ANNUAL ENERGY AUDIT ACCOUNTING 2021-22

Designated Consumer

Electricity Department Puducherry.

UT of Puducherry, Puducherry-605001
(Puducherry)

FY 2021-2022

Conducted by

A-Z Energy Engineers Private Limited

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ACKNOWLEDGEMENT

A-Z Energy Engineers Pvt. Ltd. is grateful to the Electricity Department Puducherry, for giving us an opportunity to conduct Energy Audit Accounting of their DISCOM, under the Bureau of Energy efficiency 2021 Scheme.

We also express sincere thanks to the management of Electricity Department Puducherry, which is a Designated Consumers in the DISCOM sector for extending necessary co-operation and providing relevant information to us for the successful completion of the audit.

Our sincere thanks to the entire working group comprising of:

- Mr.– T.CHANEMOUGAM (SE cum HoD)
- Mr.– V.SRIDHARAN (SE - O&M Puducherry Region)
- Mr.– RAJESH SANYAL (SE Master Plan & Outlying Region)
- Mr. – M.Ramesh (Exe Engr/General)
- Mr. – C.Umesh Chandra (Asst Engr/Tech I sub division)
- Tmt – M. Lalithalochana (Junior Engr/Tech I)

A-Z Energy Engineers Pvt. Ltd. looks forward to their continued support in all future endeavours as well.

Table of Contents

List of Abbreviations

AMI	Advanced Metering Infrastructure
AMR	Automated Meter Reading
AMRUT	Atal Mission for Rejuvenation and Urban Transformation
AT & C	Aggregate Technical and Commercial
BEE	Bureau of Energy Efficiency
ckt	Circuit Kilometer
CT	Current Transformer
DC	Designated Consumer
DEEP	Discovery of Efficient Electricity Price
DISCOM	Electricity Distribution Company
DT	Distribution Transformer
EA	Energy Auditor
EHT	Extra High Tension
EHV	Extra High Voltage
EM	Energy Manager
FY	Financial Year
HT	High Tension
HVDS	High Voltage Distribution System
KVA	Kilo Volt Ampere
LT	Low Tension
MoP	Ministry of Power
MU	Million Units
MW	Mega Watt
NO	Nodal Officer
OA	Open Access
POC	Point of Connection
PT	Potential Transformer
PX	Power Exchange
RE	Renewable Energy
RLDC	Regional Load Dispatch Centre
SDA	State Designated Agency
SLD	Single Line Diagram
SLDC	State Load Dispatch Centre
T & D	Transmission and Distribution

Executive Summary

Bureau of Energy efficiency (BEE) notified the Bureau of Energy Efficiency (Manner and intervals for conduct the energy audit (Accounting) in Electricity Distribution Companies) Regulations, 2021 on 6th October 2021. As per regulation, all Electricity Distribution Companies are Mandate to conduct annual energy audit and periodic energy accounting on quarterly basis.

The Union Territory of Puducherry is spread over an area of 492 Sq.Km., which constitutes of the four erstwhile French establishments of Puducherry, Karaikal, Mahe and Yanam. The total population of the UT of Puducherry is 9,74,375 as per the 2001 census. The city of Puducherry located in the Puducherry region serves as the capital of the Union Territory.

The Union Territory has semi-arid type of climate, with a mean annual temperature of around 30° C and 70-85% relative humidity, is prevalent in the Union Territory. While Puducherry, Karaikal and Yanam region receive rain mostly through North - East monsoon, Mahe region benefits from the South-West monsoon.

While the energy Purchase at generation End, Net Input & billed Unit PED for the customer is 3231.04 MU, 3129.49 MU & 2783.65 MU. The monthly consumption per customer stands at 464.6 KWH/Month. PED caters to area spread in 3 circles, 10 Division

- **Discom Energy Accounting FY-2021-2022**

Net Energy Input to the Discom for FY 2021-2022 is estimated and presented in the table:

S. No	Particulars	Values
1	Input Energy Purchase (MU)	3129.49
2	Transmission Loss (%)	2.95%
3	Transmission Loss (MU)	92.32
4	Energy Sold Outside the periphery (MU)	-
5	Open access sale (MU)	-
6	EHT Sale (MU)	544.98
7	Net Input Energy at Discom	3082.98

The technical losses and aggregate technical & commercial (AT&C) losses for FY 2021-2022 are presented below:

Total Losses	T & D Loss			AT & C Loss (%)
	T & D Loss (MU)	T & D Loss (%)		11.05%
	345.84	11.05%		
		D Losses		
		9.71%		

➢ Category wise Consumer count& energy consumption for FY 2021-22

Energy consumption and type of consumers

S.No	Type of Consumers	Category of Consumers (EHT/HT/LT/Others)	No of Consumers	Total Consumption (In MU)
	LOW TENSION CATEGORY			
1	Domestic	LT	369827	803.65
2	Commercial	LT	57637	170.45
3	IP Sets	LT	7046	60.06
4	Life Line services	LT	8248	3.62
5	Temporary Supply	LT	0	3.85
6	Heating and Motive	LT	4411	170.07
7	Power/Water Supply	LT		
8	Public Lighting	LT	51600	19.95
	TOTAL LOW TENSION ENERGY BILLED			**1231.65**
9	HT Water Supply &Central/state Government services	HT	63	55.45
10	HT Industrial +HT-Commercial	HT	454	951.56
11	Industrial (Extra High Voltage)	EHT	8	544.99
	TOTAL HIGH TENSION ENERGY BILLED			**1552.00**
	TOTAL ENERGY BILLED		499294	2783.65

➢ Technical Parameters For FY 2021-22

Electricity Department Puducherry., supplies power to three Circles, Puducherry, Karaikal, Yaman & Mahe. Distribution area of PED is divided into three circles, ten divisions & the overall purchased Energy, consumption and AT &C losses for the FY-2021-2022 is shown in table below. The AT&C loss for FY 2021-2022 is 11.05% & the T&D losses of the Discom is 11.05%.

Technical Details (FY2021-22)

Technical Details (FY2021-22)		
Energy Input Details	**UoM**	**Value**
Input Energy Purchase (From Generation Source)	Million kwh	3231.04
Net input energy (at DISCOM Periphery after adjusting the transmission losses and energy traded)	Million kwh	3129.49
Total Energy billed (is the Net energy billed, adjusted for energy traded))	Million kwh	2783.65
Transmission and Distribution (T&D) loss Details	Million kwh	345.84
	%	11.05%
Collection Efficiency	%	100%
Aggregate Technical & Commercial Loss	%	11.05%

The total purchased power by PED at the generation end is 3231.04 million units and the net energy after adjusting the transmission losses and energy sales is 3129.49 million units. The total energy billed or net energy billed after all the adjustment is 2783.65 million units. The total T&D losses for FY 2021-22 was 345.84 million units, the overall collection efficiency of the PED was 100.00% & AT&C losses was 11.05%.

➢ Details of Input Energy & Infrastructure

The Input energy, consumption & transmission losses of the Electricity Department Puducherry (PED) are shown in table below:

Input energy, consumption & transmission losses of the PED

Parameters	FY 2021-22
Input Energy purchased (MU)	3129.49
Transmission loss (%)	3%
Transmission loss (MU)	92.32
Energy sold outside the periphery(MU)	0.00
Open access sale (MU)	0.00
EHT sale	544.98
Net input energy (received at DISCOM periphery or at distribution point, after adjustment)-(MU)	3082.98
Is 100% metering available at 33/22 kV (Select yes or no from list)	Yes
Is 100% metering available at 11 kV (Select yes or no from list)	Yes
% of metering available at DT	85%
% of metering available at consumer end	96%
No of feeders at 33kV voltage level	2
No of feeders at 22kV voltage level	72
No of feeders at 11kV voltage level	52
No of LT feeders level	6224
Line length (ckt. km) at 33kV voltage level	19
Line length (ckt. km) at 22kV voltage level	1791.607
Line length (ckt. km) at 11kV voltage level	447
Line length (km) at LT level	4080.65
HT/LT ratio	0.553

➢ Goals and Objectives

PED is a designated consumer in Discom sector. Being a designated Consumer PED needs to undergo Annual energy audit (Accounting) as per BEE notification No 18/1/BEE/Discom/2021 dated 6th October 2021.

The Annual Energy Audit (Accounting) at PED is conducted with the following Objectives:

- Verification of existing pattern of energy distribution across periphery of electricity Distribution Company.
- Verification of accounted energy flow submitted by electricity Distribution Company at all applicable voltage levels of the distribution network.
- Verification of the accuracy of the data collected and analyses the data with respect to consistency, improvement in accounting and reducing loss of DISCOM.

- Verification of the information submitted by DC to the SDA/BEE about status of energy input, Output and loss for the previous two year.
- Access the past performance of the establishment.
- Quantification of Energy losses and Energy Saving Potential.

➢ Energy Conservation measures to reduce T&D and AT&C loss

Following energy conservation Measures (ECMs) is adopted for line loss reduction

1. Installation of Smart AMR Meters.
2. Maintaining the accuracy on the billing date.
3. System improvement & automation.
4. AMR Feeder meters to be increased.
5. Targeted Work for Distribution loss reduction under proposed RDSS Scheme

- Installation of power transformers in Substations.

6. Agricultural Feeder segregation and solarisation
7. SCADA & DMS Implementation for monitoring.
8. Replacing of conventional/non star rated transformer into energy efficient transformers.
9. Laying of AB cable in theft prone area where loss are in higher side.
10. Installation of solar generation plant & solar pumps.
11. Strengthening of energy accounting infrastructure-100% consumer metering.

➢ Action Plan to reduce AT&C Losses

At present the ratio of HT: LT ratio is 1:1.5 and on implementation of RDSS scheme (Loss Reduction Program) for an amount of sanction Rd.83.21 CRs it is expected the HT: LT ratio will come down to progressively to 1:1.4 ratio by the end of the year 2024-25.The technical loss under LT distribution will come down considerably.

Similarly under Smart Prepaid Metering Project through RDSS scheme, it is proposed to provide Smart pre-paid Energy meters to all class of consumers at the UT of Puducherry through M/s.PFC Consulting Limited (PFCCL) under TOTEX model. On implementation of the scheme, real time energy flow could be observed and the commercial loss pockets could be identified through software and therefore significant reduction in commercial loss could be achieved by the department by the end of 2024-25.

The details of anticipated progressive reduction in AT&C loss by end of FY-2024-25 is detailed below:

S. No	Result Parameter	AT&C loss Trajectory under RDSS		
		FY23	FY24	FY25
1	AT&C Loss	16.50%	14.00%	11.56%

Critical Analysis

- The Electricity Department of Government of Puducherry is a deemed licensee under Section 14 of Electricity Act, 2003 and is carrying on the business of Transmission, Distribution and retail supply of Electricity in Puducherry, Karaikal, Yanam and Mahe Regions of the Union Territory of Puducherry. With all the Towns and villages electrified in as early as 1972, the Union Territory is 100% fully electrified. The business of generation of Electricity in the Union Territory of Puducherry is being carried out by the Puducherry Power Corporation Limited, an undertaking wholly owned by the Government of Puducherry. The Puducherry power Corporation Limited presently operates a 33 MW gas power plant in Karaikal region.
- Electricity Department Puducherry., supplies power to three circles of Puducherry the energy Purchased, Net Input & billed PED for the customer is 3231.04 MU, 3129.49 MU & 2783.65 MU. The monthly consumption per customer stands at 464.6 KWH/Month. PED caters to area spread in 3 circles, 10Division, 60 numbers of sub-division, 126 number of feeders (33KV/22KV/11KV), 3123 number of DTs and 499294 numbers of consumers.
- Verified transmission losses, distribution (T&D) losses, collection efficiency & aggregate technical & commercial losses of Electricity Department Puducherry for FY 2021-2022, i.e., 1st April’ 2021 to 31st March’ 2022 was 2.95%, 11.05%, 100.00 % & 11.05 % respectively.
- The electrical energy is supplied by various interstate and intrastate generating stations at 400 KV, 220 KV, 66 KV, 33 KV and same is supplied to customers at 33 KV, 11 KV, 400V and 230 V single phases.

I. Background

1.1 Extant Regulation & Role of BEE

The Objectives of BEE

- To develop policies and programmes on efficient use of energy and its conservation with the involvement of stakeholders.
- To plan, manage and implement energy conservation programmes as envisaged in the EC Act.
- To assume leadership and provide policy framework and direction to national energy efficiency and conservation efforts and programmes.
- To demonstrate energy efficiency delivery mechanisms, as envisaged in the EC Act, through Public-Private Partnership (PPP).
- To establish systems and procedures to measure, monitor and verify energy efficiency results in individual sectors as well as at the national level.
- To leverage multi-lateral, bi-lateral and private sector support in implementation of programmes and projects on efficient use of energy and its conservation.
- To promote awareness of energy savings and energy conservation.

Role of BEE

- BEE coordinates with designated agencies, designated consumers and other organizations working in the field of energy conservation/efficiency to recognize and utilize the existing resources and infrastructure in performing the functions assigned to the Bureau under the Energy Conservation Act.
- The Act provides regulatory mandate for: standards &labelling of equipment and appliances; energy conservation building code for commercial buildings; and energy consumption norms for energy intensive industries.
- The EC Act was amended in 2010 to incorporate few additional provisions required to better equip BEE to manage ever evolving sphere of energy efficiency in the country.

The main amendments made to the original Act are given below:

- The Central Government may issue the energy savings certificate to the designated consumer whose energy consumption is less than the prescribed norms and standards in accordance with the procedure as may be prescribed.

- The designated consumer whose energy consumption is more than the prescribed norms and standards shall be entitled to purchase the energy savings certificate to comply with the prescribed norms and standards
- The Central Government may, in consultation with the Bureau, prescribe the value of per metric ton of oil equivalent of energy consumed
- Commercial buildings which are having a connected load of 100 kW or contract demand of 120 kVA and above brought under the purview under the EC Act.

Promotional Role

The major Promotional Role of BEE includes:

- Create awareness and disseminate information on energy efficiency and conservation.
- Arrange and organize training of personnel and specialists in the techniques for efficient use of energy and its conservation.
- Strengthen consultancy services in the field of Energy Efficiency.
- Promote research and development.
- Develop testing and certification procedures and promote testing facilities.
- Formulate and facilitate implementation of pilot projects and demonstration projects.
- Promote use of energy efficient processes, equipment, devices and systems.
- Take steps to encourage preferential treatment for use of energy efficient equipment or appliances.
- Promote innovative financing of energy efficiency projects.
- Give financial assistance to institutions for promoting efficient use of energy and its conservation.
- Prepare educational curriculum on efficient use of energy and its conservation.
- Implement international co-operation programmers relating to efficient use of energy and its conservation.

1.2 Purpose of Audit & Accounting Report

The annual energy audit accounting has been conducted for FY 2021-22 based on the notification no. 18/1/BEE/Discom/2021 from Bureau of Energy Efficiency, New Delhi dated 6th October, 2021 which says:

The energy intensity of India is higher with respect to GDP growth and there is an urgent need to address these issues on priority through integrated and comprehensive approach and by adopting latest techniques and technologies with active participation of all stakeholders.

Sensing the need of the hour Government of India initiated a mechanism for all energy intensive large industries and facilities (designated consumer) known as PAT Scheme which is “A market based mechanism to enhance cost effectiveness of improvements in energy efficiency in designated consumers, through certification of energy savings that could be traded.”

Annual Energy audit (Accounting) will not only help in reducing losses in system but it also helps DISCOM in sustainable growth. The objective of this energy audit is to reduce T&D loss and AT&C loss of the DISCOM through identification of commercially viable and implementable scheme for reduction of technical and commercial loss in the DISCOM thus leading to sustainable energy cost reductions.

(1) Every electricity distribution company shall conduct an annual energy audit for every financial year and submit the annual energy audit report to the Bureau and respective State Designated Agency and also made available on the website of the electricity distribution company within a period of four months from the expiry of the relevant financial year:
Provided that on the commencement of these regulations, the first annual energy audit of every electricity distribution company shall be conducted within six months from the date of such commencement, by taking into account the energy accounting of electricity distribution company for the financial year immediately preceding the date of the commencement of these regulations.

(2) Where a new electricity distribution company is established after the commencement of these regulations, such electricity distribution company shall conduct its first annual energy audit on completion of the first financial year from the date of being notified as designated consumer.
The Annual Energy Audit (Accounting) is conducted with the following Objectives:

- Verification of existing pattern of energy distribution across periphery of electricity distribution company
- Verification of accounted energy flow submitted by electricity distribution company at all applicable voltage levels of the distribution network
- Verification of the accuracy of the data collected and analyse and process the data with respect to consistency, improvement in accounting and reducing loss of DISCOM
- Verification of the information submitted by DC to the SDA/BEE about status of energy input, Output and loss for the previous two year
- Access the past performance of the establishment
- Quantification of Energy Losses, and Energy Saving Potential

1.3 **Period of Energy Audit& Accounting**

Energy audit activity was started with a meeting at Head Office of Electricity Department Puducherry in the month of Dec. 2022. Based on the requirement visit was made to Division, Subdivision, Grid etc. for data collection and technical discussion. The period of study was from for FY21-22, 1st April, 2021- 31st March, 2022.

II. Introduction of Designated Consumer

Bureau of Energy efficiency (BEE) notified the Bureau of Energy Efficiency (Manner and intervals for conduct the energy audit (Accounting) in Electricity Distribution Companies) Regulations, 2021 on 6th October 2021. As per regulation, all Electricity Distribution Companies are Mandate to conduct annual energy audit and periodic energy accounting on quarterly basis.

2.1 **Sector**

Electricity Department Puducherry belongs to the Electricity Distribution Sector.

2.2 **Name and Address of Designated Consumer**

General Information

1	**Name of the DISCOM**	Electricity Department, Puducherry		
2	**i) Year of Establishment**	1962		
	ii) Government/Public/Private	Government		
3	**DISCOM's Contact details & Address**			
I	City/Town/Village	UT of Puducherry		
Ii	District	UT of Puducherry		
Iii	State	Puducherry	Pin	605001
Iv	Telephone		Fax	0413-2331556
4	**Registered Office**			
I	Company's Chief Executive Name	T.Chanemougam		
Ii	Designation	Superintending Engineer Cum HoD		
Iii	Address	Electricity Department, Main Office, No.137,NSJ Bose Salai, Puducherry		
Iv	City/Town/Village	Puducherry	P.O.	605001
V	District	Puducherry		
Vi	State	Puducherry	Pin	605001
Vii	Telephone	9489080400	Fax	
5	**Nodal Officer Details***			
I	Nodal Officer Name (Designated at DISCOM's)	Thiru.M.Ramesh		
Ii	Designation	Executive Engineer		
Iii	Address	Electricity Department, Main Office, No.137,NSJ Bose Salai, Puducherry		
Iv	City/Town/Village	Puducherry	P.O.	605001

V	District	Puducherry			
Vi	State	Puducherry		Pin	605001
Vii	Telephone	0413-2341238		Fax	0413-2331556
6	**Energy Manager Details***				
I	Name				
Ii	Designation	Executive Engineer		Whether EA or EM	EM
Iii	EA/EM Registration No.	-			
Iv	Telephone	0413-2341238		Fax	0413-2331556
V	Mobile	9489080400	E-mail ID	ee10ped@py.gov.in	
7	**Period of Information**				
	Year of (FY) information including Date and Month (Start & End)	**FY-2021-22**			

2.3 Name and details of energy manager and Authorised signatory of DC

Name and details of energy manager and Authorised signatory of DC

PARTICULARS	DETAILS
Energy Manager	NA
Authorized Signatory	Thiru.M.Ramesh (Executive Engineer) Ph: 0413-2341238

2.4 Summary profile of DC's

The Union Territory of Puducherry is spread over an area of 492 Sq.Km., which constitutes of the four erstwhile French establishments of Puducherry, Karaikal, Mahe and Yanam. The total population of the UT of Puducherry is 9,74,375 as per the 2001 census. The city of Puducherry located in the Puducherry region serves as the capital of the Union Territory.

Puducherry region, which is the largest of all the four, lies on the east-coast, consisting of 12 scattered areas, surrounded by the State of Tamil Nadu and by the Bay of Bengal on the east. It is located around 150 Kms south of Chennai. Karaikal region is about 150 Kms south of Puducherry. Like Puducherry region, the Karaikal region is also surrounded by the State of Tamil Nadu and by the Bay of Bengal on the East. Mahe region is located at about 653 Kms west of Puducherry, on the west-coast near Tellicherry in Kerala. Yanam region is located at about 840 Kms north east of Puducherry, on the east-coast near Kakinada in

Andhra Pradesh. The Union Territory has semi-arid type of climate, with a mean annual temperature of around 30° C and 70-85% relative humidity, is prevalent in the Union Territory. While Puducherry, Karaikal and Yanam region receive rain mostly through North - East monsoon, Mahe region benefits from the South-West monsoon.

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Verified transmission losses, distribution (T&D) losses, collection efficiency & aggregate technical & commercial losses of PED for FY 2021-22, i.e., 1st April' 2021 to 31st March' 2022 is 2.95%, 11.05%, 100.00% & 11.05% respectively.

2.1.1 Assets Details

Sr. No.	Particulars	FY 2021-22
1	No. of 33KV Feeder	2
2	Total no. of 33 kv feeder(KM)	19
3	Total no. of 11 kv feeder(Nos.)	52
4	Total no. of 11 kv feeder(KM)	447
5	No. of distribution Transformers	3123
6	Length of LT (KM)	4080.65
7	Number of circles	3
8	Number of divisions	10
9	Number of sub-divisions	60

2.1.2 Consumer wise connections & energy consumptions for FY 2021-22

S. No	Type of Consumers	Category of Consumers (EHT/HT/LT/Others)	No of Consumers	Total Consumption (In MU)
	LOW TENSION CATEGORY			
1	Domestic	LT	369827	803.65
2	Commercial	LT	57637	170.45

S. No	Type of Consumers	Category of Consumers (EHT/HT/LT/Others)	No of Consumers	Total Consumption (In MU)
3	IP Sets	LT	7046	60.06
4	Life Line services	LT	8248	3.62
5	Temporary Supply	LT	0	3.85
6	Heating and Motive	LT	4411	170.07
7	Power/Water Supply	LT		
8	Public Lighting	LT	51600	19.95
	TOTAL LOW TENSION ENERGY BILLED			**1231.65**
9	HT Water Supply &Central/state Government services	HT	63	55.45
10	HT Industrial +HT-Commercial	HT	454	951.56
11	Industrial (Extra High Voltage)	EHT	8	544.99
	TOTAL HIGH TENSION ENERGY BILLED			**1552.00**
	TOTAL ENERGY BILLED		499294	2783.65

2.1.3 Consumer base for FY 2021-22

Voltage wise Metered & Unmetered Consumers. The voltage wise meter types of meter values given table:

Voltage wise metered & unmetered Consumers

Parameters	66kV and above	33kV	11/22kV	LT
Number of conventional metered consumers	0			
Number of consumers with 'smart' meters	0			31500
Number of consumers with 'smart prepaid' meters	0			
Number of consumers with 'AMR' meters	8	0	0	0
Number of consumers with 'non-smart prepaid' meters	0	0	524	451416

Parameters	66kV and above	33kV	11/22kV	LT
Number of unmetered consumers				15846
Number of total consumers	8		524	498762

2.1.4 Category wise Consumers, Consumption & Losses

Category wise Consumers, Consumption & Losses

Consumer category	Total Number of connections (Nos)	Total Connected Load (MW)	Input energy (MU)	Total energy	T&D loss (MU)
Residential	378191	650.24	3082.98	693.7266	299.33
Agricultural	7056	52.47		80.96792	
Commercial/Industrial-LT	61923	303.574		429.8765	
Commercial/Industrial-HT	524	678.55		1007.3	
Others	51600	8.89		571.7784	
	499294	1693.724	**3082.98**	2783.65	**299.33**

Consumer category	T&D loss (%)	Billed Amount in Rs. Crore	Collected Amount in Rs. Crore	Collection Efficiency	AT & C loss (%)
Residential	9.71%				23.13%
Agricultural					
Commercial/Industrial-LT					
Commercial/Industrial-HT					
Others					
	9.71%	**1640.48**	**2002.02**	**100.00%**	**23.13%**

Note:- Actual collection efficiency 122% (limited to 100%), Category wise Billed & collected amount is not available but as a whole available.

2.1.5 Administrative structure

The Distribution network of PED is divided into three numbers of circles, ten numbers of divisions & sixty numbers of sub divisions.

Administrative structure

Parameters	Values
Number of circles	3
Number of divisions	10
Number of sub-divisions	60
Number of feeders	126

- Numbers of Distribution Transformers

Number of Distribution Transformers

Parameters	66kV and above	33kV	11/22kV
Number of conventionally metered Distribution Transformers	0		
Number of DTs with communicable meters	2645		
Number of unmetered DTs	478		
Number of total Transformers	3123		

- Numbers of Feeders

Numbers of Feeders

Parameters	66kV and above	33kV	11/22kV	LT
Number of metered feeders	0	2	124	5290
Number of feeders with communicable meters	0	2	124	
Number of unmetered feeders	0	0	0	
Number of total feeders	0	2	124	5290

2.1.6 Energy Flow

PED supplies power to three Circle of Puducherry in Puducherry, Yaman, Mahe & karaikal region of UT of Puducherry, It is divided into three circles, ten divisions & the overall purchased Energy, consumptions & AT &C losses for the FY-2021-2022 is shown in table below the AT&C losses for FY2021-2022 is 11.05% & the T&D losses of the sector is 11.05% for FY 2021-22. This reflects an overall collection efficiency of 100%.

Technical Details (FY 2021-22)

Technical Details (FY2021-22)		
Energy Input Details	**UoM**	**Value**
Input Energy Purchase (From Generation Source)	Million Units	3231.04
Net input energy (at DISCOM Periphery after adjusting the transmission losses and energy traded)	Million Units	3129.49
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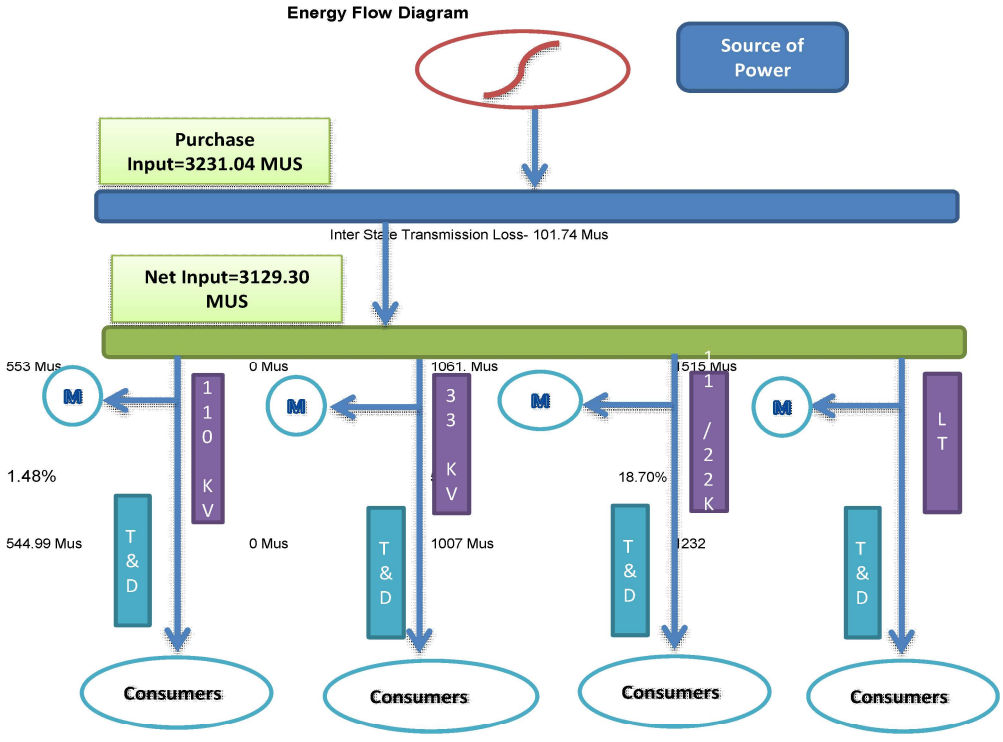
Transmission and Distribution (T&D) loss Details	Million Units	345.84
	%	11.05%
Collection Efficiency	%	100%
Aggregate Technical & Commercial Loss	%	11.05%

The total purchased power by PED is 3231.04 million units and the net energy after adjusting the transmission losses and energy sales is 3129.49 million units, The total energy billed or net energy billed after all the adjustment is 2783.65 million units. The total T & D loss for FY 2021-22 is 345.65 million units.

Energy Flow Diagram



2.1.7 Voltage wise sale and Losses FY 2021-22

Voltage level	Particulars	MU	Reference
230 kV	Long-Term Conventional	3231.04	Includes input energy for franchisees
	Medium Conventional	NA	
	Short Term Conventional	NA	
	Banking	NA	
	Long-Term Renewable energy	NA	
	Medium and Short-Term RE	NA	Includes power from bilateral/ PX/ DEEP
	Captive, open access input	NA	Any power wheeled for any purchase other than sale to DISCOM. Does not include input for franchisee.
	Sale of surplus power		
	Quantum of inter-state transmission loss	101.74	As confirmed by SLDC, RLDC etc
	Power procured from inter-state sources	3,231.04	Based on data from Form 5
	Power at state transmission boundary	3,129.30	
33kV	Long-Term Conventional		
	Medium Conventional	0	
	Short Term Conventional		
	Banking	0	
	Long-Term Renewable energy	0	
	Medium and Short-Term RE	0	
	Captive, open access input		
	Sale of surplus power		
	Quantum of intra-state transmission loss	0	
	Power procured from intra-state sources	0	
	Input in DISCOM wires network	3,129.30	
33 kV	Renewable Energy Procurement	0	
	Small capacity conventional/ biomass/ hydro plants Procurement		
	Captive, open access input	0	
11 kV	Renewable Energy Procurement		
	Small capacity conventional/ biomass/ hydro plants Procurement		

Voltage level	Particulars	MU	Reference
	Sales Migration Input		
LT	Renewable Energy Procurement		
	Sales Migration Input		
	Energy Embedded within DISCOM wires network	0	
	Total Energy Available/ Input	3,129	
Voltage level	**Energy Sales Particulars**	**MU**	**Reference**
LT Level	DISCOM' consumers	1,231.65	Include sales to consumers in franchisee areas, unmetered consumers
	Demand from open access, captive		Non DISCOM's sales
	Embedded generation used at LT level		Demand from embedded generation at LT level
	Sale at LT level	1,231.65	
	Quantum of LT level losses	283	
	Energy Input at LT level	1,514.94	
22/11 kV Level	DISCOM' consumers	1,007.01	Include sales to consumers in franchisee areas, unmetered consumers
	Demand from open access, captive	0	Non DISCOM's sales
	Embedded generation at 11 kV level used	0	Demand from embedded generation at 11kV level
	Sales at 22/11 kV level	1,007.01	
	Quantum of Losses at 22/11 kV	54	
	Energy input at 22/11 kV level	1,061.39	
33 kV Level	DISCOM' consumers	0	Include sales to consumers in franchisee areas, unmetered consumers
	Demand from open access, captive		Non DISCOM's sales
	Embedded generation at 33 kV or below level		This is DISCOM and OA demand met via energy generated at same voltage level
	Sales at 33 kV level	0	
	Quantum of Losses at 33 kV	0	
	Energy input at 33kV Level	0	

Voltage level	Particulars	MU	Reference
> 33 kV(110 KV)	DISCOM' consumers	544.99	Include sales to consumers in franchisee areas, unmetered consumers
	Demand from open access, captive		Non DISCOM's sales
	Cross border sale of energy		
	Sale to other DISCOMs		
	Banking		
	Energy input at > 33kV Level	553.16	
	Sales at 66kV and above (EHV)	544.99	
	Total Energy Requirement	**3,129.49**	
	Total Energy Sales	**2,783.65**	

- **Voltage wise losses-** Voltage wise input energy, sales & losses is tabulated below:

5	DISCOM	Input (in MU)	Sale (in MU)	Loss (in MU)	Loss %
i	LT	1,515	1,232	283	18.70
ii	22/11 Kv	1,061	1,007	54	5.12
iii	33 kv	0	0	0	0.00
iv	110 KV	553	544.99	8	1.48

2.1.8 Salient Features

At present population of Residential consumer & Agriculture consumer contribute to be 76% & 1% respectively compare to the other category of consumers, high loss prone areas.

III Discussions & Analysis-

3.1 Energy Accounts for Previous Year

Electricity Department Puducherry has undertaken first year of energy accounting as per notification. No. 18/1/BEE/DISCOM/2021 from BUREAU OF ENERGY EFFICIENCY dated 6th October, 2021.

3.2 Energy Accounts & Performance in current year (FY 2021-2022)

The net energy input to the DISCOM FOR FY 2021-22 presented in the following table.

S.No	Parameters	Value
A.1	Input Energy purchased (MU)	3129.49
A.2	Transmission loss (%)	2.95%
A.3	Transmission loss (MU)	92.32
A.4	Energy sold outside the periphery(MU)	-
A.5	Open access sale (MU)	-
A.6	EHT sale	544.98
A.7	Net input energy (received at DISCOM periphery or at distribution point)-(MU)	3082.98

➢ **Summary of Energy Consumption**

The total sale for various category wise details of consumers is given in the table:

S.No	Type of Consumers	Category of Consumers (EHT/HT/LT/Others)	No of Consumers	Total Consumption (In MU)
	LOW TENSION CATEGORY			
1	Domestic	LT	369827	803.65
2	Commercial	LT	57637	170.45
3	IP Sets	LT	7046	60.06
4	Life Line services	LT	8248	3.62
5	Temporary Supply	LT	0	3.85
6	Heating and Motive Power/Water Supply	LT	4411	170.07
7	Public Lighting	LT	51600	19.95
	TOTAL LOW TENSION ENERGY BILLED			**1231.65**
8	HT Water Supply &Central/state Government services	HT	63	55.45
9	HT Industrial +HT-Commercial	HT	454	951.56
10	Industrial (Extra High Voltage)	EHT	8	544.99
	TOTAL HIGH TENSION ENERGY BILLED			**1552.00**
	TOTAL ENERGY BILLED		499294	2783.65

The technical losses and aggregate technical & commercial (AT&C) losses for FY 2021-2022 are presented below:

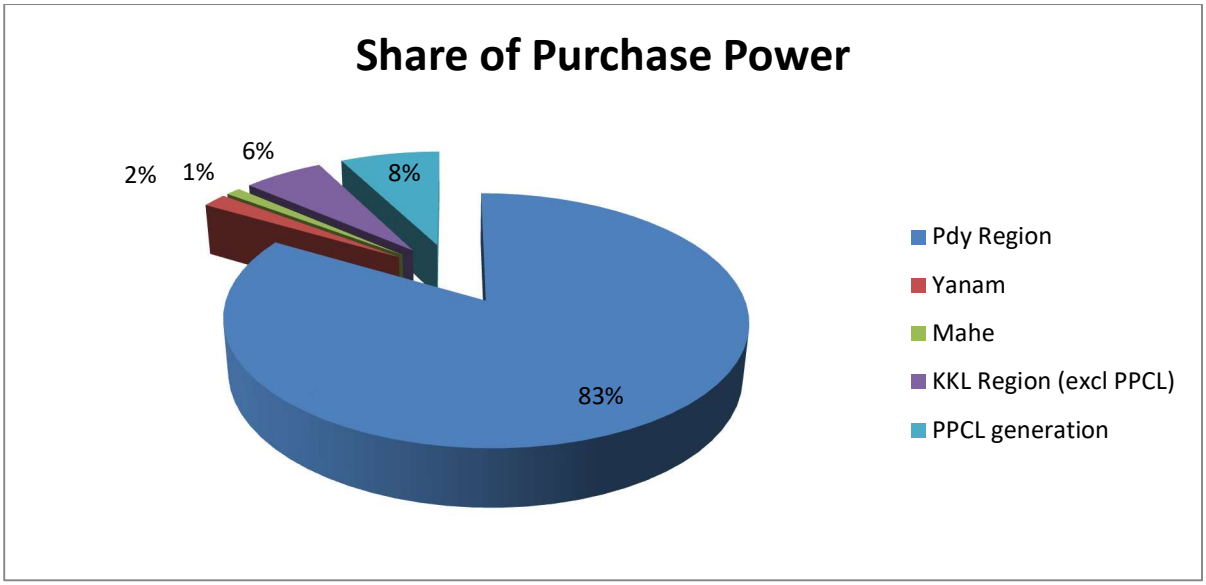
Total Losses	T & D Loss		AT & C Loss (%)
	T & D Loss (MU)	T & D Loss (%)	11.05%
	345.84	11.05%	

3.3 Month wise Purchase Energy (FY 2021-2022)

The Region wise purchase power and self-generated PPCL power & Month wise breakup is shown in below table:

Month	Pdy Region	Yanam	Mahe	KKL Region (excl PPCL)	Total (4 Regions)	PPCL Generation	Total energy available for distribution
Apr-21	240.42	5.53	3.31	21.75	271.01	19.30	290.31
May-21	222.10	5.67	2.78	18.63	249.18	20.19	269.37
Jun-21	217.39	5.01	2.60	16.00	241.00	19.79	260.79
Jul-21	232.25	4.89	2.69	19.36	259.18	19.81	278.99
Aug-21	230.94	5.07	2.76	17.40	256.16	20.71	276.87
Sep-21	230.27	4.84	2.74	16.51	254.36	20.07	274.43
Oct-21	226.45	5.04	2.88	14.21	248.58	20.62	269.20
Nov-21	183.78	4.26	2.71	11.98	202.73	19.40	222.13
Dec-21	198.51	4.53	2.96	11.28	217.28	19.71	236.99
Jan-22	201.59	4.34	2.87	12.32	221.12	20.20	241.32
Feb-22	194.24	4.11	2.71	11.71	212.76	18.18	230.94
Mar-22	232.88	5.14	3.34	18.30	259.66	18.42	278.08
Total	**2610.82**	**58.42**	**34.33**	**189.45**	**2893.03**	**236.39**	**3129.42**

Note: Sample Bills attached in Annexure



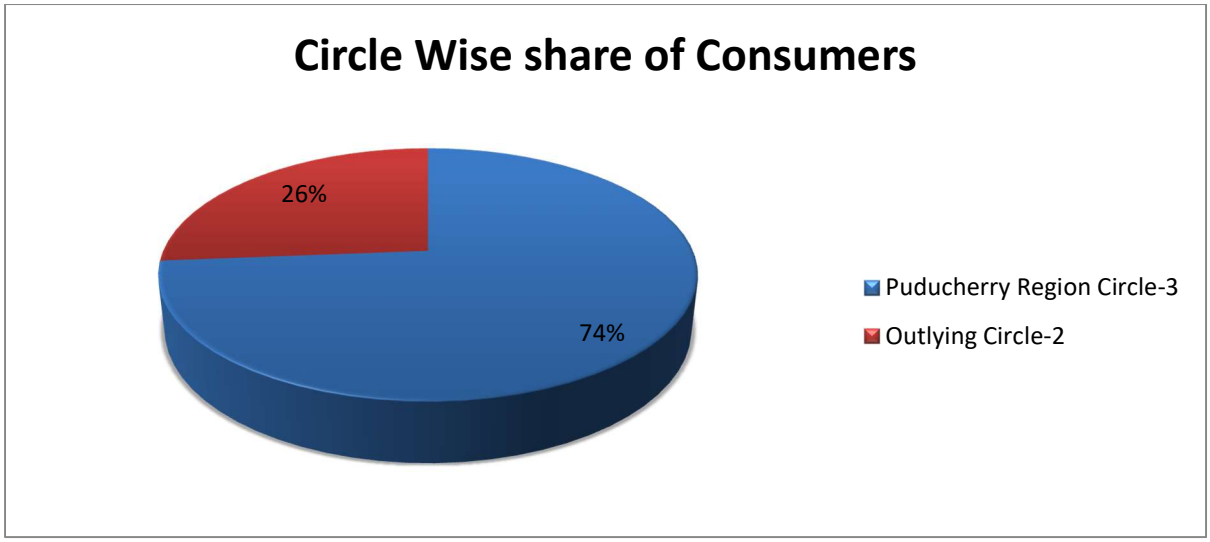
3.4 Circle-wise Performance (FY 2021-2022)

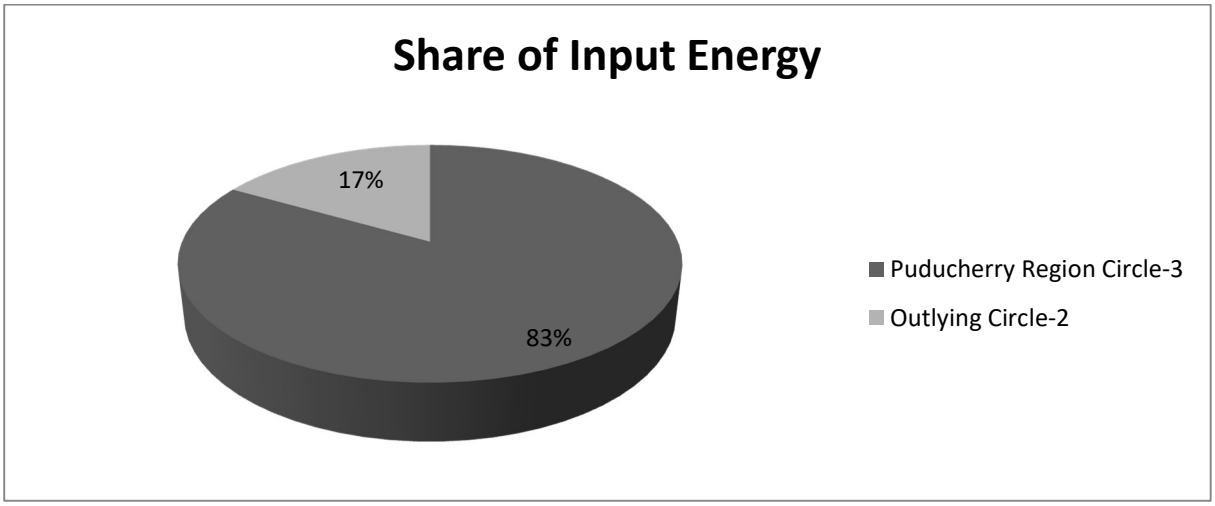
➢ Circle wise Input Energy & Total Energy

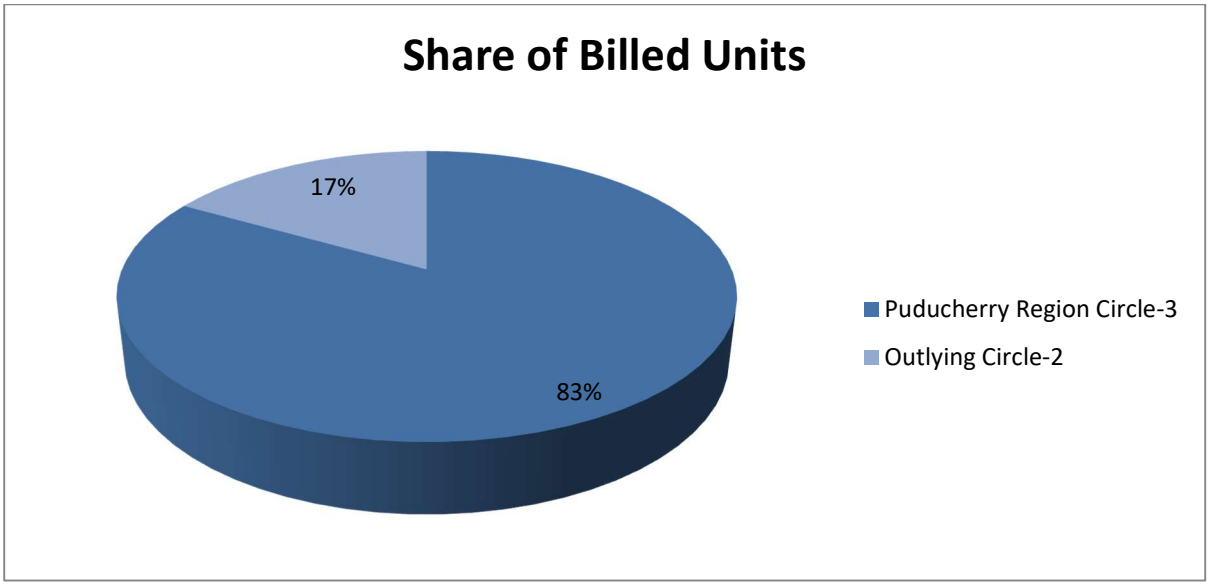
Electricity Department Puducherry, has three circles and ten numbers of division & Sixty numbers of sub division. Circle wise, Input energy (MU) & total energy (MU) is given in the table:

Circle Wise Input & Metered Energy

Circle	Total Number connections	Input energy	Total energy (MU)	D Loss (MU)
Puducherry Region Circle-3	368197	2566.6	2316.4	250.21
Outlying Region Circle-2	131097	516.36	467.23	49.13


Circle Wise share of Consumers
26%
74%
Puducherry Region Circle-3
Outlying Circle-2


Share of Input Energy
17%
83%
Puducherry Region Circle-3
Outlying Circle-2


Share of Billed Units
17%
83%
Puducherry Region Circle-3
Outlying Circle-2

➢ **Circle wise T&D and AT&C Losses**

The circle wise connected load & input energy & metered energy with transmission & distribution losses is given in following table:

T & D and AT&C Circle Wise

Circle	Input energy	Total energy (MU)	D Loss (MU)	D Loss (%)	Billed Amount (Rs Crore)	Collected Amount (Rs Crore)	Collection Efficiency	AT &C
Puducherry Region Circle-3	2566.6	2316.4	250.21	9.75%	1359.03	1282.31	94.35%	14.84%
Outlying Region Circle-2	516.36	467.23	49.13	9.51%	281.45	261.73	92.99%	15.85%

3.5 Division-wise Performance (FY 2021-2022)

➢ **Division wise energy parameters**

The total twelve numbers of divisions, the energy parameter input energy, metered energy & T & D Losses of division wise is shown in below table:

Division Wise Input, Metered Energy

Sr No	Name of Division	Total Number connections (Nos)	Input energy (MU)	Total energy (MU)
1	Puducherry	368197	2566.62	2316.41
2	Karaikal	94028	424.51	384.09
3	Mahe	18833	34.20	31.20
4	Yanam	18236	57.65	51.94
	Total	**499294**	**3082.98**	**2783.65**

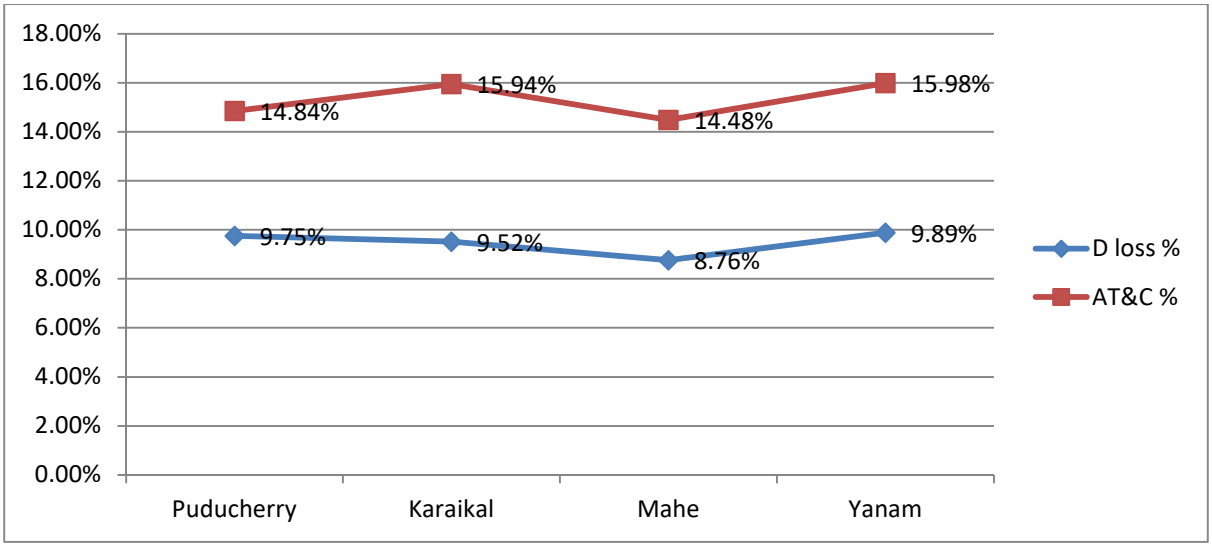
➢ **Division wise energy parameters& Losses**

The Division wise T&D Losses, Billed Amount & Collected Amount with transmission & distribution losses is given in following table

Division Wise T&D Losses & AT&C losses

Sr. No	Division	D loss (MU)	D loss (%)	Billed Amount in Rs. Crore	Collected Amount in Rs. Crore	Collection Efficiency	AT& C loss (%)
1	Puducherry	250.21	9.75%	1359.03	1282.31	94.35%	14.84%
2	Karaikal	40.42	9.52%	232.87	216.36	92.91%	15.94%
3	Mahe	3.00	8.76%	15	14.06	93.73%	14.48%
4	Yanam	5.70	9.89%	33.58	31.31	93.24%	15.98%

** Collection efficiency is more than 100 % on account of arrears, prepayment etc.*



Division wise T&D & AT&C

Electricity Department Puducherry has identified high loss feeders of high loss division, the following works were proposed under capex to bring down the losses.

a) Bifurcation of feeder by providing link lines.
b) Reconduction of old conductors by higher capacity conductors.
c) New Lines
d) Providing additional transformers.

Further to bring down the losses in high loss division and capacity additions of overload segments of the network, similar works are proposed under RDSS schemes.

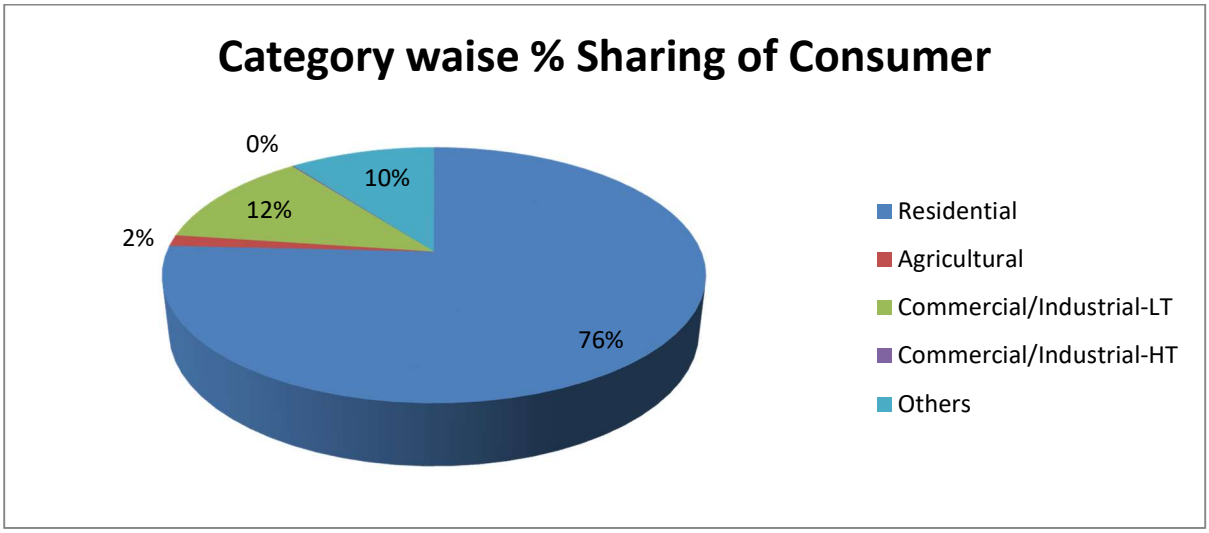
➢ Consumer Category wise energy parameters & Losses

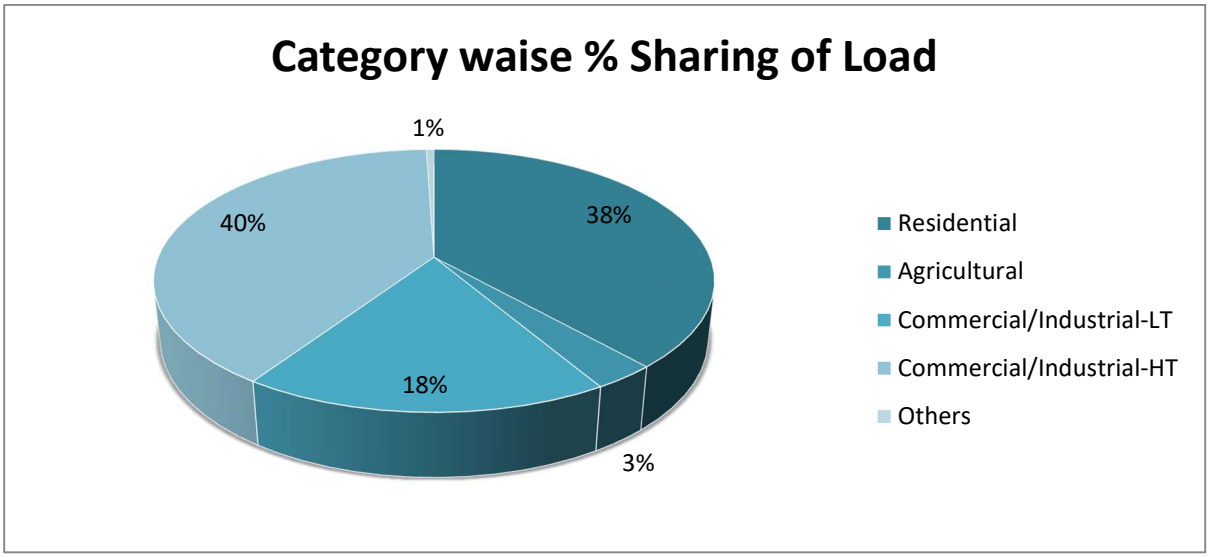
The consumer wise all the parameters like input energy, metered energy, no of consumers, billed amount, collection efficiency & AT&C losses are given in below table:

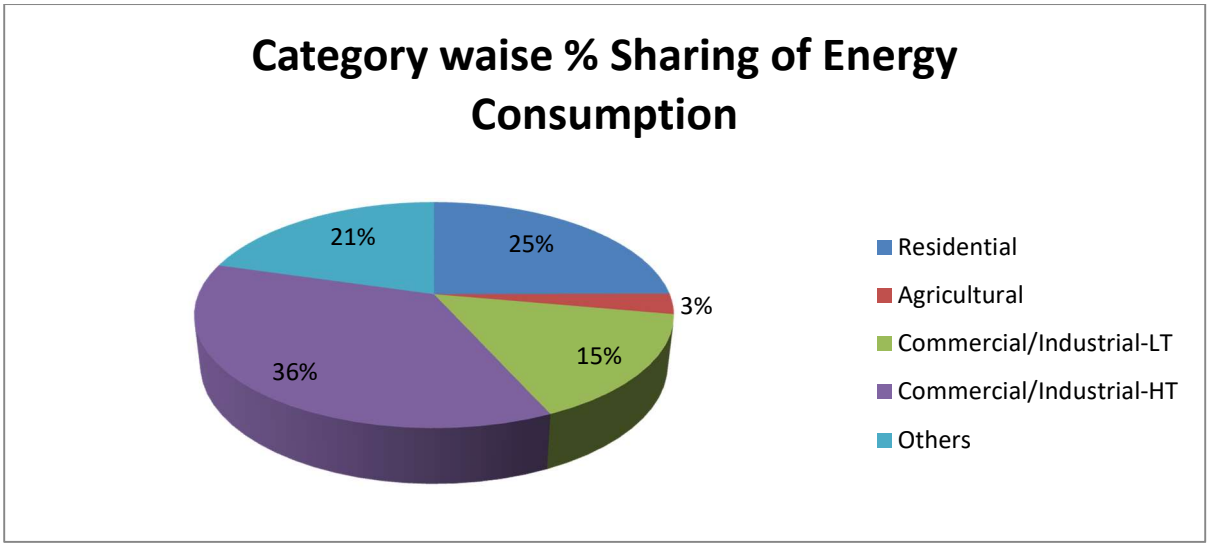
Consumer Category &AT&C Losses

Consumer category	Total Number of connections (Nos)	Total Connected Load (MW)	Input energy (MU)	Total energy	D loss (MU)
Residential	378191	650.24	3082.98	693.73	299.33
Agricultural	7056	52.47		80.97	
Commercial/Industrial-LT	61923	303.574		429.88	
Commercial/Industrial-HT	524	678.55		1007.30	
Others	51600	8.89		571.78	
	499294	1693.72	**3082.98**	2783.650	**299.33**

Consumer category	D loss (%)	Billed Amount in Rs. Crore	Collected Amount in Rs. Crore	Collection Efficiency	AT & C loss (%)
Residential	9.71%				11.05%
Agricultural					
Commercial/Industrial-LT					
Commercial/Industrial-HT					
Others					
	9.71%	**1640.48**	**2002.02**	**100.00%**	**11.05%**







3.6 Category wise Subsidy

NA

3.7 Analysis on T&D Losses and AT&C Losses

➢ **% Losses -aggregated-**

The overall technical loss (T&D Loss) is 11.05 and over all AT&C Loss is 11.05% for financial year 2021-22. This reflects an overall collection efficiency of 100%.

➢ **Division wise losses-**

The range of T&D losses, collection efficiency and AT&C losses among the divisions is tabulated below.

% Losses- Division Wise

Description	Data
D Losses	9.71%
D Losses Range	8.76% to 9.89%
Division with highest losses	Yanam
Division with lowest losses	Mahe
Collection efficiency	100.00%
AT & C Loss (%)	11.05%
AT & C Range	14.48% to 15.98%
Division with highest AT&C Losses	Yanam
Division with lowest AT&C Losses	Mahe

- **Division wise losses summary-** The following divisions of the DISCOM are having D losses more than the average value 9.71% and requires special attention.

Sr No.	Average D Loss	Divisions with More than Average D loss	T&D Loss %
1	9.71%	Puducherry	9.75%
2		Karaikal	9.52%
3		Mahe	8.76%
4		Yanam	9.89%

- **Division wise losses summary-** The following divisions of the DISCOM are having AT&C Losses more than the average value 11.05% and requires special attention.

Sr No.	Average AT&C Losses	Divisions with Less than Average AT&C Losses	AT&C Losses %
1	11.05%	Puducherry	14.84%
2		Karaikal	15.94%
3		Mahe	14.48%
4		Yanam	15.98%

Note: Actual collection efficiency 122.00% (limited to 100%), & T& D Losses is 11.05%.

- **Category wise collection efficiency-** The Category wise collection efficiency of various consumers is tabulated below.

  Category Wise Billed And collected Amount not available, Hence UT circle wise being furnished. Collection Efficiency as a whole is available.

Sr. No.	Category	Collection Efficiency
1	Residential	
2	Agricultural	
3	Commercial/Industrial-LT	
4	Commercial/Industrial-HT	
5	Others	
	Overall	=2002.02/1640.48=122%

- **Feeder Wise Input & Export Energy-** Voltage wise Feeder name input energy, & Export is tabulated below:

Voltage	Feeder Name	Meter S. No	CT/PT ratio	Import (MU)	Export (MU)
11KV	Laporte Feeder11 KV	x236668	600/1,11000/110 V	0	0

Voltage	Feeder Name	Meter S. No	CT/PT ratio	Import (MU)	Export (MU)
11KV	GH Feeder11 KV	X236664	600/1,11000/110 V	16.44	0
11KV	Kandan Feeder 11 KV	x236669	600/1,11000/110 V	0	0
11KV	Golconda feeder11 KV	x236667	600/1,11000/110 V	15.25	0
11KV	Market Feeder11 KV	x236666	400/1,11000/110 V	3.24	0
11KV	Mettakur Feeder 11 KV	x236562	150/1A,11000/110 V	4.35	0
11 KV	Savithri Nagar feeder 11KV	x236596	300/1A,11000/110 V	10.24	0
11KV	Industrial Feeder 11 KV	x236561	300/1A,11000/110 V	4	0
11KV	Kurasampeta feeder 11 KV	x236598	300/1A,11000/110 V	10.22	0
11KV	Town Feeder 11 KV	x236597	300/1A,11000/110 V	11.41	0
11KV	Kanakadurga 11 KV			0	0
11KV	Kanakalpet 11 KV	x236595	600/1A,11000/110 V	15.11	0
11KV	11KV VKR Feeder	x236560	200/1A,11000/110 V	2.24	0
11KV	Clock Tower Feeder 11 KV	x236538	300/1,11000/110 V	14.35	0
11KV	DAT feeder 11 KV	x236604	300/1,11000/110 V	11.18	0
11KV	Mandi Feeder 11 KV	x236600	300/1,11000/110 V	13.45	0
11KV	Chief Secretariat Feeder 11 KV	x236603	300/1,11000/110 V	12.9	0
11KV	Paper Mill Feeder 11 KV	x236602	300/1,11000/110 V	14.07	0
11KV	Vengatanagar Feeder 11 KV	x236537	300/1,11000/110 V	13.12	0
11KV	Brindavanam feeder 11 KV	x236554	300/1,11000/110 V	16.68	0
11KV	GRT Feeder 11 KV			15.81	0
11KV	Gingee Salai 11 KV	x236535	300/1,11000/110 V	19.92	0
11KV	Krishna Nagar 11 KV	x236550	300/1,11000/110 V	9.77	0
11KV	Muthialpet 11 KV	x236601	300/1,11000/110 V	16.97	0
11KV	Nedungadu feeder 11 KV	x236654	300/1A,11000/110 V	23.38	0
11KV	Ambagarathur feeder 11 KV	x236652	600/1A,11000/110 V	36.49	0
11KV	Ceramic feeder 11 KV	x236653	300/1A,11000/110 V	4.29	0
11KV	Industrial feeder 11 KV	x236651	600/1A,11000/110 V	8.34	0
11KV	Alloy feeder 11 KV	x236648	600/1A,11000/110 V	28.66	0
11KV	Agalankannuu feeder 11 KV	x236650	600/1A,11000/110 V	11.11	0
11KV	Thirunallar feeder 11 KV	x236647	300/1A,11000/110 V	7.71	0
11KV	Link feeder 11 KV	x236649	600/1A,11000/110 V	22.06	0
11KV	Karaikal Chlorate feeder 11 KV	x236646	300/1A,11000/110 V	19.56	0
11KV	Melakasakudy feeder 11 KV	x236645	400/1A,11000/110 V	7.14	0

Voltage	Feeder Name	Meter S. No	CT/PT ratio	Import (MU)	Export (MU)
11KV	Station 11KV			0.05	0
11KV	PPCL 11 KV	x236551	400/1A,11000/110 V	0	0
11KV	INDUSTRIAL 11 KV	x236552	400/1A,11000/110 V	9.79	0
11KV	VANJUR 11 KV	x236545	400/1A,11000/110 V	2.42	0
11KV	Karaikal Town feeder 11 KV	x236549	400/1A,11000/110 V	29.08	0
11KV	INTERLINK 11 KV	x236547	400/1A,11000/110 V	12.98	0
11KV	POLAGAM 11 KV	x236548	400/1A,11000/110 V	4.95	0
11KV	ALLOY 11 KV	x236553	400/1A,11000/110 V	8.2	0
11KV	STEEL 11 KV	x236546	400/1A,11000/110 V	18.24	0
11KV	LINK 11 KV (Mandapathur)	x236656	300/1A,11000/110 V	10.57	0
11KV	TOWN 2 - 11 KV	x236662	300/1A,11000/110 V	22.11	0
11KV	TOWN 1 - 11 KV	x236660	300/1A,11000/110 V	13.86	0
11KV	POOVAM 11 KV	x236658	300/1A,11000/110 V	24.29	0
11KV	KEEZHKASAKUDY 11 KV	x236661	300/1A,11000/110 V	18.37	0
11KV	TOWN 3 - 11 KV	x236663	300/1A,11000/110 V	11.01	0
11KV	Town North			14.91	0
11KV	TOWN 4 - 11 KV			3.75	0
11KV	SPINNING MILL -11 KV	xD452858	200/5,11000/110 V	6.72	0
11KV	MAHE - 11 KV	x236686	200/5,11000/110 V	12.78	0
11KV	PANDAKKAL - 11 KV	x236683	200/5,11000/110 V	8.04	0
11KV	CHALAKKARA - 11KV	x236681	200/5,11000/110 V	4.56	0
11KV	East Palloor	x236688	200/5,11000/110 V	2.04	0
11KV	AUX - 11 KV	x236687	200/5,11000/110 V	14.93	0
57 Nos				673.11	

Voltage	Feeder Name	Meter S. No	CT/PT ratio	Import (MU)	Export (MU)
22KV	Nellithope feeder 22 KV	x236639	400/1,22000/110 V	41.37	0
22KV	Ariyankuppam feeder22 KV	x236574	400/1,22000/110 V	63.18	0
22KV	Mill Feeder 22 KV	x236520	300/1,22000/110 V	26.1	0
22KV	Raj Nivas feeder22 KV	x236524	400/1,22000/110 V	7.07	0
22KV	Town feeder22 KV	x236521	300/1,22000/110 V	17.87	0
22KV	Amaravathy feeder22 KV	x236573	400/1,22000/110 V	32.43	0
22KV	New Feeder 22 KV	x236522	400/1,22000/110 V	5.72	0

Voltage	Feeder Name	Meter S. No	CT/PT ratio	Import (MU)	Export (MU)
22KV	Pillaithottam feeder22 KV	x236523	300/1,22000/110 V	42.13	0
22KV	Marapalam Feeder 22 KV	x236623	300/1,22000/110 V	42.54	0
22KV	Kanuvapet Feeder 22 KV	x236622	300/1,22000/110 V	19.56	0
22KV	Agaram Feeder 22 KV	KA100158	300/1,22000/110 V	33.12	0
22KV	Sedarapet Interlinking feeder 22 KV	x236620	300/1,22000/110 V	44.67	0
22KV	Industrial feeder22 KV	x236621	300/1,22000/110 V	26.65	0
22KV	Pandasozhanallur Feeder 22 KV	x236615	400/1,22000/110 V	18.97	0
22KV	Mittal Feeder 22 KV	x236614	400/1,22000/110 V	57.41	0
22KV	Industrial Feeder 22 KV	x236612	400/1,22000/110 V	6.79	0
22KV	Steel Mill 22 KV	x236611	400/1,22000/110 V	20.69	0
22KV	Bahour Feeder 22 KV	x236515	400/1,22000/110 V	26.05	0
22KV	Thavalakuppam Feeder 22 KV	x236610	400/1,22000/110 V	0	0
22KV	Paper Mill Feeder 22 KV	x236613	400/1,22000/110 V	33.88	0
22KV	Pillaichavady Feeder22 KV	x236544	300/1,22000/110 V	19.37	0
22KV	Kazhuperumpakkam feeder22 KV	x236519	300/1,22000/110 V	0	0
22KV	Alankuppam Feeder 22 KV	x236517	300/1,22000/110 V	5.77	0
22KV	Kanaga chettiukulam 22 KV	x236608	300/1,22000/110 V	50.42	0
22 KV	University 22 KV	x0236673	300/1,22000/110 V	6.73	0
22KV	Kurumbapet Interlinking 22 KV	x236635	300/1,22000/110 V	0	0
22KV	Kurumbapet feeder22 KV	x236526	400/1,22000/110 V	49.14	0
22 KV	Karuvadikuppam 22 Kv		400/1,22000/110 V	28.52	0
22KV	JIPMER feeder22 KV (old)	x236618	400/1,22000/110 V	41.91	0
22KV	Lawspet feeder22 KV	x236527	300/1,22000/110 V	39.3	0
22KV	ECR feeder22 KV	x236617	400/1,22000/110 V	37.43	0
22KV	New Jipmer feeder22 KV	x236567	400/1,22000/110 V	25.42	0
22KV	Moolakulam 22 KV	x236525	400/1,22000/110 V	60.11	0
22KV	PIPDIC -I Feeder 22 KV	x236616	400/1,22000/110 V	46.52	0
22KV	PIPDIC -II Feeder22 KV	x236565	400/1,22000/110 V	4.92	0
22KV	Sedarapet Feeder 22 KV	x236619	400/1,22000/110 V	26.89	0
22KV	Industrial Feeder 22 KV	x236572	400/1,22000/110 V	35.12	0
22KV	Villianur Interlinking Feeder 22 KV	x236631	400/1,22000/110 V	10.64	0
22KV	Abishegapakkam 22 KV	x236636	400/1,22000/110 V	13.68	0
22KV	Mangalam Feeder 22 KV	x236571	400/1,22000/110 V	53.8	0

Voltage	Feeder Name	Meter S. No	CT/PT ratio	Import (MU)	Export (MU)
22KV	Embalam 22 KV	x236570	400/1,22000/110 V	50.41	0
22KV	Manalmedu feeder 22 KV	x236605	300/1,22000/110 V	21.61	0
22KV	Motchakulam 22 KV	x236568	300/1,22000/110 V	0	0
22KV	Madukarai Feeder 22 KV	x236609	300/1,22000/110 V	14.84	0
22KV	Industrial 1 Feeder 22 KV	x236542	300/1,22000/110 V	29.05	0
22KV	Industrial 2 Feeder 22 KV	x236606	300/1,22000/110 V	15.6	0
22KV	Snam Alloys Feeder 22 KV	x236543	300/1,22000/110 V	33.26	0
22KV	Pushpit Feeder 22 KV	x236607	400/1,22000/110 V	23.39	0
22KV	Thirubhuvanai Interlink Feeder 22 KV	x236569	400/1,22000/110 V	19.56	0
22KV	Rampakam feeder 22 KV			0	0
22KV	Industrial 1 Feeder 22 KV	x236557	400/1,22000/110 V	17.02	0
22KV	Kalitheerthalkuppam 22 KV	x236534	300/1,22000/110 V	17.78	0
22KV	Industrial 2 Feeder 22 KV	x236530	300/1,22000/110 V	51.67	0
22KV	Industrial 3 Feeder 22 KV			28.49	0
22KV	Eripakkam interlinking feeder 22 KV	x236532	400/1,22000/110 V	40.18	0
22KV	P.S.Pallayam 22 KV	x236531	300/1,22000/110 V	26.53	0
22KV	Sellipet 22 KV	x236555	300/1,22000/110 V	45.81	0
22KV	Station Aux			0.07	
22KV	Spare			5.04	
22KV	L.R.Palayam 22 KV	x236671	300/1,22000/110 V	6.82	0
22KV	Manalipet 22 KV	x236672	300/1,22000/110 V	17.36	0
22KV	Vadanur 22 KV	x236558	300/1,22000/110 V	10.29	0
22KV	Industrial Feeder 22 KV	x236556	300/1,22000/110 V	0	0
22KV	Interlinking Feeder 22 KV	x236559	300/1,22000/110 V	4.68	0
22KV	BALLARPUR 22 KV	x236670	400/1,22000/110 V	39.79	0
22KV	KATTERIKUPPAM 22 KV	x236541		0	0
22KV	KURUMBAPET 22 KV	x236633	300/1,22000/110 V	23.99	0
22KV	PIPDIC - II 22 KV	x236632	300/1,22000/110 V	29.71	0
22KV	PIPDIC - I 22 KV	x236630	300/1,22000/110 V	15.52	0
22KV	V S K 22 KV	x236540	300/1,22000/110 V	0	0
22KV	Pathukannu 22 KV	x236634	400/1,22000/110 V	9.7	0
22KV	Muthialpet 22 KV	xB464429	200/1,22000/110 V	24.07	0
22KV	Uppar 22 KV	xB464431	200/1,22000/110 V	24.91	0

Voltage	Feeder Name	Meter S. No	CT/PT ratio	Import (MU)	Export (MU)
22KV	Villianur Interlinking Feeder 22 KV	x381284	400/1,22000/110 V	23.25	0
22KV	Sedarapet Interlinking feeder 22 KV	x381296	400/1,22000/110 V	37.86	0
22KV	Industrial 22 KV	x381285	400/1,22000/110 V	34.71	0
22KV	Pillayarkuppam 22KV			0	0
77 Nos				1865	

Voltage	Feeder Name	Meter S. No	CT/PT ratio	Import (MU)	Export (MU)
33KV	Adivipulam-33KV Line-1	x621354	500/1A,11000/110 V	0	0
33KV	Adivipulam-33KV Line-2			0	0
110 KV	All EHT feeders			544.99	0

3.8 Unit wise Performance

Electricity Department Puducherry, supplies power to three circle of UT of Puducherry. PED has total three circles, ten divisions and there are following category in which the energy consumption is divided Residential, agriculture, Commercial & others. The performance of all the division are shown in below table:

S. No	Name of circle	Name of Division	Consumer category	Total Number of connections	Input energy	Total energy	% of energy consumption	T&D loss	T&D loss	Billing efficiency	Billed Amount in Rs. Crore	Collected Amount in Rs. Crore	Collection Efficiency	AT & C loss
				(Nos)	(MU)			(MU)	(%)					(%)
1	Circle-1	Puducherry	Residential	286384	2566.62	532.93	23.01%	250.21	9.75%					
			Agricultural	6178		71.98	3.11%							
			Commercial/Industrial-LT	42572		368.15	15.89%							
			Commercial/Industrial-HT	420		832.76	35.95%							
			Others	32643		510.6	22.04%							
Sub-total				**368197**	**2566.62**	**2316.41**	**100%**	**250.21**	**9.75%**	**90.25**	**1359.03**	**1282.31**	**94.35%**	**14.84**
2	Circle-2	Karaikal	Residential	67387	424.51	118.1	30.75%	40.42	9.52%					
			Agricultural	818		8.94	2.33%							
			Commercial/Industrial-LT	12569		39.96	10.40%							
			Commercial/Industrial-HT	71		158.86	41.36%							
			Others	13183		58.23	15.16%							
Sub-total				**94028**	**424.51**	**384.09**	**100%**	**40.42**	**9.52%**	**90.48**	**232.87**	**216.36**	**92.91%**	**15.94**
3	Circle-2	Mahe	Residential	10736	34.2	21.19	67.92%	3	8.76%					
			Agricultural	3		0	0.00%							
			Commercial/Industrial-LT	4928		7.82	25.07%							
			Commercial/Industrial-HT	4		1.75	5.61%							
			Others	3162		0.44	1.40%							
Sub-total				**18833**	**34.2**	**31.2**	**100%**	**3**	**8.76%**	**91.24**	**15**	**14.06**	**93.73%**	**14.48**
4	Circle-2	Yanam	Residential	13684	57.65	21.51	41.40%	5.7	9.89%					

S. No	Name of circle	Name of Division	Consumer category	Total Number of connections	Input energy	Total energy	% of energy consumption	T&D loss	T&D loss	Billing efficiency	Billed Amount in Rs. Crore	Collected Amount in Rs. Crore	Collection Efficiency	AT & C loss
				(Nos)	(MU)			(MU)	(%)					(%)
			Agricultural	57		0.04	0.08%							
			Commercial/Industrial-LT	1854		13.95	26.85%							
			Commercial/Industrial-HT	29		13.93	26.83%							
			Others	2612		2.51	4.83%							
Sub-total				**18236**	**57.65**	**51.94**	**100%**	**5.7**	**9.89%**	**90.11**	**33.58**	**31.31**	**93.24%**	**15.98**

Name of Division	Consumer category	Total Number of connections (Nos)	Total Connected Load (MW)	Input energy (MU)	Total energy	T&D loss (MU)	T&D loss (%)	Billing efficiency	Billed Amount in Rs. Crore	Collected Amount in Rs. Crore	Collection Efficiency	AT & C loss (%)
U.T of Puducherry	Residential	378191	650.24	3082.98	693.73	299.33	10%		0	0	0.00%	
	Agricultural	7056	52.47		80.97				0	0	0.00%	
	Commercial/Industrial-LT	61923	303.574		429.88				0	0	0.00%	
	Commercial/Industrial-HT	524	678.55		1007.30				0	0	0.00%	
	Others	51600	8.89		571.78				0	0	0.00%	
Sub-total		**499294**	**1693.72**	**3082.98**	**2783.650**	**299.33**	**9.71%**	**90.29**	**1640.48**	**2002.02**	**100.0%**	**9.71%**

Note:1. Rs.440 Crores received from Government of Puducherry towards Government Department arrears.

Note:2. Four regions namely Puducherry, Karaikal, Mahe & Yanam called in two circle Cilrcle 1- Puducherry Region alone and Circle -2 contains Karaikal, Mahe and Yanam region. All four regions combined called UT of Puducherry.

Note:3. Region wise connected load is not available Hence UT connected load is being furnished.

Note:4. Category Wise Billed And collected Amount not available, Hence UT circle wise being furnished.

3.9 Energy Conservation measures already taken & proposed for Future

At present the ratio of HT: LT ratio is 1:1.5 and on implementation of RDSS scheme (Loss Reduction Program) for an amount of sanction Rd.83.21 CRs it is expected the HT: LT ratio will come down to progressively to 1:1.4 ratio by the end of the year 2024-25.The technical loss under LT distribution will come down considerably.

Similarly under Smart Prepaid Metering Project through RDSS scheme, it is proposed to provide Smart pre-paid Energy meters to all class of consumers at the UT of Puducherry through M/s.PFC Consulting Limited (PFCCL) under TOTEX model. On implementation of the scheme, real time energy flow could be observed and the commercial loss pockets could be identified through software and therefore significant reduction in commercial loss could be achieved by the department by the end of 2024-25.

The details of anticipated progressive reduction in AT&C loss by end of FY-2024-25 is detailed below:

S.No	Result Parameter	**AT&C loss Trajectory under RDSS**		
		FY23	FY24	FY25
1	AT&C Loss	16.50%	14.00%	11.56%

3.10 Critical Comments

The Concept of Aggregate Technical & Commercial losses provides a realistic picture of loss situation in the context it is measured. It is combination of energy loss (Technical loss + Theft + inefficiency in billing) & Commercial loss (Default in payment + inefficiency in collection)

Transmission & Distribution losses (T&D losses)

T& D Losses = {1- (Total energy Billed/ Total energy Input in the system)} x 100

Aggregate technical and commercial losses (AT&C losses)

AT&C Losses = {1- (Billing Efficiency x Collection Efficiency)} x 100

where, Billing efficiency= Total unit Billed/ Total unit Inputs

Collection efficiency = Revenue collected / Amount Billed

It is a well-known and acknowledged fact that distribution is the most risk prone segment and weakest link of the entire value chain of power sector, which has also been recognized in the National Electricity Policy. Apart from meeting high consumer expectations in terms of services provided and universal service obligation, the most

challenging task of a distribution licensee is containing the losses in its system. Losses arise both as a natural phenomenon in the network (technical losses) and also due to unauthorized consumption by some consumers of the distribution licensee (commercial losses).

The overall average T & D Losses & AT & C Losses of the PED, are 11.05% & 11.05% in the year of FY 2021-22.

DISCOM T & D Losses computation approach

Transmission losses = Total Energy Purchased - Total Energy Sale - Total Input

Transmission losses (MU)	Value
Total Energy Purchased	3231.04
Total Energy Sale	2783.65
Transmission losses	345.84
Total Input	3129.49
Transmission losses (%)	2.95

3.11 Inclusion & Exclusions

Not applicable

3.12 Detailed Formats to be annexed

An annual energy audit checklist is used to assess the energy efficiency of PED based on equipment, appliances, design, and usage. Accredited Energy Audit for develops this checklist to identify opportunities for energy cost reduction and recommend solutions.

Documentary evidence for T & D system related data voltage-wise energy input data, sale data, feeder-wise loss data, collection efficiency etc.

► List of Measures adopted for energy conservation and quantity of energy saved with proper document support.

► Checking & verification of over loading of feeders at Substation level either by the study of SCADA system or by the log book

- Month wise input and billed energy.
- T&D losses computation approach.
- Un-metered energy consumption approach.
- Internal field audit report of input and billed energy.

- Performance of discom on distribution losses.
- Outcome of internal filed audit.
- Measures taken to reduce losses and improve losses.
- Zone/circle/Division/Sub-division wise loss computation.
- Reduction achieved, measures adopted for energy conservation and quantity of energy saved.
- Report on distribution losses.
- Write up on energy scenario.
- Net Input Energy Computation Details.
- Category wise consumer's details.
- Category wise consumers connected load and % load
- Division wise subsidy details.
- Bifurcation of Billed Energy (metered billed energy and unmetered billed energy).

IV Note of the EA/EM along with queries & replies to data gaps

Electricity Department Puducherry has T&D losses 11.05% which is good. AT&C losses 11.05% which is good for Discom sector. Various schemes have been implemented by PED to reduce losses.

Feeder-wise/unit-wise losses are not available due to:

I. The entire EHT/HT/LT system is in Ring Main. For ring-main connectivity, the electrical connection keeps changing in fault conditions, maintenance purpose and optimization of asset. Thus, feeder-wise energy accounting will not be correct; it is calculated as a whole.
II. 100% consumer indexing is not in place; thus, feeder wise /DTR wise energy accounting or loss calculation is not possible.
III. PED operates in small area comprising of single unit. Thus, loss of entire unit is given. However, from FY 2021-2022 onwards, unit wise loss can be provided by dividing the licensed area in units/divisions by proper arrangement at our end.
IV. PED is having the following documents for purchase power, Input/Billed energy i.e. Internal Departmental Report, Petition & billing software database. Also supporting documents for the same has been provided which is attached in annexure of report.
V. Rs.440 Crores received from Government of Puducherry towards Government Department arrears.
VI. Four regions namely Puducherry, Karaikal, Mahe & Yanam called in two circle Circle 1- Puducherry Region alone and Circle -2 contains Karaikal, Mahe and Yanam region. All four regions combined called UT of Puducherry.
VII. Region wise connected load is not available Hence UT connected load is being furnished.
VIII. Category wise Billed amount & collected Amount is not available, Hence UT has provided the amount as a whole (Circle wise).
IX. Month wise billed and input energy is not available. Hence UT has provided the total Billed and input energy from book of account.

Designated Consumer has T&D losses 11.05% & AT&C losses 11.05%. Various schemes have been implemented by DC to reduce losses which are shown in annual report and attached in the annexure of report.

V. Annexures

5.1 Introduction to verification firm

We A-Z Energy Engineers Pvt. Ltd. provides consultancy services in the areas of energy management while conducting Energy Audits in all segments of energy input. For conducting Detailed Energy Audits, Energy Audits under PAT (Mandatory and M&V), we have a pool of experienced BEE Accredited & Certified Energy Auditors, Electrical Engineers, Mechanical Engineers and Technicians having experience of more than 30 years. The Energy Audits is being carried out with sophisticated instruments namely Power-Analyzer, Flue Gas Analyzer, Ultra-sonic flow meter, Techo-meter, Anemometer, Hego-Meter, Digital Thermometer, Thermographic Camera's, Lux Meter, Leak detectors. Laser gun etc.

Objective

- To carry out and take ahead the business of Energy Efficiency and climate change including promotion and dissemination of energy efficient product and services.
- To disseminate the culture of safe manufacturing and Services through safety audits and trainings.
- To facilitate implementation of energy efficiency projects for Demand Side Measures including optimization of energy mix for industries, railways, building sector, lighting, HVAC etc.
- To facilitate implementation of schemes, programs and policies of central and state governments or its agencies applicable for enhancing energy efficiency.
- To provide consultancy services in the field of Clean Development Mechanism and Renewable Energy Certificate projects, Carbon Markets, Demand Side Management, Energy Efficiency, Climate change and other related areas.
- To identify and impart training to build the capacity of stakeholders in the field of Energy Efficiency and safe practices in Industry.
- To act as a resource center in the field of Energy Efficiency and take up the activities of Capacity Building Training and other related activities.

Vision

- To make use of energy sustainable.
- To create and sustain markets for energy efficiency in India
- To facilitate energy efficiency improvement through private sector investments in energy efficiency.

Mission

- To assist all stakeholders in implementing energy efficiency and realizing savings.

- ❖ To create awareness regarding merits of improvement of energy efficiency and safety practices in private and public sector.

We are Accredited Energy Auditor from BEE, also empanelled by BEE for PAT M & V Audits and Mandatory Energy Audit Projects. A-Z Energy Engineers Pvt. Ltd. has been short listed by Bureau of Energy Efficiency as an Energy Service Company (ESCO), it is an ISO 9001:2015 certified company. We have completed more than 1260 nos. projects, including 52 PAT projects

Dr. P.P. Mittal the Founder Director of A-Z Energy Engineers Pvt. Ltd. was awarded by Govt. of India in National Energy Conservation Award 2013, 2015 & 2016. MSME Ministry Govt. of India awarded "Best Services Providing Company" it was awarded by Hon'ble Prime Minister of India. Dr. P.P. Mittal, also received the "Energy Engineer" of South-East Asia Sub-continent award 2016 & 2018 at Washington DC & Charlotte USA respectively. Haryana Govt. also recognized the services of Dr. P.P. Mittal, Ph.D, MBA, Post Graduate Diploma in Power Distribution, Chartered Engineer, Leed Auditor - Indian Green Building Council Hyderabad, Accredited Energy Auditor (AEA-011).

Accolades

- Stand first in MSME Micro Services Award 2013 and award received from **Hon'ble Prime Minister of India on 18/10/2016 at Ludhaiana.** This award consist Trophy, Certifiate & cash prize of Rs. 3 lacs.
- Reveived prestigious "**Legend in Energy**" Award for Asian Sub-contitnet from AEE, Atlanta at Wahington, DC on 20/09/2016.
- Received Award from AEE Atlanta at Washington citing as "Energy Engineer–2016 & 2018" of South-East Aisa sub-continent
- Received Letter of appreciateion from **Chief Minister of Haryana**
- Winner Haryana State Energy Conservation Award 2012 with Certificate & Rs. 50,000/-
- National Energy Conservation Award 2013
- National Energy Conservation Award 2015
- National Energy Conservation Award 2016
- Appreciation from Sh. Kalraj Misra, Hon'ble Minister of State for MSME.
- Recevied Appreciation from Sh. Haribahi Parathibhai Chaudhary, Minister of State for MSME, Govt. of India
- Recevied Appreciation from Sh. K.K. Jalan, IAS Seecretary, MSME
- Received appcreciation from Sh. Devender Singh, IAS, Secretary Power, Haryana
- Recevied Appreciation from Institute of Engineers on Energy Day

- Received Appreciation from HAREDA, Chandigarh
- Received feedback & appreciation from 400 units including CERC, UNDP & CAG

I. Name of the Firm

Name of Accredited Firm	Accredited Energy Auditor
A-Z Energy Engineers Pvt. Ltd. Darya Ganj New Delhi-110002	Dr. P PMittal :– AEA 0011 Registration Number:– EmAEA-0024

II. Composition of Team

Sr. No.	Name	Qualification	EM/EA/AEA/EmAEA Registration No	Experience (In Years)/ Sector
Team Leader				
1	Dr. P.P Mittal	Ph.D, MBA	AEA-011	+45 Years
Sector Expert				
2	Mr. ViponChanda	DISCOM Sector	-	30 Years
Team Members				
3	Mr. V.P Sharma	B. Tech	EA- 10061	32 Years
4	Mr.Alok Kumar Tiwari	B.Tech	EM-300137	6 Years
5	Mr. Pankaj Chauhan	Team Member	-	8 Years

III. Registration No.

EmAEA – 0024

IV. Undertaking from EmAEA

We A-Z Energy Engineers Pvt. Ltd. hereby confirms that our AEA and all other audit team members mentioned in this report has conduct mandatory annual energy audit (Accounting) for Electricity Department Puducherry (hereafter called as DC).

We also confirm that none of our team member was in the employment of the DC within the previous four years, and was not involved in undertaking energy audit of the DC within the previous four years.

Authorised Signatory

(Dr. P.P. MITTAL)

Director

5.2 Minutes of Meeting with the Discom.

Minutes of Meeting with Electricity Department Puducherry., Puducherry & A-Z Energy Engineers Pvt. Ltd., New Delhi

Electricity Department Puducherry. AZ Energy Engineers Pvt. Ltd.

AZ Energy Engineers audit team visited the site on Month of December and conduct the energy audit accounting with reference to the Electricity department Puducherry work order dated 18th Nov 2022 and notification from the Bureau of Energy Efficiency dated 6th October 2021 for Conduct of Energy Audit (Accounting) in Electricity Distribution Companies).

Following are the key observations during audit.

- Filled in proforma (Region wise) for FY 2021-22 was filled with PED available & Audit team.
- Client has provided the following documents for Purchase input Energy i.e. Government Approved bills copy & Internal Department Sheet.
- Client has provided details for action plan to reduce losses
- Verified T&D losses, AT&C losses & Collection Efficiency is 11.05%, 11.05% & 122% respectively based on the filled in proforma and verified source documents.
- Rs.440 Crores received from Government of Puducherry towards Government Department arrears.
- Region wise connected load is not available Hence UT connected load is being furnished.
- Month wise breakup & Category Wise Billed And collected Amount not available, Hence UT circle wise being furnished.
- Feeder wise /DTR wise energy accounting or loss calculation is not provided.

- Month wise billed and input energy is not available. Hence UT has provided the total Billed and input energy from book of account.

Electricity Department Puducherry.

M. RAMESH
EXECUTIVE ENGINEER - GENERAL
GENERAL DIVISION
ELECTRICITY DEPARTMENT
PUDUCHERRY.

AZ Energy Engineers Pvt. Ltd.

5.3 Check List prepared by EM/AEA

An annual energy audit checklist is used to assess the energy efficiency of PED based on equipment, appliances, design, and usage. Accredited Energy Audi tor develops this checklist to identify opportunities for energy cost reduction and recommend solutions.

Documentary evidence for T & D system related data voltage-wise energy input data, sale data, feeder-wise loss data, collection efficiency etc.

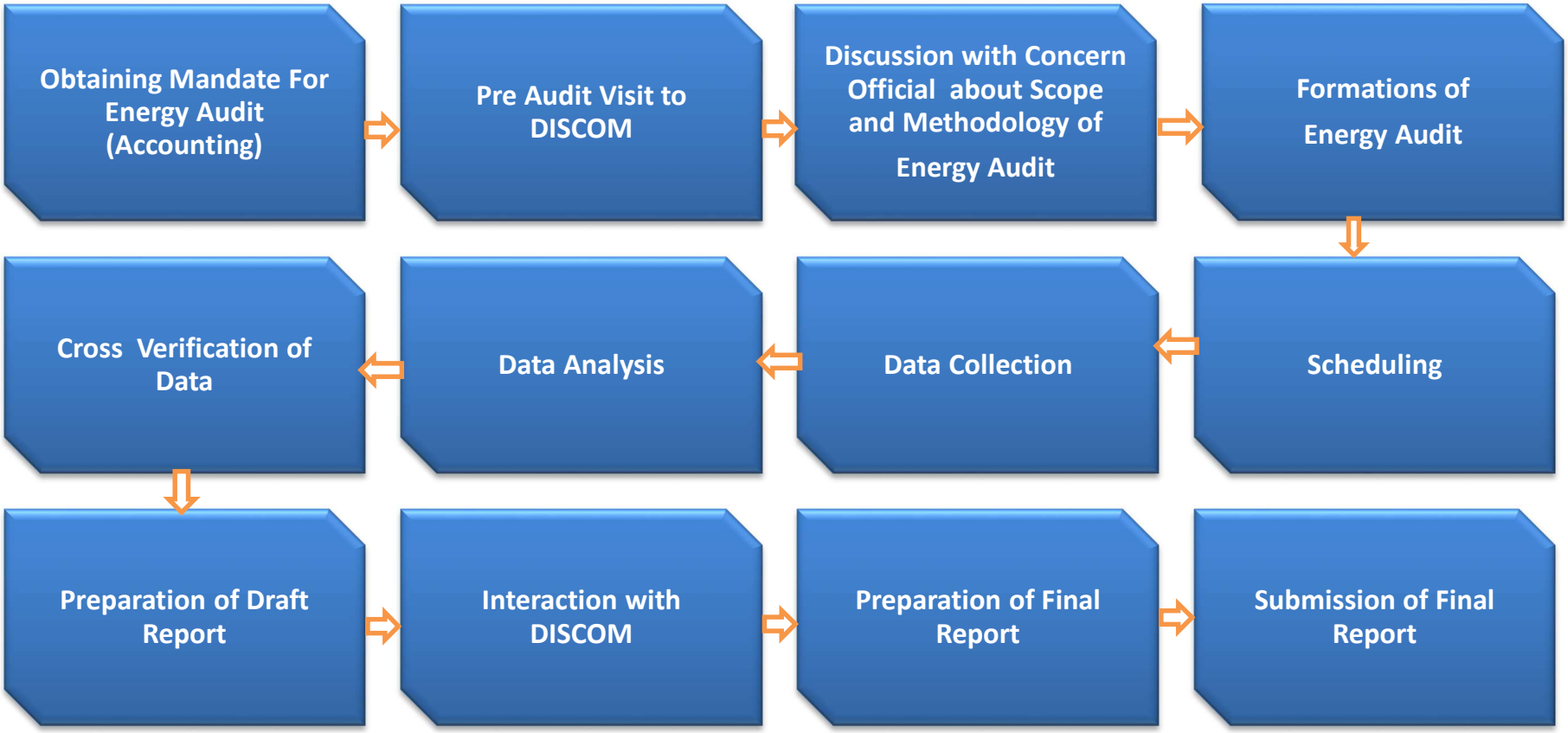
► List of Measures adopted for energy conservation and quantity of energy saved with proper document support.

► Checking & verification of over loading of feeders at Substation level either by the study of SCADA system or by the log book

- Month wise input and billed energy.
- T&D losses computation approach.
- Un-metered energy consumption approach.
- Internal field audit report of input and billed energy.
- Performance of discom on distribution losses.
- Outcome of internal filed audit.
- Measures taken to reduce losses and improve losses.
- Zone/circle/Division/Sub-division wise loss computation.
- Reduction achieved, measures adopted for energy conservation and quantity of energy saved.
- Report on distribution losses.
- Write up on energy scenario.
- Net Input Energy Computation Details.
- Category wise consumer’s details.
- Category wise consumers connected load and % load
- Division wise category wise consumer’s subsidy details.
- Bifurcation of Billed Energy (metered billed energy and unmetered billed energy).

5.4 Brief Approach, Scope & Methodology for audit

Scope of annual energy accounting is as per guidelines and notification from BUREAU OF ENERGY EFFICIENCY, New Delhi dated 6th October, 2021



5.5 Infrastructure Details

Infrastructure details

1	Parameters	Total	Covered during in audit	Verified by Auditor in Sample Check	
i	Number of circles	3	3		
ii	Number of divisions	10	10		
iii	Number of sub-divisions	60	60		
iv	Number of feeders	126	126		
v	Number of DTs	3123	3123		
vi	Number of consumers	499294	499293		
2	**Parameters**	**66kV and above**	**33kV**	**11/22kV**	**LT**
a. i.	Number of conventional metered consumers	0			
ii	Number of consumers with 'smart' meters	0			31500
iii	Number of consumers with 'smart prepaid' meters	0			
iv	Number of consumers with 'AMR' meters	8	0	0	0
v	Number of consumers with 'non-smart prepaid' meters	0	0	524	451416
vi	Number of unmetered consumers				15846
vii	**Number of total consumers**	8		524	498762
b.i.	Number of conventionally metered Distribution Transformers	0			
ii	Number of DTs with communicable meters	2645			
iii	Number of unmetered DTs	467			
iv	**Number of total Transformers**	3112			
c.i.	Number of metered feeders	0	2	124	5290
ii	Number of feeders with communicable meters	0	2	124	
iii	Number of unmetered feeders	0	0	0	
iv	**Number of total feeders**	0	2	124	5290
d.	Line length (ct km)	6319.857			
e.	Length of Aerial Bunched Cables	0			
f.	Length of Underground Cables	994.246			

3	Voltage level	Particulars	MU	Reference	Remarks (Source of data)
I	230 kV	Long-Term Conventional	3231.04	Includes input energy for franchisees	Includes long term conventional power and Puducherry owned Power generation (PPCL)
		Medium Conventional	NA		
		Short Term Conventional	NA		
		Banking	NA		
		Long-Term Renewable energy	NA		
		Medium and Short-Term RE	NA	Includes power from bilateral/ PX/ DEEP	
		Captive, open access input	NA	Any power wheeled for any purchase other than sale to DISCOM. Does not include input for franchisee.	
		Sale of surplus power			
		Quantum of inter-state transmission loss	101.74	As confirmed by SLDC, RLDC etc	
		Power procured from inter-state sources	3,231.04	Based on data from Form 5	
		Power at state transmission boundary	3,129.30		
ii	33kV	Long-Term Conventional			
		Medium Conventional	0		
		Short Term Conventional			
		Banking	0		
		Long-Term Renewable energy	0		
		Medium & Short-Term RE	0		
		Captive, open access input			
		Sale of surplus power			
		Quantum of intra-state transmission loss	0		
		Power procured from intra-state sources	0		
iii		**Input in DISCOM wires network**	3,129.30		
iv	33 kV	Renewable Energy Procurement	0		
		Small capacity conventional/ biomass/ hydro plants Procurement			

		Captive, open access input	0		
v	11 kV	Renewable Energy Procurement			
		Small capacity conventional/ biomass/ hydro plants Procurement			
		Sales Migration Input			
vi	LT	Renewable Energy Procurement			
		Sales Migration Input			
vii		**Energy Embedded within DISCOM wires network**	0		
viii		**Total Energy Available/ Input**	3,129		
4	**Voltage level**	**Energy Sales Particulars**	**MU**	**Reference**	
i	LT Level	DISCOM' consumers	1,231.65	Include sales to consumers in franchisee areas, unmetered consumers	
		Demand from open access, captive		Non DISCOM's sales	
		Embedded generation used at LT level		Demand from embedded generation at LT level	
		Sale at LT level	1,231.65		
		Quantum of LT level losses	283		
		Energy Input at LT level	1,514.94		
ii	22/11 kV Level	DISCOM' consumers	1,007.01	Include sales to consumers in franchisee areas, unmetered consumers	
		Demand from open access, captive	0	Non DISCOM's sales	
		Embedded generation at 11 kV level used	0	Demand from embedded generation at 11kV level	
		Sales at 22/11 kV level	1,007.01		
		Quantum of Losses at 22/11 kV	54		
		Energy input at 22/11 kV level	1,061.39		

iii	33 kV Level	DISCOM' consumers	0	Include sales to consumers in franchisee areas, unmetered consumers	
		Demand from open access, captive		Non DISCOM's sales	
		Embedded generation at 33 kV or below level		This is DISCOM and OA demand met via energy generated at same voltage level	
		Sales at 33 kV level	0		
		Quantum of Losses at 33 kV	0		
		Energy input at 33kV Level	0		
iv	> 33 kV(110 KV)	DISCOM' consumers	544.99	Include sales to consumers in franchisee areas, unmetered consumers	
		Demand from open access, captive		Non DISCOM's sales	
		Cross border sale of energy			
		Sale to other DISCOMs			
		Banking			
		Energy input at>33kV Level	553.16		
		Sales at 66kV and above (EHV)	544.99		
		Total Energy Requirement	**3,129.49**		
		Total Energy Sales	**2,783.65**		

5	DISCOM	Input (in MU)	Sale (in MU)	Loss (in MU)	Loss %	
i	LT	1,515	1,232	283	18.70	
ii	22/11 Kv	1,061	1,007	54	5.12	
iii	33 kv	0	0	0	0.00	
iv	110 KV	553	544.99	8	1.48	

	Loss Estimation for DISCOM	
	T&D loss in MU	346
	D loss in MU	244
	T&D loss (%)	11.05%
	D loss (%)	9.71%

5.6 Power Purchase details

There is no major Generating Station in the UT of Puducherry except a 32.5 MW Gas Power plant namely Puducherry Power Corporation Limited at Karaikal .The Power requirement is being met through power allocation made by Ministry of Power, Government of Inida from various Central Generating Stations . The allocation made by MOP, GOi is 591 MW. The agencies wise allocation is detailed below. The Power is being recovered at 230 KV level from Grid

PED, Puducherry purchase the power from the various type of generation station the details of month wise purchase power is given in the following table

Power Purchase Details

S. No.	Name of Generation Station	Generation Capacity
1	Neyveli Lignite Corporation of India Limited	202 MW
2	National Thermal Power Corporation	213 MW
3	Madras Atomic Power Station	8 MW
4	KAIGA Atomic Power Station	38 MW
5	Kudankulam Atomic Power Station	70 MW
6	NTPC Tamilnadu Energy company Limited (NTECL)	28 MW
7	NLC Tamilnadu Power Limited(NTPL)	32 MW
	Total	591 MW
	State Owned Generating Station	
	Puducherry Power Corporation Limited	32 MW

5.7 Details of Consumers

Details of Consumers

S. No	Type of Consumers	Category of Consumers (EHT/HT/LT/Others)	No of Consumers	Total Consumption (In MU)
	LOW TENSION CATEGORY			
1	Domestic	LT	369827	803.65
2	Commercial	LT	57637	170.45
3	IP Sets	LT	7046	60.06
4	Life Line services	LT	8248	3.62
5	Temporary Supply	LT	0	3.85
6	Heating and Motive Power/Water Supply	LT	4411	170.07
7	Public Lighting	LT	51600	19.95
	TOTAL LOW TENSION ENERGY BILLED			**1231.65**
8	HT Water Supply &Central/state Government services	HT	63	55.45
9	HT Industrial + HT-Commercial	HT	454	951.56
10	Industrial (Extra High Voltage)	EHT	8	544.99
	TOTAL HIGH TENSION ENERGY BILLED			**1552.00**
	TOTAL ENERGY BILLED		499294	2783.65

5.8 Electrical Distribution System

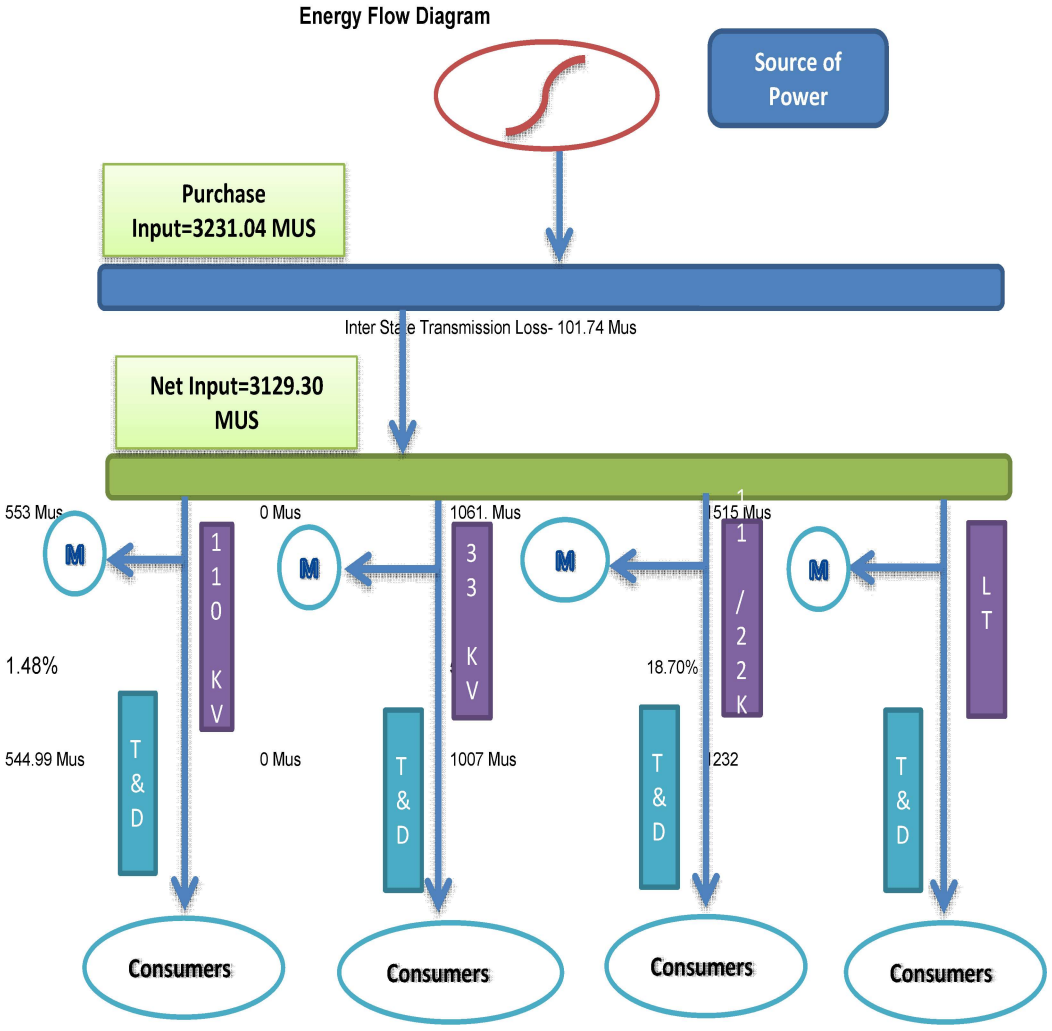
► Energy flow between transmission and 220kV/132kV/33kV/22kV/11kV incoming distribution feeders

► Energy flow between 132kV/33kV outgoing and 22 kV/11kV incoming feeders

► Energy flow between 33/22/11kV feeders and distribution transformers, or high voltage distribution system

Energy flow between distribution transformer, or high voltage distribution system to end-consumer, including ring main system

Energy flow between Feeder to end-consumer & Energy flow between 132kV/33kV/22kV/11 kV directly to consumer



5.9 Detailed Proforma & Document Verified with each Parameters

A. Signed Proforma

General Information					
1	**Name of the DISCOM**	Electricity Deparment,Puducherry			
2	**i) Year of Establishment**	1962			
	ii) Government/Public/Private	Government			
3	**DISCOM's Contact details & Address**				
i	City/Town/Village	UT of Puducherry			
ii	District	UT of Puducherry			
iii	State	Puducherry	Pin	605001	
iv	Telephone		Fax	0413-2331556	
4	**Registered Office**				
i	Company's Chief Executive Name	T.Chanemougam			
ii	Designation	Superintending Engineer Cum HoD			
iii	Address	Electricity Department, Main Office, No.137,NSJ Bose			
iv	City/Town/Village	Puducherry	P.O.	605001	
v	District	Puducherry			
vi	State	Puducherry	Pin	605001	
vii	Telephone	9489080400	Fax		
5	**Nodal Officer Details***				
i	Nodal Officer Name (Designated at DISCOM's)	Thiru.M.Ramesh			
ii	Designation	Executive Engineer			
iii	Address	Electricity Department, Main Office, No.137,NSJ Bose			
iv	City/Town/Village	Puducherry	P.O.	605001	
v	District	Puducherry			
vi	State	Puducherry	Pin	605001	
vii	Telephone	0413-2341238	Fax	0413-2331556	
6	**Energy Manager Details***				
i	Name				
ii	Designation	Executive Engineer	Whether EA or EM	EM	
iii	EA/EM Registration No.	-			
iv	Telephone	0413-2341238	Fax	0413-2331556	
v	Mobile	9489080400	E-mail ID	ee10ped@py.gov.in	
7	**Period of Information**				
	Year of (FY) information including Date and Month (Start & End)	**FY-2021-22**			

Performance Summary of Electricity Distribution Companies			
1	Period of Information Year of (FY) information including Date and Month (Start & End)		FY-21-22
2	**Technical Details**		
(a)	**Energy Input Details**		
(i)	Input Energy Purchase (From Generation Source)		3231.04
(ii)	Net input energy (at DISCOM Periphery after adjusting the transmission losses and energy traded)		3129.49
(iii)	Total Energy billed (is the Net energy billed, adjusted for energy traded)) in MU		2783.65
(b)	Transmission and Distribution (T&D) loss Details	MU	345.84
		%	11.05
	Collection Efficiency	%	100.00%
(c)	Aggregate Technical & Commercial Loss	%	11.05%

I/We undertake that the information supplied in this Document and Pro-forma is accurate to the best of my knowledge and if any of the information supplied is found to be incorrect and such information result into loss to the Central Government or State Government or any of the authority under them or any other person affected, I/we undertake to indemnify such loss.

Authorised Signatory and Seal

Name of Authorised Signatory T.CHANEMOUGAM
Name of the DISCOM: Electricity Department,Puducherry
Full Address:- Electricity Department, Main Office, No.137,NSJ Bose Salai, Puducherry -605 001

Seal
T. CHANEMOUGAM, B.E.,M.I.E.,PGDCA.,
SUPERINTENDING ENGINEER
- cum - HOD
ELECTRICITY DEPARTMENT
PUDUCHERRY.

Signature:-
Name of Energy Manager:
Registration Number:

M. RAMESH
EXECUTIVE ENGINEER - GENERAL
GENERAL DIVISION
ELECTRICITY DEPARTMENT
PUDUCHERRY.

Form-Details of Input Infrastructure April-21 to March-22							
1	**Parameters**	**Total**	**Covered during in audit**	**Verified by Auditor in Sample Check**			**Remarks (Source of data)**
i	Number of circles	3					
ii	Number of divisions	10					
iii	Number of sub-divisions	60					
iv	Number of feeders	126					
v	Number of DTs	3123					
vi	Number of consumers	499294					
2	**Parameters**	**66kV and above**	**33kV**	**11/22kV**	**LT**	**Total**	
a. i.	Number of conventional metered consumers	0					
ii	Number of consumers with 'smart' meters	0			31500		
iii	Number of consumers with 'smart prepaid' meters	0					
iv	Number of consumers with 'AMR' meters	8	0	0	0		
v	Number of consumers with 'non-smart prepaid' meters	0	0	524	451416		
vi	Number of unmetered consumers				15846		
vii	**Number of total consumers**	8		524		499294	

b.i.	Number of conventionally metered Distribution Transformers	0			0		
ii	Number of DTs with communicable meters				2645		
iii	Number of unmetered DTs				467		
iv	**Number of total Transformers**					3112	
c.i.	Number of metered feeders	0	2	124	5290		
ii	Number of feeders with communicable meters	0	2	124			
iii	Number of unmetered feeders	0	0	0			
iv	**Number of total feeders**	0	2	124	5290		
d.	Line length (ct km)	6319.857					
e.	Length of Aerial Bunched Cables	0					
f.	Length of Underground Cables	994.246					

3	Voltage level	Particulars	MU	Reference	Remarks (Source of data)	
i	230 kV	Long-Term Conventional	3231.04	Includes input energy for franchisees	Includes long term conventional power and Puducherry owned Power generation (PPCL)	
		Medium Conventional	NA			
		Short Term Conventional	NA			
		Banking	NA			
		Long-Term Renewable energy	NA			
		Medium and Short-Term RE	NA	Includes power from bilateral/ PX/ DEEP		
		Captive, open access input	NA	Any power wheeled for any purchase other than sale to DISCOM. Does not include input for franchisee.		
		Sale of surplus power				
		Quantum of inter-state transmission loss	101.74	As confirmed by SLDC, RLDC etc		
		Power procured from inter-state sources	3,231.04	Based on data from Form 5		
		Power at state transmission boundary	3,129.30			
ii	33kV	Long-Term Conventional				
		Medium Conventional	0			
		Short Term Conventional				
		Banking	0			
		Long-Term Renewable energy	0			
		Medium and Short-Term RE	0			
		Captive, open access input				
		Sale of surplus power				
		Quantum of intra-state transmission loss	0			
		Power procured from intra-state sources	0			
iii		**Input in DISCOM wires network**	3,129.30			

iv	33 kV	Renewable Energy Procurement	0			
		Small capacity conventional/ biomass/ hydro plants Procurement				
		Captive, open access input	0			
v	11 kV	Renewable Energy Procurement				
		Small capacity conventional/ biomass/ hydro plants Procurement				
		Sales Migration Input				
vi	LT	Renewable Energy Procurement				
		Sales Migration Input				
vii		**Energy Embedded within DISCOM wires network**	0			
viii		**Total Energy Available/ Input**	3,129			
4	Voltage level	Energy Sales Particulars	MU	Reference		
i	LT Level	DISCOM' consumers	1,231.65	Include sales to consumers in franchisee areas, unmetered consumers		
		Demand from open access, captive		Non DISCOM's sales		
		Embedded generation used at LT level		Demand from embedded generation at LT level		
		Sale at LT level	1,231.65			
		Quantum of LT level losses	283			
		Energy Input at LT level	1,514.94			

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PUDUCHERRY.

ii	22/11 kV Level	DISCOM' consumers	1,007.01	Include sales to consumers in franchisee areas, unmetered consumers		
		Demand from open access, captive	0	Non DISCOM's sales		
		Embedded generation at 11 kV level used	0	Demand from embedded generation at 11kV level		
		Sales at 22/11 kV level	1,007.01			
		Quantum of Losses at 22/11 kV	54			
		Energy input at 22/11 kV level	1,061.39			
iii	33 kV Level	DISCOM' consumers	0	Include sales to consumers in franchisee areas, unmetered consumers		
		Demand from open access, captive		Non DISCOM's sales		
		Embedded generation at 33 kV or below level		This is DISCOM and OA demand met via energy generated at same voltage level		
		Sales at 33 kV level	0			
		Quantum of Losses at 33 kV	0			
		Energy input at 33kV Level	0			

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iv	> 33 kV(110 KV)	DISCOM' consumers	544.99	Include sales to consumers in franchisee areas, unmetered consumers		
		Demand from open access, captive		Non DISCOM's sales		
		Cross border sale of energy				
		Sale to other DISCOMs				
		Banking				
		Energy input at > 33kV Level	553.16			
		Sales at 66kV and above (EHV)	544.99			
		Total Energy Requirement	**3,129.49**			
		Total Energy Sales	**2,783.65**			

Energy Accounting Summary

5	DISCOM	Input (in MU)	Sale (in MU)	Loss (in MU)	Loss %
i	LT	1,515	1,232	283	18.70
ii	22/11 Kv	1,061	1,007	54	5.12
iii	33 kv	0	0	0	0.00
iv	110 KV	553	544.99	8	1.48
6	**Open Access, Captive**	**Input (in MU)**	**Sale (in MU)**	**Loss (in MU)**	
i	LT	0	0		
ii	11 Kv	0	0		
iii	33 kv	0	0		
iv	> 33 kv	0	0		

Loss Estimation for DISCOM	
T&D loss in MU	346
D loss in MU	244
T&D loss (%)	11.05%
D loss (%)	8.76%

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9

Details of Division Wise Losses (See note below**)

Division Wise Losses — Period From April 21 To March 22

S.No	Name of circle	Circle code	Name of Division	Consumer profile								Energy parameters					Losses			Commercial Parameter			AT & C loss (%)
				Consumer category	No of connection metered (Nos)	No of connection Un-metered	Total Number of connections (Nos)	% of number of connections	Connected Load metered (MW)	Connected Load Un-metered (MW)	Total Connected Load (MW)	% of connected load	Billed energy (MU)				% of energy consumption	T&D loss (MU)	T&D loss (%)	Billing efficiency	Billed Amount in Rs. Crore	Collected Amount in Rs. Crore	Collection Efficiency	
													Input energy (MU)	Metered energy	Unmetered/assessment energy	Total energy							
1	Circle-1		Puducherry	Residential	286384	0	286384							532.9278	0	532.9278	23%						
				Agricultural	5	6173	6178							0	71.57967	71.57967	3%						
				Commercial/Industrial-LT	42572	0	42572						2566.62	368.1487	0	368.1487	16%	256.2081	10%				
				Commercial/Industrial-HT	420	0	420							832.759	0	832.759	36%						
				Others	76539	6104	82643							510.5985	0	510.5985	22%						
	Sub-total				355926	12277	368197	100%				100%	2566.62	2248.434	71.57967	2316.414				90.25	1859.03	1282.31	94.35	14.84
2	Circle-2		Karaikal	Residential	67387	0	67387							118.0995	0	118.0995							
				Agricultural	13	805	818							0	8.94415	8.94415							
				Commercial/Industrial-LT	12569	0	12569						424.51	39.95596	0	39.95596		40.42464	10%				
				Commercial/Industrial-HT	71	0	71							158.8567	0	158.8567							
				Others	10953	2230	13183							58.23155	0	58.23155							
	Sub-total				90993	3035	94028	100%	0	0	0	100%	424.51	71.53	2.46	384.0878	100%	40.42464	10%	90.48	232.87	216.36	91.91	15.94
3	Circle-2		Mahe	Residential	10736	0	10736							21.19288	0	21.19288							
				Agricultural	0	3	3							0	0	0							
				Commercial/Industrial-LT	4928	0	4928						34.20	7.823335	0	7.823335		2.996539	9%				
				Commercial/Industrial-HT	4	0	4							1.750068	0	1.750068							
				Others	3041	121	3162							0.437336	0	0.437336							
	Sub-total				18709	124	18833	100%	0	0	0	100%	34.20016	31.20362	0	31.20362	100%	2.996539	9%	91.24	15	14.06	93.73	14.48
4	Circle-2		Yanam	Residential	13684	0	13684							21.50648	0	21.50648	25%						
				Agricultural	0	57	57							0	0.044094	0.044094	3%						
				Commercial/Industrial-LT	1854	0	1854						57.65	13.94849	0	13.94849	15%	5.703214	10%				
				Commercial/Industrial-HT	29	0	29							13.93442	0	13.93442	36%						
				Others	2259	351	2610							2.511008	0	2.511008	21%						
	Sub-total				17826	410	18236	100%	0	0	0	100%	57.64771	51.9004	0.044094	51.9445	100%	5.703214	10%	90.13	33.58	31.31	98.24	15.58
5	U.T of Puducherry			Residential	378191	0	378191	76%	650.24	0	650.24	0%		693.7266	0	693.7266	25%				0	0	0.00%	
				Agricultural	18	7038	7056	1%	0	52.47	52.47	0%		0	80.96792	80.96792	3%				0	0	0.00%	
				Commercial/Industrial-LT	61923	0	61923	12%	363.574	0	363.574	0%	3082.98	429.8765	0	429.8765	15%	299.3325	10%		0	0	0.00%	
				Commercial/Industrial-HT	524	0	524	0%	678.55	0	678.55	0%		1007.3	0	1007.3	36%				0	0	0.00%	
				Others	42792	8868	51600	10%	6	2.89	8.89	0%		571.7784	0	571.7784	21%							
	Sub-total				483448	15846	499294	100%	1698.364	55.36	1693.724	100%	3082.982	2702.682	80.96792	2783.65	100%	299.3325	10%	90.29	1640.48	2002.02	Actual collection efficiency = 122.06% (limited to 100%)	11.05

Note 1: Rs.440 Crores received from Government of Puducherry towards Government Department arrears.

Note 2: Four regions namely Puducherry,Karaikal,Mahe & Yanam called in two circle Circle 1- Puducherry Region alone and Circle -2 contains Karaikal,Mahe and Yanam region. All four regions combined called U.T of Puducherry

Note 3: Region wise connected laod is not available Hence UT connected load is being furnished.

Color code	Parameter
	Please enter name of circle
	Please enter circle code
0	Please enter numeric value or 0
	Formula protected

I/We undertake that the information supplied in this Document and Pro-forma is accurate to the best of my knowledge and that the information supplied is found to be incorrect and such information result into loss to the Central Government or State Government or any of the authority under them or any other person affected, I/we undertake to indemnify such loss.

Authorised Signatory and Seal

Name of Authorised Signatory: T. CHINNADURAI, B.E.,M.I.E.,PGDCA.,

Name of the DISCOM ELECTRICITY DEPARTMENT,GOVERNMENT OF PUDUCHERRY

Full Address:- No.137, N.S.I Bose Salai, Electricity Department , Main Campus, Puducherry - 605 001.

SUPERINTENDING ENGINEER - cum - HOD
ELECTRICITY DEPARTMENT
PUDUCHERRY.

Signature:-

Name of Energy Manager:

Registration Number:

M. RAMESH
EXECUTIVE ENGINEER - GENERAL
GENERAL DIVISION
ELECTRICITY DEPARTMENT
PUDUCHERRY.

Form-Input energy(Details of Input energy & Infrastructure)		
Sector-Electricity Distribution Companies		
A. Summary of energy input & Infrastructure		
S.No	Parameters	FY-2021-22
A.1	Input Energy purchased (MU)	3129.49
A.2	Transmission loss (%)	3%
A.3	**Transmission loss (MU)**	**92.32**
A.4	Energy sold outside the periphery(MU)	0.00
A.5	Open access sale (MU)	0.00
A.6	EHT sale	544.98
A.7	**Net input energy (received at DISCOM periphery or at distribution point,after adjustment):(MU)**	**3082.98**
A.8	Is 100% metering available at 33/22 kV (Select yes or no from list)	yes
A.9	Is 100% metering available at 11 kV (Select yes or no from list)	yes
A.10	% of metering available at DT	85%
A.11	% of metering available at consumer end	96%
A.12	No of feeders at 33kV voltage level	2
A.13	No of feeders at 22kV voltage level	72
A.14	No of feeders at 11kV voltage level	52
A.15	No of LT feeders level	6224
A.16	Line length (ckt. km) at 33kV voltage level	19
A.17	Line length (ckt. km) at 22kV voltage level	1791.607
A.18	Line length (ckt. km) at 11kV voltage level	447
A.19	Line length (km) at LT level	4080.65
A.20	HT/LT ratio	0.553246909

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	B. Meter reading of Input energy injection points								
					Whole Year (2021-22)				
Zone/Circle	S.No	Voltge level	Feeder ID	Feeder Name	Meter S.No	CT/PT ratio	Import (MU)	Export (MU)	Remarks
Pondy	B.1	22KV		Nellithope feeder 22 KV	x236639	400/1,22000/1 10 V	41.37	0.00	From the Log Register of Marapalam 110/22-11 KV SS
	B.2	22KV		Ariyankuppam feeder22 KV	x236574	400/1,22000/1 10 V	63.18	0.00	
	B.3	22KV		Mill Feeder 22 KV	x236520	300/1,22000/1 10 V	26.10	0.00	
	B.4	22KV		Raj Nivas feeder22 KV	x236524	400/1,22000/1 10 V	7.07	0.00	
	B.5	22KV		Town feeder22 KV	x236521	300/1,22000/1 10 V	17.87	0.00	
	B.6	22KV		Amaravathy feeder22 KV	x236573	400/1,22000/1 10 V	32.43	0.00	
	B.7	22KV		New Feeder 22 KV	x236522	400/1,22000/1 10 V	5.72	0.00	
	B.8	22KV		Pillaithottam feeder22 KV	x236523	300/1,22000/1 10 V	42.13	0.00	
	B.9	11KV		Laporte feeder11 KV	x236668	600/1,11000/1 10 V	0.00	0.00	
	B.10	11KV		GH Feeder11 KV	X236664	600/1,11000/1 10 V	16.44	0.00	
	B.11	11KV		Kandan Feeder 11 KV	x236669	600/1,11000/1 10 V	0.00	0.00	
	B.12	11KV		Golconda feeder11 KV	x236667	500/1,11000/1 10 V	15.25	0.00	
	B.13	11KV		Market Feeder11 KV	x236666	400/1,11000/1 10 V	3.24	0.00	
	B.14	22KV		Marapalam Feeder 22 KV	x236623	300/1,22000/1 10 V	42.54	0.00	From the Log Register of Villianur 110 /22 KV SS
	B.15	22KV		Kanuvapet Feeder 22 KV	x236622	300/1,22000/1 10 V	19.56	0.00	
	B.16	22KV		Agaram Feeder 22 KV	KA100158	300/1,22000/1 10 V	33.12	0.00	
	B.17	22KV		Sedarapet Interlinking feeder 22 k	x236620	300/1,22000/1 10 V	44.67	0.00	
	B.18	22KV		Industrial feeder22 KV	x236621	300/1,22000/1 10 V	26.65	0.00	

M. RAMESH
EXECUTIVE ENGINEER - GENERAL
GENERAL DIVISION
ELECTRICITY DEPARTMENT
PUDUCHERRY.

B.19	22KV		Pandasozhanallur Feeder 22 KV	x236615	400/1,22000/110 V	18.97	0.00	From the Log Register of Bahour 110 /22 KV SS
B.20	22KV		Mittal Feeder 22 KV	x236614	400/1,22000/110 V	57.41	0.00	
B.21	22KV		Industrial Feeder 22 KV	x236612	400/1,22000/110 V	6.79	0.00	
B.22	22KV		Steel Mill 22 KV	x236611	400/1,22000/110 V	20.69	0.00	
B.23	22KV		Bahour Feeder 22 KV	x236615	400/1,22000/110 V	26.05	0.00	
B.24	22KV		Thavalakuppam Feeder 22 KV	x236610	400/1,22000/110 V	0.00	0.00	
B.25	22KV		Paper Mill Feeder 22 KV	x236613	400/1,22000/110 V	33.88	0.00	
B.26	22KV		Pillaichavady Feeder22 KV	x236544	300/1,22000/110 V	19.37	0.00	From the Log Register of Kalapet 110/22KV SS
B.27	22KV		Kazhuperumpakkam feeder22 KV	x236519	300/1,22000/110 V	0.00	0.00	
B.28	22KV		Alankuppam Feeder 22 KV	x236517	300/1,22000/110 V	5.77	0.00	
B.29	22KV		Kanaga chettiukulam 22 KV	x236608	300/1,22000/110 V	50.42	0.00	
B.30	22 KV		University 22 KV	x0236673	300/1,22000/110 V	6.73	0.00	
B.31	22KV		Kurumbapet Interlinking 22 KV	x236635	300/1,22000/110 V	0.00	0.00	
B.32	22KV		Kurumbapet feeder22 KV	x236526	400/1,22000/110 V	49.14	0.00	From the Log Register of Kurumbapet 110 /22 KV SS
B.33	22 KV		Karuvadikuppam 22 Kv		400/1,22000/110 V	28.52	0.00	
B.34	22KV		JIPMER feeder22 KV (old)	x236618	400/1,22000/110 V	41.91	0.00	
B.35	22KV		Lawspet feeder22 KV	x236527	300/1,22000/110 V	39.30	0.00	
B.36	22KV		ECR feeder22 KV	x236617	400/1,22000/110 V	37.43	0.00	
B.37	22KV		New Jipmer feeder22 KV	x236567	400/1,22000/110 V	25.42	0.00	
B.38	22KV		Moolakulam 22 KV	x236525	400/1,22000/110 V	60.11	0.00	
B.39	22KV		PIPDIC -I Feeder 22 KV	x236616	400/1,22000/110 V	46.52	0.00	
B.40	22KV		PIPDIC -II Feeder22 KV	x236565	400/1,22000/110 V	4.92	0.00	
B.41	22KV		Sedarapet Feeder 22 KV	x236619	400/1,22000/110 V	26.89	0.00	

M. RAMESH
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GENERAL DIVISION
ELECTRICITY DEPARTMENT
PUDUCHERRY.

B

B.42	22KV		Industrial Feeder 22 KV	x236572	400/1,22000/110 V	35.12	0.00	From the Log Register of KORKADU 110/22KV SS
B.43	22KV		Villianur Interlinking Feeder 22 KV	x236631	400/1,22000/110 V	10.64	0.00	
B.44	22KV		Abishegapakkam 22 KV	x236636	400/1,22000/110 V	13.68	0.00	
B.45	22KV		Mangalam Feeder 22 KV	x236571	400/1,22000/110 V	53.80	0.00	
B.46	22KV		Embalam 22 KV	x236570	400/1,22000/110 V	50.41	0.00	
B.47	22KV		Manalmedu feeder 22 KV	x236605	300/1,22000/110 V	21.61	0.00	From the Log Register of Eripakkam 110/22 KV SS
B.48	22KV		Motchakulam 22 KV	x236568	300/1,22000/110 V	0.00	0.00	
B.49	22KV		Madukarai Feeder 22 KV	x236609	300/1,22000/110 V	14.84	0.00	
B.50	22KV		Industrial 1 Feeder 22 KV	x236542	300/1,22000/110 V	29.05	0.00	
B.51	22KV		Industrial 2 Feeder 22 KV	x236606	300/1,22000/110 V	15.60	0.00	
B.52	22KV		Snam Alloys Feeder 22 KV	x236543	300/1,22000/110 V	33.26	0.00	
B.53	22KV		Pushpit Feeder 22 KV	x236607	400/1,22000/110 V	23.39	0.00	
B.54	22KV		Thirubhuvanai Interlink Feeder 22	x236569	400/1,22000/110 V	19.56	0.00	
B.55	22KV		Rampakam feeder 22 KV			0.00	0.00	

M. RAMESH
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GENERAL DIVISION
ELECTRICITY DEPARTMENT
PUDUCHERRY.

14

B.56	22KV		Industrial 1 Feeder 22 KV	x236557	400/1,22000/110 V	17.02	0.00	From the Log Register of Thirubhuvanai 110/22 KV SS
B.57	22KV		Kalitheerthalkuppam 22 KV	x236534	300/1,22000/110 V	17.78	0.00	
B.58	22KV		Industrial 2 Feeder 22 KV	x236530	300/1,22000/110 V	51.67	0.00	
B.59	22KV		Industrial 3 Feeder 22 KV			28.49	0.00	
B.60	22KV		Eripakkam interlinking feeder 22 K	x236532	400/1,22000/110 V	40.18	0.00	
B.61	22KV		P.S.Pallayam 22 KV	x236531	300/1,22000/110 V	26.53	0.00	
B.62	22KV		Sellipet 22 KV	x236555	300/1,22000/110 V	45.81	0.00	
B.63	22KV		Station Aux			0.07		
B.64	22KV		Spare			5.04		
B.65	22KV		L.R.Palayam 22 KV	x236671	300/1,22000/110 V	6.82	0.00	From the Log Register of Thethampkkam 110/22 KV SS
B.66	22KV		Manalipet 22 KV	x236672	300/1,22000/110 V	17.36	0.00	
B.67	22KV		Vadanur 22 KV	x236558	300/1,22000/110 V	10.29	0.00	
B.68	22KV		Industrial Feeder 22 KV	x236556	300/1,22000/110 V	0.00	0.00	
B.69	22KV		Interlinking Feeder 22 KV	x236559	300/1,22000/110 V	4.68	0.00	
B.70	22KV		BALLARPUR 22 KV	x236670	400/1,22000/110 V	39.79	0.00	From the Log Register of SEDHARAPET 110/22 KV SS
B.71	22KV		KATTERIKUPPAM 22 KV	x236541		0.00	0.00	
B.72	22KV		KURUMBAPET 22 KV	x236633	300/1,22000/110 V	23.99	0.00	
B.73	22KV		PIPDIC - II 22 KV	x236632	300/1,22000/110 V	29.71	0.00	
B.74	22KV		PIPDIC - I 22 KV	x236630	300/1,22000/110 V	15.52	0.00	
B.75	22KV		V S K 22 KV	x236540	300/1,22000/110 V	0.00	0.00	
B.76	22KV		Pathukannu 22 KV	x236634	400/1,22000/110 V	9.70	0.00	

M. RAMESH
EXECUTIVE ENGINEER - GENERAL
GENERAL DIVISION
ELECTRICITY DEPARTMENT
PUDUCHERRY.

15

Cricle-2 Yanam	B.77	11KV		Mettakur Feeder 11 KV	x236562	150/1A,11000/110 V	4.35	0.00	From the Log Register of Yanam 132/ 11 KV SS
	B.78	11 KV		Savithri Nagar feeder 11KV	x236596	300/1A,11000/110 V	10.24	0.00	
	B.79	11KV		Industrial Feeder 11 KV	x236561	300/1A,11000/110 V	4.00	0.00	
	B.80	11KV		Kurasampeta feeder 11 KV	x236598	300/1A,11000/110 V	10.22	0.00	
	B.81	11KV		Town Feeder 11 KV	x236597	300/1A,11000/110 V	11.41	0.00	
	B.82	11KV		Kanakadurga 11 KV			0.00	0.00	
	B.83	11KV		Kanakalpet 11 KV	x236595	600/1A,11000/110 V	15.11	0.00	
	B.84	11KV		11KV VKR Feeder	x236560	200/1A,11000/110 V	2.24	0.00	
	B.85	33KV		Adivipulam-33KV Line-1	x621354	500/1A,11000/110 V	0.00	0.00	
	B.86	33KV		Adivipulam-33KV Line-2			0.00	0.00	
Circle-1 Pondy	B.87	11KV		Clock Tower Feeder 11 KV	x236538	300/1,11000/110 V	14.35	0.00	From the Log Register of Vengatanagar 110/11 KV SS
	B.88	11KV		DAT feeder 11 KV	x236604	300/1,11000/110 V	11.18	0.00	
	B.89	11KV		Mandi Feeder 11 KV	x236600	300/1,11000/110 V	13.45	0.00	
	B.90	11KV		Chief Secretariat Feeder 11 KV	x236603	300/1,11000/110 V	12.90	0.00	
	B.91	11KV		Paper Mill Feeder 11 KV	x236602	300/1,11000/110 V	14.07	0.00	
	B.92	11KV		Vengatanagar Feeder 11 KV	x236537	300/1,11000/110 V	13.12	0.00	
	B.93	11KV		Brindavanam feeder 11 KV	x236554	300/1,11000/110 V	16.68	0.00	
	B.94	11KV		GRT Feeder 11 KV			15.81	0.00	
	B.95	11KV		Gingee Salai 11 KV	x236535	300/1,11000/110 V	19.92	0.00	
	B.96	11KV		Krishna Nagar 11 KV	x236550	300/1,11000/110 V	9.77	0.00	
	B.97	11KV		Muthialpet 11 KV	x236601	300/1,11000/110 V	16.97	0.00	
	B.98	22KV		Muthialpet 22 KV	x8464429	200/1,22000/110 V	24.07	0.00	
	B.99	22KV		Uppar 22 KV	x8464431	200/1,22000/110 V	24.91	0.00	

M. RAMESH
EXECUTIVE ENGINEER - GENERAL
GENERAL DIVISION
ELECTRICITY DEPARTMENT
PUDUCHERRY.

16

Circle-2 Karaikal	B.100	11KV		Nedungadu feeder 11 KV	x236654	300/1A,11000 /110 V	23.38	0.00	From the Log Register of Surakudy 110/11 KV SS
	B.101	11KV		Ambagarathur feeder 11 KV	x236652	600/1A,11000 /110 V	36.49	0.00	
	B.102	11KV		Ceramic feeder 11 KV	x236653	300/1A,11000 /110 V	4.29	0.00	
	B.103	11KV		Industrial feeder 11 KV	x236651	600/1A,11000 /110 V	8.34	0.00	
	B.104	11KV		Alloy feeder 11 KV	x236648	600/1A,11000 /110 V	28.66	0.00	
	B.105	11KV		Agalankannuu feeder 11 KV	x236650	600/1A,11000 /110 V	11.11	0.00	
	B.106	11KV		Thirunallar feeder 11 KV	x236647	300/1A,11000 /110 V	7.71	0.00	
	B.107	11KV		Link feeder 11 KV	x236649	600/1A,11000 /110 V	22.06	0.00	
	B.108	11KV		Karaikal Chlorate feeder 11 KV	x236646	300/1A,11000 /110 V	19.56	0.00	
	B.109	11KV		Melakasakudy feeder 11 KV	x236645	400/1A,11000 /110 V	7.14	0.00	
	B.110	11KV		Station 11KV			0.05	0.00	

M. RAMESH
EXECUTIVE ENGINEER - GENERAL
GENERAL DIVISION
ELECTRICITY DEPARTMENT
PUDUCHERRY.

17

Circle-2 Karaikal	B.111	11KV		PPCL 11 KV	x236551	400/1A,11000 /110 V	0.00	0.00	From the Log Register of T.R.PATTINAM SS
	B.112	11KV		INDUSTRIAL 11 KV	x236552	400/1A,11000 /110 V	9.79	0.00	
	B.113	11KV		VANJUR 11 KV	x236545	400/1A,11000 /110 V	2.42	0.00	
	B.114	11KV		Karaikal Town feeder 11 KV	x236549	400/1A,11000 /110 V	29.08	0.00	
	B.115	11KV		INTERLINK 11 KV	x236547	400/1A,11000 /110 V	12.98	0.00	
	B.116	11KV		POLAGAM 11 KV	x236548	400/1A,11000 /110 V	4.95	0.00	
	B.117	11KV		ALLOY 11 KV	x236553	400/1A,11000 /110 V	8.20	0.00	
	B.118	11KV		STEEL 11 KV	x236546	400/1A,11000 /110 V	18.24	0.00	
	B.119	11KV		LINK 11 KV (Mandapathur)	x236656	300/1A,11000 /110 V	10.57	0.00	From the Log Register of PT VASAL 110/11KV
	B.120	11KV		TOWN 2 - 11 KV	x236662	300/1A,11000 /110 V	22.11	0.00	
	B.121	11KV		TOWN 1 - 11 KV	x236660	300/1A,11000 /110 V	13.86	0.00	
	B.122	11KV		POOVAM 11 KV	x236658	300/1A,11000 /110 V	24.29	0.00	
	B.123	11KV		KEEZHKASAKUDY 11 KV	x236661	300/1A,11000 /110 V	18.37	0.00	
	B.124	11KV		TOWN 3 - 11 KV	x236663	300/1A,11000 /110 V	11.01	0.00	
	B.125	11KV		Town North			14.91	0.00	
	B.126			TOWN 4 - 11 KV			3.75	0.00	
Circle-2 Mahe	B.127	11KV		SPINNING MILL -11 KV	xD452858	200/5,11000/1 10 V	6.72	0.00	From the Log Register of Mahe 110 /11 KV SS
	B.128	11KV		MAHE - 11 KV	x236686	200/5,11000/1 10 V	12.78	0.00	
	B.129	11KV		PANDAKKAL - 11 KV	x236683	200/5,11000/1 10 V	8.04	0.00	
	B.130	11KV		CHALAKKARA - 11KV	x236681	200/5,11000/1 10 V	4.56	0.00	
	B.131			East Palloor	x236688	200/5,11000/1 10 V	2.04	0.00	
	B.132	11KV		AUX - 11 KV	x236687	200/5,11000/1 10 V	14.93	0.00	

M. RAMESH
EXECUTIVE ENGINEER - GENERAL
GENERAL DIVISION
ELECTRICITY DEPARTMENT
PUDUCHERRY.

18

	B.133	22KV		Villianur Interlinking Feeder 22 KV	x381284	400/1,22000/110 V	23.25	0.00	From the Log Register of Thondamanatham 110/22 KV SS
	B.134	22KV		Sedarapet Interlinking feeder 22 k	x381296	400/1,22000/110 V	37.86	0.00	
	B.135	22KV		Industrial 22 KV	x381285	400/1,22000/110 V	34.71	0.00	
	B.136	22KV		Pillayarkuppam 22KV			0.00	0.00	
PDY&KKL	B.137	110 KV		All EHT feeders			544.99	0.00	
	B.214						0.00	0.00	
	B.334						0.00	0.00	
	B.335						0.00	0.00	
	B.336						0.00	0.00	
	B.337						0.00	0.00	
	B.338						0.00	0.00	
	B.339						0.00	0.00	
	B.340						0.00	0.00	
	B.341						0.00	0.00	
	B.342						0.00	0.00	
	B.370						0.00	0.00	
	B.371						0.00	0.00	
							0.00	0.00	
							0.00	0.00	
							0.00	0.00	
		Total (MU)					3082.98	0.00	
		Net input energy at DISCOM periphery (MU)					3082.98		Net input energy at DISCOM periphery (MU)

M. RAMESH
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GENERAL DIVISION
ELECTRICITY DEPARTMENT
PUDUCHERRY.

19

Details of Input Energy Sources

Period From April-21 To March-22

A. Generation at Transmission Periphery (Details)

S.No.	Name of Generation Station	Generation Capacity (In MW)	Type of Station Generation (Based- Solid (Coal ,Lignite)/Liquid/Gas/Renewable (biomass-bagasse)/Others)	Type of Contract (in years/months /days)	Type of Grid (Intra-state/Inter-state)	Point of Connection (POC) Loss MU	Voltage Level (At input)	Remarks (Source of data)
	There is no major Generating Station in the UT of Puducherry except a 32.5 MW Gas Power plant namely Puducherry Power Corporation Limited at Karaikal .The Power requirement is beieng met thorugh power allocation made by Ministry of Power,Government of Inida from varios Central Generating Stations . The allocation made by MOP,GOi is 591 MW.The agencies wise allocation is detailed below. The Power is being receroved at 230 KV level from Grid.							
1	Neyveli Lignite Corporation of India Limited						202 MW	
2	National Thermal Power Corporation						213 MW	
3	Madras Atomic Power Station						8 MW	
4	KAIGA Atomic Power Station						38 MW	
5	Kudankulam Atomic Power Station						70 MW	
6	NTPC Tamilnaduu Enery company Limited (NTECL)						28 MW	
7	NLC Tamilnad Power Limited(NTPL)						32 MW	
	Total						591 MW	
	State Owned Generating Station							
	Puducherry Power Corporation Limited						32 MW	

M. RAMESH
EXECUTIVE ENGINEER - GENERAL
GENERAL DIVISION
ELECTRICITY DEPARTMENT
PUDUCHERRY.

(Details of Consumers) Summary of Energy Period From April -2021 To March-22						
S.No	Type of Consumers	Category of Consumers (EHT/HT/LT/Others)	Voltage Level (In Voltage)	No of Consumers	Total Consumption (In MU)	Remarks (Source of data)
	LOW TENSION CATEGORY					
1	Domestic	LT		369827	803.65	From Billing software data base
2	Commercial	LT		57637	170.45	
3	IP Sets	LT		7046	60.06	
4	Life Line services	LT		8248	3.62	
5	Tempeoary Supply	LT		0	3.85	
6	Heating and Motive Power/Water SUpply	LT		4411	170.07	
7		LT				
8	Public Lighting	LT		51600	19.95	
	TOTAL LOW TENSION ENERGY BILLED				**1231.65**	
9	HT Water Supply &Central/state Government services	HT		63	55.45	
10	HT Industrial +HT-Commercial	HT		454	951.56	
11	Industrial (Extra High Voltage)	EHT		8	544.99	
	TOTAL HIGH TENSION ENERGY BILLED				**1552.00**	
	TOTAL ENERGY BILLED			499294	2783.65	

M. RAMESH
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ELECTRICITY DEPARTMENT
PUDUCHERRY.

21

(Details of Feeder-wise losses) Period From.April -2021...To.... March -22																
Sl No.	Zone	Received at Circle (In MU)	Received at Division (In MU)	Received at Sub-division (In MU)	Name of the Station	Feeder Code/ID	Feeder Name	Type of Feeder (Urban/Mixed/Industrial/Agricultural/Rural)	Type of feeder meter (AMI/AMR/Other)	Received at Feeder (Final in MU)	Feeder Consumption (In MU)	Final Net Export at Feeder Level (In MU)	T&D losses	AT&C losses	% Data Received through Automatically (If feeder AMR/AMI)	Remarks
	Not Available															
																Feeder wise losses could not be provided as all the transformers yet to metered.

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PUDUCHERRY.

22

B. Supporting Documents

REGION WISE DRAWAL 21-22

	Pdy Region	Yanam	Mahe	KKL Region (excl PPCL)	PPCL	Total
Apr-21	240.4240109	5.5302336	3.3090625	21.746528	19.2986	290.3084
May-21	222.1014404	5.6669856	2.780434	18.631776	20.1854	269.366
Jun-21	217.39275	5.0082336	2.5993845	16.002112	19.7962	260.7987
Jul-21	232.2455701	4.889712	2.687998	19.359488	19.8194	279.0022
Aug-21	230.9352582	5.0675232	2.7556695	17.401664	20.7136	276.8737
Sep-21	230.2745498	4.8408576	2.735926	16.510336	20.0738	274.4355
Oct-21	226.4454025	5.0414304	2.8789595	14.212224	20.624	269.202
Nov-21	183.7777227	4.2610488	2.7148465	11.97984	19.4052	222.1387
Dec-21	198.5106349	4.5318648	2.9570495	11.282208	19.711	236.9928
Jan-22	201.5894147	4.3376352	2.866725	12.322112	20.2074	241.3233
Feb-22	194.2431155	4.1069616	2.7080105	11.70592	18.18	230.944
Mar-22	232.8827561	5.1419688	3.337339	18.297024	18.4226	278.0817
	2610.822626	**58.4244552**	**34.3314045**	**189.451232**	**236.4372**	**3129.467**

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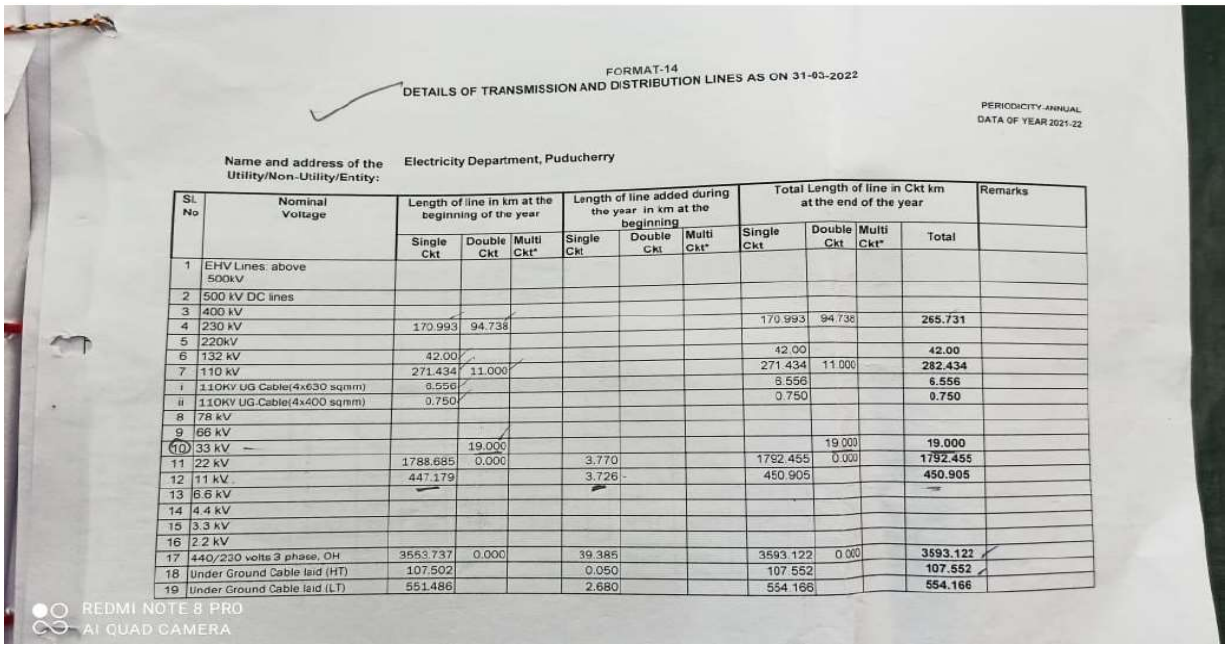
GENERAL DIVISION
ELECTRICITY DEPARTMENT
PUDUCHERRY.

C. Technical Details



FORMAT-14
DETAILS OF TRANSMISSION AND DISTRIBUTION LINES AS ON 31-03-2022

PERIODICITY-ANNUAL
DATA OF YEAR 2021-22

Name and address of the Utility/Non-Utility/Entity: Electricity Department, Puducherry

Sl. No	Nominal Voltage	Length of line in km at the beginning of the year			Length of line added during the year in km at the beginning			Total Length of line in Ckt km at the end of the year				Remarks
		Single Ckt	Double Ckt	Multi Ckt*	Single Ckt	Double Ckt	Multi Ckt*	Single Ckt	Double Ckt	Multi Ckt*	Total	
1	EHV Lines above 500kV											
2	500 kV DC lines											
3	400 kV											
4	230 kV	170.993	94.738					170.993	94.738		265.731	
5	220kV											
6	132 kV	42.00						42.00			42.00	
7	110 kV	271.434	11.000					271.434	11.000		282.434	
i	110KV UG Cable(4x630 sqmm)	8.556						8.556			6.556	
ii	110KV UG Cable(4x400 sqmm)	0.750						0.750			0.750	
8	78 kV											
9	66 kV											
10	33 kV		19.000						19.000		19.000	
11	22 kV	1788.685	0.000		3.770			1792.455	0.000		1792.455	
12	11 kV	447.179			3.726			450.905			450.905	
13	6.6 kV											
14	4.4 kV											
15	3.3 kV											
16	2.2 kV											
17	440/230 volts 3 phase, OH	3553.737	0.000		39.385			3593.122	0.000		3593.122	
18	Under Ground Cable laid (HT)	107.502			0.050			107.552			107.552	
19	Under Ground Cable laid (LT)	551.486			2.680			554.166			554.166	

D. Purchase Power

- **PPCL Bill**

PPCL				
Month	**Consumed Units**	**Rate**	**Claimed Amount**	**Settled Amount**
Apr-21	19298600	1.96	79058590	79058590
May-21	20185400	1.99	81402280	81402280
Jun-21	19796200	1.97	80231848	80231848
Jul-21	19819400	1.97	80277552	80277552
Aug-21	20713600	1.99	82453398	82453398
Sep-21	20073800	1.98	80979456	80979456
Oct-21	20624000	3.00	90738667	90738667
Nov-21	19405200	3.05	88052527	88052527
Dec-21	19711000	3.04	88953994	88953994
Jan-22	20207400	3.07	91069272	91069272
Feb-22	18184800	3.04	7439346	7439346
Mar-22	18422600	3.06	56373156	56373156
TOTAL	236442000			**907030086**

907030086

2021-2022

Sl No	Month	Unit	Rate per unit	Unit amount	Fuel cost adjusted	TOTAL(5 + 6)	Incentive claimed	Amount claimed towards repair of GTG	True up exercise for the year(Add/Less)	TOTAL(7 +8 + 9 (+/-) 10)	Less Advance paid	Less 2.5% rebate	Less 1.00% rebate	Total(of Cols 12 + 13 + 14)	ADD Filing & Publication Expenses	Balance amount to be paid/Excess amount with PPCL	Net amount paid	Cumulative total	Bill No	Remarks
1	2	3	4	5	6	7	8	9	10	11	12	13	14			15	16	17	18	19
	April'21(Bill of March)	2E+07	1.74	35474772	28916435	64391207				64391207				0	166380	64557587				
2	May'21(Bill of April)	1.9E+07	1.96	37825256	28866667	66691923			12366667	79058590				0		79058590				
3	June'21(Bill of May)	2E+07	1.99	40168946	28866667	69035613			12366667	81402280				0		81402280				
4	July'21 (Bill of June)	2E+07	1.97	38998514	28866667	67865181			12366667	80231848				0		80231848				
		Part payment of March'21bill															50000000	50000000	137/21-22	
		Balance of March'21bill															14557587	80000000	153/21-22	
		Part payment of April'21bill															15442413			
		Balance of April'21bill															63616177	200000000	158/21-22	
		Part payment of May'21bill															56383823			
5	August'21 (Bill of July)	2E+07	1.97	39044218	28866667	67910885			12366667	80277552				0		80277552				
		Balance of May'21bill															25018457	230000000	193/21-22	
		Part payment of June'21bill															4981543			
		Balance of June'21bill															30000000	260000000	207/21-22	
6	September'21 (Bill of August)	2.1E+07	1.99	41220064	28866667	70086731			12366667	82453398				0		82453398				
		Balance of June'21bill															40000000	300000000	279/21-22	
7	October'21 (Bill of September)	2E+07	1.98	39746124	28866667	68612791			12366665	80979456				0		80979456				
		Balance of June'21bill															5250305	330000000	432/21-22	
		Part payment of July'21bill															24749695			
		Balance of July'21bill															55527857	430000000	457/21-22	
		Part payment of August'21bill															44472143			
		Balance of August'21bill															37981255	548960711	498/21-22	
		Bill of September'21															80979456			

2021-2022 (CONTD...)

Sl. No.	Month	Unit	Rate per unit	Unit amount	Fuel cost adjusted	TOTAL(5 + 6)	Incentive claimed	Amount claimed towards repair of GTG	True up exercise for the year(Add/Less)	TOTAL(7 +8 + 9 (+/-) 10)	Less Advance paid	Less 2.5% rebate	Less 1.00% rebate	Total(of Cols. 12 + 13 + 14)	ADD Filing & Publication Expenses	Balance amount to be paid/Excess amount with PPCL	Net amount paid	Cumulative total	Bill No.	Remarks
1	2	3	4	5	6	7	8	9	10	11	12	13	14			15	16	17	18	19
1	Nov.21(Bill of Oct.'21)(Part payment)	20624000	3	61872000	28866667	90738667				90738667				0	0	90738667	51039289	600000000	537/21-22	
2	Dec.'21(Bill of Nov.'21)	Balance of Oct.'21 bill															39699378	727751905	708/21-22	
		19405200	3.05	59185860	28866667	88052527			0	88052527				0		88052527	88052527			
3	Jan.22(Bill of Dec.'21)(Part	19711000	3.04	59921440	28866667	88788107				88788107				0	165887	88953994	72248095	800000000	783/21-22	
4	Feb.'22(Bill of Jan.'22)(Part payment)	20207400	3.07	62036718	28866667	90903385			0	90903385				0	165887	91069272	81966997	900000000	851/21-22	
		Balance of Dec.'21 bill															16705899			
		Filing and publication expenses(JERC hearing) for 2021-22															1327104			
5	March''22(Bill of Feb.'22)	Balance of Jan'22 bill															9102275	909102275	968/21-22	
		Advance for Feb'22															75000000	984102275	967/21-22	
		18184800	3.04	55281792	28866667	84148459			84148459	75000000	1875000		76875000	165887	7439346	7439346	991541621	1015/21-22	
		Advance for March.'22															8458379	1000000000	1099/21-22	

- **PGCIL Bill**

Central Transmission Utility of India Limited
Plot No.2, Sector-29, Gurgaon, Haryana-122001.

Central Transmission Utility of India Limited
Plot No.2, Sector-29, Gurgaon, Haryana-122001.
GSTIN: 06AAJCC2026N1ZM
CIN: U40100HR2020GOI091857
CTUILPAN: AAJCC2026N

Billing,Collection and Disbursement of Inter State Transmission System Charges

Bill of Supply for First Bill for Billing month of Mar'22

DIC No : 2100051
Name of DIC: Puducherry Electricity Department
Address of Dic:No.137, Subhash Chandra Bose Salai,Subhash Chandra Bose Salai,,
GSTIN of DIC:
Bill of Supply No.: MI6012210015
Bill of Supply Date: 02.03.2022
GST_SAC: 996911

showing Inter State Tr charges 2020 w.e.f Nov 20

S No.	Description	Amount (Rs.)
1	NC-RE	6,347,203.00
2	NC-HVDC	10,607,665.00
3	RC-AC	7,622,190.00
4	TC	14,271,984.00
5	AC-UBC – usel based component	10,861,641.00
6	AC-BC	88,376,215.00
7	**Sub Total A**	**138,086,898.00**
8	Credit for STOA	5,016,571.00-
9	Rebate Adjustment	1,717,933.00-
10	**Sub Total B**	**6,734,504.00-**
	Grand Total	**131,352,394.00**
In words: Rupees Thirteen Crore Thirteen Lakh Fifty Two Thousand Three Hundred Ninety Four Only		

Please make RTGS payment In SBI,(CAG-II Branch,New Delhi) IFSC Code SBIN0017313, A/C 39954184733

Passed for an amount of Rs. 13,13,52,394/- (Rupees Thirteen crore Thirteen Lakh Fifty Two Thousand Three Hundred and Ninety Four only)

18/3/22
DRAWING AND DISBURSING OFFICER
ELECTRICITY DEPARTMENT
PUDUCHERRY
18/03/2022

Authorized signatory
For & On behalf of
Central Transmission Utility of India Ltd.

स्वहित एवं राष्ट्रहित में ऊर्जा बचाएं
Save Energy for Benefit of Self and Nation

- **NTPL Bill**

एनएलसीतमिलनाडुपावरलिमिटेड
NLC TAMILNADU POWER LIMITED
(एनएलसी इंडिया लिमिटेडएवं टेंजेडको का संयुक्त उद्यम एवं एनएलसी इंडिया लिमिटेड का सहायक कंपनी)
(A JVC between NLC India Ltd & TANGEDCO and a subsidiary of NLC India Ltd)
मुख्य कार्यकारी अधिकारी का कार्यालय
OFFICE OF THE CHIEF EXECUTIVE OFFICER
2-500 मेगावाट संयुक्त उद्यम ताप विद्युत परियोजना 2 500 MW JV Thermal Power Project
हारबर इस्टेट/Harbour Estate, टूटिकोरिन/Tuticorin- 628004
फैक्स/Fax 0461-2352480, फोन Phone : 0461-2352044, सं.नं.त CIN U40102TN2005GOI058050
ई.मेल E-mail: ceo.ntpl@nlcindia.in, वेब Web : www.ntplpower.com

BILL OF SUPPLY - MAR - 2022 (Provisional)

IRN No. :
Ack No. :
Invoice No. : 0090035375
Invoice Date : 02.04.2022

Ack Date :
Customer Code : 20000013
Invoice Unit : TPS-NTPL

To

PUDUCHERRY ELECTRICITY BOARD
PUDUCHERRY
UNION TERITORY OF PONDICHERRY, Pondicherry 605001
Customer GST No: 34AAAGO0342Q1Z7 Customer State Code: 34

Description of Goods/Services: Electrical energy (HSN - 27160000)

Period: 01.03.2022 to 31.03.2022

Description	Unit	Amount / Rate	Ratio / Qty	Payable Amount
Energy Charge	Rs./kWh	3.610	5790945	20,905,311.00
Capacity Charges	Rupees			11,394,360.00
SRLDC Fees	Rupees			12,228.00
CRSD	Rupees			10,733,572.00
			Total Invoice Amount (Rounded Off):	43,045,471.00

Accounting Document Number: 2157020988

Rupees Four Crore Thirty Lakh Forty Five Thousand Four Hundred Seventy One Only

E & O.E

The Capacity and Energy Charges are claimed as per CERC order Dated 11-07-2017

The above figures in kWh is as indicated in the website of SRPC as per provisional REA.

Rebate applicable as per NTPL Graded Rebate Scheme.

Signature
Name of Signatory VALARMATHI G
Designation/Status DGM/COMMERCIAL

1. NTPL 3. NTECL
2. NLC 4. KUDANKULAM
5. CTUIL

- **NTPC RSTPS I&II Bill**

Bill No. 602

NTPC
SR-Headqua
NTPC BHAWAN, Old Praga To
Secunderabad 500080

CIN: L40101DL1975GOI007966

Energy Bill	**01.03.2022 – 31.03.2022**	Tariff Ref.	
Bill No.	**602404790**		
Date	**06.04.2022**	REA Ref.	
Beneficiary	**Elecy Department of Pondicherry .**	REA Date	
Station	**Ramagundam Super Thermal Power Stn 1**		

Regular Energy

SNo	Description	Unit	Rate	Current Amount	Already Claimed	Net Now Claimed
01	Cap Charge(Peak-HD)	Rs. Cr/Yr	1,057.68970	6,681,073	0	6,681,073
02	Cap Charge(OffPeak-HD)	Rs. Cr/Yr	1,057.68970	25,405,707	0	25,405,707
03	Energy Charges Coal	Rs./kWh	3.03400	121,358,325	0	121,358,325
			Totals	**153,445,105**	**0**	**153,445,105**

Grand Total **153,445,105**

Rupees (in words) **Fifteen Crore Thirty-Four Lakh Forty-Five Thousand One Hundred Five Only**

Bank Details: Current Account No. 10813608669, State Bank of India, 5th Floor, Redfort Capital, Parsvnath Towers, Bhai Veer Singh Marg, Gole Market, New Delhi- 110001; IFSC CODE : SBIN0017313; SWIFT CODE : SBININBB824; BRANCH CODE :17313.

Page 1 of 4

- **NTPC RSTPS III Bill**

Bill No. 602

NTPC

SR-Headqua

NTPC BHAWAN, Old Praga To

Secunderabad 500080

CIN: L40101DL1975GOI007966

Energy Bill	**01.03.2022 – 31.03.2022**		
Bill No.	**602404791**	Tariff Ref.	
Date	**06.04.2022**	REA Ref.	
Beneficiary	**Elecy Department of Pondicherry .**	REA Date	
Station	**Ramagundam Super Thermal Power Stn 3**		

Regular Energy

SNo	Description	Unit	Rate	Current Amount	Already Claimed	Net Now Claimed
01	Cap Charge(Peak-HD)	Rs. Cr/Yr	283.65730	2,182,743	0	2,182,743
02	Cap Charge(OffPeak-HD)	Rs. Cr/Yr	283.65730	8,328,178	0	8,328,178
03	Incentive (Peak-LD)	Rs./kWh	0.65000	951,542	951,542	0
04	Incentive (Peak-HD)	Rs./kWh	0.65000	712,878	485,260	227,618
05	Incentive (OffPeak-HD)	Rs./kWh	0.50000	1,545,918	890,586	655,332
06	Energy Charges Coal	Rs./kWh	2.98100	44,230,731	0	44,230,731
07	Filing Charges	Rs.	2,200,000.00	104,852	105,468	-616
			Totals	**58,056,842**	**2,432,856**	**55,623,986**

Grand Total **55,623,986**

Rupees (in words) **Five Crore Fifty-Six Lakh Twenty-Three Thousand Nine Hundred Eighty-Six Only**

Bank Details: Current Account No. 10813608669, State Bank of India, 5th Floor, Redfort Capital, Parsvnath Towers, Bhai Veer Singh Marg, Gole Market, New Delhi- 110001; IFSC CODE : SBIN0017313; SWIFT CODE : SBININBB824; BRANCH CODE :17313.

Page 1 of 4

- **NTPC TSTPS-II Bill**

Bill No. 602404792

NTPC Ltd.
SR-Headquarters
NTPC BHAWAN, Old Praga Tools
Secunderabad 500080

CIN: L40101DL1975GOI007966

Energy Bill	**01.03.2022 – 31.03.2022**		
Bill No.	**602404792**	Tariff Ref.	
Date	**06.04.2022**	REA Ref.	
Beneficiary	**Elecy Department of Pondicherry .**	REA Date	
Station	**Talcher STPS 2 -**		

Regular Energy

SNo	Description	Unit	Rate	Current Amount	Already Claimed	Net Now Claimed
01	Cap Charge(Peak-HD)	Rs. Cr/Yr	996.95000	6,114,627	0	6,114,627
02	Cap Charge(OffPeak-HD)	Rs. Cr/Yr	996.95000	24,312,287	0	24,312,287
03	Incentive (Peak-HD)	Rs./kWh	0.65000	1,602,977	906,996	695,981
04	Incentive (OffPeak-HD)	Rs./kWh	0.50000	5,516,552	2,930,795	2,585,757
05	Energy Charges Coal	Rs./kWh	1.72500	85,613,285	0	85,613,285
			Totals	**123,159,728**	**3,837,791**	**119,321,937**

Grand Total **119,321,937**

Rupees (in words) **Eleven Crore Ninety-Three Lakh Twenty-One Thousand Nine Hundred Thirty-Seven Only**

Bank Details: Current Account No. 10813608669, State Bank of India, 5th Floor, Redfort Capital, Parsvnath Towers, Bhai Veer Singh Marg, Gole Market, New Delhi- 110001; IFSC CODE : SBIN0017313; SWIFT CODE : SBININBB824; BRANCH CODE :17313.

Page 1 of 4

- **NTPC SMTPS-II Bill**

Bill No. 602

NTPC

SR-Headqua

NTPC BHAWAN, Old Praga To

Secunderabad 500080

CIN: L40101DL1975GOI007966

Energy Bill	01.03.2022 – 31.03.2022		
Bill No.	602404789	Tariff Ref.	
Date	06.04.2022	REA Ref.	
Beneficiary	Elecy Department of Pondicherry .	REA Date	
Station	Simhadri Super Thermal Power Station 2		

Regular Energy

SNo	Description	Unit	Rate	Current Amount	Already Claimed	Net Now Claimed
01	Cap Charge(Peak-HD)	Rs. Cr/Yr	1,029.60340	2,039,981	0	2,039,981
02	Cap Charge(OffPeak-HD)	Rs. Cr/Yr	1,029.60340	8,463,228	0	8,463,228
03	Energy Charges Coal	Rs./kWh	2.95400	13,719,552	0	13,719,552
04	Filing Charges	Rs.	4,400,000.00	64,504	66,352	-1,848
05	Compensation Charges(Th)	Rs./kWh	0.06900	29,013,702	22,214,053	6,799,649
			Totals	**53,300,967**	**22,280,405**	**31,020,562**

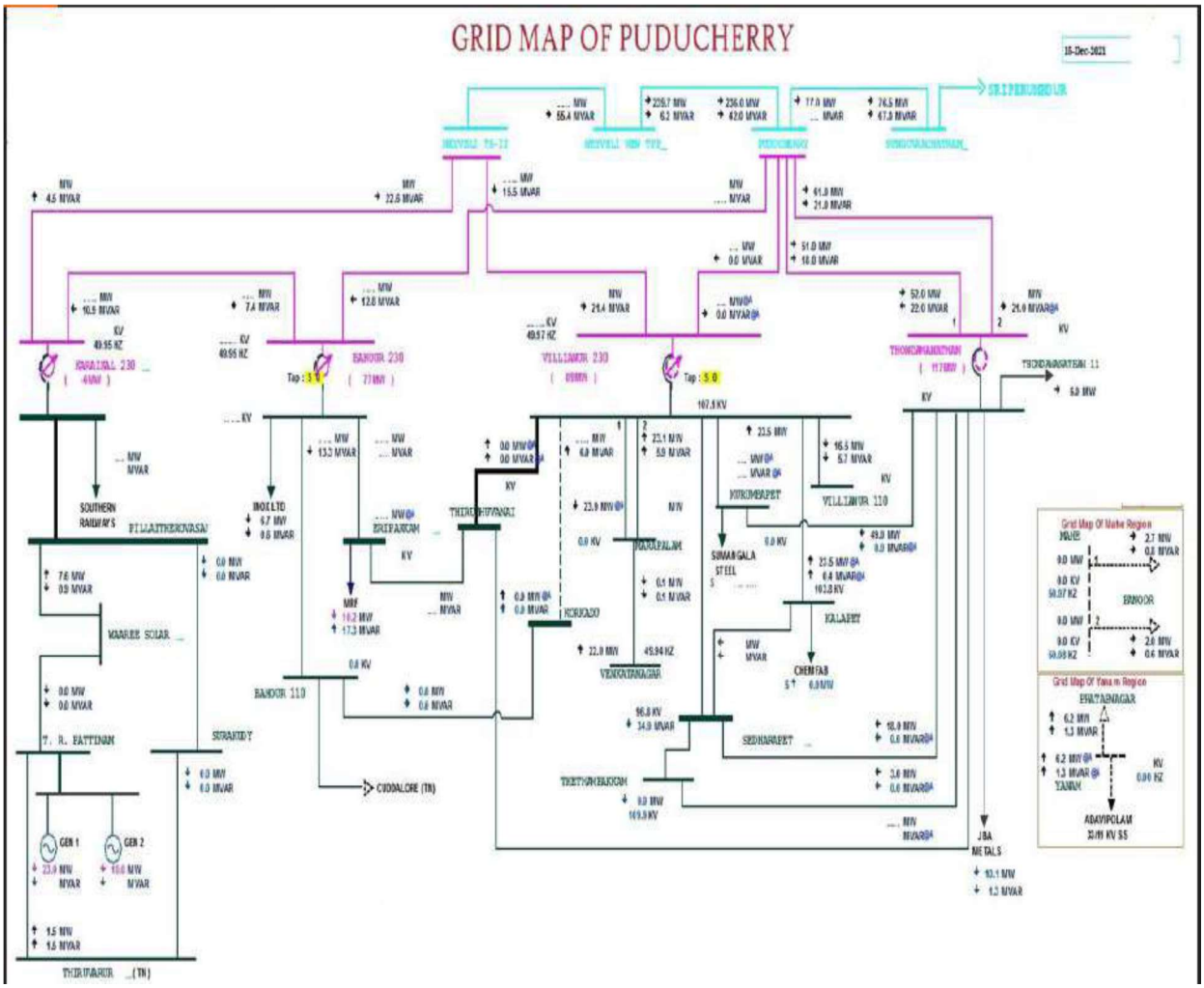
Grand Total **31,020,562**

Rupees (in words) **Three Crore Ten Lakh Twenty Thousand Five Hundred Sixty-Two Only**

Bank Details: Current Account No. 10813608669, State Bank of India, 5th Floor, Redfort Capital, Parsvnath Towers, Bhai Veer Singh Marg, Gole Market, New Delhi- 110001; IFSC CODE : SBIN0017313; SWIFT CODE : SBININBB824; BRANCH CODE :17313.

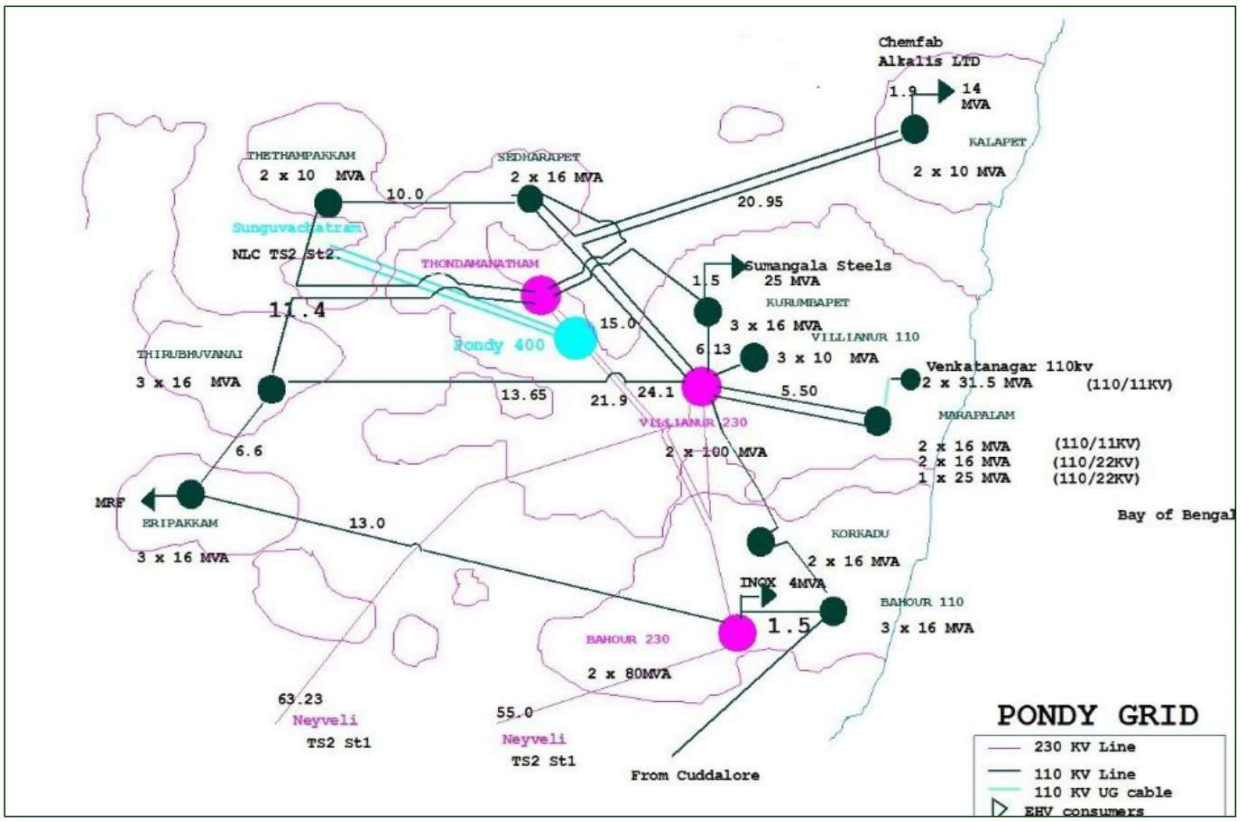
Page 1 of 4

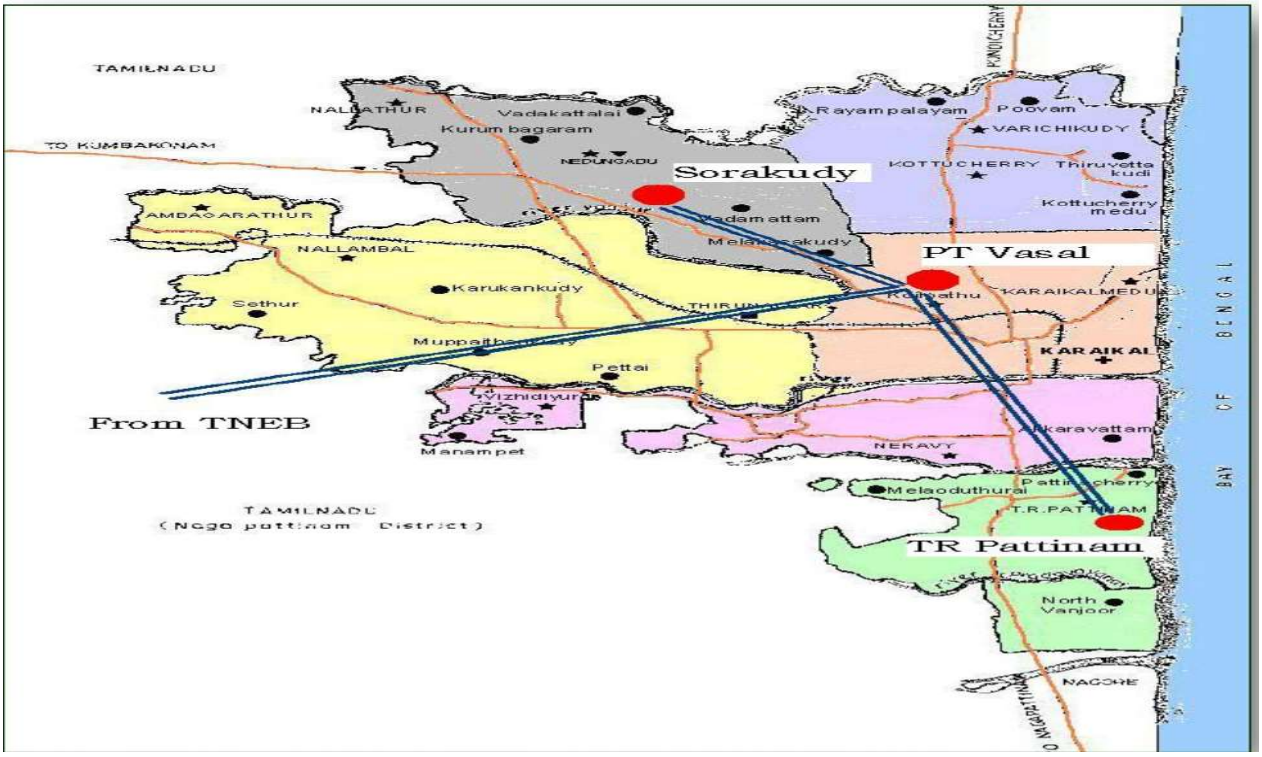
5.10 Power Map

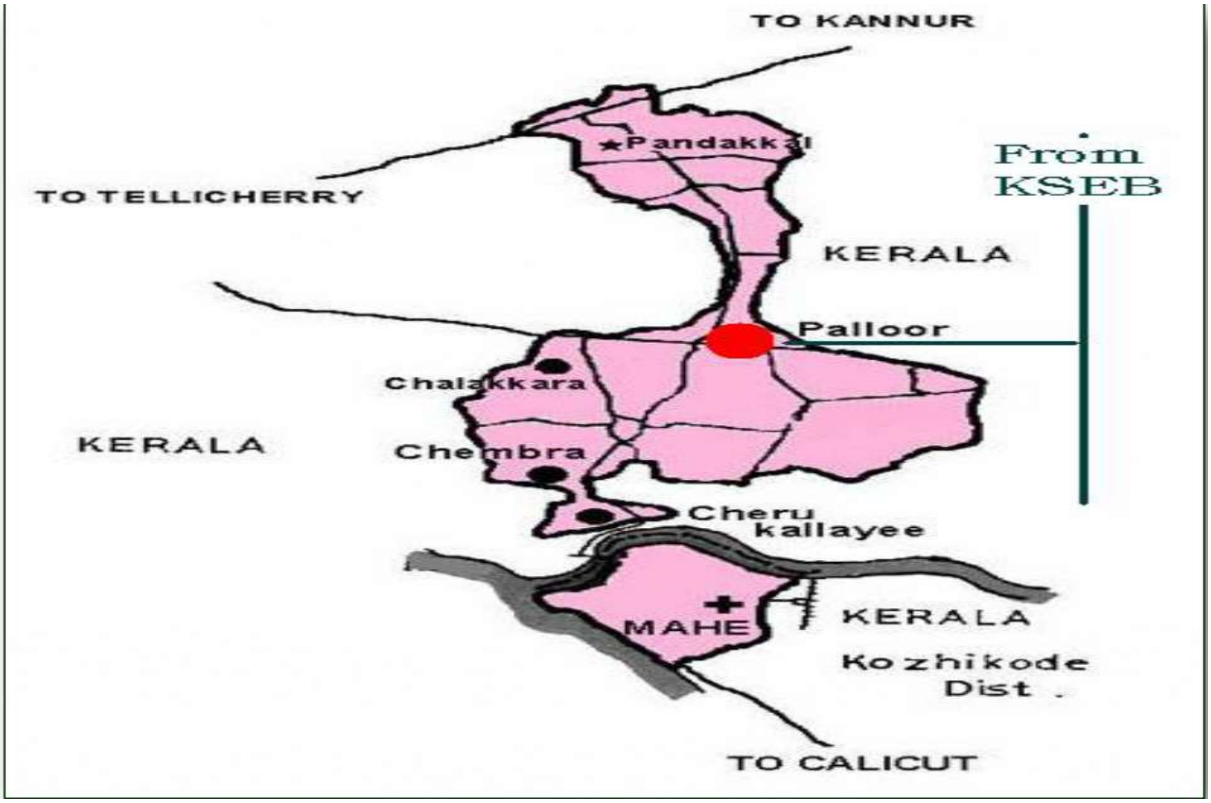


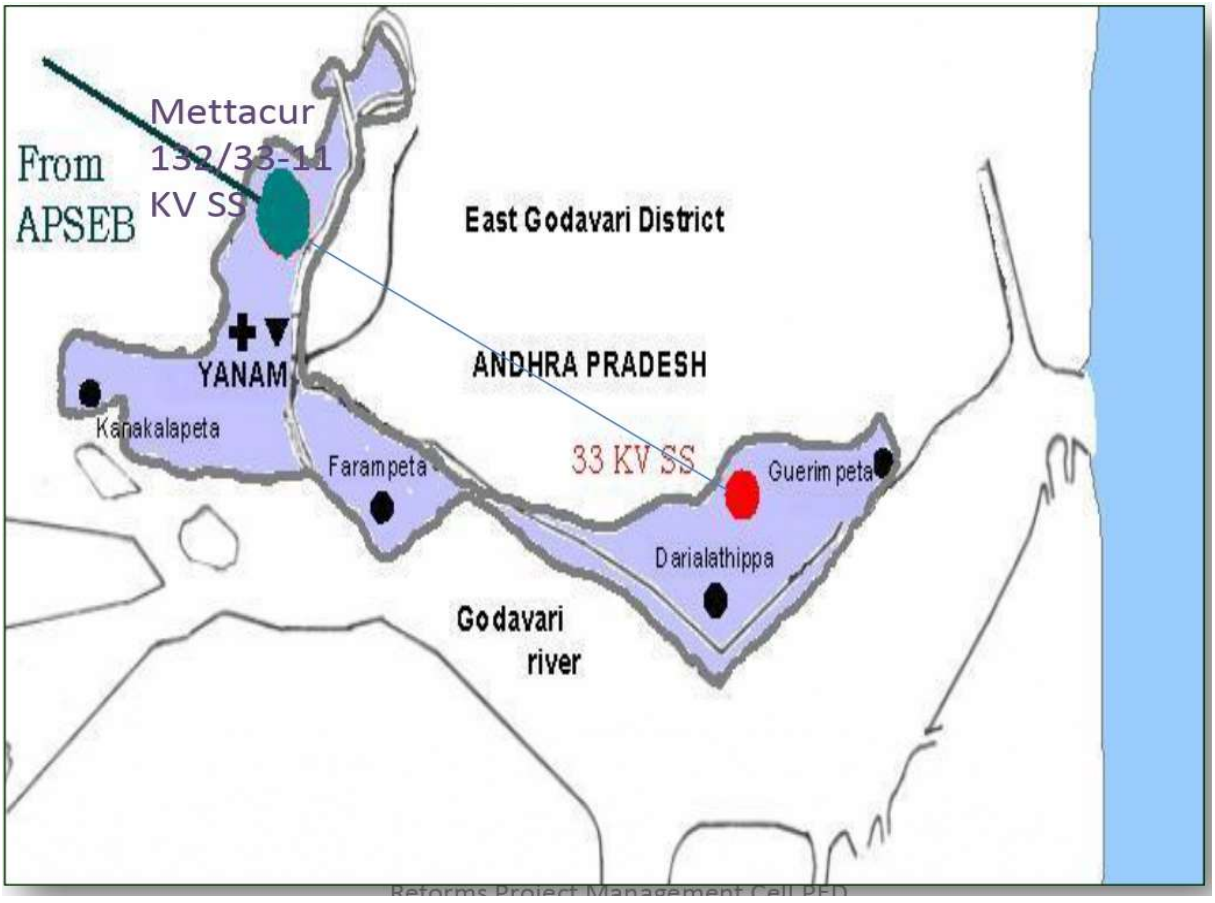
5.11 SLD (Single Line Diagram)

The SLD of all the Four Regions are attached Below. i.e Puducherry, Karaikal, Mahe & Yanam Respectively.

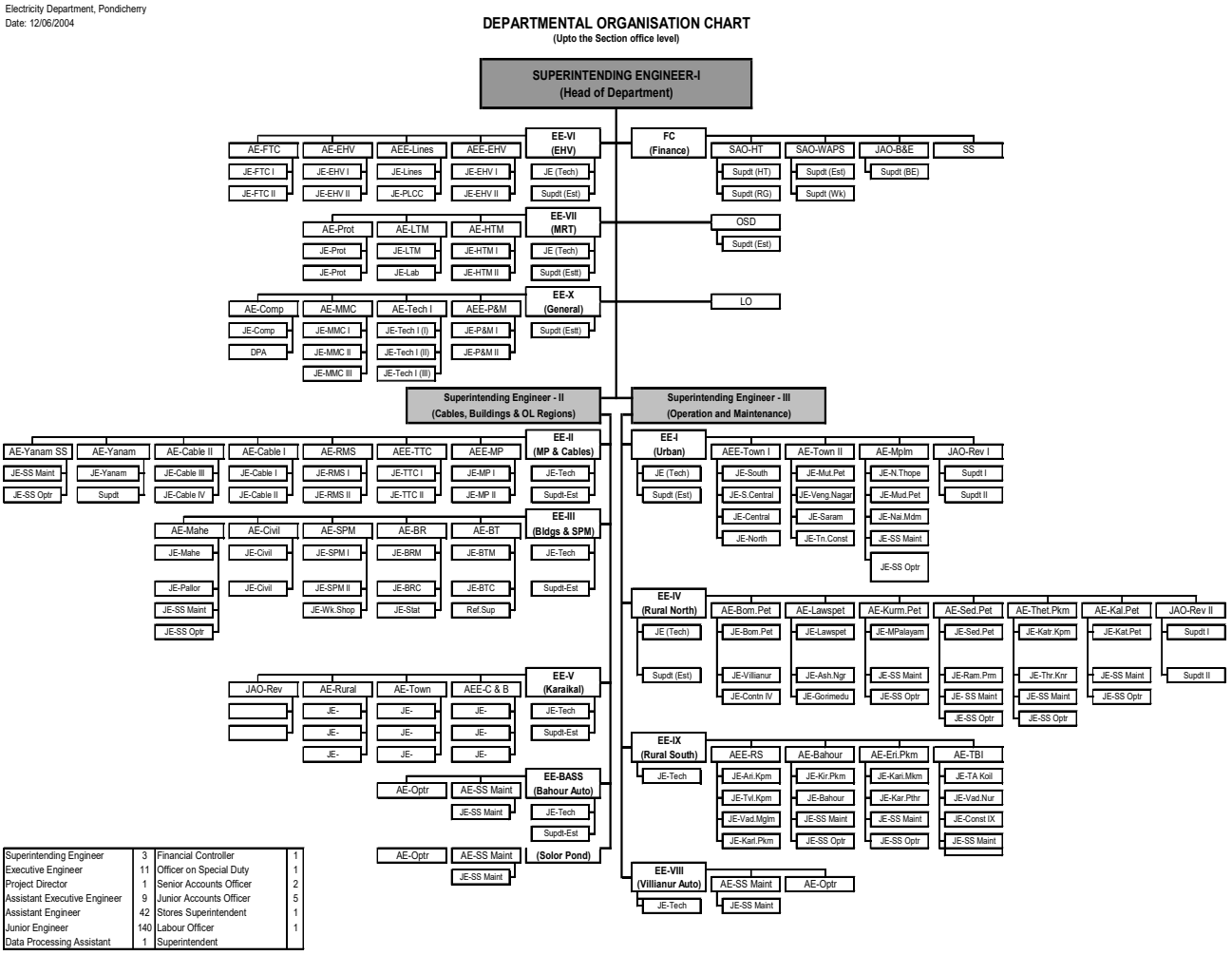





TO KANNUR
Pandakkal
From KSEB
TO TELLICHERRY
KERALA
Palloor
Chalakkara
KERALA
Chembra
Cheru kallayee
MAHE
KERALA
Kozhikode Dist .
TO CALICUT


Mettacur 132/33-11 KV SS
From APSEB
East Godavari District
YANAM
ANDHRA PRADESH
Kanakalapeta
Farampeta
33 KV SS
Guerimpeta
Darialathippa
Godavari river

5.12 Organizational Chart



5.13 List of parameters arrived through calculation or Formulae with list of source of data

➢ Transmission and Distribution Losses (T&D Losses)

- Energy losses occur in the process of supplying electricity to consumers due to technical and commercial reasons.
- The technical losses are due to energy dissipated in the conductors, transformers and other equipment used for transmission, transformation, sub-transmission and distribution of power.
- These technical losses are inherent in a system and can be reduced to a certain level.
- Pilferage by hooking, bypassing meters, defective meters, errors in meter reading and in estimating un-metered supply of energy are the main sources of the commercial losses.
- There is another component of commercial losses, which is attributable to non-recovery of the billed amount, which is reflected in collection efficiency.
- T&D losses together with loss in collection give us Aggregate Technical & Commercial (AT&C) losses.

Calculation of transmission losses:

Transmission losses = Total Energy Purchased - Total Energy Sale - Total Input

Calculation of transmission losses

Transmission losses (MU)	Value
Total Energy Purchased	3129.49
Total Energy Sale	2783.65
Transmission losses	92.32
Total Input	3082.98
Transmission losses (%)	2.95%

5.14 Recommendation to improve technical losses & commercial losses.

1. Ensure Installation of Smart Meter/ Functional Meter in all consumers. DTR &Feeder.
2. Installation of Capacitor bank in S/s for power factor improvement.
3. GIS based mapping of all 33/11 KV Substations, 11KV Lines, DTR and all Consumers both HT & LT.
4. Development & Implementation of technology based energy accounting system including associated software as per guideline of BEE.