 2.5.10 POWERLAK Workflow is changed from 'self-reading' mechanism to 'Department Reading/SPOT Reading' w.e.f 1st Oct 2018. Accordingly billing services are also changed from current-month billing to pre-prepared previous-month billing.
- 2.5.11 BBPS integrated Electricity Billing system for payments apps like BHIM, Google Pay, PayTM etc. started in March 2021.


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2.6 CUSTOMER SERVICE RELATED ACTIVITIES

- 2.6.1 LED has taken several initiatives for improvement of customer service. The steps already taken and those proposed to be taken are provided below.
- 2.6.2 **Centralized Complaint Centre:** LED plans to establish 24X7 centralized complaint centre where consumers can lodge complaints and remedial action can be taken accordingly.
- 2.6.3 LED has introduced the facility of online payment whereby consumers can pay by internet banking system.

2.7 OTHER DETAILS

2.7.1 POWER DEMAND AND SUPPLY

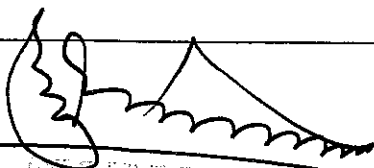
- 2.7.1.1 Electricity Department is responsible for arranging power mainly from own generation and distribution and transmission thereof to all type of consumers. LED has 17 (11 nos. Diesel Power Plant and 06 nos. solar power plants) own generating stations for the generation of power. There is no availability of power from Central Generating Stations or from other sources/ open market/ power exchanges etc.
- 2.7.1.2 The present power available to LED is 27.606 MW. The peak demand for last year touched 11.95 MW (FY 20-21) and it is anticipated to reach 12.50 MW in FY 21-22. The peak demand is projected to be 13 MW, 13.83 MW and 14.50 MW for FY 2022-23, FY 23-24 and FY 24-25 respectively.

2.7.2 GRID DETAILS

Due to the geographical & topographical peculiarities of these islands including separation by sea over great distances there is no single power grid for the entire electrified island and instead a power house caters independently to the power requirements of area/islands.

2.7.3 ORGANIZATION STRUCTURE: ROLES AND RESPONSIBILITIES

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


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KAVARATTI OFFICE

CHAPTER 3: PROJECTIONS FOR NO. OF CONSUMERS, CONNECTED LOAD AND SALES

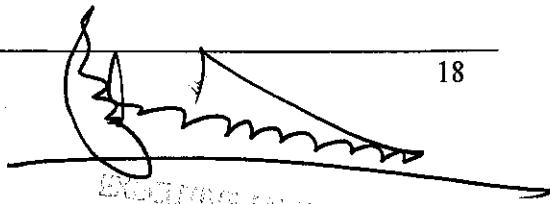
3.1 FORECAST FOR NO. OF CONSUMERS

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

Table 13: Past Consumer Growth

Category	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
	Actual	Actual	Actual	Actual	Actual (Unaudited)	Actual (Unaudited)
Domestic	18,670	19,316	19,729	19,683	20,003	20,254
Commercial	2,207	2,313	2,402	2,766	2,885	3,422
Govt. Connection	1,184	1,197	1,218	1,178	1,296	1,173
Industrial	334	345	356	349	345	352
HT Consumers	4	5	6	6	8	9
Public Lighting	75	75	76	75	75	76
Temporary	234	274	160	246	225	136
Total	22,708	23,525	23,947	24,303	24,837	25,422

3.1.2 The 5-years, 3-years & 1-year CAGR was calculated to analyse the growth over different periods of time. CAGRs along with the projected consumer growth for the control period has been given in the table. There is consistent growth in number of consumers over the period of 5-years and 3-years Hence, 5-years CAGR has been considered to project the consumer growth for the control period of Domestic consumers, Industrial consumers and HT consumers and 3-years CAGR has been considered to project the consumer growth for the control period of Commercial consumers, Govt connections & Public lighting category. Further, the number of consumers in the temporary category for the control period has been kept same as that of FY 2020-21. The CAGR along with projected number of consumers for the control period has been given in the table below:


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Table 14: Projected Consumer Growth

Category	CAGR			2021-22	2022-23	2023-24	2024-25
	5 Years	3 Years	1 Year	Estimated	Projected	Projected	Projected
Domestic	101.64%	100.88%	101.25%	20,587	20,925	21,268	21,617
Commercial	109.17%	112.52%	118.61%	3,850	4,333	4,875	5,486
Govt. Connection	99.81%	103.06%	90.51%	1,209	1,246	1,284	1,323
Industrial	101.06%	99.62%	102.03%	364	368	372	376
HT Consumers	117.61%	114.47%	112.50%	11	12	15	17
Public Lighting	100.27%	100.00%	101.33%	76	76	76	76
Temporary	89.71%	94.73%	60.44%	136	136	136	136
Total				26,235	27,095	28,026	29,031

3.2 FORECAST FOR CONNECTED LOAD

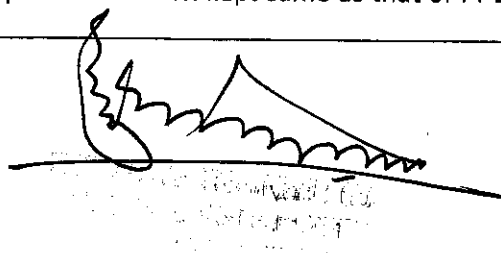
3.2.1 The Table given below summarizes the growth in sanctioned load over the past 5 years.

Table 15: Past Load Growth

All Figures are in KVA

Category	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
	Actual	Actual	Actual	Actual	Actual (Unaudited)	Actual (Unaudited)
Domestic	81,502	83,647	85,601	87,669	90,294	92,032
Commercial	14,482	15,158	15,817	15,975	12,240	8,213
Govt. Connection	7,769	7,845	8,021	8,101	7,503	12,026
Industrial	3,452	3,581	3,708	3,786	3,723	3,658
HT Consumers	452	452	520	520	728	923
Public Lighting	285	285	296	308	277	284
Temporary	0	37	66	147	275	273
Total	1,07,942	1,11,005	1,14,029	1,16,506	1,15,040	1,17,409

3.2.2 The load growth of different categories of consumers was analysed by calculating 5-years, 3 years and 1-year CAGR. Domestic category has been projected on the basis of 5-year CAGR. There is consistent growth in connected load over the period of 5-years and 3-years Hence, 5-years CAGR has been considered to project the load growth for the control period of Domestic consumers and Industrial consumers and 3-years CAGR has been considered to project the load growth for the control period of Commercial consumers, Govt connections and HT consumers. Further, the load in the public lighting and temporary category for the control period has been kept same as that of FY 2020-21.



**Petition for Approval of Business Plan for the for 3-year MYT Control Period
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The CAGR along with projected load for the control period has been given in the table below:

Table 16: Projected Load Growth

All Figures are in KVA

Category	CAGR			2021-22	2022-23	2023-24	2024-25
	5 Years	3 Years	1 Year	Estimated	Projected	Projected	Projected
Domestic	102.46%	102.44%	101.93%	94,297	96,616	98,993	1,01,429
Commercial	89.28%	101.76%	67.09%	8,726	8,880	9,037	9,196
Govt. Connection	109.13%	101.08%	160.28%	12,156	12,287	12,419	12,553
Industrial	101.17%	99.55%	98.24%	3,730	3,773	3,817	3,862
HT Consumers	115.37%	104.82%	126.81%	967	1,014	1,063	1,114
Public Lighting	99.92%	98.61%	102.50%	284	284	284	284
Temporary	405.09%	102.44%	101.93%	273	273	273	273
Total				1,20,432	1,23,127	1,25,886	1,28,711

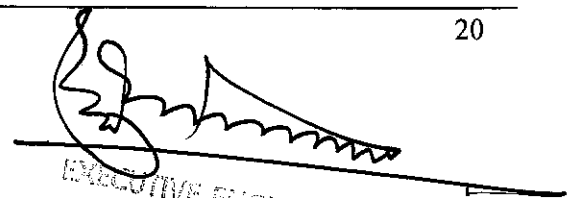
3.3 ENERGY DEMAND FORECAST

3.3.1 The Table below presents the category-wise energy sales for the past six years. It may be seen that there has been consistent growth in sales for different categories of consumers.

Table 17: Past Sales Growth

All Figures are in MUs

Category	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
	Actual	Actual	Actual	Actual	Actual (Unaudited)	Actual (Unaudited)
Domestic	34.09	35.02	35.90	35.97	35.59	40.35
Commercial	2.54	2.73	2.87	3.09	3.12	3.31
Govt. Connection	12.59	10.74	8.01	8.00	7.60	7.28
Industrial	0.40	0.42	0.43	0.38	0.36	0.37
HT Consumers	0.26	0.41	0.53	0.69	0.81	0.88
Public Lighting	0.61	0.61	0.64	0.67	0.81	0.82
Temporary	0.13	0.14	0.09	0.11	0.14	0.09
Total	50.62	50.08	48.46	48.90	48.42	53.10


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3.3.2 The table given below summarizes the projections of category wise energy sales for the Control Period (FY 2022-23 to FY 2024-25) along with the CAGR used for projections.

Domestic Category Consumers: As can be witnessed that from the data presented in the table above, the 5-years, 3-years and 1-year CAGR for the domestic category sales has been in the range of 3% to 13%. However, sales in domestic category is to be considered on the basis of consistent growth over a period of time. Accordingly, for projection of sales in the domestic category has been done considering 5-years CAGR year over year on the actual figures for the FY 2020-21.

Commercial category consumer: As can be witnessed that from the data presented in the table above, the 5-years, 3-years and 1-year CAGR for the commercial category sales has been in the range of 5% to 6%. However, sales in commercial category is to be considered on the basis of consistent growth over a period of time. Accordingly, for projection of sales in the commercial category has been done considering 5-years CAGR year over year on the actual figures for the FY 2020-21

Government Connection: Sales in government categories is showing decreasing trend over past 3-years due to replacement of incandescent/CFL bulb to LED bulbs, but as the most of the bulbs has been replaced in all the Island we have considered the growth rate as the rate of 5.00% year over year on the actual figures for the FY 2020-21.

Industrial: The growth in the industrial category is not showing any specific trend. However, for projecting sales in this category has been considered as the rate of 5.00% year over year on the actual figures for the FY 2020-21.

HT Consumers: The growth in the HT Consumers category is increasing consistently over past 5 years. Growth in the HT Consumers category is estimated to be 5% per annum during the control period. Accordingly, for projecting sales in this category, growth rate has been considered at 5.00% year over year on the actual figures for the FY 2020-21.

Public Lighting Category: No specific trend is observed in past four to five years in this category. The projected energy consumption during the control period in the category has been kept at same level as that of FY 2020-21.


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Temporary Connections: No specific trend is observed in past four to five years in this category. The projected energy consumption during the control period in the category has been kept at same level as that of FY 2020-21.

Based on the assumptions and methodology detailed above, the projected sales for FY2018-19 and for the Control Period FY 2022-23 to FY 2024-25 is summarized in table below:

Table 18: Projected Sales Growth All Figures are in MUs

Category	CAGR			2021-22	2022-23	2023-24	2024-25
	5 Years	3 Years	1 Year	Estimated	Projected	Projected	Projected
Domestic	103.43%	103.97%	113.37%	41.73	43.16	44.64	46.17
Commercial	105.41%	104.90%	106.15%	3.49	3.68	3.88	4.09
Govt. Connection	89.62%	96.86%	95.71%	7.64	8.02	8.42	8.85
Industrial	98.69%	95.49%	104.25%	0.39	0.41	0.43	0.45
HT Consumers	128.04%	118.57%	109.10%	0.93	0.97	1.02	1.07
Public Lighting	105.97%	108.30%	101.42%	0.82	0.82	0.82	0.82
Temporary	93.64%	100.46%	66.08%	0.09	0.09	0.09	0.09
Total				55.09	57.16	59.31	61.54


 EXECUTIVE ENGINEER (E.E.)
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 KAVARATTI-602 585

CHAPTER 4: POWER PROCUREMENT PLAN

4.1 ENERGY BALANCE AND ENERGY REQUIREMENT

4.1.1 Accordingly, the energy requirement for LED is estimated based on the retail sales projections, grossed up by estimated loss levels. The energy balance expected for the FY 2022-23, 2023-24 and 2024-25 is as given below:

Table 19: Energy Requirement – FY 2022-23, 2023-24 and 2024-25

Energy Balance	FY 2020-2021	FY 2021-2022	FY 2022-2023	FY 2020-2021	FY 2021-2022
	(Actuals)	(Estimated)	(Projected)	(Projected)	(Projected)
	MU's	MU's	MU's	MU's	MU's
ENERGY REQUIREMENT					
Energy Sales					
LT Supply	52.22	54.16	56.18	58.28	60.47
HT Supply	0.88	0.93	0.97	1.02	1.07
Total Energy Sales	53.10	55.09	57.16	59.31	61.54
Overall T & D Losses %	11.63	11.50	11.50	11.50	11.50
Overall T & D Losses (MUs)	6.99	7.16	7.43	7.70	7.99
Total Energy Requirement	60.09	62.25	64.59	67.01	69.53
ENERGY AVAILABILITY AT PERIPHERY					
Power Purchase	0.00	0.00	0.00	0.00	0.00
Own Generation	60.09	62.25	64.59	67.01	69.53
Total Energy Availability	60.09	62.25	64.59	67.01	69.53
ENERGY SURPLUS/(GAP)	0.00	0.00	0.00	0.00	0.00

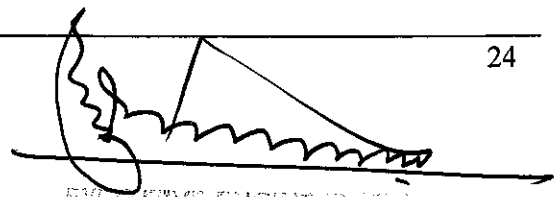
(Handwritten Signature)
 Director, Lakshadweep Electricity Department
 Thiruvananthapuram

4.1.2 The energy requirement of LED is met from own generation. There is no availability of power from Central Generating Stations or from other sources/ open market/ power exchanges etc. The present scenario is likely to continue and is projected that energy requirement for FY 2022-23, 2023-24 and 2024-25 shall be met by own generation.

The existing installed capacity of DG sets is provided below:

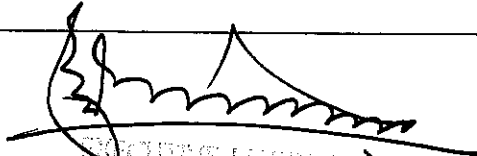
Table 20: Existing Installed Capacity of DG Sets

Sl. No.	Island	Capacity (Kw)	No. of units	Date of Commissioning
1	Minicoy	1000	5	05.08.2009
		1000		15.09.2020
		808		03.12.2019
		400		22.04.1995
		400		03.12.2012
2	Kavaratti	1000	5	11.11.2010
		1000		13.10.2010
		1200		27.01.2020
		600		19.10.2009
		600		18.09.2009
3	Amini	750	5	31.08.2008
		750		04.04.2010
		400		22.05.1998
		750		01.09.2013
		750		07.01.2020
4	Andrott	1056	6	09.02.2009
		808		30.01.2013
		520		01.08.2016
		520		01.08.2016
		600		18.02.2020
		600		18.02.2020
5	Kalpeni	250	5	01.01.1998
		250		25.05.2009
		250		25.05.2009
		750		17.02.2016
		750		29.01.2020


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Sl. No.	Island	Capacity (Kw)	No. of units	Date of Commissioning
6	Agatti	500	5	12.03.2008
		500		02.06.2008
		400		09.03.1998
		808		10.01.2013
		600		23.12.2020
7	Kadmat	400	4	08.05.2011
		750		03.02.2013
		600		17.03.2020
		808		08.05.2021
8	Kiltan	505	4	13.08.2008
		505		14.08.2008
		480		22.02.2016
		400		03.09.1998
9	Chetlat	256	3	10.02.2012
		256		11.02.2012
		500		08.05.2011
10	Bitra	250	2	30.12.2012
		100		28.02.2013
11	Bangaram	60	3	09.06.2005
		60		09.06.2005
		66		20.12.2009
TOTAL		26566		


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The existing installed capacity of SPV plants is provided below:

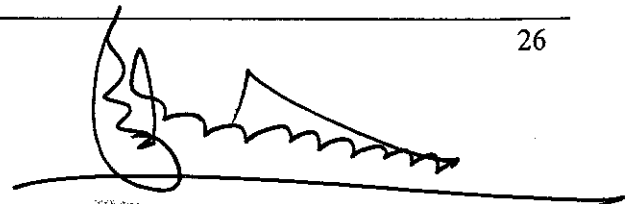
Table 21: Existing Installed Capacity of SPV Plants

Sl. No.	Island	Capacity (Kw)	No. of units	Date of Commissioning
1	Minicoy	210	1	01-09-2012
2	Andrott	320	1	01-10-2012
3	Kalpeni	100	1	01-03-2014
4	Kadmat	260	1	01-11-2021
5	Kiltan	100	1	06-02-2013
6	Bitra	50	1	26-01-2018
TOTAL		1040		

Apart from the above, LED has planned augmentation of generation capacity. The planned additions/replacement are provided below:

Table 22: Augmentation of Installed Capacity

Sl.No.	New source of power	Location	Installed Capacity (MW)		
			FY 22-23 (Projected)	FY 23-24 (Projected)	FY 24-25 (Projected)
1	DG Set	Kavaratti	3.00		
2	DG Set	Amini		0.75	
3	DG Set	Agatti		0.75	
4	DG Set	Kiltan			0.75
5	DG Set	Chetlat			0.75
6	DG Set	Kalpeni			0.75
Total			3.00	1.50	2.25



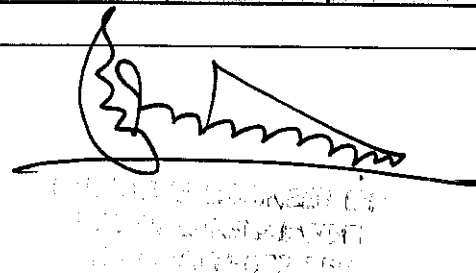
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The expected power generation/procurement sources for FY 2022-23, 2023-24 and 2024-25 are provided in the table below.

Table 23: Details of Power Procurement Sources – FY 2022-23, 2023-24 and 2024-25

Energy Balance	FY 2020-21 (Actual) MU's	FY 2021-22 (Estimated) MU's	FY 2022-23 (Projected) MU's	FY 2023-24 (Projected) MU's	FY 2024-25 (Projected) MU's
Power Purchase	Nil	Nil	Nil	Nil	Nil
Own Generation	60.09	62.25	64.59	67.01	69.53
Total	60.09	62.25	64.59	67.01	69.53



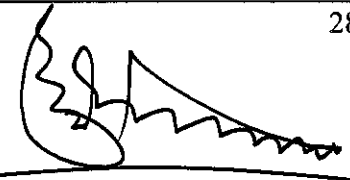
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4.2 PROCUREMENT PLAN

4.2.1 The Generation forecast is based on the plant availability and energy demand for the period. Accordingly, generation for FY 2018-19, FY 2022-23, 2023-24 and 2024-25 is estimated.

Table 24: Projected Power Generation– FY 2022-23, 2023-24 and 2024-25

	Units Generated & Sent Out (MUs)								
	FY 2016- 17	FY 2017- 18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
Units Generated	58.47	56.35	56.73	56.39	60.43	62.60	64.95	67.39	69.92
Auxiliary Consumption	0.65	0.58	0.52	0.38	0.34	0.35	0.36	0.38	0.39
Sent Out	57.83	55.77	56.21	56.01	60.09	62.25	64.59	67.01	69.53


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4.3 RENEWABLE PURCHASE OBLIGATION

4.3.1 Apart from the above allocations from central generating stations, LED shall also procure power from roof-top solar power plants as covered under the power procurement from renewable energy segment and balance power shall be required to be procured from bilateral agreements. Renewable power obligation for the utilities has been prescribed by the Hon'ble Commission vide JERC for State of Goa and UTs (Procurement of Renewable Energy) Regulations, 2010, First Amendment Regulations, 2014, Second Amendment Regulations, 2015 and Third Amendment Regulations, 2016.

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

Table 25: RPO Obligation

FY	Solar RPO (%)	Non-Solar RPO (%)
2022-23	8.00	9.00
2023-24	8.00	9.00
2024-25	8.00	9.00

4.3.3 The LED submits that it intends to meet the RPO as per the directions of the Hon'ble Commission in the MYT Control period as well. LED has planned to meet the Solar RPO from the generation of solar power from own power plants. Further, it is submitted that in absence of any non-solar power plants, LED shall not be able meet the RPO towards non-solar. However, the Hon'ble Commission in the tariff order for the FY 2018-19 had approved clubbing of RPO of solar & non-solar energy to meet the targets set by the Commission. Accordingly, projected RPO compliance by LED during the Control Period is summarized in the table below:

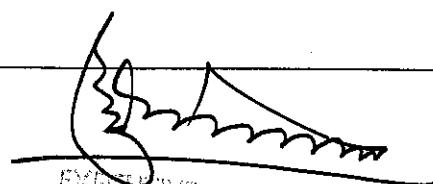

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Table 26: Renewable Purchase Obligation Compliance

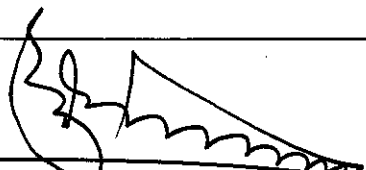
RPO Compliance			
Solar Obligation	2022-23	2023-24	2024-25
Solar RPO (In %)	8.00	8.00	8.00
Projected Sales	57.16	59.31	61.54
Total Power to be Procured to meet Solar Obligation (In MUs)	4.57	4.74	4.92
Non-Solar Obligation			
Non-Solar RPO (In %)	9.00	9.00	9.00
Projected Sales (In MU's)	57.16	59.31	61.54
Total Power to be Procured to meet Non-Solar Obligation (In MU's)	5.14	5.34	5.54
Total Power for clubbed RPO compliance	9.72	10.08	10.46
Breakup of Sources for RPO Compliance			
Total Power to be procured to meet RPO (In MUs)	9.72	10.08	10.46

To meet the RPO as projected above, LED has initiated the following actions,

4.3.4 To promote the use of renewable power in Lakshadweep, LED plans to purchase of solar power from SECI. LEDA has initiated a study to make a road map for sourcing 100% energy requirement of LED through Renewable Energy sources for all the Islands to mitigate the diesel consumption. As per the discussion with SECI, they will take all the existing projects and then will start work. Based on the preliminary inputs, the solution would comprise of the following:

- 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 in tandem with load requirements and DG sets.

4.3.5. UT of Lakshadweep Administration had decided to privatize entire Generation and Distribution functions of Department of Electricity. Hence all the existing projects of SECI except Kavaratti and Agatti SPV plants, has been put on hold for the time being.


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CHAPTER 5: CAPITAL INVESTMENT PLAN

As per the MYT Regulations 2021, the Distribution Licensee is required to file the Business Plan for Control Period of three financial years from April 1, 2022 to March 31, 2025, which shall comprise but not be limited to detailed category-wise sales and demand projections, power procurement plan, capital investment plan, financing plan and physical targets before the Hon'ble Commission as part of the Tariff Filing before the beginning of the Control Period.

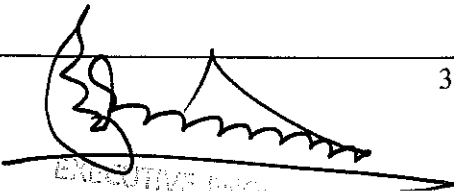
Based upon the above mandate the CAPEX Plan proposals (scheme wise) for FY 22-23 to FY 24-25 under the MYT Control Period FY 2022-25 have been formulated by Lakshadweep Electricity Department in order to enable better planning, budgeting and monitoring at macro & micro levels. The capital expenditure plan has been prepared for 11 KV and below works.

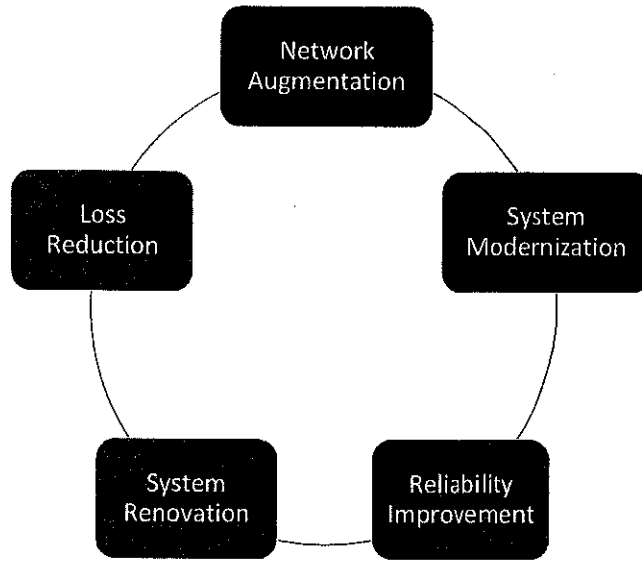
Lakshadweep Electricity Department has prepared the CAPEX plan taking into consideration all the factors which would affect the operations of the company. The CAPEX plan includes the details of various capital expenditure schemes in the identified areas and their respective estimates for each year of the MYT control period from FY22-23 to FY24-25.

The capital investments of the Lakshadweep Electricity Department can largely be categorized in following areas:


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

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


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Since capital investment is an ongoing activity for any transmission and distribution licensee, LED has categorized the schemes under the followings two categories i.e. On-going schemes and new schemes. But in case of LED mainly all the capital expenditures are been completed within a year, hence there will be no ongoing scheme. The year wise details of proposed capital expenditure under the two categories has been furnished below.


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5.1 ONGOING PROJECTS

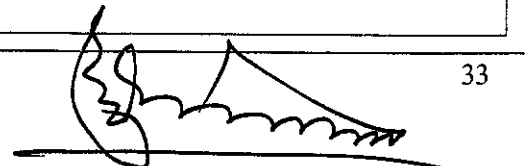
5.1 There is no spill over of the Capital expenditure as all the Capital expenditure works is being completed in the same financial year hence there is no ongoing schemes.

5.2 NEW PROJECTS PLANNED

5.2.1 LED has planned for 17 new 11kV schemes in view of the system upgradation requirement and improvement of reliability. The Cap-ex Plan proposal (Scheme wise) for FY 2022-23 to 2024-25 under the MYT control period FY-2022-25 have been formulated by Lakshadweep Electricity Department keeping in view various parameters that come into play to ensure better supply of power to end consumers. The details of the new 11kV capital schemes along with the investment rationale and their approval status is provided in table below:

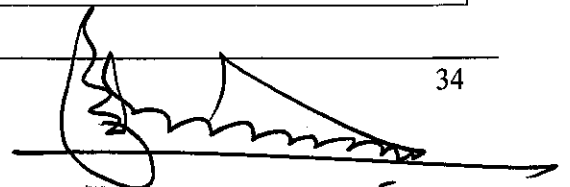
Table 27: 11 KV New Schemes proposed for the Control Period

Sr. No.	11KV New Scheme	Total Exp. (In lakhs)
1	Installation/Augmentation/Replacement of DG generating Capacity	750
Scheme Details	Installation of 2 no's of 1500 KVA New DG generating Capacity at Kavaratti(2) Island and augmentation/replacement of 5 no's of 750 KVA DG generating capacity at Amini(1), Agatti(1), Kiltan(1), Chetlat(1) and Kalpeni(1). Rationale: The scheme will help to meet the future load demand due to growth of consumers and also due to derating of DG sets due to ageing and for cost effective.	
2	DG set major components of Coil Cooler ,Radiator and Essy GEN	700
Scheme Details	DG set major components of Coil Cooler ,Radiator and Essy GEN etc. Rationale: The scheme will help in continuous and reliable supply of electricity.	
3	Step up Transformer at 11 KV existing sub-station	200
Scheme Details	Improvement and augmentation of step up transformers at Agatti ,Kadmath, Chetlat & Kalpeni Island (Continuing), Kalpeni & Kiltan and Chetlat & Androth. Rationale: The scheme will help to meet the increasing load demand due to growth of consumers and also for replacement of defective transformer so as to reduce T&D loss.	


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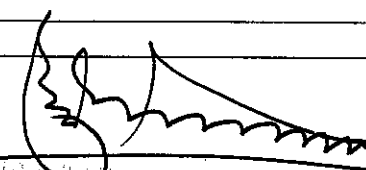
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Sr. No.	11KV New Scheme	Total Exp. (In lakhs).
4	Step down Transformer at 11KV existing system	700
Scheme Details	Improvement and augmentation of Step down Transformers at Amini, Androth, Kavaratti, Minicoy, Agatti, Chetlat, Kalpeni, Kadmath and Kiltan. Rationale: The scheme will help to meet the increasing load demand due to growth of consumers and also for replacement of defective transformer so as to reduce T&D loss.	
5	Ring main Unit in distribution transformer	150
Scheme Details	Installation of Ring Main Unit at Androth -2, Kadmath - 2 and Kavaratti-2(Continuing). Rationale: The scheme will help to provide redundancy of electricity supply, so that availability of supply will be increased to meet JERC recommendation.	
6	Energy Meters/ smart meters	300
Scheme Details	Installation of Smart Meters/Energy meters. Rationale: The scheme will help to improve the collection and billing efficiency.	
7	HT Cable line	225
Scheme Details	Providing HT cable line in the phased manner in all the island. Rationale: The scheme will help to provide transmission of power from power house (Step up Transformer) to distribution transformers (Step down Transformer) installed in new places.	
8	Supply of LT cable	350
Scheme Details	Supply of LT cables in the phased manner in all the island. Rationale: The scheme will help to provide new service connections and also for replacement of defective cables.	
9	Consumer cable / Street Light cable	350
Scheme Details	Supply of consumer cable / Street Light cable Rationale: The scheme will help to provide new service connections to domestic and commercial consumers and also for replacement of defective lines.	


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Sr. No.	11KV New Scheme	Total Exp. (In lakhs)
10	Supply of Street light set	150
Scheme Details	Supply of Street light set in the phased manner in all the island. Rationale: The scheme will help in saving of energy by replacing with LED type street lights.	
11	Supply of street light poles	350
Scheme Details	Supply of street light poles. Rationale: The 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	
12	Supply of Pole Mounting Street boxes	400
Scheme Details	Supply of Pole Mounting Street boxes (Continuing) Rationale:	
13	Power House Tools and Line Tools	75
Scheme Details	Improvement and Augmentation of Power House/Line Tools in all the Island. Rationale: The scheme will help in minimising the running and maintenance of power system which improve the efficiency.	
14	VCB Pannel for power House at Kavaratti and Androth	100
Scheme Details		
15	Modernisation and Augmentation of control Pannel at Power Houses	100
Scheme Details	Modernisation and Augmentation of control Pannel at Power Houses. Rationale:	




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Sr. No.	11KV New Scheme	Total Exp. (In lakhs).
16	Multipurpose vehicle for Line at Electrical Sub Division, Kavaratti, Androth and kalpeni. And Minicoy and Amini	150
Scheme Details	Multipurpose vehicle for Line at Electrical Sub Division, Kavaratti., Androth and kalpeni. And Minicoy and Amini.	
17	Construction of Office Building and Power House	700
Scheme Details	Construction of Office Building and Power House	

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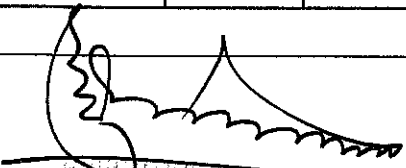
5.2.2 SCHEME WISE PROPOSED CAPITAL EXPENDITURE FOR THE CONTROL PERIOD

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

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

Table 28: Proposed Capital Expenditure for 11 KV New Schemes

Sr. No.	11 kV New Schemes	Proposed Expenditure (Rs Lakh)		
		2022-23	2023-24	2024-25
1	Supply of DG sets at Kavaratti (2x1500KVA), Amini & Agatti (2 x 750) and Kiltan Chetlat and kalpeni	300	200	250
2	DG set major components of Coil Cooler ,Radiator and Essy GEN etc.	400	150	150
3	Supply and Installation of step up transformers at Agatti ,Kadmth, Chetlat & Kalpeni Island (Continuing), Kalpeni & Kiltan and Chetlat & Androth	100	50	50
4	Supply and Installation of Step down Transformers in all Islands except Bitra	500	100	100
5	Supply of Ring Main Unit at Androth -2 , Kadmth - 2 and Kavaratti-2 (Continuing)	50	50	50
6	Supply of Energy Meters/ smart meters	100	100	100
7	Supply of HT cables	75	75	75
8	Supply of LT cables	150	100	100
9	Supply of consumer cable / Street Light cable (Continuing)	150	100	100
10	Supply of Street light set	50	50	50
11	Supply of street light poles	150	100	100
12	Supply of Pole Mounting Street boxes (Continuing)	200	100	100
13	Power House Tools and Line Tools (Supply of Flow meters)	25	25	25
14	VCB Pannel for power House at Kavaratti and Androth	100		
15	Modernisation and Augmentation of control Pannel at Power Houses	100		

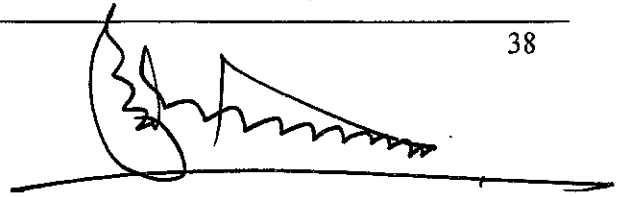

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16	Multipurpose vehicle for Line at Electrical Sub Division, Kavaratti., Androth and kalpeni. And Minicoy and Amini	50	50	50
17	Construction of office building and Power House building at Islands.	300	200	200
	Total	2,800	1,450	1,500

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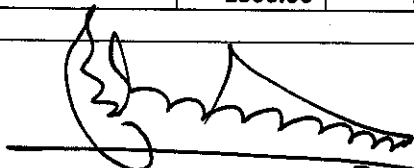
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5.2.2.3 With respect to the FY 2020-21, it is submitted that the Lakshadweep Electricity Department has incurred the capital expenditure for system improvement. The following table provides details of the target cost of such schemes and expenditure which has already being incurred on these schemes for the FY 2020-21.

Table 29: Ongoing Scheme's Original Cost and Incurred Expenditure

Sl. No.	NAME OF COMPONENT	(Rs Lakh)	
		Target for 2020-21	Actual Expenditure 2020-21
1	Supply and installation of Dg sets at Kadmath- 1 No and Bitra - 2 Nos.	140.00	98.61
2	Supply and Installation of step up and step down transformers at Islands step Up 2 Nos Agatti and Chetlat (1000 KVA)	50.00	
	Step down Transformers -4 Nos Androth - 2 Nos Kadmat - 1 No and Kavaratti - 1 No		1.02
3	Ring Main Unit at Kalpeni - 3 Nos , Amini 3 Nos And Chetlat -1 No(Balance Payment)	10.00	
4	Providing of service connections(Supply of Energy meters)	10.00	10.00
5	LT cables laying works at Islands.	15.00	15.00
6	RCC Slab Supply	20.00	18.40
7	Supply of Street light set	20.00	10.61
8	Supply of pole mounting Distribution boxes	40.00	1.02
9	Supply of Smart Meters/ Energy meters(Kavaratti)	465.00	
10	Supply of consumer cable / Street Light cable	35.00	
11	Power house tools and line Tools	20.00	11.64
12	Oil storage facility(Amini Androth and Agatti.)	200.00	
13	Supply of Bouser Androth and Amini	35.00	2.03
14	Land Aquisition for Power House building/ office building at Islands.	100.00	
15	Mordernisation of distribution net work	40.00	
	Total	1200.00	168.33
16	Construction of office and power house building etc.	100.00	0
	Grant total	1300.00	168.33


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

Table 30: Year Wise Overall Capital Expenditure and Capitalization

Particulars (In Rs Lakh)	2022-23	2023-24	2024-25
Capital Expenditure	2,800	1,450	1,500
Capitalization	2,800	1,450	1,500

5.2.3 PHYSICAL TARGET ACHIEVEMENT FOR THE CONTROL PERIOD

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

Table 31: Expected Physical Target Achievement for the control period

Year	Distribution Transformer		New Sub-Stations (11KV)		Lines (In KM's)	
	Nos.	kVA	Nos.	MVA	LT	HT
2022-23	20	5000	Nil	Nil	25	Nil
2023-24	4	1000	Nil	Nil	20	Nil
2024-25	5	1250	Nil	Nil	20	Nil

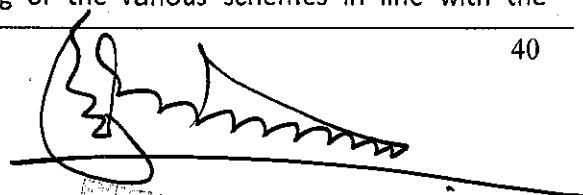
5.2.4 STATUS OF TENDER PROCESSING FOR SUPPLY/SERVICES

5.2.4.1 All activities to prepare DNIT, Tender & their execution is done by Department at their own level after getting approval from the Administrator. The normal lead time to complete the work is 12 Months after award of work.

5.2.5 FINANCING OF THE CAPITAL SCHEMES

5.2.5.1 The entire capital expenditure incurred by LED had been funded through equity infusion by Central Govt. through budgetary support without any external borrowings. There are no loan borrowings by the Lakshadweep Electricity Department for the capital expenditure.

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


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Regulations and provide approval for the same.

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

Table 32: Proposed Funding Details

Particulars	FY 2022-23 (In Rs Lakhs)	FY 2023-24 (In Rs Lakhs)	FY 2024-25 (In Rs Lakhs)
Proposed Capital Expenditure	2,800	1,450	1,500
Actual Funding			
100% Equity from Central Govt.	2,800	1,450	1,500
Proposed Funding in line with Regulation of JERC MYT			
Equity (30%)	840	435	450
Debt (Normative Debt in excess of 30% equity)	1,960	1,015	1,050
Total Funding	2,800	1,450	1,500

CHAPTER 6: TARGETS

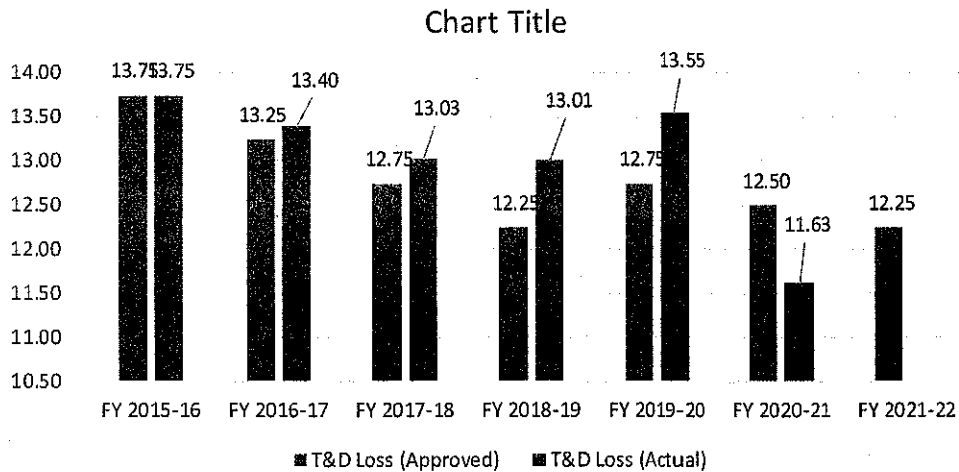
7.1 T&D LOSS TRAJECTORY FOR THE CONTROL PERIOD

6.1.1 LED has been trying to reduce the distribution losses during recent years. LED submits that the system improvement works executed every year under the plan schemes have also contributed to the reduction of distribution losses. However, it may also be noted that reduction of distribution losses may not be possible beyond a certain level due to topographical conditions and technical limitations.

The losses has reduced from 13.75% in the FY 2015-16 to 11.63% in FY 2020-21. The Hon'ble Commission has approved T&D loss of 12.25% for the FY 2021-22. It is expected that the losses for the FY 2021-22 would be in the range of 11.50%.

6.1.2 As can be seen from the above, LED has been successfully reducing the T&D loss y-o-y in spite of having consumer profile where majority of the consumers are LT category consumers.

T&D Loss Target Achieved vis-a-vis Targets



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6.1.3 While in future LED shall make all efforts to achieve the loss targets set up by the Hon'ble Commission, it is requested that Commission may set realistic targets in view of the fact that the current loss level is very low and reduction of loss below the current levels shall be difficult.

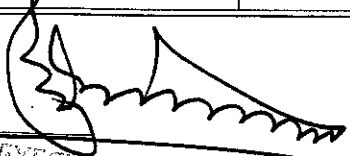
Accordingly, for the purpose of FY 2022-23, 2023-24 and 2024-25, LED proposes to restrict the T&D loss to 11.50% for the Control Period in view of the difficulty in loss reduction below 11.50% as approved as detailed in paras above. The T&D loss target proposed by LED is as below and the Hon'ble Commission is requested to approve the same:

Table 33: T&D Loss Trajectory for the Control Period

Loss %	FY 22-23	FY 23-24	FY 24-25
T&D Losses	11.50%	11.50%	11.50%

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CHAPTER 7: OTHER INITIATIVES

7.1 PROMOTION OF RENEWABLE POWER

To promote the use of renewable power in Lakshadweep, LED plans to purchase of solar power from SECI. LEDA has initiated a study to make a road map for sourcing 100% energy requirement of LED through Renewable Energy sources for all the Islands to mitigate the diesel consumption. As per the discussion with SECI, they will take all the existing projects and then will start work. Based on the preliminary inputs, the solution would comprise of the following:

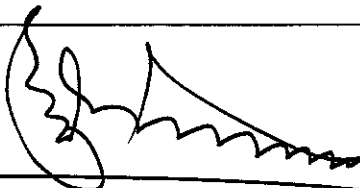
- Development of Floating Solar Power Projects
- Repowering of existing ground mounted solar projects
- Development of roof top solar power projects
- Development of small scale wind turbines
- Employing Battery energy storage to manage the renewable power generated in tandem with load requirements and DG sets.

UT of Lakshadweep Administration had decided to privatize entire Generation and Distribution functions of Department of Electricity. Hence, all the existing projects of SECI except Kavaratti and Agatti SPV plants, has been put on hold for the time being.

One of the prime objective of privatization is the transition from Diesel based generation to clean energy generation within a short period. It is anticipated that 80-100% RE generation shall be complied within 3-4 years after the privatization.

7.2 ENERGY AUDIT

LED has conducted energy audit for the FY 2018-19 and submitted the report to the JERC. LED plans to conduct energy audit of its Transmission & Distribution system every year henceforth to identify energy loses and implement steps to reduce the same.



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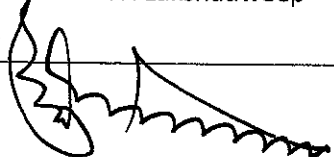
7.3 CGRF EXPENSE DETAILS

The details of the expense incurred over CGRF for the FY20-21 is provided as below:

Table 34: CGRF Expense Details

Sr No	Item	Amount (In Rs)
1	Salary	8,36,422
2	Petty Expenditure i.e. Newspaper bill, Stationary	13,939
3	Others	57,536
	Total	9,07,897

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Electricity Department
U.T. Lakshadweep


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