

ANNUAL ENERGY AUDIT REPORT
OF TP SOUTHERN ODISHA DISTRIBUTION LIMITED
(TPSODL)
[DC Registration No. - DIS00420D]



Submitted to:

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ABBREVIATIONS

AMI	:	Advanced Metering Infrastructure
AMR	:	Automated Meter Reading
ARR	:	Annual Revenue Requirement
AT & C	:	Aggregate Technical and Commercial
BEE	:	Bureau of Energy Efficiency
CAPEX	:	Capital Expenditure
CERC	:	Central Electricity Regulatory Commission
CGPs	:	Captive Generating Plants
CKT	:	Circuit Kilometer
CTU	:	Central Transmission Utilities
CT	:	Current Transformer
DC	:	Designated Consumer
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 Unit
MW	:	Mega Watt
NO	:	Nodal Officer
OA	:	Open Access
OERC	:	Odisha Electricity Regulatory Commission
OPTCL	:	Odisha Power Transmission Corporation Limited
POC	:	Point of Connection
PT	:	Potential Transformer
PVC	:	Polyvinyl chloride
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
TPSODL	:	Tata Power Southern Odisha Distribution Limited
XLPE	:	Cross-linked polyethylen

ACKNOWLEDGEMENT

Power Tech Consultants (PTC) places on record its sincere thanks to management of TP Southern Odisha Distribution Limited (TPSODL) for entrusting the task of conducting Energy Audit of TPSODL.

PTC acknowledges with gratitude the wholehearted support and cooperation extended by Mr. Arvind Singh, CEO, Mr. Saumitro Banerjee (Head – MMG, Energy Audit), Mr. Binod Bihari Nayak, AGM (Com & RA), Mr. Ratan Kuber (Lead Engineer – Energy Audit), Mr. Dusmanta Kumar Rout (HoG – IT), Mr. Deepak Jain (Financial Controller) and Officials of Project, Regulatory Affairs and Commercial Department while carrying out the study at TPSODL.

PTC sincerely thank to all the officials and staff members of TPSODL who have rendered their all possible cooperation and assistance to the study team during the entire period of the Audit.

M/s. Power Tech Consultants

Bibhu Charan Swain
Authorised Signatory

Signature

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AUDIT TEAM DETAILS

The following team members of M/s. Power Tech Consultants were involved in the Annual Energy Audit of TPSODL for FY 2021-22.

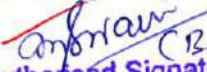
Sl. No.	Organization	Team Member	Designation	Role
1	Power Tech Consultants	Mr. Bibhu Charan Swain	Sr. Consultant Accredited Energy Auditor Regd. No. -AEA-0121	Project Head, Review of Data and Report
2		Mr. Sangram Keshari Routray	Sector Expert	Review of Data and Report
3		Mr. Subhranshu Sekhar Rath	General Manager	Inspection, Review of Data & Report
4		Mr. Dambarudhar Kar	Sr. Manager	Inspection, Field Visit, Review of Data & Report
5		Mr. Suresh Gurjar	Manager (Project)	Field Visit, Document verification & Report writing
6		Mr. Nirjhar Biswal	Assistant Manager (Project)	Field Visit, Collection & Verification of Data, Report Writing
7		Mr. Suraj Kumar Bhujabala	Assistant Manager (Project)	Field Visit, Collection & Verification of Data, Report Writing
8		Mr. Subash Mallick	Project Associate	Field Visit, Collection & Verification of Data
9		Mr. Suman Sourav Nayak	Project Associate	Field Visit, Collection & Verification of Data, Report Writing
10		Ms. Subhasmita Priyadarsani Bhukta	Project Associate	Verification of Data, Report Writing

CERTIFICATE

We certify the following:

- The data collection has been carried out diligently and truthfully.
- All data measuring devices used by the auditor are in good working condition, have been calibrated and have valid certificates from the authorized approved agencies and tampering of such devices has not occurred.
- All reasonable professional skill, care and diligence had been taken in preparing the energy audit report and the contents thereof are a true representation of the facts.
- Adequate training provided to personnel involved in daily operations for implementation of recommendations.
- The energy audit has been carried out in accordance with the BEE (Manner and Intervals for Conduct of Energy Audit in electricity distribution companies) Regulations, 2021.

M/s. Power Tech Consultants


(Bibhu Charan Swain)
Authorised Signatory

Signature

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1.0 EXECUTIVE SUMMARY

TP Southern Odisha Distribution Limited (TPSODL) is a joint venture between Tata Power and the Government of Odisha with the majority stake being held by Tata Power Company (51%).

TPSODL has been carrying out the business of distribution and retail supply of electricity in the eight districts of Odisha namely Ganjam, Gajapati, Boudh, Kandhamala, Rayagada, Koraput, Nabarangpur and Malkangiri over an area of supply 48,751 sq km. TPSODL serves a population of 94.38 lacs with a Customer Base of 23.86 lacs. The Company is operating through 6 circles namely City Circle, Berhampur Circle, Aska Circle, Bhanjanagar Circle, Rayagada Circle and Jeypore Circle which is further subdivided in 19 Divisions and 51 Sub-division which manages the commercial and O&M activities in order to serve its consumers. The business of TPSODL utility is governed by the provisions of license issued by Hon'ble Odisha Electricity Regulatory Commission (OERC).

TPSODL receives electrical power at 33kV level from 28 numbers of transmission stations (TS) out of which 4 nos. TS are rated at 220/132/33kV, 2 nos. at 220/33kV and 22 nos. at 132/33kV located within and in the vicinity of TPSODL operational area. TPSODL distributes the power at 33kV / 11kV / 440V / 230V depending on the demand of the consumers.

Fact sheet of TPSODL:

The Fact sheet of TPSODL is furnished below.

Supply Area	48751 Sq. Km
Maximum Demand	650 MVA
Power Transformer Installed Capacity	23474 MVA
No. of distribution Substations	55959
Distribution Transformer (DT) Installed Capacity	2402 MVA
HT Mains-33 kV	3847 Ckt. Km
HT Mains-11 kV	42786 Ckt. Km
LT Mains	39270 Ckt. Km
No of 33 kV Feeders	116
No of 11 kV Feeders	881
No of 33/11 kV Sub Station	244
No of Power Transformer	524

The Energy and Performance Fact Sheet of TPSODL for the last 2 financial years is furnished below.

PARTICULARS	FY 20-21	FY 21-22
Total Sale (MU)	2769	2998
T & D Loss (%)	23.07%	24%
Billing Efficiency (%)	76.93%	76%
Billing To Consumers (Rs. in Cr)	1318 Cr.	1613 Cr.
Collection Received (Rs. in Cr)	1198 Cr.	1438 Cr.
Collection Efficiency (%)	90.95%.	89%
AT& C Loss (%)	30.03%	32%

CATEGORY WISE % OF METERING COMPLETED									
Category	FY 2019-20			FY 2020-21			FY 2021-22		
	Total	No. of Metering Completed	% of Metering Completed	Total	No. of Metering Completed	% of Metering Completed	Total	No. of Metering Completed	% of Metering Completed
33 kV Feeders	105	74	70.48%	110	83	75.45%	116	95	81.90%
11 kV Feeders	695	290	41.73%	794	616	77.58%	881	664	75.37%
Distribution Transformers	51,915	0	0.00%	54,451	854	1.57%	55959	900	1.61%
Consumers	2279096	2148081	94.25%	2340713	2247898	96.03%	2386112	2283832	95.71%

Energy Bill Extracts for FY 2021-22:

Sl.No.	Month	SMD Approved by OERC(kVA)	SMD Permitted by OERC(kVA)	Actual SMD (kVA)	Total Energy Billed (MU)	Total Energy Sale (MU)	LOSS (%)	Total Energy Billed as per OERC (MU)	LOSS (%) as per OERC
1	Apr-21	700000	770000	619106	342.0101	259	24%	347	25%
2	May-21	700000	770000	594193	338.315	255	25%	343	26%
3	Jun-21	700000	770000	602886	325.3891	247	24%	329	25%
4	Jul-21	700000	770000	612651	336.9157	264	22%	341	23%
5	Aug-21	700000	770000	609068	348.1566	270	22%	352	23%
6	Sep-21	700000	770000	626390	328.3436	270	18%	333	19%
7	Oct-21	700000	770000	637461	353.1658	291	18%	358	19%
8	Nov-21	700000	770000	595136	300.9311	202	33%	301	33%
9	Dec-21	700000	770000	592714	288.5356	216	25%	289	25%
10	Jan-22	700000	770000	604421	294.6971	219	26%	295	26%
11	Feb-22	700000	770000	613363	287.4249	226	21%	287	21%
12	Mar-22	700000	770000	649824	367.2553	279	24%	367	24%
TOTAL		8400000	9240000	7357213	3911.14	2998	23%	3942	24%

ENERGY CONSERVATION MEASURES:

DETAILS OF ENERGY CONSERVATION MEASURES RECOMMENDED IN THE ENERGY AUDIT REPORT [2022-23]							
Sl. No.	Energy Saving Measures	Investment (In Cr)	Targeted Annual Energy Savings in MU	Targeted Financial Savings in Rupees Crore	Payback Period	Date of Completion of measure / likely completion	Remarks
A	Loss Reduction						
	Up-gradation / refurbishment of 33 kV & 11 kV Line	24.84					
	Feeder Meter for Energy Audit	8.15					
	LT Bare to ABC Conversion	3.9					
	LT Distribution Polycarbonate Box & Replacement of Damaged Service Cable	5.43					
	GIS Implementation	18.4					
	Total (A)	60.72					
B	Network Reliability						
	Refurbishment of 33/11kV Primary Substations (Station Transformer, VCB, Isolator, Relay, CT, PT, LA, Illumination, Battery & Chargers, Earthing, etc)	13.13					
	Mitigation of Single PTR (N-1 arrangement) & Replacement of Old PTR	12.52					
	SCADA implementation in Conventional Non ODSSP PSS (Electrical+ Automation +Civil)	59.86					
	ADMS Implementation	0					
	Construction of New 33 kV Lines for GSS Bay Utilisation	6.65					
	N-1 arrangement for 33 kV Lines	4.95					
	Life enhancement/Refurbishment of Network (Lines, V-Cross arm, Earthings, LA, UG & Covered Conductor)	8.17					
	Refurbishment of DSS & LV Protection at DSS	8.85					
	33 kV & 11 kV Line AB Switch, FPI, RMU, ARC, Sectionalizer	8.44					
	Trolley mounted Mobile Substation	1.18					
	Total (B)	123.75					
C	Load Growth		90.55	23.81	9.93	FY 2022-23	As per the annual reduction in T&D loss target of Hon'ble OERC and detailed note attached

	New 11kV link Lines	5.75					
	Augmentation of Power Transformer	1.78					
	Augmentation of Distribution Transformer	9.85					
	Augmentation / addition of LT ABC line	1.34					
	Total (C)	18.72					
D	Technology & Civil Infrastructure						
	Build & Strengthen end user IT infrastructure	8.05					
	Strengthen Network Connectivity across TPSODL	7.97					
	Augmentation of Data Centre infrastructure – Hardware and Software	15.55					
	IT infrastructure for 50-Seater Call Centre.	1.7					
	Total (D)	33.27					
	Grand Total	236.46	90.55	23.81	9.93		

CALCULATION OF PAYBACK PERIOD

Approved sale of TPSODL as approved by commission FY 2022-23= 3297.7 MU

Calculated T&D Loss of TPSODL for FY 2021-22= 24%

Assumed Target T&D Loss as approved by Hon'ble OERC for FY 2022-23= 21.25%

So, Targeted Annual Energy Savings in MU = $7747.2 \times (24\% - 21.25\%) = 90.55$ MU

Approved Bulk Supply Price of GRIDCO for FY 2022-23= 2.35 per Unit

Approved Transmission Tariff of OPTCL for FY 2022-23= 0.28 per Unit

Hence financial saving of TPSODL due to T&D loss reduction= $(2.35 + 0.28) \times 90.55 / 10 = 23.81$ Cr.

Total investment approved by Hon'ble OERC for T&D Loss= 236.46 Cr

Simple Payback period = $\text{TOTAL INVESTMENT} / \text{SAVINGS} = 236.46 / 23.81 = 9.93$ Years

Considering the higher payback period, TPSODL / Hon'ble OERC may target for higher T&D Loss reduction in order to justify the Capital Expenditure.

The present annual energy audit is conducted in compliance with BEE (Manner and Intervals for Conduct of Energy Audit in electricity distribution companies), Regulations 2021 by Power Tech Consultants.

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2.0 SUMMARY OF CRITICAL ANALYSIS AND MAJOR OBSERVATIONS AND RECOMMENDATION:

The observations and critical comments with regards of the energy data as furnished in the Pro-forma by TPSODL is furnished as under:

1. The Cell C-28 of “Infrastructure Details” sheet of the Pro-forma may be read and considered as Energy Purchase Particular. TPSODL may request BEE/SDA for necessary changes in the Pro-forma.
2. There is no separate segregation of input energy and sale to consumers at 33kV and 11kV levels as per the prevailing practice of TPSODL. However in the “Infrastructure Details” sheet of the Pro-forma [Ref Row 4(ii) and 4(iii)], there is a requirement to fill the data of 11kV and 33kV voltage wise energy input and energy sale. TPSODL has clubbed both the 33kV and 11kV energy input and energy sale and provided the data in 11kV row. It is recommended that in future TPSODL is required to segregate the 11kV and 33kV Input Energy and Energy Sale.
3. In Energy Accounting Summary of “Infrastructure Details” sheet of the Pro-forma [Ref Row 5(ii) and 5(iii)], TPSODL has reported HT Input by reverse calculating the difference of total sale and HT sale and assuming 8% loss in the HT System, which is not the correct approach. Since majority of the 33kV Feeders are metered at GSS end and all the 33kV consumers are supplied with meters and majority of the outgoing 11KV Feeders in the PSS are being metered, therefore TPSODL is in a position to capture the Total Input Energy and Energy Sale at 33KV System. In view of the same it is recommended TPSODL should take a corrective approach to capture 33kV and 11kV Input Energy and Energy Sale as per the meter data and should not consider the normative approach of 8% distribution loss in HT Systems.
4. In the Cell R-23-24 of “Form Input Energy” sheet of the Pro-forma the length of AB cable and length of underground cable may be considered as length of LT-AB cable and length of LT underground cable.

5. In cell no P-28 of “Form input energy” sheet of the pro-forma the (period from-- to --) may be considered as 1st April 2021-31st Mar 2022. TPSODL may request BEE/SDA for necessary changes in the Pro-forma.
6. In the cell D-29 of “Form Input Energy” sheet of the pro-forma, the voltage level unit should be in kV, instead of kVA. Again in Cell E-29 & F-29 “Form Input Energy” sheet of the pro-forma the unit of division & subdivision (KVA) may be edited. TPSODL may request BEE/SDA for necessary changes in the Pro-forma.
7. In Cell Q-30 to Q-139 of “Form input energy” sheet of the pro-forma, TPSODL informs that they don't have the CT/PT ratio of the meter installed at the injection point and hence the data are not available and left blank. It is recommended that TPSODL may obtain the same from OPTCL and may fill the data in future.
8. Station consumption at OPTCL Grid Substation is considered as Export for adjustment purpose in the BSP Bill of GRIDCO and hence same are mentioned accordingly in the “Form Input Energy” sheet of the pro-forma.

The observations and critical comments with regards of the Field Visit of the Audit team to various TPSODL Grid Substations (GSS):

1. It is observed that the 33kV meters are installed at Grid Substation (GSS) interface points and at each consumer points. However 33kV meters were not installed at the input point to the 33/11 kV substation (PSS) for the FY 2020-21 but in the FY 2021-22 there is a significant increase in the meter installed at the 33/11 kV substation (PSS) input point.
2. SCADA system has been implemented in various Substations across TPSODL to collect data from the PSS for better load management. The automation of the PSS has been started and been used by PSCC for its proper use. The RTU panels have been installed at the PSS.
3. It is observed that in most of the Substations the Silica gel breathers of the Transformer are in bad condition. It is recommended that TPSODL should maintain the PSS for better safety and to avoid the unwanted loss and damage.
4. It is also observed that in most of the Substation there is no or very less Metal spreading which is a safety issue. It is recommended that TPSODL should do the metal spreading in the required Substations.
5. It is recommended that DTR metering should be done across TPSODL, made functional and meter reading should be taken on monthly basis for better load management and analysis.
6. It is observed that TPSODL have not conducted Audit of any 33kV, 11kV Feeders & DTs. It is recommended that TPSODL should conduct the audit of the same to comply with BEE Guidelines.
7. It is found that the state and central government are implementing a number of electrification projects in which meters are becoming defective and has stopped working after a few months of installations.

The various loss reduction recommendations are furnished below:

1. It is recommended that TPSODL should pray before the Hon'ble Commission for tariff rationalisation measures to be adopted for HT / EHT Consumers so that HT / EHT

Industries will be incentivised to procure power from DISCOM without depending much on Open Access. TPSODL may be required to incentivise the Industrial Consumption by taking up better tariff rationalisation measures in future tariff hearing process, as increase in HT / EHT consumption will help in reducing the T&D loss and AT & C loss.

2. It is found that the % of defective meters are more in consumer categories like Kutri Jyoti, Agro, Allied Agro, Agricultural, Street Lighting and Specified Public purpose. It is recommended to give special emphasize on Kutri Jyoti, Agro, Allied Agro, Agricultural, Street Lighting and specified Public purpose category consumers for replacement of defective meters with correct one. In the next tariff hearing process TPSODL may propose to the Hon'ble Commission DBT based subsidy for these consumers in which the subsidy linked with the above category consumer can be transferred through Direct Benefit Transfer (DBT) Scheme based on the correct meter reading. In case the meter is tampered and found to be defective, then the transfer of subsidy may be stopped till the meter is replaced with the correct meter.
3. It is recommended that TPSODL should initiate dialogue with Urban Local Bodies and the Agricultural Department regarding higher % defective meters found in street lights and agricultural sectors. It is recommended that the TPSODL should involve Government Machinery and political people for awareness creation and to reduce meter tampering and theft of electricity. TPSODL should initiate dialogue with the Agricultural Department regarding higher % of agricultural connections having no meters and take early action for providing connections with meters. It is recommended that the TPSODL should involve the Government Machinery and Agricultural Department for awareness creation for metered power supply connection and to reduce meter tampering. It is proposed that the subsidy meant for Agriculture Category Consumer should be Aadhar linked and should be transferred through Direct Benefit Transfer (DBT) Scheme based on the correct meter reading. In case there is no meter or meter is tampered and found to be defective, then the transfer of electricity tariff subsidy as well as other Agriculture Subsidy of the Agriculture Department may be stopped till the defective meter is replaced with the correct meter.
4. It is proposed that TPSODL should promote Energy Efficient Lighting System (LED Bulbs, Tube lights and Energy Efficient Fans) in association with BEE / EESL / Private ESCO in its utility area. The availability of LED Bulbs, Tube Lights, BLDC Fans, IE3 Meters which are supposed to be distributed to consumers through BEE / EESL / Private ESCO as part of the Utility based Demand Side Management Program are not available in plenty. TPSODL may discuss with BEE / EESL / Private ESCO to open more outlets and increase the LED Lights, Super Efficient AC and Fans Distribution.
5. Promoting the use of renewable energy (Solar) through facilitation:

Hon'ble Commission has notified Net Metering Scheme for Solar Roof Top Project in the consumer premises. TPSODL should popularize the scheme for LT consumers and provide prompt support and cooperation to the consumer for net metering agreement and solar project interconnection with DISCOM systems. Once Solar Interconnection happens at the

LT systems, this will improve the voltage profile and reduce LT loss. Also the RPO of GRIDCO/DISCOM can be compiled which may reduce the BSP in future and will lead to financial savings for DISCOM.

6. At present Hon'ble OERC has implemented kVAh billing for the HT/EHT/Commercial/MSME and Industrial consumers. In view of the kVAh billing, the consumer which are having low power factor are paying higher energy bills, still the awareness about kVAh billing is not there and consumers are operating with low Power Factors. TPSODL may carry out special drives for awareness and sensitisation about kVAh billing. This may lead to more numbers of APFC installation and improvement in Power Factor and will lower the burden on the existing infrastructure. TPSODL may sign MoU with Private ESCO / AFPC installer under the Utility based Demand Side Management program so that APFC installer will assess the data base of Consumers with low power factor, take necessary action for installation of APFC Panels in consultation with Consumers directly.
7. Exploring opportunities in industrial segments (using efficient motors, pumps, compressors, capacitor bank, etc). TPSODL can coordinate and inform BEE/EESL/Private ESCO to provide the Industrial LED lighting Solution, IE3 Motors in RESCO / PMC level as per the provision of DSM Regulations. This will facilitate Demand Side Management in a long way.
8. TPSODL should conduct more nos. of Consumer awareness programs on saving electricity, electricity wastage, power theft, using electricity during off peak hour, using star rated equipment.

TRAJECTORY FOR METER INSTALLATION AS ON 31ST MARCH 2022

I. Current Metering Status:

Feeders Metering Status:

All below mentioned feeder's meters are functional meters and are not integrated with AMI.

Circle	33 KV Outgoing Meter at GSS End			33kV Incoming Meter at PSS end			11 KV Outgoing Meter at PSS end		
	NO. OF FEEDER	Metered Feeders	Unmetered Feeders	NO. OF FEEDER	Metered Feeders	Unmetered Feeders	NO. OF FEEDER	Metered Feeders	Unmetered Feeders
CITY	11	11	0	20	14	6	78	63	15
BERHAMPUR	18	15	3	31	22	9	114	91	23
ASKA	13	13	0	22	20	2	78	72	6
BHANJANAGAR	16	15	1	47	31	16	171	142	29
JEYPORE	38	23	15	76	12	64	273	150	123
RAYAGADA	20	18	2	58	35	23	167	146	21
TOTAL	116	95	21	254	134	120	881	664	217

TPSODL would need feeder and DTR metering to ensure the complete distribution network is metered at all receiving, sending end as well as Tapping and Boundary Points. This would enable TPSODL to generate energy audit reports feeder-wise for all the feeders. These reports will provide detailed information about

electricity consumption by different categories of consumers & the transmission and distribution losses in various sub-divisions, divisions, and circles.

Currently, we have functional meters for 33KV Outgoing meter at GSS End, 33KV Incoming meter at PSS end and 11KV Outgoing meter at PSS end.

According to the BEE notification, TPSODL has taken the steps to replacement all existing non-smart meters with Smart meters integrated with AMI for accurate and timely Energy Accounting and reporting.

DTRs Metering Status:

Circle Name	Metering Numbers
ASKA	18
BERHAMPUR	63
BERHAMPUR CITY	818
RAYAGADA	1
Grand Total	900

II. Roadmap for Meter Installation Integrated with AMI:

In line with the BEE regulations, TPSODL has planned to install Smart Meters integrated with AMI from FY22-23. Following is the Roadmap of metering installation for Feeders and DTRs:

<u>Road Map for Metering of Feeders and DTRs</u>					
Voltage Level	Meter Point	Total Points (Nos.)	FY 22-23	FY 23-24	FY 24-25
33 KV	33 KV GSS Feeders	116	116	-	-
	33 KV PSS Feeders	254	-	254	-
	33 KV Tapping Points	250	-	-	250
11 KV	11 KV Feeders	881	881	-	-
	11 KV Tapping Points	900	-	-	900
11KV/33KV	Inter Section/Subdivision Boundary Points	175	-	175	-
	Inter Division Boundary Points	60	-	60	-
DT	DT above 25 KVA	16534	-	16000	534

1. FEEDERS

- For GSS 33KV outgoing Feeders (116Nos) and PSS 11KV outgoing Feeders (881 Nos.):**
TPSODL has already planned to install Smart Meter Integrated with AMI in all 33KV GSS Outgoing and 11KV PSS Outgoing Feeders by March 2023. TPSODL has issued PO to various reputed vendors to implement the same.
- For PSS 33KV Incoming Feeders (254 Nos.):**
TPSODL has planned to install Smart Meter Integrated with AMI in all 33KV PSS Incoming Feeders by March 2024. This plan has already been proposed in our CAPEX Plan to OERC.

2. TAPPING POINTS AND BOUNDARY METERS**a. Inter Section/Sub-Division Boundary Points (175 Nos.):**

TPSODL has planned to install Smart Meter Integrated with AMI by March 2024. This plan is already been proposed in our CAPEX Plan to OERC.

b. Inter Division Boundary Points (60 Nos.):

TPSODL has planned to install Smart Meter Integrated with AMI by March 2024. This plan is already been proposed in our CAPEX Plan to OERC.

c. For 33KV Tapping Points (250 Nos.) and 11KV Tapping Points (900 Nos.):

TPSODL has planned to install Smart Meter Integrated with AMI by March 2025.

3. DISTRIBUTION TRANSFORMERS**a. Above 25KVA (16534 Nos.)**

TPSODL has already planned to install Smart Meter Integrated with AMI in all DTRs above 25KVA i.e., 16000 Nos. by Dec 2023, TPSODL also has issued PO to various reputed vendors to implement the same and rest 534 Nos. Meters by Dec 2024.

3.0 BACKGROUND

Energy Conservation has become a top most priority in today's scenario in order to have a sustainable growth, productivity, enhancement & environmental protection. Considering the vast potential of energy savings and benefits of energy efficiency as per the report prepared by National Development Council (NDC) Committee on power, Govt. of India enacted the Energy Conservation Act 2001. The aim of EC Act 2001 is to provide the much-needed legal framework and other institutional arrangements so that various energy efficiency improvement drives can be easily launched at the state and national level. In order to implement the various provisions under the EC Act 2001, the Government of India established the Bureau of Energy Efficiency (BEE) on 1st March 2002 for development of policies and strategies with a thrust on self regulation and market principles, with the primary objective of reducing energy intensity of the Indian Economy and to enact and enforce energy efficiency through various regulatory and promotional measures.

Role of BEE

BEE coordinates with designated consumers, designated agencies and other organizations and recognizes, identify and utilize the existing resources and infrastructure, in performing the functions assigned to it under the Energy Conservation Act. The Energy Conservation Act provides for regulatory and promotional functions.

The Major Promotional Functions of BEE include:

- 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 conservation
- 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 system
- 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 programmes relating to efficient use of energy and its conservation.

Perform Achieve and Trade (PAT) Scheme

National Mission of Enhanced Energy Efficiency (NMEEE) is one of the eight national missions of the NAPCC released by the Prime Minister on 30th June 2008. BEE has been entrusted with the task of preparing the implementation plan for NMEEE. PAT scheme is formulated under National Mission for Enhanced Energy Efficiency (NMEEE) which is one of eight plans in the National Action Plan on Climate Change (NAPCC).

PAT is a regulatory instrument framed by BEE and Ministry of Power to reduce specific energy consumption in energy intensive industries and reduce T&D loss in DISCOMs with an associated market based mechanism to enhance the cost effectiveness through certification of excess energy saving which can be traded in power exchange.

Purpose of Audit and Accounting Report

DISCOMs are currently focusing on Energy Conservation and Energy Efficiency to a larger extent for reducing the T & D Loss and improving the performance. Efficient Energy management, Usage of Energy Efficient Technologies and adopting best-practices for reduction T & D Loss would help Utility to improve their billings, collection, energy sale and profitability. As per the PAT scheme of BEE, TPSODL being a DISCOM having annual AT & C losses more than 1000 Million kWh i.e. 86000 Metric Tonne of Oil Equivalent (mtoe) is a Designated Consumer as per EC Act 2001.

The main focus of the audit is to establish T & D Loss for the year 2021-22, collection of technical information like annual energy consumption, nos. of connections, nos. of disconnections, connected load and % of total connected load, energy billed, net input energy, power factor, total supply hour, scheduled outage, scheduled supply hours, unscheduled outage, available supply hours and evaluation of T & D loss, AT & C loss and Billing Efficiency of utility, finding out deviations from the baseline T & D loss, evaluations of energy management systems, exploring future energy conservation measures, energy saving potentials and providing recommendation for the same.

In line with Section 14(g) of the Energy Conservation(EC) Act, the Central Government has notified targets (in the form of Specific Energy Consumption) for Designated Consumers (DCs) on 26th October 2021 under the PAT cycle-VII. The baseline Distribution loss of TPSODL has been fixed as 29.76% for base line year 2018-19 to with base line net input energy 3638.95 MU. TPSODL has been directed to reduce its T&D Loss to 26.90% in Target Year 2024-25.

BEE (Manner and Intervals for Conduct of Energy Audit in electricity distribution companies), Regulations 2021 has been notified on 6th October 2021 and as per Regulation 3 of the said Regulations, it is required that the TPSODL to conduct the annual energy audit by an Accredited Energy Auditor and submit the report to BEE and SDA.

The management of TPSODL evinced keen interest in availing the services of PTC for conducting Annual Energy Audit of the TPSODL. The proposal for conducting energy audit of the DISCOM was accepted by

the management of TPSODL vide their work order no 4800000690 dated 29.12.2021. Accordingly, PTC has been entrusted with the work of conducting the annual energy audit and submission of reports for the same. The field study, measurement and audit activities by PTC were conducted and the report has been prepared based on the field study data, available technical data as well as information / inputs received from TPSODL.

4.0 INTRODUCTION ABOUT DISCOMS (DC)

TP Southern Odisha Distribution Limited (TPSODL) is a joint venture between Tata Power and the Government of Odisha with the majority stake being held by Tata Power Company (51%) and Govt. of Odisha (49%) on the Public-Private Partnership (PPP) model. TPSODL took over the license to distribute electricity in the southern part of Odisha, which was earlier served by erstwhile SOUTHCO, through a competitive bidding process. TPSODL was vested in the Utility of SOUTHCO for distributing and retail supply of electricity in the southern part of Odisha, through a Vesting Order issued by the Hon'ble Odisha Electricity Regulatory Commission (OERC).

The business of TPSODL is governed by the provisions of license issued by Hon'ble Odisha Electricity Regulatory Commission (OERC) for distribution and retail supply of electricity in South Odisha.

TPSODL procures power from GRIDCO which is a state owned company, engaged in the business of purchase of electricity in bulk from various generators located inside Odisha and the state share of power from Central generators for supply in all power distribution utilities, including TPSODL.

The licensed area of operation of the Company is 48,751 Sq. Km. and covers eight revenue districts of south Odisha namely Ganjam, Gajapati, Boudh, Kandhamala, Rayagada, Koraput, Nabarangpur and Malkangiri. TPSODL serves a population of 94.38 lacs with a Customer Base of 23.41 lacs. The Company is operating through 6 circles namely City Circle, Berhampur Circle, Aska Circle, Bhanjanagar Circle, Rayagada Circle and Jeypore Circle which is further subdivided in 19 Divisions and 51 Sub-division and 136 sections which manage the commercial and O&M activities in order to serve its consumers.

The details of administrative set up TPSODL are furnished below:

TP SOUTHERN Odisha Distribution Limited (TPSODL)

Corporate Office: Courtpeta, Berhampur, Ganjam, Odisha- 760004

Phone: 9777333245

Email: energyaudit@tpsouthernodisha.com

Website: www.tpsodl.com

Name and Contact Details of Energy Manager and Authorized signatory of DC

Authorized Signatory:

Mr. Arvind Singh, Chief Executive Officer

E-mail: ceo.office@tpsouthernodisha.com

Nodal Officer:

Mr. Saumitro Banerjee, Head – MMG, Energy Audit

Phone: 9810281982

Email: saumitro.banerjee@tpsouthernodisha.com

Designated Energy Manager:

Mr. Ratan Kuber, Lead Engineer

Regd. No-EA-32475/21

Phone: 9777333245

E-mail: energyaudit@tpsouthernodisha.com

IT Manager:

Mr. Dusmanta Kumar Rout, HoG – IT

Phone: 9337229715

Email: dusmanta.rout@tpsouthernodisha.com

Financial Manager:

Mr. Deepak Jain, Financial Controller

Phone: 9958181337

Email: deepak.jain@tpsouthernodisha.com

The details of organisational set up of TPSODL are furnished below:

Details	As on 31st March 2021	As on 31st March 2022
No. of Circles	6	6
No. of Divisions	19	19
No. of Subdivisions	51	51
No. of Sections	136	136

4.1 SUMMARY PROFILE OF TPSODL

TPSODL receives electrical power at 33kV level from 33 nos. of Grid Substations (GSS) out of which 5 nos. GSSs are rated at 220/132/33kV, 5 nos. at 220/33kV and 23 nos. at 132/33kV located within and in the vicinity of TPSODL operational area. TPSODL distributes the power at 33kV / 11kV / 440V / 230V depending on the demand of the consumers.

At present, there are 116 numbers of 33 kV feeders with a combined circuit length of approximately 3808 Ckt. KMs supplying power to 244 numbers of 33/11kV Primary Substations. The 33kV supply is stepped down to 11kV level through 510 numbers of 33/11kV power transformers with an installed capacity of 2344 MVA at these primary substations. Nearly 881 numbers of 11 kV feeders emanates from the 33/11 kV primary substations having cumulative length of approximately 42555 Ckt. KMs and supply power to HT consumers connected at 11 kV level and LT customers connected to 11/0.415 kV & 11/0.230 kV distribution substations. 55717 numbers of distribution transformers are installed in all six circles with an installed capacity of 2402 MVA. The length of the LT network is approximately 39094 Ckt. KMs. These LT feeders supply power to three-phase and single-phase consumers.

The Detail of Network Systems of TPSODL is furnished below:

Network System	As on 31st March 2021	As on 31st March 2022
Length of 33 KV Line (km.)	3665	3847
Length of 11 KV Line (km.)	40368	42786
Length of LT KV Line (km.)	37302	39270
Length of LT AB Cable (km.)	27703	30229

The Detail of Assets under TPSODL is furnished below:

ASSETS	As on 31 st March 2021	As on 31 st March 2022
No. of 33 KV feeders (Including GRIDCO interface)	110	116
No. of 11 KV feeders	794	881
No. of 33 / 11 kV POWER Transformers	481	524
No. of Distribution Transformers (11/0.4 & 33/ 0.4 kV)	54,451	55959

5.0 DISCUSSION AND ANALYSIS

The main objective of Energy Audit is to establish the following.

- Energy Input to the System
- Energy utilized / sold (Energy Sales) to the consumer
- Energy losses in the System.
- To assess the Efficiency of the System
- To identify the area of high T&D losses
- To assess the extent of Theft & Pilferage
- To take appropriate steps for making the system technically more efficient and financially sustainable

Energy audit distinctly addresses the problems of energy losses. Hence any savings in energy usage and reduction of losses directly leads to the profitability of the utility.

Energy Accounts and performance of TPSODL in Current Year:

Category wise nos. of Consumers:

TPSODL is licensed to distribute electricity to consumers and collect revenue. The different categories of consumers in TPSODL are as per the following.

- EHT
- HT
- Domestic
- Kutir Jyoti
- L.T. General (Com)
- Agriculture
- Agro
- Allied-Agro
- Street Lighting
- PWW
- Small Industry
- Medium Industry
- Specified Pub. Purpose (P.I.)

Details of category wise nos. of consumers and their annual energy consumption, Contract Demand, Correct Meter, without meter and defect meter for the last financial year are given below:

Category wise no. of consumer under TPSODL

Category	FY 2021-22	
	Live Cons. (Nos.)	% of Total Live Consumers
EHT	18	0.001%
HT	548	0.023%
Domestic	2107298	88.315%
Kutir Jyoti	127573	5.346%
L.T. General (Com)	93025	3.899%
Agriculture	28391	1.190%
Agro	1080	0.045%
Allied-Agro	78	0.003%
Street Lighting	5187	0.217%
PWW	4833	0.203%
Small Industry	2511	0.105%
Medium Industry	1868	0.078%
Specified Pub. Purpose (P.I.)	13696	0.574%
Total	2386112	100.000%

OBSERVATIONS & RECOMMENDATIONS:

- From the above table it is found that the total consumers in TPSODL FY 2021-22 are 2386112.
- Among all categories, the percentage of Domestic category consumers is around 88 % in FY 2021-22.
- Whereas percentage of nos. of EHT consumers is around 0.001% in FY 2021-22 and percentage of nos. of HT consumers around 0.023% in FY 2021-22.

Category wise Connected Contract Demand under TPSODL

Sl. No	Category	CD(KW)	% Wrt Total
1	Allied Agriculture Activities	22798.41	0.766%
2	Allied Agro-Industrial Activities	2532.87	0.085%
3	Bulk Supply Domestic	5028.09	0.085%
4	Domestic	1924247.09	64.671%
5	Emergency Supply To CGP	29999.70	1.008%
6	General Purpose	291138.00	9.785%
7	Industrial(M) Supply	54828.78	1.843%
8	Irrigation Pumping And Agriculture	147655.10	4.962%
9	Kutir Jyoti	49012.65	1.647%
10	Large Industry	130607.58	4.389%
11	Lt Industrial(M) Supply \geq 22 KVA	43935.03	1.477%
12	Lt Industrial(S) Supply $<$ 22 KVA	27376.99	0.920%
13	Power Intensive Industry	25999.20	0.874%
14	Public Light	10809.15	0.363%
15	Public Water Works & Sewerage Pumping	37839.64	1.272%
16	Railway Traction	116280.00	3.908%
17	Specified Public Purpose	55310.69	1.859%
18	Temp. Supply Domestic	1.80	0.0001%
19	Temp. Supply General Purpose $<$ 110 KVA	58.00	0.002%
20	Total	2975458.77	100.000%

Category wise no. of without Meter Consumers in TPSODL

Category	Consumers	Without Meter Cons	% w.r.t Cons in the Category
Allied Agriculture Activities	1080	0	0.000%
Allied Agro-Industrial Activities	78	0	0.000%
Bulk Supply Domestic	58	0	0.000%
Domestic	2107353	1172	0.056%
Emergency Supply To CGP	1	0	0.000%
General Purpose < 110 KVA	92785	16	0.017%
General Purpose >70 KVA <110 KVA	122	0	0.000%
General Purpose >= 110 KVA	99	0	0.000%
General Purpose>=110 KVA	13	0	0.000%
Industrial(M) Supply	862	0	0.000%
Irrigation Pumping And Agriculture	28376	0	0.000%
Kutir Jyoti	127747	264	0.207%
Large Industry	269	0	0.000%
Lt Industrial(M) Supply>=22 KVA	1006	0	0.000%
Lt Industrial(S) Supply<22 KVA	2511	0	0.000%
Mega Lift	15	0	0.000%
Power Intensive Industry	1	0	0.000%
Public Light	5187	0	0.000%
Public Water Works & Sewerage Pumping	50	0	0.000%
Public Water Works And Sewerage< 110 KVA	4776	0	0.000%
Public Water Works And Sewerage>= 110 KVA	7	0	0.000%
Railway Traction	12	0	0.000%
Specified Public Purpose	13696	0	0.000%
Temp. Supply Domestic	2	0	0.000%
Temp. Supply General Purpose < 110 KVA	6	0	0.000%
TOTAL	2386112	1452	0.061%

Category wise no. of Defective Meter Consumers under TPSODL

Category	Consumers	No of Defective Meter	% w.r.t Cons in the Category
Allied Agriculture Activities	1080	129	0.01%
Allied Agro-Industrial Activities	78	8	0.00%
Bulk Supply Domestic	58	4	0.00%
Domestic	2107353	215946	9.05%
Emergency Supply To CGP	1	0	0.00%
General Purpose < 110 KVA	92785	9119	0.38%
General Purpose >70 KVA <110 KVA	122	0	0.00%
General Purpose >= 110 KVA	99	0	0.00%
General Purpose>=110 KVA	13	2	0.00%
Industrial(M) Supply	862	59	0.00%
Irrigation Pumping And Agriculture	28376	7691	0.32%
Kutir Jyoti	127747	15764	0.66%
Large Industry	269	0	0.00%
Lt Industrial(M) Supply>=22 KVA	1006	65	0.00%
Lt Industrial(S) Supply<22 KVA	2511	322	0.01%
Mega Lift	15	0	0.00%
Power Intensive Industry	1	0	0.00%
Public Light	5187	924	0.04%
Public Water Works & Sewerage Pumping	50	2	0.00%
Public Water Works And Sewerage< 110 KVA	4776	915	0.04%
Public Water Works And Sewerage>= 110 KVA	7	0	0.00%
Railway Traction	12	0	0.00%
Specified Public Purpose	13696	3017	0.13%
Temp. Supply Domestic	2	0	0.00%
Temp. Supply General Purpose < 110 KVA	6	0	0.00%
TOTAL	2386112	253967	10.64%

Category wise no. of Correct Meter Consumers under TPSODL

Category	Consumers	No. of Correct Meter	% w.r.t Cons in the Category
Allied Agriculture Activities	1080	951	88.00%
Allied Agro-Industrial Activities	78	70	90.00%
Bulk Supply Domestic	58	54	93.00%
Domestic	2107353	1890235	90.00%
Emergency Supply To CGP	1	1	100.00%
General Purpose < 110 KVA	92785	83650	90.00%
General Purpose >70 KVA <110 KVA	122	122	100.00%
General Purpose >= 110 KVA	99	99	100.00%
General Purpose>=110 KVA	13	11	85.00%
Industrial(M) Supply	862	803	93.00%
Irrigation Pumping And Agriculture	28376	20685	73.00%
Kutir Jyoti	127747	111719	87.00%
Large Industry	269	269	100.00%
Lt Industrial(M) Supply>=22 KVA	1006	941	94.00%
Lt Industrial(S) Supply<22 KVA	2511	2189	87.00%
Mega Lift	15	15	100.00%
Power Intensive Industry	1	1	100.00%
Public Light	5187	4263	82.00%
Public Water Works & Sewerage Pumping	50	48	96.00%
Public Water Works And Sewerage< 110 KVA	4776	3861	81.00%
Public Water Works And Sewerage>= 110 KVA	7	7	100.00%
Railway Traction	12	12	100.00%
Specified Public Purpose	13696	10679	78.00%
Temp. Supply Domestic	2	2	100.00%
Temp. Supply General Purpose < 110 KVA	6	6	100.00%
TOTAL	2386112	2130693	89.00%

5.1 BILLED AMOUNT AND ARREAR STATUS OF TPSODL

Total Energy Billed, Amount billed, Gross Amount Collected by the DISCOM for FY 2021-22 are furnished below:

ANNUAL BILLED AMOUNT IN CRORES			
Financial Year	Total Energy Billed	Amount Billed	Gross Amount Collected
	Million kWh	Rs. Cr	Rs. Cr
FY 2021-22	2998	1613	1438

Arrears Status for FY 2021-22 is furnished below:

CATEGORY	FY 2021-22
ALLIED AGRICULTURE ACTIVITIES	9015673.543
ALLIED AGRO-INDUSTRIAL ACTIVITIES	3552193.246
BULK SUPPLY DOMESTIC	20077701.73
DOMESTIC	15568216381
EMERGENCY SUPPLY TO CGP	0.48085
GENERAL PURPOSE < 110 KVA	1719979699
GENERAL PURPOSE >= 110 KVA	217042382.4
GENERAL PURPOSE >70 KVA <110 KVA	6288341.758
GENERAL PURPOSE>=110 KVA	1114800.949
INDUSTRIAL(M) SUPPLY	109609318.1
IRRIGATION PUMPING AND AGRICULTURE	795685113.7
KUTIR JYOTI	854528367.1
LARGE INDUSTRY	193883966.7
LT INDUSTRIAL(M) SUPPLY>=22 KVA	41162501.24
LT INDUSTRIAL(S) SUPPLY<22 KVA	104604816.7
POWER INTENSIVE INDUSTRY	0.1064
PUBLIC LIGHT	303122597.5
PUBLIC WATER WORKS & SEWERAGE PUMPING	30696589.31
PUBLIC WATER WORKS AND SEWERAGE< 110 KVA	215078441.6
PUBLIC WATER WORKS AND SEWERAGE>= 110 KVA	-14126241.5
RAILWAY TRACTION	17.25322
SPECIFIED PUBLIC PURPOSE	246980383.8
TEMP. SUPPLY DOMESTIC	1597.5029
TEMP. SUPPLY GENERAL PURPOSE < 110 KVA	40008.32
Total	20365161473

5.2 METERED/UNMETERED ENERGY SALE OF TPSODL

Annual energy consumption of the consumers in TPSODL for FY 2021-22 is given below.

Annual Metered/ Unmetered Energy Consumption (in MU) under TPSODL

ANNUAL METERED/UNMETERED ENERGY CONSUMPTION IN MU				
Financial Year	Input Energy (In MU)	Metered Energy Sales	Unmetered Energy Sales	Estimated unaccounted energy/theft
FY 2021-22	3941.537	2995.318	3.406	942.813

% of Metered, Unmetered & Unaccounted Energy Consumption

% OF METERED/UNMETERED & UNACCOUNTED ENERGY CONSUMPTION				
Financial Year	Input Energy (In MU)	Metered Energy Sales in %	Unmetered Energy Sales in %	Estimated unaccounted energy/theft in %
FY 2021-22	3941.537	76%	0.08%	23.92%

5.3 LOSSES IN DISTRIBUTION NETWORK

The losses in a distribution network are classified into three categories i.e. Transmission & Distribution (T&D) Loss, Technical Loss and Commercial loss.

1. T&D loss is the difference between Energy Supplied to a network and the total Energy Billed. It includes both Technical & Commercial loss.

$T\&D \text{ Loss} = \text{Input Energy to the System} - \text{Energy Billed to the Consumer}$

$\text{Distribution (T\&D) Loss} = \text{Input Energy Supplied to DISCOM system} (-) \text{Energy Billed to consumer by DISCOM}$

$\% \text{ Distribution (T\&D) Loss} = \frac{[\text{Input Energy} (-) \text{Energy Billed}] \times 100}{[\text{Input Energy}]}$

2. Technical loss or line loss occurs mainly due to the heating effects, loose bindings, earthing problem, unbalancing, inadequate size of conductors, shifting of load centre, low power factor/reactive losses etc. This loss is difficult to calculate and the most accurate method is the load flow study using network analysis software.

The Technical losses in the system comprises of the following

- 33 kV & 11 kV Line Losses
- Distribution Transformer Losses (Iron & Copper losses)
- L.T. Line Losses

- Miscellaneous Technical Losses
 - Losses due to Loose Jump Connections in the line
 - Losses due to Short Circuits & Earth Faults
 - Losses in Service Mains of Installations.
 - Losses incurred in CT'S & Current Coils of Energy Meters.
3. Commercial Loss is the difference between T & D loss and Technical loss.
Commercial Loss = Distribution Loss (-) Technical Loss

The commercial losses comprise of the following

- Mistakes in the billing.
- Meters not recording (MNR)
- Meters not recording correctly
- Meters by pass due to defects/ intentionally
- Meters not read & billed.
- Theft and pilferage.

5.3.1 CALCULATION OF T&D LOSS

Distribution Loss or T&D loss is the difference between energy supplied to a network and the total energy billed. It includes both technical and commercial losses.

Sample Calculation:

A typical calculation for T&D Loss for FY 2021-22 is furnished below.

The total demand of TPSODL for FY 2021-22 = 650 MVA

The total Energy Input to TPSODL for FY 2021-22 = 3942 MU

BST Bill (P/U) = 2.35

$$\begin{aligned}\text{BST Bill of GRIDCO of TPSODL for FY 2021-22} &= \text{Energy input (MU)} \times \text{BST Bill (P/U)/10} + 0.0713 \\ &= 3942 \times (2.35/10) + 0.0713 \\ &= 926.37 + 0.0713 = 926.4413 \text{ Cr}\end{aligned}$$

Total Energy sale to all consumer i.e. EHT, HT and LT for FY 2021-22 = 2998 MU

Energy sale to EHT consumer = 531 MU

Energy sale to HT consumer = 274 MU

Energy sale to LT consumer = 2193 MU

For HT Category of T & D Loss is assumed at 8%

T & D Loss in LT Category = $1 - (\text{Energy sale to LT consumer in MU} / ((\text{Total Energy input in MU} - \text{Energy sale to EHT consumer in MU}) - ((\text{Energy input in MU} - \text{Energy sale to EHT consumer in MU}) \times 8\%) - \text{Energy sale to HT consumer in MU}))$

$$= 1 - (2193 \text{ MU} / ((3942 \text{ MU} - 531 \text{ MU}) - ((3942 \text{ MU} - 531 \text{ MU}) \times 8\%) - 274 \text{ MU}))$$

$$= 0.2343\% = 23.43\%$$

T & D Loss in HT & LT Category = $1 - (((\text{Energy sale to HT consumer in MU} + \text{Energy sale to LT consumer in MU}) / (\text{Total Energy input in MU} - \text{Energy sale to EHT consumer in MU})))$

$$= 1 - (((274 \text{ MU} + 2193 \text{ MU}) / (3942 \text{ MU} - 531 \text{ MU})))$$

$$= 1 - (2467 / 3411) = 1 - 0.7232 = 0.2768 = 27.68\%$$

Overall T & D Loss of TPSODL for FY 2021-22 = $1 - (\text{Total Energy sale to consumer including EHT, HT and LT in MU} / \text{Total Energy input in MU})$

$$= 1 - (2998 \text{ MU} / 3942 \text{ MU})$$

$$= 1 - 0.7605 = 0.2394 = 23.94\%$$

Based on the above methodology T&D loss for FY 2021-22 is calculated & furnished below:

PARTICULARS	FY 2021-22
BULK SUPPLY	
Demand (MVA)	650
Energy input (MU)	3942
SALE TO CONSUMERS (MU)	
EHT	531
HT	274
LT	2193
TOTAL SALE (MU)	2998
T & D LOSS (%)	
HT, LT and T&D Loss	28%
OVERALL T & D LOSS (%)	24%

Month wise T & D loss FY 2021-22 is furnished below:

PARTICULARS	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	TOTAL
BULK SUPPLY													
Demand (MVA)	619	594	603	613	609	626	637	595	593	604	613	650	650
Energy input (MU)	347	343	329	341	352	333	358	301	289	295	287	367	3942
SALE TO CONS (MU)													
EHT	44	40	34	35	36	43	53	46	47	52	46	55	531
HT	17	16	17	23	25	23	26	23	23	25	26	30	274
LT	198	200	195	207	209	204	211	133	145	142	155	194	2193
TOTALSALE (MU)	259	255	247	264	270	270	291	202	216	219	226	279	2998
T & D LOSS (%)													
LT	24	24	23	20	21	16	17	37	27	28	21	25	23
HT & LT	29	29	28	25	26	22	22	39	30	31	25	28	28
OVERALL (%)	25%	26%	25%	23%	23%	19%	19%	33%	25%	26%	21%	24%	24%

5.3.2 CALCULATION OF AT&C LOSS

AGGREGATE TECHNICAL & COMMERCIAL (AT&C) LOSS:

Aggregate Technical & Commercial Loss (AT&C Loss) is defined as the summation of all technical as well as commercial power loss that occurs due to electrical power flow through sub-transmission and distribution network.

Technical Loss is defined as the summation of Power Loss through 33 kV, 11 kV line and LT Line Loss including Transformer Loss and others.

Commercial Loss is defined as the summation of Power Loss occurring due to Theft/ Pilferage, Deficient meter, Inefficiency in Billing & Unrealized Revenue due to Collection Inefficiency.

COMPUTATION OF AT& C LOSS

Aggregate Technical & Commercial Loss (AT&C) is computed from the actual meter readings of the meter installed at various locations in the system.

Sample Calculation:

A typical calculation AT & C loss for FY 2021-22 is furnished below:

The total demand of TPSODL for FY 2021-22 = 650 MU

The total Energy Input to TPSODL for FY 2021-22= 3942 MU

The total Energy sale by TPSODL for FY 2021-22 =2998 MU

Total Billing to Consumers (Rs. in Cr) =1613 Cr

Total Collection Received (Rs. in Cr) =1438 Cr

Overall Billing Efficiency (%) for FY 2021-22 = Total Sale in MU/ Total input in MU*100
 = (2998/3942) *100= 0.7605 =76.05 %

Overall Collection Efficiency (%) for FY 2021-22
 = Total Collection Received (Rs. in Cr) / Total Billing to Consumers (Rs. in Cr) *100
 = Rs (1438/1613) *100 = 0.8915 =89.15 %

AT & C Loss (%) for FY 2021-22:

AT & C Loss (%) = 1- {Collection Efficiency (%) x Billing Efficiency (%)}

Overall AT & C Loss (%) for FY 2021-22 = 1-(0.8915*0.7605)
 =0.3220 =32.20%

AT & C Loss for FY 2021-22 is furnished below:

Particulars	FY 2021-22
Total Sale (MU)	2998
T & D Loss (%)	24
Billing Efficiency (%)	76%
Billing To Consumers (Rs. in Cr)	1613 Cr
Collection Received (Rs. in Cr)	1438 Cr
Collection Efficiency (%)	89%
AT & C Loss (%)	32 %

Month wise AT & C loss for last financial year is furnished below:

AT&C LOSS FOR FY 2021-22

PARTICULARS	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	TOTAL
SALE TO CONSUMERS (MU)													
TOTAL SALE (MU)	259	255	247	264	270	270	291	202	216	219	226	279	2998
T & D LOSS (%)													
OVERALL (%)	25%	26%	25%	23%	23%	19%	19%	33%	25%	26%	21%	24%	24%
BILLING EFFICIENCY (%)													
OVERALL (%)	75%	74%	75%	77%	77%	81%	81%	67%	75%	74%	79%	76%	76%
BILLING TO CONSUMERS (Rs. in Crs.)													
TOTAL	123	133	128	139	146	145	150	117	125	125	128	154	1613
COLLECTION RECEIVED (Rs. in Crs.)													
TOTAL	87	68	123	102	94	115	116	122	130	113	126	241	1438
COLLECTION EFFICIENCY (%)													
OVERALL (%)	71%	51%	96%	73%	64%	79%	77%	105%	104%	90%	99%	157%	89%
AT & C LOSS(%)													
OVERALL (%)	47%	62%	28%	43%	51%	36%	37%	30%	22%	33%	22%	-19%	32%

Sample Study

Calculation of 33KV feeder loss (33KV to 11KV)

Sample Study

Calculation of 11 kV & LT loss

Sample Study

Calculation of Average T & D Loss of DTs

RECOMMENDATION

- We propose to adopt the following methodology for carrying out future energy audits by TPSODL.
- 33 kV System Loss should be estimated as the difference of sending end energy from the 220 / 132 / 33 kV Grid Sub-Station and receiving end energy of Primary Substation including energy sent out to Bulk consumers at 33 kV level.
- 33 kV Loss should be computed considering one month consumption by taking meter reading of all the incoming 33 kV feeders of Primary Sub-Station including bulk 33 kV consumer and related 33 kV outgoing feeders of Grid Sub-Station.
- 33 kV line loss = $\Sigma(33 \text{ kV O/G Feeder meter reading at GRID SUB-STATION} - \Sigma(33 \text{ kV I/C meter reading at PRIMARY SUBSTATION} + 33 \text{ kV I/C meter reading at HT Bulk}))$
- Computation of 33/11 kV transformer loss: $\Sigma 33 \text{ kV I/C meter reading at primary Substation} - \Sigma 11 \text{ kV O/G meter reading at primary Substation}$.

➤ COMPUTATION OF 11 kV LOSS:

Energy Loss of 11 kV feeders should be arrived at by the difference between the sending end energy i.e. 11 kV outgoing feeders of PRIMARY SUB-STATION and Energy recorded at LV side of DTR including Bulk consumer connected in the same 11 kV feeder.

11 kV Loss should be computed considering one month's energy consumption by taking the meter reading of the 11 kV feeder of Primary Substation and all the DTR meter reading connected in the same 11 kV feeder and bulk consumer connected in the same 11 kV feeder.

Thus the total 11 kV loss for this circle found out as

11 kV line loss = $\Sigma(11 \text{ kV O/G Feeder meter reading at PRIMARY SUBSTATION} - \Sigma \text{ All DTRs' meter reading connected to that 11 kV feeder}) - \Sigma 11 \text{ kV I/C meter reading at HT Bulk}$.

➤ COMPUTATION OF LT LOSS:

Energy Loss of LT feeders should be arrived at by the difference between the sending end energy i.e. Distribution Transformer (DTR) and Energy recorded at consumer meters of LT consumers connected in the same DTR.

LT Loss should be computed considering one month's energy consumption by taking meter reading of DTR and the entire Consumers' meter reading connected to the same DTR.

Thus the total LT line loss for these circles is found out as

LT line loss = $\Sigma(11/0.44 \text{ KV DTR meter reading} - \Sigma \text{ All consumers' meter reading connected to that DTR})$

➤ COMPUTATION OF COMMERCIAL LOSS:

Commercial Loss may be found out as

= AT&C Loss – Technical Loss

= {(1 – Billing Efficiency x Collection Efficiency) x 100} – (33 kV loss + 33/11 kV transformer loss) + (11 kV Line Loss + LT Line Loss)

The Billing efficiency, Collection Efficiency, Energy Billed and Energy to be collected from TPSODL

Technical Loss i.e.; 33 kV, 11 kV and LT Line Losses to be computed as mentioned above

Hence Total amount of Commercial Loss has been arrived by deducting all other components from AT&C Loss.

RECOMMENDATION

a) Energy loss due to theft/ pilferage:

During Field Survey it was observed that there is some energy lost due to theft/ pilferage in the Power system. It needs to be prevented by checking periodically.

b) Defective meters:

Considerable percentage of defective meters is one of the reasons for provisional billing and consequential commercial losses in the DISCOM. Some energy meters installed at the consumer premises are found to be defective.

In other cases, it was found that the consumers deliberately conceal the information regarding defective meters. With the assistance of the local linemen/ meter reader, the consumer takes the benefit of provisional billings, resulting in commercial loss. It needs to prevent by strict vigilance measures and quality meter replacement programme.

➤ COMPUTATION OF LOSS DUE TO UNREALIZED REVENUE

Unrealized revenue is the revenue which is not realized due to non-payment by the consumers. Hence Energy loss due to unrealized revenue is the amount of energy loss converted from equivalent revenue loss.

Hence the total loss due to unrealized revenue found out as

Loss due to Unrealized Revenue= Σ (Energy Billed – Collections in MU)

RECOMMENDATION

Technical loss recommendation

- ☐ Reduction in Transmission losses:
- ☐ Improvement in power factor
- ☐ Reconductering of transmission line
- ☐ Conversion of single circuit to double circuit

Reduction of Transformer losses:

- ☐ Improvement of die electric strength of transformer oil
- ☐ Improvement of Power factor
- ☐ Thermography of primary/ secondary cable/ bus terminations

- ☐ Reduction of contact resistance of terminations
- ☐ Regular checking and replacement of silica Gel

Reduction of Bus losses

- ☐ Visual inspection of bus for detection any loose connections or oxidation
- ☐ Thermographs of bus section for thermal imaging to detect any hot spots/ joints
- ☐ Reduction in contact resistance by proper termination after cleaning & tightening of contacts
- ☐ Replacement of bus by that of higher cross section & of material of higher conductivity (copper in place of Aluminium) if necessary.

6.0 DEMAND SIDE MANAGEMENT (DSM), ENERGY EFFICIENCY & CONSERVATION:

Demand Side Management (DSM) is applied to energy efficiency measures that would modify or reduce end-user's energy demand. It is basically the selection, planning and implementation of measures intended to have an influence on the demand either caused directly or indirectly by the utility's programs.

Hon'ble OERC has framed Odisha Electricity Regulatory Commission (Demand Side Management) Regulations, 2011, based on which DISCOM has to prepare the action plan and take measures for implementation of DSM Regulations.

TPSODL has established a Distribution System Operations Control Centre i.e. (DSOCC) (ABT Cell) in its Head Office for management of load at 33KV and 11KV feeder level, so that it can adhere to allotted drawl schedule of SLDC.

Following DSM measures and energy conservation options are proposed to be implemented in TPSODL.

- It is proposed that TPSODL should promote Energy Efficient Lighting System (LED Bulbs, Tube lights and Energy Efficient Fans) in association with BEE / EESL / Private ESCO in its utility area. The availability of LED Bulbs, Tube Lights, BLDC Fans, IE3 Meters which are supposed to be distributed to consumers through BEE / EESL / Private ESCO as part of the Utility based Demand Side Management Program are not available in plenty. TPSODL may discuss with BEE / EESL / Private ESCO to open more outlets and increase the LED Lights, Super Efficient AC and Fans Distribution.
- Promoting the use of renewable energy (Solar) through facilitation: Hon'ble Commission has notified Net Metering Scheme for Solar Roof Top Project in the consumer premises. TPSODL should popularize the scheme for LT consumers and provide prompt support and cooperation to the consumer for net metering agreement and solar project interconnection with DISCOM systems. Once Solar Interconnection happens at the LT systems, this will improve the voltage profile and reduce LT loss. Also the RPO of GRIDCO / DISCOM can be compiled which may reduce the BSP in future and will lead to financial savings for DISCOM.
- At present Hon'ble OERC has implemented kVAh billing for the HT/ EHT/ Commercial / MSME and Industrial consumers. In view of the kVAh billing, the consumer which are having low power factor are paying higher energy bills, still the awareness about kVAh billing is not there and consumers are operating with low Power Factors. TPSODL may carry out special drives for awareness and sensitisation about kVAh billing. This may lead to more numbers of APFC installation and

improvement in Power Factor and will lower the burden on the existing infrastructure. TPSODL may sign MoU with ESCO / AFPC installer under the Utility based Demand Side Management program so that APFC installer will assess the data base of Consumers with low power factor, take necessary action for installation of APFC Panels in consultation with Consumers directly.

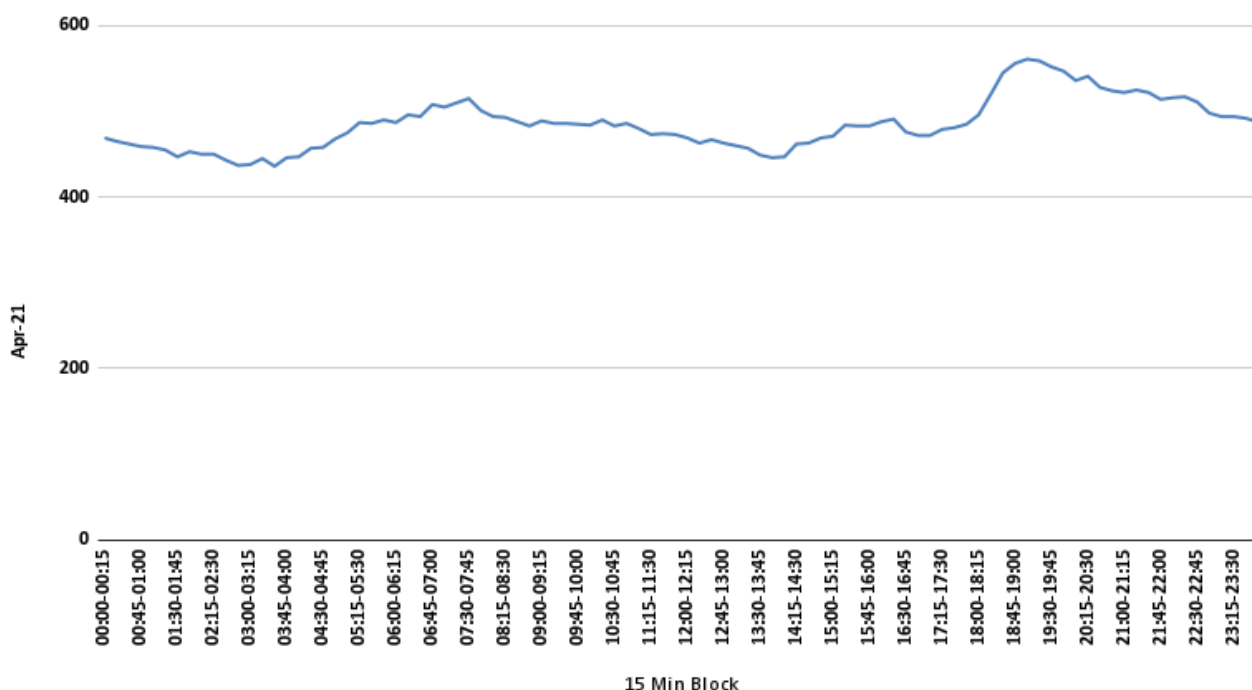
- Exploring opportunities in industrial segments (using efficient motors, pumps, compressors, capacitor bank, etc). TPSODL can coordinate and inform BEE / EESL / Private ESCO to provide the Industrial LED lighting Solution, IE3 Motors in RESCO / PMC level as per the provision of DSM Regulations. This will facilitate Demand Side Management in a long way.
- TPSODL should conduct more nos. of Consumer awareness programs on saving electricity, electricity wastage, power theft, using electricity during off peak hour, using star rated equipment.

6.1 ANALYSIS OF BLOCK WISE DRAWL PATTERN

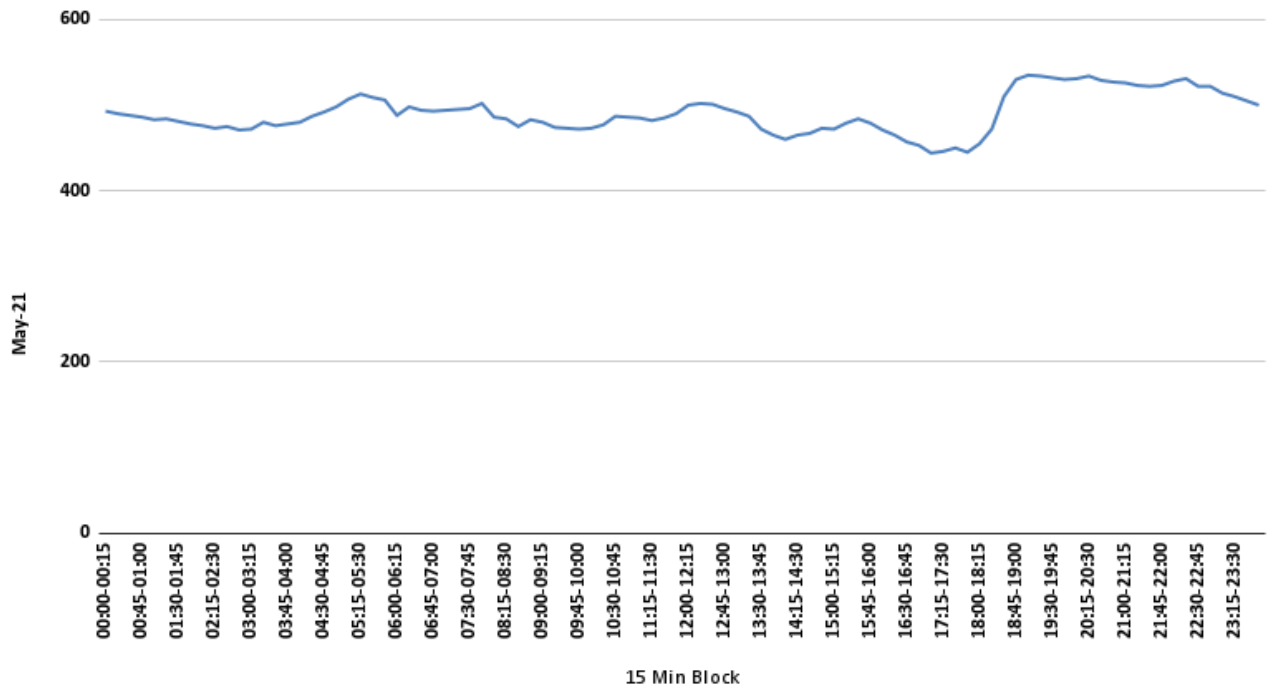
During Audit period we have collected the month wise 15 minute block wise drawl data of TPSODL for the period of April 21 to March 22 and analyzed the same.

The Block wise Monthly Average data was calculated and the trend of drawl pattern is presented below:

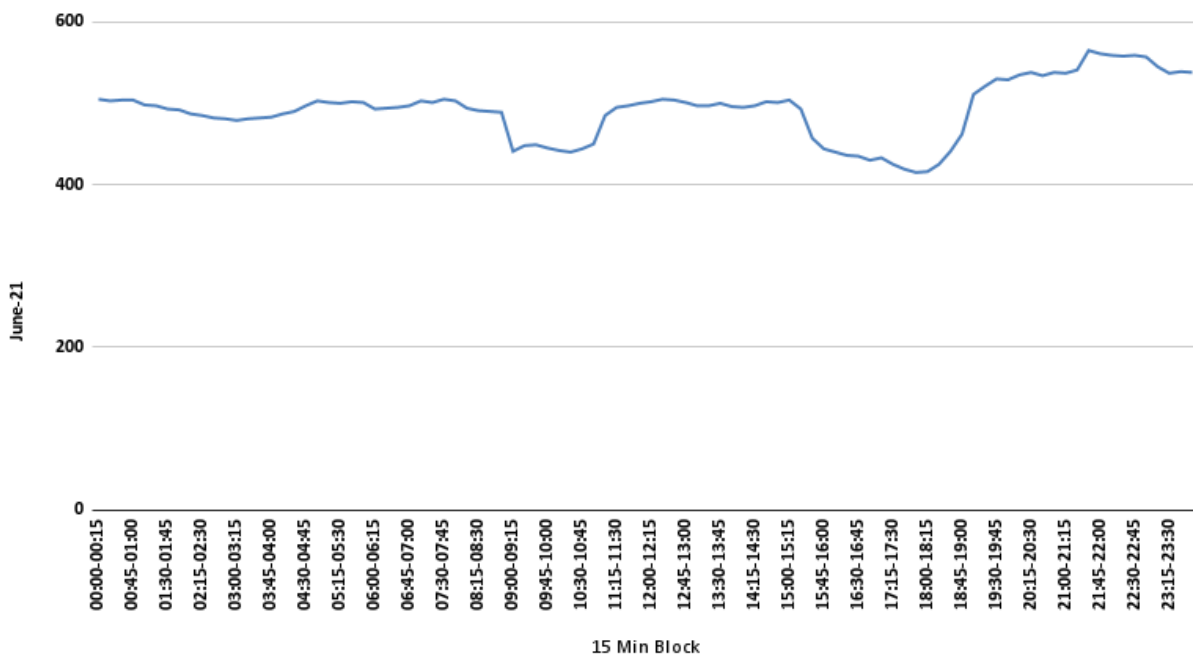
DRAW LOAD PATTERN FOR APRIL-2021



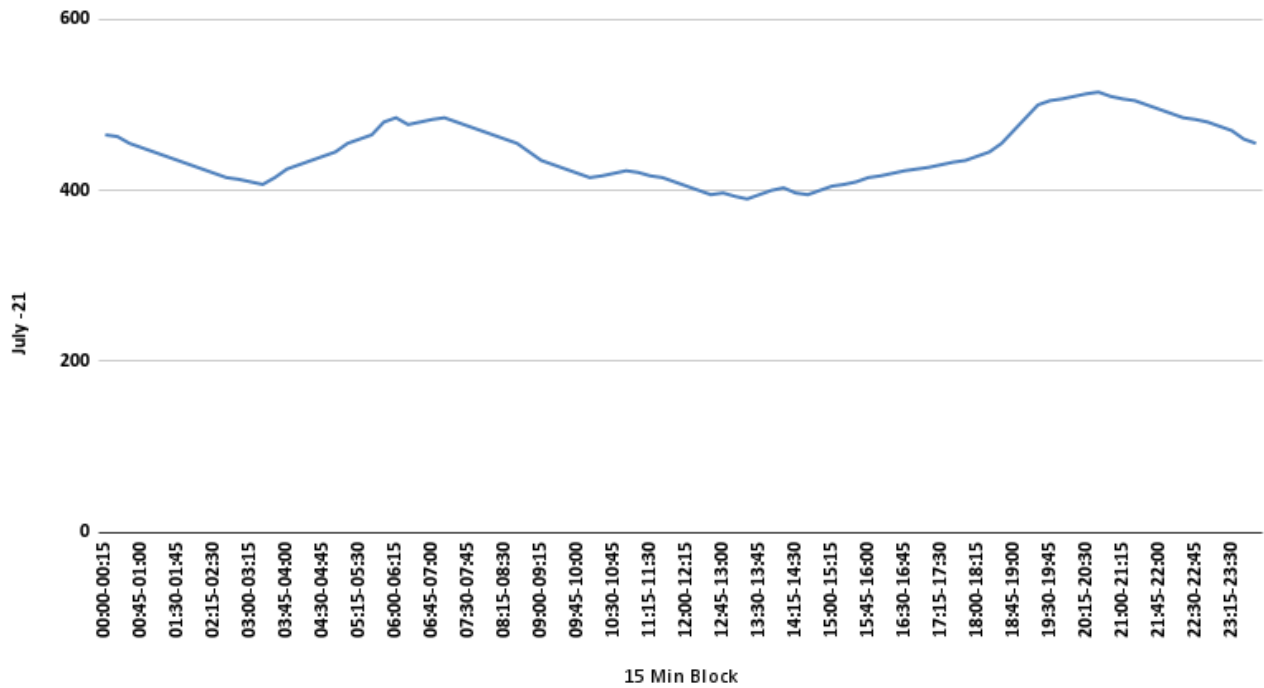
DRAW LOAD PATTERN FOR MAY-2021



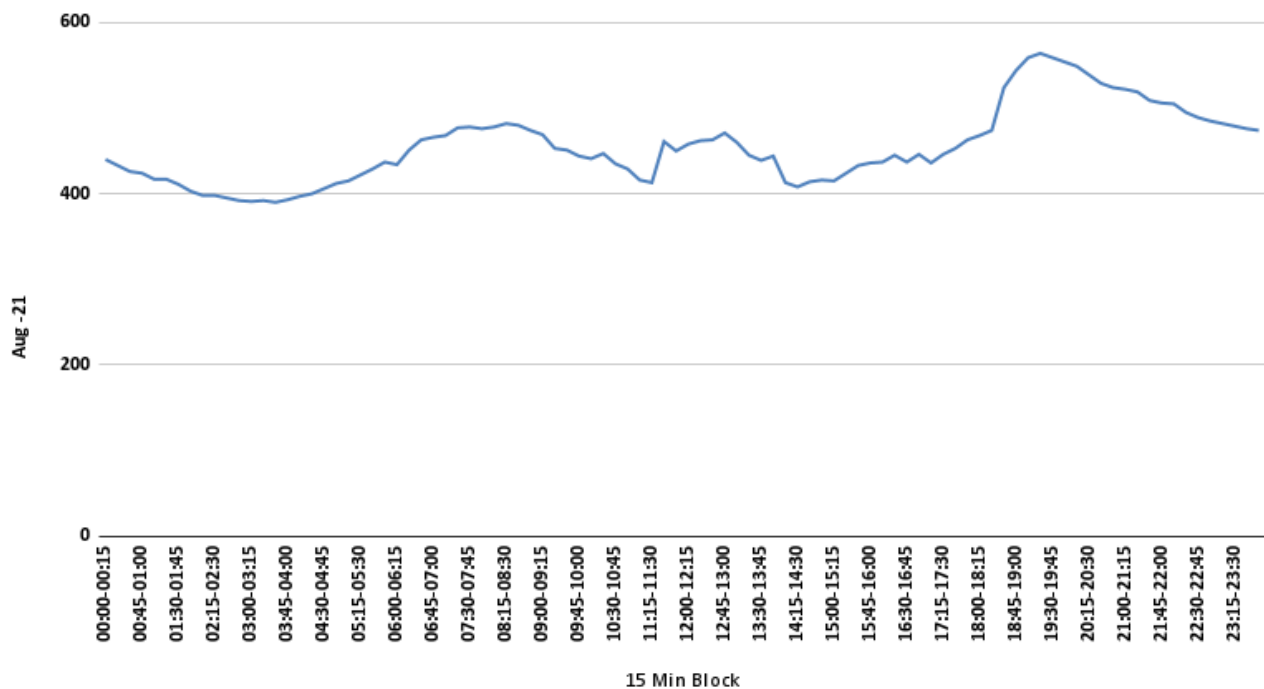
DRAW LOAD PATTERN FOR JUNE -2021



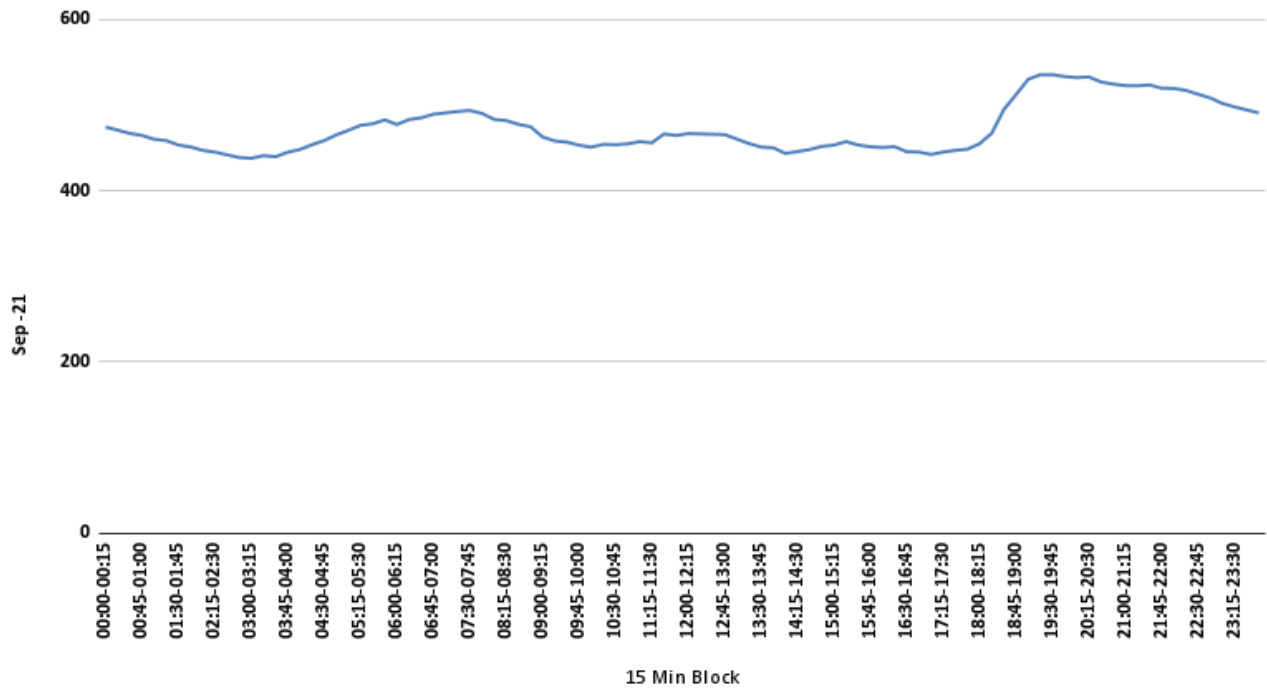
DRAW LOAD PATTERN FOR JULY -2021



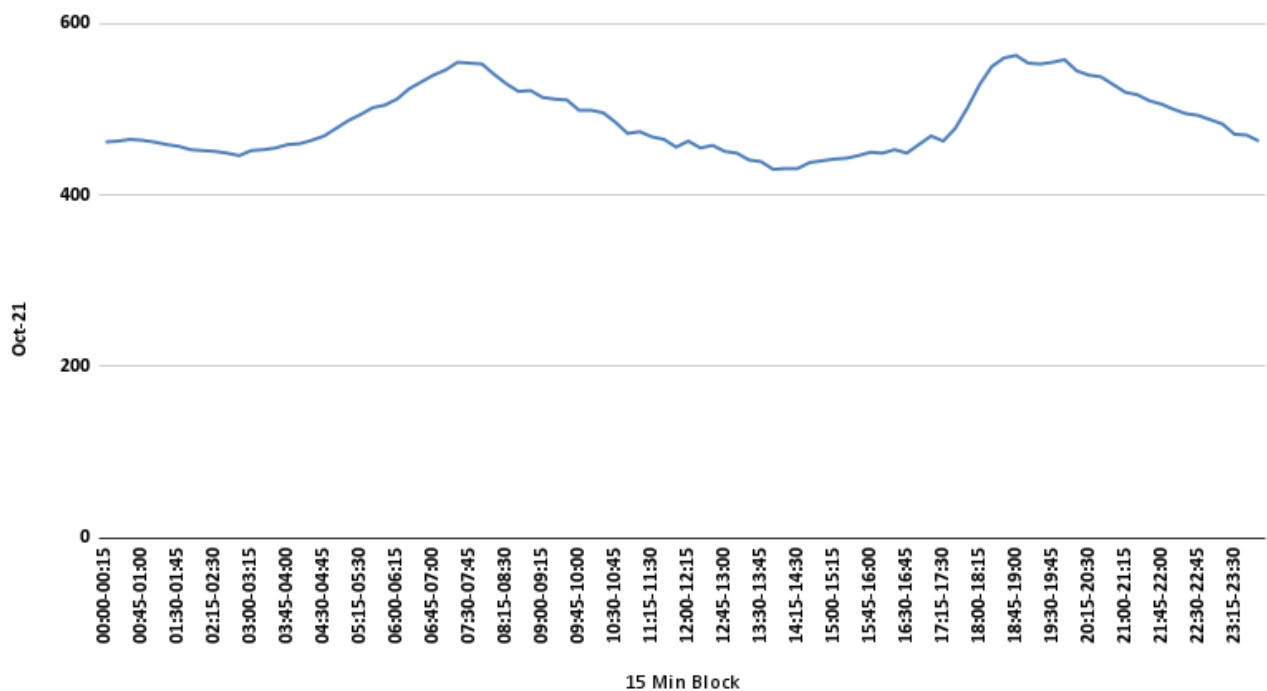
DRAW LOAD PATTERN FOR AUG -2021



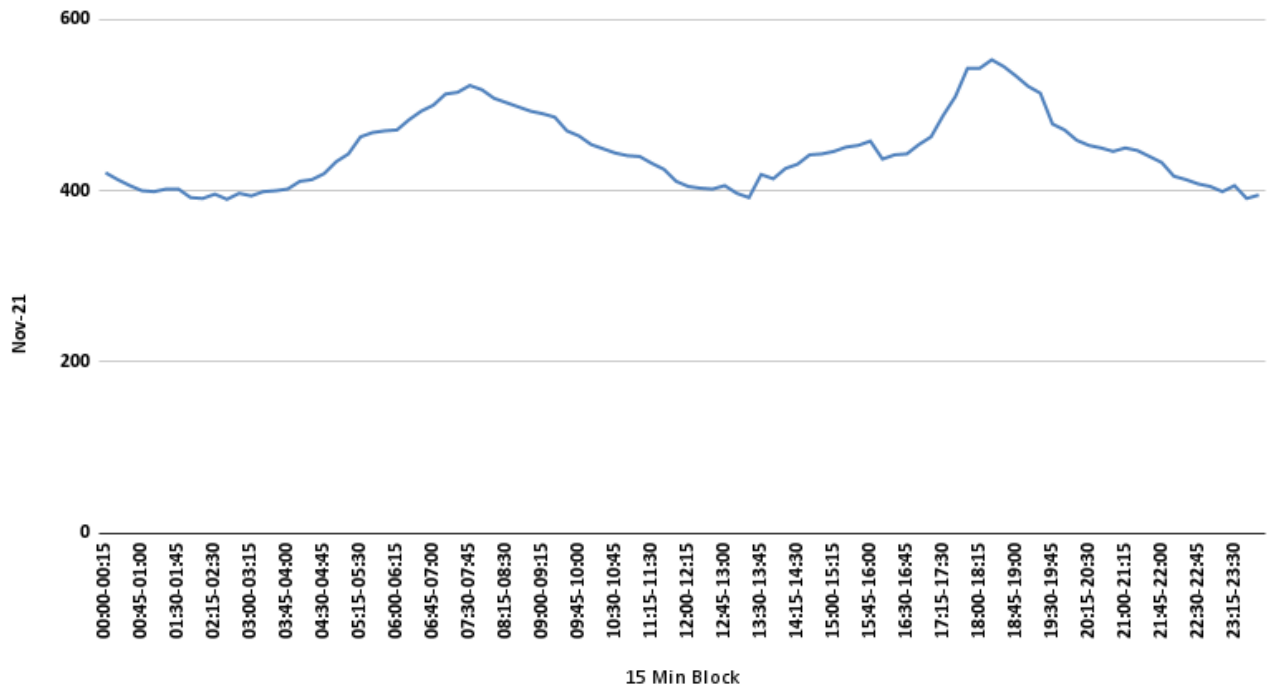
DRAW LOAD PATTERN FOR SEP-2021



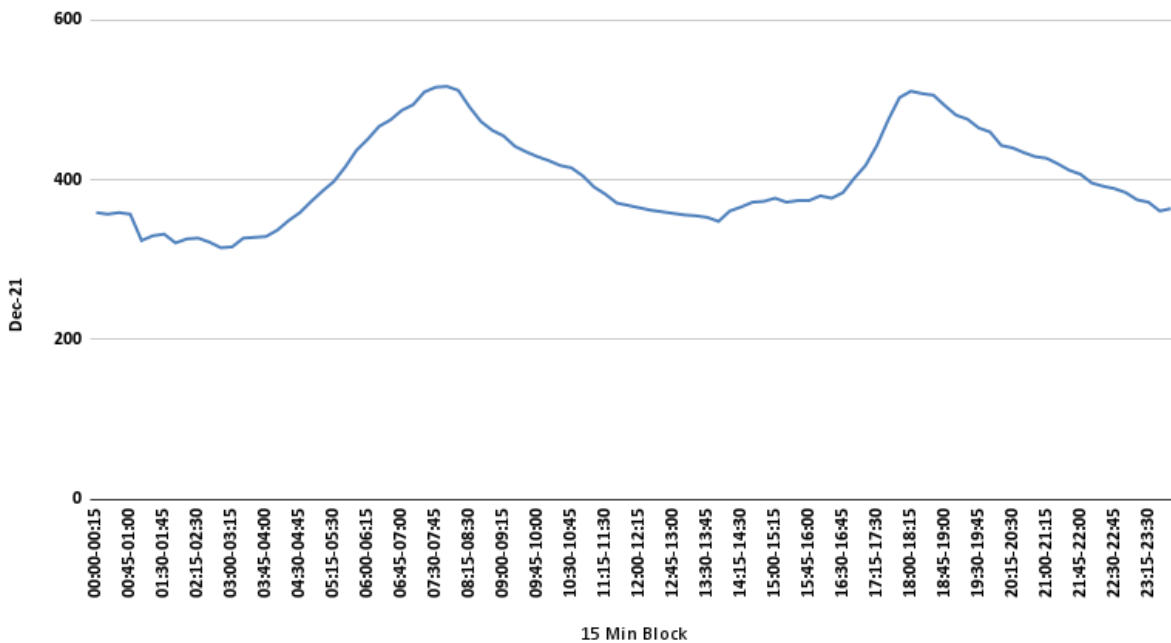
DRAW LOAD PATTERN FOR OCT-2021



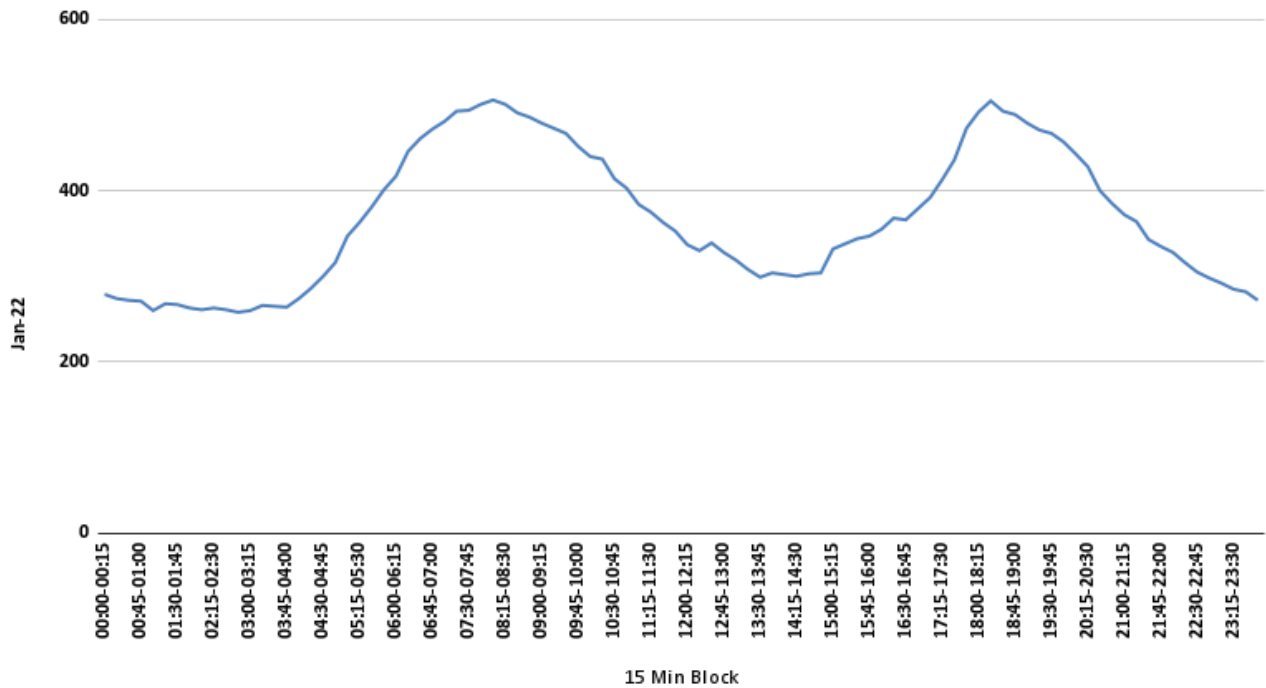
DRAW LOAD PATTERN FOR NOV-2021



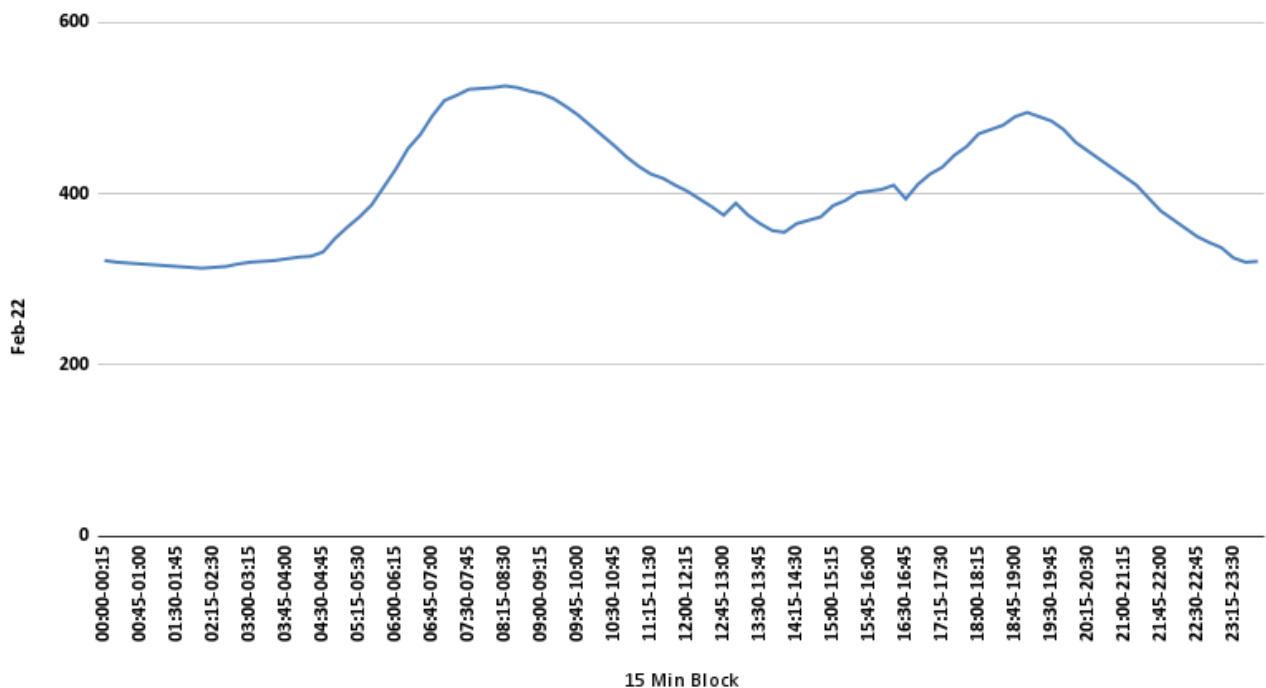
DRAW LOAD PATTERN FOR DEC-2021



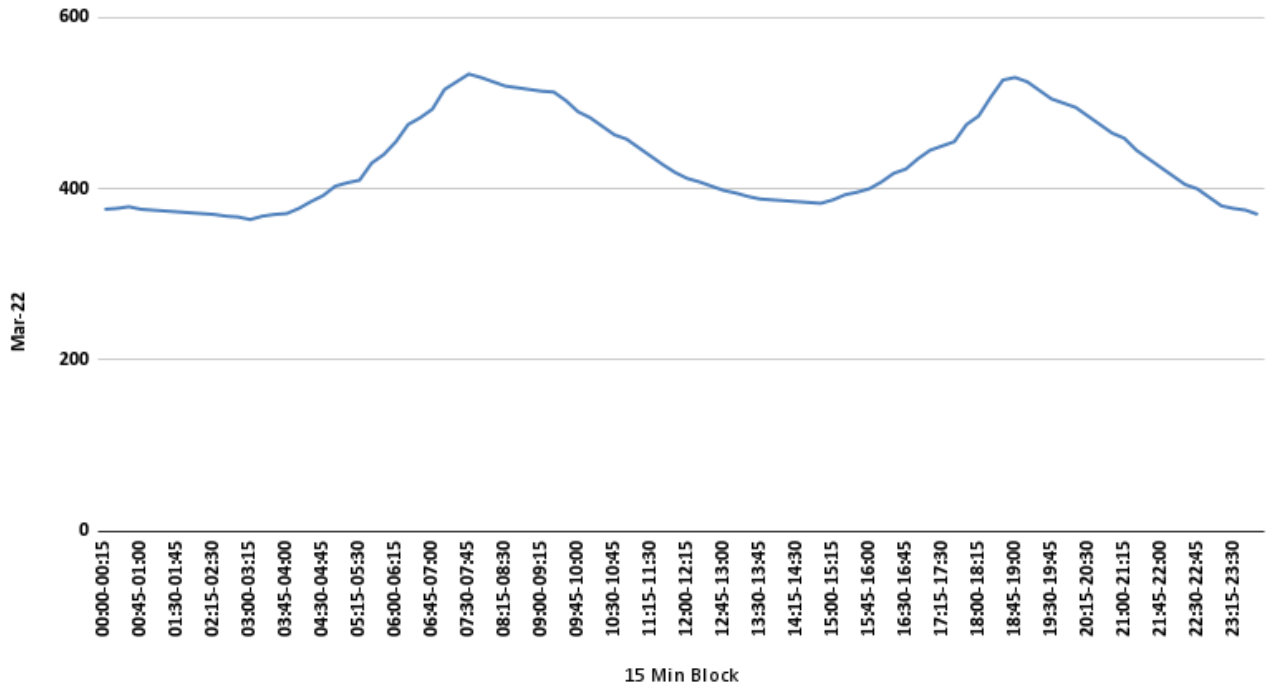
DRAW LOAD PATTERN FOR JAN-2022



DRAW LOAD PATTERN FOR FEB-2022



DRAW LOAD PATTERN FOR MAR-2022



The monthly average 15 minute block wise drawl pattern is presented below in a tabular form

BLOCK WISE MONTHLY AVERAGE DRAWAL LOAD PATTERN												
15 Min Block	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22
00:00-00:15	469	493	505	465	440	474	462	421	359	279	322	376
00:15-00:30	465	490	503	463	433	471	463	413	357	274	320	377
00:30-00:45	462	488	504	455	426	467	465	406	359	272	319	379
00:45-01:00	459	486	504	450	424	465	464	400	357	271	318	376
01:00-01:15	458	483	498	445	417	460	462	399	324	260	317	375
01:15-01:30	455	484	497	440	417	459	459	402	330	268	316	374
01:30-01:45	447	481	493	435	411	453	457	402	332	267	315	373
01:45-02:00	453	478	492	430	403	451	453	392	321	263	314	372
02:00-02:15	450	476	487	425	398	447	452	391	326	261	313	371
02:15-02:30	450	473	485	420	398	445	451	396	327	263	314	370
02:30-02:45	443	475	482	415	395	442	449	390	322	261	315	368
02:45-03:00	437	471	481	413	392	439	446	397	315	258	318	367

03:00-03:15	438	472	479	410	391	438	452	394	316	260	320	364
03:15-03:30	445	480	481	407	392	441	453	399	327	266	321	368
03:30-03:45	436	476	482	415	390	440	455	400	328	265	322	370
03:45-04:00	446	478	483	425	393	445	459	402	329	264	324	371
04:00-04:15	447	480	487	430	397	448	460	411	337	274	326	377
04:15-04:30	457	487	490	435	400	454	464	413	349	286	327	385
04:30-04:45	458	492	497	440	406	459	469	420	359	300	332	392
04:45-05:00	468	498	503	445	412	465	478	434	373	316	348	403
05:00-05:15	475	507	501	455	415	471	487	443	386	347	361	407
05:15-05:30	487	513	500	460	422	476	494	463	398	363	373	410
05:30-05:45	486	509	502	465	429	478	502	468	416	381	387	430
05:45-06:00	490	506	501	480	437	483	505	470	437	401	408	440
06:00-06:15	487	488	493	485	434	477	512	471	451	417	429	455
06:15-06:30	496	498	494	477	451	483	524	483	467	446	453	475
06:30-06:45	494	494	495	480	463	485	532	493	475	461	469	483
06:45-07:00	508	493	497	483	466	489	540	500	487	472	491	493
07:00-07:15	505	494	503	485	468	491	546	513	494	481	509	516
07:15-07:30	510	495	501	480	477	493	555	515	510	493	515	525
07:30-07:45	515	496	505	475	478	494	554	523	516	494	522	534
07:45-08:00	501	502	503	470	476	490	553	518	517	501	523	530
08:00-08:15	494	486	494	465	478	483	541	508	512	506	524	525
08:15-08:30	493	484	491	460	482	482	530	503	491	501	526	520
08:30-08:45	488	475	490	455	480	478	521	498	473	491	524	518
08:45-09:00	483	483	489	445	474	475	522	493	462	486	520	516
09:00-09:15	489	480	441	435	469	463	514	490	455	479	517	514
09:15-09:30	486	474	448	430	453	458	512	486	442	473	511	513
09:30-09:45	486	473	449	425	451	457	511	470	435	467	502	503
09:45-10:00	485	472	445	420	444	453	499	464	429	452	492	490

10:00-10:15	484	473	442	415	441	451	499	454	424	440	480	483
10:15-10:30	490	477	440	417	447	454	496	449	418	437	468	473
10:30-10:45	483	487	444	420	435	454	485	444	415	414	456	463
10:45-11:00	486	486	450	423	429	455	472	441	405	403	443	458
11:00-11:15	480	485	485	421	416	457	474	440	391	384	432	448
11:15-11:30	473	482	495	417	413	456	468	432	382	375	423	438
11:30-11:45	474	485	497	415	461	466	465	425	371	363	418	428
11:45-12:00	473	490	500	410	450	465	456	411	368	353	410	419
12:00-12:15	469	500	502	405	458	467	463	405	365	337	403	412
12:15-12:30	463	502	505	400	462	466	455	403	362	330	394	408
12:30-12:45	467	501	504	395	463	466	458	402	360	339	385	403
12:45-13:00	463	496	501	397	471	466	451	406	358	328	375	398
13:00-13:15	460	492	497	393	460	460	449	397	356	319	389	395
13:15-13:30	457	487	497	390	445	455	441	392	355	308	375	391
13:30-13:45	449	472	500	395	439	451	439	419	353	299	365	388
13:45-14:00	446	465	496	400	444	450	430	414	348	304	357	387
14:00-14:15	447	460	495	403	413	444	431	426	361	302	355	386
14:15-14:30	462	465	497	397	408	446	431	431	366	300	365	385
14:30-14:45	463	467	502	395	414	448	438	442	372	303	369	384
14:45-15:00	469	473	501	400	416	452	440	443	373	304	373	383
15:00-15:15	471	472	504	405	415	453	442	446	377	332	386	387
15:15-15:30	484	479	493	407	424	457	443	451	372	338	392	393
15:30-15:45	483	484	457	410	433	453	446	453	374	344	401	396
15:45-16:00	483	479	444	415	436	451	450	458	374	347	403	400
16:00-16:15	488	471	440	417	437	451	449	437	380	355	405	408
16:15-16:30	491	465	436	420	445	451	453	442	377	368	410	418
16:30-16:45	476	457	435	423	437	446	449	443	384	366	394	423
16:45-17:00	472	453	430	425	446	445	459	454	402	379	411	435

17:00-17:15	472	444	433	427	436	442	469	463	418	392	423	445
17:15-17:30	479	446	425	430	446	445	463	488	443	413	431	450
17:30-17:45	481	450	419	433	453	447	478	510	475	436	445	455
17:45-18:00	485	445	415	435	463	449	502	543	503	473	455	475
18:00-18:15	496	455	416	440	468	455	529	543	511	492	470	485
18:15-18:30	520	472	425	445	474	467	550	553	508	505	475	507
18:30-18:45	545	510	441	455	524	495	560	545	506	493	480	527
18:45-19:00	556	530	462	470	544	512	563	534	493	489	490	530
19:00-19:15	561	535	511	485	559	530	554	522	481	479	495	525
19:15-19:30	559	534	521	500	564	536	553	514	476	471	490	515
19:30-19:45	552	532	530	505	559	536	555	478	465	467	485	505
19:45-20:00	547	530	529	507	554	533	558	471	460	457	475	500
20:00-20:15	536	531	535	510	549	532	545	459	443	443	460	495
20:15-20:30	541	534	538	513	539	533	540	453	440	428	450	485
20:30-20:45	528	529	534	515	529	527	538	450	434	400	440	475
20:45-21:00	524	527	538	510	524	525	529	446	429	385	430	465
21:00-21:15	522	526	537	507	522	523	520	450	427	372	420	459
21:15-21:30	525	523	541	505	519	523	517	447	420	364	410	445
21:30-21:45	522	522	565	500	509	524	510	440	412	343	395	435
21:45-22:00	514	523	561	495	506	520	506	433	407	335	380	425
22:00-22:15	516	528	559	490	505	520	500	417	396	328	370	415
22:15-22:30	517	531	558	485	495	517	495	413	392	316	360	405
22:30-22:45	511	522	559	483	489	513	493	408	389	305	350	400
22:45-23:00	498	522	557	480	485	508	488	405	384	298	343	390
23:00-23:15	494	514	545	475	482	502	483	399	375	292	337	380
23:15-23:30	494	510	537	470	479	498	471	406	372	285	325	377
23:30-23:45	492	505	539	460	476	494	470	391	361	282	320	375
23:45-00:00	488	500	538	455	474	491	463	395	364	272	321	370

6.2 ENERGY EFFICIENCY IN DEMAND SIDE MANAGEMENT

The purpose of Energy Efficiency and Demand Side Management should be to reduce the load during peak period and enhance load during the non-peak period.

DSM activity should also be carried out to protect the Environment and to win the trust of consumers. DSM can be carried out at three levels:

- A) DISCOM level**
- B) Consumer Level**
- C) Using technology like energy storage**

- The DSM activities are to be initiated by DISCOM however need to be carried out by consumers. DISCOM can only manage a few DSM activities like voltage regulation and power factor regulation.
- It is proposed that enough data are required to be generated by carrying out consumer load Research and third party experts should be engaged.
- DSM programmes need skill about energy conservation and art of Communication with a consumer. It is better to engage Energy Manager/ Energy Auditors in a DSM cell. Awareness program on DSM should be conducted. Based on the analysis of data and third party survey report and action plan to be prepared for submission to Hon'ble OERC.
- At the consumer level, the involvement of consumers is must for the success of demand side management. Awareness, Incentives, penalties and legislations are four main tools to involve consumers. The DSM scheme should be formulated based on these four tools.
- Awareness is the key to the success of the DSM programme. However at present no such awareness program on DSM is being conducted by DISCOM and it is proposed to implement the same.

6.3 ENERGY ACCOUNTING

In order to segregate the losses further in technical & commercial category, it is necessary to have energy meters at key locations in the distribution system. At present the meters are installed up to 11 kV feeders outgoing from each substation. It is proposed that DTR metering should be taken up in mission mode to check the theft and commercial loss.

7.0 FIELD STUDY

Sl. No.	Date	Place	Activity
1	01-11-2022	Head Office	Arrival on Site, Opening meeting, Discussed audit methodology & substation visit agenda
2	01-11-2022	CHATRAPUR 33/11 kV PSS	Field Visit, Inspection, Collection & Verification of data
3	01-11-2022	BIDUTPURI 33/11 kV PSS	Field Visit, Inspection, Collection & Verification of data

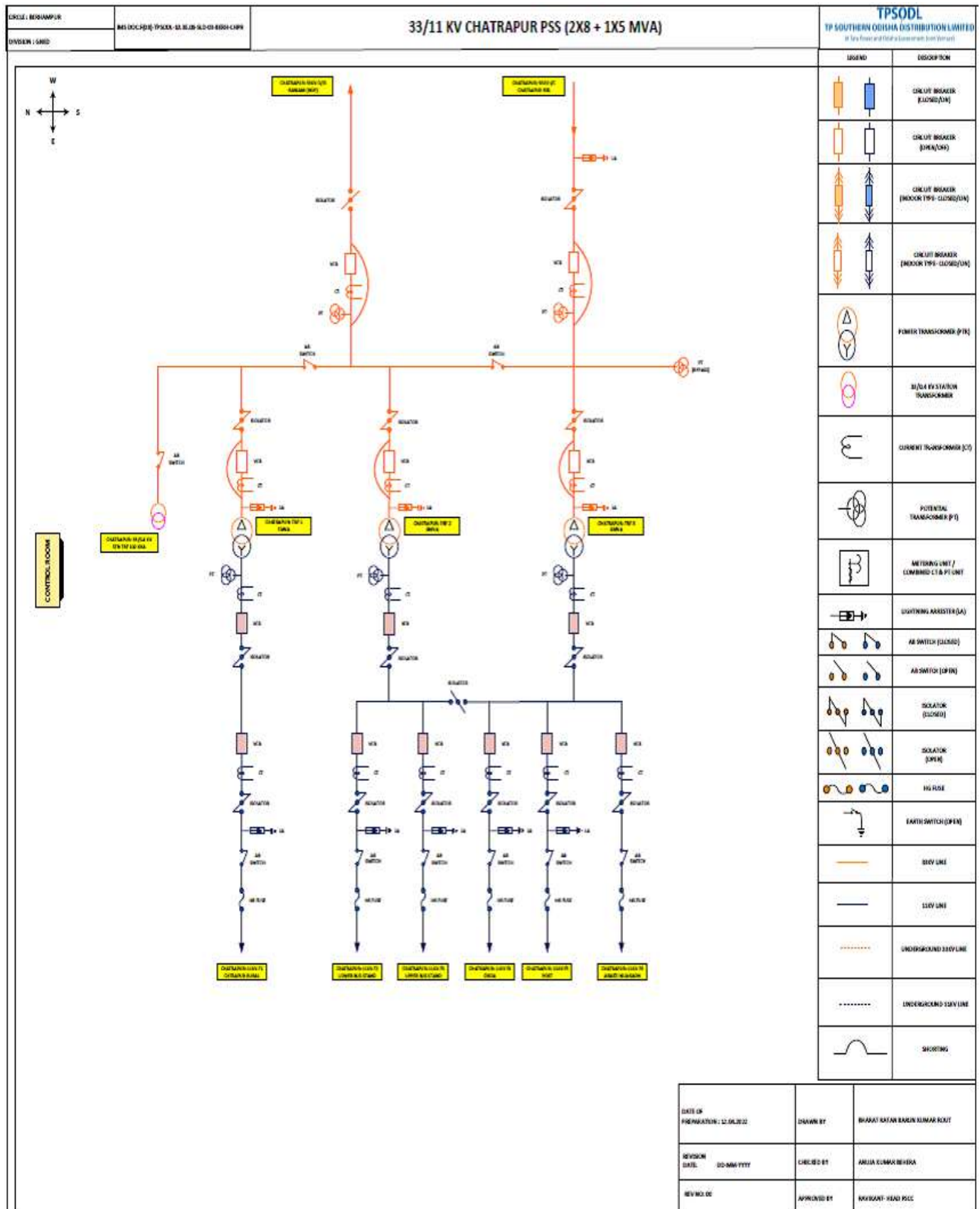
4	02-11-2022	HUMMA 33/11 kV PSS	Field Visit, Inspection, Collection & Verification of data
5	02-11-2022	TARA TARINI PSS	Field Visit, Inspection, Collection & Verification of data
6	02-11-2022	PANDIA PSS	Field Visit, Inspection, Collection & Verification of data

VISIT TO CHATRAPUR 33/11 kV PSS:

OBSERVATIONS:

- The CHATRAPUR 33/11 kV Substation is of capacity 2x8 MVA + 1x5MVA which are fed from CHATRAPUR OPTCL Grid Sub Station.
- Six numbers of 11 KV Feeders emanate from the structure namely Chatrapur Rural, Lower Bus Stand, Upper Bus Stand, DRDA, PORT, Agasti Nua Gaon.
- One 11 kV feeder namely Chatrapur Rural emanate from one Power Transformer of 5 MVA, Two 11 kV Feeders namely Lower Bus Stand & Upper Bus Stand emanate from one 8 MVA Power Transformer and other three 11 kV feeders namely DRDA, PORT, Agasti Nua Gaon emanate from the other Transformer of 8 MVA.
- The meters of 11kV feeders are working and the reading of Kwh, KVArh, KVAh, KW, KVA etc are shown in the energy meter in the Control panel.
- The meter at 33 kV Feeder is working properly and readings are shown in the control panel.
- Metal Spreading is not done properly in the PSS but renovation work is underway at the PSS.
- The log books are maintained in the PSS & proper safety protocols are followed.

SINGLE-LINE DIAGRAM OF CHATRAPUR 33/11 KV SUBSTATION:



SNAPSHOTS TAKEN DURING VISIT TO CHATRAPUR 33/11 KV SUBSTATION:

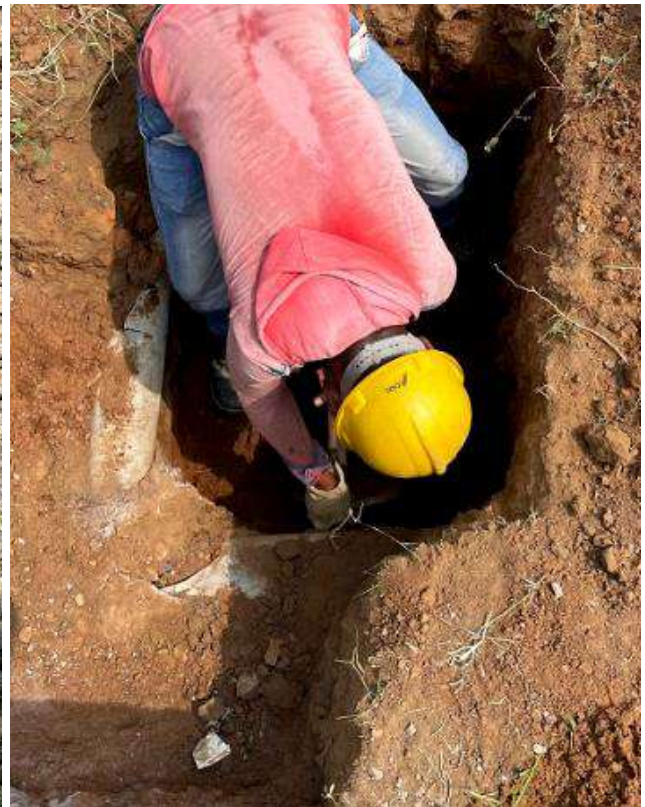


Visit to Chatrapur 33/11 kV substation.





Control Panels at the Chatrapur 33/11 kV Substation



Earthing work is under construction at the PSS



Energy Meter Verification at the PSS





Transformers of the PSS are in good condition.

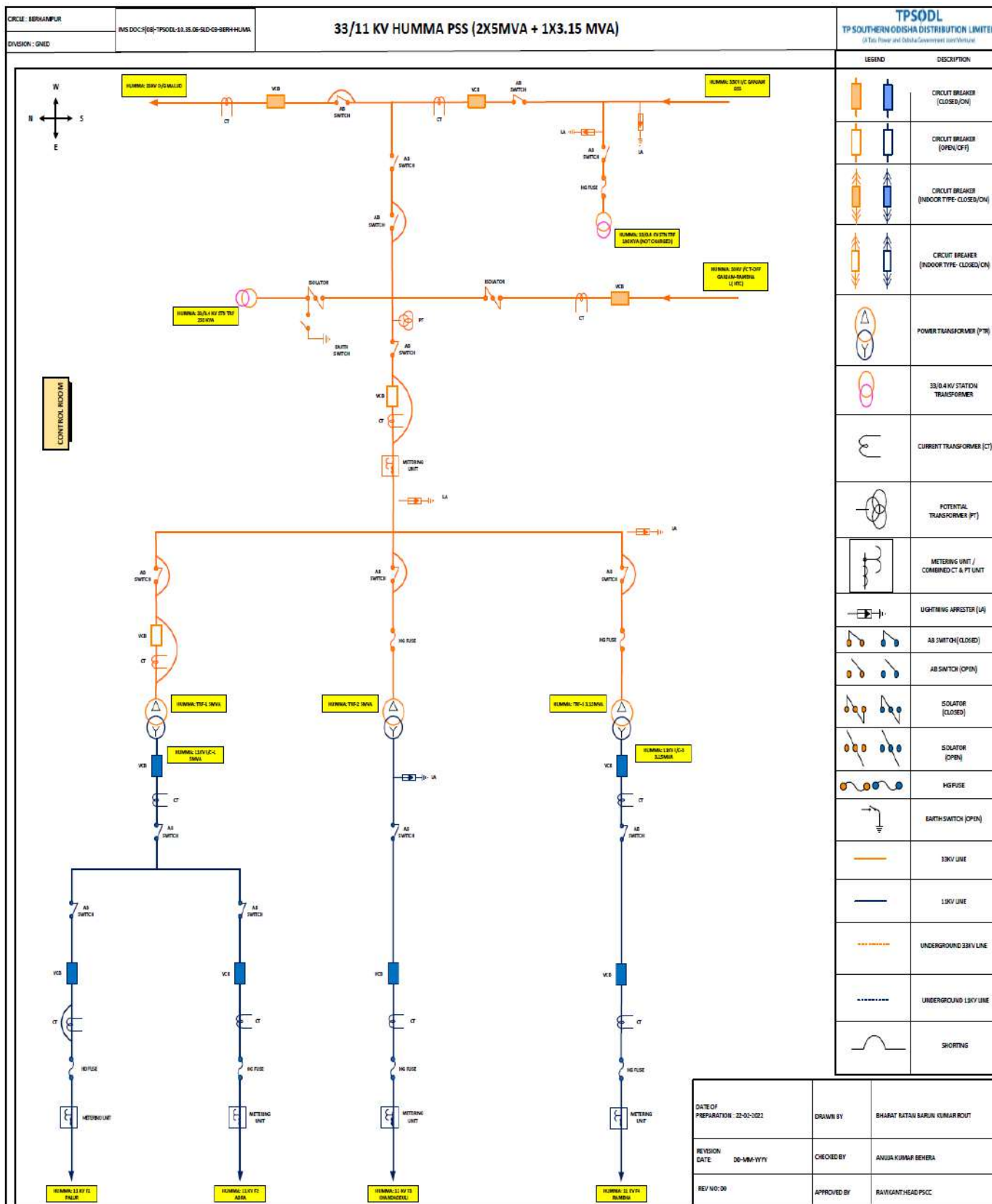


Silica Gel Breather of the Transformer is in good condition

VISIT TO HUMMA 33/11 kV PSS:**OBSERVATIONS:**

- The HUMMA 33/11 kV Substation is of capacity 2 x 5 MVA + 1 x 3.15 MVA which are fed from Ganjam Grid Sub Station.
- Four numbers of 11 KV Feeders emanate from the structure namely Palur, Abra, Khandadeuli & Rambha.
- Two 11 kV feeders namely Palur & Abra emanate from one Power Transformer of 5 MVA, One 11 kV Feeder namely Khandadeuli emanates from the other 5 MVA Power Transformer and the other 11 kV Feeder namely Rambha emanate from the another Power Transformer of 3.15 MVA.
- The 11 kV Feeders have peak ampere of Palur (60 Amp), Abra (40 Amp), Khandadeuli (70 Amp) & Rambha (45 Amp).
- The meters of 11kV feeders are working and the reading of Kwh, KVArh, KVAh, KW, KVA etc are shown in the energy meter in the Control panel.
- The meter at 33 kV incoming feeder is not working and readings no readings are taken.
- Metal Spreading & maintenance work is not done properly in the PSS.
- The log books are maintained in the PSS & proper safety protocols are followed.

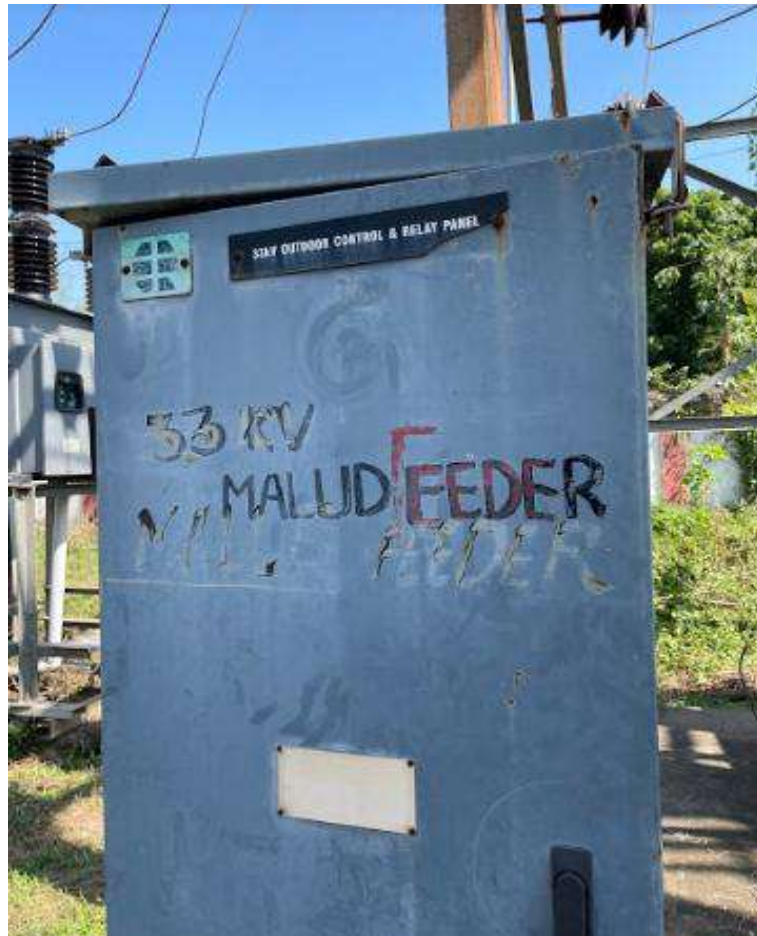
SINGLE-LINE DIAGRAM OF HUMMA 33/11 KV SUBSTATION:



SNAPSHOTS TAKEN DURING VISIT TO HUMMA 33/11 KV SUBSTATION:

Visit to HUMMA 33/11 kV PSS





Control Panels and Energy Meter Verification at the PSS





Metal Spreading is not done at the PSS



Earthing of the PSS is in bad condition



Silica Gel Breather of the Power Transformer is in good condition

TP Southern Odisha Distribution						TPSODL Ltd. (LC/PTW Log Sheet)									
Sl. No.	Name of the Transformer	Capacity (KVA)	Location	Remarks	Remarks	Sl. No.	Transformer Name	Capacity (KVA)	Location	Remarks	Remarks	Sl. No.	Transformer Name	Capacity (KVA)	Location
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9
10	10	10
11	11	11
12	12	12
13	13	13
14	14	14
15	15	15
16	16	16
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70	70	70

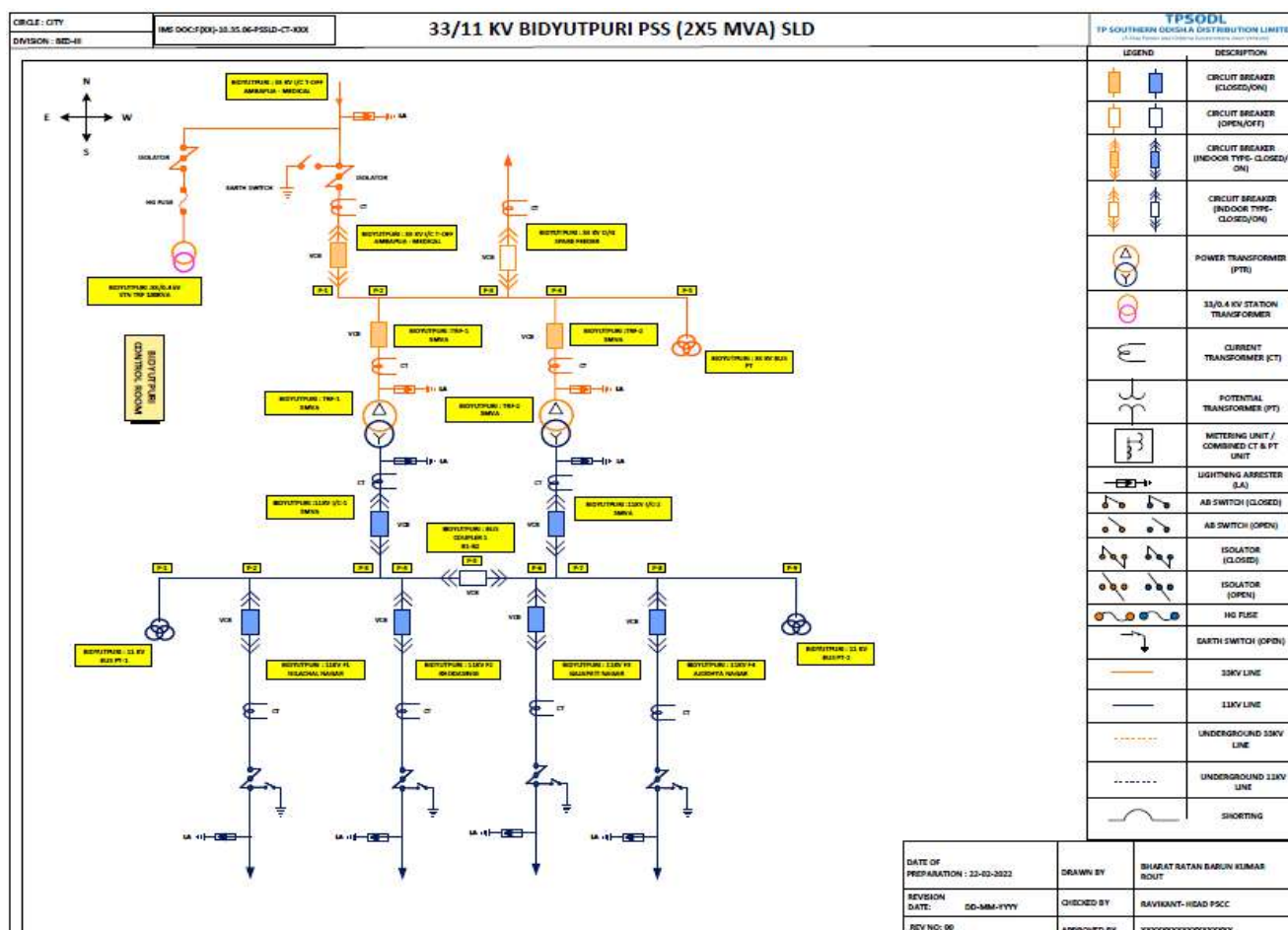
Log Book Verification at the PSS

VISIT TO BIDYUTPURI 33/11 kV PSS:

OBSERVATIONS:

- The BIDYUTPURI 33/11 kV Substation is of capacity 2 x 5 MVA which are fed from AMBAPUA-MEDICAL Sub Station.
- Four numbers of 11 KV Feeders emanate from the structure namely Nilachal Nagar, Khodasingi, Gajapati Nagar & Ajodhya Nagar.
- Two 11 kV feeders namely Nilachal Nagar & Khodasingi emanate from one Power Transformer of 5 MVA and the other two 11 kV Feeders namely Gajapati Nagar & Ajodhya Nagar emanate from the other Transformer of 5 MVA.
- The meters of 11kV feeders are working and the reading of Kwh, KVarh, KVAh, KW, KVA etc are shown in the energy meter in the Control panel.
- The meter at 33 kV Feeder is working properly and readings are shown in the control panel.
- Metal Spreading & maintenance work is done properly in the PSS.
- The log books are maintained in the PSS & proper safety protocols are followed.

SINGLE-LINE DIAGRAM OF BIDYUTPURI 33/11 KV SUBSTATION:



SNAPSHOTS TAKEN DURING VISIT TO BIDYUTPURI 33/11 KV SUBSTATION:



Visit to Bidyutpuri 33/11 kV PSS



Power Transformers at the PSS



Control Panels at the PSS

[illegible]

Log Book Verification at the PSS



Energy Meter in the Control Panels

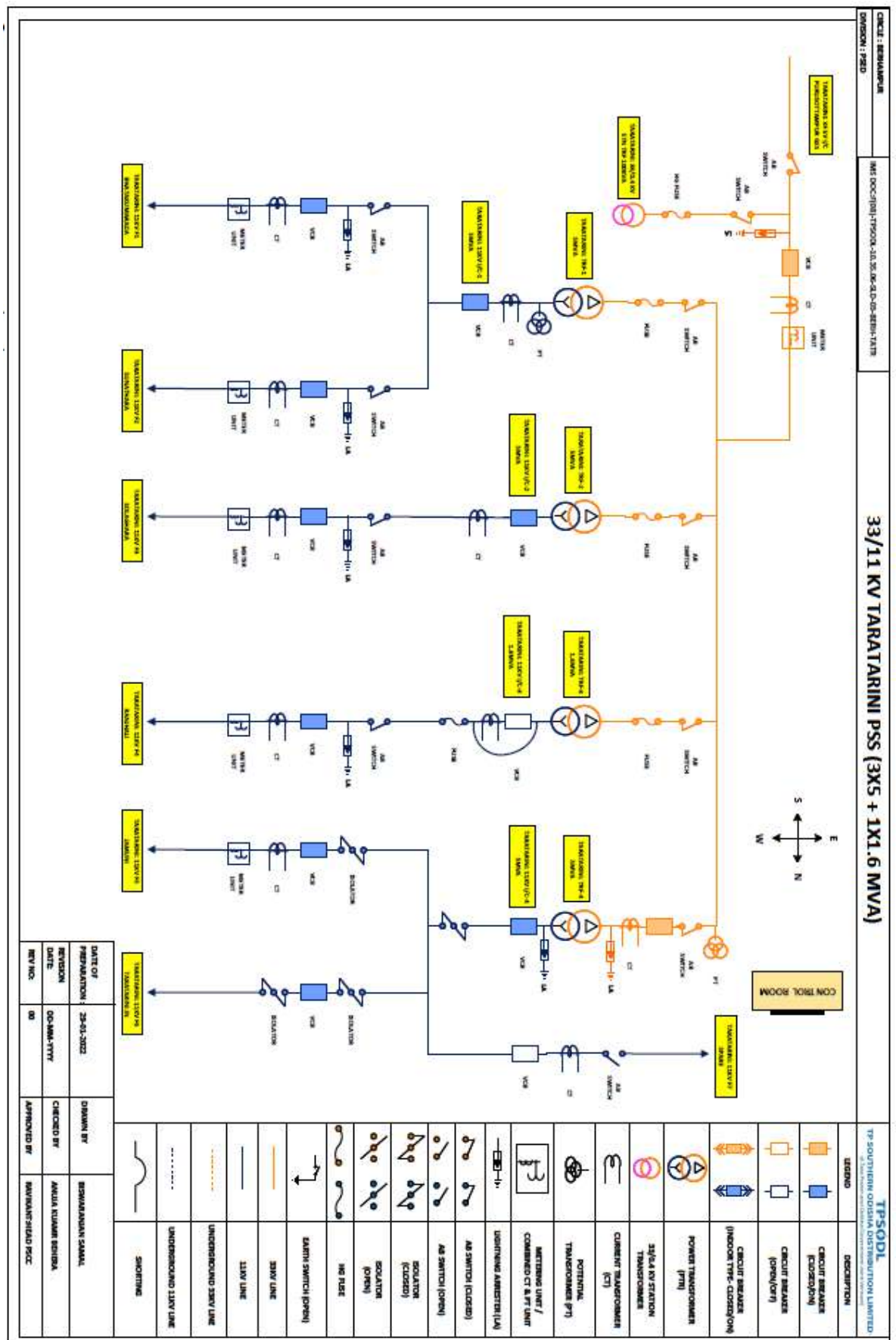


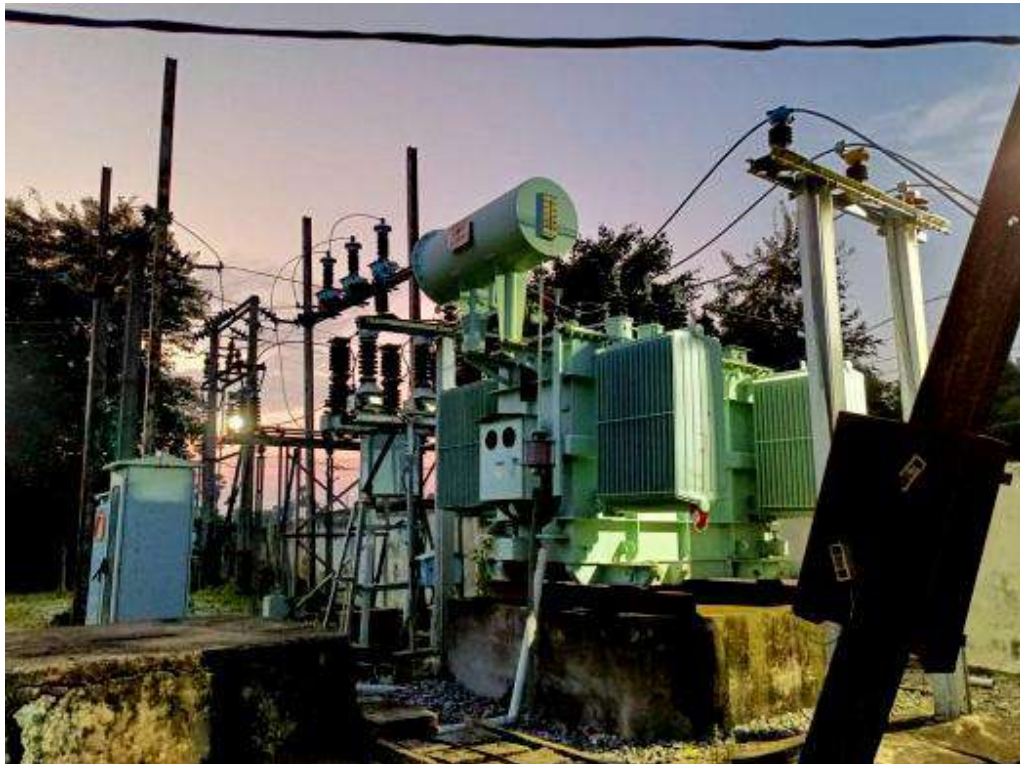
Silica gel Breather of the Transformer is in bad condition.

VISIT TO TARATARINI PSS:**OBSERVATIONS:**

- The TARATARINI 33/11 kV Substation is of capacity 3x5 MVA + 1x1.6 MVA which is fed from TARATARINI OPTCL Grid Sub Station.
- Six numbers of 11 KV Feeders emanate from the structure namely Bhatakumarada, Sunathara, Solaghara, Ranjhali, Jamuni and Taratarini JN.
- There are three nos. of 5 MVA & one nos. of 1.6 MVA Power Transformers in the structure out of which two 11 kV feeders namely Bhatakumarada & Sunathara emanate from one Power Transformer, Solaghara emanate from another 5 MVA Power Transformer, Jamuni & Taratarini JN emanate from the other 5 MVA Power Transformer. Ranjhali 11 kV feeder emanate from the 1.6 MVA Power Transformer.
- The 11 kV Feeders have peak ampere of Bhatakumarada(41 Amp), Sunathara(86 Amp), Solaghara(55 Amp), Ranjhali(13 Amp), Jamuni(46 Amp)and Taratarini JN(10 Amp).
- The meters of 11kV feeders are working and the reading of Kwh, KVArh, KVAh, KW, KVA etc are shown in the energy meter in the Control panel except in Taratarini JN, where the meter is found defected.
- The meter at 33 kV Feeder is working properly and readings are shown in the control panel
- Metal Spreading is not done properly in the PSS and maintenance of the PSS is not carried out properly.
- The log books are maintained in the PSS & safety protocols are followed properly.

SINGLE-LINE DIAGRAM OF TARATARINI 33/11 KV SUBSTATION:

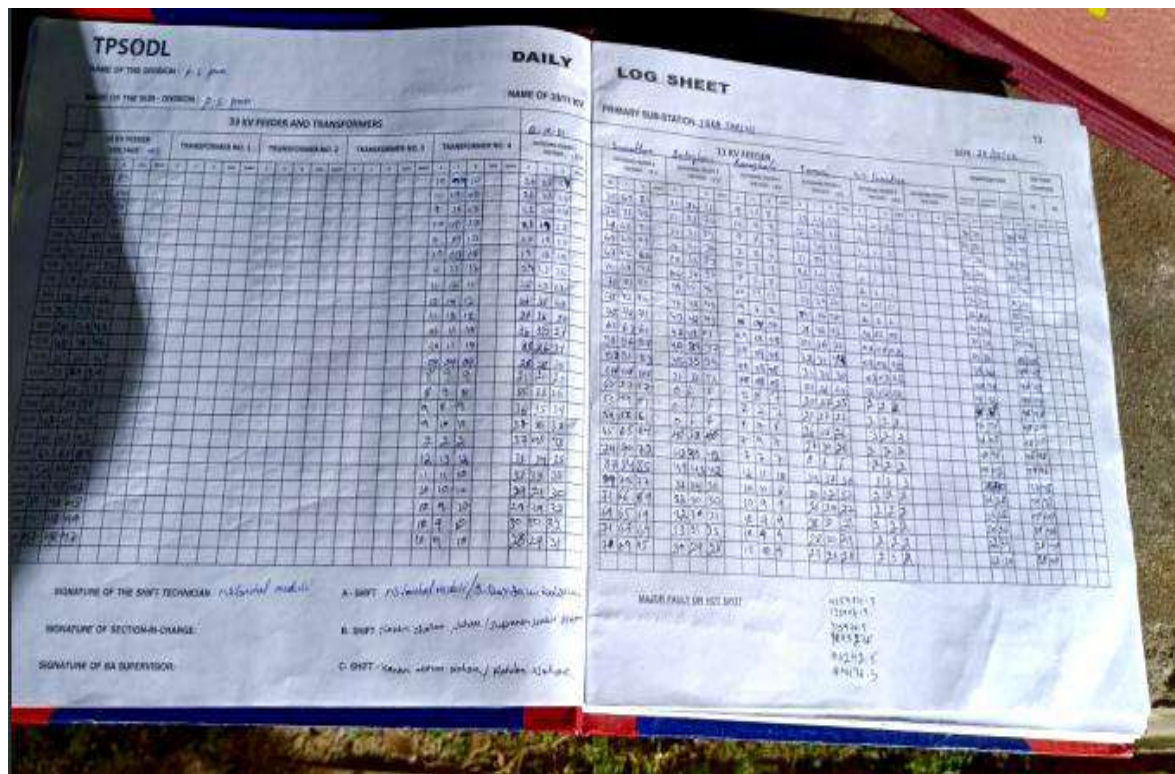


SNAPSHOTS TAKEN DURING VISIT TO TARATARINI 33/11 KV SUBSTATION:

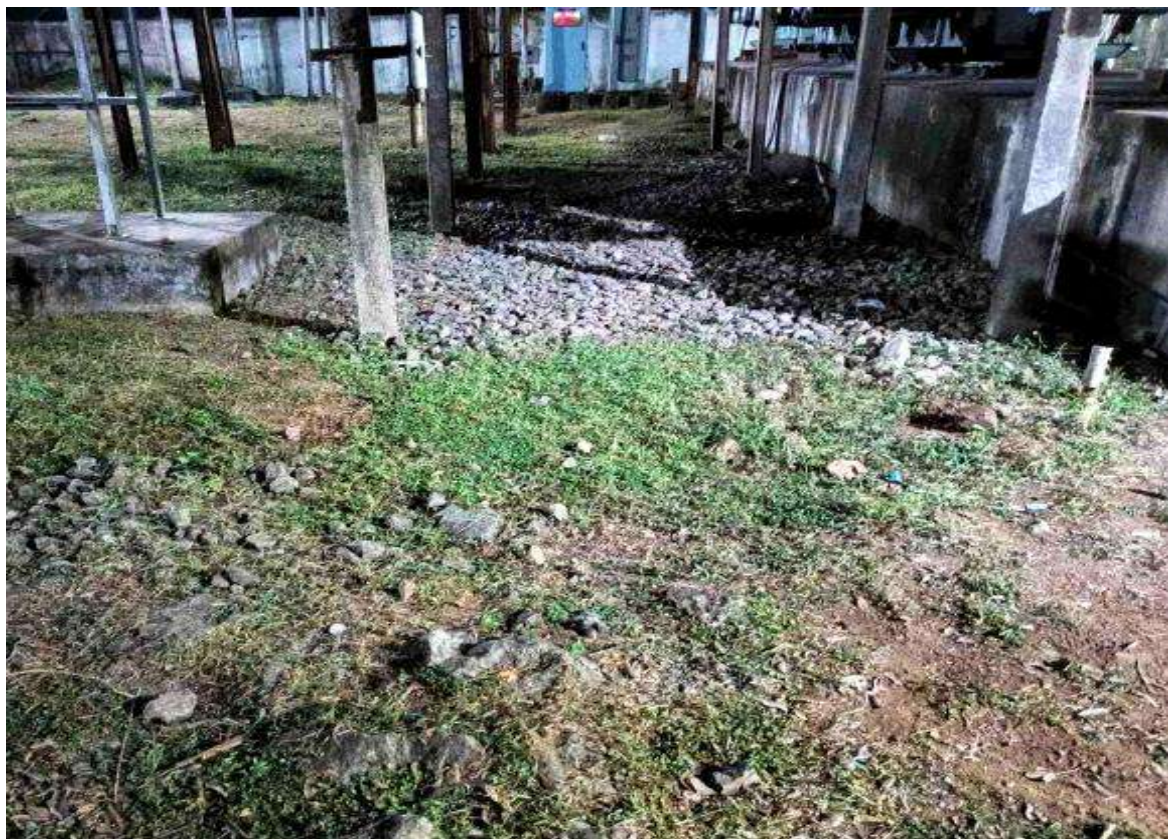
Visit to Taratarini 33/11 kV substation.



Earthing is done at the PSS, but it is not in good condition.

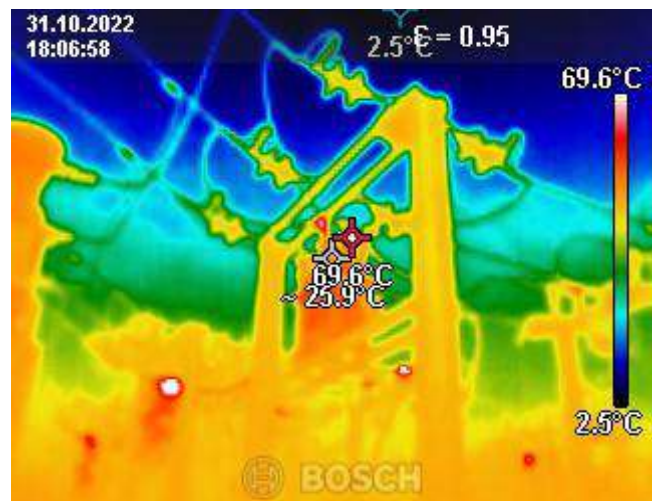
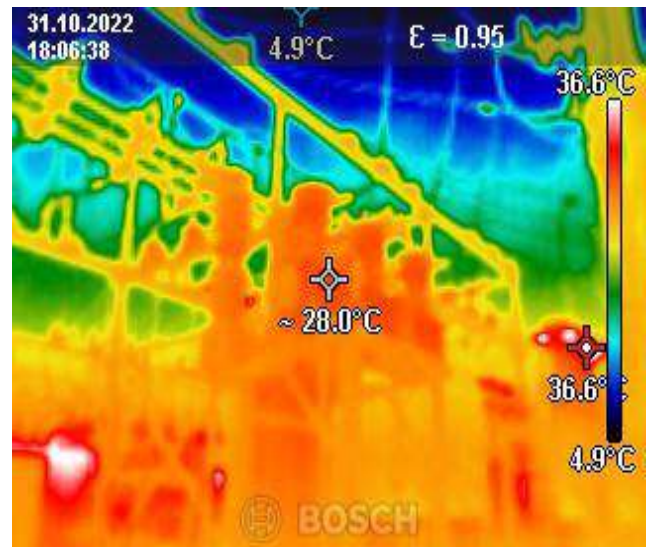


Maintenance of Registers is done properly in the PSS.



Metal Spreading is not done properly at the PSS.

THERMOGRAPHY IMAGES FROM THE VISIT TO THE TARATARINI 33/11 KV SUBSTATION:



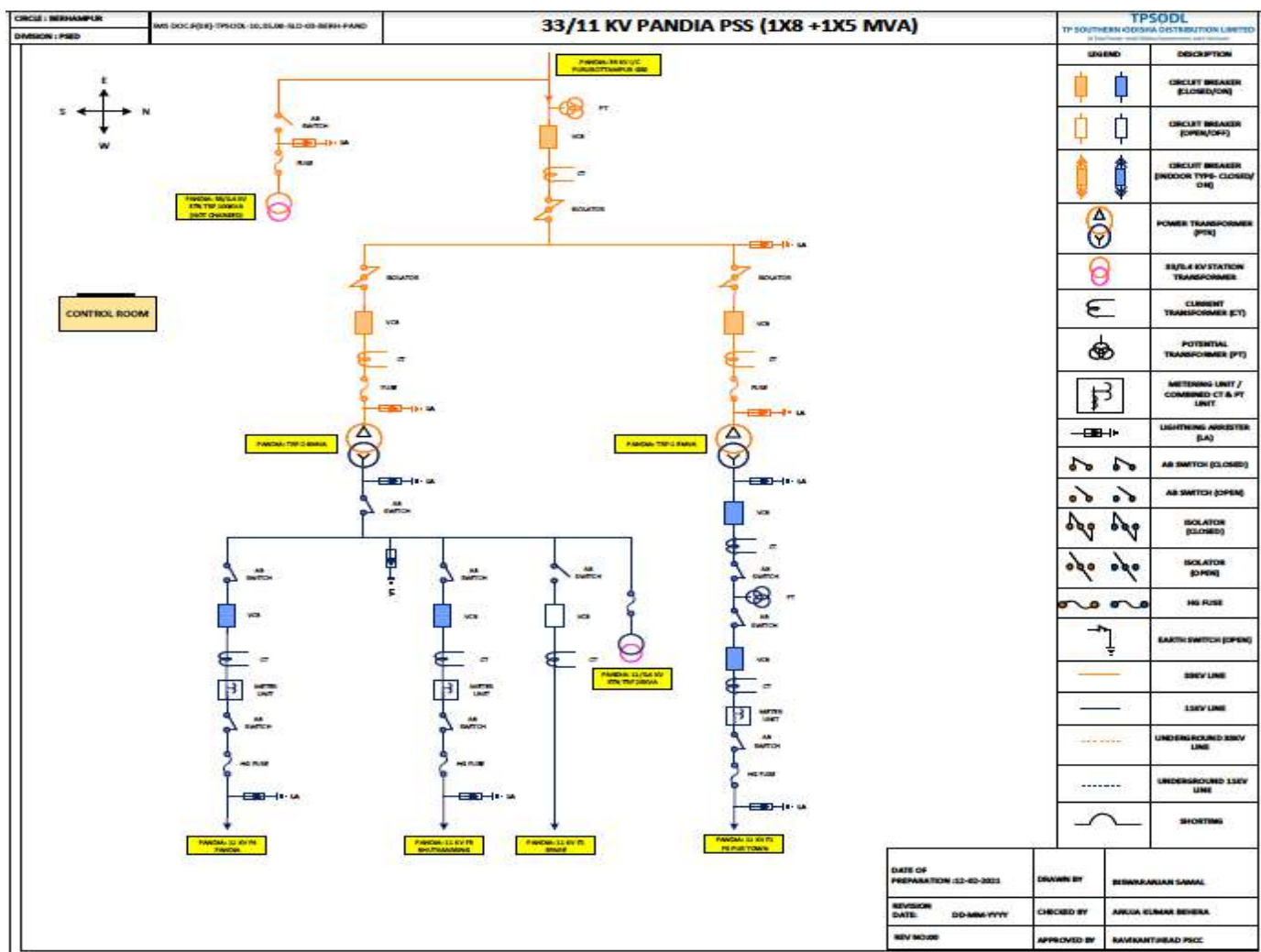


VISIT TO PANDIA PSS:

OBSERVATIONS:

- The PANDIA 33/11 kV Substation is of capacity 1x8 MVA + 1x5MVA which are fed from Purushottampur OPTCL Grid Sub Station.
- Four numbers of 11 KV Feeders emanate from the structure namely Pandia, Bhutasarsing, Spare Feeder & Purushottampur Town.
- Three 11 kV feeders namely Pandia, Bhutasarsing & Spare Feeder emanate from one Power Transformer of 8 MVA & Purushottampur Town emanate from the other Transformer of 5 MVA.
- The 11 kV Feeders have peak ampere of Pandia (37Amp), Bhutasarsing (78Amp), Spare Feeder & Purushottampur Town (30 Amp).
- The meters of 11kV feeders are working and the reading of Kwh, KVARh, KVAh, KW, KVA etc are shown in the energy meter in the Control panel.
- The meter at 33 kV Feeder is working properly and readings are shown in the control panel.
- Metal Spreading is not done properly in the PSS but renovation work is underway at the PSS.
- The log books are maintained in the PSS & proper safety protocols are followed.

SINGLE-LINE DIAGRAM OF PANDIA 33/11 KV SUBSTATION:



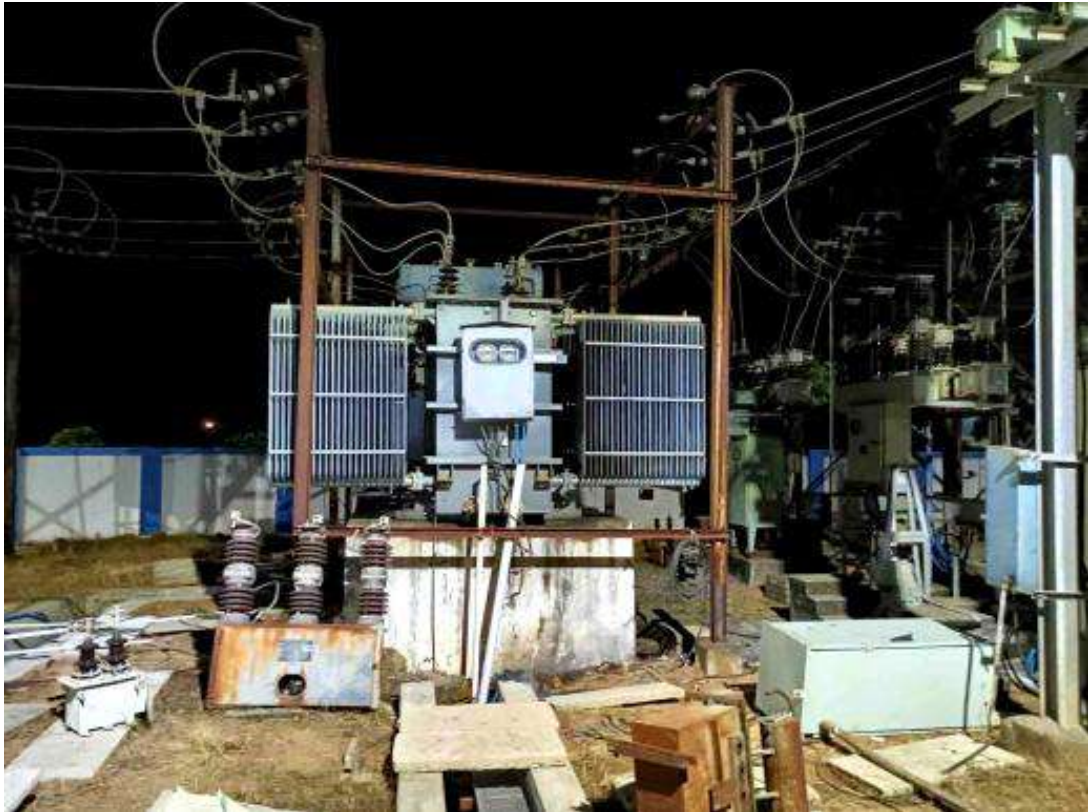
SNAPSHOTS TAKEN DURING VISIT TO PANDIA 33/11 KV SUBSTATION:



Visit to 33/11 kV Pandia PSS where renovation work is going on



Control Panels at the Pandia 33/11 kV PSS



Transformers at the PSS are in good condition

TPSODL

NAME OF THE SUB-STATION

NAME OF THE SUB-SECTION

DAILY LOG SHEET

NAME OF THE SUB-STATION

PRIMARY SUB-STATION

11

DATE 25/12/22

11 KV FEEDER

TEMPERATURE

BATTERY VOLTAGE

11 KV FEEDER

NO. OF PHASES

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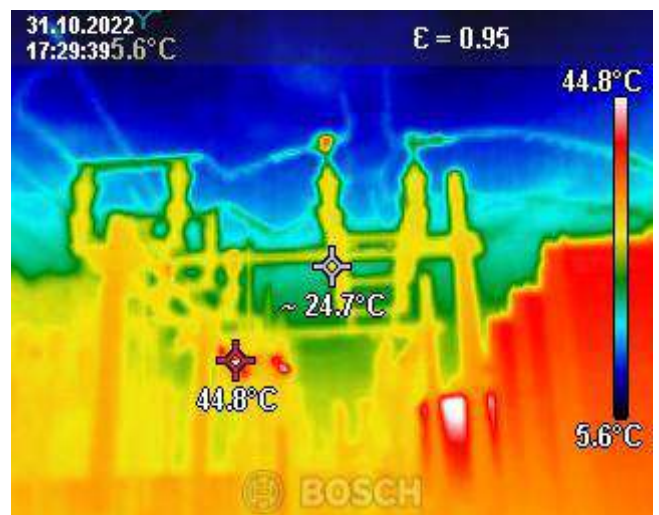
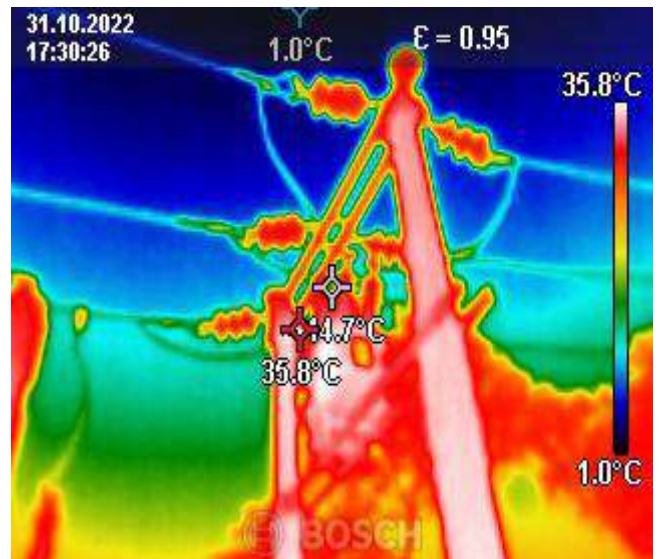
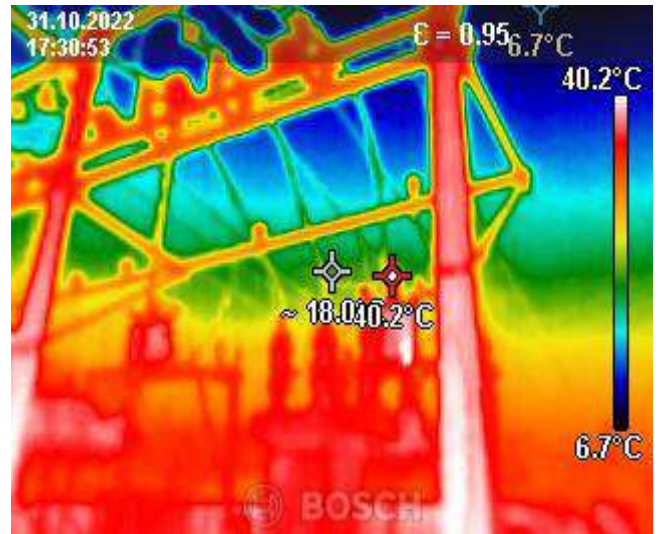
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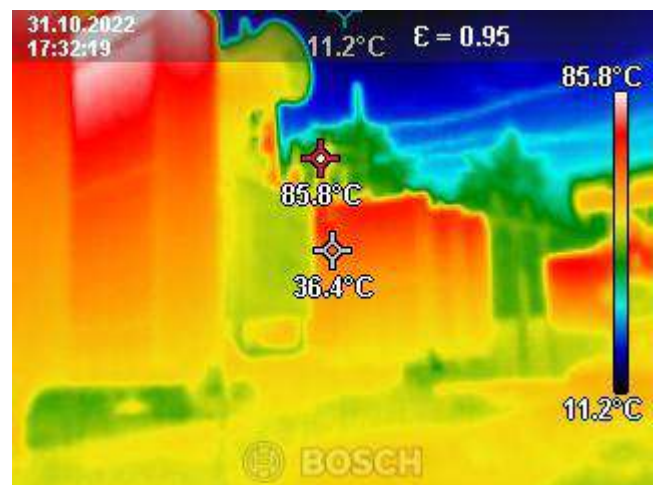
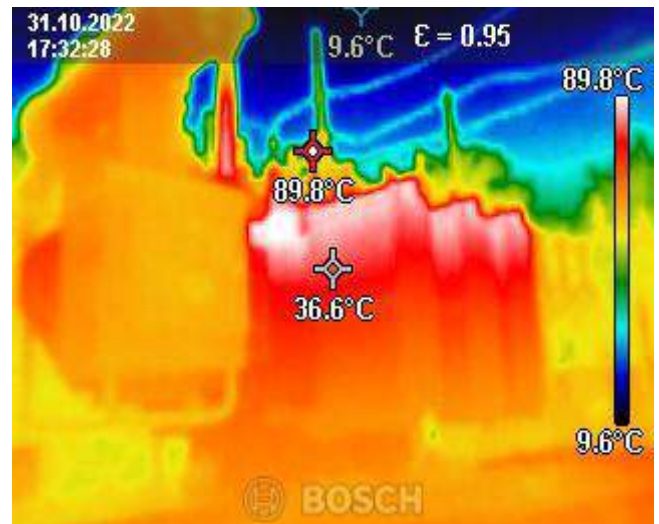
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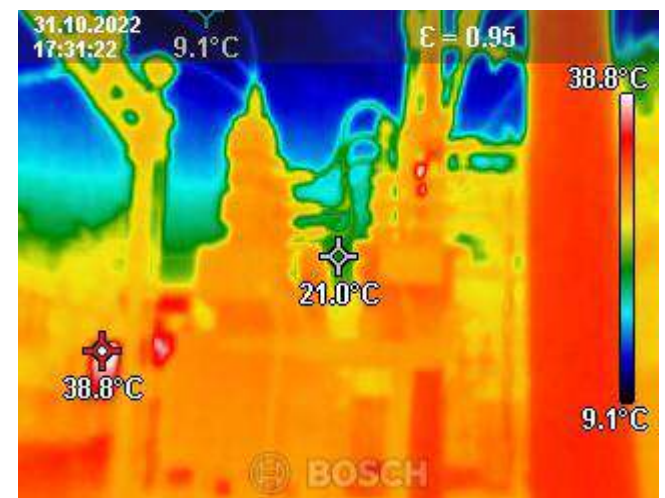
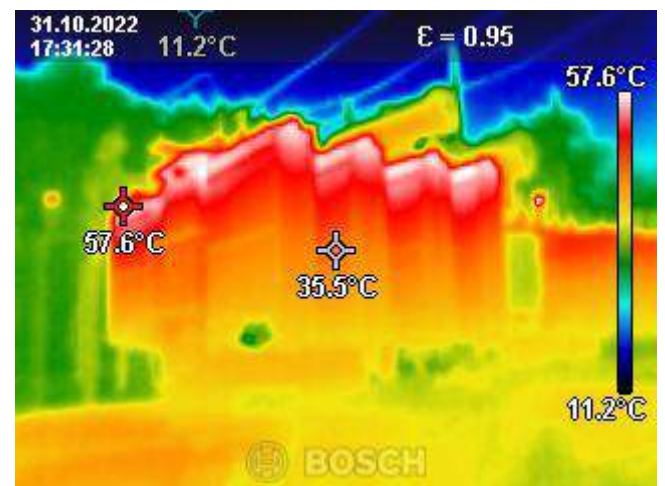
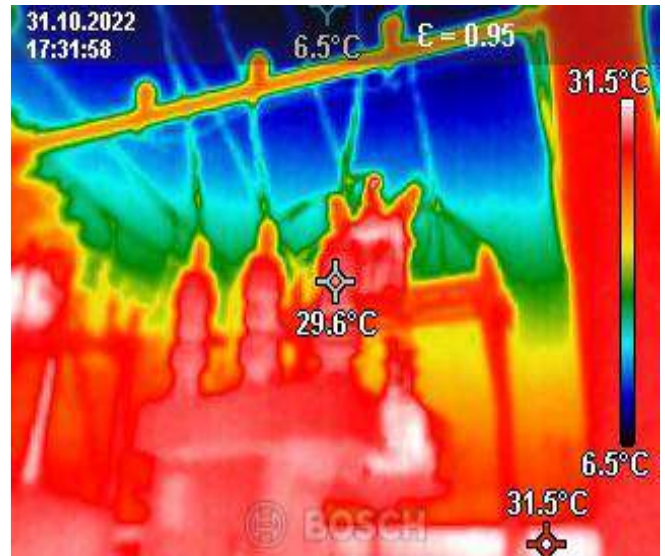
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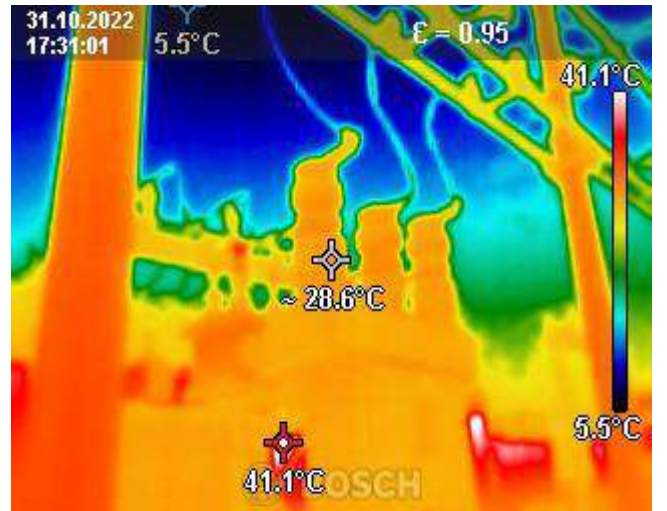
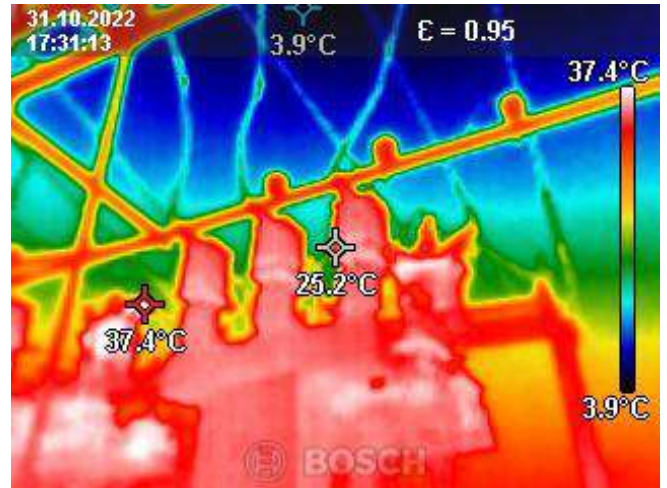
Maintenance of Registers is done properly in the PSS.

THERMOGRAPHY IMAGES FROM THE VISIT TO THE PANDIA 33/11 KV SUBSTATION:









8.0 DETAILS OF VARIOUS SYSTEM IMPROVEMENT & LOSS REDUCTION PROJECT UNDERTAKEN BY TPSODL

8.1 STATUS OF ONGOING PROJECTS

Ongoing Govt funded Projects:

Ongoing Projects (Government Funded Schemes)								
SN	Project Name	Grant received (Net of Fund) in Cr.	Interest Earned till date in Cr.	Total amount in Cr.	Amount spent in Cr.	Asset Handed Over	Total Asset	Executing Organization (PIA)
1	Elephant Corridor	37.15	3.63	40.78	11.46	0	7	Southco Utility
2	School & Anganwadi	10.2	0	10.2	3.07	0	0	Southco Utility
3	DMF	3.03	N.A	3.03	NA	1.9	4.94	Southco Utility & District Administrator
4	IPDS	NIL	NIL	NIL	NIL	211.86	211.86	OPTCL
5	ODSSP	NIL	NIL	NIL	NIL	584.06	584.06	OPTCL
6	SETU	1.04	0	1.04		0	0	Southco Utility
7	BGJY	NIL	NIL	NIL	NIL	177.65	177.65	Respective District Administrator or OPTCL
8	BSVY	NIL	NIL	NIL	NIL	12.89	12.89	Respective District Administrator or OPTCL

Ongoing projects of CAPEX FY 2021-22:

S N	CAPEX Head	Approved Amount (Cr)	Status
1	PPEs, Safety & Testing Equipment	9.99	The work order for all PPE, Safety and Testing Equipment placed, most of the material received and 100 % of the work is expected to be completed in FY-22.
2	Cradle guard at major road crossings	4.57	Work order has been placed and the project work is in progress.
3	Fencing of Distribution substations (DSS)	9	Work order has been placed and 100 % of the project work is expected to be completed in FY 22
4	Boundary wall for Primary substations (PSS)	5.4	Work order has been placed and Boundary wall for 14 nos. PSS is initiated. It is expected to complete 70% of the project work by FY-22
5	Establishment of Meter Testing Lab	2.47	Meter Test Bench delivered and installation work is in progress. The project is expected to be completed by FY-22
6	Replacement of burnt, Faulty and Electromechanical meters and meter installation at no Meter cases.	8.68	Work order has been placed and approximately 50% of the work is expected to be completed by FY 22.
7	LT Bare to ABC conversion	7.01	Material procurement has been done. Work order for the project work has been awarded and work is under progress. Partial completion of the project is expected in FY 22
8	33 KV Network refurbishment	5.04	Material procurement has been done. Work order for the project work has been awarded and work is under progress. Partial completion of the project is expected in FY 22
9	Installation of 33 KV AB Switch	2.23	Material procurement has been done. Work order for the project work has been awarded and work is under progress. Partial completion of the project is expected in FY 22
10	PSS Refurbishment	6.25	Material procurement has been done. Work order for the project work has been awarded and work is under progress. Partial completion of the project is expected in FY 22

11	11 KV Network refurbishment	6.92	Material procurement has been done. Work order for the project work has been awarded and work is under progress. Partial completion of the project is expected in FY 22
12	Installation of 11 KV AB Switch	3.05	Material procurement has been done. Work order for the project work has been awarded and work is under progress. Partial completion of the project is expected in FY 22
13	DSS Refurbishment	4.08	Material procurement has been done. Work order for the project work has been awarded and work is under progress. Partial completion of the project is expected in FY 22
14	Installation of LV protection at DSS	5.08	Material procurement has been done. Work order for the project work has been awarded and work is under progress. Partial completion of the project is expected in FY 22
15	Installation of Auto reclosure / Sectionalizers ,RMUs, & FPIs	3.95	Material Procurement for RMU, Auto recloser & Sectionalizer has been completed. 50% RMUs has already been installed and balanced are expected to be completed by FY 22. Work order for Autorecloser, Sectionalizer is placed and material expected by March-FY 22. Procurement Process for FPI is in progress.
16	Trolley Mounted Pad Substations	0.22	The work order has been placed and it is expected to be completed by FY-22
17	Package Distribution Substations	0.65	Work order for Package Distribution Substations has been placed and delivery is expected in March FY 22.
18	Network augmentation / addition to meet load growth/11 KV line, PTR,DTR,LT line	8.74	Material procurement has been done. Work order for the has been placed and work is under progress. Partial completion of the project is expected in FY 22
19	Installation of Smart Meters along with back end IT Infrastructure	14.07	The project is expected to be completed by FY 22.
20	Augmentation of IPDS Software licenses pan TPSODL	12.24	The project is progressing as scheduled. The complete project is expected to be completed by FY 22.
21	IT Infrastructure (H/W & Field office infra for augmentation of IPDS application/licenses)	19.26	The project is progressing as scheduled. The complete project is expected to be completed by FY 22.
22	Communication Network Infra	5.38	The project is progressing as scheduled. The complete project is expected to be completed by FY 22.
23	SCADA Implementation	14.71	The project is progressing as scheduled. The approved CAPEX amount in FY 22 is towards partial quantity of the complete Project. The work towards approved CAPEX amount in FY 22 is expected to be completed by FY 22.
24	GIS Implementation	5.46	The project is progressing as scheduled. The approved CAPEX amount in FY 22 is towards Pilot Project in Berhampur City. The work towards approved CAPEX amount in FY 22 is expected to be completed by FY 22.
25	Civil Infrastructure	10	Work order has been placed and 80% work is expected to be completed in FY 22.
26	Civil Work for Meter Test Bench	2	Work order has been placed and work is in progress
27	Civil work for Call center &PSCC	2	Work order has been placed and 85% of work is expected to be completed in FY 22.
28	Upgradation of DT workshop	1	Upgradation of DT workshop is under progress
29	Security system in Central Store	2.25	Work order have been placed. 90% of the works is expected to be completed by FY 22.
30	Assets for Offices	2.95	Work order have been placed. 100% of the works is expected to be completed by FY 22.
TOTAL		184.65	

8.2 CAPEX PROGRAMME FOR FY 2022-23

To address the challenges and reduction of AT & C loss and quality power supply to consumers, TPSODL proposed to take up a detailed CAPEX investment plan in the FY 2022-23 under the different heads. TPSODL has submitted that it has inherited the power distribution network in dilapidated state at some places, which is not compliant with the requisite statutory standards and poses threat to consumers, staff etc. Further, underrated/ undersized/ worn out conductors, poor earthing, presence of either faulty equipments or non-availability of equipments/ switchgear s/ protection devices are creating potential safety hazards to the employees, consumers, children, animals, public, etc.

TPSODL has identified several challenges related to Safety, 33kV/11kV/0.415kV/0.230kV network, Metering infrastructure, Customer Services and Technology usage. The scope includes renovation/modernization of existing and new 33/11KV S/S, re-conduct ring of 33KV & 11KV lines, implementation of HVDS system and AB conduct ring, installation of theft proof energy meters etc. The capital investments have been proposed under the following broad cost centres that shall be aligned with multiple initiatives and schemes so as to reduce AT & C losses, improve system reliability and augment the network to support continuous load growth. Further, a need is also felt to improve the existing facilities and infrastructure to provide a better consumer experience.

TPSODL has categorised the various activities of the Capital Investment Plan under 6 major broad subheads.

- 1) Statutory Compliance/Safety
- 2) Loss Reduction
- 3) Network Reliability
- 4) Load Growth
- 5) Technology Infrastructure
- 6) Civil Infrastructure & Administration

Out of the above, we have considered CAPEX related to Loss Reduction, Network Reliability, Load Growth and Technology Infrastructure under the scope present Energy Account Audit as we feel that these major will lead to T&D Loss Reduction and AT&C Loss Reduction.

Loss Reduction

The technical losses are due to energy dissipated in the conductors of distribution line and equipment in Network System. Technical losses are directly dependent on the network characteristics such as lengthy distribution lines, overloading of the Line, inadequate size of conductors, Unequal load distribution on 3 phases of the line, Poor workmanship, old Conductor having multiple joints. It is also observed that, meters are not installed on Feeders & Distribution Transformers leading to no energy accounting. As a result, it is not possible to determine energy input accurately and hence unable to measure AT&C losses at each level. Energy accounting provides the means to identify areas of leakages, wastage and inefficient energy usage.

Therefore, with an aim for reduction in T&D loss, following activities are proposed to be implemented:

- Upgradation / Refurbishment of 33 kV and 11 kV Line.
- Feeder Meter for Energy Audit.

- LT Bare to LT ABC Conversion.
- Installation of LT Distribution Box at Pole.
- Old/Damaged Service Cable Replacement.
- GIS Implementation.

Capex Head	Activity	Total proposed Cost (Cr.)
Loss Reduction	Network refurbishment/Upgradation of 33 KV Line	12.93
	Network refurbishment/Upgradation of 11 KV Line	11.91
	Feeder Meter for Energy Audit	8.15
	LT Bare to ABC Conversion (95 sq.mm)	4.20
	LT Bare to ABC Conversion (50 sq.mm)	3.60
	LT Distribution Polycarbonate Box for service connection	1.32
	Damaged Service Cable Replacement	4.11
	GIS Implementation	18.40
	Total Cost	64.62

Up gradation / Refurbishment of 33 kV & 11 kV Line:

During site survey it was observed that most of 33/11kV Primary Sub-Stations are having single incoming 33kV source. With failure of single existing 33kV source entire 33/11kV PSS gets shutdown thereby causing shutdown to all the downstream 11kV & LT network consumers. To improve reliability and technical losses and to ensure safety of equipment and human beings / animals, refurbishment/Up gradation of 33kV, 11kV is required.

Network Refurbishment and Up gradation of Line job would encompass following scope:

- Up gradation of Conductor in 33KV & 11KV Line.
- Replacement of damaged, tilted poles, insulators and accessories.
- Restraining of conductor to increase the vertical clearance by reducing the sag.
- Replacement of the conductor in the sections having multiple joints.
- Replacement of weak Jumpers and connections.
- Replacement of binding wire joints with wedge connector to remove hotspots.
- Installation of Danger boards, Anti climbing devices, stay sets etc. to ensure safety & statutory compliance

Description of Project		Amount (Cr)
Upgradation / Refurbishment of 33 kV Line		12.93 Cr.
Total		12.93 Cr.
SI NO	Circle	Amount (Cr.)
1	Aska	2.67
2	Berhampur	5.37
3	City	0.47
4	Bhanjanagar	4.42
5	Jeypore	0.00
6	Rayagada	0.00
Total		12.93

Description of Project		Amount (Cr)
Upgradation / Refurbishment of 11 kV Line		11.91 Cr.
Total		11.91 Cr.
SI NO	Circle	Amount (Cr.)
1	Aska	0.36
2	Berhampur	1.78
3	City	3.08
4	Bhanjanagar	0.62
5	Jeypore	3.75
6	Rayagada	2.33
Total		11.91

Feeder Metering for Energy Audit:

As per the, Gazette of India notification, Bureau of Energy Efficiency, Ministry of Power, Government of India issued for Conduct of Energy Audit in Electricity Distribution Companies under the preview of Energy Conservation Act, 2001, Notification Number 18/1/BEE/DISCOM/2021 dated: 06th Oct 2021, which requires TPSODL to install meters on all feeders and provides broad framework for conduct of Annual Energy Audit and Quarterly Periodic Energy Accounting with necessary Pre-requisites and reporting requirements to be met.

It requires installation of functional meters for all consumers, transformers and feeders and verification of accounted energy flow submitted by electricity Distribution Company at all applicable voltage levels of the distribution network. Energy audit would help TPSODL to identify areas of high loss and pilferage, and thereafter focused efforts to take corrective action; as well as help to take informed decisions about augmenting the network after insights about overloaded network segments.

Benefits:

- To help develop comprehensive energy accounting system to quantify and determine actual losses in the power distribution system segregated across technical and commercial losses.
- Identify areas of leakage, theft, wastage or inefficient use, thereby further helping to reduce high Transmission and Distribution (T&D) losses.
- To enable TPSODL to undertake targeted efficiency improvement activities to reduce T&D losses in target areas / customer segments.
- Identification of overloaded feeders, sections / DTs of the network for necessary capacity additions in future.
- It can provide insights for TPSODL to further prioritize energy capital investments and help budget more accurately to achieve maximum results.
- Energy Audit monitoring system would enable TPSODL to assess correct and accurate distribution loss levels.
- Appropriate corrective actions can be planned & implemented to ensure that technical and financial losses are minimized.

Five Year Energy Audit Metering Roadmap					
Voltage Level	Meter Point	Requirement	FY 22-23	FY 23-24	FY 24-25
33 KV	33 KV GSS Feeders	21	21	-	-
	33 KV PSS Feeders	117	117	-	-
	33 KV PSS Feeders (Alternative Incoming +Outgoing point)	145		145	-
11 KV	11 KV Feeders	217	130	87	-
	11 KV Tapping Meter	1000		300	700
	Three Phase DTR	16000	-	16000	-
	TOTAL	17500	268	16532	700

Voltage Level	Meter Point	Total Points (Nos.)	Metered (Nos.)	Unmetered (Nos.)	Total Points Considered to be metered	Unit Cost (In Cr)	Total Cost (Cr)
33 KV	33 KV GSS Feeders	116	95	21	21	0.0324	0.68
	33 KV PSS Feeders	244	127	117	117	0.0324	3.80
11 KV	11 KV Feeders	881	664	217	130	0.0283	3.67
						TOTAL	8.15

Cost Benefits Analysis for Installation of Meters at Feeder for Energy Audit				
Benefits to DISCOM				
Particular	Value	Quantity	Annual Saving (INR/Lacs)	Scheme Proposal (in Lac)
Annual savings due to reduction in AT&C losses (considering INR 5.32 as avg. tariff). This includes energy accounting	Reduction in AT&C losses due to energy accounting considered as 0.1%;	Avg. monthly billed energy as 258.02 MU (Avg. from Apr 2021-Dec 2021) and billing efficiency as 78%	211.176	815.17
Total			211.176	815.17
Payback Period (in Years)			3.86	

Description of Project	Amount (Cr)
Feeder Meter for Energy Audit	8.15 Cr.
Total	8.15 Cr.

Line to ABC conversion:

To improve the safety factor, minimize the safety accident risk, reduce the chances of fault & strengthen existing 415V network, it is suggested for replacement of overhead bare conductors with new aerial bundled cables. This in turn will help in providing reliable power supply for all consumers.

Following benefits are envisaged from this investment:

- Reliable Power supply to the Consumers since bare conductor will get converted into insulated cable.
- Comparatively safer than the LT Bare conductor and eliminate the element of risk if comes in close proximity.
- Simpler installation, as crossbars and insulators are not required.
- Suitable for congested lanes as well.
- Electricity theft is becoming hard as hooking would not be possible.
- Less required maintenance and necessary inspections of lines.

S No.	Description	UOM	Considered in Capex 22-23	Unit Cost (INR)	Total (In Cr)
1	LT Bare to ABC conversion 95 SQMM ABC	Ckm	27	1555173	4.20
2	LT Bare to ABC conversion 50SQMM ABC	Ckm	30	1199219	3.60

Description of Project	Amount (Cr)
LT Bare to ABC Conversion	7.80 Cr.
Total	7.80 Cr.

GIS Implementation:

In FY-2023, as part of above PO, GIS shall be integrated with other Enterprise systems like ERP, Network planning and MBC system. Integration helps to keep GIS system updated with meter and network data which enables to do network analysis, new scheme creation, energy audit and consumer analysis to serve the customer better and reduce AT&C losses.

In FY-2023, the solution is proposed to be extended to all areas under 3 (three) electrical circles namely City, Berhampur, Aska and 1 no. of division of Bhanjanagar which has an area of approx. 8200 Sq. Km having 80 nos. of PSS, HT, and LT network of 22,300 kms and consumer base of 9,10,000. It also covers 17 nos. of NACs

In FY-2024, the solution is proposed to be extended to 2 nos. of electrical circles namely Jeypore, Rayagada and remaining 2 divisions of Bhanjanagar which has an area of approx. 40,000 sqkms having consumer base of approx. 15,00,000. Estimated Capex requirement is approx. between 40 to 45 Cr.

- GIS system will help to serve customer better for resolution of complaints
- GIS system ensures proper asset management.
- GIS System will strengthen various other business processes viz. energy audit process, technical feasibility, dues verification, network planning.
- GIS will be backbone for implementation of outage management system in coming years.
- GIS System will enable mapping of all the assets & customers, enables quick services in case of breakdown of network.
- GIS applications will aid in collection, monitoring and management and consequently reduce the non-technical losses.
-

Description of Project	Amount (Cr)
GIS Implementation	18.4
Total	18.4

Network Reliability:

TPSODL intends to implement the following actions to improve the reliability of power supply:

- Refurbishment of 33/11KV Primary Substations (PSS).
- Mitigation of Single PTR (N-1 arrangement) & Replacement of Old PTR at PSS.
- SCADA System Implementation in TPSODL.
- Construction of New 33 KV Lines for GSS Bay Utilization.
- N-1 arrangement for 33 KV Lines.
- DSS Refurbishment and LV protection at DSS.
- Life enhancement/Refurbishment of Network.
- 33 KV & 11 KV Line AB Switch, FPI, RMU, ARC & Sectionalizer.
- Trolley mounted Mobile Substation.

Capex Head	Activity	Total proposed Cost (Cr)
Network Reliability	Refurbishment of 33/11kV Primary Substations (Station Transformer, VCB, Isolator, Relay, CT, PT, LA, Illumination, Battery & Chargers, Earthing, etc.)	16.45
	Mitigation of Single PTR (N-1 arrangement) & Replacement of Old PTR 5 MVA	12.52
	Implementation of SCADA in Old Conventional Non-ODSSP and ODSSP PSS	71.86
	Construction of New 33 KV Lines for GSS Bay Utilization	7.27
	N-1 arrangement for 33 KV Lines	7.59
	Life enhancement/Refurbishment of Network	8.17
	Refurbishment and LV protection at DSS	18.13
	33 KV & 11 KV Line AB Switch, FPI, RMU, ARC & Sectionalizer	16.88
	Trolley Mounted Mobile Sub-station	1.41
	Sub-Total (3)	160.28

Refurbishment of Primary Substations (PSS):

- Replacement of the old/ non-functional equipment CT/PT, Isolator, in PSS.
- Replacement of the old / non-functional equipment 33 KV, 11KV VCB and CRP etc. in PSS.
- Replacement/addition of Lightning Arrestors (LA) and provision of earthing at PSS.
- Addition of PTR at PSS where Single PTR exists.
- Replacement of Old PTR in PSS.
- Replacement of Station Transformers-33/0.4 KV 100 KVA TRF
- Replacement of damaged support structure at PSS. This includes MS / GI structure, channels etc.
- Dismantling of existing structure and erection of new structure at same location has been considered in scope of the work.
- Replacement of Battery and Charger with Control Cables.

- Provision of ACDB and replacement of defective relay with numerical relay for better protection coordination
- Replacement of old Power cable at Secondary of PTR
- Illumination of PSS

Description of Project	Amount (Cr)
Refurbishment of Primary Substations (PSS)	16.45 Cr.
Total	16.45 Cr.

Mitigation of Single PTR & Replacement of Old PTR:

Addition of PTR at PSS with Single PTR (N-1 arrangement at PSS):

Benefits:

- Uninterrupted power supply system
- N-1 arrangement at PTR Level
- Segregation of Consumer to improve Reliability.
- To cater the future load growth in these areas,
- Improve Operational efficiency.
- Prevention of revenue Loss

Proposed Cost Estimate of Single PTR PSS for N-1 arrangement

S. No	Circle	Division	PSS	Total Cost (in Crore)
1	CITY	BED - I	Ankuli	1.62
2	BERHAMPUR	HED	Gandala	1.63
3	ASKA	Digapahandi	Bhismagiri	1.72
4	BHANJANAGAR	BNED	Badagada	1.65
5	RAYAGADA	GED	Gumuda	1.63
6	JEYPORE	NED	Tandaguda	1.78
TOTAL				10.03

Replacement of Old PTR at PSS:

Description of Project	Amount (Cr)
Replacement of Old PTR at PSS	2.49 Cr
Total	2.49 Cr

SCADA/ADMS System Implementation in TPSODL:

Benefits:

- This will ensure efficient operation & monitoring under steady state, dynamic & transient condition of the system.
- To achieve improvement in operations considering complex Load- Demand cycle changes to bring in better and holistic visibility while making critical decisions.
- Optimize on unscheduled power interchange, maximize utilization of the assets.
- Better Inventory management, low maintenance cost.
- Multi-skilling of operational and maintenance personals.
- Enhanced operational safety.
- Using the latest Operating systems, with enhanced functionalities, enabling Analysis and Power System studies/event analysis including Integrated Graphical User Interface (GUI) for SCADA, ADMS and other applications, which would be uniform across all substations and would be cyber security compliant for IT/OT integration requirements of the future.
- With common system interfaces, it brings in optimized resource management, common training platform for systems, and maintenance of assets. Avoidance of multiple systems in OS and software is also affected.
- Data exchange with redundancy to any external system.
- Better Control on Cyber Security Management, optimization of cyber security measures implementation.
- Better Data Synchronization between MCC, APSCC, ensuring data accuracy, availability and reliability.
- N-2 Communication redundancy will be provided at critical location for communication by using advanced MPLS Technology.
- Improved reliability of service.
- Reduction in restoration time of outage.
- Better Integration and coordination with enterprise system to provide relevant information to those internal & external users that rely on accurate information in a timely manner.
- Better control of power quality and enhanced use.
- Monitoring the potential quality problems and the reliability problems due to supply.
- Reduction in MU loss due to unwanted tripping's.
- Significant reduction in equipment failure due to repetitive charging.

Description of Project	Amount (Cr)
SCADA System Implementation in TPSODL	59.86 Cr
Total	59.86 Cr

Description of Project	Amount (Cr)
ADMS Implementation in TPSODL	12 Cr.
Total	12 Cr.

Life enhancement/Refurbishment of Network:

Sub Head	Activity	UOM	Qty.	Total proposed Cost (Rs. Cr)
Life enhancement /Refurbishment of Network	Network refurbishment of 33 KV Line	Nos. of Feeder	7	3.95
	V- Cross arm for 33 KV	Nos.	500	0.42
	V- Cross arm for 11 KV Line	Nos.	1700	0.75
	Lightening arrestor at 33kv Lines	Nos.	50	0.24
	Lightening arrestor at DSS	Nos.	479	0.61
	Lightening arrestor at 11kv Lines	Nos.	110	0.14
	Earthing At 33kv Lines	Nos.	235	0.19
	Earthing At DSS	Nos.	285	0.23
	Earthing At 11kv Lines	Nos.	550	0.45
	Covered Conductor	CKM	2.5	1.18
Total				8.17

DSS Refurbishment and LV protection at DSS:

Activities under Refurbishment of Distribution Substation:

- Detailed technical inspection and testing of the equipment.
- Replacement of damaged support structure at DSS. This includes MS / GI structure, channels etc. Dismantling of existing structure and erection of new structure at same location has been considered in scope of the work.
- Replacement of all undersize conductors with standard size to remove hotspot.
- Replacement / provision of AB switch, DD Fuse units, MCCB (depending on Transformer ratings) and all associated cables / conductors.
- Provision of new / additional earthing in all DSS as per site requirement.
- Installation of fencing to safeguard the DSS equipment and to maintain safety clearances.
- Installation of danger boards, anti-climbing devices, stay-sets etc. to ensure safety & statutory compliance.
- Carry out civil works as per site requirement.

LV protection at DSS:

- Refurbishment of DSS helps in improving the overall efficiency and safety by removing all old joints with new one, crimping of Lugs through Crimping tool, new earthing of the substation, replacement of faulty AB switches and corn out jumpers, provision of LT protection through MCCB etc.
- Reliable power supply to consumers
- Ease of operation to the field teams
- Location where no LT Protection at DT end, any fault occurred during LT shifts to 11KV System due to which 11kv feeders trips most of the time. The Tripping on 11KV feeders has impact of SAIFI and SAIDI and more and more consumers are being affected by the fault, which in turn reduces the reliability of the system. Hence by providing LT protection there will be Improvement in reliability Indices like SAIDI & SAIFI with very few nos. of consumers will be affected.
- Enhance Customer delight.
- Safety to workforce and improve operation efficiency

- Safety of the Equipment in DSS and reduces its failure rate. Distribution transformer is major and costly item of our distribution system by using the LT Protection we can save our transformer to go into faulty condition.
- By using the LT Protection, we can enhance the life of LT lines.

Sub Head	Activity	UOM	Qty	Total proposed Cost (Rs. Cr)
DSS Refurbishment and LV protection	DSS Refurbishment - 25 KVA	Nos.	100	2.16
	DSS Refurbishment - 63 KVA	Nos.	100	3.77
	DSS Refurbishment - 100 KVA	Nos.	50	1.94
	DSS Refurbishment - 250 KVA	Nos.	19	0.85
	DSS Refurbishment - 500 KVA	Nos	5	0.27
	Installation of LV protection at DSS-Switch Fuse unit (Hanging Feeder Pillar)	Nos.	511	3.18
	Installation of LV protection at DSS-MCCB for 63 KVA	Nos.	200	1.17
	Installation of LV protection at DSS-MCCB for 100 KVA	Nos.	200	1.40
	Installation of LV protection at DSS-MCCB for 250 KVA	Nos.	100	1.15
	Installation of LV protection at DSS-MCCB for 500 KVA	Nos.	100	2.24
Total				18.13

Load Growth:

- Addition of new 11 KV link line (N-1 arrangement)
- Augmentation of PTR
- Augmentation of DTR
- Augmentation / addition of LT ABC line

Capex Head	Activity	Total proposed Cost (Cr)
Load Growth	New 11 KV line-Link	11.52
	Augmentation Power Transformer	3.56
	Augmentation of Distribution Transformer	19.7
	Augmentation / addition of LT ABC	2.67
Total		37.45

11kV New Link Line:

S NO	Circle	Total	
		Length (Ckm)	Amount (Cr.)
1	Aska	7.55	1.48
2	Berhampur	8.70	1.71
3	City	10.55	2.09
4	Bhanjanagar	15.90	3.13
5	Jeypore	8.25	1.62
6	Rayagada	7.57	1.49
Total		58.52	11.52

Augmentation of Power Transformers:

Benefits:

- Reliable power supply by ensuring N-1 reliability at PTR level. Further, this proposal would help in managing the load in case of any exigency and mitigate the issue of overloading. Thus, will lead into lower interruption and good quality power hence leading to satisfaction of our consumers.
- Reduce over-burdening of existing PTRs thereby reducing power cuts.
- Optimization of PTR loading.
- Reduction of technical loss.
- Reliability will be improved.
- Reduction of PTR failure which is costly asset.
- Improve the operational efficiency.
- Existing PTR freed after Augmentation shall be repaired and will be used at other location of PSS for mitigation of PTR after testing and overhauling. This will help in multiple swapping and Cost optimization.

Description of Project	Amount (Cr)
Augmentation of Power Transformers	3.56 Cr.
Total	3.56 Cr.

Cost benefit Analysis of PTR:

Name of the Proposal	Cost Benefit analysis of Distribution Transformer Augmentation.	
Particulars of Power Transformer		
Existing PTR Rating	19450	KVA
Existing loading of PTR	16102	KVA
Proposed loading of PTR after 2 years	18093	KVA
Rating of PTR after Proposal	28000	KVA
Total cost of scheme	356.40	Rs. Lac
Annual Revenue Return (A)		
Total units consumed (Load x days x Hrs x load factor)	3882390	(KWH)
Average Cost of Supply Per Unit	2.35	Rs.
Average Sale cost per unit	5.32	Rs.
Difference (Sale-purchase)	2.97	Rs.
Net Revenue Collected (A)	115.31	Rs. Lac
% Revenue return	32.4	%
Pay Back Period	3.09	Years

Augmentation of Distribution Transformer & LT feeders:

Benefit:

- The proposal will help in Mitigation of overloading DTs. Thus, it will lead into lower interruption and good quality power hence leading to satisfaction of our consumers.
- Reduce over-burdening of existing DTs thereby reducing power cuts.
- Optimization of DTR loading.
- Reduction of technical loss
- Reliability will be improved.
- Reduction of DTR failure which is costly asset.
- Improve the operational efficiency
- Existing DTR freed after augmentation shall be repaired and will be used at other location of DSS for mitigation of DTR after testing and overhauling. This will help in Multiple swapping and thus Cost optimization.

Capex Head	Activity	UOM	Proposed QTY	Total proposed Cost (Cr)
Load Growth	Augmentation of DTR - 63 KVA	Nos.	135	7.04
	Augmentation of DTR 100 KVA	Nos.	35	2.05
	Augmentation of DTR- 250 KVA	Nos.	90	9.55
	Augmentation of DTR- 500 KVA	Nos.	7	1.07
Total				19.70

Cost Benefit analysis of DTR:

Name of the Proposal	Cost Benefit analysis of Distribution Transformer Augmentation.	
Particulars of Distribution Transformer		
Existing DT Rating	16590	KVA
Existing loading of DT	16462	KVA
Proposed loading of DT after 2 years	18496	KVA
Rating of proposed new DT	38135	KVA
Total cost of scheme	1970.41	Rs. Lac
Annual Revenue Return (A)		
Total units consumed (Load x days x Hrs x load factor)	8008707	(KWH)
Average Cost of Supply Per Unit (in Rs.)	2.35	Rs.
Average Sale cost per unit (in Rs.)	5.32	Rs.
Difference. (Sale-purchase) (in Rs.)	2.97	Rs.
Net Revenue Collected (A)	237.86	Rs. Lac
% Revenue return	12.1	%
Pay Back Period	8.28	Years

LT AB Cable:

Description of Project	Amount (Cr)
Augmentation of LT feeders	2.67 Cr
Total	2.67 Cr

Technology Infrastructure:

Capex Head	Activity	Total Cost (Cr)
Technology Infrastructure	Build & Strengthen end user IT infrastructure	8.05
	Strengthen Network Connectivity across TPSODL	7.97
	Augmentation of Data Center infrastructure	15.55
	IT infrastructure for 50-seater Call Center.	1.70
	Total	33.27

Build & Strengthen end user IT infrastructure:

Benefits:

- Build a culture of following online processes and less of paper movement.
- Maintain proper attendance record and implementation of access control.
- Availability of end user computing devices up to section level for proper use of various IT applications towards more effective and transparent execution of business processes.
- Build a more robust and reliable communication platform based on our own network as an alternate to cell phone communication.

- Enable seamless real time communication across TPSODL.
- To equip each section office with fully functional, modern infrastructure including reliable communication.
- Enhancing the reach of computerization across the organization.

Description of Project	Amount (Cr)
Build & Strengthen end user IT infrastructure	8.05
Total	8.05

Strengthen Network Connectivity across TPSODL:

Benefits:

- OFC and IP-MPLS connectivity in PSS and offices will create a reliable redundant network which can be used for SCADA enablement of PSS as well as critical IT applications across TPSODL.
- The majority of consumers under TPSODL are being billed via SBM app. additionally; Sangrah collection app is used for door to door revenue collection from consumers. Both these vital apps require daily sync in/sync out activities over the internet. WiFi connectivity at section level will enable users of the above apps to sync in/sync out effectively without being dependent upon mobile service providers.

Description of Project	Amount (Cr)
Strengthen Network Connectivity across TPSODL	7.97
Total	7.97

Augmentation of Data Centre infrastructure:

Benefits:

- Augmentation of OT Data centre infrastructure will enable extension of GIS and AMI landscape leading to better asset and outage management as well as reduction of AT&C loss respectively.
- Augmentation of IPDS data centre for will result in an integrated approach to ensure commonality of applications and maximum utilization of physical as well as human resources.
- Compliance of cyber security guidelines published by MoP will ensure safety of IT/OT applications and data.
- CIS application shall be used for MBC activities of entire TPSODL. CIS ensures digitization of the entire MBC process leading to accuracy and transparency.
- End user computing devices will enable use of IT applications up to section level. Operating System Licenses shall be needed for the functioning of the end user devices.
- Database licenses shall be required for various bespoke IT applications which will increase productivity and transparency in various business processes.

- E-Office application will ensure proper maintenance of records and audit trail as well as reduced turnaround time in respect of day-to-day official works.

Description of Project	Amount (Cr)
Augmentation of Data Center infrastructure – Hardware and Software	15.55
Total	15.55

IT infrastructure for 50-seater call centre:

Benefits:

- Ensure customer satisfaction by reducing hold time at call centre.
- Increased manpower shall help in quick resolution of complaints/grievances in an effective manner.

Description of Project	Amount (Cr)
IT Infrastructure for 50-seater Call Center	1.7
Total	1.7

8.3 ENERGY CONSERVATION MEASURES:

DETAILS OF ENERGY CONSERVATION MEASURES RECOMMENDED IN THE ENERGY AUDIT REPORT [2022-23]							
Sl. No.	Energy Saving Measures	Investment (In Cr)	Targeted Annual Energy Savings in MU	Targeted Financial Savings in Rupees Cr	Payback Period	Date of Completion of measure / likely completion	Remarks
A	Loss Reduction						
	Upgradation / refurbishment of 33 kV & 11 kV Line	24.84					
	Feeder Meter for Energy Audit	8.15					
	LT Bare to ABC Conversion	3.9					
	LT Distribution Polycarbonate Box & Replacement of Damaged Service Cable	5.43					
	GIS Implementation	18.4					
	Total (A)	60.72					
B	Network Reliability						
	Refurbishment of 33/11kV Primary Substations (Station Transformer, VCB, Isolator, Relay, CT, PT, LA, Illumination, Battery & Chargers, Earthing, etc)	13.13					
	Mitigation of Single PTR (N-1 arrangement) & Replacement of Old PTR	12.52					
	SCADA implementation in Conventional Non ODSSP PSS (Electrical+ Automation +Civil)	59.86	90.55	23.81	9.93	FY 2022-23	As per the annual reduction in T&D loss target of Hon'ble OERC and detailed note attached
	ADMS Implementation	0					
	Construction of New 33 kV Lines for GSS Bay Utilisation	6.65					
	N-1 arrangement for 33 kV Lines	4.95					
	Life enhancement/Refurbishment of Network (Lines, V-Cross arm, Earthings, LA, UG & Covered Conductor)	8.17					
	Refurbishment of DSS & LV Protection at DSS	8.85					
	33 kV & 11 kV Line AB Switch, FPI, RMU, ARC, Sectionalizer	8.44					
	Trolley mounted Mobile Substation	1.18					
	Total (B)	123.75					
C	Load Growth						

	New 11kV link Lines	5.75					
	Augmentation of Power Transformer	1.78					
	Augmentation of Distribution Transformer	9.85					
	Augmentation / addition of LT ABC line	1.34					
	Total (C)	18.72					
D	Technology & Civil Infrastructure						
	Build & Strengthen end user IT infrastructure	8.05					
	Strengthen Network Connectivity across TPSODL	7.97					
	Augmentation of Data Centre infrastructure – Hardware and Software	15.55					
	IT infrastructure for 50-Seater Call Centre.	1.7					
	Total (D)	33.27					
	Grand Total	236.46	90.55	23.81	9.93		

CALCULATION OF PAYBACK PERIOD

Approved sale of TPSODL as approved by commission FY 2022-23= 3297.7 MU

Calculated T&D Loss of TPSODL for FY 2021-22= 24%

Assumed Target T&D Loss as approved by Hon'ble OERC for FY 2022-23= 21.25%

So, Targeted Annual Energy Savings in MU = $7747.2 \times (24\% - 21.25\%) = 90.55$ MU

Approved Bulk Supply Price of GRIDCO for FY 2022-23= 2.35 per Unit

Approved Transmission Tariff of OPTCL for FY 2022-23= 0.28 per Unit

Hence financial saving of TPSODL due to T&D loss reduction= $(2.35 + 0.28) \times 90.55 / 10 = 23.81$ Cr.

Total investment approved by Hon'ble OERC for T&D Loss= 236.46 Cr

Simple Payback period = $\text{TOTAL INVESTMENT} / \text{SAVINGS} = 236.46 / 23.81 = 9.93$ Years

Considering the higher payback period, TPSODL / Hon'ble OERC may target for higher T&D Loss reduction in order to justify the Capital Expenditure.

9.0 CONCLUSION

In line with Section 14(g) of the Energy Conservation (EC) Act, the Central Government has notified targets (in the form of Specific Energy Consumption) for Designated Consumers (DCs) on 26th October 2021 under the PAT cycle-VII. The baseline Distribution loss of TPSODL has been fixed as 29.76% for base line year 2018-19 to with base line net input energy 3638.95 MU. TPSODL has been directed to reduce its T&D Loss to 26.90% in Target Year 2024-25.

TPSODL Management has endeavoured for continual improvement in its drive for achieving energy efficiency by adopting various energy saving measures with most energy efficient technology. Considering the trend in their energy performance, it is expected that TPSODL may get a target for further reduction of its T & D Loss from its present level. Hence, TPSODL should focus to achieve the future target by adopting a strict energy conservation plan and energy efficiency measures.

Overall, the TPSODL management has a very progressive outlook and is open to ideas involving moderate to low investment, to improve the Energy Efficiency. Hence, we feel TPSODL management needs to put best effort to achieve Energy Conservation in future.

ANNEXURES

ANNEXURE (I): INTRODUCTION OF VERIFICATION FIRM: Details are provided in the MEA report of TPSODL for FY 2021-22

ANNEXURE (II): MINUTES OF MEETING WITH DISCOM TEAM:



Power Tech
Consultants

**MINUTES OF MEETING BETWEEN TPSODL & POWER TECH CONSULTANTS (PTC)
ON 1st November 2022.**

For M/s. Tata Power Southern Odisha Distribution Limited

- Mr. Saumitro Banerjee
- Ms. Shephali Gupta
- Mr. Vaibhav kumar singh
- Mr. Ratan Kuber

For M/s. Power Tech Consultants

- Mr. Bibhu Charan Swain
- Mr. Dambrudhar Kar
- Mr. Nirjhar Biswal
- Mr. Suman Sourav Nayak

The following points were discussed during the various meetings held between TPSODL & Power Tech Consultants (PTC) and the following documents were asked from TPSODL for the audit work of Annual Energy Audit for FY 2021-22:

- Power Tech Consultants (PTC) provided the questionnaire for the DISCOM mandatory energy audit and requested the required data to TPSODL.
- Power Tech Consultants (PTC) requested TPSODL for Form 1, Form 3, OERC Review of Performance from the FY 20-21 and Sector Specific Energy Accounting pro forma sheet and the required data was provided by TPSODL.
- The Field visit plan for the identified 33 kV feeders, associated 11 kV, DTR and LT lines for the purpose of audit was discussed.
- TPSODL Organised visit to the planned PSS and SLD of the visited Feeders was provided by TPSODL.



**MINUTES OF MEETING BETWEEN TPSODL & POWER TECH CONSULTANTS (PTC)
ON 2nd November 2022.**

For M/s. Tata Power Southern Odisha Distribution Limited

- Mr. Saumitro Banerjee
- Ms. Shephali Gupta
- Mr. Vaibhav kumar singh
- Mr. Ratan Kuber

For M/s. Power Tech Consultants

- Mr. Bibhu Charan Swain
- Mr. Dambrudhar Kar
- Mr. Nirjhar Biswal
- Mr. Suman Sourav Nayak

The following points were discussed during the various meetings held between TPSODL & Power Tech Consultants (PTC) and the following documents were asked from TPSODL for the audit work of Annual Energy Audit for FY 2021-22:

- TPSODL Organised visit to the planned PSS and SLD of the visited Feeders was provided by TPSODL
- TPSODL Provided the Filled in Sector Specific Pro-Forma for FY 2021-22 to be verified by Power Tech Consultants and the same was verified.
- OERC approved Capex order for TPSODL was provided to Power Tech Consultants.
- List of smart metering installation was provided.
- Category wise consumer list, Category wise OK Meter, Defective Meter and without meter information for the FY-2021-22 was provided by TPSODL.
- Power Tech Consultants (PTC) requested TPSODL for Monthly Drawl pattern and BSP Bill of each month for FY 2021-22 and the requested data was provided by TPSODL.

**MINUTES OF MEETING BETWEEN TPSODL & POWER TECH CONSULTANTS (PTC)
ON 15th November 2022, Time: 6:30 PM**

For M/s. Tata Power Southern Odisha Distribution Limited

- Mr. Amit Kumar Garg
- Mr. Vijay Kumar Sharma
- Mr. Saumitro Banerjee
- Mr. Vaibhav kumar Singh
- Mr. Ratan Kuber
- Energy Audit Group members

For M/s. Power Tech Consultants

- Mr. Bibhu Charan Swain
- Mr. Suman Sourav Nayak

The following points were discussed during the meeting held between TPSODL & Power Tech Consultants (PTC) for the audit work of Annual Energy Audit for FY 2021-22:

1. Draft report for Annual Energy Audit of FY 2021-22 has been submitted by M/s. Power Tech Consultants for review from Energy Audit Group of TPSODL.
2. Metering status and roadmap of meter installation of feeders and DTRs to be submitted by TPSODL.
3. 11KV feeders' wise energy loss is not been completed due to incomplete metering, 11kV feeder wise mapping is not completed.
4. As per new guidelines from BEE, for details of DTRs losses in the annual and quarterly report, consumer indexing and metering will be ramming up by TPSODL.
5. As per the BEE Notification following steps has been taken to complete the metering of feeders and DTRs (Separate Sheet shared with detailed Information):

1. FEEDERS

- a. **For GSS 33KV outgoing Feeders (116Nos) and PSS 11KV outgoing Feeders (881 Nos.):** TPSODL has already planned to install Smart Meter Integrated with AMI in all 33KV GSS Outgoing and 11KV PSS Outgoing Feeders by March 2023. TPSODL has issued PO to various reputed vendors to implement the same.

b. For PSS 33KV Incoming Feeders (254 Nos.):

TPSODL has planned to install Smart Meter Integrated with AMI in all 33KV PSS Incoming Feeders by March 2024. This plan is already been proposed in our CAPEX Plan to OERC.

2. TAPPING POINTS AND BOUNDARY METERS

a. Inter Section/Sub-Division Boundary Points (175 Nos.):

TPSODL has planned to install Smart Meter Integrated with AMI by March 2024. This plan is already been proposed in our CAPEX Plan to OERC.

b. Inter Division Boundary Points (60 Nos.):

TPSODL has planned to install Smart Meter Integrated with AMI by March 2024. This plan is already been proposed in our CAPEX Plan to OERC.

c. For 33KV Tapping Points (250 Nos.) and 11KV Tapping Points (900 Nos.):

TPSODL has planned to install Smart Meter Integrated with AMI by March 2025.

3. DISTRIBUTION TRANSFORMERS

a. Above 25KVA (16534 Nos.)

TPSODL has already planned to install Smart Meter Integrated with AMI in all DTRs above 25KVA i.e., 16000 nos. by Dec 2023, TPSODL also has issued PO to various reputed vendors to implement the same and rest 534 nos. meters by Dec 2024.

ANNEXURE (III): CHECK LIST PREPARED BY AUDITING FIRM:

<u>QUESTIONNAIRES FOR CONDUCTING MANDATORY ENERGY AUDIT IN TPSODL</u>		
<u>Sl. No.</u>	<u>Particulars</u>	<u>Remarks</u>
1	Name of all the heads of DISCOM and their designations, phone numbers and mail ids, contact details to be collected.	Received
DISCOM DETAILS (FOR FY 2021-22)		
2	Details of the DISCOM to be collected.	Received
3	Single Line Diagram of distribution network, Details of assets of DISCOM, Consumer details, and supply area to be collected.	Received
4	Category wise nos. of consumer and their annual energy consumption (Domestic, Industrial, Commercial, Agricultural) to be collected.	Received
5	Category wise nos. of consumer and their annual energy consumption (LT, HT, EHT, Unmetered connections) to be collected.	Received
6	Metered Energy Sales, Unmetered Energy Sales, unaccounted energy / theft, Total Energy Billed, Amount billed, Gross Amount Collected, Arrears Collected, subsidy received from state and central government details to be collected.	Partially Received
7	Average Billing Rate (ABR) Categories wise & Consumption wise ABR with tariff subsidy, Categories wise & Consumption wise ABR without tariff subsidy details to be collected.	Not Received
8	Collection of data regarding system improvement and loss reduction and their status with project cost, project period for report and Form-III preparation.	Received
9	Collection of Annual Report submitted to Honourable OERC, Month wise Energy Audit Report.	Received
10	Collection of MEA, Form-I, Form-II and Form-III and M & V Audit Report for earlier PAT cycle	Received

ANNEXURE (IV): BRIEF APPROACH, SCOPE & METHODOLOGY FOR AUDIT:
SCOPE OF WORK

The Scope of Work for the detailed energy audit is as per following:

1. Visit to DISCOM office and discussion with DISCOM officials and management on Energy Audit, Energy Efficiency and Energy Management.

2. Verification of details of category wise nos. of consumer and their annual energy consumption (Domestic, Industrial, Commercial, Agricultural and Municipalities)
3. Verification of details of category wise nos. of consumer and their annual energy consumption (LT, HT, EHT, Unmetered connections)
4. Verification of details of nos. of connections, nos. of disconnections, connected load and % of total connected load, energy billed, Net Input energy, Power Factor, Total Supply Hour, scheduled outage, scheduled supply hours, Unscheduled Outage, Available Supply Hours.
5. Verification of details of Feeders by consumer class of categories (Domestic, Industrial, Commercial, Agricultural and Municipalities)
6. Verification of Metered Energy Sales
7. Verification of Unmetered Energy Sales
8. Estimation of unaccounted energy / theft
9. Verification of Total Energy Billed, Amount billed, Gross Amount Collected, Arrears Collected, subsidy received from state and central government
10. Verification of Average Billing Rate (ABR)
11. Total revenue billed categories wise & Consumption wise
12. Categories wise & Consumption wise ABR with tariff subsidy
13. Categories wise & Consumption wise ABR without tariff subsidy
14. Verification of T & D Loss
15. Verification of collection Efficiency (Categories Wise)
16. Verification of Billing Efficiency (Categories Wise)
17. Verification of Transmission and Distribution Losses
18. Verification of AT & C Losses
19. Analysis of T & D Losses, AT & C Losses, T & D loss, AT & C loss reduction targets given by State Electricity Regulatory Commission (SERC) to DISCOMs.
20. T&D Loss and AT&C loss reduction projection by Electricity Distribution Companies.
21. Review of the energy losses data (AT & C & T&D) of the last year with the authenticated documents.
22. Verification of detailed calculation methodology adopted by DISCOMs for calculating AT & C and T&D loss.
23. Compare the performance data with SERC / FOR/ CERC standard data.
24. Study of Loss Reduction measures undertaken by DISCOM.
25. Study of Demand Side Management undertaken by DISCOM
26. Identification of a power sub-station at 66kV/33kV level having input energy
27. injection points and 11kV/440V transformers for verification of the status of
28. energy metering along with their healthiness of incoming / outgoing feeders at
29. 66kV, 33 kV and 11 kV and DTRs at field for sample study.
30. Carrying out field study to ascertain the status of consumer metering, type and healthiness for various categories of consumers, meter calibration frequency bands the time taken for replacement of faulty meters.
31. Verification of energy sales (metered and unmetered) in the distribution network area of identified power sub-station.
32. Computation of losses:
 - Above 11 kV level:
 - Computation of grid losses by using grid balancing approach.
 - Verification of the healthiness and life of Power transformer.
 - Computation of energy handled and power transformer losses at each voltage level (like 66/33, 33/11, 66/11).

- At 11 kV level:
 - Computation feeder wise losses of all 11kV feeders emanating from identified power sub-station.
- Below 11 kV level:
 - Calculation of DT transformation losses.
 - Verification of the healthiness and life of the distribution transformer.
 - Computation LT losses (DT wise) under the distribution network of identified power sub-stations.
- 33. Evaluation of existing Energy Management policy, Energy Management systems.
- 34. Providing recommendations to reduce T & D loss, AT & C Losses, furnishing details of energy saving measures, investment to be made and cost benefit analysis of each recommended energy savings measures.
- 35. Identification of cost effective energy saving opportunities in short, medium & long term.
- 36. Development of an action plan for time bound implementation activities.
- 37. Based on the above study the draft detailed energy audit report is prepared and submitted for review of the management. After receipt of necessary observation, the draft report shall be modified and final report shall be submitted to the management.
- 38. The Detailed Energy Audit and report preparation has been carried out in accordance with provision of "The Bureau of Energy Efficiency (Manner and Intervals of Time for conduct of Energy Audit) Regulations, 2010" and its amendment from time to time and based on revised scope of work as prescribed by BEE.

METHODOLOGY

The following step by step methodology and approach were adopted to carry out the detailed energy audit of TPSODL:

1. The program of visit of the energy audit team to TPSODL for carrying out the energy audit work was informed to management.
2. A pre audit meeting was held with the concerned TPSODL officials. During this kick off meeting, the importance of energy audit for the Designated Consumers (DC) and the procedure to be adopted for audit work was explained.
3. The representative of the TPSODL accompanied the energy audit team to different sections including MIS, MRT, and ABT cell, Energy Audit section for system familiarization and for collection of technical & financial information.
4. All the staff /heads of the departments were requested to co-operate with the energy audit team for data collection.
5. Data collection was carried through discussions with the Technical in-charge of TPSODL and from past MIS records.
6. The details of Division, sub division, Sections, Assets list, Details of 220/132/33 KV Network, Details of 11 KV Network, Power sale, details of billing and details of consumer were collected.
7. Details of category wise nos. of consumers and their annual energy consumption (Domestic, Industrial, Commercial, Agricultural and Municipalities) (LT, HT, EHT, Unmetered connections) were collected.
8. Details of nos. of connections, nos. of disconnections, connected load and % of total connected load, energy billed, Net Input energy, Power Factor, Total Supply Hour, scheduled outage, scheduled supply hours, Unscheduled Outage, Available Supply hours were collected from TPSODL.
9. Details of Feeders by consumer class of categories (Domestic, Industrial, Commercial, Agricultural and Municipalities) were collected from TPSODL.
10. The metered energy sales, unmetered energy sales and estimated unaccounted energy / theft was collected.

11. Measurement was carried out at 33 KV and 11 kV meter point at sample basis to analyse the power loss and unaccounted energy.
12. Details of total Energy Billed, Amount billed, Gross Amount Collected, Arrears Collected, subsidy received from state and central government and verified.
13. Average Billing Rate (ABR) was collected.
14. Category wise Billing efficiency and Collection efficiency were calculated for TPSODL for the last financial year.
15. T & D Loss, AT & C Loss were arrived for TPSODL for the last financial year.
16. Studied Demand Side Management and Loss Reduction measures undertaken by TPSODL.
17. Existing Energy Management policy, Energy Management systems was evaluated Energy Conservation options to reduce T & D loss and AT & C Losses were identified and tabulated on the basis of priority.
18. Draft soft copy of the energy audit report consisting of observations and recommendations with adequate financial justification, vendor support data, etc. was prepared and submitted to TPSODL for acceptance.
19. Final energy audit report was submitted to Management of TPSODL after acceptance of the draft energy audit report.

ANNEXURE (V): INFRASTRUCTURE DETAILS: Details are provided in the MEA report of TPSODL for FY 2021-22 and in Sector Specific Pro-forma.

ANNEXURE (VI): ELECTRICAL DISTRIBUTION SYSTEM: Details are provided in the MEA report of TPSODL for FY 2021-22.

ANNEXURE (VII): POWER PURCHASE DETAILS:



GRIDCO GSTIN: 21AABCG5398P323
Good's Description: Electricity
HSN Code: 27160000
Ref No: GR/BS/21-22/ 030

The Chief Executive Officer
TP Southern Odisha Distribution Limited
Courtpetta, Berhampur, Odisha
GSTIN: 21AAICT3239P1Z1

GRIDCO Limited
Registered Office: Janpath
Bhubaneswar 751022
CIN: L40109OR1995SGC003960
Bill of Supply (Provisional)
For **TPSODL**
April-2021

Date: 06-May-21
Pay By Date: 05-Jun-21

A. Total Energy for the month
a) Energy from 01.04.21 to 03.04.21 (Pro-rata)
b) Energy from 04.04.21 to 30.04.21 (Pro-rata)
Sub Total: (a+b)
B. SMD approved by OERC (applicable till 03.04.21)
SMD permitted by OERC (applicable till 03.04.21)
SMD approved by OERC (applicable from 04.04.21 onwards)
SMD permitted by OERC (applicable from 04.04.21 onwards)
Actual SMD occurred on 02.04.21 at 19:00 hrs
Excess SMD drawal

34.331528 MU
307.678559 MU
342.010087 MU
6,80,000 kVA
7,48,000 kVA
7,00,000 kVA
7,70,000 kVA
6,19,106 kVA
0 kVA

Item No	Amount (Rs.)
1 Current Charges	
(a) Bulk Supply Price @ 197.40 Paise per kWh for the Energy from 01.04.21 to 03.04.21	6,77,70,436.27
(a) Bulk Supply Price @ 207.00 Paise per kWh for the Energy from 04.04.21 to 30.04.21	63,68,94,617.13
(b) Excess Demand Charge @ Rs 250 per kVA	0.00
Sub Total: (a+b)	70,46,65,053.40
2 Instalment of outstanding BSP Dues for the period from April'20 to Dec'20 as per CI.46 of vesting order dt.28.12.2020	8,23,99,401.00
3 Total Current Charges: Items (1+2)	78,70,64,454.40
4 TCS Claims during the month	
(a) TCS u/s 206 C (1H) of IT Act, 1961 @ 0.1% on 1	7,04,665.00
(b) TCS u/s 206 C (1H) of IT Act, 1961 @ 0.1% on 2	82,399.00
(c) Differential TCS u/s 206 C (1H) of IT Act, 1961 on BSP Bill of Feb 21	1,32,983.00
Sub Total: (a+b+c)	9,20,047.00
5 Total Current Charges incl. TCS: Items (3+4)	78,79,84,501.40
6 Add Late Payment Surcharge for the month of Apr-2021 (Annex-6)	1,474.00
7 TCS u/s 206 C (1H) of IT Act, 1961 @ 0.1% on 6	1.00
8 Add: Previous amount outstanding :-	
(i) Outstanding energy charges	1,27,80,19,317.00
(ii) Outstanding TCS	12,06,836.00
(iii) Outstanding LPS	-
Total Previous Outstanding: (i+ii+iii)	1,27,92,26,153.00
9 Less payment received during the month	
(a) Amount received against Feb'21 and Mar'21	1,17,68,93,974.00
(b) TCS Amount recovered	12,77,886.00
(c) Rebate allowed	1,85,93,094.00
(d) Amount received towards 4th Instalment upto Dec'20	8,23,99,401.00
(e) Amount received towards Arrear Dues	-
(f) Other Adjustment (if any)	-
Total Payment and Adjustment: (a+b+c+d+e)	(1,27,91,64,355.00)
10 Total amount claimed through this bill: Item (5 to 9)	78,80,47,774.40
(Rounded off to the nearest Rupee)	78,80,47,774.00

(Rupees seventy eight crore eighty lakh forty seven thousand seven hundred seventy four only)

Checked by

Somali
DGM(F), PP

For & on behalf of GRIDCO

M.S. Sahoo
DGM (EBC)

[Signature]
Sr. GM (T&S)

Note:

- The BSP Bill of TPSODL for the month has been prepared in line with the vesting order Dt.28.12.2020 of Hon'ble OERC in Case No.83/2020 and Bulk Supply Agreement executed with TPSODL.
- The billing for Bulk Supply of Power has been done based on the actual energy consumption statement provided by SLDC in line with the order dt. 07.05.2018 of Hon'ble APTEL in Appeal No. 55 of 2015 and Clause No. 370 of the BSP order Dt.28.03.2021 of GRIDCO in the matter of overdrawal by DISCOM and as per the rates stipulated in BSP Order Dt.26.03.2021 of GRIDCO for FY-2021-22 in Case No.72/2021.
- In compliance to the BSP order which has become effective from 4th April, 2021, the total energy consumption has been segregated into two parts on pro-rata basis by SLDC i.e. from 01.04.2021 to 03.04.2021 and from 04.04.2021 to 30.04.2021 for billing TPSODL at two different BSP rates. As intimated by SLDC, the software being used for energy accounting does not have provisions for part energy accounting and hence SLDC will manually work out the energy consumed during aforesaid part periods at a later date which will result in subsequent revision of the BSP Bill.
- In line with the decisions of the 98th & 99th PSOC Meetings and discussions held among GRIDCO, SLDC & WESCO in the chamber of CGM(PP), in the Meeting Dt.29.08.2018, the Energy Import by Solar Entities has been deducted from the Energy Import Figure of DISCOMs.
- Rebate for prompt payment/late payment surcharge shall be admissible/imposed as per the Clause No. 371 & 372 of BSP Order of GRIDCO Dt.26/03/2021 in case No.72 of 2020 of OERC and Bulk Supply Agreement executed with TPSODL.
- In case of any default in monthly BSP dues by the DISCOMs, they are liable for imposition of power regulation to the extent of non payment of monthly BSP dues as per Clause No. 365 of the BSP Order.
- Statutory levy/duty/tax/cess/toll etc. imposed under any law from time to time shall be charged over and above the bulk supply price fixed by the Commission as per Clause No. 373 of the BSP Order.
- The TCS u/s 206 C(1H) shall be recovered from the realised amount at the rate prevailing on the date of realisation.
- Discrepancy, if any, found later on, towards the billing will be taken into account.
- Details of the Annexures -

Annexure 1 Energy Flow Statement
Annexure 3 Open Access Statements
Annexure 5 Over Drawal/ Under Drawal Energy Statement
Annexure 7 Rebate Statement
Annexure 9 Billing Information Statement

Annexure 2
Annexure 4
Annexure 6
Annexure 8

Station Consumption statement
Main/Check Comparison of Solar Plants
Late Payment Surcharge Statement
Billing Consideration Statement



GRIDCO Limited
Registered Office: Janpath
Bhubaneswar 751022
CIN: L40109OR1995SGC003960
Bill of Supply (Provisional)
For **TPSODL**
May-2021

GRIDCO GSTIN: 21AABCG5398P3Z3
Good's Description: Electricity
HSN Code: 27160000
Ref No: GR/BS/21-22/055

Date: 08-Jun-21
Pay By Date: 08-Jul-21

The Chief Executive Officer
TP Southern Odisha Distribution Limited
Courtpet, Berhampur, Odisha
GSTIN: 21AAICT3259P1Z1

A. Total Energy for the month
B. SMD approved by OERC
SMD permitted by OERC
Actual SMD occurred
Excess SMD drawal

336,314,963 MU
7,00,000 kVA
7,70,000 kVA
5,94,193 kVA
0 kVA

Item No	Amount (Rs.)
1 Current Charges	
(a) Bulk Supply Price @ 207 Paise per kWh for the Energy	70,03,11,973.41
(b) Excess Demand Charge @ Rs 250 per kVA	0.00
Sub Total: (a+b)	70,03,11,973.41
2 Credit Bill for the month of Apr-2021 vide Bill No. GR/BS/21-22/036 Dtd 21.05.21	(9,643.59)
3 Instalment of outstanding BSP Dues for the period from Apr'20 to Dec'20 as per Cl.46 of vesting order dt:28.12.2020	8,23,99,401.00
4 Total Current Charges: Items (1+2)	78,27,01,730.82
5 TCS Claims during the month	
(a) TCS u/s 206 C (1H) of IT Act, 1961 @ 0.1% on 1	7,00,312.00
(b) TCS u/s 206 C (1H) of IT Act, 1961 @ 0.1% on 3	82,399.00
Sub Total: (a+b+c)	7,82,711.00
6 Total Current Charges incl. TCS: Items (3+4)	78,34,84,442.00
7 Add Late Payment Surcharge for the month of May-2021 (Annex-6)	
8 TCS u/s 206 C (1H) of IT Act, 1961 @ 0.1% on 6	
9 Add: Previous amount outstanding :-	
(i) Outstanding energy charges	78,71,97,302.00
(ii) Outstanding TCS	8,37,848.00
(iii) Outstanding LPS	
Total Previous Outstanding: (i+ii+iii)	78,80,34,950.00
10 Less payment received during the month	
(a) Amount received against Apr'21	
(b) TCS Amount recovered	
(c) Rebate allowed	0.00
(d) Amount received towards 5th Instalment upto Dec'20	8,23,99,402.00
(e) Amount received against TCS on 10(d)	82,399.00
(f) Other Adjustment (if any)	
Total Payment and Adjustment: (a+b+c+d+e+f)	(8,24,81,861.00)
11 Total amount claimed through this bill: item (6 to 10)	1,48,96,37,591.00
(Rounded off to the nearest Rupee)	1,48,96,37,591.00

(Rupees one hundred forty eight crore ninety lakh thirty seven thousand five hundred ninety one only)

Checked by

For & on behalf of GRIDCO

Bamal
DGM (F), PP

M. S. Saha
DGM (EBC)

[Signature]
Sr. GM (F&BS)

Note:

- The BSP Bill of TPSODL for the month has been prepared in line with the vesting order Dt 28-12-2020 of Hon'ble OERC in Case No.83/2020 and Bulk Supply Agreement executed with TPSODL.
- The billing for Bulk Supply of Power has been done based on the actual energy consumption statement provided by SLDC, in line with the order dt: 07.05.2018 of Hon'ble APTEL in Appeal No. 55 of 2015 and Clause No. 370 of the BSP order Dt 26.03.2021 of GRIDCO in the matter of overdrawal by DISCOM and as per the rates stipulated in BSP Order Dt:26.03.2021 of GRIDCO for FY-2021-22 in Case No.72/2021.
- In line with the decisions of the 98th & 99th PSOC Meetings and discussions held among GRIDCO, SLDC & WESCO in the chamber of CGM(PP), in the Meeting Dt:29.08.2016, the Energy Import by Solar Entities has been deducted from the Energy Import Figure of DISCOMs.
- Rebate for prompt payment/late payment surcharge shall be admissible/imposed as per the Clause No. 371 & 372 of BSP Order of GRIDCO Dt:26/03/2021 in case No.72 of 2020 of OERC and Bulk Supply Agreement executed with TPSODL.
- In case of any default in monthly BSP dues by the DISCOMs, they are liable for imposition of power regulation to the extent of non payment of monthly BSP dues as per Clause No. 365 of the BSP Order.
- Statutory levy/duty/tax/cess/toll etc. imposed under any law from time to time shall be charged over and above the bulk supply price fixed by the Commission as per Clause No. 373 of the BSP Order.
- The TCS u/s 206 C(1H) shall be recovered from the realised amount at the rate prevailing on the date of realisation.
- Discrepancy, if any, found later on, towards the billing will be taken into account.
- Details of the Annexures -

Annexure 1 Energy Flow Statement
Annexure 3 Open Access Statements
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Station Consumption statement
Main/Check Comparison of Solar Plants
Late Payment Surcharge Statement
Billing Consideration Statement



GRIDCO Limited
Registered Office: Janpath
Bhubaneswar 751022
CIN: L40109OR1995SGC003960
Bill of Supply
For **TPSODL**
June-2021

GRIDCO GSTIN: 21AABCG5398P323

Good's Description: Electricity

HSN Code: 27160000

Ref No: GR/BS/21-22/077

Date: 05-Jul-21
Pay By Date: 04-Aug-21

The Chief Executive Officer
TP Southern Odisha Distribution Limited
Courtpet, Berhampur, Odisha
GSTIN: 21AAICT3239P1Z1

A. Total Energy for the month	325,389,104 MU
B. SMD approved by OERC	7,00,000 kVA
SMD permitted by OERC	7,70,000 kVA
Actual SMD occurred	6,02,886 kVA
Excess SMD drawal	0 kVA

Item No	Amount (Rs.)
1	Current Charges
(a) Bulk Supply Price @ 207 Paise per kWh for the Energy	67,35,55,445.28
(b) Excess Demand Charge @ Rs 250 per kVA	0.00
Sub Total: (a+b)	67,35,55,445.28
2	Debit/Credit Bill for the month of _____ vide Bill No. _____ Dtd. _____
3	Instalment of outstanding BSP Dues for the period from Apr'20 to Dec'20 as per Cl.46 of vesting order dt 28.12.2020
4	Total Current Charges: Items (1+2)
5	Add Late Payment Surcharge for the month of Jun-2021 (Annex-6)
6	TCS u/s 206 C (1H) of IT Act, 1961 @ 0.1% on 5
7	Add: Previous amount outstanding :-
(i) Outstanding energy charges	1,48,74,99,631.00
(ii) Outstanding TCS	7,62,112.00
(iii) Outstanding LPS	
Total Previous Outstanding: (i+ii+iii)	1,48,82,61,743.00
8	Less payment received during the month
(a) Amount received against Apr'21	69,77,51,252.00
(b) TCS Amount recovered	
(c) Rebate allowed	70,46,651.00
(d) Amount received towards 6th Instalment upto Dec'20	8,23,99,402.00
(e) Amount received against TCS on 10(d)	7,87,197.00
(f) Other Adjustment (if any)	
Total Payment and Adjustment: (a+b+c+d+e+f)	(78,79,84,502.00)
11	Total amount claimed through this bill: Item (4 to 8)
(Rounded off to the nearest Rupee)	1,45,62,32,087.00

(Rupees one hundred forty five crore sixty two lakh thirty two thousand eighty seven only)

Checked by

For & on behalf of GRIDCO

[Signature]
DGM(F), PP

[Signature]
DGM (EBC)

[Signature]
Sr. GM (BRS)

Note:

- The BSP Bill of TPSODL for the month has been prepared in line with the vesting order Dt.28-12-2020 of Hon'ble OERC in Case No.83/2020 and Bulk Supply Agreement executed with TPSODL.
- The billing for Bulk Supply of Power has been done based on the actual energy consumption statement provided by SLDC, in line with the order dt. 07.05.2016 of Hon'ble APTEL in Appeal No. 55 of 2015 and Clause No. 370 of the BSP order Dt.26.03.2021 of GRIDCO in the matter of overdrawal by DISCOM and as per the rates stipulated in BSP Order Dt.26.03.2021 of GRIDCO for FY-2021-22 in Case No.72/2021.
- In line with the decisions of the 58th & 99th PSOC Meetings and discussions held among GRIDCO, SLDC & WESCO in the chamber of CGM(PP), in the Meeting Dtd.29.08.2016, the Energy Import by Solar Entities has been deducted from the Energy Import Figure of DISCOMs.
- Rebate for prompt payment/late payment surcharge shall be admissible/imposed as per the Clause No. 371 & 372 of BSP Order of GRIDCO Dt.26/03/2021 in case No.72 of 2020 of OERC and Bulk Supply Agreement executed with TPSODL.
- In case of any default in monthly BSP dues by the DISCOMs, they are liable for imposition of power regulation to the extent of non payment of monthly BSP dues as per Clause No. 365 of the BSP Order.
- Statutory levy/duty/tax/cess/toll etc. imposed under any law from time to time shall be charged over and above the bulk supply price fixed by the Commission as per Clause No. 373 of the BSP Order.
- Discrepancy, if any, found later on, towards the billing will be taken into account.
- Details of the Annexures -

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Station Consumption statement
Main/Check Comparison of Solar Plants
Late Payment Surcharge Statement
Billing Consideration Statement



GRIDCO Limited
Registered Office: Janpath
Bhubaneswar 751022
CIN: L40109OR1995SGC003960

Bill of Supply
For **TPSODL**
July-2021

GRIDCO GSTIN: 21AABCG5398P323

Good's Description: Electricity

HSN Code: 27150000

Ref No: GR/BS/21-22/102

Date: 04-Aug-21
Pay By Date: 03-Sep-21

The Chief Executive Officer
TP Southern Odisha Distribution Limited
Courtpetta, Barhampur, Odisha
GSTIN: 21AAICT3239P121

A. Total Energy for the month 336.915674 MU
B. SMD approved by OERC 7,00,000 kVA
SMD permitted by OERC 7,70,000 kVA
Actual SMD occurred 6,12,651 kVA
Excess SMD drawal 0 kVA

Item No		Amount (Rs.)
1	Current Charges	
	(a) Bulk Supply Price @ 207 Paise per kWh for the Energy	69,74,15,445.18
	(b) Excess Demand Charge @ Rs 250 per kVA	0.00
	Sub Total: (a+b)	69,74,15,445.18
2	Debit/Credit Bill for the month of _____ vide Bill No. _____ Dtd. _____	0.00
3	Instalment of outstanding BSP Dues for the period from Apr'20 to Dec'20 as per CI-46 of vesting order dt.28.12.2020	8,23,99,401.00
4	Total Current Charges: Items (1+2)	77,98,14,846.00
5	Add Late Payment Surcharge for the month of Jul-2021 (Annex-6)	-
6	TCS u/s 206 C (1H) of IT Act, 1961 @ 0.1% on 6	-
7	Add: Previous amount outstanding :-	
	(i) Outstanding energy charges	1,45,62,57,165.00
	(ii) Outstanding TCS	7,82,711.00
	(iii) Outstanding LPS	-
	Total Previous Outstanding: (i+ii+iii)	1,45,70,39,876.00
8	Less payment received during the month	
	(a) Amount received against Apr'21	69,32,99,307.00
	(b) TCS Amount recovered	7,82,701.00
	(c) Rebate allowed	70,03,023.00
	(d) Amount received towards 8th instalment upto Dec'20	8,23,99,401.00
	(e) Other Adjustment (if any)	-
	Total Payment and Adjustment: (a+b+c+d+e+f)	(78,34,84,432.00)
11	Total amount claimed through this bill: item (4 to 8)	1,45,33,70,290.00
	(Rounded off to the nearest Rupee)	1,45,33,70,290.00

(Rupees one hundred forty five crore thirty three lakh seventy thousand two hundred ninety only)

Checked by

For & on behalf of GRIDCO

Bimal
DGM(F), PP

M.S. Sahoo
DGM (EBC)

San
Sr. GM (T&BS)

Note:

- The BSP Bill of TPSODL for the month has been prepared in line with the vesting order Dt.28-12-2020 of Honble OERC in Case No.83/2020 and Bulk Supply Agreement executed with TPSODL.
- The billing for Bulk Supply of Power has been done based on the actual energy consumption statement provided by SLDC, in line with the order dtd. 07.05.2018 of Honble APTEL in Appeal No. 56 of 2015 and Clause No. 370 of the BSP order Dt.26.03.2021 of GRIDCO in the matter of overdrawal by DISCOM and as per the rates stipulated in BSP Order Dt.26.03.2021 of GRIDCO for FY-2021-22 in Case No.72/2021.
- In line with the decisions of the 98th & 99th PSOC Meetings and discussions held among GRIDCO, SLDC & WESCO in the chamber of CGM(PP), in the Meeting Dtd.29.08.2016, the Energy Import by Solar Entities has been deducted from the Energy Import Figure of DISCOMs.
- Rebate for prompt payment/late payment surcharge shall be admissible/imposed as per the Clause No. 371 & 372 of BSP Order of GRIDCO Dt.26/03/2021 in case No.72 of 2020 of OERC and Bulk Supply Agreement executed with TPSODL.
- In case of any default in monthly BSP dues by the DISCOMs, they are liable for imposition of power regulation to the extent of non payment of monthly BSP dues as per Clause No. 365 of the BSP Order.
- Statutory levy/duty/tax/cess/etc. imposed under any law from time to time shall be charged over and above the bulk supply price fixed by the Commission as per Clause No. 373 of the BSP Order.
- Discrepancy, if any, found later on, towards the billing will be taken into account.
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Station Consumption statement
Main/Check Comparison of Solar Plants
Late Payment Surcharge Statement
Billing Consideration Statement



GRIDCO Limited
Registered Office: Janpath
Bhubaneswar 751022
CIN: L40109OR1995SGC003960

Bill of Supply
For **TPSODL**
August-2021

GRIDCO GSTIN: 21AABCG5398P3Z3

Good's Description: Electricity

HSN Code: 27160000

Ref No: GR/BS/21-22/ 129

Date: 04-Sep 21
Pay By Date: 04-Oct 21

The Chief Executive Officer
TP Southern Odisha Distribution Limited
Courtpetta, Berhampur, Odisha
GSTIN: 21AAICT3239P1Z1

A. Total Energy for the month	348.156599 MU
B. SMD approved by OERC	7,00,000 kVA
SMD permitted by OERC	7,70,000 kVA
Actual SMD occurred	6,09,068 kVA
Excess SMD drawal	0 kVA

Item No	Amount (Rs.)
1	Current Charges
	(a) Bulk Supply Price @ 207 Paise per kWh for the Energy 72,06,84,159.93
	(b) Excess Demand Charge @ Rs 250 per kVA 0.00
	Sub Total: (a+b) 72,06,84,159.93
2	Debit/Credit Bill for the month of _____ vide Bill No _____ Dtd. _____ 0.00
3	Installment of outstanding BSP Dues for the period from April'20 to Dec'20 as per CI 46 of vesting order dt.28.12.2020 8,23,99,401.00
4	Total Current Charges: Items (1+2) 80,30,83,561.00
5	Add Late Payment Surcharge for the month of Aug-2021 (Annex-6)
6	Add: Previous amount outstanding :-
	(i) Outstanding energy charges 1,45,33,70,290.00
	(ii) Outstanding LPS
	Total Previous Outstanding: (i+ii) 1,45,33,70,290.00
7	Less payment received during the month
	(a) Amount received against Jun'21 66,61,46,336.00
	(b) Rebate allowed 67,35,554.00
	(c) Amount received towards 7th Installment upto Dec'20 8,23,17,002.00
	(d) Amount against TDS 7,55,954.00
	(e) Other Adjustment (If any)
	Total Payment and Adjustment: (a+b+c+d+e+f) (75,59,54,846.00)
8	Total amount claimed through this bill: item (4 to 8) 1,50,04,99,005.00
	(Rounded off to the nearest Rupee) 1,50,04,99,005.00

(Rupees one hundred fifty crore four lakh ninety nine thousand five only)

Checked by

For & on behalf of GRIDCO

[Signature]
DGM(F), PP

[Signature]
DGM (EBC)

[Signature]
Sr.GM(T&BS)

Note:

- The BSP Bill of TPSODL for the month has been prepared in line with the vesting order Dt.28-12-2020 of Hon'ble OERC in Case No.83/2020 and Bulk Supply Agreement executed with TPSODL.
- The billing for Bulk Supply of Power has been done based on the actual energy consumption statement provided by SLDC, in line with the order dtd. 07.05.2018 of Hon'ble APTEL in Appeal No. 55 of 2015 and Clause No. 370 of the BSP order Dt.26.03.2021 of GRIDCO in the matter of overdrawal by DISCOM and as per the rates stipulated in BSP Order Dt.26.03.2021 of GRIDCO for FY-2021-22 in Case No.72/2021.
- In line with the decisions of the 98th & 99th PSOC Meetings and discussions held among GRIDCO, SLDC & WESCO in the chamber of CGM(PP), in the Meeting Dtd.29.08.2018, the Energy Import by Solar Entities has been deducted from the Energy Import Figure of DISCOMs.
- Rebate for prompt payment/late payment surcharge shall be admissible/imposed as per the Clause No. 371 & 372 of BSP Order of GRIDCO Dt.26/03/2021 in case No.72 of 2020 of OERC and Bulk Supply Agreement executed with TPSODL.
- In case of any default in monthly BSP dues by the DISCOMs, they are liable for imposition of power regulation to the extent of non payment of monthly BSP dues as per Clause No. 365 of the BSP Order.
- Statutory levy/duty/tax/cess/toll etc. imposed under any law from time to time shall be charged over and above the bulk supply price fixed by the Commission as per Clause No. 373 of the BSP Order.
- Discrepancy, if any, found later on, towards the billing will be taken into account.
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Station Consumption statement
Main/Check Comparison of Solar Plants
Late Payment Surcharge Statement
Billing Consideration Statement



GRIDCO Limited
Registered Office: Janpath
Bhubaneswar 751022
CIN: L40109OR1995SGC003960
Bill of Supply
For TPSODL
September-2021

GRIDCO GSTIN: 21AABCG5398P323
Good's Description: Electricity
HSN Code: 27160000
Ref No: GR/BS/21-22/ 155

Date: 05-Oct 21
Pay By Date: 04-Nov 21

The Chief Executive Officer
TP Southern Odisha Distribution Limited
Courtpetta, Berhampur, Odisha
GSTIN: 21AAICT3239P121

A. Total Energy for the month 328.343631 MU
B. SMD approved by OERC 7,00,000 kVA
SMD permitted by OERC 7,70,000 kVA
Actual SMD occurred 6,26,390 kVA
Excess SMD drawal 0 kVA

Item No	Amount (Rs)
1	Current Charges
	(a) Bulk Supply Price @ 207 Paise per kWh for the Energy 67,96,71,316.17
	(b) Excess Demand Charge @ Rs 250 per kVA 0.00
	Sub Total: (a+b) 67,96,71,316.17
2	Debit/Credit Bill for the month of _____ vide Bill No _____ Dtd _____ 0.00
3	Instalment of outstanding BSP Dues for the period from April'20 to Dec'20 as per Cl.46 of vesting order dt.28.12.2020 8,23,99,401.30
4	Total Current Charges: Items (1+2) 76,20,70,717.00
5	Add Late Payment Surcharge for the month of Sep-2021 (Annex-5)
6	Add: Previous amount outstanding :-
	(i) Outstanding energy charges 1,50,04,99,005.00
	(ii) Outstanding LPS
	Total Previous Outstanding: (i+ii) 1,50,04,99,005.01
7	Less payment received during the month
	(a) Amount received against Jul'21 68,97,43,876.00
	(b) Rebate allowed 69,74,154.00
	(c) Amount received towards 8th Instalment upto Dec'20 8,23,17,002.00
	(d) Amount against TDS 7,79,814.00
	(e) Other Adjustment (if any)
	Total Payment and Adjustment: (a+b+c+d+e) (77,98,14,846.00)
8	Total amount claimed through this bill: item (4 to 8) 1,48,27,54,876.00
	(Rounded off to the nearest Rupee) 1,48,27,54,876.00

(Rupees one hundred forty eight crore twenty seven lakh fifty four thousand eight hundred seventy six only)

Checked by

For & on behalf of GRIDCO

Bimal
DGM(F), PP

M. S. Sahoo
DGM (EBC)

S. S. Sahoo
Sr. GM (T&BS)

Note:

- The BSP Bill of TPSODL for the month has been prepared in line with the vesting order DL28-12-2020 of Hon'ble OERC in Case No.83/2020 and Bulk Supply Agreement executed with TPSODL.
- The billing for Bulk Supply of Power has been done based on the actual energy consumption statement provided by SLDC, in line with the order dt. 07.05.2018 of Hon'ble APTEL in Appeal No. 55 of 2015 and Clause No. 370 of the BSP order Dt.26.03.2021 of GRIDCO in the matter of overdrawal by DISCOM and as per the rates stipulated in BSP Order Dt.26.03.2021 of GRIDCO for FY-2021-22 in Case No.72/2021.
- In line with the decisions of the 98th & 99th PSOC Meetings and discussions held among GRIDCO, SLDC & WESCO in the chamber of CGM(PP), in the Meeting Dtd.29.08.2016, the Energy Import by Solar Entities has been deducted from the Energy Import Figure of DISCOMs.
- Rebate for prompt payment/late payment surcharge shall be admissible/imposed as per the Clause No. 371 & 372 of BSP Order of GRIDCO Dt.26/03/2021 in case No.72 of 2020 of OERC and Bulk Supply Agreement executed with TPSODL.
- In case of any default in monthly BSP dues by the DISCOMs, they are liable for imposition of power regulation to the extent of non payment of monthly BSP dues as per Clause No. 365 of the BSP Order.
- Statutory levy/duty/tax/cess/toll etc. imposed under any law from time to time shall be charged over and above the bulk supply price fixed by the Commission as per Clause No 373 of the BSP Order.
- Discrepancy, if any, found later on, towards the billing will be taken into account.
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Annexure 4 Main/Check Comparison of Solar Plants
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G R I D C O Limited
Registered Office: Janpath
Bhubaneswar 751022
CIN: L40109OR1995SGC003960

Bill of Supply
For **TPSODL**
October-2021

GRIDCO GSTIN: 21AABCG5398P323
Good's Description: Electricity
HSN Code: 27160000
Ref No: GR/BS/21-22/187

Date: 05-Nov-21
Pay By Date: 05-Dec-21

The Chief Executive Officer
TP Southern Odisha Distribution Limited
Courtpetta, Berhampur, Odisha
GSTIN: 21AAICT3239P1Z1

A. Total Energy for the month	353.165831 MU
B. SMD approved by OERC	7,00,000 kVA
SMD permitted by OERC	7,70,000 kVA
Actual SMD occurred	6,37,461 kVA
Excess SMD drawal	0 kVA

Item No		Amount (Rs.)#
1	Current Charges	
	(a) Bulk Supply Price @ 207 Paise per kWh for the Energy	73,10,53,270.17
	(b) Excess Demand Charge @ Rs 250 per kVA	0.00
	Sub Total: (a+b)	73,10,53,270.17
2	Debit/Credit Bill for the month of _____ vide Bill No _____ Dtd _____	0.00
3	Installment of outstanding BSP Dues for the period from April'20 to Dec'20 as per Cl.46 of vesting order dt.28.12.2020	8,23,99,401.00
4	Total Current Charges: Items (1+2)	81,34,52,671.00
5	Add Late Payment Surcharge for the month of Oct-2021 (Annex-6)	
6	Add: Previous amount outstanding :-	
	(i) Outstanding energy charges	1,48,27,54,876.00
	(ii) Outstanding LPS	
	Total Previous Outstanding: (i+ii)	1,48,27,54,876.00
7	Less payment received during the month	
	(a) Amount received against Aug'21	71,27,56,634.00
	(b) Rebate allowed	72,06,842.00
	(c) Amount received towards 9th Installment upto Dec'20	8,23,17,002.00
	(d) Amount against TDS	8,03,083.00
	(e) Other Adjustment (if any)	
	Total Payment and Adjustment: (a+b+c+d+e)	(80,30,83,561.00)
8	Total amount claimed through this bill: item (4 to 8)	1,49,31,23,986.00
	(Rounded off to the nearest Rupee)	1,49,31,23,986.00

(Rupees one hundred forty nine crore thirty one lakh twenty three thousand nine hundred eighty six only)

Checked by

Samuel
DGM(F), PP

For & on behalf of GRIDCO

M.S. Sahu
DGM (EBC)

[Signature]
Sr.GM(T&BS)

Note:

- The BSP Bill of TPSODL for the month has been prepared in line with the vesting order Dt.28-12-2020 of Hon'ble OERC in Case No.83/2020 and Bulk Supply Agreement executed with TPSODL.
- The billing for Bulk Supply of Power has been done based on the actual energy consumption statement provided by SLDC, in line with the order dtd. 07.05.2018 of Hon'ble APTEL in Appeal No. 55 of 2015 and Clause No. 370 of the BSP order Dt.26.03.2021 of GRIDCO in the matter of overdrawal by DISCOM and as per the rates stipulated in BSP Order Dt.26.03.2021 of GRIDCO for FY-2021-22 in Case No.72/2021.
- In line with the decisions of the 98th & 99th PSOC Meetings and discussions held among GRIDCO, SLDC & WESCO in the chamber of CGM(PP), in the Meeting Dtd.29.08.2016, the Energy Import by Solar Entities has been deducted from the Energy Import Figure of DISCOMs.
- Rebate for prompt payment/late payment surcharge shall be admissible/imposed as per the Clause No. 371 & 372 of BSP Order of GRIDCO Dt.26/03/2021 in case No.72 of 2020 of OERC and Bulk Supply Agreement executed with TPSODL.
- In case of any default in monthly BSP dues by the DISCOMs, they are liable for imposition of power regulation to the extent of non payment of monthly BSP dues as per Clause No. 365 of the BSP Order.
- Statutory levy/duty/tax/cess/toll etc. imposed under any law from time to time shall be charged over and above the bulk supply price fixed by the Commission as per Clause No. 373 of the BSP Order.
- Discrepancy, if any, found later on, towards the billing will be taken into account.
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Station Consumption statement
Main/Check Comparison of Solar Plants
Late Payment Surcharge Statement
Billing Consideration Statement



GRIDCO Limited
Registered Office: Janpath
Bhubaneswar 751022
CIN: L40109OR1995SGC003960

Bill of Supply
For **TPSODL**
November-2021

GRIDCO GSTIN: 21AABCG5398P323

Good's Description: Electricity

HSN Code: 27160000

Ref No: GR/BS/21-22/ 221

Date: 07-Dec-21
Pay By Date: 06-Jan-22

The Chief Executive Officer
TP Southern Odisha Distribution Limited
Courtpet, Berhampur, Odisha
GSTIN: 21AAICT3239P121

A. Total Energy for the month	300.931092 MU
B. SMD approved by OERC	7,00,000 kVA
SMD permitted by OERC	7,70,000 kVA
Actual SMD occurred	5,95,136 kVA
Excess SMD drawal	0 kVA

Item No	Amount (Rs.)
1	Current Charges
(a) Bulk Supply Price @ 207 Paise per kWh for the Energy	62,29,27,360.44
(b) Excess Demand Charge @ Rs 250 per kVA	0.00
Sub Total: (a+b)	62,29,27,360.44
2	Debit/Credit Bill for the month of _____ vide Bill No. _____ Dtd. _____
3	Instalment of outstanding BSP Dues for the period from April'20 to Dec'20 as per CI.46 of vesting order dt.28.12.2020
4	Total Current Charges: Items (1+2)
5	Add Late Payment Surcharge for the month of Nov-2021 (Annex-5)
6	Add: Previous amount outstanding :-
(i) Outstanding energy charges	1,49,31,23,986.00
(ii) Outstanding LPS	-
Total Previous Outstanding: (i+ii)	1,49,31,23,986.00
7	Less payment received during the month
(a) Amount received against Sep '21	67,21,94,832.00
(b) Rebate allowed	67,96,713.00
(c) Amount received towards 10th Instalment upto Dec'20	8,23,17,002.00
(d) Amount against TDS	7,62,070.00
(e) Other Adjustment (if any)	-
Total Payment and Adjustment: (a+b+c+d+e)	(76,20,70,717.00)
8	Total amount claimed through this bill: item (4 to 8)
(Rounded off to the nearest Rupee)	1,43,63,80,030.00

(Rupees one hundred forty three crore sixty three lakh eighty thousand thirty only)

Checked by

[Signature]
DGM(F), PP

For & on behalf of GRIDCO

[Signature]
DGM (EBC)

[Signature]
Sr.GM(T&BS)

Note:

- The BSP Bill of TPSODL for the month has been prepared in line with the vesting order Dt.28-12-2020 of Hon'ble OERC in Case No.83/2020 and Bulk Supply Agreement executed with TPSODL.
- The billing for Bulk Supply of Power has been done based on the actual energy consumption statement provided by SLDC, in line with the order dtd. 07.05.2018 of Hon'ble APTEL in Appeal No. 55 of 2015 and Clause No. 370 of the BSP order Dt.26.03.2021 of GRIDCO in the matter of overdrawal by DISCOM and as per the rates stipulated in BSP Order Dt.26.03.2021 of GRIDCO for FY-2021-22 in Case No.72/2021.
- In line with the decisions of the 98th & 99th PSOC Meetings and discussions held among GRIDCO, SLDC & WESCO in the chamber of CGM(PP), in the Meeting Dtd.29.08.2016, the Energy Import by Solar Entities has been deducted from the Energy Import Figure of DISCOMs.
- Rebate for prompt payment/late payment surcharge shall be admissible/imposed as per the Clause No. 371 & 372 of BSP Order of GRIDCO Dt.26/03/2021 in case No.72 of 2020 of OERC and Bulk Supply Agreement executed with TPSODL.
- In case of any default in monthly BSP dues by the DISCOMs, they are liable for imposition of power regulation to the extent of non payment of monthly BSP dues as per Clause No. 365 of the BSP Order.
- Statutory levy/duty/tax/cess/toll etc. imposed under any law from time to time shall be charged over and above the bulk supply price fixed by the Commission as per Clause No. 373 of the BSP Order.
- Discrepancy, if any, found later on, towards the billing will be taken into account.
- Details of the Annexures -

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Station Consumption statement
Main/Check Comparison of Solar Plants
Late Payment Surcharge Statement
Billing Consideration Statement



GRIDCO GSTIN: 21AABCG5398P323

Good's Description: Electricity

HSN Code: 27160000

Ref No: GR/BS/21-22/251

The Chief Executive Officer
TP Southern Odisha Distribution Limited
Courtpetta, Berhampur, Odisha
GSTIN: 21AAICT3239P121

G R I D C O Limited
Registered Office: Janpath
Bhubaneswar 751022
CIN: L40109OR1995SGC003960

Bill of Supply
For TPSODL
December-2021

Date: 05-Jan-22
Pay By Date: 04-Feb-22

A. Total Energy for the month 288,535,648 MU
B. SMD approved by OERC 7,00,000 kVA
SMD permitted by OERC 7,70,000 kVA
Actual SMD occurred 5,92,714 kVA
Excess SMD drawal 0 kVA

Item No	Amount (Rs.)
1	Current Charges
(a) Bulk Supply Price @ 207 Paise per kWh for the Energy	59,72,68,791.36
(b) Excess Demand Charge @ Rs 250 per kVA	0.00
Sub Total: (a+b)	59,72,68,791.36
2	Debit Bill for the FY-2017-18 vide Bill No. GR/BS/21-22/248 Dtd 31.12.2021
3	Installment of outstanding BSP Dues for the period from April'20 to Dec'20 as per Cl.46 of vesting order dt.28.12.2020
4	Total Current Charges: Items (1+2)
5	Add Late Payment Surcharge for the month of Dec-2021 (Annex-6)
6	Add: Previous amount outstanding :-
(i) Outstanding energy charges	1,43,63,80,031.00
(ii) Outstanding LPS	
Total Previous Outstanding: (i+ii)	1,43,63,80,031.00
7	Less payment received during the month
(a) Amount received against Oct '21	72,30,11,684.00
(b) Rebate allowed	73,10,533.00
(c) Amount received towards 11th installment upto Dec'20	8,23,17,002.00
(d) Amount against TDS	8,13,452.00
(e) Other Adjustment (if any)	
Total Payment and Adjustment: (a+b+c+d+e)	(81,34,52,671.00)
8	Total amount claimed through this bill: item (4 to 7)
(Rounded off to the nearest Rupee)	1,30,26,09,260.00
	1,30,26,09,260.00

(Rupees one hundred thirty crore twenty six lakh nine thousand two hundred sixty only)

Checked by

[Signature]
DGM(F), PP

For & on behalf of GRIDCO

[Signature]
DGM (EBC)

[Signature]
Sr.GM(T&BS)

Note:

- The BSP Bill of TPSODL for the month has been prepared in line with the vesting order Dt.28.12.2020 of Hon'ble OERC in Case No.83/2020 and Bulk Supply Agreement executed with TPSODL.
- The billing for Bulk Supply of Power has been done based on the actual energy consumption statement provided by SLDC, in line with the order dttd. 07.05.2018 of Hon'ble APTEL in Appeal No. 55 of 2015 and Clause No. 370 of the BSP order Dt.26.03.2021 of GRIDCO in the matter of overdrawal by DISCOM and as per the rates stipulated in BSP Order Dt.26.03.2021 of GRIDCO for FY-2021-22 in Case No.72/2021.
- In line with the decisions of the 98th & 99th PSOC Meetings and discussions held among GRIDCO, SLDC & WESCO in the chamber of CGM(PP), in the Meeting Dttd.29.08.2018, the Energy Import by Solar Entities has been deducted from the Energy Import Figure of DISCOMs.
- Rebate for prompt payment/late payment surcharge shall be admissible/imposed as per the Clause No. 371 & 372 of BSP Order of GRIDCO Dt.26/03/2021 in case No.72 of 2020 of OERC and Bulk Supply Agreement executed with TPSODL.
- In case of any default in monthly BSP dues by the DISCOMs, they are liable for imposition of power regulation to the extent of non payment of monthly BSP dues as per Clause No. 385 of the BSP Order.
- Statutory levy/duty/tax/cess/toll etc. imposed under any law from time to time shall be charged over and above the bulk supply price fixed by the Commission as per Clause No. 373 of the BSP Order.
- Discrepancy, if any, found later on, towards the billing will be taken into account.
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Main/Check Comparison of Solar Plants
Late Payment Surcharge Statement
Billing Consideration Statement



GRIDCO GSTIN: 21AABCG5398P3Z3
Good's Description: Electricity
HSN Code: 27160000
Ref No: GR/BS/21-22/ 321

The Chief Executive Officer
TP Southern Odisha Distribution Limited
Courtpetta, Berhampur, Odisha
GSTIN: 21AAICT3239P121

GRIDCO Limited
Registered Office: Janpath
Bhubaneswar 751022
CIN: L40109OR1995SGC003960
Bill of Supply
For TPSODL
January-2022

Date: 07-Feb-22
Pay By Date: 09-Mar-22

A. Total Energy for the month 294.897117 MU
B. SMD approved by OERC 7,00,000 kVA
SMD permitted by OERC 7,70,000 kVA
Actual SMD occurred 6,04,421 kVA
Excess SMD drawal 0 kVA

Item No	Amount (Rs.)
1	Current Charges
(a) Bulk Supply Price @ 207 Paise per kWh for the Energy	61,00,23,032.19
(b) Excess Demand Charge @ Rs 250 per kVA	0.00
Sub Total: (a+b)	61,00,23,032.19
2	Debit/Credit Bills:
(a) Debit/Credit Bills for the months from Apr-21 to Nov-21 vide Bill Nos. GR/BS/21-22/273 to 280 Dtd 21.01.2022	6,28,70,884.00
(b) Debit Bill for the month of Mar-2021 vide Bill No. GR/BS/21-22/281 Dtd 21.01.2022	88,22,248.00
(c) Debit Bill for the month of June-2021 vide Bill No. GR/BS/21-22/315 Dtd 01.02.2022	2,639.00
Sub Total: (a+b+c)	7,16,95,771.00
4	Total Current Charges: Items (1+2)
5	Add Late Payment Surcharge for the month of Jan-2022 (Annex-6)
6	Add: Previous amount outstanding :-
(i) Outstanding energy charges	1,22,02,09,860.00
(ii) Outstanding LPS	-
Total Previous Outstanding: (i+ii)	1,22,02,09,860.00
7	Less payment received during the month
(a) Collection for Nov '21	61,60,75,159.00
(b) Rebate against Nov '21	62,29,274.00
(c) Amount against TDS	6,22,927.00
(d) Other Adjustment (if any)	-
Total Payment and Adjustment: (a+b+c+d)	(62,29,27,360.00)
8	Total amount claimed through this bill: Item (4 to 7)
(Rounded off to the nearest Rupee)	1,27,90,01,303.00

(Rupees one hundred twenty seven crore ninety lakh one thousand three hundred three only)

Checked by

For & on behalf of GRIDCO

DGM(F, PP)

DGM (EBC)

Sr.GM(T&ES)

Note:

- The BSP Bill of TPSODL for the month has been prepared in line with the vesting order Dt.28-12-2020 of Hon'ble OERC in Case No.83/2020 and Bulk Supply Agreement executed with TPSODL.
- The billing for Bulk Supply of Power has been done based on the actual energy consumption statement provided by SLDC, in line with the order dtd. 07.05.2018 of Hon'ble APTEL in Appeal No. 55 of 2015 and Clause No. 370 of the BSP order Dt.26.03.2021 of GRIDCO in the matter of overdrawal by DISCOM and as per the rates stipulated in BSP Order Dt.26.03.2021 of GRIDCO for FY-2021-22 in Case No.72/2021.
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- In case of any default in monthly BSP dues by the DISCOMs, they are liable for imposition of power regulation to the extent of non payment of monthly BSP dues as per Clause No. 365 of the BSP Order.
- Statutory levy/duty/tax/cess/toll etc. imposed under any law from time to time shall be charged over and above the bulk supply price fixed by the Commission as per Clause No. 373 of the BSP Order.
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Main/Check Comparison of Solar Plants
Late Payment Surcharge Statement
Billing Consideration Statement



GRIDCO Limited
Registered Office: Janpath
Bhubaneswar 751022
CIN: L40109OR1995SGC003960

Bill of Supply
For **TPSODL**
February-2022

GRIDCO GSTIN: 21AABCG5398P323

Good's Description: Electricity

HSN Code: 27160000

Ref No: GR/BS/21-22/ 366

Date: 07-Mar-22
Pay By Date: 06-Apr-22

The Chief Executive Officer
TP Southern Odisha Distribution Limited
Courtpetta, Berhampur, Odisha
GSTIN: 21AAICT3239P1Z1

A. Total Energy for the month	287.424932 MU
B. SMD approved by OERC	7,00,000 kVA
SMD permitted by OERC	7,70,000 kVA
Actual SMD occurred	6,13,363 kVA
Excess SMD drawal	0 kVA

Item No	Amount (Rs.)
1 Current Charges	
(a) Bulk Supply Price @ 207 Paise per kWh for the Energy	59,49,69,609.24
(b) Excess Demand Charge @ Rs 250 per kVA	0.00
Sub Total: (a+b)	59,49,69,609.24
2 Debit/Credit Bills:	
(a) Debit Bill towards auxiliary consumption by PGCIL substations for FY-2018-19 (Bill No.GR/BS/21-22/334 Dt.22.02.22)	8,24,452.00
(b) Debit Bill towards auxiliary consumption by PGCIL substations for FY-2019-20 (Bill No.GR/BS/21-22/338 Dt.24.02.22)	10,75,833.00
Sub Total: (a+b+c)	20,00,285.00
4 Total Current Charges: Items (1+2)	59,69,69,894.00
5 Add Late Payment Surcharge for the month of Feb-2022 (Annex-6)	
6 Add: Previous amount outstanding :-	
(i) Outstanding energy charges	1,27,90,01,303.00
(ii) Outstanding LPS	-
Total Previous Outstanding: (i+ii)	1,27,90,01,303.00
7 Less payment received during the month	
(a) Collection for Dec '21	59,07,12,392.00
(b) Rebate against Dec '21	59,72,825.00
(c) Amount against TDS	5,97,283.00
(d) Other Adjustment (if any)	-
Total Payment and Adjustment: (a+b+c+d)	(59,72,82,500.00)
8 Total amount claimed through this bill: item (4 to 7)	1,27,86,88,697.00
(Rounded off to the nearest Rupee)	1,27,86,88,697.00

(Rupees one hundred twenty seven crore eighty six lakh eighty eight thousand six hundred ninety seven only)

Checked by

For & on behalf of GRIDCO

Samel
DGM(F), PP

M.S. Sahas
DGM (EBC)

Sr. GM (EBC)
Sr. GM (EBC)

Note:

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GRIDCO Limited
Registered Office: Janpath
Bhubaneswar 751022
CIN: U40109OR1995SGC003960
Bill of Supply
For TPSODL
March-2022

GRIDCO GSTIN: 21AABCG5398P3Z3

Good's Description: Electricity

HSN Code: 27160000

Ref No: GR/BS/22-23/007

Date: 05-Apr-22
Pay By Date: 05-May-22

The Chief Executive Officer
TP Southern Odisha Distribution Limited
Courtpetta, Berhampur, Odisha
GSTIN: 21AAICT3239P1Z1

A. Total Energy for the month 367,255,251 MU
B. SMD approved by OERC 7,00,000 kVA
SMD permitted by OERC 7,70,000 kVA
Actual SMD occurred 6,49,824 kVA
Excess SMD drawal 0 kVA

Item No	Amount (Rs.)
1	Current Charges
	(a) Bulk Supply Price @ 207 Paise per kWh for the Energy 76,02,18,369.57
	(b) Excess Demand Charge @ Rs 250 per kVA 0.00
	Sub Total: (a+b) 76,02,18,369.57
2	Debit/Credit Bills:
	(a) Debit Bill towards auxiliary consumption by PGCIL substations for FY-2020-21 (Bill No.Gr/BS/21-22/375 Dt.16.03.22) 6,904.00
	Sub Total: 6,904.00
3	Total Current Charges: Items (1+2) 76,02,25,274.00
4	Add Late Payment Surcharge for the month of Mar-2022 (Annex-6)
5	Add: Previous amount outstanding :-
	(i) Outstanding energy charges 1,27,86,88,697.00
	(ii) Outstanding LPS -
	Total Previous Outstanding: (i+ii) 1,27,86,88,697.00
6	Less payment received during the month
	(a) Collection for Jan '22 67,42,19,896.00
	(b) Rebate against Jan '22 68,17,188.00
	(c) Amount against TDS 6,81,719.00
	(d) Other Adjustment (if any) -
	Total Payment and Adjustment: (a+b+c+d) (68,17,18,803.00)
7	Total amount claimed through this bill: Item (3 to 7) 1,35,71,95,168.00
	(Rounded off to the nearest Rupee) 1,35,71,95,168.00

(Rupees one hundred thirty five crore seventy one lakh ninety five thousand one hundred sixty eight only)

Checked by

For & on behalf of GRIDCO

[Signature]
DGM(F, PP)

[Signature]
DGM (EBC)

[Signature]
Sr.GM (T&BS)

Note:

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ANNEXURE (VIII): LINE DIAGRAM (SLD): Details are provided in the MEA report of TPSODL for FY 2021-22.

ANNEXURE (IX): CATEGORY OF SERVICE DETAILS:

[illegible]

ANNEXURE (X): DETAILED FORMATS TO BE ANNEXED:

33KV MONTHLY ENERGY AUDIT REPORT

SL.NO.	132/33 KV or 220/33KV Grid Name	33 KV Feeder Name	Electrical Length of the Feeder	Total INPUT in MU=A	CONSUMPTION BY 33KV CONSUMER IF ANY=B	NAME OF 33/11KV S/S	INPUT TO 33/11KV S/S	11KV Feeder Name	FDR_CD	INPUT IN 11KV FEEDERS IN MU=C1,C2,C3	TOTAL INPUT TO THE 11KV FEEDERS CORRESPONDING TO 33/11KV S/S=C= C1+C2+C3	TOTAL(33KV CONSUMER+11KV FEEDERS*) Consumption in MU (B)=D=B+C	LOSS IN MU E=(D-A)	AVERAGE % LOSS (E/A*100)	Average Loss during Last Quarter as observed

11KV MONTHLY ENERGY AUDIT REPORT

SL NO	Name of Distribution Division	Name of 11KV Feeder	Feeder Code	Length of Feeder in KM	No of DTR	Total DTR Capacity in KVA	No of Consumer	Previous Reading- X	Present Reading- Y	MF	Input in MU, (Z=(Y-X)*MF)	Billing to HT Consumer	Billing to LT Consumer	Total Units Billed in MU	Loss in MU	Loss in %age	Average Loss during Last Quarter as observed

T&D LOSS TABLE

PARTICULARS	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	TOTAL
BULK SUPPLY													
Demand (MVA)													
Energy input (MU)													
SALE TO CONS (MU)													
EHT													
HT													
LT													
TOTAL SALE (MU)													
T & D LOSS (%)													
LT													
HT & LT													
OVERALL (%)													

					AT & C LOSS TABLE								
PARTICULARS	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	TOTAL
SALE TO CONSUMERS (MU)													
TOTAL SALE (MU)													
T & D LOSS (%)													
OVERALL (%)													
BILLING EFFICIENCY (%)													
OVERALL (%)													
BILLING TO CONSUMERS (Rs. in Crs.)													
TOTAL													
COLLECTION RECEIVED (Rs. in Crs.)													
TOTAL													
COLLECTION EFFICIENCY (%)													
OVERALL (%)													
AT & C LOSS (%)													
OVERALL (%)													

ANNEXURE (XI): LIST OF DOCUMENTS VERIFIED WITH EACH PARAMETER: Details are furnished in Sector Specific Pro-forma.

ANNEXURE (XII): BRIEF DESCRIPTION OF UNIT: Details are provided in the MEA report of TPSODL for FY 2021-22.

ANNEXURE (XIII): LIST OF PARAMETERS ARRIVED THROUGH CALCULATION OR FORMULAE WITH LIST OF DOCUMENTS AS SOURCE OF DATA: Details are provided in the MEA report of TPSODL for FY 2021-22.

Reply from TPSODL to the observations and critical comments Power Tech Consultants in reference to the Energy Audit submission for FY21-22.

The observations and critical comments with regards of the energy data as furnished in the Pro-forma by TPSODL is furnished as under.

Comment by Power Tech Consultants:

The Cell C-28 of "Infrastructure Details" sheet of the Pro-forma may be read and considered as Energy Purchase Particular. TPSODL may request BEE/SDA for necessary changes in the Pro-forma.

TPSODL: Noted

Comment by Power Tech Consultants:

There is no separate segregation of input energy and sale to consumers at 33kV and 11kV levels as per the prevailing practice of TPSODL. However in the "Infrastructure Details" sheet of the Pro-forma [Ref Row 4(ii) and 4(iii)], there is a requirement to fill the data of 11kV and 33kV voltage wise energy input and energy sale. TPSODL has clubbed both the 33kV and 11kV energy input and energy sale and provided the data in 11kV row. It is Annual Energy Audit Report 2021-22 of TPSODL Page 11 recommended that in future TPSODL is required to segregate the 11kV and 33kV Input Energy and Energy Sale.

TPSODL: Noted

Comment by Power Tech Consultants:

In Energy Accounting Summary of “Infrastructure Details” sheet of the Pro-forma [Ref Row 5(ii) and 5(iii)], TPSODL has reported HT Input by reverse calculating the difference of total sale and HT sale and assuming 8% loss in the HT System, which is not the correct approach. Since majority of the 33kV Feeders are metered at GSS end and all the 33kV consumers are supplied with meters and majority of the outgoing 11kV Feeders in the PSS are being metered, therefore TPSODL is in a position to capture the Total Input Energy and Energy Sale at 33KV System. In view of the same it is recommended TPSODL should take a corrective approach to capture 33kV and 11kV Input Energy and Energy Sale as per the meter data and should not consider the normative approach of 8% distribution loss in HT Systems.

TPSODL: Noted**Comment by Power Tech Consultants:**

In the Cell R-23-24 of “Form Input Energy” sheet of the Pro-forma the length of AB cable and length of underground cable may be considered as length of LT-AB cable and length of LT underground cable.

TPSODL: Noted**Comment by Power Tech Consultants:**

In cell no P-28 of “Form input energy” sheet of the pro-forma the (period from-- to --) may be considered as 1st April 2021-31st Mar 2022. TPSODL may request BEE/SDA for necessary changes in the Pro-forma.

TPSODL: Noted**Comment by Power Tech Consultants:**

In the cell D-29 of “Form Input Energy” sheet of the pro-forma, the voltage level unit should be in kV, instead of kVA. Again in Cell E-29 & F-29 “Form Input Energy” sheet of the Annual Energy Audit Report 2021-22 of TPSODL Page 12 pro-forma the unit of division & subdivision (KVA) may be edited. TPSODL may request BEE/SDA for necessary changes in the Pro-forma.

TPSODL: Noted

The observations and critical comments with regards of the Field Visit of the Audit team to various TPSODL Primary Grid Substations (PSS):

Comment by Power Tech Consultants:

It is observed that in most of the Grid Substations the Silica gel breather of the Transformer are in bad condition. It is recommended that TPSODL should maintain the GSS for better safety and to avoid the unwanted loss and damage.

TPSODL: Noted**Comment by Power Tech Consultants:**

It is also observed that in most of the Grid Substation there is no or very less Metal spreading which is a safety issue. It is recommended that TPSODL should do the metal spreading in the required Substations.

TPSODL: Noted

Comment by Power Tech Consultants:

It is recommended that DTR metering should be done across TPSODL, made functional and meter reading should be taken on monthly basis for better load management and analysis.

TPSODL: TPSODL is already in planned to installed Smart Meter Integrated with AMI in all DTRs above 25KVA i.e., 16000 Nos by Dec 2023, TPSODL also has issued PO to various reputed vendors to implement the same and rest 534 Nos Meters by Dec 2024.

Comment by Power Tech Consultants:

It is observed that TPSODL have not conducted Audit of any 33kV, 11kV Feeders & DTs. It is recommended that TPSODL should conduct the audit of the same to comply with BEE Guidelines.

TPSODL: Consumer mapping with the help of GIS is under process. Feeders and DTs auditing will be conducted soon after.

Comment by Power Tech Consultants:

It is recommended that TPSODL should pray before the Hon'ble Commission for tariff rationalisation measures to be adopted for HT / EHT Consumers so that HT / EHT Industries will be incentivised to procure power from DISCOM without depending much on Open Access. TPSODL may be required to incentivise the Industrial Consumption by taking up better tariff rationalisation measures in future tariff hearing process, as increase in HT / EHT consumption will help in reducing the T&D loss and AT & C loss. Annual Energy Audit Report 2021-22 of TPSODL

TPSODL: Noted

Comment by Power Tech Consultants:

It is found that the % of defective meters are more in consumer category like Kutri Jyoti, Agro, Allied Agro, Agricultural, Street Lighting and Specified Public purpose. It is recommended to give special emphasize on Kutri Jyoti, Agro, Allied Agro, Agricultural, Street Lighting and specified public purpose category consumer for replacement of defective meters with correct one. In the next tariff hearing process TPSODL may propose to the Hon'ble Commission DBT based subsidy for these consumers in which the subsidy linked with the above category consumer can be transferred through Direct Benefit Transfer (DBT) Scheme based on the correct meter reading. In case meter is tampered and found to be defective, then the transfer of subsidy may be stopped till the meter is replaced with correct meter.

TPSODL: TPSODL has taken the activity for replacement of defective meters in the priority basis and more than 3 lacs meters has been replaced since inception.

Comment by Power Tech Consultants:

It is found that the state and central government are implementing a no. of electrification project in which meters are becoming defective and stopped working after few months of installations. Currently very few meters manufacturers have been approved by TPSODL. It is recommended that TPSODL should empanel a nos. of quality meter manufacturers from where the contractor should procure meters and install in Government sponsored project and the meter manufacturer should issue guarantee certificate of each meter for a period of 5 years in favour of the local DISCOM where the project is being implemented so that in case of any defective meter is found by the DISCOM, then same can be replaced by the meter manufacturers directly. TPSODL should inform both State and Central Government implementing agency

regarding % increase in defective meters happening in their sponsored scheme so that they can take appropriate remedial measures.

TPSODL: TPSODL through strict tendering process and uppermost quality & technical evaluation already selected various meter supply and installation vendor/contractor.

Comment by Power Tech Consultants:

It is recommended that TPSODL should initiate dialogue with Urban Local Bodies and the Agricultural Department regarding higher % defective meters found in street lights and agricultural sectors. It is recommended that the TPSODL should involve Government Machinery and political people for awareness creation and to reduce meter tampering and theft of electricity. TPSODL should initiate dialogue with the Agricultural Department regarding higher % of agricultural connections having no meters and take early action for providing connections with meters.

TPSODL: TPSODL has taken the activity for replacement of defective meters and enforcement activity in the priority basis.

Comment by Power Tech Consultants:

It is proposed that TPSODL should promote Energy Efficient Lighting System (LED Bulbs, Tube lights and Energy Efficient Fans) in association with BEE / EESL / Private ESCO in its utility area. The availability of LED Bulbs, Tube Lights, BLDC Fans, IE3 Meters which are supposed to be distributed to consumers through BEE / EESL / Private ESCO as part of the Utility based Demand Side Management Program are not available in plenty. TPSODL may discuss with BEE / EESL / Private ESCO to open more outlets and increase the LED Lights, Super Efficient AC and Fans Distribution.

TPSODL: We already sign MOU with EESL for Implementation of Energy Efficient Appliances for our DISCOM consumer to meet the Demand Side Management plan. We also started awareness campaign for the same.

Comment by Power Tech Consultants:

Promoting the use of renewable energy (Solar) through facilitation: Hon'ble Commission has notified Net Metering Scheme for Solar Roof Top Project in the consumer premises. TPSODL should popularize the scheme for LT consumers and provide prompt support and cooperation to the consumer for net metering agreement and solar project interconnection with DISCOM systems. Once Solar Interconnection happens at the LT systems, this will improve the voltage profile and reduce LT loss. Also the RPO of GRIDCO / DISCOM can be compiled which may reduce the BSP in future and will lead to financial savings for DISCOM.

TPSODL: With support from MNRE, we have taken the target to install 5MW Grid connected solar rooftop power plant for our DISCOM. We also started awareness campaign for the same.

Comment by Power Tech Consultants:

At present Hon'ble OERC has implemented kVAh billing for the HT/ EHT/ Commercial / MSME and Industrial consumers. In view of the kVAh billing, the consumer which are having low power factor are paying higher energy bills, still the awareness about kVAh billing is not there and consumers are operating with low Power Factors. TPSODL may carry out special drives for awareness and sensitisation about kVAh billing. This may lead to more numbers of APFC installation and improvement in Power Factor and will lower the burden on the existing infrastructure. TPSODL may sign MoU with ESCO / AFPC installer under

the Utility based Demand Side Management program so that APFC installer will assess the data base of Consumers with low power factor, take necessary action for installation of APFC Panels in consultation with Consumers directly. Annual Energy Audit Report 2021-22 of TPSODL

TPSODL: Noted**Comment by Power Tech Consultants:**

Exploring opportunities in industrial segments (using efficient motors, pumps, compressors, capacitor bank, etc). TPSODL can coordinate and inform BEE / EESL / Private ESCO to provide the Industrial LED lighting Solution, IE3 Motors in RESCO / PMC level as per the provision of DSM Regulations. This will facilitate Demand Side Management in a long way. 8. TPSODL should conduct more nos. of Consumer awareness programs on saving electricity, electricity wastage, power theft, using electricity during off peak hour, using star rated equipment.

TPSODL: We already sign MOU with EESL for Implementation of Energy Efficient Appliances for our DISCOM consumer to meet the Demand Side Management plan. We also started awareness campaign for the same.

Comment by Power Tech Consultants:

TPSODL should conduct more nos. of Consumer awareness programs on saving electricity, electricity wastage, power theft, using electricity during off peak hour, using star rated equipment.

TPSODL: TPSODL is already engage with consumers in different social media platform and physical to create various awareness programs.

TPSODL PERFORMANCE REVIEW

**FOR THE FY 2021-22
(APRIL 2021- MARCH 2022)**

BY

O. E. R. C

DATE:18.06.2022

BEFORE THE ODISHA ELECTRICITY REGULATORY COMMISSION
BIDYUT NIYAMAK BHAWAN, PLOT NO-4, CHUNOKOLI,
SAILASHREE VIHAR, CHANDRASEKHARPUR, BBSR-23

IN THE MATTER OF:

REVIEW OF PERFORMANCE OF SOUTHCO UTILITY
FOR THE FINANCIAL YEAR 2021-22
(APRIL 2021 TO MAR 2022)

A N D

IN THE MATTER OF:

TPSODL, COURTPETA, BERHAMPUR

... Applicant

**Affidavit furnishing information for the Review of Performance of
SOUTHCO UTILITY for the FY 2021-22
(April 2021 to Mar 2022)**

I, Sri Arvind Singh aged about 61 years, S/O. Virendra Bhhadur Singh
residing at Court Peta, Berhampur, do here by solemnly affirm and sincerely
state as follows:

1. That, I am working as Chief Executive Officer of TPSODL, Courtpeta,
Berhampur, Dist. Ganjam-760004, the Applicant in the above matter
and duly authorized by the said applicant to make this affidavit on its
behalf.
2. That, the statements made in this booklet for Review of Performance of
SOUTHCO Utility as stated above containing Page-1 to Page-17 has
been prepared as per the prescribed Formats. The facts and figures
given in the booklet are true to the best of my knowledge basing upon
information available on record and I believe them to be true.



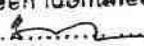
P.C. PATNAIK
NOTARY
BERHAMPUR (GM.)
No. A. 2281
Time. 5-15. AM/PM.
Date 13-6-2022

Identified by:


Advocate.



Chief Executive Officer
Deponent

The Declarant having been identified by
Sri R. M. B. Adv. 
So I have affirmed before me on this
the 13/6/2022 Day of June 2022
S-18 AM/PM. Contents having been
read over & explained to the Declarant who
seemed to have perfectly understood the
contents the there of moving the affidavit

13-6-2022
NOTARY 13/6/2022

PERFORMANCE OF TFSODL													
Items	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-21-Mar-22
BULK SUPPLY													
Demand (MVA)	619	594	603	613	609	626	637	595	593	604	613	650	650
ENERGY INPUT (MU)													
	347	343	329	341	352	333	368	301	289	295	287	367	3942
BST bill of GRIDCO (Cr.)													
	80	81	77	80	83	78	84	71	68	69	68	86	925
BST bill (PRU)													
	231	235	235	235	235	235	235	235	235	235	235	235	235
Performance of TFSODL (Contd.)													
Items	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-20-Mar-22
SALE TO CONSUMERS (MU)													
EHT	44	40	34	35	36	43	53	46	47	52	46	55	531
HT	17	16	17	23	25	23	26	23	23	25	26	30	274
LT	198	200	195	207	209	204	211	133	145	142	155	194	2193
Total Sale (MU)	259	255	247	264	270	270	291	202	216	219	226	279	2998

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Items	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr 21-Mar 22
F & O LOSS (%), ASSUMING HT LOSS 6%													
LT	24	24	23	20	21	16	17	37	27	28	21	25	23
HT & LT	29	29	28	25	26	22	22	39	30	31	25	28	28
OVERALL (%)	25	26	25	23	23	19	19	33	25	26	21	24	24
BILLING EFFICIENCY (%)													
LT	76	78	77	80	79	84	83	63	73	72	79	75	77
HT & LT	71	71	72	75	74	78	78	61	70	69	75	72	72
OVERALL (%)	75	74	75	77	77	81	81	67	75	74	79	76	76
BILLING TO CONSUMERS (Rs. Cr.)													
EHT	29	24	24	24	25	29	35	31	32	35	31	36	358
HT	13	12	12	16	18	17	18	16	17	18	18	20	195
LT	81	97	92	100	103	99	97	69	76	73	78	98	1062
TOTAL	123	133	128	139	146	145	160	117	125	125	128	154	1613
Billing to Govt. Dept. & PSU (Rs. h Crores)	9	9	8	8	8	8	9	8	8	9	8	11	103
Performance of TPSODL (Contd.)													
Items	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr 21 - Mar 22
COLLECTION RECEIVED (Rs Cr.)													
EHT	28	29	24	24	24	25	29	35	31	32	35	31	348
HT	10	11	13	12	15	18	18	20	19	19	20	26	201
LT	49	28	86	66	55	71	69	68	80	62	71	164	888
Total	87	68	123	102	94	115	116	122	130	113	126	241	1438
Collection from Govt. & PSU included above	3	4	4	4	4	6	5	6	5	6	8	10	65

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Items	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr 21-Mar 22
COLLECTION EFFICIENCY (%)													
EHT	98	120	100	102	93	88	83	111	97	93	110	87	98
HT	79	94	106	77	85	109	99	120	114	104	110	128	103
LT	60	29	93	66	54	72	71	98	105	85	92	188	84
HT & LT	71	51	96	73	64	79	77	105	104	90	99	157	87
OVERALL (%)	71	51	96	73	64	79	77	105	104	90	99	157	89
Collection efficiency (%) (excluding Govt & PSU dues)	74	51	99	76	65	80	79	107	107	92	99	162	91
AT & C LOSS (%)													
LT	54	78	28	48	58	40	41	38	24	39	28	-41	36
HT & LT	55	75	32	50	57	39	41	38	26	39	29	-27	37
OVERALL (%)	47	62	28	43	51	36	37	30	22	33	22	-19	32
Realisation (Rs)													
LT	1.88	1.06	3.37	2.63	2.08	2.99	2.72	3.19	4.01	3.14	3.64	7.12	3.10
HT & LT	1.96	1.28	3.36	2.54	2.22	3.08	2.86	3.42	4.10	3.32	3.79	6.72	3.19
OVERALL	2.52	1.98	3.73	2.89	2.67	3.45	3.26	4.05	4.51	3.83	4.39	6.57	3.65

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Performance of SOUTHCO (Contd..)

STATUS OF ARREAR 2021-2022 (April' 21 to March'22)

CATEGORY	Arrears as on 1.04.1999	Arrears as on 1.04.2021	Billing for the period 21 - Mar 22	Collection Against			Adjustments	Arrear for the period 21 - Mar 22		(Rs. In Crores)
				Current dues Apr 21 - Mar 22 against '4'	Arrear during Apr 21 - Mar 22 against '3'	Total Collection		Arrear for the period 21 - Mar 22	Arrears as on 31.03.2022	
1	2	3	4	5	6	7=5+6		8=4-5	10=3+4-7	
(i) EHT	4		356	348		348		7	7	
(ii) HT	57	32	180	180	6	186		0	26	
(iii) LT	110	1330	974	760	78	838		214	1466	
TOTAL	171	1362	1510	1289	84	1373	4	221	1499	
(i) Govt & PSU-LT	18	35	88	47	3	50	13	38	60	
(ii) Govt & PSU-HT		-1	15	16		15			-1	
Total Govt & PSU	18	34	103	63	3	65	13	38	59	
GRAND TOTAL	189	1396	1613	1352	87	1438	17	259	1558	

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TPSODL

Details of Govt. Outstanding

(Rs. in Crores)

Name of the Deptt.	Outstanding as on 01.04.2021	Amount collected during Apr-21 to Mar-22	Outstanding during Apr'21 to Mar'22	Outstanding as on 31.03.2022
a) Govt. Deptts.				
(i) Health & Family Welfare	-5.11	2.10	6.95	1.84
(ii) School & Mass Edu.	-0.66	2.17	6.02	5.36
(iii) Higher Edu.	-0.02	1.26	0.46	0.44
(iv) Home Department including Police s	0.62	1.17	3.91	4.53
(v) ST & SC Dev. Department	-0.05	1.01	0.93	0.88
(vi) Water Resource Deptt.	0.62	1.22	0.14	0.76
(vii) RWSS	3.32	1.58	13.15	16.47
(viii) Other Govt. Deptt.	0.41	1.38	3.29	3.71
b) Urban Local Bodies	21.26	4.49	-13.63	7.63
c) (i) Lift Irrigation	6.22	0.08	-0.53	5.69
(ii) Panipanchayat		0.84		
(iii) Urban Water Supply	-5.88	5.22	8.57	2.69
d) Govt. PSUs	0.27	0.83	-0.04	0.22
e) Pachayat Raj Institution				
(i) Gram Panchayats	13.70	1.64	16.93	30.63
(ii) Panchayat Samiti (including Block)				
(iii) Zilla Parishad				
Total	34.70	25.00	46.15	80.85

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Departments			
As on 01.04.2021	As on 31.03.2022	Arrear Added	Rs. in Crore
1. Housing & Urban Development			
(i) P.H.D. Dept.	2.40	8.52	
(ii) Others	0.24	0.05	
Total	-5.88	2.69	8.57
2. Rural Development			
(i) R.V.S.S	3.32	16.47	13.15
(ii) Others			
Total	3.32	16.47	13.15
3. Irrigation			
Water resources/Irrigation Dept.	0.62	0.76	0.14
(i) Lift Irrigation			
(ii) Part Panchayat			
(iii) Others			
Total	0.62	0.76	0.14
4. Home Department			
(i) Judiciary			
(ii) Police	0.62	4.51	3.89
(iii) Jail			
(iv) Others	0.02	0.02	0.02
Total	0.62	4.53	3.91
5. Law Department			
(i) Judiciary	0.04	0.63	0.59
(ii) Police			
(iii) Jail			
(iv) Others			
Total	0.04	0.63	0.59
6. Panchayat raj Deptt			
Panchayat Raj Dept.	13.65	30.58	16.93
(i) Zila Parishad			
(ii) Panchayat samiti			
(iii) Grampanchayat			
(iv) Other Establishment	0.05	30.63	16.93
Total	13.70	30.63	16.93
7. School & Mass Education			
School Education Dept.	-0.86	3.40	4.26
Mass Education Dept.	0.20	1.96	1.76
Total	-0.66	5.36	6.02
8. Higher Education			
Higher Education Dept.	-0.02	0.44	0.46
Total	-0.02	0.44	0.46
9. Industries			
Industries Dept.	-0.02		0.02
(i) Technical Education			
(ii) Other Establishment			
Total	-0.02	0.44	0.46
10. Revenue			
Revenue Excise Dept.	0.00	0.64	0.00
Revenue, Commerce Dept.	0.64	0.64	0.00
Revenue, Land Revenue Dept.	0.06	0.78	0.72
Total	0.70	1.42	0.72
11 Works			
Public works Department	-0.05	0.27	0.32
Total	-0.05	0.27	0.32
12 Fisheries & Animal Resources			
(i) Fisheries Dept.	-0.13	0.20	0.13
(ii) Veterinary	-0.06		0.26
(iii) Others			
Total	-0.19	0.20	0.39

Departments	As on 01.04.2021	As on 31.03.2022	Rs. in Crore
13.Foresty			
Forest Dept.	-0.12	0.41	0.53
Total	-0.12	0.41	0.53
14.Health & Family Welfare	-5.11	1.84	6.95
Total	-5.11	1.84	6.95
15. Other Departments			
Agriculture Dept.	-0.01	0.21	0.22
Agriculture/Food Conservation Dept	-0.05	0.00	0.05
Child & Women's welfare/C	0.07	0.07	0.00
Civil supply Dept.	0.00	0.00	0.00
Commerce Transport Dept.	-0.02		0.02
Energy Dept.	0.04	0.25	0.21
Finance Dept.	-0.05	0.00	0.05
Handloom and Textile Dept.	0.00	0.00	0.00
Int and Public Relation Dept.	0.02	0.03	0.01
Labour and Employment Dept.	-0.01		0.01
Mining Dept.	0.00		0.00
Planning and Public Ent. Dept.	-0.03	0.05	0.03
Sports and Culture Dept.	0.03		0.02
Cooperative Department	0.00	0.00	0.00
Tourism Dept.	0.00		0.00
Tbcal and Rural welfare Dept.	-0.05	0.85	0.83
AGRO INDUSTRIES Dept.	0.07	0.17	0.10
Total	-0.01	1.86	1.66
16.Urban Local Bodies			
Total State Government	6.95	67.31	60.36
(i)Municipal Corporations	21.26	7.63	-13.63
(ii)Municipality			
(iii)NAC			
Total	21.26	7.63	-13.63
17.Co-Operatives			
(i)Spinning Mills			
(ii)Other Establishment			
Cooperative Socity	0.00		0.00
Handloom Socety	0.00	0.00	0.00
Total	0.00	0.00	0.00
18.PSU			
(i)OSFC	0.00	0.00	0.00
(ii)OFC/OHSA Forest Development Corp	0.01	0.02	0.01
(iii)GRD Corporation of onssa	0.11	0.15	0.04
(iv) Others			
Civil Supply Corporation	0.03	0.03	0.00
Milk Cooperation			
AGRO	0.02	0.02	0.00
Housing & Urban Development Corp			
OLIC/OHSA Lift Irrigation Corp	6.22	5.69	-0.53
OSRTC/OHSA State Road Transport	0.01		-0.01
Rural Development Corporation	-0.05		0.05
OSFHC/OHSA State Handloom Corp.			
OSIC/OHSA Small Industries Corp.	0.00	0.00	0.00
OHSA State Police Housing Corp.	0.10		-0.10
OHSA Hydro Power Corporation	0.03		-0.03
Total	6.49	5.91	-0.57
19.Others			
Total Outstanding Arrear	34.70	80.85	46.16

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METER REPLACEMENT FOR THE FY 2021-22(April to March)

METER REPLACEMENT FOR THE 12 MONTH PERIOD												
DESCRIPTION	TARGET	OPENING BALANCE	METER RECEIVED DURING THE PERIOD				TOTAL METERS AVAILABLE	STATUS OF INSTALLATION DURING THE PERIOD				CLOSING BALANCE
			NEW	REPAIR	TOTAL	NEW METER INSTALLED		REPLACEMENT	ENERGY AUDIT METER	TOTAL		
1	2	3	4	5	6	7	8	9	10	11	12	13
Single Ph.	DISTCO.	3,00,000	31,637	3,47,065		3,47,065	3,78,702	76,300	2,72,565	-	3,48,865	29,837
	PARTY	-	-	-		-	-	-	-	-	-	-
3 Ph.-LT		20,000	60	4,528		4,528	4,588	4,028	-	-	4,028	560
3 Ph.-HT												
TOTAL		3,20,000	31,697	3,51,593	-	3,51,593	3,83,290	80,328	2,72,565	-	3,52,893	30,397

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CONSUMER MIX DATA - TPSODL AS ON 31.03.2022

Sl No	Name of the Division	Category in terms of Area			Category in terms of Use of power(MU)								No of Villages	No of Villages Electrified
		Urban	Rural	Total	Kutir Jyoti	Agricultural	Domestic	Commercial	Industrial	Others	Total			
1	BERHAMPUR- I	52227	36533	88760	0.03	5.90	127.03	51.03	7.15	61.92	253.073			
2	BERHAMPUR- II	64261	97	64358	0.00	0.03	102.52	29.25	4.31	4.35	140.448			
3	BERHAMPUR- III	1662	76155	77817	0.11	9.46	67.05	12.18	17.14	4.37	110.304			
4	CHATRAPUR	47323	106308	153631	0.50	10.17	83.51	20.02	287.75	47.66	449.605			
5	PURUSOTTAMPUR	49390	94669	144059	0.29	6.61	79.06	10.47	5.27	12.61	114.313	2860	2860	
6	HINJILICUT	49500	79550	129050	0.12	3.01	62.82	8.61	8.66	4.62	87.827			
7	ASKA- I	6344	59234	65578	0.15	3.99	41.17	6.91	3.39	7.12	62.732			
8	ASKA- II	7990	61231	69221	0.17	1.31	42.52	5.66	4.14	3.97	57.770			
9	DIGAPAHANDI	42110	62160	104270	0.31	4.83	69.81	9.69	12.94	4.81	102.393			
10	BHANUANAGAR	32434	106567	139001	1.20	3.41	86.36	13.04	5.41	5.52	114.959			
11	PHULBANI	43659	126189	169848	10.47	3.48	79.66	16.47	1.58	6.62	118.274	2417	2417	
12	BOUDH	35336	99738	135074	6.10	10.55	59.71	11.40	10.15	5.70	103.630	1117	1117	
13	JEYPORE	33781	111194	144975	7.57	24.44	88.87	23.02	15.83	60.84	220.574	1941	1941	
14	KORAPUT	19604	100044	119648	8.13	12.32	65.64	19.30	64.95	72.84	243.191			
15	NOWRANGPUR	34384	236800	271184	10.91	24.80	140.39	19.29	13.58	17.64	226.600	868	868	
16	IMALAKANGIRI	33517	136726	170243	4.57	3.88	85.07	16.37	20.27	8.12	138.273	995	995	
17	RAYAGADA	27057	122194	149251	6.99	5.24	104.74	23.24	17.70	100.96	258.855	2468	2468	
18	GUNUPUR	13011	51638	64649	2.03	9.50	47.46	8.21	3.88	6.43	77.515			
19	PARALAKHEMUNDI	35336	90159	125495	3.63	5.50	76.45	15.24	7.03	10.20	118.043	1499	1499	
	SOUTHCO TOTAL	628926	1757186	2386112	63.29	148.44	1509.83	319.42	511.13	446.27	2998.38	14165	14165	

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**PERFORMANCE OF TPSODL- SYSTEM
IMPROVEMENT**

Man Power	As on 31st March 2022
No. of Circles	6
No. of Divisions	19
No. of Subdivisions	51
No. of Sections	136
No of Special Police Stations	10
No of Courts	1
No. of consumers	
EHT	18
HT	548
LT	2385546
Total	2386112
Network System	
Length of 33 KV Line (km.)	3847
Length of 11 KV Line (km.)	42786
Length of LT KV Line (km.)	39270
Length of LT AB Cable (km.)	30229
Length of conductor stolen (km.)	
Cost involved (Cr.)	
No. of 33 KV Group & Feeder Breakers Required	339
No. of 33 KV Group & Feeder Breakers Installed	178
No. of 11 KV Group & Feeder Breakers Required	1058
No. of 11 KV Group & Feeder Breakers Installed	824
FEEDER METERING	
No. of 33 KV feeders (Including GRIDCO interface)	116
No. of 33 KV feeder metering	95
No. of 11 KV feeders	881
No. of 11 KV feeder metering	664
No. of 33 / 11 kv POWER Transformers	524
No. of 33/11 kv transformer metering position	
No. of Distribution Transformers (11/0.4 & 33/ 0.4 kv)	55959
No. of distribution transformer metering position	900
Energy Audit Carried Out-33 KV	69
Energy Audit Carried Out-11 KV	274
Energy Audit Carried out- No of DTRs covered	0
Consumer Metering Position	
Total number of meters	2283832
No. of working meters	2115625
Percentage of working meters (%)	93%
New meters installed (3 ph)	4028
New meters installed (1 ph)	76300
No of 3 Phase Consumers	56759
No of Consumers with TOD benefit	1596
No of Consumers above 10 KW load	14378
No of Consumer AMR metering	14692
Total No of consumers	2386112
No. of consumers added	80328
No of meters purchased (1-Ph)	352893
Cost involved in purchase of meters (Rs. In Cr.)	0

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No of meters used for installation for new consumer and replacements for old consumers	352893
Cost of meter rent Collected (Rs. In Cr.)	7.98
Anti Theft Measures during review period	
No of cases Finalised under Section 126 & 135	30064
Amount Finalised (lakhs)	1953.48
Amount Assessed during filing of case (Rs. In Lakhs)	5958.36
No of new connections given	0
No of Connection Regularised	0
Amount Collected (Lakhs.)	1116.59
NO. of FIR Lodged	4
No. of illegal consumers prosecuted/Initiated in Court	0
Number of disconnection made	24648
Revenue realised (Rs. Cr.)	20.17
Franchisee Activity	
No of Micro-Franchisees	506
No of Consumers Covered	565000
No of Macro-Franchisees	
No of Consumers Covered	
No of Input Based-Franchisees	
No of Consumers Covered	
Total no of consumers covered under Franchisee	565000
QUALITY OF SUPPLY	
Failure of Power Transformers	13
No. of transformers burnt	1514
Cost involved (Cr.)	6.9
No of Interruptions in 33 KV Feeders	6419
No of Interruptions in 11 KV Feeders	87889
No. of Grievances received through CHP during FY	3341
Disposed through CHP including Bijuli Adalat during FY	3070
No. of GRF Orders received	1245
No. of GRF Orders Complied	1160
SYSTEM IMPROVEMENT WORKS DURING REVIEW	
Installation of New Transformers (Nos.)	1508
Upgradation of Transformers (Nos.)	164
Length of AB Cable Laid(Km.)	2526.3
Conversion of Single Phase to Three Phase Lines(Km.)	0
Amount estimated under Deposit Work (Govt)-(Rs. in Lakhs)	2106
Amount finalised for 6% calculations-(Rs. in Lakhs)	126.36
Amount estimated under Deposit Work (Pvt)- (Rs. in Lakhs)	836
Amount finalised for 6% calculations- (Rs. in Lakhs)	50.16

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LT PERFORMANCE OF TPSODL

CATEGORY	No of Consumers As on March'20	Consumption (MU)	2020 - 21 (Apr'20 - Mar'21)		Collection Efficiency	No of Consumers As on March'21	Consumption (MU)	2021 - 22 (Apr'21 - Mar'22)		Collection Efficiency
			Amount Billed (Rs in Cr.)	Amount Collected (Rs in Cr.)				Amount Billed (Rs in Cr.)	Amount Collected (Rs in Cr.)	
Domestic	1930906	1497.208	569.34	519.55	91%	2107298	1529.641	651.32	585.05	90%
Kutir Jyoti	269612	127.802	33.84	13.87	41%	127573	61.240	17.89	9.78	55%
General Purpose (Com)	87167	243.190	165.38	140.57	85%	93025	282.894	212.48	156.06	73%
Irrigation	25767	84.240	13.91	7.26	52%	28391	113.359	17.34	8.72	50%
Allied Agriculture	894	12.71	2.21	2.21	100%	1080	14.413	2.81	2.69	96%
Allied Agro Industries	69	0.785	0.38	0.38	100%	78	1.398	0.72	0.73	101%
Public Lighting	4796	34.822	20.21	16.17	80%	5187	30.784	22.14	16.22	73%
LT Industrial (Small)	2506	11.011	7.26	7.04	97%	2511	14.925	9.27	8.24	89%
LT Industrial (Medium)	1807	59.379	45.74	38.88	85%	1868	41.052	61.15	51.08	84%
Specific Public Purpose (PI)	12112	30.124	20.35	18.93	93%	13696	34.675	25.07	18.92	75%
PWW	4576	47.170	29.03	23.51	81%	4833	68.699	41.96	30.53	73%
TOTAL L.T.	2340212	2148	907.65	788.38	87%	2385540	2193	1062.15	888.03	84%
Energy Input in LT (MU)	2725.909									
Energy sold in LT (MU)	2148.443									
Distribution loss(%)	21									
AT & C LOSS (%)	32									
Realisation per LT Unit (Rs.)	2.89									
				2863.389						
				2193.081						
				23						
				36						
				3.10						

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L.T. PERFORMANCE OF TSSROD FOR THE FY 2021-22 (APRIL 21 TO MARCH 22)														
Basis of Data: Supply Bill (incl. Transmission & ALDO PU)			Rate of Loss: Supply Bill (incl. Transmission & ALDO PU)		Checkers are assigned in descending order of AT & C Losses. LT upto March-22		Consistency of System Loss (Basis)		Overall Efficiency (%)		AT & C Losses (%)		Overall Efficiency (%)	
Sl. No.	Name of Division	Period	No. of Consumers	Energy Input (kWh)	Energy Sold (kWh)	Losses (%)	Collection Received (Rupees)	Collection Efficiency (%)	AT & C Losses (%)	Overall Efficiency (%)	Overall Efficiency (%)	Overall Efficiency (%)	Overall Efficiency (%)	Overall Efficiency (%)
				LT	TOTAL	HT & LT	HT	LT	TOTAL	LT	TOTAL	LT	TOTAL	LT
OBJECT TARIFF APPROVED FOR 2021-22														
ACTUAL														
1	AED-1, ASKA	2020 - 21 (APR-MAR)	65608	139	156	4	231	96%	60%	1.62	1.65	1.62	1.65	1.62
		2021 - 22 (APR-MAR)	65578	135	154	6	365	90%	62%	1.63	1.82	1.63	1.82	1.63
2	AED-2, ASKA	2020 - 21 (APR-MAR)	67340	118	130	1	126	84%	64%	1.69	1.75	1.69	1.75	1.69
		2021 - 22 (APR-MAR)	69221	116	128	1	139	82%	61%	1.85	1.92	1.85	1.92	1.85
3	NED, NABARANGPUR	2020 - 21 (APR-MAR)	262517	246	275	6	555	94%	54%	1.91	1.90	1.91	1.90	1.91
		2021 - 22 (APR-MAR)	271184	291	327	9	657	95%	57%	1.88	1.90	1.88	1.90	1.88
4	KED, KORAPUT	2020 - 21 (APR-MAR)	147399	149	284	32	2649	76%	93%	4.04	2.20	4.04	2.20	4.04
		2021 - 22 (APR-MAR)	119648	162	307	34	2377	71%	88%	4.11	2.30	4.11	2.30	4.11
5	GNEO, CHATRAPUR	2020 - 21 (APR-MAR)	111171	216	472	16	1241	75%	79%	3.92	2.10	3.92	2.10	3.92
		2021 - 22 (APR-MAR)	153631	205	561	76	5590	90%	97%	4.68	2.52	4.68	2.52	4.68
6	BOED, BOUDH	2020 - 21 (APR-MAR)	112861	103	124	11	709	83%	65%	2.19	1.95	2.19	1.95	2.19
		2021 - 22 (APR-MAR)	135074	146	140	12	839	83%	72%	2.58	2.38	2.58	2.38	2.58
7	MED, MALKANGIRI	2020 - 21 (APR-MAR)	143954	151	177	12	767	79%	61%	2.26	2.16	2.26	2.16	2.26
		2021 - 22 (APR-MAR)	170243	147	181	20	1176	83%	71%	2.79	2.64	2.79	2.64	2.79
8	PED, PHULBANI	2020 - 21 (APR-MAR)	173325	146	161	2	127	76%	82%	2.34	2.49	2.34	2.49	2.34
		2021 - 22 (APR-MAR)	169848	150	165	2	140	69%	79%	2.80	2.99	2.80	2.99	2.80
9	JED, JEYPORE	2020 - 21 (APR-MAR)	162211	167	235	14	1030	78%	68%	3.90	3.10	3.90	3.10	3.90
		2021 - 22 (APR-MAR)	144975	202	282	16	1253	85%	39%	3.66	2.86	3.66	2.86	3.66
10	PSED, PURUSOTTAMPUR	2020 - 21 (APR-MAR)	121614	157	174	3	137	79%	86%	2.20	2.35	2.20	2.35	2.20
		2021 - 22 (APR-MAR)	144059	165	182	3	151	78%	82%	2.56	2.77	2.56	2.77	2.56
11	BNEO, BHANJANAGAR	2020 - 21 (APR-MAR)	142864	171	188	2	199	80%	99%	2.57	2.71	2.57	2.71	2.57
		2021 - 22 (APR-MAR)	139001	161	178	3	257	70%	99%	3.11	3.26	3.11	3.26	3.11
12	HED, HUNKULCUT	2020 - 21 (APR-MAR)	83830	123	138	4	340	72%	95%	2.77	2.82	2.77	2.82	2.77
		2021 - 22 (APR-MAR)	129050	115	128	4	396	73%	95%	3.25	3.05	3.25	3.05	3.25

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Sl. No.	Name of Division	Period	No. of Consumer	Energy Input(kWh)		Energy Sold (kWh)					Loss (%) (Assuming HT Loss 6%)			Billing Efficiency (%)			Collection Received (Lakhs)			Collection Efficiency (%)		AT & C Loss (%)		Overall Reduction in LT/ltm	LT Billing per lt	
				LT	TOTAL	HT	HT	LT	TOTAL	LT	HT & LT	Overall	LT	HT & LT	Overall	HT	LT	TOTAL	LT	TOTAL	LT	TOTAL				
13	RED RAYAGADA	2020 - 21/APR-MAR	168646	152	236	62	11	152	225	0%	6%	6%	100%	94%	94%	885	6108	11774	93%	96%	7%	9%			4.94	4.02
		2021 - 22/APR-MAR	149251	163	282	91	12	166	258	5%	8%	8%	95%	92%	92%	1037	6183	13847	73%	87%	25%	20%			4.91	3.79
14	GOSED JOKAPAMANDI	2020 - 21/APR-MAR	110310	115	133		7	94	101	18%	24%	24%	82%	76%	76%	585	3676	4160	98%	99%	20%	23%			3.12	3.19
		2021 - 22/APR-MAR	104270	118	139		10	93	102	22%	26%	26%	78%	74%	74%	4163	4748	4748	97%	97%	24%	28%			3.41	3.52
15	PIED PARALAKHEMUNDI	2020 - 21/APR-MAR	139655	118	133		5	107	112	9%	16%	16%	81%	84%	84%	303	4445	4838	97%	97%	12%	19%			3.63	3.77
		2021 - 22/APR-MAR	128485	125	143		6	112	118	11%	17%	17%	89%	83%	83%	562	4808	5309	89%	90%	21%	25%			3.78	3.86
16	GED, GUNUPUR	2020 - 21/APR-MAR	77929	71	79		2	71	74	-1%	7%	7%	101%	93%	93%	165	2787	2852	97%	97%	2%	10%			3.71	3.83
		2021 - 22/APR-MAR	64649	77	86		2	75	78	2%	10%	10%	96%	90%	90%	180	3058	3246	87%	88%	15%	21%			3.76	3.97
17	BED-1, BERNAMPUR	2020 - 21/APR-MAR	62895	144	196		3	137	140	4%	10%	10%	96%	90%	90%	211	8987	7209	109%	106%	-4%	3%			4.61	4.87
		2021 - 22/APR-MAR	64358	158	172		3	137	140	13%	18%	18%	87%	82%	82%	268	7537	7805	101%	101%	12%	17%			4.55	4.76
18	BED- II, BERNAMPUR	2020 - 21/APR-MAR	78059	92	114		16	93	109	-2%	5%	5%	102%	90%	95%	1105	4243	5349	99%	104%	-1%	1%			4.69	4.64
		2021 - 22/APR-MAR	77817	96	121		17	93	110	3%	8%	8%	97%	82%	82%	1503	4622	6125	99%	104%	4%	5%			5.08	4.83
19	BED- I, BERNAMPUR	2020 - 21/APR-MAR	80384	158	233	31	32	165	216	2%	7%	7%	98%	93%	93%	1802	7837	11703	107%	103%	-5%	4%			5.02	4.96
		2021 - 22/APR-MAR	88760	170	265	45	36	172	253	-1%	4%	4%	101%	95%	95%	2852	8722	14257	101%	101%	-2%	4%			5.39	5.13
ACTUAL TOTAL TFSOOL		2020 - 21/APR-MAR	23,40,712	2,736	3,999	438	182	2,148	2769	21%	23%	23%	79%	77%	77%	13,186	78,839	1,19,839	87%	81%	32%	30%			3.33	2.88
		2021 - 22/APR-MAR	23,86,112	2,863	3,942	531	274	2,193	2998	23%	24%	24%	77%	76%	76%	20,117	88,803	1,43,157	84%	89%	36%	32%			3.65	3.10
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**ODISHA ELECTRICITY REGULATORY COMMISSION
BIDYUT NIYAMAK BHAVAN
PLOT NO.4, CHUNOKOLI, SHAILASHREE VIHAR,
BHUBANESWAR - 751021

**Present: Shri G. Mohapatra, Officiating Chairperson
Shri S. K. Ray Mohapatra, Member**

Case No. 13/2022

M/s. TPSODL Petitioner
Vrs.	
DoE, GoO & Others Respondents

In the matter of: **Application for approval of Annual CAPEX Plan for FY 2022-23 in compliance to the Commission's direction in the Vesting Order dt 28.12.2020 (Case no. 83/2020) vide Para 43.**

For Petitioner: Shri Arvind Singh, Chief Executive Officer, TPSODL.

For Respondents: Ms. Sonali Patnaik, ALO, DoE, GoO, Shri Lalit Mishra, DGM (Fin.), GRIDCO, Shri B. K. Das, GM (RT&C), OPTCL and Shri R. P. Mohapatra.

ORDER

Date of Hearing: 10.05.2022

Date of Order: 14.07.2022

The Petitioner, M/s. TP Southern Odisha Distribution Limited (TPSODL), has submitted an application for approval of Capital Expenditure (CAPEX) to the tune of Rs.378.37 Cr. for FY 2022-23 to carry out various system improvement and safety related activities in its area of operation. This application has been filed pursuant to the direction of the Commission at para 43 in the vesting order in Case No.83/2020.

TPSODL's licensed area is spread over a geographical area of 48751 sq. Km. and it serves a registered consumer base of around 23 lakhs. TPSODL procures power from GRIDCO through Odisha Power Transmission Corporation Limited (OPTCL)'s 220/132/33 kV grid substations at sub transmission voltage level of 33 kV and then distributes the power at 33 kV/11 kV/440 V/230 V depending on the demands of the consumers. A snapshot of infrastructure available with TPSODL has been provided in the table as follows:

Sl. No.	Particulars	Unit	Details (as on 31-Mar-22)
1.	Area	Sq. km	48,751
2.	Consumers	No.	24,22,168
3.	Circles	No.	6
4.	Divisions	No.	19
5.	Sub-divisions	No.	53
6.	Sections	No.	135
7.	33/11 kV sub-stations	No.	244
8.	33/11 kV PTR	No.	510
9.	33/11kV PTR capacity	MVA	2,344
10.	11/0.415 kV DTR	No.	55,717
11.	11/0.415 kV DTR Capacity	MVA	2,402
12.	33 kV OH & UG Line	Ckt. km.	3,808
13.	11 kV OH & UG Line	Ckt. km.	42,466
14.	LT Bare & ABC Line	Ckt. km.	39,094

2. TPSODL in compliance with the Vesting Order has to seek the approval of the Capital Expenditure Plan in line with the regulations. The extracts from the Vesting Order are as follows:

“43. Capital investment plan

.....

- (b) *In its Bid submitted in response to the RFP, TPCL committed capital expenditure of Rs. 1,166 Crs (Indian Rupee One thousand one hundred and sixty six Crs) only for period FY 2021-22 to FY 2025-26 as follows:*

Table 1: Capital Expenditure Commitment by TPCL

Capex Commitment (INR Cr)					
FY 2021-22	FY 2022-23	FY 24	FY 25	FY 26	Total
227	316	241	233	150	1,166

- “(c) *To allow flexibility in the capital expenditure planning, the Commission stipulates that, in the capital expenditure plan to be submitted by TPSODL as per the license conditions, the capital expenditure commitment for each year of the period FY 2021-22 to FY 2025-26 must be such that capital expenditure proposed up to a year shall be at least equal to the cumulative capital expenditure committed up to that year in the Bid submitted by TPCL. For avoidance of doubt, the minimum cumulative capital expenditure to be proposed by TPSODL for the period FY 2021-22 to FY 2025-26 must be as provided in the table below:*

Table 2: TPCL Cumulative Capital Expenditure for 5 years

Cumulative Capex Expenditure (INR Cr)				
Upto 31-Mar-2022	Upto 31-Mar-2023	Upto 31-Mar-2024	Upto 31-Mar-2025	Upto 31-Mar-2026
227	543	783	1,016	1,166

3. Further, OERC (Terms and Conditions for Determination of Wheeling Tariff and Retail Supply Tariff) Regulations, 2014 specifies the provisions related to Capital Investment Plan based on which the CAPEX proposal should be submitted by the DISCOMs. The relevant extracts of the regulations are as follows:

“Capital Investment:

- 7.34 *The licensee shall propose in its filing a detailed capital investment plan. The plan must separately show ongoing projects that will spill into the year under review and new projects that will commence but may be completed within or beyond the tariff period. For the new projects, the filing must provide the justification as stipulated under relevant investment guidelines of the Commission.....*
- 7.36 *The Capital investment plan shall be divisionwise/ schemewise and with respect to each division/scheme, shall include---*
- a) Purpose of investment (i.e. replacement of existing assets, meeting load growth, technical loss reduction, non-technical loss reduction, meeting reactive energy requirements, customer service improvement, improvement in quality and reliability of supply etc.);*
 - b) Capital Structure;*
 - c) Capitalization Schedule;*
 - d) Financing plan;*
 - e) Cost-benefit analysis;*
 - f) Performance improvement envisaged in the Control Period.*
- 7.37 *While presenting the justification for new projects, the licensee shall detail the specific nature of the works and outcome sought to be achieved. The detail must be shown in the form of physical parameters, e.g., new capacity added, to be added, meters replaced, customer service centers set up etc., so that it is amenable to physical verification. This is necessary to ensure that the approved investment plans are implemented and the licensee does not derive improper financial benefit by delaying or neglecting to make the proposed investment.”*
4. As per the Licence Conditions No. 11 and 32, the investment above Rs. 5 Cr is to be made by the Distribution Licensee in the licensed business area of operation with the approval of the Commission. The relevant extracts of the Licence Conditions are as follows:

“11. INVESTMENTS

- 11.1 *Unless otherwise directed by the Commission, every Licensee shall obtain prior approval of the Commission for making investment in the Licensed Business if such investment is above the limits laid down in Condition 32.*
- 11.2 *The Licensee shall duly comply with the Regulations, guidelines,*

directions and orders the Commission may issue from time to time in regard to the investments to be made in the Distribution Business.

11.3 *The Licensee shall submit to the Commission investment plans as a part of the business plan under Condition 10.9 above giving details of investment schemes to be undertaken during the concerned period for the approval of the Commission. For new schemes formulated by the GoO, if TPSODL wishes to avail funding under such scheme, an agreement shall be signed between GoO/ GRIDCO/ OPTCL and TPSODL for utilization of such grants. The Licensee shall demonstrate to the satisfaction of the Commission that:*

- (a) there is a need for such investments in the Distribution System;*
- (b) the Licensee has made techno-economic analysis and environmental aspects of all viable alternatives to the proposal for investing in or acquiring new Distribution System assets to meet such need;*
- (c) the investment plan is in conformance to the conditions for capital investment specified in the Vesting Order.....”*

“32. INVESTMENT AND TRANSFER OF ASSETS (IN CONTINUATION TO CONDITION 11 AND 12)

32.1. *For the purposes of Condition 11.10, the term “major investment” means any planned scheme wise investment in or acquisition of distribution facilities like rural electrification, system improvement, major renovation & modernization works, the cost of which, when aggregated with all other investments or acquisitions (if any) forming part of the same overall transaction/ scheme, equals or exceeds Rs. 5 Cr (Indian Rupee Five Cr) or otherwise determined by the Commission from time to time by a general or special order. For smaller transactions for which prior approval of the Commission has not been obtained, the proposals will be considered at the time of annual true-up subject to prudence check by the Commission.”*

5. The Petitioner, TPSODL has submitted that it has inherited the power distribution network in dilapidated state at some places, which is not compliant with the requisite statutory standards and poses threat to consumers, staff, etc. Further, underrated/ undersized/ worn out conductors, poor earthing, presence of either faulty equipment or non-availability of equipment/ switchgears/ protection devices are creating potential safety hazards to the employees, consumers, children, animals, public, etc. TPSODL has therefore, come up with this Capital Investment Plan with the objective of ensuring safe reliable power supply and best customer service to its end consumers. TPSODL has categorised the various activities of the Capital Investment Plan under 6 major subheads, i.e., (i) statutory and safety, (ii) loss reduction, (iii) network reliability, (iv) load growth, (v) technology infrastructure, (vi) civil infrastructure and administration.

6. The petitioner has submitted that every area under its operation has different characteristics and thus, has different challenges. However, some common challenges have been identified for taking up the work in the initial years of its operation. TPSODL receives power from EHT Grid S/s and catering to above 23,68,462 consumers. The distribution infrastructure primarily includes 244 no. of 33/11 kV substations (510 nos. of transformer); 55,717 nos. of 33/ 0.415 kV & 11/ 0.415/ 0.230 kV DTR; 3803 ckt. km. of 33 kV Over Head (OH) line; 5 ckt. km. of 33 kV Under Ground (UG) cable link; 42466 ckt. km. of 11 kV OH line; 89 ckt. km. of 11 kV UG cable link; 9116 ckt. km. of bare LT line and 29,978 ckt. km. of LT ABC to meet the load demand in its area of operation.
7. The petitioner has submitted that due to vast geographical area, wide-spread network and absence of preventive maintenance, providing reliable of power supply to consumers through existing network is not possible. The existing infrastructure needs strengthening. The petitioner has proposed to replace the damaged poles, replace worn out conductors, re-stringing of the conductor, installation of the mid-span pole, installation of stay-wire at required locations. The petitioner has also proposed to strengthen earthing system by taking remedial measures in both Distribution Sub-Station (DSS) and Primary Sub-Station (PSS) as part of refurbishment activity, which will provide a safe operating environment and proper functioning of protection relays. The petitioner has also proposed various activities required to be performed for the aforesaid job.
8. The petitioner has further submitted that most of the 33/ 11 kV and 11/ 0.415 kV substations either have damaged boundary wall/fencing or without boundary wall/fencing. Hence, TPSODL has proposed to put up fencing/ boundary wall. The petitioner has also proposed to procure Personal Protection Equipment (PPE) and testing equipment for its staff to ensure safety which the Licensee is mandated to comply as per the prevailing Regulations.
9. TPSODL has submitted the Detailed Project Report (DPR) for Capex plan of Rs. 378.37 Cr for the FY 2022-23 under the following sub-heads:
 - (i) **Statutory & Safety** –includes purchase of Safety and testing equipment, providing Cradle guard at major road crossings, Fencing of Distribution substations (DSS) & Boundary wall for Primary substations (PSS) and

Intermediate poles to maintain safe ground clearance.

- (ii) **Loss Reduction** –includes Upgradation/ refurbishment of 33 kV & 11 kV Line, Feeder Meter for Energy Audit, conversion of LT Bare to ABC, Polycarbonate LT Distribution Box & Replacement of Damaged Service Cable and GIS implementation.
 - (iii) **Network Reliability** –includes Refurbishment of 33/11 kV Primary Substations (Station Transformer, VCB, Isolator, Relay, CT, PT, LA, Illumination, Battery & Chargers, Earthing, etc.), addition of Single PTR for meeting (N-1) contingency & Replacement of Old PTR, SCADA implementation in Conventional Non ODSSP PSS (Electrical + Automation + Civil), ADMS implementation, Construction of New 33 kV Lines for GSS Bay Utilisation, N-1 contingency for 33 kV Lines, Life enhancement/Refurbishment of Network (Lines, V-Cross arm, Earthing, LA, UG cable & Covered Conductor), Refurbishment of DSS & LV Protection at DSS, 33 kV & 11 kV Line, AB Switch, FPI, RMU, ARC, Sectionalizer and Trolley mounted Mobile Substation.
 - (iv) **Load growth** –includes New 11 kV link Lines, Augmentation of Power Transformer, Augmentation of Distribution Transformer and Augmentation / addition of LT ABC line.
 - (v) **Technology infrastructure** – Technology includes Building & Strengthening end user IT infrastructure, Strengthen Network Connectivity across TPSODL, Augmentation of Data Centre infrastructure – Hardware and Software and IT infrastructure for 50-Seater Call Centre.
 - (vi) **Civil Infrastructure & Administration-** includes Customer Relation Centre (CRC), Infrastructure for store and offices and Security Surveillance System and Employee Welfare.
10. The petitioner has submitted various documents/ information in the Annexures of its DPR as listed below:
- **Annexure-9.1:** DPR with projected cost of Rs. 43.71 Cr has been submitted for meeting Safety & Statutory requirement. This shall ensure benefit in the shape of reduced physical harm/hazards, improved quality of work, reduced man-hour loss and quick decision on attempting work on an equipment

- **Annexure-9.2:** DPR with projected cost of Rs.64.62 Cr has been submitted for Loss reduction. This shall ensure benefit to develop comprehensive energy accounting system to quantify and determine actual losses in the power distribution system, segregating across commercial and technical losses.
- **Annexure-9.3:** DPR for network reliability, refurbishment of selected 33 kV feeder assets so as to restore the efficiency of the S/s and feeders and improve the safety and reliability of network assets including enhancing the operational life of the equipment. This shall ensure uninterrupted power supply system, meeting N-1 contingency at PTR level, improve operational efficiency, prevention of revenue loss etc. The total projected cost is Rs. 160.28 Cr.
- **Annexure-9.4:** DPR with projected cost of Rs.37.45 Cr has been submitted for Load Growth. The total projected cost is Rs. 37.45 Cr. By installing new link lines, reliability of the system will be improved. At present, 11 kV feeders are radial feeders and do not have any ring connectivity with other 11 kV feeder .Augmentation of Power Transformer with the PSS will improve reliable power supply by ensuring N-1 contingency at PTR level, reduced Over burdening of existing PTR and power cuts, reduction in chances of failure & interruption, reduction in over burdening of existing DTs resulting in reduced power cuts, Optimization of PTR loading, reduction in technical losses, improve reliability and improve the operational efficiency. Total 4 Nos of PTR augmentation was proposed by TPSODL in FY 2022-23. Augmentation of DT is required to avoid overloading of transformer, which was leading to failure of transformer and power interruptions. Augmentation of Distribution Transformer have following benefits:
 - Mitigation of overloading DTs. Thus, it will lead to lower interruption and quality power leading to satisfaction of consumers.
 - Reduce over-burdening of existing DTs thereby reducing power cuts.
 - Optimization of DTR loading.
 - Reduction of technical loss.
- **Annexure-9.5:** DPR for Technology Infrastructure has been submitted. The total projected cost is Rs. 33.27 Cr. DPR for Technology Infrastructure covers the following four (4) areas.

- (i) Building & Strengthening end user IT Infrastructure: Rs. 8.05 Cr
- (ii) Strengthening Network Connectivity Across TPSODL: Rs. 7.97 Cr
- (iii) Augmentation of Data Centre Infrastructure: Rs. 15.55 Cr

Hardware & Software:

- (iv) IT Infrastructure for 50 seater Call Centre: Rs. 1.7 Cr

TOTAL: Rs.33.27 Cr

- **Annexure-9.6:** DPR with cost Rs 19.04 Cr has been submitted for Civil Infrastructure & Administration. DPR for Civil Infrastructure & Administration covers the following three (3) areas.

- (i) Customer Relation Centre (CRC) : Rs. 2.5 Cr
 - (ii) Infrastructure for store & offices : Rs. 10.78 Cr
 - (iii) Security Surveillance System & Employee Welfare : Rs. 5.76 Cr
- TOTAL : Rs. 19.04 Cr**

11. The summary of the above CAPEX as proposed by the petitioner is given in the table below:

Sl. No	Major Category	Activity	DPR Cost (Rs. Cr)
1	Statutory & Safety	Safety & Electrical Testing Equipment	14.89
		Cradle guard at major road crossings in Populated area, School area	6.79
		Fencing of Distribution substations (DSS) & Boundary wall for PSS	15.30
		Intermediate poles for unsafe to safe location	6.72
		Sub Total- Statutory & Safety (1)	43.71
2	Loss Reduction	Upgradation / refurbishment of 33 kV & 11 kV Line	24.84
		Feeder Meter for Energy Audit	8.15
		LT Bare to ABC Conversion	7.80
		LT Distribution Polycarbonate Box & Replacement of Damaged Service Cable	5.43
		GIS Implementation	18.40
		Sub Total- Loss Reduction (2)	64.62
3	Network Reliability	Refurbishment of 33/11kV Primary Substations (Station Transformer, VCB, Isolator, Relay, CT, PT, LA, Illumination, Battery & Chargers, Earthing, etc)	16.45
		Mitigation of Single PTR (N-1 arrangement) & Replacement of Old PTR	12.52
		SCADA implementation in Conventional Non ODSSP PSS (Electrical+ Automation +Civil)	59.86
		ADMS Implementation	12.00
		Construction of New 33 kV Lines for GSS Bay Utilisation	7.27
		N-1 arrangement for 33 kV Lines	7.59
		Life enhancement/Refurbishment of Network (Lines, V-Cross arm, Earthings, LA, UG & Covered Conductor)	8.17

Sl. No	Major Category	Activity	DPR Cost (Rs. Cr)
		Refurbishment of DSS & LV Protection at DSS	18.13
		33 kV & 11 kV Line AB Switch, FPI, RMU, ARC, Sectionalizer	16.88
		Trolley mounted Mobile Substation	1.41
		Sub-Total Network Reliability (3)	160.28
4	Load Growth	New 11kV link Lines	11.52
		Augmentation of Power Transformer	3.56
		Augmentation of Distribution Transformer	19.70
		Augmentation / addition of LT ABC line	2.67
		Sub Total- Load Growth (4)	37.45
5	Technology Infrastructure	Build & Strengthen end user IT infrastructure	8.05
		Strengthen Network Connectivity across TPSODL	7.97
		Augmentation of Data Centre infrastructure – Hardware and Software	15.55
		IT infrastructure for 50-Seater Call Centre.	1.70
		Sub Total -Technology Infrastructure (5)	33.27
6	Civil Infrastructure & Administration	Customer Relation Centre (CRC)	2.50
		Infrastructure for store and offices	10.78
		Security Surveillance System and Employee Welfare	5.76
		Sub Total – Civil Infrastructure & Admin (6)	19.04
		Total (1+2+3+4+5+6)	358.37
		Unforeseen CAPEX	20.00
		GRAND TOTAL	378.37

12. In addition to the above, the petitioner has submitted the following details, which are dealt in different Annexures as stated above:

- (a) Details of the projects completed and the projects, which are in progress for all the Schemes approved in the Capex Plan for FY 2021-22.
- (b) Details of accidents (fatal and non-fatal) from FY 2011-12 to FY 2021-22 and measures and preparedness of TPSODL to minimise accidents in the upcoming years.
- (c) Circle wise actual performance (Energy Input, Energy Sales and AT&C loss) for the period from FY 2016-17 to FY 2021-22 and category wise Energy Sales for the period from FY 2022-23 to FY 2024-25.
- (d) Quarter wise details SAIDI, SAIFI and MAIFI for the period from FY 2016-17 to FY 2021-22 and the projected SAIDI and SAIFI for the period from FY 2022-23 to FY 2026-27 .
- (e) Circle wise details of the interruptions and outages for the period from FY 2020-21 to FY 2021-22 which includes the abstract of outages due to tripping's of HT

feeder, Failure of Transformer (nos.) and Major disturbances due to EHT failure.

- (f) Details of consumer related information like Consumption details, Consumer Commercial Information, Information on System Demand, Status of Metering for the period from FY 2016-17 to FY 2021-22.
 - (g) Details of technical specifications of the major IT related items such as Antivirus, UPS, WiFi Access Point, Laptop etc.
 - (h) Details & evaluation criteria for procurement of cyber security Application.
 - (i) Details of Capex incurred, Capitalisation, Financial Progress, Technical Progress and Likely Date of completion of Projects considered as part of CAPEX – FY 2021-22.
13. The present Capex proposal was submitted by TPSODL on 07.03.2022. The public notice was issued on 21.04.2022 inviting suggestions/ objections to the CAPEX Plan for FY 2022-23 of the DISCOMs which were to be filed on or before 04.05.2022. The public hearing in the matter was held on 10.05.2022. The Commission during hearing heard the Applicants who had participated in the hearing. There were three submissions received from the stakeholders namely OPTCL, GRIDCO and Shri R. P. Mohapatra.
14. The Commission had raised various queries relating to the Capex proposal of TPSODL. The specific queries and response of TPSODL are as under:
- a) As regards to submission of System Study and time frame of completion, TPSODL stated that they have completed the modeling of 33 KV Network for all six Circles and the same for 11KV Network is under progress. 90% of the 11 kV feeders have been modelled in Cyme Software. The balance work of network modelling for 11 KV feeders is under progress and the load flow analysis is expected to be completed by July'2022.
 - b) With respect to submission of any schemes proposed based on load growth, TPSODL submitted that the schemes namely construction of new 11 KV Line and augmentation of Power Transformer, Distribution Transformer & LT feeder are proposed under Load Growth in FY 2022-23 DPR. Further, location wise details have also been provided for the schemes by TPSODL.
 - c) As regards to the query on augmentation of lines specifically mentioning the proposed lines, TPSODL stated that they have considered augmentation of 33

kV and 11 kV lines under Loss reduction Head of Capex in the FY 2022-23. The lines proposed in CAPEX DPR were prioritised based on network analysis. Summary of the proposed feeders are provided along with the technical justification for 33 kV feeder and 11 kV feeder.

- d) On the query regarding the steps taken on standardization, TPSODL submitted that they have already started the process of standardisation of technical specification of materials along with other three DISCOMS of Odisha. TPSODL is also standardising the rating of Power transformer and distribution Transformer in the network. All the materials are presently being procured for new projects with standard rating. The standardised material details are given below:

- 33kV OH lines - 100sqmm, 148sqmm, 232sqmm;
- 33kV UG cables - 3X400sqmm;
- 11kV OH lines - 55sqmm, 80sqmm, 100sqmm;
- 11kV UG cables - 3CX95sqmm, 3CX150sqmm, 3CX300sqmm;
- LTABC-4X35+1X35+1X16, 4X50+1X50+1X16, 4x95+1x95+1x16;
- 33/11kV PTR - 3.15MVA, 5MVA, 8MVA;
- 11/0.433kV DTR Single Phase- 10KVA, 16KVA, 25KVA;
- Three Phase- 25KVA, 63KVA, 100KVA, 250KVA, 500KVA.

TPSODL further stated that they have already standardized more than 60 nos. of technical specification of various materials and the same will be used in procurement of materials.

- e) In the matter relating to design aspects of Cyclone Resilient Power System, TPSODL has submitted that in order to design Cyclone Resilient Distribution Network, TPSODL have segregated the geographical area into two zones: Zone-1 comprising the network within 60 Km from the coastline and Zone-2 beyond 60 Km from the coastline. They have further standardized the type of pole and span length for overhead network as per the following:

- 33 kV new line (within 60 Km from the coastline) - H-Pole with span length 50 Mtr;
- 33 kV new line (Beyond 60 Km from the coastline) - WPB Pole with span length of 50Mtr;

- 11 kV new line with WPB Pole span length is 50Mtr;
- Refurbishment of existing lines is proposed to strengthen the lines;
- Interposing/ intermediate poles are considered to strengthen existing 33 kV as well as 11 kV lines;
- Stay set and cement concreting of poles are considered to strengthen the existing network. Cradle Guard is also considered;
- LA and strengthening of earthing system is also considered;
- All metallic structure shall be of Galvanized Iron in place of Mild Steel for protection against corrosion of steel structures;
- Trolley Mounted Mobile Sub-Stations are considered for ensuring faster restoration of power during breakdown. TPSODL has proposed 6 Nos. 500 kVA Trolley Mounted Sub-Station in the Capex DPR for FY 2022-23.

15. The comments received from Respondent Sri R. P. Mohapatra are summarized as follows :

- a) Since, GRIDCO holds 49% equity in TPSODL therefore while approving the Capex Plan for the FY 2022-23, the submissions of GRIDCO including the Report of the Consultant are important.
- b) TPSODL may be directed to submit the cost of execution of the Capex Scheme for the FY 2021-22 in line with the order of the Commission.

16. To the queries raised by Shri R. P. Mohapatra, TPSODL submitted that the respondent GRIDCO may be directed to serve a copy of their submissions to Shri Mohapatra. Further, TPSODL submitted that approved Capex was of Rs 184.65 Cr. for which Capitalization of Rs 121.06 Cr. has been done by TPSODL in the FY 2021-22.

17. The Comments received from the Respondent GRIDCO are summarized as follows :

- a) After compliance of its observations, TPSODL has filed its revised Capex proposal to OERC only after getting approval of the Board.
- b) The proposal may be approved for implementation in order to have a stable power distribution system, ensuring reliability and safety of equipment and man-

power with optimum utilisation of existing resources as well as resources to be acquired through the Capex plan.

- c) The proposal for conversion of AIS to GIS may be taken up in urban areas with space constraints and also in coastal areas to achieve cyclone resilient system as suggested by CEA.
- d) The Capex Plan need to ensure optimum utilization of the existing assets considering the balance residual life of the existing assets, alternative utilization of the equipment /assets being replaced through Capex expenditure with adequate Repair & Maintenance in order to make the equipment operational.
- e) The infrastructure created out of Government funding through ODSSP and other Schemes over the recent years as well as from the upcoming projects need to be optimally utilized. Also, the future projects need to be taken up with proper load flow study justifying the requirement of the system.
- f) The Capex plan should envisage the requirement of new/ augmentation/ renovation of the system with proper requisite planning, as can be foreseeable prudently and for implementation of the latest technology in order to cater the future load growth over a relatively longer period.

18. The Comments received from the Respondent OPTCL are summarized as follows:

- a) While taking over the erstwhile SOUTHCO, the Petitioner has cited about the unsafe/ dilapidated distribution system inherited for which the Commission was liberal enough to approve Capex of Rs. 184.65 Cr in the FY 2021-22 & Opex of Rs. 60.28 Cr. in the FY 2021-22, to strengthen the system to make it safer and O&M Compliant. However, from Para-1.5 (Page-26) of the present petition, it is understood that, the condition of the system has not improved at all, in spite of infusion of so much funds through Capex & Opex, which causes doubt about the seriousness of the applicant in above matter.
- b) As in previous years, the applicant did not mention the Source of Funding and if available from external sources, the rate of interest thereon.
- c) They have not identified about the works already completed and Assets capitalized thereof. As the Applicant was unable to utilize the funds approved under Capex for the FY 2021-22 due to several factors, some of these being

attributable to them, their Capex proposal for FY 2022-23 may be reduced accordingly by the Commission in the interest of the Consumers.

- d) As in earlier occasions, majority of the investments during the first 5 years should be for construction/ revamping of downstream assets and strengthening of the system. The value addition service like SCADA/ AMI may be postponed till the system is healthy and loss is minimized.
- e) Capex approved in FY 2021-22 under the Fencing work was Rs. 9.00 Cr & Boundary wall work was Rs.5.40 Cr. The applicant is proposing during FY 2022-23, Rs 10.37 Cr for fencing and Rs 4.93 Cr for Boundary wall towards fencing 900 no for DSS and 3000 RM Boundary wall for PSS. The applicant should furnish information on capitalization of Assets created in the FY 2021-22.
- f) The Commission have allowed for procurement of around 680 Nos. FRP ladders, 136 nos. Neon testers & 50 Discharge Rods under Capex for the FY 2021-22. TPSODL have planned for procurement of 200 Nos. FRP ladders, 570 nos. Neon testers & 1500 Discharge Rods under Capex for FY 2022-23. The Petitioner should quantify the number of fuse-call camps/ sections under their jurisdiction, how many of them are equipped till now with above equipment and what is the further requirement, basing on which Commission may approve the quantity & cost thereof for the above items.
- g) The Commission has approved Rs. 15.69 Cr. for the FY 2021-22 under Capex for improvement in AT&C losses. For the FY 2022-23, TPSODL have proposed for Rs. 64.62 Cr. for achieving loss reduction. TPSODL may submit the loss reduction achievement after implementation of Capex for FY 2021-22 and the projected loss reduction to be achieved during Capex for FY 2022-23.
- h) At Para-4.5 (Page-69), the Petitioner has proposed for an expenditure of Rs. 4.11 Cr. towards replacement of damaged service cables. But the damaged Cable replacement is an R&M activity and supposed to be covered under RST Order dt 24.03.2022. So it is proposed to exclude Rs.4.11 Cr towards above replacement work from Capex proposal for FY 2022-23.
- i) Under the Capex for the FY 2021-22, Rs. 7.01Cr. was approved by the

Commission for conversion of LT bare conductor to AB cable. So the Petitioner should inform the extent of work completed location wise and the cost incurred thereof. Further conversion of LT bare conductor to AB cable works should only be restricted to urban congested areas & busy road crossing and electricity theft prone areas, to minimise tariff burden on the Consumers.

- j) TPSODL has proposed for Rs. 16.45 Cr. & 18.13 Cr. for refurbishment of PSS & DSS respectively. The Commission has approved for Rs. 36.6 Cr towards above works in the Capex for FY 2021-22. Further Rs. 33.21 Cr was allowed one time Opex over & above the RST order for FY 2021-22 towards R&M works. As the Petitioner have admitted that the previous Capex work is under progress, the Commission may allow further Capital based on their spending pattern & work progress.
- k) OPTCL has constructed many new 33/11kV substations under ODSSP, DDUGJY and IPDS schemes which are yet to be made fully operational by TPSODL. The Commission may kindly consider the above submission and allow necessary Capex in this regard.
- l) TPSODL have proposed for 06 Nos. Trolley mounted 500kVA Mobile s/s. In the previous Capex, the Commission has allowed for 01 No. Trolley mounted 650kVA Mobile s/s. Before allowing further capital on Trolley mounted S/s, the Commission may ask TPSODL to inform about their positioning & utilization in terms of attending breakdowns thereof.
- m) TPSODL has proposed Rs. 37.45 Cr. for Load Growth, while the Commission have approved for Rs. 8.74 Cr. for above works in the Capex for FY 2021-22. The Commission may allow further Capital in the above matter after collecting trend of Load growth & spending pattern towards same. It is worth mentioning that, many OPTCL Grid S/s were constructed based on Power Demand Projections of DISCOMs and majority of them are operating in under-loaded condition, which means that either the load growth is zero/ negative. Accordingly the Commission may allocate funds in this area.
- n) Lots of DTs were purchased & installed under numerous Government Schemes and it is apprehended that quite a large number of such DTs might be in under-loaded condition. So the DISCOMs should carry out a study on above and try to

shift/ relocate such DTs to overloaded stations, thereby addressing the load growth side by side keeping the burden of Capex minimum on Consumers.

- o) More focus is stressed upon IT related activities, call centres, etc. under Technology & Civil Infrastructure (Rs. 52.31Cr.) instead of focusing more on the development of basic infrastructure.
 - p) The Capex cannot be Unplanned in nature. Further it is evident from the submission of the Petitioner that, they are not able to utilise the funds that were allowed to them by the Commission under Capex for the FY 2021-22. As the Applicant is unable to make use of the Planned Capex, it will be prudent enough not to allow them any fund towards unplanned Capex.
 - q) As per practice and standards, the end product of any Capex plan is revenue and tariff forecast which has not been done.
19. Heard the petitioner and respondents at length through virtual mode. Before going to the merit of the proposal of the Licensee, we will discuss the background and provisions based on which, the Capex plan shall be approved. As per Section 42 of the Electricity Act, 2003 read with Condition 7 of the Licence Conditions and Regulation 4 of the General Conditions of Distribution Licence, and the OERC (Conduct of Business) Regulations, 2004, it shall be the duty of the Distribution Licensee to develop and maintain an efficient, coordinated, economic distribution system in its area of supply and to supply electricity in accordance with the provisions in the Act, Rules, Regulations and the directions of the Commission. The Commission is guided by Section 61(c) of the Electricity Act, 2003, i.e., by the factors, which would encourage, competition, efficiency, economical use of the resources, good performance and optimum investments while determining the tariff.
20. As per the provisions in the OERC Tariff Regulations 2014, the Commission has sought the petitioner to submit the details of cost benefit analysis, capital structure, capitalisation schedule, financing plan and specific details of work. TPSODL in its reply has submitted the capital structure, capitalisation schedule, and financing plan along with cost benefit analysis for most of the schemes. TPSODL has submitted the specific details of works i.e., location at which the works have been proposed along with cost benefit analysis for majority of the schemes. During the site visits, it was

stated by TPSODL that after the issuance of Order of Capital Investment Plan for FY 2021-22, there was limited time for execution of the schemes considered for FY 2021-22. TPSODL has been able to utilise 70% of the Capital Expenditure approved by OERC for the FY 2021-22 and TPSODL has submitted that the pending works will be completed and capitalised by Quarter-3 of FY 2022-23.

21. The Commission at this stage has considered and analyzed the Capex plan for FY 2022-23 based on the submissions made by TPSODL. In the present case as per para 43(b) of the Vesting Order, the petitioner committed capital expenditure of Rs.1166 Cr for the period FY 2021-22 to FY 2025-26 as follows:

(Value in Rs. Cr)					
FY 2021-22	FY 2022-23	FY 24	FY 25	FY 26	Total
227	316	241	233	150	1,166

- (i) As per para 43(c) of the Vesting Order:

“(c) To allow flexibility in the capital expenditure planning, the Commission stipulates that, in the capital expenditure plan to be submitted by TPSODL as per the license conditions, the capital expenditure commitment for each year of the period FY 2021-22 to FY 2025-26 must be such that capital expenditure proposed up to a year shall be at least equal to the cumulative capital expenditure committed up to that year in the Bid submitted by TPCL. For avoidance of doubt, the minimum cumulative capital expenditure to be proposed by TPSODL for the period FY 2021-22 to FY 2025-26 must be as provided in the table below:

Table 2: TPCL Cumulative Capital Expenditure for 5 years

Cumulative Capex Expenditure (INR Cr)				
Upto 31-Mar- 2022	Upto 31-Mar- 2023	Upto 31-Mar- 2024	Upto 31-Mar-2025	Upto 31-Mar-2026
227	543	783	1,016	1,166

22. With respect to Capex Proposal for FY 2022-23, TPSODL has submitted that as per the Vesting Order, it has to achieve a cumulative Capex of Rs. 543.00 Cr upto FY 2022-23. The Commission has approved Rs. 184.65 Cr for the Capex Plan – FY 2021-22. Hence, to comply with the commitment made in the Vesting Order, TPSODL has to submit minimum Capex of Rs. 358.35 Cr.
23. The main objective of the investment plan is to develop and maintain an efficient, coordinated and economic distribution system in its area of operation. TPSODL shall affect supply of electricity to consumers in accordance with the provisions of the Act, Rules, Regulations, Orders framed thereunder and the directions of the Commission.

The Commission has further considered the following major aspects while finalizing the investment plan proposed by TPSODL:

- (i) Whether the Board Approval is available for the Capital Investment Plan?
- (ii) Whether the scheme is required to meet the statutory standards stipulated in the Act, or specified under Regulations, standards, etc.
- (iii) Whether it will be helpful to meet the consumer's expectations of economic, quality and reliable power?
- (iv) Whether the investment is cost efficient?
- (v) Whether the proposal shall have any tariff impact on the consumers?
- (vi) Whether there is any backlog in the activities which are approved in FY 2021-22?

24. The Commission has also decided to avail services of a third-party consultant to assist in verification of each scheme, assessment of component wise requirements along with the cost. The Commission has engaged a third party Consultancy firm for the evaluation of the Capital Expenditure Plan of TPSODL. The Consultants conducted some field visits and had several rounds of discussion with the concerned officials of Licensee and examined various aspects of the proposal including the requirement, investment priority, commercial rationale etc., keeping in mind the concerns raised by different stake holders during the process of hearing. The consultant has submitted their report to the Commission.
25. The Commission has examined the investments proposed by the petitioner. The Commission has observed that there is no variation in the Capex proposed in the DPR for FY 2022-23 and as per TPSODL's Board's Approval for FY 2022-23 as shown below:

(Value in Rs. Cr)		
Capex as per Vesting Order	Capex as per DPR Submitted	Board Approved Capex Value [#]
316*	378.37**	378.37**

* Capex Commitment by TPCL

** Inclusive of Unforeseen CAPEX proposal – Rs. 20.00 Cr

26. The major category under CAPEX plan as claimed in the DPR and as per the Board's approval are as shown below:

Sl. No.	CAPEX Head	As per DPR (Rs. Cr)	As per Board Approval (Rs. Cr)
1	Statutory & Safety	43.71	43.71
2	Loss Reduction	64.62	64.62
3	Network Reliability	160.28	160.28
4	Load Growth	37.45	37.45
5	Technology Infrastructure	33.27	33.27
6	Civil Infrastructure & Administration	19.04	19.04
Total Proposed CAPEX		358.37	358.37
Unforeseen CAPEX		20.00	20.00
Total CAPEX		378.37	378.37

27. In TPSODL, TPCL is having 51% (fifty one percent) equity shares and Government of Odisha ("GoO") through GRIDCO is having 49% (forty nine percent) equity shares. The Commission notes that since the Board is the governing body of TPSODL, any Capital Investment Plan should be approved in their Board before approaching the Commission for granting approval. During the analysis, the Commission observes that the DPR proposed by TPSODL and Board's approval in respect of Capex Plan for FY 2022-23 are the same.
28. The Commission has analyzed each activity in the submission of TPSODL's Capex proposal and evaluated the same based on the following methodology:
- Site visit on sample basis for analyzing the present condition of the Distribution area.
 - Verification of the Schemes claimed in line with the provision of various OERC Regulations, Codes, Licence Condition, etc.
 - Analysis of the backlogs in the activities proposed in Capex for FY 2021-22
 - Analysis the requirement of the activity/ work proposed for FY 2022-23.
 - Verification of the required quantity as claimed in the proposal.
 - For Cost Analysis, the cost of equipment/material submitted in the DPR with that of materials provided at the Cost Data Book, 2019 issued by Government of Odisha has been compared. For the materials, which are not mentioned in Cost

Data Book, 2019, the reference rates of other States like Maharashtra, Andhra Pradesh and Telangana or prevailing market rates have been considered.

29. The Scheme wise detailed analysis is discussed in the subsequent paragraphs in line with the above methodology for the evaluation of the Capital Expenditure claimed by TPSODL.
30. During the activity-wise analysis, for the Capex approved in FY 2021-22, it has been observed that there are a few activities where TPSODL has utilised less than 50% of the approved capital expenditure for the FY 2021-22 and again identical activity has also been proposed for FY 2022-23. Considering the importance of the activity, the Commission has decided to allow 50% of the Proposed Cost for various activity submitted in Capex DPR for FY 2022-23.
31. The summary of current status of schemes approved under Capex Plan for FY 2021-22 as submitted by TPSODL, are as follows:

Capex Head	OERC approved Capex (Rs. Cr)	Actual Capital Expenditure in FY 2021-22 (Rs. Cr)	Actual Capitalisation in FY 2021-22 (Rs. Cr)
Statutory Compliance/Safety	31.43	22.49	21.68
Loss Reduction	15.69	3.22	0.00
Reliability Improvement	37.47	11.34	8.83
Load Growth	8.74	1.84	1.20
Technology & Civil Infrastructure	91.32	89.93	89.35
Total	184.65	128.82	121.06

A. Statutory and Safety

32. The Commission notes the importance of all the parameters considered under the Statutory and Safety like Personal Protection Equipment(PPE), testing equipment, Cradle guard at major road crossings, fencing of Distribution substations (DSS) & Boundary wall for Primary substations (PSS) and Intermediate poles to maintain safe ground clearance. While comparing the Unit Rates of various items proposed in the DPR with the Cost Data Book, the Commission observed that there are no deviations in the rates considered for various items.
33. TPSODL has made significant progress under the Statutory & Safety head as compared to other heads during the FY 2021-22. The actual Capital Expenditure incurred till March 2022 is Rs.22.49 Cr as against the approved Capex of Rs. 31.43 Cr which is 71.55% of the OERC approved Capital Expenditure for FY 2021-22. Further, TPSODL

has submitted that 100% capitalization of the OERC approved amount of Rs. 31.43 Cr under Statutory and Safety Capex Scheme will be achieved by 3rd Quarter of FY 2022-23.

34. During the analysis of activities in the FY 2021-22, it has been observed that TPSODL has only utilized Rs. 0.09 Cr. (2%) as against the approved Capex value of Rs. 4.57 Cr towards cradle guard at major road crossings in Populated area. TPSODL is targeting to complete the backlogs under this activity by Quarter-3 of FY 2022-23. Hence, the Commission decides to allow only 50% of the Capex proposed for this activity i.e. (50% of Rs. 6.79 Cr) for the FY 2022-23.
35. From the Accident Reports (for the last 10 years) as submitted by TPSODL, it is observed that fatal accidents amount to almost 73% (Humans + Animals) of total accidents out of which 58% relates to humans. The Commission is of the view that the proposals submitted by TPSODL under Statutory & Safety considerations are essentially to reduce accident cases in the years to care.
36. The Commission decides to limit the Capex amount under Statutory and Safety to the value of Rs. 39.33 Cr as against Rs.43.71 Cr proposed in the DPR. The Commission expects that with the investments considered under Statutory and Safety, there should be substantial reduction in accident.
37. The summary of Capex proposed in the DPR, Capex approved by the Board and the Capex approved by the Commission are summarized as follows:

Description	Capex as per DPR (Rs. Cr)	Board Approved Capex (Rs. Cr)	OERC Approved Capex (Rs. Cr)
Safety & Electrical Testing Equipment	14.89	14.89	14.26
Cradle guard at major road crossings in Populated area, School area	6.79	6.79	3.40
Fencing of Distribution substations (DSS) & Boundary wall for PSS	15.30	15.30	15.30
Intermediate poles for unsafe to safe location	6.72	6.72	6.37
Total	43.71	43.71	39.33

B. Loss Reduction

38. The submission of the Petitioner has been examined under the Loss Reduction Scheme. While comparing the Unit Rates of various items proposed in the DPR with the Cost

Data Book, it is observed that there is no deviation in the rates considered for various items.

39. TPSODL has not utilised the CAPEX approved for the FY 2021-22 under the Loss Reduction scheme. As per the progress of work submitted by TPSODL, it is observed that TPSODL has utilised only Rs.3.22 Cr (as against the approved Capex of Rs. 15.69 Cr) which is 20.52% of the Capital Expenditure approved by OERC for the FY 2021-22. Further, TPSODL has submitted that 100% capitalization of the approved amount (i.e. Rs. 15.69 Cr) would be achieved by 2nd Quarter of FY 2022-23.
40. Activity wise analysis of the schemes are as follows:
- (a) **Upgradation / refurbishment of 33 kV & 11 kV Line** – It is observed that upgradation of 33 kV & 11 kV line was under progress in TPSODL. As per Capex approved for FY 2021-22, only erection of intermediate pole has been completed by TPSODL. Stringing of conductor is yet to be started due to unavailability of long time shut down. Hence, the Commission decides to allow the cost claimed for the Upgradation / refurbishment of 33 kV & 11 kV Line.
 - (b) **Feeder Meter for Energy Audit** – TPSODL in its DPR stated that Feeder energy meters in 33 kV and 11 kV feeders at GSS, PSS and DSS has to be provided. As per the Capex of FY 2021-22, refurbishment of DSS are still in progress. Further, TPSODL in its DPR has also given reference of Gazette of India notification, Bureau of Energy Efficiency, Ministry of Power, Government of India issued for Conduct of Energy Audit in Electricity Distribution Companies under the purview of Energy Conservation Act, 2001, which requires TPSODL to install meters on all feeders and provides broad framework for conduct of Annual Energy Audit and Quarterly Periodic Energy Accounting with necessary Pre-requisites and reporting requirements to be met. Hence, considering the above, the Commission allows the cost claimed for the Feeder meter installation at GSS and PSS substation as proposed by TPSODL in the CAPEX for FY 2022-23.
 - (c) **LT Bare to ABC Conversion** – During site visit, it was observed that over head lines in most of the areas are with bare conductor. TPSODL in its DPR has stated that 39,094 Ckm of bare conductor is to be replaced by ABC for achieving loss reduction and to avoid theft of electricity. It is observed that

TPSODL has utilized only Rs. 2.62 Cr (37%) of Capex approved for the FY 2021-22 (as against the approved Capex value of Rs. 7.01 Cr). Hence, the Commission decides to allow 50% of the total Cost under LT Bare to ABC conversion in the CAPEX proposal for the FY 2022-23.

(d) **LT Distribution Polycarbonate Box & Replacement of Damaged Service Cable** –TPSODL has proposed LT Distribution box at pole for all service connections to consumers to minimize the jumbling of service cable and to create a safe environment. The field staff can quickly restore the supply, maintenance can be done easily and it will also help in improving AT&C losses. During site visit, it was observed that there is need for replacement of damaged Service Cable and installation of LT Distribution Polycarbonate Box. Hence, the Commission allows the Capex for Polycarbonate LT Distribution Box & Replacement of Damaged Service Cable during the FY 2022-23.

(e) **GIS Implementation-** Considering the importance of Geographical Information System to have better asset management and to strengthen various other business processes viz. energy audit, technical feasibility, dues verification, network planning and developing Outage Management System, the proposed Capex for the FY 2022-23 is allowed. TPSODL has made significant progress in the GIS Implementation and utilised the Capex approved for FY 2021-22. Further, TPSODL has also submitted the detailed phase-wise GIS Implementation plan which appears to be reasonable. Hence, the Commission decides to allow the Capex for GIS Implementation during the FY 2022-23.

41. Based on the above analysis and considering the importance of Loss Reduction in the Capital Investment Plan, the Commission allows Capex of Rs. 60.72 Cr (against the proposed amount of Rs. 64.62 Cr) under Loss Reduction.
42. The Capex proposed in the DPR, Capex approved by the Board and the Capex approved by the Commission are summarized as follows:

Description	Capex as per DPR (Rs. Cr)	Board Approved Capex (Rs. Cr)	OERC Approved Capex (Rs. Cr)
Upgradation / refurbishment of 33 kV & 11 kV Line	24.84	24.84	24.84
Feeder Meter for Energy Audit	8.15	8.15	8.15

Description	Capex as per DPR (Rs. Cr)	Board Approved Capex (Rs. Cr)	OERC Approved Capex (Rs. Cr)
LT Bare to ABC Conversion	7.80	7.80	3.90
LT Distribution Polycarbonate Box & Replacement of Damaged Service Cable	5.43	5.43	5.43
GIS Implementation (considered under technology head last year)	18.40	18.40	18.40
Total	64.62	64.62	60.72

C. Network Reliability

43. The Commission has noted the schemes and claims of the petitioner under the Network Reliability Scheme. Considering the present condition of the distribution network of TPSODL, the Commission is of the view that all the schemes covered under the Network Reliability to strengthen the network are justified. While comparing the Unit Rates of various items proposed in the DPR with the Cost Data Book, some deviations in the rates is observed. The Commission has considered Unit Rate as per Cost Data Book while arriving at the total cost.
44. It is observed that under Network Reliability Scheme, TPSODL has utilised only Rs.11.34 Cr (as against the approved Capex of Rs. 37.47 Cr) which is 30.26% of the Capital Expenditure approved for FY 2021-22.
45. During the analysis, some deviations are observed in the rates with reference to Cost Data Book for following activities:
- **Construction of New 33 kV Lines for GSS Bay Utilisation** which is estimated to be Rs. 6.65 Cr against claimed amount of Rs. 7.27 Cr,
 - **Cost for N-1 arrangement for 33 kV Lines** which is estimated to be Rs. 4.95 Cr against claimed amount of Rs. 7.59 Cr (Estimate for 33 kV line of 1 Km given by TPSODL was Rs. 0.21 Cr, but under this activity TPSODL calculated Rs. 0.3273 Cr for 1 Km of 33 kV line),
46. During the analysis, it has been observed there are pending works associated with Capex Plan approved for FY 2021-22 which are discussed below:

For the activity of Refurbishment of DSS & LV Protection at DSS, it is observed that TPSODL has utilized only Rs. 0.23 Cr (6%) as against the approved Capex of Rs. 4.08

Cr for DSS Refurbishment and Rs. 0.78 Cr (15%) as against the approved Capex of Rs. 5.08 Cr in the FY 2021-22. Further, as per submissions made by TPSODL, they are targeting to complete the pending work logs of this activity by Quarter-2 of FY 2022-23. Hence, the Commission allows only 50% of the Capex proposed for the activity, i.e., (50% of Rs. 18.30 Cr) for the FY 2022-23.

For the activity of 33 kV & 11 kV Line AB Switch, FPI, RMU, ARC, Sectionalizer, it has been observed that TPSODL has only utilized (a) Rs. 0.20 Cr (9%) as against the approved Capex of Rs. 2.23 Cr for Installation of 33 kV AB Switch, (b) Rs. 0.72 Cr (24%) as against the approved Capex of Rs. 3.05 Cr for Installation of 11 kV AB Switch and (c) Rs. 0.45 Cr (11%) as against the approved Capex of Rs. 3.95 Cr for Installation of Auto recloser /Sectionalizers, RMUs, &FPIs during the FY 2021-22. Further, as per submissions made by TPSODL, the pending work is targeted for completion by Quarter-2 of FY 2022-23. Hence, the Commission allows 50% of the Capex for this activity, i.e., (50% of Rs. 16.88 Cr) for the FY 2022-23.

Trolley mounted Mobile Substation - The Commission notes that already cost for 1 Trolley mounted mobile substation has been allowed in FY 2021-22 and TPSODL has procured the same. Since there are 6 circles in TPSODL, the Commission decides to allow cost of 5 no. of trolley mounted substation at a total cost of Rs.1.18 Cr (against claimed for Rs. 1.41 Cr).

ADMS Implementation - Implementation of ADMS requires inputs from SCADA and GIS. However, it has been observed that TPSODL has been installing SCADA and GIS in phased manner. Further, TPSODL has already proposed Rs. 59.86 Cr for SCADA implementation in Conventional Non ODSSP PSS (Electrical+ Automation +Civil) and also has proposed Rs.18.40 Cr for GIS Implementation. Hence, the Commission decides to defer the proposed ADMS implementation for the coming years till the significant progress is achieved in SCADA implementation. Further, the Commission directs TPSODL to implement SCADA at all the substations and GIS Implementation in whole area of operation TPSODL at the earliest.

47. Hence as discussed above, the Commission decides to limit the CAPEX under Network Reliability Rs.127.07 Cr against the proposed CAPEX for Rs.160.28 Cr.
48. The summary of Capex proposed in the DPR, approved by the Board and approved by the Commission are summarized as follows:

Description	Capex as per DPR (Rs. Cr)	Board Approved Capex (Rs. Cr)	OERC Approved Capex (Rs. Cr)
Refurbishment of 33/11kV Primary Substations (Station Transformer, VCB, Isolator, Relay, CT, PT, LA, Illumination, Battery & Chargers, Earthing, etc.)	16.45	16.45	16.45
Mitigation of Single PTR (N-1 arrangement) & Replacement of Old PTR	12.52	12.52	12.52
SCADA implementation in Conventional Non ODSSP PSS (Electrical+ Automation +Civil)	59.86	59.86	59.86
ADMS Implementation	12.00	12.00	0.00
Construction of New 33 kV Lines for GSS Bay Utilisation	7.27	7.27	6.65
N-1 arrangement for 33 kV Lines	7.59	7.59	4.95
Life enhancement/Refurbishment of Network (Lines, V-Cross arm, Earthings, LA, UG & Covered Conductor)	8.17	8.17	8.17
Refurbishment of DSS & LV Protection at DSS	18.13	18.13	8.85
33 kV & 11 kV Line AB Switch, FPI, RMU, ARC, Sectionalizer	16.88	16.88	8.44
Trolley mounted Mobile Substation	1.41	1.41	1.18
Total	160.28	160.28	127.07

D. Load Growth

49. The Commission has noted the schemes and claims of the petitioner under the Load Growth Scheme. After analysing the annual growth rate (in %) for the period from FY 2017-18 to FY 2020-21 in respect of different categories of consumers, it is observed that sales growth over the years is in the range of 2.5% to 9.5% with overall CAGR of around 4.36% and CAGR of Load Growth is around 10.37%. Load growth has increasing trend, which justifies the requirement of Network augmentation / addition of 11 kV line, PTR, DTR and LT line to meet growth in demand. Some deviations in the rates are observed while comparing the unit rates with cost data book. However, the Commission has considered Unit Rate as per Cost Data Book while arriving at the total cost.
50. During the analysis, it is observed that in the FY 2021-22 Capex Plan, for activity of Network augmentation / addition to meet load growth/11 KV line, PTR, DTR, LT line, TPSODL has only utilised Rs. 1.84 Cr (21%) of the approved Capex (Rs.8.74 Cr). Further, TPSODL has submitted to complete the pending activities by Quarter-2 of FY

2022-23. In the Capex DPR for the FY 2022-23, TPSODL has proposed the similar activities separately. Hence, the Commission allows 50% of Rs. 11.52 Cr under New 11kV link Lines, 50% of Rs 3.56 Cr. under augmentation of Power Transformer, and 50% of Rs 19.70 Cr under augmentation of Distribution Transformer and 50% of Rs. 2.67 Cr under augmentation/ addition of LT ABC line as Capex for the FY 2022-23.

51. Hence, the Commission decides to limit the CAPEX amount under Load Growth to Rs. 18.72 Cr for the FY 2022-23 against the proposed CAPEX of Rs. 37.45 Cr.

52. The summary of Capex proposed in the DPR, approved by the Board and approved by the Commission are summarized as follows:

Description	Capex as per DPR (Rs. Cr)	Board Approved Capex (Rs. Cr)	OERC Approved Capex (Rs. Cr)
New 11kV link Lines	11.52	11.52	5.75
Augmentation of Power Transformer	3.56	3.56	1.78
Augmentation of Distribution Transformer	19.70	19.70	9.85
Augmentation / addition of LT ABC line	2.67	2.67	1.34
Total	37.45	37.45	18.72

E. Technology Infrastructure

53. The Commission has noted the schemes and claims of the petitioner under the Technology Infrastructure Scheme. The Commission is of the view that the CAPEX proposed under the Technology Infrastructure has to be considered in view of the long-term benefits as there are no. of schemes are related to IT infrastructure development, which are one-time investments. Further, in FY 2021-22, TPSODL has incurred maximum Capital Expenditure in the development of the Technology Infrastructure.

54. As per the work progress data submitted by TPSODL, it is observed that TPSODL has utilized Rs. 89.93 Cr as against the approved Capex of Rs. 91.32 Cr, which is 98 % of the OERC approved Capital Expenditure for FY 2021-22.

55. In case of activities related to Technology Infrastructure, TPSODL up to March 2022 has utilized actual Capital Expenditure of Rs. 72.86 Cr (as against the approved Capex of Rs. 71.12 Cr), which is 102.44 % of the OERC approved Capital Expenditure for FY 2021-22 and has submitted that Management approval has been taken for the schemes

such as SCADA and GIS Implementation where CAPEX incurred was more than the OERC approved value.

56. Considering the significant progress and efforts made by TPSODL during the FY 2021-22 and the importance of Technology Infrastructure, the Commission allows Capex proposal of Rs. 33.27 Cr as proposed by TPSODL under Technology Infrastructure for the FY 2022-23.
57. The summary of Capex proposed in the DPR, approved by the Board and approved by the Commission are summarized as follows:

Description	Capex as per DPR (Rs. Cr)	Board Approved Capex (Rs. Cr)	OERC Approved Capex (Rs. Cr)
Build & Strengthen end user IT infrastructure	8.05	8.05	8.05
Strengthen Network Connectivity across TPSODL	7.97	7.97	7.97
Augmentation of Data Centre infrastructure – Hardware and Software	15.55	15.55	15.55
IT infrastructure for 50-Seater Call Centre.	1.7	1.7	1.7
Total	33.27	33.27	33.27

F. Civil Infrastructure and Administration

58. The Commission has noted the schemes and claims of the petitioner under the Civil Infrastructure and Administration Scheme and is of the view that the Capex proposed is essential for long-term benefits and to comply with mandatory requirements.
59. TPSODL has partially utilized the CAPEX approved under the Civil Infrastructure & Administration scheme as compared to other schemes in FY 2021-22. As per the progress of work submitted by TPSODL, it is observed that actual Expenditure is Rs. 89.93 Cr as against the approved Capex of Rs. 91.32 Cr, which is 98 % of the approved Capital Expenditure for the FY 2021-22.
60. In case of activities related to Civil Infrastructure, TPSODL up to March 2022 has utilized actual Capital Expenditure of Rs. 17.07 Cr as against the approved Capex of Rs. 20.20 Cr, which is 84.50 % of the OERC approved Capital Expenditure for FY 2021-22.
61. Some of the schemes such as Civil & Electrical work for Call center &PSCC, STPI has been fully capitalized by TPSODL. TPSODL has also submitted that capitalization of

the Rs. 91.32 Cr approved by Commission under Technology & Civil Infrastructure Scheme will be achieved before 3rd Quarter of FY 2022-23.

62. Considering significant progress and efforts made by TPSODL during FY 2021-22 and importance of Civil Infrastructure, the Commission allows Capex proposal for Rs. 19.04 Cr as proposed by TPSODL under Civil Infrastructure and Administration for the FY 2022-23.
63. The summary of Capex proposed in the DPR, approved by the Board and the approved by the Commission are summarized as follows:

Description	Capex as per DPR (Rs. Cr)	Board Approved Capex (Rs. Cr)	OERC Approved Capex (Rs. Cr)
Customer Relation Centre (CRC)	2.50	2.50	2.50
Infrastructure for store and offices	10.78	10.78	10.78
Security Surveillance System and Employee Welfare	5.76	5.76	5.76
Total	19.04	19.04	19.04

64. TPSODL in its DPR proposal has also requested for approval of Rs. 20.00 Cr to meet Unforeseen Expenses. The Commission does not find any merit on allowing the Unforeseen Capex as part of Capex Plan for FY 2022-23 as no justification has been submitted by the Petitioner for such provision.
65. In view of the necessity of the proposed capital investment plan, the Commission hereby grants in principle approval to Capex proposals for the FY 2022-23, which is summarized as follows:

Approved Capex Plan for FY 2022-23

Sl. No.	Major Category	Activity	DPR Cost (Rs. Cr)	Board Approved Cost (Rs. Cr)	OERC Approved Cost (Rs. Cr) (Considering dis-allowance due to variation in CDB rates & last year backlogs)
1	Statutory & Safety	Safety & Electrical Testing Equipment	14.89	14.89	14.26
		Cradle guard at major road crossings in Populated area, School area	6.79	6.79	3.40
		Fencing of Distribution substations (DSS) & Boundary wall for PSS	15.30	15.30	15.30
		Intermediate poles for unsafe to safe location	6.72	6.72	6.37
		Sub Total- Statutory & Safety (1)	43.71	43.71	39.33
2	Loss	Upgradation / refurbishment of 33	24.84	24.84	24.84

Sl. No.	Major Category	Activity	DPR Cost (Rs. Cr)	Board Approved Cost (Rs. Cr)	OERC Approved Cost (Rs. Cr) (Considering dis-allowance due to variation in CDB rates & last year backlogs)
	Reduction	kV & 11 kV Line			
		Feeder Meter for Energy Audit	8.15	8.15	8.15
		LT Bare to ABC Conversion	7.80	7.80	3.90
		LT Distribution Polycarbonate Box & Replacement of Damaged Service Cable	5.43	5.43	5.43
		GIS Implementation	18.40	18.40	18.40
		Sub Total- Loss Reduction (2)	64.62	64.62	60.72
3	Network Reliability	Refurbishment of 33/11kV Primary Substations (Station Transformer, VCB, Isolator, Relay, CT, PT, LA, Illumination, Battery & Chargers, Earthing, etc)	16.45	16.45	13.13
		Mitigation of Single PTR (N-1 arrangement) & Replacement of Old PTR	12.52	12.52	12.52
		SCADA implementation in Conventional Non ODSSP PSS (Electrical+ Automation +Civil)	59.86	59.86	59.86
		ADMS Implementation	12.00	12.00	0.00
		Construction of New 33 kV Lines for GSS Bay Utilisation	7.27	7.27	6.65
		N-1 arrangement for 33 kV Lines	7.59	7.59	4.95
		Life enhancement/Refurbishment of Network (Lines, V-Cross arm, Earthings, LA, UG & Covered Conductor)	8.17	8.17	8.17
		Refurbishment of DSS & LV Protection at DSS	18.13	18.13	8.85
		33 kV & 11 kV Line AB Switch, FPI, RMU, ARC, Sectionalizer	16.88	16.88	8.44
		Trolley mounted Mobile Substation	1.41	1.41	1.18
		Sub-Total Network Reliability (3)	160.28	160.28	123.75
4	Load Growth	New 11kV link Lines	11.52	11.52	5.75
		Augmentation of Power Transformer	3.56	3.56	1.78
		Augmentation of Distribution Transformer	19.70	19.70	9.85
		Augmentation / addition of LT ABC line	2.67	2.67	1.34
		Sub Total- Load Growth (4)	37.45	37.45	18.72
5	Technology Infrastructure	Build & Strengthen end user IT infrastructure	8.05	8.05	8.05
		Strengthen Network Connectivity across TPSODL	7.97	7.97	7.97

Sl. No.	Major Category	Activity	DPR Cost (Rs. Cr)	Board Approved Cost (Rs. Cr)	OERC Approved Cost (Rs. Cr) (Considering dis-allowance due to variation in CDB rates & last year backlogs)
		Augmentation of Data Centre infrastructure – Hardware and Software	15.55	15.55	15.55
		IT infrastructure for 50-Seater Call Centre.	1.70	1.70	1.70
		Sub Total -Technology Infrastructure (5)	33.27	33.27	33.27
6	Civil Infrastructure & Administration	Customer Relation Centre (CRC)	2.50	2.50	2.50
		Infrastructure for store and offices	10.78	10.78	10.78
		Security Surveillance System and Employee Welfare	5.76	5.76	5.76
		Sub Total – Civil Infrastructure & Admin (6)	19.04	19.04	19.04
		Total (1+2+3+4+5+6)	358.37	358.37	294.82
		Unforeseen CAPEX	20.00	20.00	0.00
		GRAND TOTAL	378.37	378.37	294.82

66. In summary, the Commission's year-wise and cumulative approval for Capex is as under:

Requirement of Minimum Capex as per Vesting Order for FY 2021-22	Rs. 227.00 Cr.
Capex Approved by the Commission for FY 2021-22	Rs. 184.65 Cr.
Requirement of Minimum Capex as per Vesting Order for FY 2022-23	Rs. 316.00 Cr.
Capex Approved by the Commission for FY 2022-23	Rs. 294.82 Cr.
Total Minimum Cumulative Capex as per Vesting Order till FY 2022-23	Rs. 543.00 Cr.
Total Cumulative Capex Approved by the Commission till FY 2022-23	Rs. 479.47 Cr.

67. The approved cost shall be passed in the ARR as per the norm subject to rational utilization by the petitioner and prudence check through audit.

68. In addition to the observations stated above, the Commission directs TPSODL to submit the CAPEX DPR for the upcoming years with the following details for each proposed project:

- Name of the Capital Investment Work
- Nature of CAPEX Scheme (New/ Resubmitted / revised / modified /extended).
- Details of the Location including Name of Zone, Circle/Area/Location) along with GPS Co-ordinates
- Objective of the Capital Investment

- e) Timelines of the Project
 - f) Need Analysis – details of mandatory section under sections of EA 2003 or any mandatory Regulations, Policies if any.
 - g) Brief Scope and Specifications of Work.
 - h) Detailed Justification for Quantity of material proposed.
 - i) List of Identical schemes previously approved by the Commission and their progress report (since the taking over of Licensees) including plan of other utilities to avoid duplication of work.
 - j) Funding Arrangement for the Scheme along with the estimated cost including details of Hard Cost, IDC and Contingency Cost
 - k) Time Frame of the expenditure specifically mentioning corresponding years of Capital Expenditure and Capitalization along with the methodology for computing Percentage utilization of Project.
 - l) Cost Benefit Analysis for the project (% reduction in Loss over a specific period, Load Relief Details, % Voltage Regulation or any other benefit which are quantifiable).
 - m) Constraints - Technical, Physical and Financial constraints, if any, in execution of the Scheme may be highlighted, Risk Mitigation plan, Right of Way (RoW) Issues/Land availability/ Forest Area/ Delay in other clearances, etc.
 - n) Statutory Clearances and Project Layout.
 - o) Works intended for adaptation of latest Technology/ Improvement/ Upgradation of Existing Infrastructure.
69. The Commission further suggests that due care on the following aspects shall be taken by the DISCOM while submitting the Capex proposals for subsequent years:
- a) Planning of distribution network (at least considering downstream network upto 11/0.4 kV transformers) has to be based on load flow study for different time frames (short term: for one year and long term for five years) considering the projected load growth including industrial load, (n-1) contingency criteria for 33 kV lines & 33/11 kV transformers and permissible range of operating voltage. The summary of study report for different time frame shall bring out:

- i. List of existing lines getting over loaded at 33 kV & 11 kV level
- ii. List of existing 33/11 kV, 11/0.4 kV sub-stations with over loaded transformers
- iii. Requirement of additional lines & sub-stations
- iv. Low voltage pockets
- v. Technical loss etc.

The implementation plan in stages has to be formulated accordingly. The distribution planning study shall take into account the capital investment by Govt. in form of transmission and distribution assets.

- b) DPR is to be prepared based on above studies covering required augmentation/strengthening of existing distribution infrastructure and requirement of additional infrastructure (new sub-station and lines at 33 kV & 11 kV level) to meet the projected demand in different time frame.
- c) The projected peak demand & energy requirement in area of operation of the DISCOM is to be indicated (for current FY 2022-23 and subsequent financial year upto the end of FY 2026-27). The projected load and energy requirement for each circle and divisions (for current FY 2022-23 and subsequent financial years upto the end of FY 2026-27) is also to be indicated.
- d) Details of Distribution infrastructure, load & energy requirement are to be submitted in format provided in Annexure- 1.
- e) Details of existing & proposed new lines and sub-station (considered for distribution network load flow study) are to be submitted. A suggested format with typical example is enclosed as Annexure-2, 3, 4, 5.
- f) The DPR shall be prepared based on Standardization of (i) maximum MVA capacity of sub-station (33/11 kV, 11/.4 kV) for Urban & Rural area, (ii) rating of Distribution Transformer (DT) & Power Transformer (PT), (iii) (n-1) contingency Criteria for lines and PT (iv) maximum line length and the power flow in 11 kV & 33 kV lines, (v) span length of 33 kV & 11 kV overhead lines, (vi) type (ACSR/AAAC/High Tempt & low Sag/any other) & size (Dia & Area) of conductor for 33kV & 11kV overhead lines, (vii) Rating of 33kV & 11kV Switchgear/Air break switch/Air Circuit Breaker (A, kA & duration, Type : SF/ Vacuum/ MCCB/ ACB/ Air break switch), (viii) rating of RMU, Auto-recloser

& sectionaliser and (ix) Suitable insulator (polymer/ long rod/ RTV coated porcelain insulator/ normal porcelain or long rod insulators).

- g) The specification for Distribution Transformer (DT) & Power Transformer (PT), switchgear, conductor, insulator, overhead structure (pole/Lattice structure/joist/ PCC, etc. underground cable, transformer foundation, foundation for LT & HT poles, lightening protection, fire fighting system, lighting system, AC/DC system, auto-recloser and RMU etc. need to be standardized across the DISCOMs keeping in view the development of cyclone resilient Distribution infrastructure, wherever required. This would facilitate interchangeability of equipment / material and spares across the DISCOMs and would also facilitate the common pooling of spares.
- h) The present status and identification of area & planning for conversion of radial system to ring main and time frame for implementation need to be indicated in the DPR.
- i) The present status and the future planning of underground cable system or conversion of overhead to underground system indicating the area and the time frame for implementation are to be mentioned in the DPR.
- j) Planning for establishment of fibre optic communication network and identification of area (indicating the lines with voltage level) for implementation of AB cable or covered conductor need to be brought out clearly.

70. The Petitioner is also directed to :

- a) Expedite the execution of pending works (approved for the FY 2021-22) and submit the report on execution of the activities approved in CAPEX Plan for FY 2021-22 along with actual Capital Expenditure and actual Capitalisation along with the ARR & Tariff Petition.
- b) Submit the Capital investment plan strictly adhering to the provisions of the Tariff Regulations, Vesting Order and the license conditions from FY 2023-24 onwards.
- c) More focus should be on the Safety aspects such as proper earthing, utilisation of proper testing equipment and other measures to ensure safety of human & animals as well as assets of distribution system;

- d) Standard specification is to be followed for development of cyclone resilient Distribution infrastructure, wherever required for Distribution Transformer (DT) & Power Transformer (PT), switchgear, conductor, insulator, overhead structure (pole/Lattice structure/joist/ PCC, etc. underground cable, transformer foundation, foundation for LT & HT poles, lightening protection, fire fighting system, lighting system, AC/DC system, auto-recloser and RMU etc.
- e) Planning of new Sub-station shall be done having adequate provision for future expansion (additional bays for future lines & transformers) to avoid creation of another sub-station in nearby area.
- f) Proper utilisation of the feeders available in the OPTCL substations is desired.
- g) Submit the System study report along with details of Augmentation works and establishment of new infrastructure mentioning the name of lines & sub-stations in the format suggested at Annexure- 2, 3, 4, 5;
- h) The Commission has allowed expenditure for Replacement of Damaged Service Cable in this Capex as an effort to strengthen the system in initial years of TPSODL. However, the Petitioner is directed to propose for Replacement of Damaged Service Cable in the ARR and not through Capex in the subsequent years.
- i) Provide Cost Benefits analysis such as % loss reduction which are quantifiable, comparison for impact on tariff with and without the proposed investment, Target (Year wise Projection), Year wise Tariff impact due to Investment in terms of % of ARR and Rs./kWh, Payback Period, NPV, IRR and other Financial Parameters for project assessment.
- j) Provide justification for cost increment (if any) due to proposal for any specific quality product or increased no. of quantity than normally required. Further justification is also desired on why alternatives cannot be possible.
- k) Submit the details of compliances of the directions given in the CAPEX Order of previous years.
- l) Submit quarterly progress report of the works along with the details of materials utilized vis-à-vis various activities shown in the DPR.

- m) Take stock of the inventory available in the stores and make its effective utilization.
- n) Procure the material/award the Contracts only through transparent open competitive bidding process;
- o) Approach the Commission for prior approval if the awarded cost of any work is exceeding the cost approved by the Commission;
- p) Effort should be made to optimize project cost with efficient project management and leveraging various technology options so that the benefit can be passed on to consumers.

71. Accordingly the case is disposed of.

Sd/-
(S. K. Ray Mohapatra)
Member

Sd/-
(G. Mohapatra)
Officiating Chairperson

Annexure-1

Name of Circle : _____
Area (Sq. Km.) : _____

Sl. No.	Description	Existing	Expected addition at the end of				
			FY 2021-22-23	FY 2022-23-24	FY 24-25	FY 25-26	FY 26-27
1	No. of Consumers						
2	Total Geographical area covered						
3	Total No. of Consumer base						
4	Load demand (MW)						
5	Energy Requirement (MU)						
6	AT&C loss						
7	Total No. of 33 kV Feeders						
8	Total Circuit length of 33 kV Lines						
9	Total No. of 33/11 kV Primary Substation						
10	Total No. of 33/11 kV Power Transformer (PT)						
11	Total No. of 33/0.4 kV PT						
12	Total Installed capacity of primary S/s						
13	Total No. of 11 kV outgoing Feeder						
14	Total Circuit length of 11 kV Lines						
15	Total No. of 11/0.4, 11/0.23 kV Distribution Transformer (DT)						
16	Total Installed Capacity of Distribution S/s						
17	Total Circuit length of LT Network (Bare Conductor)						
18	Total Circuit length of LT Network (AB Cable)						

Name of Circle	Division Name	Sub-Division Name	Load in MW	Energy requirement in MU
CIRCLE-1 (Name)	Division-1 (Name)			
	Division-2 (Name)			
	Division-3 (Name)			
CIRCLE-2 (Name)	Division-1 (Name)			
	Division-2 (Name)			
	Division-3 (Name)			

Annexure- 2

Basic information of existing Sub-stations (the SLD & Power map to be enclosed covering 33 kV & 11 kV system upto 11/0.4 kV Transformers)

Sl. No.	Name of Circle / District, Division & Sub-station	33/11 kV or 11/0.4 kV or 33/0.4 kV	Present load (MW)	No. Of Bays [line bays & transformer bays (33 kV & 11 kV), etc.]	N-I contingency for 33 kV incommensurable or not (Y/N)	Transformation capacity (MVA) with voltage ratio (e.g. 33/11 kV, 2x5 MVA + 11/0.4 kV, 2x100 KVA)	Transformer pole mounted/plinth mounted (for 11/0.4 kV transformer)	N-I contingency for Power Transformer (33/11 kV) available or not (Y/N)	Augmentation of Transformation capacity required or not (Y/N) (Based on load flow study/based on operation feedback)	Switchgear rating (Normal -A & short time rating with duration -A, kA & sec.) adequate or not (Y/N)	Lightning Protection for Transformer (PT/DT) provided as required on HV and/or LV side	Protection system (as per CEA Regulation) in place or not for lines, cables, transformers (HV & LV side) (Y/N)	Status of implementation of SCADA/ Automatic in substation (Existing/to be implemented)	Metering of all feeders & Transformer (HV/LV) side in place or not (Y/N)	Adequate battery Capacity (AH) & associated chargers available with standby battery (Y/N)	Earthing system is healthy or not (Y/N) & Required gravel thickness (if provided) maintained or not (Y/N)	Required Fire Fighting System provided or not (Y/N)	Lighting system adequate or not (Y/N)	Action Required/ Action being taken
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	A	33/11 kV	7 MW	33 kV: line bay-3 T/F bay -1 11 kV: line bay-5 T/F bay -1	N	33/11 kV, 8 MVA	-	N	N	Y	Y	Line – Y T/F HV side-Y T/F LV side-Y	To be implemented	Y	Y	N, N	N	Y	

Annexure- 3

Basic information of proposed new substation (based on load flow study of Distribution network)															
Sl.No.	Name of Circle/ District, Division & Sub- station	33/11 kV or 11/0.4 kV or 33/0.4 kV	Expected load (MW)	No. Of Bays [line bays & transformer bays (33 kV & 11 kV), etc.]	Transformation capacity (MVA) with voltage ration (e.g. 33/11 kV, 2x5 MVA+11/0.4 kV, 2x100 KVA)	N-1 contingency provided or not for incommer and Power Transformer (Y/N)	Protection provided for lines, transfromers (on HV & LV side) in line with CEA Reg.	Adequate switchgear Rating (A, kA with duration) considered or not (Y/N)	Required Battery Capacity (AH) and associated charger provided with standby battery (Y/N)	Required lightning protection for Transformer (PT/DT), fire fighting system, earthing system, AC/DC system, lighting system provided or not (Y/N)	Target for completion				
											2022- 23	2023- 24	2024- 25	2025- 26	2026- 27
1	2	3	4	5	6	7	8	9	10	11	12				
	A	33/0.4 kV	4 MW	33 kV: Line bays-4 T/F bays-1 11 kV: Line bays-5 T/F bays-2	33/11 kV, 2x5 MVA+11/0.4 kV, 500 KVA	Y	Y	Y	Y	Y					

Annexure- 4

Basic information of existing overhead lines (33 kV & 11 kV)														
Sl.No	Name of Circle/ District & Division	From	To	Voltage level (kV)	Single circuit or Double circuit or more no. of circuit & Length of line (KM)	Type & size (dia & area) of conductor	Line over loaded or not (based on load flow study/based on operation feedback)	Design span (m)	Type of support structure (Pole/ Joist/ Lattice/PCC/Steel pole/ other type)	Adequate safety clearance maintained for over head line (Y/N)	Cradle guards provided below the line (wherever required)	Foundation healthy or not (Y/N)	Status of mapping of line Asset [completed/in progress(% of progress)/to be taken up]	Action Required/Action being taken
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	X	A	B	33	single circuit, 10 km	ACSR (DOG), Dia: 14.15 mm, Area: 117.69 sq.mm	Based on load flow study & operation feedback	60 M	MS Joist	Y		Y	To be taken up	

Annexure- 5

Basic information of proposed new lines at 33 kV & 11 kV level (based on load flow study of Distribution network)															
Sl.No	Name of Circle/ District & Division	From	To	Voltage level (kV)	Single circuit or Double circuit or more no. of circuits & Length of line (kM)	Type & size (dia & area) of conductor	Design span (m)	Type of support structure (Pole/ Joist/ Lattice/ PCC/ Steel pole/ other types, etc.)	Status of mapping of line Asset [completed/in progress(% of progress)/to be taken up]	Action Required/ Action being taken	Target for completion				
											2022-23	2023-24	2024-25	2025-26	2026-27
1	2	3	4	5	6	7	8	9	10	11	12				
1	Name	A	B	33 kV	D/C, 15 KM	ACSR (DOG), Dia: 14.15 mm, Area: 117.69 sqmm	60 M	Lattice Structure	To be taken up						

General Information				
1	Name of the DISCOM	TP SOUTHERN ODISHA DISTRIBUTION LIMITED (erstwhile		
2	i) Year of Establishment	2021 (erstwhile SOUTHCO 1997)		
	ii) Government/Public/Private			
3	DISCOM's Contact details & Address			
i	City/Town/Village	Berhampur		
ii	District	Ganjam		
iii	State	Odisha	Pin	760004
iv	Telephone		Fax	
4	Registered Office			
i	Company's Chief Executive Name	Mr. Arvind Singh		
ii	Designation	Chief Executive Officer		
iii	Address	Kamapalli, Courtpetta		
iv	City/Town/Village	Berhampur	P.O.	Medical Campus
v	District	Ganjam		
vi	State	Odisha	Pin	760004
vii	Telephone		Fax	
5	Nodal Officer Details*			
i	Nodal Officer Name (Designated at DISCOM's)	Mr. Saumitro Banerjee		
ii	Designation	Head		
iii	Address	Kamapalli, Courtpetta		
iv	City/Town/Village	Berhampur	P.O.	Medical Campus
v	District	Ganjam		
vi	State	Odisha	Pin	760004
vii	Telephone		Fax	
6	Energy Manager Details*			
i	Name	Mr. Ratan Kuber		
ii	Designation	Lead Engineer	Whether EA or EM	EM
iii	EA/EM Registration No.	EA-32475/21		
iv	Telephone		Fax	
v	Mobile	9777333245	E-mail ID	energyaudit@tpsouthernodisha.com
7	Period of Information			
	Year of (FY) information including Date and Month (Start & End)	1st Apr, 2021 - 31st March, 2022		

Performance Summary of Electricity Distribution Companies			
1	Period of Information Year of (FY) information including Date and Month (Start & End)	1st Apr, 2021 - 31st March, 2022	
2	Technical Details		
(a)	Energy Input Details		
(i)	Input Energy Purchase (From Generation Source)	Million kwh	3941.52
(ii)	Net input energy (at DISCOM Periphery after adjusting the transmission losses and energy traded)	Million kwh	3941.54
(iii)	Total Energy billed (is the Net energy billed, adjusted for energy traded))	Million kwh	2998.72
(b)	Transmission and Distribution (T&D) loss Details	Million kwh	942.81
		%	23.92%
	Collection Efficiency	%	89%
(c)	Aggregate Technical & Commercial Loss	%	32%

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
Name of the DISCOM:
Full Address:-

Signature:-
Name of Energy Manager*:
Registration Number:

Seal

Form-Details of Input Infrastructure					
1	Parameters	Total	Covered during in audit	Verified by Auditor in Sample Check	Remarks (Source of data)
i	Number of circles	6			
ii	Number of divisions	19			
iii	Number of sub-divisions	51			
iv	Number of feeders	997			
v	Number of DTs	55959			
vi	Number of consumers	2386112			
2	Parameters	66kV and above	33kV	11/22kV	LT
a.i.	Number of conventional metered consumers	18	109	1862	2384123
ii	Number of consumers with 'smart' meters	0	0	0	0
iii	Number of consumers with 'smart prepaid' meters	0	0	0	0
iv	Number of consumers with 'AMR' meters	18	109	123	14442
v	Number of consumers with 'non-smart prepaid' meters	0	0	0	0
vi	Number of unmetered consumers	0	0	0	0
vii	Number of total consumers	18	109	1862	2384123
b.i.	Number of conventionally metered Distribution Transformers				900
ii	Number of DTs with communicable meters				900
iii	Number of unmetered DTs				55059
iv	Number of total Transformers				55959
c.i.	Number of metered feeders		95	664	
ii	Number of feeders with communicable meters		17	415	
iii	Number of unmetered feeders		21	217	
iv	Number of total feeders		116	881	
d.	Line length (ct km)		85903		
e.	Length of Aerial Bunched Cables		39270		
f.	Length of Underground Cables				
3	Voltage level	Particulars	MU	Reference	Remarks (Source of data)
i	66kV and above	Long-Term Conventional	3,942	Includes input energy for franchisees	
		Medium Conventional			
		Short Term Conventional			
		Banking			
		Long-Term Renewable energy			
		Medium and Short-Term RE		Includes power from bilateral/ PX/ DEEP	
		Captive, open access input		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		As confirmed by SLDC, RLDC etc.	
		Power procured from inter-state sources	3,942	Based on data from Form 5	
		Power at state transmission boundary	3,942		
		Long-Term Conventional			
		Medium Conventional			
		Short Term Conventional			
		Banking			

ii	33kV	Long-Term Renewable energy		
		Medium and Short-Term RE		
		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	3,942	
iv	33 kV	Renewable Energy Procurement		
		Small capacity conventional/ biomass/ hydro plants Procurement		
		Captive, open access input		
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	3,942	
4	Voltage level	Energy Sales Particulars	MU	Reference
i	LT Level	DISCOM' consumers	2,193	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	2,193	
		Quantum of LT level losses	670	
		Energy Input at LT level	2,863	
ii	11 kV Level	DISCOM' consumers	206	Include sales to consumers in franchisee areas, unmetered consumers
		Demand from open access, captive		Non DISCOM's sales
		Embedded generation at 11 kV level used		Demand from embedded generation at 11kV level
		Sales at 11 kV level	206	
		Quantum of Losses at 11 kV	205	
		Energy input at 11 kV level	410	
iii	33 kV Level	DISCOM' consumers	69	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	69	
		Quantum of Losses at 33 kV	68	
		Energy input at 33kV Level	137	
iv	> 33 kV	DISCOM' consumers	531	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	531	
		Sales at 66kV and above (EHV)	531	
Total Energy Requirement			3,941	
Total Energy Sales			2,998	

Energy Accounting Summary					
5	DISCOM	Input (in MU)	Sale (in MU)	Loss (in MU)	Loss %
i	LT	2863	2,193	670	23%
ii	11 Kv	410.46	206	204.64	50%
iii	33 kv	136.82	69	68.22	50%
iv	> 33 kv	531	531	0	0%
6	Open Access, Captive	Input (in MU)	Sale (in MU)	Loss (in MU)	
i	LT				
ii	11 Kv				
iii	33 kv				
iv	> 33 kv				

Loss Estimation for DISCOM	
T&D loss	943
D loss	943
T&D loss (%)	0.239235348
D loss (%)	0.239235348

Form-Input energy(Details of Input energy & Infrastructure)			
A. Summary of energy input & Infrastructure			
S.No	Parameters	Period From 1st April,2021 To 31st March,2022	Remarks (Source of data)
A.1	Input Energy purchased (MU)	3941.52	
A.2	Transmission loss (%)	24%	
A.3	Transmission loss (MU)	942.8087379	
A.4	Energy sold outside the periphery(MU)	0	
A.5	Open access sale (MU)	0	
A.6	EHT sale	531	
A.7	Net input energy (received at DISCOM periphery or at distribution point)-(MU)	3941.52	
A.8	Is 100% metering available at 66/33 kV (Select yes or no from list)	No	
A.9	Is 100% metering available at 11 kV (Select yes or no from list)	No	
A.10	% of metering available at DT	2%	
A.11	% of metering available at consumer end	100%	
A.12	No of feeders at 66kV voltage level	0	
A.13	No of feeders at 33kV voltage level	118	
A.14	No of feeders at 11kV voltage level	911	
A.15	No of LT feeders level	55959	
A.16	Line length (ckt. km) at 66kV voltage level		
A.17	Line length (ckt. km) at 33kV voltage level	3847	
A.18	Line length (ckt. km) at 11kV voltage level	42786	
A.19	Line length (km) at LT level	39270	
A.20	Length of Aerial Bunched Cables	30229	
A.21	Length of Underground Cables		
A.22	HT/LT ratio	1.187496817	

B. Meter reading of input energy at injection points																				
S.No	Zone	Circle	Voltage Level (KVA)	Division (KVA)	Sub-Division (KVA)	Feeder ID	Feeder Name	Feeder Metering Status (Metered/ unmetered/ AMI/AMR)	Status of Meter (Functional/Non-functional)	Metering Date	Feeder Type (Agri/ Industrial/Mixed)	Status of Communication			Meter S.No	Period from...to...			Sales	Remarks (Source of)
										Date of last actual meter reading/ communication		% data received through automatically if feeder AMR/AMI	Number of hours when meter was unable to communicate in period	Total Number of hours in the period		CT/PT ratio	Import (MU)	Export (MU)		
B.1	TPSODL	Rayagada	132 KV	GED		Akhusingi	Trf1-12.5MVA 132/33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT02182	1	43.01			BST BILL
B.2	TPSODL	Rayagada	132 KV	GED		Akhusingi	Trf2-12.5MVA 132/33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT02184	1	42.25			BST BILL
B.3	TPSODL	Aska	132 KV	AED-II		Aska	Trf1-40MVA 132/33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT01167	1	100.23			BST BILL
B.4	TPSODL	Aska	132 KV	AED-II		Aska	Trf2-40MVA 132/33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT00961	1	97.27			BST BILL
B.5	TPSODL	Aska	132 KV	AED-II		Aska	Trf3-40MVA 132/33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT01457	1	97.46			BST BILL
B.6	TPSODL	Aska	132 KV	AED-I		Aska New(220/132/33)	Trf1-40MVA 132/33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT01488	1	74.04			BST BILL
B.7	TPSODL	Jeyapore	220 KV	MED		Balimela	Trf1-40MVA 220/33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT01893	1	52.98			BST BILL
B.8	TPSODL	Jeyapore	220 KV	MED		Balimela	Trf2-20MVA 220/33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT01895	1	34.43			BST BILL
B.9	TPSODL	Berhampur	132 KV	GNED		Balugaon	Khallikote Feeder 33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT00747	1	99.47			BST BILL
B.10	TPSODL	Berhampur	132 KV	GNED		Berhampur	Trf1-40MVA 132/33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT00121	1	130.31			BST BILL
B.11	TPSODL	City	132 KV	BED-II		Berhampur	Trf2-20MVA 132/33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	B0004476	1	83.51			BST BILL
B.12	TPSODL	City	132 KV	BED-II		Berhampur	Trf3-40MVA 132/33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT00123	1	131.57			BST BILL
B.13	TPSODL	Bhanjanagar	132 KV	BNED		Bhanjanagar	Trf1-40MVA 132/33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT02084	1	66.72			BST BILL
B.14	TPSODL	Bhanjanagar	132 KV	BNED		Bhanjanagar	Trf2-16MVA 132/33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT01273	1	43.37			BST BILL
B.15	TPSODL	Bhanjanagar	132 KV	BNED		Bhanjanagar	Trf3-40MVA 132/33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT01277	1	67.29			BST BILL
B.16	TPSODL	Bhanjanagar	132 KV	BOED		Boudh	Aditya Birla Solar-I 33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	ORUS1513	1	25.29	0.082211		BST BILL
B.17	TPSODL	Bhanjanagar	132 KV	BOED		Boudh	Aditya Birla Solar-II 33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	ORUS1512	1	25.17	0.06682		BST BILL
B.18	TPSODL	Bhanjanagar	132 KV	BOED		Boudh	Trf1-20MVA 132/33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT01155	1	19.71			BST BILL
B.19	TPSODL	Bhanjanagar	132 KV	BOED		Boudh	Trf2-20MVA 132/33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT00858	1	19.75			BST BILL
B.20	TPSODL	Berhampur	132 KV	GNED		Chatrapur	IRE Feeder1 132KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	APM03533	1	22.70			BST BILL
B.21	TPSODL	Berhampur	132 KV	GNED		Chatrapur	IRE Feeder2 132KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	APM03517	1	39.04			BST BILL
B.22	TPSODL	Berhampur	132 KV	GNED		Chatrapur	Rambha Tr. Fdr 132KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT00688	1	40.85			BST BILL
B.23	TPSODL	Berhampur	132 KV	GNED		Chatrapur	Trf1-20MVA 132/33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT00786	1	70.49			BST BILL
B.24	TPSODL	Berhampur	132 KV	GNED		Chatrapur	Trf2-20MVA 132/33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT00715	1	65.32			BST BILL
B.25	TPSODL	Berhampur	132 KV	GNED		Chatrapur	Trf3-20MVA 132/33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT00107	1	51.39			BST BILL
B.26	TPSODL	Aska	132 KV	GSED		Chikiti	Trf1-40MVA 132/33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT01593	1	64.06			BST BILL
B.27	TPSODL	Jeyapore	132 KV	NED		Dabugaon	Trf1-12.5MVA 132/33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT00717	1	46.34			BST BILL
B.28	TPSODL	Jeyapore	132 KV	NED		Dabugaon	Trf2-12.5MVA 132/33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT00861	1	46.73			BST BILL
B.29	TPSODL	Aska	132 KV	GSED		Digapahandi	Trf1-20MVA 132/33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	APM03696	1	56.29			BST BILL
B.30	TPSODL	Aska	132 KV	GSED		Digapahandi	Trf2-20MVA 132/33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	APM03549	1	57.11			BST BILL
B.31	TPSODL	Aska	132 KV	GSED		Digapahandi	Trf3-12.5MVA 132/33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	APM12597	1	36.56			BST BILL
B.32	TPSODL	Rayagada	132 KV	PKED		G. UDAYAGIRI	Trf1-20MVA 132/33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT01437	1	15.11			BST BILL
B.33	TPSODL	Berhampur	132 KV	GNED		Ganjam	GRASIM Ind. Ltd. 132KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT00003	1	165.92	47.586321		BST BILL
B.34	TPSODL	Berhampur	132 KV	GNED		Ganjam	Trf1-12.5MVA 132/33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT00347	1	21.31			BST BILL
B.35	TPSODL	Berhampur	132 KV	GNED		Ganjam	Trf2-12.5MVA 132/33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT00697	1	25.22			BST BILL
B.36	TPSODL	Jeyapore	132 KV	JED		Jayanagar	JAYPUR PG 28KV TERTIA	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	ER1599-A	1	0.38			BST BILL
B.37	TPSODL	Jeyapore	132 KV	JED		Jayanagar	JAYPUR PG 33KV TERTIA	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	ER1600-A	1	0.44			BST BILL
B.38	TPSODL	Jeyapore	132 KV	JED		Jayanagar	JAYPUR PG 430V TERTIA	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	NP5965-A	1	0.32			BST BILL
B.39	TPSODL	Jeyapore	132 KV	JED		Jayanagar	Traction Feeder 132KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT00932	1	93.13			BST BILL
B.40	TPSODL	Jeyapore	132 KV	JED		Jayanagar	Trf1-12.5MVA 132/33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT00917	1	34.28			BST BILL
B.41	TPSODL	Jeyapore	132 KV	JED		Jayanagar	Trf2-20MVA 132/33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT01052	1	47.27			BST BILL
B.42	TPSODL	Jeyapore	132 KV	JED		Jayanagar	Trf3-20MVA 132/33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	APM12635	1	51.87			BST BILL
B.43	TPSODL	Jeyapore	132 KV	JED		Jayanagar	Trf4-20MVA 132/33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT02172	1	51.88			BST BILL
B.44	TPSODL	Rayagada	220 KV	RED		Kasipur	220/33KV 20MVA Trf 1	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT01473	1	7.74			BST BILL
B.45	TPSODL	Jeyapore	220 KV	KED		Laxmipur	Trf1-20MVA 220/33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT00741	1	32.35			BST BILL
B.46	TPSODL	Jeyapore	220 KV	KED		Laxmipur	Trf2-20MVA 220/33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT01479	1	21.04			BST BILL
B.47	TPSODL	Jeyapore	220 KV	KED		Laxmipur	UTKAL ALUMINA Fdr-1	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT00780	1	1.95			BST BILL
B.48	TPSODL	Jeyapore	220 KV	KED		Laxmipur	UTKAL ALUMINA Fdr-2	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT00875	1	0.65			BST BILL
B.49	TPSODL	Jeyapore	220 KV	MED		Malkangiri	Trf1-40MVA 220/33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT01779	1	43.85			BST BILL
B.50	TPSODL	Jeyapore	220 KV	MED		Malkangiri	Trf2-40MVA 220/33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT00710	1	43.92	7.21844		BST BILL
B.51	TPSODL	Jeyapore	33 KV	MED		Meenakshi s/w	Megalift Feeder 33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT01557	1	0.15			BST BILL
B.52	TPSODL	Rayagada	132 KV	PKED		Mohana	Trf1-12.5MVA 132/33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT01794	1	21.68			BST BILL
B.53	TPSODL	Rayagada	132 KV	PKED		Mohana	Trf2-12.5MVA 132/33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT01886	1	20.45			BST BILL
B.54	TPSODL	Rayagada	132 KV	RED		Muniguda .	Bissam-Cuttack Tr.132KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT01798	1	42.25			BST BILL
B.55	TPSODL	City	132 KV	BED-I		Narendrapur	220 KV TATA Feeder-I	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OREB9352	1	0.00			BST BILL
B.56	TPSODL	City	132 KV	BED-I		Narendrapur	220 KV TATA Feeder-II	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OREB9350	1	186.56	149.24979		BST BILL
B.57	TPSODL	City	132 KV	BED-I		Narendrapur	Narendrapur Traction 132KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT00859	1	45.20			BST BILL
B.58	TPSODL	City	132 KV	BED-I		Narendrapur	Trf1-20MVA 132/33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT01837	1	35.08			BST BILL
B.59	TPSODL	City	132 KV	BED-I		Narendrapur	Trf2-40MVA 132/33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT00676	1	56.53			BST BILL
B.60	TPSODL	City	132 KV	BED-I		Narendrapur	Trf3-40MVA 132/33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT00856	1	72.24			BST BILL

B.61	TPSODL	City	132 KV	BED-I		Narendrapur	Trf4-40MVA 132/33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT01810	1	58.36			BST BILL
B.62	TPSODL	Rayagada	132 KV	PKED		Paralakhemendi	Trf1-12.5MVA 132/33KV			31.03.2022	MIXED	NA	NA	NA	OPT01956	1	32.79			BST BILL
B.63	TPSODL	Rayagada	133 KV	PKED		Paralakhemendi	Trf2-12.5MVA 132/33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT01958	1	33.19			BST BILL
B.64	TPSODL	Rayagada	134 KV	PKED		Paralakhemendi	Trf3-12.5MVA 132/33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT00537	1	34.84			BST BILL
B.65	TPSODL	Bhanjanagar	132 KV	PED		Phulbani	Trf1-40MVA 132/33KV			31.03.2022	MIXED	NA	NA	NA	OPT01879	1	63.40			BST BILL
B.66	TPSODL	Bhanjanagar	132 KV	PED		Phulbani	Trf2-12.5MVA 132/33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT01880	1	21.86			BST BILL
B.67	TPSODL	Bhanjanagar	132 KV	PED		Phulbani	Trf3-40MVA 132/33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT01883	1	57.77			BST BILL
B.68	TPSODL	Jeypore	132 KV	KED		Podagada	Trf2-12.5MVA 132/33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT01802	1	14.57			BST BILL
B.69	TPSODL	Jeypore	132 KV	KED		Potangi	Trf1-40MVA 132/33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT00247	1	24.20			BST BILL
B.70	TPSODL	Berhampur	132 KV	PSED		Purushottampur	Trf1-12.5MVA 132/33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT00151	1	27.24			BST BILL
B.71	TPSODL	Berhampur	132 KV	PSED		Purushottampur	Trf2-12.5MVA 132/33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT00156	1	28.09			BST BILL
B.72	TPSODL	Berhampur	132 KV	PSED		Purushottampur	Trf3-20MVA 132/33KV			31.03.2022	MIXED	NA	NA	NA	OPT01795	1	44.03			BST BILL
B.73	TPSODL	Rayagada	132 KV	RED		Rayagada	Traction Feeder 132KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT00740	1	34.23			BST BILL
B.74	TPSODL	Rayagada	132 KV	RED		Rayagada	Trf1-12.5MVA 132/33KV			31.03.2022	MIXED	NA	NA	NA	OPT01846	1	23.62			BST BILL
B.75	TPSODL	Rayagada	132 KV	RED		Rayagada	Trf2-12.5MVA 132/33KV			31.03.2022	MIXED	NA	NA	NA	OPT01848	1	19.84			BST BILL
B.76	TPSODL	Rayagada	132 KV	RED		Rayagada	Trf3-20MVA 132/33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT01809	1	32.80			BST BILL
B.77	TPSODL	Bhanjanagar	132 KV	BOED		Sonepur	Manamunda Feeder 33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT01720	1	80.57			BST BILL
B.78	TPSODL	Jeypore	132 KV	KED		Sunabeda	HAL Feeder 132KV			31.03.2022	MIXED	NA	NA	NA	OPT01892	1	43.12			BST BILL
B.79	TPSODL	Jeypore	132 KV	KED		Sunabeda	Trf1-12.5MVA 132/33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT01890	1	40.57			BST BILL
B.80	TPSODL	Jeypore	132 KV	KED		Sunabeda	Trf2-12.5MVA 132/33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT01888	1	39.51			BST BILL
B.81	TPSODL	Jeypore	132 KV	KED		Sunabeda	Trf3-20MVA 132/33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT01891	1	63.02			BST BILL
B.82	TPSODL	Jeypore	132 KV	NED		Tentulikhunti	Mukhiguda Fdr 33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT01790	1		7.302458		BST BILL
B.83	TPSODL	Jeypore	132 KV	NED		Tentulikhunti	Trf1-20MVA 132/33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT01900	1	37.18			BST BILL
B.84	TPSODL	Jeypore	132 KV	NED		Tentulikhunti	Trf2-20MVA 132/33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT01902	1	35.56			BST BILL
B.85	TPSODL	Jeypore	132 KV	NED		Tentulikhunti	Trf3-20 MVA 132/33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	APM12627	1	23.96			BST BILL
B.86	TPSODL	Jeypore	132 KV	NED		Tentulikhunti	Vento Energy Infra Pvt L	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	Y0639836	1	0.36	0.35755		BST BILL
B.87	TPSODL	Rayagada	132 KV	RED		Therubali	JK Feeder 132KV(Biomas	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT01669	1	1.54			BST BILL
B.88	TPSODL	Rayagada	132 KV	RED		Therubali	Trf1-12.5MVA 132/33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT01398	1	47.71			BST BILL
B.89	TPSODL	Rayagada	132 KV	RED		Therubali	Trf2-12.5MVA 132/33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT01226	1	44.92			BST BILL
B.90	TPSODL	Jeypore	132 KV	NED		Umerkote	Trf1-20MVA 132/33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT00674	1	78.31			BST BILL
B.91	TPSODL	Jeypore	132 KV	NED		Umerkote	Trf2-20MVA 132/33KV	Metered	Functional	31.03.2022	MIXED	NA	NA	NA	OPT01238	1	80.42			BST BILL
B.92						Station Transformer		Metered	Functional	31.03.2023	MIXED	NA	NA	NA				3.68		BST BILL

Details of Input Energy Sources								
Period From 1st April,2021 To 31st March,2022								
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)
1	Meenakshi Power Ltd	37	Others		Inter-State		132KV	GRIDCO
2	Utkal Alumina	90	Coal		Inter-State		220KV	GRIDCO
3	NALCO (Damanjodi)	74	Coal		Inter-State		132KV	GRIDCO
4	Abacus Holding Pvt Ltd	1	Renewable		Inter-State		11KV	GRIDCO
5	JK Paper Ltd, Theruvali	25	Biomass		Inter-State		132KV	GRIDCO
6	GEDCOL, Manmunda	20	Renewable		Inter-State		33KV	GRIDCO
7	Vento Power & Energy Ltd	40	Renewable		Inter-State		132KV	GRIDCO
8	IMFA Solar	4.5	Renewable		Inter-State		33KV	GRIDCO
9	Ltd	25	Renewable		Inter-State		33KV	GRIDCO
10	Balimela Power House	510	Others		Inter-State		220KV	GRIDCO
11	Upper Kolab Power House	320	Others		Inter-State		220KV	GRIDCO
12	Machhkund Power House	60	Others		Inter-State		132KV	GRIDCO

B. Embedded Generation in DISCOM Area																
S.No	Name of Generation Station	Generation Capacity (In MW)	Type of Station (Generation Based- Solid/Liquid/Gas/Renewable/Others)	Type of Contract	Type of Grid	Voltage Level (KVA)	Circle Load (MW)	Received at Circle (KVA)	Received at Circle (In MU)	Division Level Load (MW)	Received at Division Level (KVA)	Received at Division Level (In MU)	Sub-Division Level Load (MW)	Received at Sub-Division Level (KVA)	Received at Sub-Division Level (In MU)	Remarks (Source of data)
1	EXECUTIVE OFFICER, NAC KASHINAGAR	0.015	Renewable	Net Metering	Renewable Source	440V	Raygada 0.208		Raygada 0.273978	PKED 0.065		PKED 0.190673	Kashinagar 0.015		Kashinagar 0	
2	THE COMMISSIONER, BMR	0.002	Renewable	Net Metering	Renewable Source	440V	City 0.586		City 0.000963	BED-1 0.234		BED-1 0	Bijpur 0.008		Bijpur 0	
3	DR. SUBASH CHANDRA SAHU	0.042	Renewable	Net Metering	Renewable Source	440V	City 0.586		City 0.000963	BED-1 0.234		BED-1 0	SDO-2 0.144		SDO-2 0	
4	DR. J. APPA RAO	0.006	Renewable	Net Metering	Renewable Source	440V	City 0.586		City 0.000963	BED-2 0.240		BED-2 0.00016	SDO-3 0.213		SDO-3 0.00016	
5	ASHOK KUAMR PADHY, SRI KRUS	0.002	Renewable	Net Metering	Renewable Source	440V	City 0.586		City 0.000963	BED-1 0.234		BED-1 0	Bijpur 0.008		Bijpur 0	
6	SECRETARY, XAVIER SCHOOL ED	0.032	Renewable	Net Metering	Renewable Source	440V	City 0.586		City 0.000963	BED-2 0.240		BED-2 0.00016	SDO-3 0.213		SDO-3 0.00016	
7	THE SECRETARY R.M.C, HINJILICUT	0.003	Renewable	Net Metering	Renewable Source	440V	Berhampur 0.017		Berhampur 0	HED 0.003		HED 0	Hinjilicut 0.003		Hinjilicut 0	
8	SRI PRABHAKAR MOHANTY	0.003	Renewable	Net Metering	Renewable Source	440V	City 0.586		City 0.000963	BED-1 0.234		BED-1 0	SDO-2 0.144		SDO-2 0	
9	M. SUNITA	0.026	Renewable	Net Metering	Renewable Source	440V	Jeypore 0.163		Jeypore 0.03423	KED 0.049		KED 0	SUNABEDA 0.036		SUNABEDA 0.036	
10	E.TEJESWAR RAO	0.062	Renewable	Net Metering	Renewable Source	11kV	City 0.586		City 0.000963	BED-3 0.112		BED-3 0.000803	Kanisi 0.062		Kanisi 0.000803	
11	SECRETARY	0.015	Renewable	Net Metering	Renewable Source	440V	Raygada 0.208		Raygada 0.273978	RED 0.143		RED 0.083305	Bissam cuttack 0.023		Bissam cuttack 0.011467	
12	SUMAN KU PANIGRAHI	0.005	Renewable	Net Metering	Renewable Source	440V	Jeypore 0.163		Jeypore 0.03423	KED 0.049		KED 0	Koraput 0.009		Koraput 0	
13	G.GOURA PRASAD REEDY	0.005	Renewable	Net Metering	Renewable Source	440V	City 0.586		City 0.000963	BED-1 0.234		BED-1 0	Gopalpur 0.083		Gopalpur 0	
14	SMT USHARANI ACHARAYA, W/O	0.001	Renewable	Net Metering	Renewable Source	440V	City 0.586		City 0.000963	BED-1 0.234		BED-1 0	Gopalpur 0.083		Gopalpur 0	
15	SARASWATI SISU BIDYAMANDIR	0.018	Renewable	Net Metering	Renewable Source	440V	Jeypore 0.163		Jeypore 0.03423	JED 0.054		JED 0.03423	Jeypore SDO-1 0.038		Jeypore SDO-1 0.011803	
16	KANCHARANI DILEWSAR RAO	0.023	Renewable	Net Metering	Renewable Source	440V	City 0.586		City 0.000963	BED-2 0.240		BED-2 0.00016	SDO-3 0.213		SDO-3 0.00016	
17	CHIEF MANAGER	0.051	Renewable	Net Metering	Renewable Source	11kV	Raygada 0.208		Raygada 0.273978	RED 0.143		RED 0.083305	Raygada 0.120		Raygada 0.071838	
18	THE CHIEF MANAGER, SBI, MAL	0.06	Renewable	Net Metering	Renewable Source	11kV	Jeypore 0.163		Jeypore 0.03423	MED 0.060		MED 0	Malkangiri 0.060		Malkangiri 0.060	
19	SANTOSH KUMAR SAHU	0.011	Renewable	Net Metering	Renewable Source	440V	City 0.586		City 0.000963	BED-2 0.240		BED-2 0.00016	SDO-1 0.026		SDO-1 0	
20	GAGAN PATTANAIK, BHABA NAG	0.003	Renewable	Net Metering	Renewable Source	440V	City 0.586		City 0.000963	BED-1 0.234		BED-1 0	SDO-2 0.144		SDO-2 0	
21	SMT. BINODINI RATHA, SARADH	0.003	Renewable	Net Metering	Renewable Source	440V	City 0.586		City 0.000963	BED-1 0.234		BED-1 0	SDO-2 0.144		SDO-2 0	
22	MIRUPAMA SAHU, DURA, ,	0.003	Renewable	Net Metering	Renewable Source	440V	City 0.586		City 0.000963	BED-1 0.234		BED-1 0	Gopalpur 0.083		Gopalpur 0	
23	SMT. SUNITA PANDA	0.004	Renewable	Net Metering	Renewable Source	230V	Berhampur 0.017		Berhampur 0	GNED 0.014		GNED 0	Chatrapur 0.004		Chatrapur 0	
24	LABA BANUA	0.004	Renewable	Net Metering	Renewable Source	440V	Jeypore 0.163		Jeypore 0.03423	KED 0.049		KED 0	Laxmipur 0.004		Laxmipur 0	
25	M/S. RUBY EYE HOSPITAL	0.05	Renewable	Net Metering	Renewable Source	11kV	City 0.586		City 0.000963	BED-3 0.112		BED-3 0.000803	SDO-4 0.050		SDO-4 0	
26	DIRECTOR (R) LIGHT HOUSE, PO	0.01	Renewable	Net Metering	Renewable Source	440V	Berhampur 0.017		Berhampur 0	GNED 0.014		GNED 0	Rambha 0.010		Rambha 0	
27	HEAD LIGHT KEEPER, LIGHT HO	0.035	Renewable	Net Metering	Renewable Source	11kV	City 0.586		City 0.000963	BED-1 0.234		BED-1 0	Gopalpur 0.083		Gopalpur 0	
28	COLLECTOR GAJAPATI	0.05	Renewable	Net Metering	Renewable Source	440V	Raygada 0.208		Raygada 0.273978	PKED 0.065		PKED 0.190673	Parlakhemundi 0.050		Parlakhemundi 0.190673	
29	SRI NABIN CHANDRA PATRO	0.008	Renewable	Net Metering	Renewable Source	440V	Raygada 0.208		Raygada 0.273978	RED 0.143		RED 0.083305	Bissam cuttack 0.023		Bissam cuttack 0.011467	
30	COLLECTOR & DISTRICT MAGISTR	0.017	Renewable	Net Metering	Renewable Source	440V	Raygada 0.208		Raygada 0.273978	RED 0.143		RED 0.083305	Raygada 0.120		Raygada 0.071838	
31	HYDERABAD EYE INSTITUTE	0.052	Renewable	Net Metering	Renewable Source	11kV	Raygada 0.208		Raygada 0.273978	RED 0.143		RED 0.083305	Raygada 0.120		Raygada 0.071838	
32	THE SECRETARY, DIGAPAHANDI	0.039	Renewable	Net Metering	Renewable Source	440V	City 0.586		City 0.000963	BED-1 0.234		BED-1 0	Gopalpur 0.083		Gopalpur 0	
33	SAI NEUROLOGY AND RADIOLOG	0.06	Renewable	Net Metering	Renewable Source	11kV	City 0.586		City 0.000963	BED-1 0.234		BED-1 0	SDO-2 0.144		SDO-2 0	
34	THE BRANCH MANAGER, LIC OF	0.03	Renewable	Net Metering	Renewable Source	440V	City 0.586		City 0.000963	BED-1 0.234		BED-1 0	SDO-2 0.144		SDO-2 0	
35	THE COMMISSIONER, BMR	0.001	Renewable	Net Metering	Renewable Source	440V	City 0.586		City 0.000963	BED-1 0.234		BED-1 0	SDO-2 0.144		SDO-2 0	
36	THE COMMISSIONER, BMR	0.001	Renewable	Net Metering	Renewable Source	440V	City 0.586		City 0.000963	BED-1 0.234		BED-1 0	SDO-2 0.144		SDO-2 0	
37	THE COMMISSIONER, BMR	0.001	Renewable	Net Metering	Renewable Source	440V	City 0.586		City 0.000963	BED-1 0.234		BED-1 0	Bijpur 0.008		Bijpur 0	
38	THE COMMISSIONER, BMR	0.001	Renewable	Net Metering	Renewable Source	440V	City 0.586		City 0.000963	BED-1 0.234		BED-1 0	Bijpur 0.008		Bijpur 0	
39	THE COMMISSIONER, BMR	0.001	Renewable	Net Metering	Renewable Source	440V	City 0.586		City 0.000963	BED-1 0.234		BED-1 0	Bijpur 0.008		Bijpur 0	
40	THE COMMISSIONER, BMR	0.001	Renewable	Net Metering	Renewable Source	440V	City 0.586		City 0.000963	BED-1 0.234		BED-1 0	Bijpur 0.008		Bijpur 0	
41	ROOF TOP SOLAR PV PROJECT, C	0.003	Renewable	Net Metering	Renewable Source	440V	Aska 0.003		Aska 0.0015	AED-1 0.003		AED-1 0.00155	Aska 0.003		Aska 0.00155	
42	CHANDRA SEKHAR BHUYAN	0.005	Renewable	Net Metering	Renewable Source	440V	City 0.586		City 0.000963	BED-2 0.240		BED-2 0.00016	SDO-1 0.026		SDO-1 0	
43	BEMC OFFICE BUILDING, CLC	0.098	Renewable	Net Metering	Renewable Source	440V	City 0.586		City 0.000963	BED-2 0.240		BED-2 0.00016	SDO-3 0.213		SDO-3 0.00016	
44	SOUCHALAYA DANDAKALI TEMPI	0.002	Renewable	Net Metering	Renewable Source	440V	City 0.586		City 0.000963	BED-2 0.240		BED-2 0.00016	SDO-1 0.026		SDO-1 0	
45	SOUCHALAYA DHORABANDHA HU	0.002	Renewable	Net Metering	Renewable Source	440V	City 0.586		City 0.000963	BED-2 0.240		BED-2 0.00016	SDO-1 0.026		SDO-1 0	
46	SOUCHALAYA AUTO NAGAR	0.002	Renewable	Net Metering	Renewable Source	440V	City 0.586		City 0.000963	BED-2 0.240		BED-2 0.00016	SDO-1 0.026		SDO-1 0	
47	SOUCHALAYA BINAYAK	0.001	Renewable	Net Metering	Renewable Source	440V	City 0.586		City 0.000963	BED-2 0.240		BED-2 0.00016	SDO-2 0.144		SDO-2 0	
48	SOUCHALAYA BIJUPATI	0.002	Renewable	Net Metering	Renewable Source	440V	City 0.586		City 0.000963	BED-2 0.240		BED-2 0.00016	SDO-1 0.026		SDO-1 0	
49	SOUCHALAYA BIJUPATI	0.002	Renewable	Net Metering	Renewable Source	440V	City 0.586		City 0.000963	BED-2 0.240		BED-2 0.00016	SDO-3 0.213		SDO-3 0.00016	
50	SOUCHALAYA MANGAL	0.002	Renewable	Net Metering	Renewable Source	440V	City 0.586		City 0.000963	BED-2 0.240		BED-2 0.00016	SDO-3 0.213		SDO-3 0.00016	
51	SOUCHALAYA BINAYAK	0.001	Renewable	Net Metering	Renewable Source	440V	City 0.586		City 0.000963	BED-2 0.240		BED-2 0.00016	SDO-1 0.026		SDO-1 0	
52	SRI UMESH CH. MISHRA	0.016	Renewable	Net Metering	Renewable Source	440V	Jeypore 0.163		Jeypore 0.03423	JED 0.054		JED 0.03423	Jeypore SDO-2 0.016		Jeypore SDO-2 0.022427	
53	A. DILIP KUMAR (SECRETARY), P	0.02	Renewable	Net Metering	Renewable Source	11kV	Jeypore 0.163		Jeypore 0.03423	JED 0.054		JED 0.03423	Jeypore SDO-1 0.038		Jeypore SDO-1 0.011803	
54	TRINATH KHILLO	0.01	Renewable	Net Metering	Renewable Source	440V	Jeypore 0.163		Jeypore 0.03423	KED 0.049		KED 0	SUNABEDA 0.036		SUNABEDA 0.036	
55	CHATUR KUMAR	0.004	Renewable	Net Metering	Renewable Source	440V	Jeypore 0.163		Jeypore 0.03423	KED 0.049		KED 0	Koraput 0.009		Koraput 0	
56	M/S ROYAL EDUCATIONAL & RE	0.005	Renewable	Net Metering	Renewable Source	11kV	City 0.586		City 0.000963	BED-2 0.240		BED-2 0.00016	SDO-3 0.213		SDO-3 0.00016	
57	SOUCHALAYA TALUKA	0.001	Renewable	Net Metering	Renewable Source	440V	City 0.586		City 0.000963	BED-2 0.240		BED-2 0.00016	SDO-1 0.026		SDO-1 0	

[illegible]

(Details of Feeder-wise losses)

Period From 1st April,2021 To 31st March,2022

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)
1	TPSODL	ASKA	AED-I	ASKA	DHARAKOTE	ICAA	Dharakote Town	RURAL	OTHER	
2	TPSODL	ASKA	AED-I	ASKA	DHARAKOTE	ICAB	DASAMAILI	RURAL	OTHER	
3	TPSODL	ASKA	AED-I	ASKA	DHARAKOTE	ICAC	Jahada	RURAL	OTHER	
4	TPSODL	ASKA	AED-I	ASKA	DHARAKOTE	ICAD	Mundamarei	RURAL	AMR	2.512
5	TPSODL	ASKA	AED-I	ASKA	DHARAKOTE	ICAE	Rugume	RURAL	AMR	1.580566
6	TPSODL	ASKA	AED-I	ASKA	BALISIRA	ICBA	Nimina	RURAL	AMR	9.484
7	TPSODL	ASKA	AED-I	ASKA	BALISIRA	ICBB	Kamagada/ Balisira	RURAL	AMR	3.856
8	TPSODL	ASKA	AED-I	ASKA	BALISIRA	ICBC	Gunthapada	RURAL	AMR	5.767
9	TPSODL	ASKA	AED-I	ASKA	uma (tap from khariguma C	ICCA	Baradabili	RURAL	OTHER	
10	TPSODL	ASKA	AED-I	ASKA	uma (tap from khariguma C	ICCB	Nuagada	RURAL	OTHER	
11	TPSODL	ASKA	AED-I	ASKA	ASKA	IDAA	Aska Bus Stand	URBAN	AMR	12.105
12	TPSODL	ASKA	AED-I	ASKA	ASKA	IDAB	Gangapur	RURAL	AMR	13.534
13	TPSODL	ASKA	AED-I	ASKA	ASKA	IDAC	Jokabandha	URBAN	AMR	4.139
14	TPSODL	ASKA	AED-I	ASKA	ASKA	IDAD	Sheragada	RURAL	AMR	9.997
15	TPSODL	ASKA	AED-I	ASKA	ASKA	IDAE	Medical	URBAN	AMR	2.221
16	TPSODL	ASKA	AED-I	NUAGAM	NUAGAM	IEAA	A.C.S.I (Sugar Factory)	RURAL	AMR	0.377
17	TPSODL	ASKA	AED-I	NUAGAM	NUAGAM	IEAB	Nuagam/ KANIARY	RURAL	AMR	9.822
18	TPSODL	ASKA	AED-I	NUAGAM	NUAGAM	IEAC	College Square	RURAL	AMR	7.816
19	TPSODL	ASKA	AED-I	NUAGAM	NUAGAM	IEAD	Mukundapur	RURAL	AMR	13.713
20	TPSODL	ASKA	AED-II	KS NAGAR	BUDHAMB	IAAA	Budhamba	RURAL	AMR	36.001
21	TPSODL	ASKA	AED-II	KS NAGAR	BUDHAMB	IAAB	anamahuri/ BADAMAHU	RURAL	AMR	1.641
22	TPSODL	ASKA	AED-II	KS NAGAR	BUDHAMB	IAAC	Gudiapali	RURAL	AMR	0.994
23	TPSODL	ASKA	AED-II	KS NAGAR	BUDHAMB	IAAE	thagada Patna/ Athagad	RURAL	AMR	2.697
24	TPSODL	ASKA	AED-II	KS NAGAR	BUDHAMB	IAAF	New Athagada	RURAL	AMR	0.275
25	TPSODL	ASKA	AED-II	KS NAGAR	KS NAGAR	IBAA	Gudiali	RURAL	AMR	0.946
26	TPSODL	ASKA	AED-II	KS NAGAR	KS NAGAR	IBAB	Barida	RURAL	AMR	5.688
27	TPSODL	ASKA	AED-II	KS NAGAR	KS NAGAR	IBAC	K.S.Nagar Town	URBAN	AMR	7.952
28	TPSODL	ASKA	AED-II	KS NAGAR	KS NAGAR	IBAD	Sialia	RURAL	AMR	5.695
29	TPSODL	ASKA	AED-II	KS NAGAR	KS NAGAR	IBAE	Pathara	RURAL	AMR	4.652
30	TPSODL	ASKA	AED-II	KS NAGAR	PAIKAJAMUNA	IFAA	KANIARI	RURAL	AMR	
31	TPSODL	ASKA	AED-II	KS NAGAR	PAIKAJAMUNA	IFAB	PAIKAJAMUNA	RURAL	AMR	
32	TPSODL	ASKA	AED-II	KS NAGAR	PAIKAJAMUNA	IFAC	BARIDA	RURAL	AMR	
33	TPSODL	ASKA	AED-II	BUGUDA	BALIPADAR	3AAA	Balipadar Town	RURAL	AMR	9.600
34	TPSODL	ASKA	AED-II	BUGUDA	BALIPADAR	3AAC	Mandar/ Mahulapalli	RURAL	AMR	2.042
35	TPSODL	ASKA	AED-II	BUGUDA	BALIPADAR	3AAD	A.karadabadi	RURAL		
36	TPSODL	ASKA	AED-II	BUGUDA	BUGUDA	3ABA	Buguda Town	URBAN	OTHER	
37	TPSODL	ASKA	AED-II	BUGUDA	BUGUDA	3ABB	Pangidi	RURAL	OTHER	
38	TPSODL	ASKA	AED-II	BUGUDA	BUGUDA	3ABC	Motabadi	RURAL	AMR	1.328116
39	TPSODL	ASKA	AED-II	BUGUDA	BUGUDA	3ABD	Karchulli	RURAL	AMR	5.885
40	TPSODL	ASKA	AED-II	BUGUDA	BUGUDA	3ABE	Golia	URBAN	OTHER	
41	TPSODL	ASKA	GSED	DIGAPAHANDI	DIGAPAHANDI	BAAA	Digapahandi Town	URBAN	OTHER	
42	TPSODL	ASKA	GSED	SHERAGADA	DIGAPAHANDI	BAAB	ANKORODA	RURAL	AMR	
43	TPSODL	ASKA	GSED	DIGAPAHANDI	DIGAPAHANDI	BAAC	Digapahandi Rural	RURAL	OTHER	
44	TPSODL	ASKA	GSED	DIGAPAHANDI	DIGAPAHANDI	BAAD	Padmanavapur	RURAL		2.777
45	TPSODL	ASKA	GSED	DIGAPAHANDI	DIGAPAHANDI	BAAE	PHD	RURAL	AMR	
46	TPSODL	ASKA	GSED	DIGAPAHANDI	PUDAMARI	BBAA	Bhismagiri	RURAL	AMR	2.071
47	TPSODL	ASKA	GSED	DIGAPAHANDI	PUDAMARI	BBAB	Dengausta	RURAL	AMR	
48	TPSODL	ASKA	GSED	DIGAPAHANDI	PUDAMARI	BBAC	Pudamari	RURAL		6.406
49	TPSODL	ASKA	GSED	DIGAPAHANDI	Bhismagiri(CAPEX)	BBBA	Nimakhandi Pentha	RURAL	AMR	
50	TPSODL	ASKA	GSED	DIGAPAHANDI	Bhismagiri(CAPEX)	BBBB	Bhismagiri NEW	RURAL	AMR	2.146
51	TPSODL	ASKA	GSED	DIGAPAHANDI	Dekhali (CAPEX)	BDA	Bomkai	RURAL	AMR	1.439
52	TPSODL	ASKA	GSED	DIGAPAHANDI	Dekhali (CAPEX)	BDBA	Jakar Dumula	RURAL	AMR	3.178
53	TPSODL	ASKA	GSED	CHIKITI	NUAPADA (Chikiti)	BDBA	KHAIGUDA			
54	TPSODL	ASKA	GSED	CHIKITI	NUAPADA (Chikiti)	BDBB	CHANDAPUR			
55	TPSODL	ASKA	GSED	CHIKITI	NUAPADA (Chikiti)	BDBC	NUAPADA			
56	TPSODL	ASKA	GSED	DIGAPAHANDI	Sidheswar	BEAA	Sidheswar/ GANIANALA	RURAL	OTHER	
57	TPSODL	ASKA	GSED	DIGAPAHANDI	Sidheswar	BEAB	Kotinada	RURAL	OTHER	
58	TPSODL	ASKA	GSED	CHIKITI	(MAINLY FEED FROM CHIKI	2AAA	Nuapada	RURAL	OTHER	
59	TPSODL	ASKA	GSED	CHIKITI	(MAINLY FEED FROM CHIKI	2AAB	BAHANAPATI	RURAL	OTHER	
60	TPSODL	ASKA	GSED	CHIKITI	(MAINLY FEED FROM CHIKI	2AAC	Chikiti/NAC	URBAN	OTHER	2.872
61	TPSODL	ASKA	GSED	CHIKITI	(MAINLY FEED FROM CHIKI	2AAD	otilingi/ Ramachandrap	RURAL	OTHER	
62	TPSODL	ASKA	GSED	CHIKITI	Patrapur	2ABA	Jarada/ Badapur	RURAL	AMR	0.604
63	TPSODL	ASKA	GSED	CHIKITI	Patrapur	2ABB	Bomkei	RURAL	AMR	1.882
64	TPSODL	ASKA	GSED	CHIKITI	Patrapur	2ABC	Surangi/ Kelua	RURAL	AMR	1.858
65	TPSODL	ASKA	GSED	CHIKITI	Patrapur	2ABD	Jayantipur	RURAL	AMR	2.025
66	TPSODL	ASKA	GSED	CHIKITI	Patrapur	2ABE	Patrapur	RURAL	AMR	3.506
67	TPSODL	ASKA	GSED	CHIKITI	Jarada (ODSSP)	2ACA	Jarada	RURAL	OTHER	
68	TPSODL	ASKA	GSED	CHIKITI	Jarada (ODSSP)	2ACB	Tumba	RURAL	OTHER	
69	TPSODL	ASKA	GSED	CHIKITI	Pitatali (ODSSP)	2ADA	Krushna Nagar	RURAL	OTHER	
70	TPSODL	ASKA	GSED	CHIKITI	Pitatali (ODSSP)	2ADB	Pitatali Rural	RURAL	OTHER	
71	TPSODL	ASKA	GSED	CHIKITI	Pitatali (ODSSP)	2ADC	Rampa Barida	RURAL	OTHER	
72	TPSODL	ASKA	GSED	CHIKITI	Surangi (ODSSP)	2BAA	Mandarada	RURAL	OTHER	
73	TPSODL	ASKA	GSED	CHIKITI	Surangi (ODSSP)	2BAB	Rajpur	RURAL	OTHER	
74	TPSODL	ASKA	GSED	CHIKITI	Surangi (ODSSP)	2BAC	Surangi	RURAL	OTHER	
75	TPSODL	ASKA	GSED	CHIKITI	Surangi (ODSSP)	2BAD	Talapada	RURAL	OTHER	
76	TPSODL	BERHAMPUR	HED	HINJLI	Hinjili	AFAA	Saru	RURAL	OTHER	
77	TPSODL	BERHAMPUR	HED	HINJLI	Hinjili	AFAB	Badakhandi	RURAL	OTHER	
78	TPSODL	BERHAMPUR	HED	HINJLI	Hinjili	AFAC	Burupada	URBAN	OTHER	
79	TPSODL	BERHAMPUR	HED	HINJLI	Hinjili	AFAD	Putiapadar	RURAL	OTHER	
80	TPSODL	BERHAMPUR	HED	HINJLI	Hinjili	AFAE	Hinjili Town Feeder	URBAN	OTHER	
81	TPSODL	BERHAMPUR	HED	HINJLI	Hinjili	AFAF	Hinjili Feeder	URBAN		
82	TPSODL	BERHAMPUR	HED	HINJLI	PUDINGI/ Pitala	AFCA	PITALA	RURAL	AMR	1.426
83	TPSODL	BERHAMPUR	HED	HINJLI	PUDINGI/ Pitala	AFCB	BURUPADA NEW	RURAL	AMR	
84	TPSODL	BERHAMPUR	HED	SHERAGADA	RUJDI JAGANATHPUR (ODS	AFDA	GOVIND PUR	RURAL		
85	TPSODL	BERHAMPUR	HED	SHERAGADA	RUJDI JAGANATHPUR (ODS	AFDB	PUNANDA	RURAL		
86	TPSODL	BERHAMPUR	HED	SHERAGADA	SHERAGADA	BCAA	Seragada Town	RURAL	AMR	26.590
87	TPSODL	BERHAMPUR	HED	SHERAGADA	SHERAGADA	BCAB	Karadakana	RURAL	AMR	

88	TPSODL	BERHAMPUR	HED	SHERAGADA	SHERAGADA	BCAC	Bandhaguda	RURAL	AMR	
89	TPSODL	BERHAMPUR	HED	SHERAGADA	SHERAGADA	BCAD	Takarada/ Dhabalpur	RURAL	AMR	1.752
90	TPSODL	BERHAMPUR	HED	SHERAGADA	SHERAGADA	BCAE	Aska	RURAL	AMR	15.951
91	TPSODL	BERHAMPUR	HED	SHERAGADA	ADAPADA/ KONKARADA	BCBA	Kurula	RURAL		
92	TPSODL	BERHAMPUR	HED	SHERAGADA	ADAPADA/ KONKARADA	BCBB	Adapada	RURAL		
93	TPSODL	BERHAMPUR	HED	SHERAGADA	ADAPADA/ KONKARADA	BCBC	Konkarada	RURAL		
94	TPSODL	BERHAMPUR	HED	SHERAGADA	ADAPADA/ KONKARADA	BCBD	KHALINGI	RURAL		
95	TPSODL	BERHAMPUR	HED	SHERAGADA	K. KARADAKANA	BCCA	BANDHAGUDA NEW	RURAL	AMR	2.390
96	TPSODL	BERHAMPUR	HED	SHERAGADA	K. KARADAKANA	BCCB	MANIKAPUR	RURAL	AMR	2.891
97	TPSODL	BERHAMPUR	HED	SERAGADA	PALLASPUR	BCDA	SASAPUR		OTHER	
98	TPSODL	BERHAMPUR	HED	SERAGADA	PALLASPUR	BCDB	PATAPUR			
99	TPSODL	BERHAMPUR	HED	SERAGADA	PALLASPUR	BCDC	JURA			
100	TPSODL	BERHAMPUR	GNE	Chatrapur	CHATRAPUR	CAAA	Port	URBAN	AMR	99.814
101	TPSODL	BERHAMPUR	GNE	Chatrapur	CHATRAPUR	CAAB	Rural	RURAL	AMR	136.035
102	TPSODL	BERHAMPUR	GNE	Chatrapur	CHATRAPUR	CAAC	Upper Bustand	URBAN	AMR	95.481
103	TPSODL	BERHAMPUR	GNE	Chatrapur	CHATRAPUR	CAAD	DRDA	URBAN	AMR	1.781
104	TPSODL	BERHAMPUR	GNE	Chatrapur	CHATRAPUR	CAAE	Lower Bustand	URBAN	AMR	3.585
105	TPSODL	BERHAMPUR	GNE	Chatrapur	CHATRAPUR	CAAF	Agastinuagam	URBAN	AMR	1.510
106	TPSODL	BERHAMPUR	GNE	RAMBHA	RAMBHA	CBA	Rambha	URBAN	AMR	3.930
107	TPSODL	BERHAMPUR	GNE	RAMBHA	RAMBHA	CBAB	MILL FDR	URBAN	AMR	2.647732
108	TPSODL	BERHAMPUR	GNE	RAMBHA	HUMMA	CBBA	Abra	RURAL	AMR	5.311
109	TPSODL	BERHAMPUR	GNE	RAMBHA	HUMMA	CBBB	Palur	RURAL	AMR	5.214
110	TPSODL	BERHAMPUR	GNE	RAMBHA	HUMMA	CBBC	Humma (Rambha)	RURAL	AMR	5.119
111	TPSODL	BERHAMPUR	GNE	RAMBHA	HUMMA	CBB	Khanda Deuli	RURAL	AMR	8.952
112	TPSODL	BERHAMPUR	GNE	RAMBHA	SAKIRI	CBCA	SANAGHATI	RURAL	AMR	1.653
113	TPSODL	BERHAMPUR	GNE	RAMBHA	SAKIRI	CBCB	KANAKA	RURAL	AMR	1.431
114	TPSODL	BERHAMPUR	GNE	KHALIKOTE	SAKIRI	CBCC	CHIKILI-BANIA	RURAL	AMR	1.614
115	TPSODL	BERHAMPUR	GNE	Chatrapur	RAMACHANDRAPUR	CCAA	Mayapatna (Industrial)	RURAL		
116	TPSODL	BERHAMPUR	GNE	Chatrapur	RAMACHANDRAPUR	CCAB	Matikhala		OTHER	
117	TPSODL	BERHAMPUR	GNE	Chatrapur	RAMACHANDRAPUR	CCAC	Bhikaripalli	RURAL	OTHER	
118	TPSODL	BERHAMPUR	GNE	Chatrapur	RAMACHANDRAPUR	CCAD	Chamakhandi	RURAL	OTHER	
119	TPSODL	BERHAMPUR	GNE	Chatrapur	aulagam (At Dibyasingpur)	CDA	Badamadhapur	RURAL		1.972
120	TPSODL	BERHAMPUR	GNE	Chatrapur	aulagam (At Dibyasingpur)	CDA	Baulagam	RURAL		1.273
121	TPSODL	BERHAMPUR	GNE	Chatrapur	aulagam (At Dibyasingpur)	CDAC	Karatali	RURAL		2.698
122	TPSODL	BERHAMPUR	GNE	Chatrapur	aulagam (At Dibyasingpur)	CDAD	Dibyasingpur	RURAL		0.307
123	TPSODL	BERHAMPUR	PSED	PS PUR	TARATARINI	DAAA	Bhatakumuda	RURAL	AMR	2.786
124	TPSODL	BERHAMPUR	PSED	PS PUR	TARATARINI	DAAB	Solaghara	RURAL	AMR	8.072
125	TPSODL	BERHAMPUR	PSED	PS PUR	TARATARINI	DAAC	rustompur Rural/16 gha	RURAL	AMR	4.197
126	TPSODL	BERHAMPUR	PSED	PS PUR	TARATARINI	DAAD	udiali/Taratarini Junction	RURAL	OTHER	
127	TPSODL	BERHAMPUR	PSED	PS PUR	TARATARINI	DAAE	Jamuni	RURAL	AMR	2.755
128	TPSODL	BERHAMPUR	PSED	PS PUR	TARATARINI	DAAF	RANAJHALI	RURAL	AMR	3.492
129	TPSODL	BERHAMPUR	PSED	PS PUR	PSPUR	DBAA	Pandia	RURAL	AMR	7.346
130	TPSODL	BERHAMPUR	PSED	PS PUR	PSPUR	DBAB	Bhutasarsingi	RURAL	AMR	12.185
131	TPSODL	BERHAMPUR	PSED	PS PUR	PSPUR	DBAC	Purustompur Town	URBAN	AMR	9.069
132	TPSODL	BERHAMPUR	HED	HINJLI	GANDALA	DDAA	Gandala	RURAL		
133	TPSODL	BERHAMPUR	HED	HINJLI	GANDALA	DDAB	Bhabandha	RURAL		
134	TPSODL	BERHAMPUR	HED	HINJLI	GANDALA	DDAC	Dhobadi Pattapur	RURAL		2.509
135	TPSODL	BERHAMPUR	HED	HINJLI	S. AMBAGAO	DDBA	AGAON/ PUTIA PADAR (RURAL	AMR	5.024
136	TPSODL	BERHAMPUR	HED	HINJLI	S. AMBAGAO	DDBB	DARUBHADRA	RURAL	AMR	3.265
137	TPSODL	BERHAMPUR	PSED	PS PUR	Pratappur/ Balia (ODSSP)	DEAA	Achhuli	RURAL	AMR	
138	TPSODL	BERHAMPUR	PSED	PS PUR	Pratappur/ Balia (ODSSP)	DEAB	Badabaragam	RURAL	AMR	2.292
139	TPSODL	BERHAMPUR	PSED	PS PUR	Pratappur/ Balia (ODSSP)	DEAC	BN PUR	RURAL	AMR	0.763
140	TPSODL	BERHAMPUR	PSED	PS PUR	Pratappur/ Balia (ODSSP)	DEAD	Balia	RURAL	AMR	
141	TPSODL	BERHAMPUR	GNE	CHATRAPUR	KHANDADAULI	DEBA	KHANDADAULI			
142	TPSODL	BERHAMPUR	GNE	CHATRAPUR	KHANDADAULI	DEBB	PALLANGI		OTHER	
143	TPSODL	BERHAMPUR	GNE	CHATRAPUR	KHANDADAULI	DEBC	NUAPADA			
144	TPSODL	BERHAMPUR	GNE	CHATRAPUR	KHANDADAULI	DEBD	SANTASHPUR			
145	TPSODL	BERHAMPUR	GNE	RAMBHA	MALUD	EAAA	Fatepur	RURAL	AMR	0.207
146	TPSODL	BERHAMPUR	GNE	RAMBHA	MALUD	EAB	Morada/ Chilika Nuapad	RURAL	AMR	1.970
147	TPSODL	BERHAMPUR	GNE	RAMBHA	MALUD	EAC	Krishna Prasad Gada	RURAL	AMR	9.030
148	TPSODL	BERHAMPUR	GNE	RAMBHA	MALUD	EAD	Brajakote	RURAL	AMR	4.488
149	TPSODL	BERHAMPUR	GNE	RAMBHA	TITIPA	EABA	Nuapada/CHILKA	RURAL	AMR	3.057
150	TPSODL	BERHAMPUR	GNE	RAMBHA	TITIPA	EABB	Trichhana	RURAL	OTHER	
151	TPSODL	BERHAMPUR	GNE	RAMBHA	TITIPA	EABC	Nuagaon	RURAL	AMR	0.10738
152	TPSODL	BERHAMPUR	GNE	RAMBHA	TITIPA	EABD	M. Berhampur	RURAL	AMR	1.612
153	TPSODL	BERHAMPUR	GNE	RAMBHA	GANIAM	EBAA	GANIAM	URBAN	OTHER	
154	TPSODL	BERHAMPUR	GNE	KHALIKOTE	KHALIKOTE	FAAA	Khalikote Town	URBAN		
155	TPSODL	BERHAMPUR	GNE	KHALIKOTE	KHALIKOTE	FAAB	Kodala/REC	RURAL		
156	TPSODL	BERHAMPUR	GNE	KHALIKOTE	KHALIKOTE	FAAC	Shyama Sundarpur	URBAN		
157	TPSODL	BERHAMPUR	PSED	KODALA	BEGUNIAPADA	FABA	Beguniapada	RURAL	AMR	6.138
158	TPSODL	BERHAMPUR	PSED	KODALA	BEGUNIAPADA	FABB	Angargao	RURAL	AMR	52.911
159	TPSODL	BERHAMPUR	PSED	KODALA	BEGUNIAPADA	FABC	Odanai	RURAL		
160	TPSODL	BERHAMPUR	PSED	KODALA	BEGUNIAPADA	FABD	Mundula	RURAL		
161	TPSODL	BERHAMPUR	GNE	KHALIKOTE	KANHEIPUR (GURAPALLI)	FACA	Kanheipur	RURAL		
162	TPSODL	BERHAMPUR	GNE	KHALIKOTE	KANHEIPUR (GURAPALLI)	FACB	Narayani	RURAL		
163	TPSODL	BERHAMPUR	GNE	KHALIKOTE	KANHEIPUR (GURAPALLI)	FACC	Keshpur	RURAL	AMR	4.917
164	TPSODL	BERHAMPUR	GNE	KHALIKOTE	KANHEIPUR (GURAPALLI)	FACD	LANGALESWAR	RURAL	AMR	5.518
165	TPSODL	BERHAMPUR	PSED	KODALA	a (tap from Beguniapada P	FADA	Angargam (NEW)	RURAL	AMR	3.753
166	TPSODL	BERHAMPUR	PSED	KODALA	a (tap from Beguniapada P	FADB	Sumandal	RURAL	AMR	2.528
167	TPSODL	BERHAMPUR	PSED	KODALA	a (tap from Beguniapada P	FADC	TALASARA	RURAL	AMR	0.923
168	TPSODL	BERHAMPUR	PSED	POLOSARA	BUDHAMB	IAD	Polosara Rural	RURAL	AMR	8.570
169	TPSODL	BERHAMPUR	PSED	POLOSARA	POLOSARA	IABA	Polosara Town	URBAN	OTHER	
170	TPSODL	BERHAMPUR	PSED	POLOSARA	POLOSARA	IABB	Belagaon	RURAL	OTHER	
171	TPSODL	BERHAMPUR	PSED	POLOSARA	POLOSARA	IABC	Chirikipada (Singhasini)	RURAL	OTHER	
172	TPSODL	BERHAMPUR	PSED	POLOSARA	POLOSARA	IABD	POLOSARA PHD	RURAL	OTHER	
173	TPSODL	BERHAMPUR	PSED	Kodala	KODALA	IACA	Beguniapada (Phasi)	RURAL		
174	TPSODL	BERHAMPUR	PSED	Kodala	KODALA	IACB	Kodala	URBAN	OTHER	
175	TPSODL	BERHAMPUR	PSED	Kodala	KODALA	IACC	Mattha Sarsingh	RURAL	OTHER	
176	TPSODL	BERHAMPUR	PSED	POLOSARA	bada (ODSSP) 4.2KM TAP F	IADA	Dhumka pada	RURAL	AMR	1.331
177	TPSODL	BERHAMPUR	PSED	POLOSARA	bada (ODSSP) 4.2KM TAP F	IADB	Bhabarada	RURAL	AMR	0.893
178	TPSODL	BERHAMPUR	PSED	POLOSARA	bada (ODSSP) 4.2KM TAP F	IADC	Pandripada	RURAL	AMR	0.630
179	TPSODL	BERHAMPUR	PSED	PURUSOTTAMPUR	HATIOTA	3BAA	BALISALI			
180	TPSODL	BERHAMPUR	PSED	PURUSOTTAMPUR	HATIOTA	3BAB	KALAMBA		OTHER	

181	TPSODL	BERHAMPUR	PSED	PURUSOTTAMPUR	HATIOTA	3BAC	RAMGADA		
182	TPSODL	BERHAMPUR	PSED	PURUSOTTAMPUR	HATIOTA	3BAD	DARTILI	OTHER	
183	TPSODL	CITY	BED-I	SDO-1	Luchapada	AAAD	ospital (Dedicated) 138	URBAN	4.917
184	TPSODL	CITY	BED-I	MEDICAL SD	Medical	WAAA	Tatabenz	URBAN	5.518
185	TPSODL	CITY	BED-I	MEDICAL SD	Medical	WAAB	Kamapally	URBAN	3.753
186	TPSODL	CITY	BED-I	MEDICAL SD	Medical	WAAC	Old Bus Stand	URBAN	2.528
187	TPSODL	CITY	BED-I	MEDICAL SD	Medical	WAAD	City Hospital	URBAN	0.923
188	TPSODL	CITY	BED-I	MEDICAL SD	Medical	WAAE	Ambapua/ Gajapati Naga	URBAN	8.570
189	TPSODL	CITY	BED-I	MEDICAL SD	Medical	WAAF	Courtpeta	URBAN	AMR
190	TPSODL	CITY	BED-I	MEDICAL SD	Medical	WAAG	Medical	URBAN	AMR
191	TPSODL	CITY	BED-I	MEDICAL SD	Medical	WAAH	SIDHARTH NAGAR	URBAN	AMR
192	TPSODL	CITY	BED-I	MEDICAL SD	Ambapua	WBAA	Ambapua	URBAN	
193	TPSODL	CITY	BED-I	MEDICAL SD	Ambapua	WBAB	ncometax & Palligumud	URBAN	
194	TPSODL	CITY	BED-I	MEDICAL SD	Bidyutpuri colony	WBBA	Nilachalnagar	URBAN	OTHER
195	TPSODL	CITY	BED-I	MEDICAL SD	Bidyutpuri colony	WBBB	Khodasingi	URBAN	OTHER
196	TPSODL	CITY	BED-I	GOPALPUR	Narendrapur	WCAA	Narendrapur	RURAL	AMR 1.331
197	TPSODL	CITY	BED-I	GOPALPUR	Narendrapur	WCAB	Raghunathpur	RURAL	AMR 0.893
198	TPSODL	CITY	BED-I	GOPALPUR	Narendrapur	WCAC	Tanganapalli	RURAL	AMR 0.630
199	TPSODL	CITY	BED-I	GOPALPUR	Narendrapur	WCAD	Jhadankuli	RURAL	AMR
200	TPSODL	CITY	BED-I	GOPALPUR	Narendrapur	WCAE	TATA Colony, BD-34	RURAL	AMR
201	TPSODL	CITY	BED-I	GOPALPUR	Narendrapur	WCAF	Airport Director Radar	RURAL	
202	TPSODL	CITY	BED-I	GOPALPUR	UNIVERSITY	WEAA	Karapalli	RURAL	AMR
203	TPSODL	CITY	BED-I	GOPALPUR	UNIVERSITY	WEAB	Gopalpur	URBAN	AMR
204	TPSODL	CITY	BED-I	GOPALPUR	UNIVERSITY	WEAC	University (Mandiapalli)	RURAL	AMR 1.090
205	TPSODL	CITY	BED-I	GOPALPUR	UNIVERSITY	WEAD	Kallipalli	RURAL	AMR 4.502
206	TPSODL	CITY	BED-I	GOPALPUR	DURA	WEBA	DURA	OTHER	4.262
207	TPSODL	CITY	BED-I	GOPALPUR	DURA	WEBB	LI FEEDER	OTHER	7.247
208	TPSODL	CITY	BED-I	GOPALPUR	DURA	WEBC	RAMCHANDRAPUR	OTHER	3.000
209	TPSODL	CITY	BED-I	GOPALPUR	DURA	WEBD	GANJAM	OTHER	5.626
210	TPSODL	CITY	BED-I	INDUSTRIAL	Goodshed	WFAA	ANKULI NH	URBAN	AMR 9.875
211	TPSODL	CITY	BED-I	INDUSTRIAL	Goodshed	WFAB	Lanjipalli	URBAN	AMR 4.042
212	TPSODL	CITY	BED-I	INDUSTRIAL	Goodshed	WFAC	Goodshed	URBAN	AMR
213	TPSODL	CITY	BED-I	INDUSTRIAL	Goodshed	WFAD	Hilpatna	URBAN	AMR 0.769
214	TPSODL	CITY	BED-I	INDUSTRIAL	Ankuli (CAPEX)	WFBA	Ankuli	URBAN	OTHER
215	TPSODL	CITY	BED-I	MEDICAL SD	New Medical (Dedicated)	WFCA	Hospital (Nursing school)	RURAL	OTHER
216	TPSODL	CITY	BED-I	MEDICAL SD	New Medical (Dedicated)	WFCB	College (Eye ward)	RURAL	OTHER 0.440
217	TPSODL	CITY	BED-II	SDO-1	Luchapada	AAAA	Tulsinagar	URBAN	AMR 4.350
218	TPSODL	CITY	BED-II	SDO-1	Luchapada	AAAB	Brajanagar	URBAN	AMR 1.144
219	TPSODL	CITY	BED-II	SDO-1	Luchapada	AAAC	Gatebazar	URBAN	AMR 0.624
220	TPSODL	CITY	BED-II	SDO-1	Corporation Road (CAPEX)	AABA	pan bank road/ Tulasi na	URBAN	AMR 0.780
221	TPSODL	CITY	BED-II	SDO-1	Corporation Road (CAPEX)	AABB	Dalua Sahi (NEW)	URBAN	AMR 0.012
222	TPSODL	CITY	BED-II	SDO-1	Corporation Road (CAPEX)	AABC	Sriram Nagar	URBAN	AMR 8.308
223	TPSODL	CITY	BED-II	SDO-1	Corporation Road (CAPEX)	AABD	Sana Bazar	URBAN	AMR 20.004
224	TPSODL	CITY	BED-II	SDO-1	Ambagada	ABAC	Aska Road -1	URBAN	AMR 3.342
225	TPSODL	CITY	BED-II	SDO-1	Ambagada	ABAD	ka Road -2 (Old Berhamp	URBAN	AMR 10.264
226	TPSODL	CITY	BED-II	SDO-1	Ambagada	ABAE	CITY Hospital	URBAN	AMR
227	TPSODL	CITY	BED-II	SDO-4	Ambagada	ABAF	Balipada	URBAN	AMR
228	TPSODL	CITY	BED-II	SDO-1	Ambagada	ABAG	Aska road PHD	URBAN	AMR
229	TPSODL	CITY	BED-II	SDO-3	N.K.Nagar	ACAA	Gandhinagar-I	URBAN	AMR
230	TPSODL	CITY	BED-II	SDO-3	N.K.Nagar	ACAB	Gandhinagar-II	URBAN	AMR 0.088
231	TPSODL	CITY	BED-II	SDO-3	N.K.Nagar	ACAC	Housing Board Colony	URBAN	AMR
232	TPSODL	CITY	BED-II	SDO-3	N.K.Nagar	ACAD	Gosaninuagam+HIG	URBAN	AMR
233	TPSODL	CITY	BED-II	SDO-3	N.K.Nagar	ACAE	Gosaninuagam	URBAN	AMR 1.241
234	TPSODL	CITY	BED-III	SDO-4	Ambagada	ABAA	atnapur/ WATER WORK	RURAL	AMR
235	TPSODL	CITY	BED-III	SDO-4	Ambagada	ABAB	Nimakhandi	RURAL	AMR
236	TPSODL	CITY	BED-III	SDO-4	Lathi	ADAA	Sukunda	RURAL	AMR
237	TPSODL	CITY	BED-III	SDO-4	Lathi	ADAB	Mahuda	RURAL	AMR 6.528
238	TPSODL	CITY	BED-III	SDO-4	Lathi	ADAC	Lathi	RURAL	AMR 12.724
239	TPSODL	CITY	BED-III	KANISI	Jagapur	ADBA	Golonthara	RURAL	AMR
240	TPSODL	CITY	BED-III	KANISI	Jagapur	ADBB	Sumandi/Girisola	RURAL	AMR 1.082
241	TPSODL	CITY	BED-III	KANISI	Jagapur	ADBC	Sorola/SONEPUR	RURAL	AMR
242	TPSODL	CITY	BED-III	KANISI	Mantridi/ Golanthara	ADCA	Town	RURAL	OTHER
243	TPSODL	CITY	BED-III	KANISI	Mantridi/ Golanthara	ADCB	Sasanpadar	RURAL	OTHER 0.750
244	TPSODL	CITY	BED-III	KANISI	Mantridi/ Golanthara	ADCC	NIST	RURAL	OTHER 2.6482
245	TPSODL	CITY	BED-III	KANISI	Mantridi/ Golanthara	ADCD	Bhairabi	RURAL	OTHER 4.823
246	TPSODL	CITY	BED-III	KANISI	Konishi	AEAA	Randha	RURAL	AMR 3.23568
247	TPSODL	CITY	BED-III	KANISI	Konishi	AEAB	Tulu	RURAL	AMR 8.268
248	TPSODL	CITY	BED-III	KANISI	Konishi	AEAC	Haldiapadar	RURAL	AMR 0.062
249	TPSODL	CITY	BED-III	SDO-4	Kukudakhandi	AFBA	Kukudakhandi	RURAL	8.354
250	TPSODL	CITY	BED-III	SDO-4	Kukudakhandi	AFBB	Industrial	RURAL	13.010
251	TPSODL	CITY	BED-III	SDO-4	Kukudakhandi	AFBC	Baulojholi	RURAL	OTHER
252	TPSODL	CITY	BED-III	SDO-4	Kukudakhandi	AFBD	Ankushpur	RURAL	OTHER 13.263
253	TPSODL	CITY	BED-III	SDO-4	NIMAKHANDI	AGAA	GURUNTHI		7.597
254	TPSODL	CITY	BED-III	SDO-4	NIMAKHANDI	AGAB	BORIGAON		0.523
255	TPSODL	CITY	BED-III	SDO-4	NIMAKHANDI	AGAC	NIMAKHANDI		2.674
256	TPSODL	CITY	BED-III	SDO-4	NIMAKHANDI	AGAD	LUCHAPADA		4.842
257	TPSODL	RAYAGADA	PKED	Paralakhemundi	PARALAKHEMUNDI (OLD)	GAAA	ralakhemundi Town No	URBAN	OTHER 0.984
258	TPSODL	RAYAGADA	PKED	Paralakhemundi	PARALAKHEMUNDI (OLD)	GAAB	ralakhemundi Town No	URBAN	OTHER 2.734
259	TPSODL	RAYAGADA	PKED	Paralakhemundi	PARALAKHEMUNDI (OLD)	GAAC	ralakhemundi Town No.	URBAN	OTHER 1.052
260	TPSODL	RAYAGADA	PKED	KASINAGAR	PARALAKHEMUNDI (OLD)	GAAD	Rural Feeder	RURAL	OTHER 2.421
261	TPSODL	RAYAGADA	PKED	KASINAGAR	PARALAKHEMUNDI (OLD)	GAAE	SP Office	RURAL	OTHER 9.306
262	TPSODL	RAYAGADA	PKED	UPALADA	PARALAKHEMUNDI (NEW)	GBAA	J.L.T.M	RURAL	OTHER
263	TPSODL	RAYAGADA	PKED	Paralakhemundi	PARALAKHEMUNDI (NEW)	GBAB	Kerandi	URBAN	OTHER
264	TPSODL	RAYAGADA	PKED	Paralakhemundi	PARALAKHEMUNDI (NEW)	GBAC	Town-IV	URBAN	AMR
265	TPSODL	RAYAGADA	PKED	Paralakhemundi	PARALAKHEMUNDI (NEW)	GBAD	Medical	URBAN	OTHER
266	TPSODL	RAYAGADA	PKED	Paralakhemundi	PARALAKHEMUNDI (NEW)	GBAE	PHD	URBAN	AMR 2.005
267	TPSODL	RAYAGADA	PKED	UPALADA	Uppalada	GCAA	Uppalada	RURAL	AMR 7.348
268	TPSODL	RAYAGADA	PKED	UPALADA	Uppalada	GCEA	Baghasala	RURAL	AMR 7.120
269	TPSODL	RAYAGADA	PKED	UPALADA	GARABANDHA	GCBA	Garabandha	RURAL	AMR
270	TPSODL	RAYAGADA	PKED	UPALADA	GARABANDHA	GCBB	Guandi	RURAL	OTHER

271	TPSODL	RAYAGADA	PKED	UPALADA	GARABANDHA	GCBC	Magada	RURAL	OTHER	
272	TPSODL	RAYAGADA	PKED	UPALADA	RAIGADA	GCCA	Raigada	RURAL	OTHER	
273	TPSODL	RAYAGADA	PKED	UPALADA	RAIGADA	GCCB	Jeranga	RURAL	OTHER	
274	TPSODL	RAYAGADA	PKED	UPALADA	RAIGADA	GCCC	Gudda	RURAL	OTHER	
275	TPSODL	RAYAGADA	PKED	UPALADA	SOBARA	GCDA	Gandahati	RURAL	OTHER	
276	TPSODL	RAYAGADA	PKED	UPALADA	SOBARA	GCDB	Lingipur/Labanyagada	RURAL	OTHER	
277	TPSODL	RAYAGADA	PKED	UPALADA	SOBARA	GCDC	Deula	RURAL	OTHER	
278	TPSODL	RAYAGADA	PKED	KASINAGAR	GUMMA	GDAA	Gumma (Seranga)	RURAL	OTHER	3.214
279	TPSODL	RAYAGADA	PKED	KASINAGAR	GUMMA	GDAB	Bada Kolakut	RURAL	OTHER	
280	TPSODL	RAYAGADA	PKED	KASINAGAR	GUMMA	GDAC	Padampur	RURAL	OTHER	3.707
271	TPSODL	RAYAGADA	PKED	UPALADA	GARABANDHA	GCBC	Magada	RURAL	OTHER	
272	TPSODL	RAYAGADA	PKED	UPALADA	RAIGADA	GCCA	Raigada	RURAL	OTHER	
273	TPSODL	RAYAGADA	PKED	UPALADA	RAIGADA	GCCB	Jeranga	RURAL	OTHER	
274	TPSODL	RAYAGADA	PKED	UPALADA	RAIGADA	GCCC	Gudda	RURAL	OTHER	
275	TPSODL	RAYAGADA	PKED	UPALADA	SOBARA	GCDA	Gandahati	RURAL	OTHER	0.442
276	TPSODL	RAYAGADA	PKED	UPALADA	SOBARA	GCDB	Lingipur/Labanyagada	RURAL	OTHER	
277	TPSODL	RAYAGADA	PKED	UPALADA	SOBARA	GCDC	Deula	RURAL	OTHER	
278	TPSODL	RAYAGADA	PKED	KASINAGAR	GUMMA	GDAA	Gumma (Seranga)	RURAL	OTHER	
279	TPSODL	RAYAGADA	PKED	KASINAGAR	GUMMA	GDAB	Bada Kolakut	RURAL	OTHER	
280	TPSODL	RAYAGADA	PKED	KASINAGAR	GUMMA	GDAC	Padampur	RURAL	OTHER	0.947006
271	TPSODL	RAYAGADA	PKED	UPALADA	GARABANDHA	GCBC	Magada	RURAL	OTHER	
272	TPSODL	RAYAGADA	PKED	UPALADA	RAIGADA	GCCA	Raigada	RURAL	OTHER	
273	TPSODL	RAYAGADA	PKED	UPALADA	RAIGADA	GCCB	Jeranga	RURAL	OTHER	
274	TPSODL	RAYAGADA	PKED	UPALADA	RAIGADA	GCCC	Gudda	RURAL	OTHER	
275	TPSODL	RAYAGADA	PKED	UPALADA	SOBARA	GCDA	Gandahati	RURAL	OTHER	0.12096
276	TPSODL	RAYAGADA	PKED	UPALADA	SOBARA	GCDB	Lingipur/Labanyagada	RURAL	OTHER	
277	TPSODL	RAYAGADA	PKED	UPALADA	SOBARA	GCDC	Deula	RURAL	OTHER	
278	TPSODL	RAYAGADA	PKED	KASINAGAR	GUMMA	GDAA	Gumma (Seranga)	RURAL	OTHER	
279	TPSODL	RAYAGADA	PKED	KASINAGAR	GUMMA	GDAB	Bada Kolakut	RURAL	OTHER	
280	TPSODL	RAYAGADA	PKED	KASINAGAR	GUMMA	GDAC	Padampur	RURAL	OTHER	
281	TPSODL	RAYAGADA	PKED	KASINAGAR	GUMMA	GDAD	Gaiba	RURAL	OTHER	
282	TPSODL	RAYAGADA	PKED	KASINAGAR	KHANDWA	GEAA	ra(Puriliguda)/KHANDW	RURAL	OTHER	
283	TPSODL	RAYAGADA	PKED	KASINAGAR	KHANDWA	GEAB	33KV Gunupur feeder	MIXED	OTHER	
284	TPSODL	RAYAGADA	PKED	KASINAGAR	KHANDWA	GEAC	Allada	RURAL	OTHER	
285	TPSODL	RAYAGADA	PKED	KASINAGAR	KASINAGAR	GEBA	Kasinagar-I	URBAN	OTHER	
286	TPSODL	RAYAGADA	PKED	KASINAGAR	KASINAGAR	GEBB	Bathuva	URBAN	OTHER	
287	TPSODL	RAYAGADA	PKED	KASINAGAR	KASINAGAR	GEBC	Hadubangi/ KIDINGA	URBAN	OTHER	
288	TPSODL	RAYAGADA	PKED	KASINAGAR	KASINAGAR	GEBD	Kasinagar -2/ Gumma	URBAN	OTHER	
289	TPSODL	RAYAGADA	PKED	KASINAGAR	Kharda	GECA	Kharada	RURAL	OTHER	
290	TPSODL	RAYAGADA	PKED	KASINAGAR	Kharda	GECE	Hadubangi 2	RURAL	OTHER	
291	TPSODL	RAYAGADA	PKED	KASINAGAR	Kharda	GECC	KAITHAPADAR/ KARTAM	RURAL	OTHER	
292	TPSODL	RAYAGADA	PKED	MOHANA	BRAHMANIGAON	HAAA	Panigonda (Alen)heri	RURAL	OTHER	
293	TPSODL	RAYAGADA	PKED	MOHANA	MOHANA	HABA	Mohona	RURAL	OTHER	
294	TPSODL	RAYAGADA	PKED	MOHANA	MOHANA	HABB	Adava	RURAL	OTHER	
295	TPSODL	RAYAGADA	PKED	MOHANA	MOHANA	HABC	Luhagudi	RURAL	OTHER	
296	TPSODL	RAYAGADA	PKED	MOHANA	MOHANA	HABD	Chandragiri (Chandiput)	RURAL	OTHER	
297	TPSODL	RAYAGADA	PKED	MOHANA	ADAVA (ODSSP)	HACA	ADAVA	RURAL	AMR	
298	TPSODL	RAYAGADA	PKED	MOHANA	ADAVA (ODSSP)	HACB	ALLIGANDA	RURAL	AMR	
299	TPSODL	RAYAGADA	PKED	MOHANA	ADAVA (ODSSP)	HACC	BIRIKOTE	RURAL	AMR	
300	TPSODL	RAYAGADA	PKED	MOHANA	PANIGANDA	HADA	PATAMA	MIXED	OTHER	
301	TPSODL	RAYAGADA	PKED	MOHANA	PANIGANDA	HADB	PANIGANDA	MIXED	OTHER	
302	TPSODL	RAYAGADA	PKED	R UDAYAGIRI	CHAJURIPADA/ BADAPADA	HBAA	Titisingi	RURAL	OTHER	
303	TPSODL	RAYAGADA	PKED	R UDAYAGIRI	CHAJURIPADA/ BADAPADA	HBAB	Nuagada / KHAJURIPADA	RURAL	OTHER	
304	TPSODL	RAYAGADA	PKED	R UDAYAGIRI	CHELIGADA	HBBA	Cheligada	RURAL	OTHER	
305	TPSODL	RAYAGADA	PKED	R UDAYAGIRI	CHELIGADA	HBBB	Ramagiri	RURAL	OTHER	
306	TPSODL	RAYAGADA	PKED	UPALADA	CHELIGADA	HBBC	R. Udayagiri	RURAL	OTHER	
307	TPSODL	RAYAGADA	PKED	R UDAYAGIRI	NUAGADA	HBCA	Luhangara	RURAL	AMR	
308	TPSODL	RAYAGADA	PKED	R UDAYAGIRI	NUAGADA	HBCB	Nuagada Town	RURAL	AMR	
309	TPSODL	RAYAGADA	PKED	R UDAYAGIRI	NUAGADA	HBCD	Keradanga	RURAL	AMR	
310	TPSODL	RAYAGADA	PKED	R UDAYAGIRI	NUAGADA	HBCD	Bhramarpur	RURAL	AMR	
311	TPSODL	RAYAGADA	PKED	R UDAYAGIRI	R.Udayagiri	HBDA	Sambalpur	RURAL	AMR	
312	TPSODL	RAYAGADA	PKED	R UDAYAGIRI	R.Udayagiri	Hbdb	Putrupada	RURAL	AMR	
313	TPSODL	RAYAGADA	PKED	R UDAYAGIRI	R.Udayagiri	HbDC	R.Udayagiri	RURAL	AMR	
314	TPSODL	RAYAGADA	PKED		Chandragiri (ODSSP)	HBEA	Baghamari	RURAL	AMR	
315	TPSODL	RAYAGADA	PKED		Chandragiri (ODSSP)	HBEB	Antaraba	RURAL	AMR	
316	TPSODL	RAYAGADA	PKED		Chandragiri (ODSSP)	HBED	Chandragiri	RURAL	AMR	
317	TPSODL	RAYAGADA	PKED		Chandragiri (ODSSP)	HBED	Mahendragada	RURAL	AMR	
318	TPSODL	RAYAGADA	PKED	MOHANA	LUHAGUDI	HBFA	LUHAGUDI	MIXED	OTHER	
319	TPSODL	RAYAGADA	PKED	MOHANA	LUHAGUDI	HBFB	CHANDIPUT	MIXED	OTHER	
320	TPSODL	RAYAGADA	PKED	MOHANA	LUHAGUDI	HBFC	GOBINDHPUR	MIXED	OTHER	
321	TPSODL	RAYAGADA	GED	GUMUDA	Gudari	NAAA	Gudari Town	URBAN	OTHER	
322	TPSODL	RAYAGADA	GED	GUMUDA	Gudari	NAAB	Gudari Rural (M.K.Rai)	RURAL	OTHER	
323	TPSODL	RAYAGADA	GED	GUMUDA	Gudari	NAAC	DHEPAGUDA (IPDS)	RURAL	OTHER	
324	TPSODL	RAYAGADA	GED	GUMUDA	Ukumba	NBAA	kamba(KUJENDRI/ ALAD	URBAN	OTHER	
325	TPSODL	RAYAGADA	GED	GUMUDA	Ukumba	NBAB	SUBHADRAPUR	RURAL	OTHER	
326	TPSODL	RAYAGADA	GED	GUMUDA	Padmapur	NBBA	Padmapur	RURAL	OTHER	
327	TPSODL	RAYAGADA	GED	GUMUDA	Padmapur	NBBB	Kenduguda	RURAL	OTHER	
328	TPSODL	RAYAGADA	GED	GUMUDA	Padmapur	NBBC	Gudiabandha	RURAL	OTHER	
329	TPSODL	RAYAGADA	GED	GUMUDA	Dambasara (bdssp)	NBCA	Dambasara/ Dakasukla	RURAL	OTHER	
330	TPSODL	RAYAGADA	GED	GUMUDA	Dambasara (bdssp)	NBCB	Chalkamba/ Baghasala	RURAL	OTHER	
331	TPSODL	RAYAGADA	GED	GUMUDA	Dambasara (bdssp)	NBCC	Bhimpur/ Ghanantri	RURAL	OTHER	
332	TPSODL	RAYAGADA	GED	GUNUPUR	GUNUPUR	NCAA	Gunpur Town	URBAN	OTHER	
333	TPSODL	RAYAGADA	GED	GUNUPUR	GUNUPUR	NCAB	Court	URBAN	OTHER	
334	TPSODL	RAYAGADA	GED	GUNUPUR	GUNUPUR	NCAC	Gadiakhala	RURAL	OTHER	
335	TPSODL	RAYAGADA	GED	GUNUPUR	GUNUPUR	NCAD	Kalama	RURAL	OTHER	
336	TPSODL	RAYAGADA	GED	GUNUPUR	PEX) (0.5KM tap from Gunu	NCBA	Bikrampur	RURAL	OTHER	
337	TPSODL	RAYAGADA	GED	GUNUPUR	PEX) (0.5KM tap from Gunu	NCBB	Jagannathpur	RURAL	OTHER	
338	TPSODL	RAYAGADA	GED	GUNUPUR	PEX) (0.5KM tap from Gunu	NCBC	Panasaguda	RURAL	OTHER	
339	TPSODL	RAYAGADA	GED	GUNUPUR	JALTARA	NCCA	JALTARA	MIXED	OTHER	
340	TPSODL	RAYAGADA	GED	GUNUPUR	JALTARA	NCCB	PATASINGH	MIXED	OTHER	
341	TPSODL	RAYAGADA	GED	GUNUPUR	JALTARA	NCCC	PANKSING	MIXED	OTHER	
342	TPSODL	RAYAGADA	GED	GUMUDA	GUMUDA	NDAA	Gumuda	RURAL	OTHER	0.754
343	TPSODL	RAYAGADA	GED	GUMUDA	GUMUDA	NDBA	Naira	RURAL	OTHER	
344	TPSODL	RAYAGADA	GED	GUMUDA	RAMANAGUDA	NDBA	Suludi	RURAL	OTHER	1.161
345	TPSODL	RAYAGADA	GED	GUMUDA	RAMANAGUDA	NDBB	Pallupai	RURAL	OTHER	0.395
346	TPSODL	RAYAGADA	GED	GUMUDA	RAMANAGUDA	NDBC	Bangi	RURAL	OTHER	
347	TPSODL	RAYAGADA	GED	GUMUDA	RAMANAGUDA	NDBD	Ramnaguda	RURAL	OTHER	
348	TPSODL	RAYAGADA	GED	GUMUDA	OLAEARLIER UNDER AUTO	NDCA	Tandikona	RURAL	OTHER	
349	TPSODL	RAYAGADA	GED	GUMUDA	OLAEARLIER UNDER AUTO	NDCB	Minajhola/BAINKILU	RURAL	OTHER	
350	TPSODL	RAYAGADA	GED	GUMUDA	OLAEARLIER UNDER AUTO	NDCC	uni/MUKUNDPUR/CHAI	RURAL	OTHER	

351	TPSODL	RAYAGADA	GED	GUMUDA	Kailaspur	NDDA	Bhoimoda	RURAL	OTHER	
352	TPSODL	RAYAGADA	GED	GUMUDA	Kailaspur	NDDB	Lalbi	RURAL	OTHER	
353	TPSODL	RAYAGADA	GED	GUMUDA	Kailaspur	NDDC	Makundapur	RURAL	OTHER	
354	TPSODL	RAYAGADA	RED	RAYAGADA	AUTONAGAR	OAAA	Town Feeder No.-III	URBAN	OTHER	
355	TPSODL	RAYAGADA	RED	RAYAGADA	AUTONAGAR	OAA8	Town Feeder No.-IV	URBAN	OTHER	19.751
356	TPSODL	RAYAGADA	RED	RAYAGADA	Muniguda	OAAC	J.K Pur	RURAL	OTHER	
357	TPSODL	RAYAGADA	RED	RAYAGADA	AUTONAGAR	OAAD	Kerada	RURAL	OTHER	0.314
358	TPSODL	RAYAGADA	RED	RAYAGADA	Seriguda (CAPEX)	ODAA	Town Feeder No.-I	URBAN	OTHER	
359	TPSODL	RAYAGADA	RED	RAYAGADA	Seriguda (CAPEX)	ODAB	Town Feeder No.-II	URBAN	OTHER	
360	TPSODL	RAYAGADA	RED	RAYAGADA	Seriguda (CAPEX)	ODAC	Medical	URBAN	OTHER	
361	TPSODL	RAYAGADA	RED	RAYAGADA	Seriguda (CAPEX)	ODAD	Industrial	RURAL	OTHER	
362	TPSODL	RAYAGADA	RED	RAYAGADA	Seriguda (CAPEX)	ODAE	ral (PITAMAHAL+GUMN	RURAL	OTHER	
363	TPSODL	RAYAGADA	RED	RAYAGADA	Jhimidipeta (ODSSP)	OEAA	Kereda	RURAL	OTHER	
364	TPSODL	RAYAGADA	RED	RAYAGADA	Jhimidipeta (ODSSP)	OEAB	Jhimidipeta	RURAL	OTHER	
365	TPSODL	RAYAGADA	RED	RAYAGADA	Jhimidipeta (ODSSP)	OEAC	Champakota	RURAL	OTHER	
366	TPSODL	RAYAGADA	RED	RAYAGADA	MITs Mega Food park	OEBA	MITs	RURAL	OTHER	0.033
367	TPSODL	RAYAGADA	RED	RAYAGADA	MITs Mega Food park	OE8B	KOLANARA	RURAL	AMR	
368	TPSODL	RAYAGADA	RED	RAYAGADA	Pitamahal	OECA	Pitamahal	RURAL	AMR	
369	TPSODL	RAYAGADA	RED	RAYAGADA	Pitamahal	OECB	Rayagada Express	MIXED	OTHER	
370	TPSODL	RAYAGADA	RED	RAYAGADA	Pitamahal	OEEC	Jagannathpur	RURAL	OTHER	0.385
371	TPSODL	RAYAGADA	RED	RAYAGADA	Pitamahal	OECD	Industrial	RURAL	OTHER	0.533
372	TPSODL	RAYAGADA	RED	THERUBALI	Therubali	QAAA	Therubali	RURAL	AMR	
373	TPSODL	RAYAGADA	RED	THERUBALI	Therubali	QAAB	D.P.Camp	RURAL	AMR	
374	TPSODL	RAYAGADA	RED	THERUBALI	Therubali	QAAC	Kolonara	RURAL	AMR	
375	TPSODL	RAYAGADA	RED	THERUBALI	Sikarpai	QABA	K.Singpur	RURAL	OTHER	0.479
376	TPSODL	RAYAGADA	RED	THERUBALI	Sikarpai	QABB	Serigumma	RURAL	AMR	
377	TPSODL	RAYAGADA	RED	THERUBALI	Sikarpai	QABC	Antamada/ Tandipur	RURAL	AMR	0.203
378	TPSODL	RAYAGADA	RED	THERUBALI	Sikarpai	QABD	Majhiguda	RURAL	AMR	
379	TPSODL	RAYAGADA	RED	THERUBALI	Sikarpai	QABE	Sikarpai	RURAL	OTHER	0.990
380	TPSODL	RAYAGADA	RED	THERUBALI	Kasipur	QACA	Sunger	RURAL	AMR	
381	TPSODL	RAYAGADA	RED	THERUBALI	Kasipur	QACB	Dangasil	RURAL	AMR	0.318
382	TPSODL	RAYAGADA	RED	THERUBALI	Kasipur	QACC	Kasipur	RURAL	AMR	0.414546
383	TPSODL	RAYAGADA	RED	THERUBALI	Kasipur	QACD	Chandragiri/Tikiri	RURAL	AMR	0.215636
384	TPSODL	RAYAGADA	RED	THERUBALI	Kasipur	QACE	Gorakhpur	RURAL	AMR	0.857
385	TPSODL	RAYAGADA	RED	THERUBALI	guda/ Kalyansingh Pur(ODS	QADA	K.Singpur Town	RURAL	OTHER	
386	TPSODL	RAYAGADA	RED	THERUBALI	guda/ Kalyansingh Pur(ODS	QADB	Suliapadar	RURAL	OTHER	
387	TPSODL	RAYAGADA	RED	THERUBALI	guda/ Kalyansingh Pur(ODS	QADC	KRISHNAPATRAGUDA	RURAL	OTHER	
388	TPSODL	RAYAGADA	RED	THERUBALI	guda/ Kalyansingh Pur(ODS	QADD	Hajiaguda/ Hatimunda	RURAL	OTHER	
389	TPSODL	RAYAGADA	RED	THERUBALI	utaguda/ Antamada (ODSS	QAEA	DUNDULI	RURAL	OTHER	
390	TPSODL	RAYAGADA	RED	THERUBALI	utaguda/ Antamada (ODSS	QAE8	ANGURU	RURAL	OTHER	
391	TPSODL	RAYAGADA	RED	THERUBALI	utaguda/ Antamada (ODSS	QAEc	REVOLKANA	RURAL	OTHER	
392	TPSODL	RAYAGADA	RED	BISAMKATAK	BissamaButtack	QBAA	Dukuluguda-1	RURAL	OTHER	
393	TPSODL	RAYAGADA	RED	BISAMKATAK	BissamaButtack	QBAB	Bissamacuttack	RURAL	AMR	1.345958
394	TPSODL	RAYAGADA	RED	BISAMKATAK	BissamaButtack	QBAC	Bissamacuttack Rural	RURAL	OTHER	
395	TPSODL	RAYAGADA	RED	BISAMKATAK	BissamaButtack	QBAD	Chatikona	RURAL	OTHER	
396	TPSODL	RAYAGADA	RED	BISAMKATAK	Hata muniguda	QBBA	Hatamuniguda	RURAL	OTHER	
397	TPSODL	RAYAGADA	RED	BISAMKATAK	Hata muniguda	QB8B	RK MISSION	RURAL	AMR	0.18476
398	TPSODL	RAYAGADA	RED	BISAMKATAK	Hata muniguda	QB8C	DUKULGUDA-2	RURAL	AMR	
399	TPSODL	RAYAGADA	RED	BISAMKATAK	Hata Dahikhal (ODSSP)	QBcA	Station Dahikhal	RURAL	AMR	
400	TPSODL	RAYAGADA	RED	BISAMKATAK	Hata Dahikhal (ODSSP)	QBcB	Express Back	RURAL	AMR	0.167
401	TPSODL	RAYAGADA	RED	BISAMKATAK	Muniguda	QBDA	Muniguda	RURAL	OTHER	
402	TPSODL	RAYAGADA	RED	BISAMKATAK	Muniguda	QB8D	Ambadola/ JAGDALPUR	RURAL	OTHER	
403	TPSODL	RAYAGADA	RED	BISAMKATAK	Muniguda	QBDC	Bhairabagada	RURAL	OTHER	
404	TPSODL	RAYAGADA	RED	BISAMKATAK	Muniguda	QBDD	Kutraguda	RURAL	OTHER	
405	TPSODL	RAYAGADA	RED	BISAMKATAK	K. Dhamini	QBEA	K. Dhamini	RURAL	OTHER	1.738
406	TPSODL	RAYAGADA	RED	BISAMKATAK	K. Dhamini	QBEB	Durgi	RURAL	AMR	
407	TPSODL	RAYAGADA	RED	BISAMKATAK	Dangasorada	QBFA	Bangarada	RURAL	OTHER	
408	TPSODL	RAYAGADA	RED	BISAMKATAK	Dangasorada	QBFB	andrapur/ Hanumantap	RURAL	OTHER	
409	TPSODL	RAYAGADA	RED	BISAMKATAK	Dangasorada	QBFC	SORADA (FROM BANGA	RURAL	OTHER	
410	TPSODL	RAYAGADA	RED	BISAMKATAK	mbadola/ Pediguda(ODSSP	QBGA	Ambadola Town	RURAL	OTHER	
411	TPSODL	RAYAGADA	RED	BISAMKATAK	mbadola/ Pediguda(ODSSP	QBGB	Pediguda	RURAL	OTHER	
412	TPSODL	RAYAGADA	RED	BISAMKATAK	mbadola/ Pediguda(ODSSP	QBGC	Daikhal Back	RURAL	OTHER	
413	TPSODL	RAYAGADA	RED	BISAMKATAK	Chandrapur	QBHA	Chandrapur	RURAL	AMR	
414	TPSODL	RAYAGADA	RED	BISAMKATAK	Chandrapur	QBHB	Raibiji Back	RURAL	AMR	
415	TPSODL	RAYAGADA	RED	BISAMKATAK	Chandrapur	QBHC	Bandipanga	RURAL	AMR	
416	TPSODL	RAYAGADA	RED	BISAMKATAK	Chandrapur	QBHD	Bandiri	RURAL	AMR	
417	TPSODL	RAYAGADA	RED	RAYAGADA	AMLABHATA	QCAA	KALARA	MIXED	OTHER	
418	TPSODL	RAYAGADA	RED	RAYAGADA	AMLABHATA	QCAB	JK PUR	MIXED	OTHER	
419	TPSODL	RAYAGADA	RED	RAYAGADA	AMLABHATA	QCAC	PENTA	MIXED	OTHER	
420	TPSODL	RAYAGADA	RED	THERUBALI	RISAPADAR (in GIS list this	SBAA	Tikiri Town	RURAL	AMR	
421	TPSODL	RAYAGADA	RED	THERUBALI	RISAPADAR (in GIS list this	SBAB	Rural	RURAL	AMR	
422	TPSODL	RAYAGADA	RED	THERUBALI	NUAPADA	SBBA	Kucheipadar/ D. Corol	RURAL	AMR	0.434714
423	TPSODL	RAYAGADA	RED	THERUBALI	NUAPADA	SB8B	Nuapada/ Compur	RURAL	OTHER	
424	TPSODL	RAYAGADA	PKED	Paralakhemundi	Paralakhemundi	GA	ARALAKHEMUNDI (OLD	URBAN	OTHER	0.655
425	TPSODL	RAYAGADA	PKED	UPALADA	Paralakhemundi	GB	ARALAKHEMUNDI (NEW	RURAL	OTHER	
426	TPSODL	RAYAGADA	PKED	UPALADA	Paralakhemundi	GC	Uppalada	RURAL	OTHER	
427	TPSODL	RAYAGADA	PKED	KASINAGAR	Paralakhemundi	GD	GUMMA	RURAL	OTHER	
428	TPSODL	RAYAGADA	PKED	KASINAGAR	Paralakhemundi	GE	KASINAGAR	RURAL	OTHER	
429	TPSODL	RAYAGADA	PKED	MOHANA	Mohana	HA	DARINGIBADI/ MOHANA	RURAL	OTHER	
430	TPSODL	RAYAGADA	PKED	R UDAYAGIRI	Mohana	HB	LAKHEMUNDI/ EHELIGA	RURAL	OTHER	

431	TPSODL	RAYAGADA	GED	GUMUDA	Akhusing	NA	Gudari	URBAN	AMR	
432	TPSODL	RAYAGADA	GED	GUMUDA	Akhusing	NB	PADMAPUR	URBAN	OTHER	
433	TPSODL	RAYAGADA	GED	GUNUPUR	Akhusing	NC	GUNUPUR-2	URBAN	AMR	
434	TPSODL	RAYAGADA	GED	GUMUDA	Akhusing	ND	GUMUDA	RURAL	OTHER	
435	TPSODL	RAYAGADA	RED	RAYAGADA	Rayagada	OA	AUTONAGAR	URBAN	OTHER	
436	TPSODL	RAYAGADA	RED	RAYAGADA	Rayagada	OD	SIRIGUDA	URBAN	OTHER	
437	TPSODL	RAYAGADA	RED	RAYAGADA	Rayagada	OE	GUNUPUR-1	RURAL	OTHER	
438	TPSODL	RAYAGADA	RED	THERUBALI	Therubali	QA	Siliput/ THERUBALI	RURAL	OTHER	
439	TPSODL	RAYAGADA	RED	BISAMKATAK	Therubali	QB	BISAMKATAK	RURAL	OTHER	
440	TPSODL	RAYAGADA	RED	RAYAGADA	Therubali	QC	AMLABHATA	MIXED	OTHER	
441	TPSODL	RAYAGADA	RED	THERUBALI	Laxmipur	SB	TIKIRI	RURAL	OTHER	
442	TPSODL	RAYAGADA	PKED	R.UDAYAGIRI	R.UDAYAGIRI	4A	RAMGIRI	MIXED	OTHER	
443	TPSODL	JEYPORE	KED	Koraput	Koraput	RAAA	Koraput No.-I	URBAN	OTHER	
444	TPSODL	JEYPORE	KED	Koraput	Koraput	RAAB	Chapper	URBAN	OTHER	
445	TPSODL	JEYPORE	KED	Koraput	Koraput	RAAC	Coffee Board	URBAN	OTHER	
446	TPSODL	JEYPORE	KED	Koraput	Koraput	RAAD	Koraput No.-II	URBAN	OTHER	
447	TPSODL	JEYPORE	KED	Koraput	Kolab Nagar	RABA	Dam gallery	RURAL	OTHER	
448	TPSODL	JEYPORE	KED	Koraput	Kolab Nagar	RABB	TOWN	RURAL	OTHER	
449	TPSODL	JEYPORE	KED	Koraput	Kolab Nagar	RABC	Settle Tank	RURAL	OTHER	
450	TPSODL	JEYPORE	KED	Koraput	Kolab Nagar	RABD	Dhaduapadar	RURAL	OTHER	
451	TPSODL	JEYPORE	KED	Koraput	OMP	RACA	OMP/ Silk board	RURAL	OTHER	
452	TPSODL	JEYPORE	KED	Koraput	OMP	RACB	Paduguda	RURAL	OTHER	
453	TPSODL	JEYPORE	KED	SUNABEDA	Sunabeda	RADA	Raw Water Works/ PHD	RURAL	OTHER	
454	TPSODL	JEYPORE	KED	SUNABEDA	Sunabeda	RADB	Jadaguda	RURAL	AMR	
455	TPSODL	JEYPORE	KED	SUNABEDA	Sunabeda	RADC	N.A.C TOWN	URBAN	OTHER	
456	TPSODL	JEYPORE	KED	SUNABEDA	Sunabeda	RADD	Central University	RURAL	OTHER	
457	TPSODL	JEYPORE	KED	SUNABEDA	Sunabeda	RADE	Semiliguda	RURAL	OTHER	
458	TPSODL	JEYPORE	KED	SUNABEDA	Sunabeda	RADF	A.E.F	RURAL	OTHER	
459	TPSODL	JEYPORE	KED	SUNABEDA	Sunabeda	RADG	RURAL NSC	RURAL	OTHER	
460	TPSODL	JEYPORE	KED	SUNABEDA	Pottangi (RGGVY)	RAEA	Pottangi town	RURAL	OTHER	
461	TPSODL	JEYPORE	KED	SUNABEDA	Pottangi (RGGVY)	RAEB	Digugabadar/ PUKALI	RURAL	OTHER	
462	TPSODL	JEYPORE	KED	SUNABEDA	Pottangi (RGGVY)	RAEC	Konadora/ NUAGAM	RURAL	OTHER	
463	TPSODL	JEYPORE	KED	SUNABEDA	Pottangi (RGGVY)	RAED	Dhulipadar/ SUNKI	RURAL	OTHER	
464	TPSODL	JEYPORE	KED	SUNABEDA	Analabadi	RBAA	MATHALPUT/ BHEJAPUT	RURAL	OTHER	
465	TPSODL	JEYPORE	KED	SUNABEDA	Analabadi	RBAB	DAMANJODI COLONY	RURAL	OTHER	
466	TPSODL	JEYPORE	KED	SUNABEDA	Beliaguda/ Similiguda	RCAA	Subai	RURAL	AMR	
467	TPSODL	JEYPORE	KED	SUNABEDA	Beliaguda/ Similiguda	RCAB	angi/Beleipada Town/ K	RURAL	OTHER	
468	TPSODL	JEYPORE	KED	SUNABEDA	Nandapur(RGGVY)	RCBA	Nandapur Town-1	RURAL	OTHER	
469	TPSODL	JEYPORE	KED	SUNABEDA	Nandapur(RGGVY)	RCBB	Pujariput	RURAL	OTHER	
470	TPSODL	JEYPORE	KED	SUNABEDA	Nandapur(RGGVY)	RCBC	Padua	RURAL	OTHER	
471	TPSODL	JEYPORE	KED	SUNABEDA	Nandapur(RGGVY)	RCBD	Nandapur Rural	RURAL	OTHER	
472	TPSODL	JEYPORE	JED	JPR-I	Lamtaput (RGGVY)	RCCA	Lamtaput	RURAL	OTHER	
473	TPSODL	JEYPORE	JED	JPR-I	Lamtaput (RGGVY)	RCCB	Sagar/Palliba	RURAL	OTHER	
474	TPSODL	JEYPORE	JED	JPR-I	Lamtaput (RGGVY)	RCCC	Silpondi	RURAL	OTHER	
475	TPSODL	JEYPORE	JED	JPR-I	Lamtaput (RGGVY)	RCCD	Ballel	RURAL	OTHER	
476	TPSODL	JEYPORE	JED	JEYPORE SDO-1	MARTAMPUT	RCD A	MACHAKUNDA	MIXED	OTHER	
477	TPSODL	JEYPORE	JED	JEYPORE SDO-1	MARTAMPUT	RCD B	GANEIPADA	MIXED	OTHER	
478	TPSODL	JEYPORE	JED	JEYPORE SDO-1	MARTAMPUT	RCD C	GADIBANDHAR	MIXED	OTHER	
479	TPSODL	JEYPORE	KED	SUNABEDA	KUNDULI	REAA	Thuria	RURAL	OTHER	
480	TPSODL	JEYPORE	KED	SUNABEDA	KUNDULI	REAB	Kundili	RURAL	OTHER	
481	TPSODL	JEYPORE	KED	LAXMIPUR	Laxmipur	SAAA	Ropkana/Kumbhikota	RURAL	OTHER	
482	TPSODL	JEYPORE	KED	LAXMIPUR	Laxmipur	SAAB	Champi	RURAL	AMR	2.742
483	TPSODL	JEYPORE	KED	LAXMIPUR	Laxmipur	SAAC	Laxmipur	RURAL	OTHER	
484	TPSODL	JEYPORE	KED	LAXMIPUR	Laxmipur	SAAD	S.E.Railway (Laxmipur)	RURAL	OTHER	
485	TPSODL	JEYPORE	KED	LAXMIPUR	Laxmipur	SAAE	Pradhan Industry	RURAL	OTHER	0.071
486	TPSODL	JEYPORE	KED	LAXMIPUR	Laxmipur	SAAF	Burja	RURAL	OTHER	
487	TPSODL	JEYPORE	KED	LAXMIPUR	Narayanapatna	SABA	Town	RURAL	OTHER	
488	TPSODL	JEYPORE	KED	LAXMIPUR	Narayanapatna	SABB	Balipeta	RURAL	OTHER	
489	TPSODL	JEYPORE	KED	LAXMIPUR	Narayanapatna	SABC	Dondabadi	RURAL	OTHER	
490	TPSODL	JEYPORE	KED	LAXMIPUR	Bandhugaon	SACA	Bandhugaon Town	RURAL	OTHER	
491	TPSODL	JEYPORE	KED	LAXMIPUR	Bandhugaon	SACB	Nilabadi	RURAL	OTHER	
492	TPSODL	JEYPORE	KED	LAXMIPUR	Bandhugaon	SACC	Alumunda	RURAL	OTHER	
493	TPSODL	JEYPORE	KED	LAXMIPUR	Kakirigumma	SADA	Panchada	RURAL	OTHER	2.614
494	TPSODL	JEYPORE	KED	LAXMIPUR	Kakirigumma	SADB	Nalco (Tala Champi)	RURAL	OTHER	0.289
495	TPSODL	JEYPORE	KED	LAXMIPUR	Kakirigumma	SADC	Goudaguda	RURAL	OTHER	
496	TPSODL	JEYPORE	KED	LAXMIPUR	Kakirigumma	SADD	Railway/ Kakirigumma T	RURAL	AMR	0.093
497	TPSODL	JEYPORE	KED	LAXMIPUR	KHUMBHARIPUT	SAEA	KUMBHARIPUT	MIXED	OTHER	
498	TPSODL	JEYPORE	KED	LAXMIPUR	KHUMBHARIPUT	SAEB	DUMADANGA	MIXED	OTHER	
499	TPSODL	JEYPORE	JED	JPR-I	Old Control Room	TAAA	No.- I Jeypore	URBAN	OTHER	
500	TPSODL	JEYPORE	JED	JPR-I	Old Control Room	TAAB	Koraput	URBAN	OTHER	3.084
501	TPSODL	JEYPORE	JED	JPR-I	Old Control Room	TAAC	Jayanagar (Jeypore-III)	URBAN	AMR	
502	TPSODL	JEYPORE	JED	JPR-I	Old Control Room	TAAD	Brahamnigaon	URBAN	OTHER	
503	TPSODL	JEYPORE	JED	JPR-I	Old Control Room	TAAE	No. - II Jeypore	URBAN	OTHER	3.247
504	TPSODL	JEYPORE	JED	JPR-I	Old Control Room	TAAF	der (SCSD0701 Group w	RURAL	OTHER	1.299
505	TPSODL	JEYPORE	JED	JPR-I	Old Control Room	TAAG	OCC feeder	RURAL	OTHER	0.363
506	TPSODL	JEYPORE	JED	JPR-II	ew Bus Stand(Burial Groun	TCAA	No.-I town Feeder	URBAN	OTHER	8.023
507	TPSODL	JEYPORE	JED	JPR-II	ew Bus Stand(Burial Groun	TCAB	Lingaraj Nagar Feeder	URBAN	OTHER	3.825
508	TPSODL	JEYPORE	JED	JPR-II	ew Bus Stand(Burial Groun	TCAC	Umuri Feeder	RURAL	OTHER	
509	TPSODL	JEYPORE	JED	JPR-I	Dangaguda	TCBA	Gandhi chhak	RURAL	AMR	2.143
510	TPSODL	JEYPORE	JED	JPR-I	Dangaguda	TCBB	Dangaguda	RURAL	OTHER	1.535
511	TPSODL	JEYPORE	JED	JPR-I	Dangaguda	TCBC	Kalaguda	RURAL	OTHER	1.872
512	TPSODL	JEYPORE	JED	JPR-I	Dangaguda	TCBD	Bariniput Rural	RURAL	OTHER	2.580
513	TPSODL	JEYPORE	JED	JPR-I	Boipariguda	TDAA	Boipariguda Town	RURAL	OTHER	
514	TPSODL	JEYPORE	JED	JPR-I	Boipariguda	TDAB	Doraguda	RURAL	OTHER	
515	TPSODL	JEYPORE	JED	JPR-I	Boipariguda	TDAC	3KV Mantriamba Feede	MIXED	OTHER	
516	TPSODL	JEYPORE	JED	JPR-I	Boipariguda	TDAD	Digapur	RURAL	OTHER	
517	TPSODL	JEYPORE	JED	JPR-I	Boipariguda	TD AE	Ramagiri	RURAL	OTHER	
518	TPSODL	JEYPORE	JED	JPR-I	Dasmantpur (ODSSP)	TD BA	Tanginiguda	RURAL	OTHER	
519	TPSODL	JEYPORE	JED	JPR-I	Dasmantpur (ODSSP)	TD BB	Chickima	RURAL	OTHER	
520	TPSODL	JEYPORE	JED	JPR-I	Dasmantpur (ODSSP)	TD BC	Dasmantpur	RURAL	OTHER	

521	TPSODL	JEYPORE	JED	JPR-I	Dasmantpur (ODSSP)	TDBD	Laxmipur	RURAL	OTHER	
522	TPSODL	JEYPORE	JED	JEYPORE SDO-1	BALIA	TDCA	KUMBHARPUT	MIXED	OTHER	
523	TPSODL	JEYPORE	JED	JEYPORE SDO-1	BALIA	TDCB	ANTA	MIXED	OTHER	
524	TPSODL	JEYPORE	JED	JEYPORE SDO-1	BALIA	TDCC	PATRAPUT	MIXED	OTHER	
525	TPSODL	JEYPORE	JED	JEYPORE SDO-1	RAMGIRI	TDDA	HALADIKUNDA	MIXED	OTHER	
526	TPSODL	JEYPORE	JED	JEYPORE SDO-1	RAMGIRI	TDOB	RAMGIRI	MIXED	OTHER	
527	TPSODL	JEYPORE	JED	JEYPORE SDO-1	RAMGIRI	TDDC	DANDABADI	MIXED	OTHER	
528	TPSODL	JEYPORE	JED	JEYPORE SDO-1	DIGAPUR	TDEA	MATIGAON	MIXED	OTHER	
529	TPSODL	JEYPORE	JED	JEYPORE SDO-1	DIGAPUR	TDEB	NADIALPALI	MIXED	OTHER	
530	TPSODL	JEYPORE	JED	JEYPORE SDO-1	DIGAPUR	TDEC	DIGAPUR	MIXED	OTHER	
531	TPSODL	JEYPORE	JED	JPR-II	Randhapalli	TEAA	Ekamba	RURAL	OTHER	0.313
532	TPSODL	JEYPORE	JED	JPR-II	Randhapalli	TEAB	Ambaguda	RURAL	OTHER	1.268
533	TPSODL	JEYPORE	JED	JPR-II	Randhapalli	TEAC	AIR	RURAL	OTHER	
534	TPSODL	JEYPORE	JED	JPR-II	Randhapalli	TEAD	Jamunda	RURAL	AMR	1.343
535	TPSODL	JEYPORE	JED	Borigumma	B.Singipur	TEBA	gam (Renamed from K	RURAL	OTHER	
536	TPSODL	JEYPORE	JED	Borigumma	B.Singipur	TEBB	B.Singipur	RURAL	OTHER	
537	TPSODL	JEYPORE	JED	Borigumma	B.Singipur	TEBC	Sargiguda	RURAL	OTHER	
538	TPSODL	JEYPORE	JED	Borigumma	Kusumi	TECA	Chitra	RURAL	OTHER	
539	TPSODL	JEYPORE	JED	Borigumma	Kusumi	TECB	Bobeya	RURAL	OTHER	
540	TPSODL	JEYPORE	JED	Borigumma	Kusumi	TECC	Kusumi	RURAL	OTHER	
541	TPSODL	JEYPORE	JED	Borigumma	Borigumma	TEDA	Jayantigiri	RURAL	AMR	
542	TPSODL	JEYPORE	JED	Borigumma	Borigumma	TEDB	Anchala	RURAL	OTHER	
543	TPSODL	JEYPORE	JED	Borigumma	Borigumma	TEDC	Borigumma Town	RURAL	AMR	
544	TPSODL	JEYPORE	JED	Borigumma	Borigumma	TEDD	Bondaguda	RURAL	AMR	
545	TPSODL	JEYPORE	JED	Borigumma	Kotapad	TEEA	Bastamba	RURAL	OTHER	
546	TPSODL	JEYPORE	JED	Borigumma	Kotapad	TEEB	Sadaranga	RURAL	AMR	
547	TPSODL	JEYPORE	JED	Borigumma	Kotapad	TEEC	Chandili	RURAL	OTHER	
548	TPSODL	JEYPORE	JED	Borigumma	Kotapad	TEED	Girila	RURAL	OTHER	
549	TPSODL	JEYPORE	JED	Borigumma	Kotapad	TEEE	Kotpad Town	URBAN	OTHER	
550	TPSODL	JEYPORE	JED	Borigumma	anguda (ODSSP)NABRANGP	TEFA	Dengupadar	RURAL	OTHER	
551	TPSODL	JEYPORE	JED	Borigumma	anguda (ODSSP)NABRANGP	TEFB	Kaliaguda	RURAL	OTHER	0.805
552	TPSODL	JEYPORE	JED	Borigumma	anguda (ODSSP)NABRANGP	TEFC	Kamara	RURAL	OTHER	
553	TPSODL	JEYPORE	JED	Borigumma	Kamata/ Gumuda (ODSSP)	TEGA	Hardali	RURAL	OTHER	
554	TPSODL	JEYPORE	JED	Borigumma	Kamata/ Gumuda (ODSSP)	TEGB	Kathargada	RURAL	OTHER	
555	TPSODL	JEYPORE	JED	Borigumma	Kamata/ Gumuda (ODSSP)	TEGC	Murja	RURAL	OTHER	
556	TPSODL	JEYPORE	JED	Borigumma	Kamata/ Gumuda (ODSSP)	TEGD	KUMULI	RURAL	OTHER	
557	TPSODL	JEYPORE	JED	Borigumma	Kamata/ Gumuda (ODSSP)	TEGE	Kamta	RURAL	OTHER	
558	TPSODL	JEYPORE	JED	Borigumma	Kebidi(ODSSP)	TEHA	Kebidi	RURAL	OTHER	
559	TPSODL	JEYPORE	JED	Borigumma	Kebidi(ODSSP)	TEHB	Ranigada	RURAL	OTHER	
560	TPSODL	JEYPORE	JED	Borigumma	Kebidi(ODSSP)	TEHC	Pujariput	RURAL	OTHER	
561	TPSODL	JEYPORE	JED	JOYPORE-2	JAMUNDA	TEIA	KANGO	MIXED	OTHER	
562	TPSODL	JEYPORE	JED	JOYPORE-2	JAMUNDA	TEIB	TELIA	MIXED	OTHER	
563	TPSODL	JEYPORE	JED	JOYPORE-2	JAMUNDA	TEIC	JAMUNDA	MIXED	OTHER	
564	TPSODL	JEYPORE	JED	JOYPORE-2	JAMUNDA	TEID	BARAPADA	MIXED	OTHER	
565	TPSODL	JEYPORE	JED	BORIGUMA	S B NUAGAOM	TEJA	S B NUAGAOM	MIXED	OTHER	
566	TPSODL	JEYPORE	JED	BORIGUMA	S B NUAGAOM	TEJB	BANSILI	MIXED	OTHER	
567	TPSODL	JEYPORE	JED	BORIGUMA	S B NUAGAOM	TEJC	EKAMADA	MIXED	OTHER	
568	TPSODL	JEYPORE	JED	JPR-II	ndra (Earlier under Borigu	TFAA	Dangerpaunsi	RURAL	AMR	4.250
569	TPSODL	JEYPORE	JED	JPR-II	ndra (Earlier under Borigu	TFAB	Kundra	RURAL	OTHER	
570	TPSODL	JEYPORE	JED	JPR-II	ndra (Earlier under Borigu	TFAC	Udiliagada	RURAL	OTHER	
571	TPSODL	JEYPORE	JED	JPR-II	ndra (Earlier under Borigu	TFAD	Lima	RURAL	AMR	1.297
572	TPSODL	JEYPORE	JED	JPR-II	ndra (Earlier under Borigu	TFAE	R.E	RURAL	OTHER	2.204
573	TPSODL	JEYPORE	JED		KALIAGAON	TFBA	salapa	RURAL	OTHER	
574	TPSODL	JEYPORE	JED		KALIAGAON	TFBB	kaliogaon	RURAL	OTHER	
575	TPSODL	JEYPORE	JED		KALIAGAON	TFBC	phampuni	RURAL	OTHER	
576	TPSODL	JEYPORE	JED	JEYPORE SDO-2	BAGDERI	TFCA	BAGDERI	MIXED	OTHER	
577	TPSODL	JEYPORE	JED	JEYPORE SDO-2	BAGDERI	TFCB	DANGARAPALI	MIXED	OTHER	
578	TPSODL	JEYPORE	JED	JEYPORE SDO-2	BAGDERI	TFCC	BUDAGUDA	MIXED	OTHER	
579	TPSODL	JEYPORE	MED	BALIMELA	mela (1X5+1X3.15+2X1.6M)	UAAA	Balimela Town	URBAN	OTHER	
580	TPSODL	JEYPORE	MED	BALIMELA	mela (1X5+1X3.15+2X1.6M)	UAAB	Micro	RURAL	OTHER	0.391
581	TPSODL	JEYPORE	MED	BALIMELA	mela (1X5+1X3.15+2X1.6M)	UAAC	K. Gumma/Korkunda	RURAL	OTHER	0.367
582	TPSODL	JEYPORE	MED	BALIMELA	mela (1X5+1X3.15+2X1.6M)	UAAD	R.E/ Ayeppa	RURAL	OTHER	0.269
583	TPSODL	JEYPORE	MED	BALIMELA	mela (1X5+1X3.15+2X1.6M)	UAAE	Sadashivpur	RURAL	OTHER	
584	TPSODL	JEYPORE	MED	BALIMELA	Nitrakonda (1X5+1X1.6MVA)	UABA	Janbai/ Tunnel Camp	RURAL	OTHER	
585	TPSODL	JEYPORE	MED	BALIMELA	Nitrakonda (1X5+1X1.6MVA)	UABB	Doraguda	RURAL	OTHER	
586	TPSODL	JEYPORE	MED	BALIMELA	Nitrakonda (1X5+1X1.6MVA)	UABC	Chitrakonda	RURAL	OTHER	
587	TPSODL	JEYPORE	MED	BALIMELA	gumma (1X5MVA)(RGGVY)	UBAA	GUMMA TOWN	RURAL	OTHER	
588	TPSODL	JEYPORE	MED	BALIMELA	gumma (1X5MVA)(RGGVY)	UBAB	SOMNATHPUR	RURAL	OTHER	
589	TPSODL	JEYPORE	MED	BALIMELA	Chairiput (1X5+1X3.15MVA)	UBBA	Chairiput	RURAL	OTHER	
590	TPSODL	JEYPORE	MED	BALIMELA	Chairiput (1X5+1X3.15MVA)	UBBB	MUDULIPADA	RURAL	OTHER	
591	TPSODL	JEYPORE	MED	BALIMELA	Chairiput (1X5+1X3.15MVA)	UBCC	Khemaguru	RURAL	OTHER	
592	TPSODL	JEYPORE	MED	BALIMELA	Chairiput (1X5+1X3.15MVA)	UBBD	Mundiguda	RURAL	OTHER	
593	TPSODL	JEYPORE	MED	BALIMELA	Mathili (1X5+1X3.15MVA)	UBCA	Mathili	RURAL	OTHER	
594	TPSODL	JEYPORE	MED	BALIMELA	Mathili (1X5+1X3.15MVA)	UBCB	Mendukuli	RURAL	OTHER	
595	TPSODL	JEYPORE	MED	BALIMELA	Mathili (1X5+1X3.15MVA)	UBCC	PANGAM	RURAL	OTHER	
596	TPSODL	JEYPORE	MED	BALIMELA	Mathili (1X5+1X3.15MVA)	UBCD	SaliM	RURAL	OTHER	
597	TPSODL	JEYPORE	MED	BALIMELA	vindapalli (2X5MVA)(ODSS	UBDA	Govindapalli	RURAL	OTHER	
598	TPSODL	JEYPORE	MED	BALIMELA	vindapalli (2X5MVA)(ODSS	UBDB	Saptadhara	RURAL	OTHER	
599	TPSODL	JEYPORE	MED	BALIMELA	vindapalli (2X5MVA)(ODSS	UBDC	Badadural	RURAL	OTHER	
600	TPSODL	JEYPORE	MED	BALIMELA	vindapalli (2X5MVA)(ODSS	UBDD	Udulibeda	RURAL	OTHER	
601	TPSODL	JEYPORE	MED	BALIMELA	Korkonda (2X1.6MVA)	UCAA	Korkonda Town	RURAL	OTHER	
602	TPSODL	JEYPORE	MED	BALIMELA	Korkonda (2X1.6MVA)	UCAB	MV-35	RURAL	OTHER	
603	TPSODL	JEYPORE	MED	BALIMELA	MV-27 (2X5MVA)	UCBA	Kamwada	RURAL	OTHER	
604	TPSODL	JEYPORE	MED	BALIMELA	MV-27 (2X5MVA)	UCBB	Mariwada	RURAL	OTHER	
605	TPSODL	JEYPORE	MED	BALIMELA	MV-27 (2X5MVA)	UCBC	Tumsapalli	RURAL	OTHER	
606	TPSODL	JEYPORE	NED	Nabarangpur	ntulikhunti (NOW NBPUR-I	VAAA	Tentulikhunti	RURAL	OTHER	
607	TPSODL	JEYPORE	NED	Nabarangpur	ntulikhunti (NOW NBPUR-I	VAAB	Jhaliaguda	RURAL	AMR	4.453
608	TPSODL	JEYPORE	NED	Nabarangpur	ntulikhunti (NOW NBPUR-I	VAAC	Anchalagumma	RURAL	OTHER	
609	TPSODL	JEYPORE	NED	Nabarangpur	ntulikhunti (NOW NBPUR-I	VAAD	Mentry	RURAL	OTHER	
610	TPSODL	JEYPORE	NED	Nabarangpur	ntulikhunti (NOW NBPUR-I	VAAE	Digi-salpa	RURAL	AMR	2.516

611	TPSODL	JEYPORE	NED	Nabarangpur	arbhaja/ Nandahandi (RGGVY)	VABA	Dongarbhaja/DAHANA	RURAL	AMR	1.691
612	TPSODL	JEYPORE	NED	Nabarangpur	arbhaja/ Nandahandi (RGGVY)	VABB	Soruguda	RURAL	AMR	1.675
613	TPSODL	JEYPORE	NED	Nabarangpur	arbhaja/ Nandahandi (RGGVY)	VABC	Jagannathpur	RURAL	OTHER	1.839
614	TPSODL	JEYPORE	NED	Nabarangpur	arbhaja/ Nandahandi (RGGVY)	VABD	Nandahandi	RURAL	AMR	2.079
615	TPSODL	JEYPORE	NED	Nabarangpur	Nabarangpur	VACA	Nabarangpur Town No.-1	URBAN	OTHER	4.18667
616	TPSODL	JEYPORE	NED	Nabarangpur	Nabarangpur	VACB	Nabarangpur Town No.-2	URBAN	OTHER	11.628
617	TPSODL	JEYPORE	NED	Nabarangpur	Nabarangpur	VACC	B.Maliguda	RURAL	AMR	3.682
618	TPSODL	JEYPORE	NED	Nabarangpur	Nabarangpur	VACD	S.Maliguda	RURAL	AMR	1.420
619	TPSODL	JEYPORE	NED	Nabarangpur	Nabarangpur	VACE	Kenduguda	RURAL	OTHER	0.217
620	TPSODL	JEYPORE	NED	Nabarangpur	sigaoi (ODSSP) (NOW NBP)	VBAA	Deuli	RURAL	OTHER	
621	TPSODL	JEYPORE	NED	Nabarangpur	sigaoi (ODSSP) (NOW NBP)	VBAB	Badamasigaon	RURAL	OTHER	
622	TPSODL	JEYPORE	NED	Nabarangpur	sigaoi (ODSSP) (NOW NBP)	VBAC	R.Beheraguda	RURAL	OTHER	
623	TPSODL	JEYPORE	NED	Nabarangpur	Podagada (Khatiguda)	VCAA	Permanent Colony	RURAL	OTHER	1.060
624	TPSODL	JEYPORE	NED	Nabarangpur	Podagada (Khatiguda)	VCAB	Temporary Colony	RURAL	OTHER	0.434
625	TPSODL	JEYPORE	NED	Nabarangpur	Podagada (Khatiguda)	VCAC	Kopur/ MURAN	RURAL	OTHER	
626	TPSODL	JEYPORE	NED	Nabarangpur	Podagada (Khatiguda)	VCAD	enakhamar/ PODAGADA	RURAL	OTHER	
627	TPSODL	JEYPORE	NED	Nabarangpur	Moran	VCBA	Moran (Stand by)	RURAL	OTHER	
628	TPSODL	JEYPORE	NED	NABARANGPUR	ANCHALGUMA	VDA	ANCHALGUMA	MIXED	OTHER	
629	TPSODL	JEYPORE	NED	NABARANGPUR	ANCHALGUMA	VDAB	PATRAPUT	MIXED	OTHER	
630	TPSODL	JEYPORE	NED	NABARANGPUR	ANCHALGUMA	VDAC	KANGARA	MIXED	OTHER	
631	TPSODL	JEYPORE	NED	PAPADAHANDI	BUGAM (EARLIER NBPUR P)	XAAA	DabugamTown	RURAL	OTHER	
632	TPSODL	JEYPORE	NED	PAPADAHANDI	BUGAM (EARLIER NBPUR P)	XAAB	Kelia /Jatabal	RURAL	OTHER	
633	TPSODL	JEYPORE	NED	PAPADAHANDI	BUGAM (EARLIER NBPUR P)	XAAC	Gumuda	RURAL	OTHER	
634	TPSODL	JEYPORE	NED	PAPADAHANDI	MEDENA	XBAA	Mangra Charaguda	RURAL	OTHER	
635	TPSODL	JEYPORE	NED	PAPADAHANDI	MEDENA	XBAB	Chacharaguda	RURAL	OTHER	
636	TPSODL	JEYPORE	NED	PAPADAHANDI	DAHANDI (EARLIER NBPUR P)	XCAA	Papadahandi Town	RURAL	OTHER	
637	TPSODL	JEYPORE	NED	PAPADAHANDI	DAHANDI (EARLIER NBPUR P)	XCAB	Kaliaguda/ Maidalpur	RURAL	OTHER	
638	TPSODL	JEYPORE	NED	PAPADAHANDI	DAHANDI (EARLIER NBPUR P)	XCAC	Mokia	RURAL	OTHER	
639	TPSODL	JEYPORE	NED	UMERKOTE	TANDAGUDA	XCBA	DONGRA	RURAL	OTHER	
640	TPSODL	JEYPORE	NED	UMERKOTE	TANDAGUDA	XCBB	SIRISI	RURAL	OTHER	
641	TPSODL	JEYPORE	NED	UMERKOTE	TANDAGUDA	XCBC	MANTRIGIDA	RURAL	OTHER	
642	TPSODL	JEYPORE	NED	Papadahandi	APSPARE FEEDER FROM KODINGA	XCCA	Temara	RURAL	OTHER	
643	TPSODL	JEYPORE	NED	Papadahandi	APSPARE FEEDER FROM KODINGA	XCCB	Rajuda	RURAL	OTHER	
644	TPSODL	JEYPORE	NED	Papadahandi	APSPARE FEEDER FROM KODINGA	XCCC	Kodinga	RURAL	OTHER	
645	TPSODL	JEYPORE	NED	Papadahandi	APSPARE FEEDER FROM KODINGA	XCCD	Chirma	RURAL	OTHER	
646	TPSODL	JEYPORE	NED	Papadahandi	APSPARE FEEDER FROM KODINGA	XCCE	Kosagumuda Town	RURAL	OTHER	
647	TPSODL	JEYPORE	NED	Papadahandi	APSPARE FEEDER FROM KODINGA	XCCF	Badambada	RURAL	OTHER	
648	TPSODL	JEYPORE	NED	Papadahandi	APSPARE FEEDER FROM KODINGA	XCCG	Kondapuri/ Adarsha	RURAL	OTHER	
649	TPSODL	JEYPORE	NED	NABARANGPUR	CHUTIAGUDA	XCDA	CHUTIAGUDA	RURAL	OTHER	
650	TPSODL	JEYPORE	NED	NABARANGPUR	CHUTIAGUDA	XCDB	JAMUGUDA	RURAL	OTHER	
651	TPSODL	JEYPORE	NED	NABARANGPUR	CHUTIAGUDA	XCDC	PODALGUDA	RURAL	OTHER	
652	TPSODL	JEYPORE	NED	UMARKOT	Babajiguda	XCEA	TUMBARALA	MIXED	OTHER	
653	TPSODL	JEYPORE	NED	UMARKOT	Babajiguda	XCEB	SINDHIGUDA	MIXED	OTHER	
654	TPSODL	JEYPORE	NED	UMARKOT	Babajiguda	XCEC	MAIDALPUR	MIXED	OTHER	
655	TPSODL	JEYPORE	NED	UMERKOTE	KODINGA	XDAA	KODINGA TOWN	RURAL	OTHER	
656	TPSODL	JEYPORE	NED	UMERKOTE	KODINGA	XDAB	DUMADEI	RURAL	OTHER	
657	TPSODL	JEYPORE	NED	UMERKOTE	KODINGA	XDAC	KONDAPURI	RURAL	OTHER	
658	TPSODL	JEYPORE	NED	UMERKOTE	Umerkote	YAAA	Umerkote Town (FROM DABUGAM)	URBAN	OTHER	
659	TPSODL	JEYPORE	NED	UMERKOTE	Umerkote	YAAB	D.N.K (FROM DABUGAM)	URBAN	OTHER	
660	TPSODL	JEYPORE	NED	UMERKOTE	Umerkote	YAAC	Umerkote (FED FROM UMARKOT)	RURAL	OTHER	
661	TPSODL	JEYPORE	NED	UMERKOTE	Umerkote	YAAD	Umerkote (FROM UMARKOT)	RURAL	OTHER	
662	TPSODL	JEYPORE	NED	UMERKOTE	Umerkote	YAAE	Umerkote (FROM UMARKOT)	RURAL	OTHER	
663	TPSODL	JEYPORE	NED	UMERKOTE	Umerkote	YAAF	MEDICAL/ PHD	URBAN	OTHER	
664	TPSODL	JEYPORE	NED	UMERKOTE	Umerkote (RGGVY) (FROM JHARIKOT)	YABA	CHANDAHANDI TOWN	RURAL	OTHER	
665	TPSODL	JEYPORE	NED	UMERKOTE	Umerkote (RGGVY) (FROM JHARIKOT)	YABB	BEHERAMUNDA	RURAL	OTHER	
666	TPSODL	JEYPORE	NED	UMERKOTE	Umerkote (RGGVY) (FROM JHARIKOT)	YABC	DEOBANDH	RURAL	OTHER	
667	TPSODL	JEYPORE	NED	UMERKOTE	Umerkote (RGGVY) (FROM JHARIKOT)	YABD	DONDAMUNDA	RURAL	OTHER	
668	TPSODL	JEYPORE	NED	UMERKOTE	Jharigam	YBAA	Ekamba	RURAL	OTHER	0.310
669	TPSODL	JEYPORE	NED	UMERKOTE	Jharigam	YBAB	Chataguda	RURAL	OTHER	
670	TPSODL	JEYPORE	NED	UMERKOTE	Jharigam	YBAC	Jharigaon Town	RURAL	OTHER	
671	TPSODL	JEYPORE	NED	UMERKOTE	Jharigam	YBAD	Chacha/Pupugaon	RURAL	OTHER	
672	TPSODL	JEYPORE	NED	UMERKOTE	Jharigam	YBAE	Hatibadi	RURAL	OTHER	
673	TPSODL	JEYPORE	NED	UMERKOTE	Raighar	YCAA	Town	RURAL	OTHER	
674	TPSODL	JEYPORE	NED	UMERKOTE	Raighar	YCAC	Kundai	RURAL	OTHER	
675	TPSODL	JEYPORE	NED	UMERKOTE	Raighar	YCAC	Gurusingha	RURAL	OTHER	
676	TPSODL	JEYPORE	NED	UMERKOTE	Raighar	YCAD	Gona	RURAL	OTHER	
677	TPSODL	JEYPORE	NED	UMERKOTE	Raighar	YCAE	Turudihi	RURAL	OTHER	
678	TPSODL	JEYPORE	NED	UMERKOTE	Raighar	YCAF	Chhatabeda	RURAL	OTHER	
679	TPSODL	JEYPORE	NED	UMERKOTE	Beheda (ODSSP)	YCBA	Beheda	RURAL	OTHER	
680	TPSODL	JEYPORE	NED	UMERKOTE	Beheda (ODSSP)	YCBB	Burja	RURAL	OTHER	
681	TPSODL	JEYPORE	NED	UMERKOTE	Beheda (ODSSP)	YCBC	Sukigaon	RURAL	OTHER	
682	TPSODL	JEYPORE	NED	UMERKOTE	Adhikari Guda	YDAA	Pujariguda	RURAL	OTHER	
683	TPSODL	JEYPORE	NED	UMERKOTE	Adhikari Guda	YDAB	Silati	RURAL	OTHER	
684	TPSODL	JEYPORE	KED	LAXMIPUR	PODAGADA	ZAAA	Mujang	RURAL	OTHER	
685	TPSODL	JEYPORE	KED	LAXMIPUR	PODAGADA	ZAAB	Gadiaguda	RURAL	OTHER	
686	TPSODL	JEYPORE	KED	LAXMIPUR	PODAGADA	ZAAC	Chotaguda	RURAL	OTHER	
687	TPSODL	JEYPORE	KED	LAXMIPUR	PODAGADA	ZAAD	Podagada	RURAL	OTHER	
688	TPSODL	JEYPORE	KED	LAXMIPUR	mantapur (RGGVY)/Dasban	ZABA	Town	RURAL	OTHER	
689	TPSODL	JEYPORE	KED	LAXMIPUR	mantapur (RGGVY)/Dasban	ZABB	Kuntesh	RURAL	OTHER	
690	TPSODL	JEYPORE	KED	LAXMIPUR	mantapur (RGGVY)/Dasban	ZABC	Lula	RURAL	OTHER	
691	TPSODL	JEYPORE	KED	LAXMIPUR	mantapur (RGGVY)/Dasban	ZABD	Grilli Gumma	RURAL	OTHER	
692	TPSODL	JEYPORE	MED	MALKANIGIRI	Malkangiri (2X3.15+1X5MV)	1AAA	Malkangiri Town	URBAN	OTHER	
693	TPSODL	JEYPORE	MED	MALKANIGIRI	Malkangiri (2X3.15+1X5MV)	1AAB	Talasahi/Challanguda	MIXED	OTHER	
694	TPSODL	JEYPORE	MED	MALKANIGIRI	Malkangiri (2X3.15+1X5MV)	1AAC	Educational feeder	RURAL	OTHER	
695	TPSODL	JEYPORE	MED	MALKANIGIRI	Malkangiri (2X3.15+1X5MV)	1AAD	MV-7	RURAL	OTHER	
696	TPSODL	JEYPORE	MED	MALKANIGIRI	Malkangiri (2X3.15+1X5MV)	1AAE	Micro	URBAN	OTHER	
697	TPSODL	JEYPORE	MED	MALKANIGIRI	Malkangiri (2X3.15+1X5MV)	1AAF	Dam Site	RURAL	OTHER	
698	TPSODL	JEYPORE	MED	MALKANIGIRI	Malkangiri (2X3.15+1X5MV)	1AAG	DNK	URBAN	OTHER	
699	TPSODL	JEYPORE	MED	MALKANIGIRI	Malkangiri (2X3.15+1X5MV)	1AAH	Dedicated Medical	URBAN	OTHER	
700	TPSODL	JEYPORE	MED	MALKANIGIRI	Malkangiri (1X5+1X1.6MV)	1ABA	Pandripani	RURAL	OTHER	

701	TPSODL	JEYPORE	MED	MALKANIGIRI	Andripani (1X5+1X1.6MVA)	1ABB	Kotameta	RURAL	OTHER	
702	TPSODL	JEYPORE	MED	MALKANIGIRI	Andripani (1X5+1X1.6MVA)	1ABC	Padamgiri	RURAL	OTHER	
703	TPSODL	JEYPORE	MED	MALKANIGIRI	MV-79 (1X5MVA)(RGGVY)	1BAA	TOWN (MV-79)	RURAL	OTHER	
704	TPSODL	JEYPORE	MED	MALKANIGIRI	MV-79 (1X5MVA)(RGGVY)	1BAB	Motu	RURAL	OTHER	
705	TPSODL	JEYPORE	MED	MALKANIGIRI	MV-79 (1X5MVA)(RGGVY)	1BAC	MV-83	RURAL	OTHER	
706	TPSODL	JEYPORE	MED	MALKANIGIRI	MV-79 (1X5MVA)(RGGVY)	1BAD	MV-96	RURAL	OTHER	
707	TPSODL	JEYPORE	MED	MALKANIGIRI	Kalimela (2X3.15MVA)	1BBA	Kalimela Town	RURAL	OTHER	
708	TPSODL	JEYPORE	MED	MALKANIGIRI	Kalimela (2X3.15MVA)	1BBB	MV-72	RURAL	OTHER	
709	TPSODL	JEYPORE	MED	MALKANIGIRI	Kalimela (2X3.15MVA)	1BBC	UNDRUKONDA	RURAL	OTHER	
710	TPSODL	JEYPORE	MED	MALKANIGIRI	Kalimela (2X3.15MVA)	1BBD	giwada (Changed from f	RURAL	OTHER	
711	TPSODL	JEYPORE	MED	MALKANIGIRI	MVA 7TAP FROM KALIMEL	1BCA	Podia Town Feeder	RURAL	OTHER	
712	TPSODL	JEYPORE	MED	MALKANIGIRI	MVA 7TAP FROM KALIMEL	1BCB	Matteru Feeder	RURAL	OTHER	
713	TPSODL	JEYPORE	MED	MALKANIGIRI	MVA 7TAP FROM KALIMEL	1BCC	MV-58 Feeder	RURAL	OTHER	
714	TPSODL	JEYPORE	MED	MALKANIGIRI	MVA 7TAP FROM KALIMEL	1BCD	Kaldapalli Feeder	RURAL	OTHER	
715	TPSODL	JEYPORE	MED	MALKANIGIRI	BODILI (2X8MVA)	1BDA	Potteru	RURAL	OTHER	
716	TPSODL	JEYPORE	MED	MALKANIGIRI	BODILI (2X8MVA)	1BDB	MV-64/10	RURAL	OTHER	
717	TPSODL	JEYPORE	MED	MALKANIGIRI	BODILI (2X8MVA)	1BDC	MV-55	RURAL	OTHER	
718	TPSODL	JEYPORE	MED	MALKANIGIRI	BODILI (2X8MVA)	1BDD	Sikhapally	RURAL	OTHER	0.250624
719	TPSODL	JEYPORE	KED	Koraput	Sunabeda	RA	KORAPUT	URBAN	OTHER	
720	TPSODL	JEYPORE	KED	SUNABEDA	Sunabeda	RB	LAXMIPUR (Sunabeda)	RURAL	OTHER	
721	TPSODL	JEYPORE	KED	SUNABEDA	Sunabeda	RC	NANDAPUR	RURAL	OTHER	
722	TPSODL	JEYPORE	KED	SUNABEDA	Sunabeda	RE	KUNDULI	RURAL	OTHER	
723	TPSODL	JEYPORE	KED	LAXMIPUR	Laxmipur	SA	LAXMIPUR	RURAL	OTHER	
724	TPSODL	JEYPORE	JED	JPR-I	Jayanagar	TA	Jeyapore-1	URBAN	OTHER	
725	TPSODL	JEYPORE	JED	JPR-I	Jayanagar	TB	Jeyapore-2	URBAN	OTHER	
726	TPSODL	JEYPORE	JED	JPR-II	Jayanagar	TC	Jeyapore-3	URBAN	OTHER	
727	TPSODL	JEYPORE	JED	JPR-I	Jayanagar	TD	BOIPARIGUDA	RURAL	OTHER	
728	TPSODL	JEYPORE	JED	JPR-II	Jayanagar	TE	BORIGUMMA	RURAL	OTHER	
729	TPSODL	JEYPORE	JED	JPR-II	Jayanagar	TF	KUNDRU	RURAL	OTHER	
730	TPSODL	JEYPORE	MED	BALIMELA	Balimela	UA	Balimela/ Chitrakonda	URBAN	OTHER	
731	TPSODL	JEYPORE	MED	BALIMELA	Balimela	UB	MATHILI	RURAL	OTHER	
732	TPSODL	JEYPORE	MED	BALIMELA	Balimela	UC	MALKANIGIRI-2	RURAL	OTHER	
733	TPSODL	JEYPORE	NED	Nabarangpur	Tentulikhunti	VA	NABARANGPUR-II	RURAL	OTHER	
734	TPSODL	JEYPORE	NED	Nabarangpur	Tentulikhunti	VB	NABARANGPUR-I	RURAL	OTHER	
735	TPSODL	JEYPORE	NED	Nabarangpur	Tentulikhunti	VC	JAGADA (Tentulikhunti)	RURAL	OTHER	
736	TPSODL	JEYPORE	NED	NABARANGPUR	Tentulikhunti	VD	INDRAVATI	MIXED	OTHER	
737	TPSODL	JEYPORE	NED	PAPADAHANDI	Dabugam	XA	DABUGAM	RURAL	OTHER	
738	TPSODL	JEYPORE	NED	PAPADAHANDI	Dabugam	XB	MEDENA	RURAL	OTHER	
739	TPSODL	JEYPORE	NED	PAPADAHANDI	Dabugam	XC	PAPADAHANDI	RURAL	OTHER	
740	TPSODL	JEYPORE	NED	UMERKOTE	Dabugam	XD	KODINGA	RURAL	OTHER	
741	TPSODL	JEYPORE	NED	UMERKOTE	Umerkote	YA	UMERKOTE	URBAN	OTHER	
742	TPSODL	JEYPORE	NED	UMERKOTE	Umerkote	YB	Jharigam	RURAL	OTHER	
743	TPSODL	JEYPORE	NED	UMERKOTE	Umerkote	YC	BEHEDA/ RAIGHAR	RURAL	OTHER	
744	TPSODL	JEYPORE	NED	UMERKOTE	Umerkote	YD	ADHIKARIGUDA	RURAL	OTHER	
745	TPSODL	JEYPORE	KED	LAXMIPUR	Podagada	ZA	Podagada	RURAL	OTHER	
746	TPSODL	JEYPORE	MED	MALKANIGIRI	MALKANIGIRI	1A	MALKANIGIRI-3	URBAN	OTHER	
747	TPSODL	JEYPORE	MED	MALKANIGIRI	MALKANIGIRI	1B	KALIMELA	RURAL	OTHER	
748	TPSODL	BHANJANAGAR	PED	Baliguda	BRAHMANIGAON	HAAB	Katigaon (Jhingiriguda)	RURAL	OTHER	
749	TPSODL	BHANJANAGAR	PED	Baliguda	BRAHMANIGAON	HAAC	Gaddaput	RURAL	OTHER	
750	TPSODL	BHANJANAGAR	BNED	Bhanjanagar-I	Bhanjanagar	JAAA	Bhanjanagar Town	URBAN	OTHER	
751	TPSODL	BHANJANAGAR	BNED	Bhanjanagar-I	Bhanjanagar	JAAB	Bhanajangar College	URBAN	OTHER	
752	TPSODL	BHANJANAGAR	BNED	Bhanjanagar-II	Bhanjanagar	JAAC	Kulada	RURAL	OTHER	
753	TPSODL	BHANJANAGAR	BNED	Bhanjanagar-II	Bhanjanagar	JAAD	Gangapur	URBAN	OTHER	
754	TPSODL	BHANJANAGAR	BNED	Bhanjanagar-II	Bhanjanagar	JAEE	Station supply	RURAL	OTHER	
755	TPSODL	BHANJANAGAR	BNED	Bhanjanagar-II	LALSING	JABA	Daha/SANAPADANDA	RURAL	OTHER	
756	TPSODL	BHANJANAGAR	BNED	Bhanjanagar-II	LALSING	JABB	urgaprasada/ MUJAGUE	RURAL	OTHER	0.975
757	TPSODL	BHANJANAGAR	BNED	Bhanjanagar-I	JSINGO/Q/G FROM BNAGAR	JACA	Turung	RURAL	AMR	0.684
758	TPSODL	BHANJANAGAR	BNED	Bhanjanagar-I	JSINGO/Q/G FROM BNAGAR	JACB	Tarasingh	RURAL	AMR	1.339736
759	TPSODL	BHANJANAGAR	BNED	Bhanjanagar-I	JSINGO/Q/G FROM BNAGAR	JACC	Tilisingh Town	RURAL	OTHER	
760	TPSODL	BHANJANAGAR	BNED	Bhanjanagar-I	GALLERY	JADA	Gallery	RURAL	OTHER	5.116
761	TPSODL	BHANJANAGAR	BNED	Bhanjanagar-I	GALLERY	JADB	Brahamanapadar	RURAL	OTHER	
762	TPSODL	BHANJANAGAR	BNED	Bhanjanagar-I	GALLERY	JADC	Badangi	RURAL	OTHER	
763	TPSODL	BHANJANAGAR	BNED	BHANJANAGAR-1	GAYAGANDA	JAEA	GAYAGANDA	MIXED	OTHER	6.127
764	TPSODL	BHANJANAGAR	BNED	BHANJANAGAR-1	GAYAGANDA	JAEB	RUDHAPADA	MIXED	OTHER	
765	TPSODL	BHANJANAGAR	BNED	BHANJANAGAR-1	GAYAGANDA	JAEC	KALLINGAPADAR	MIXED	OTHER	
766	TPSODL	BHANJANAGAR	BNED	BHANJANAGAR-1	GAYAGANDA	JAED	KOKOLOBA	MIXED	OTHER	
767	TPSODL	BHANJANAGAR	BNED	BHANJANAGAR-2	DAHA	JAFB	DAHA	MIXED	OTHER	
768	TPSODL	BHANJANAGAR	BNED	BHANJANAGAR-2	DAHA	JAFB	BOIVALI	MIXED	OTHER	
769	TPSODL	BHANJANAGAR	BNED	BHANJANAGAR-2	DAHA	JAFB	DUMAKUMPHA	MIXED	OTHER	
770	TPSODL	BHANJANAGAR	BNED	SORADA	SORADA	JBAA	Sorada Town	URBAN	OTHER	
771	TPSODL	BHANJANAGAR	BNED	SORADA	SORADA	JBAB	Lathipada	RURAL	OTHER	
772	TPSODL	BHANJANAGAR	BNED	SORADA	SORADA	JBAC	Kaithaguda	RURAL	OTHER	
773	TPSODL	BHANJANAGAR	BNED	SORADA	SORADA	JBAD	Gajalbadi	RURAL	OTHER	
774	TPSODL	BHANJANAGAR	BNED	SORADA	SORADA	JBAD	Badagada	RURAL	AMR	0.005
775	TPSODL	BHANJANAGAR	BNED	BADAGADA	BADAGADA	JBBA	Badagada Town	RURAL	OTHER	
776	TPSODL	BHANJANAGAR	BNED	BADAGADA	BADAGADA	JBBC	Sidhapur/Gangapur	RURAL	OTHER	
777	TPSODL	BHANJANAGAR	BNED	BADAGADA	BADAGADA	JBBC	Goudagotha	RURAL	OTHER	
778	TPSODL	BHANJANAGAR	BNED	SERAGADA	ASURAGANDHA	JBCA	UPPARABANDHA	MIXED	OTHER	
779	TPSODL	BHANJANAGAR	BNED	SERAGADA	ASURAGANDHA	JBCB	BHAGABANPUR	MIXED	OTHER	
780	TPSODL	BHANJANAGAR	BNED	SERAGADA	ASURAGANDHA	JBCC	DANKULING	MIXED	OTHER	
781	TPSODL	BHANJANAGAR	BNED	SERAGADA	ASURAGANDHA	JBCD	GAJALBADI	MIXED	OTHER	
782	TPSODL	BHANJANAGAR	BNED	Bhanjanagar-II	KBPUR	JCAA	Gobara-1	RURAL	AMR	1.982
783	TPSODL	BHANJANAGAR	BNED	Bhanjanagar-II	KBPUR	JCAB	K.B.Pur (Pallipada)	RURAL	AMR	8.033
784	TPSODL	BHANJANAGAR	BNED	BELLAGUNTHA	BELLAGUNTHA	JCAC	Gangapur	RURAL	AMR	5.039
785	TPSODL	BHANJANAGAR	BNED	BELLAGUNTHA	BELLAGUNTHA	JDA	Bellaguntha Town	URBAN	AMR	7.302
786	TPSODL	BHANJANAGAR	BNED	BELLAGUNTHA	BELLAGUNTHA	JDAB	Banka/Udra	RURAL	OTHER	
787	TPSODL	BHANJANAGAR	BNED	BELLAGUNTHA	BELLAGUNTHA	JDAC	Nuagam	RURAL	OTHER	13.248
788	TPSODL	BHANJANAGAR	BNED	BELLAGUNTHA	JNPRASAD	JDBA	J.N.Prasad Town	RURAL	OTHER	
789	TPSODL	BHANJANAGAR	BNED	BELLAGUNTHA	JNPRASAD	JDBB	Jhadabhumi	RURAL	OTHER	
790	TPSODL	BHANJANAGAR	BNED	BELLAGUNTHA	JNPRASAD	JDBC	Kadua	RURAL	OTHER	
791	TPSODL	BHANJANAGAR	BNED	BELLAGUNTHA	JNPRASAD	JDBD	Panchabhuti	RURAL	OTHER	
792	TPSODL	BHANJANAGAR	BNED	BELLAGUNTHA	BD PUR	JDCA	Patadhara	RURAL	AMR	
793	TPSODL	BHANJANAGAR	BNED	BELLAGUNTHA	BD PUR	JDCB	Bankatara	RURAL	AMR	2.800
794	TPSODL	BHANJANAGAR	BNED	BELLAGUNTHA	BD PUR	JDCC	BD PUR	RURAL	AMR	1.032
795	TPSODL	BHANJANAGAR	BNED	BELLAGUNTHA	BD PUR	JDCD	Luni Jhola	RURAL	AMR	4.075
796	TPSODL	BHANJANAGAR	BNED	Bhanjanagar-II	Gobindapur/Kanteipalli	JEAA	Gobara-2	RURAL	AMR	3.385
797	TPSODL	BHANJANAGAR	BNED	Bhanjanagar-II	Gobindapur/Kanteipalli	JEAB	Nettenga	RURAL	AMR	4.444
798	TPSODL	BHANJANAGAR	BNED	Bhanjanagar-II	Gobindapur/Kanteipalli	JEAC	Kulangi	RURAL	AMR	2.860
799	TPSODL	BHANJANAGAR	BNED	Bhanjanagar-II	Gobindapur/Kanteipalli	JEAD	Jilundi	RURAL	AMR	1.472
800	TPSODL	BHANJANAGAR	PED	G.UDAYAGIRI	KALINGA	KAAA	Dungi	RURAL	AMR	

801	TPSODL	BHANJANAGAR	PED	G.UDAYAGIRI	KALINGA	KAAB	Microwave	RURAL	AMR	0.211
802	TPSODL	BHANJANAGAR	PED	G.UDAYAGIRI	KALINGA	KAAC	Raipada/Nandagiri	RURAL	AMR	
803	TPSODL	BHANJANAGAR	PED	G.UDAYAGIRI	G.UDAYGIRI	KABA	G.Udayagiri No.-1	URBAN	OTHER	
804	TPSODL	BHANJANAGAR	PED	G.UDAYAGIRI	G.UDAYGIRI	KABB	Town Feeder-II(PHD)	URBAN	OTHER	
805	TPSODL	BHANJANAGAR	PED	G.UDAYAGIRI	G.UDAYGIRI	KABC	Grisingia	RURAL	AMR	3.094
806	TPSODL	BHANJANAGAR	PED	G.UDAYAGIRI	G.UDAYGIRI	KABD	Lingagada	RURAL	AMR	1.452
807	TPSODL	BHANJANAGAR	PED	G.UDAYAGIRI	G.UDAYGIRI	KABE	Malikapadi	RURAL	AMR	1.425
808	TPSODL	BHANJANAGAR	PED	G.UDAYAGIRI	RAIKIA	KBAA	Raikia Town	RURAL	AMR	
809	TPSODL	BHANJANAGAR	PED	G.UDAYAGIRI	RAIKIA	KBAB	Mandakia	RURAL	OTHER	
810	TPSODL	BHANJANAGAR	PED	G.UDAYAGIRI	RAIKIA	KBAC	Manikeswar	RURAL	AMR	
811	TPSODL	BHANJANAGAR	PED	G.UDAYAGIRI	RAIKIA	KBAD	GunJibadi	RURAL	AMR	
812	TPSODL	BHANJANAGAR	PED	G.UDAYAGIRI	RAIKIA	KBAE	Mandasara	RURAL	AMR	
813	TPSODL	BHANJANAGAR	PED	G.UDAYAGIRI	KARADA	KBBA	Baraba	RURAL	AMR	
814	TPSODL	BHANJANAGAR	PED	G.UDAYAGIRI	KARADA	KBBB	Karada	RURAL	AMR	
815	TPSODL	BHANJANAGAR	PED	G.UDAYAGIRI	KARADA	KBBC	Surabandha/ Podhamar	RURAL	AMR	
816	TPSODL	BHANJANAGAR	PED	G.UDAYAGIRI	GHUTINGIA	KBCA	Gutingia	RURAL	OTHER	
817	TPSODL	BHANJANAGAR	PED	G.UDAYAGIRI	GHUTINGIA	KBCB	Paburia	RURAL	OTHER	
818	TPSODL	BHANJANAGAR	PED	G.UDAYAGIRI	GHUTINGIA	KBCD	Padangi	RURAL	OTHER	
819	TPSODL	BHANJANAGAR	PED	G.UDAYAGIRI	GHUTINGIA	KBCD	Argadi	RURAL	OTHER	
820	TPSODL	BHANJANAGAR	PED	G.UDAYAGIRI	SANKARAKHOL	LAAA	Adabadi	RURAL	AMR	
821	TPSODL	BHANJANAGAR	PED	G.UDAYAGIRI	SANKARAKHOL	LAAB	Sankarkhola & Linepada	RURAL	AMR	
822	TPSODL	BHANJANAGAR	PED	G.UDAYAGIRI	SANKARAKHOL	LAAC	Gudurigaon	RURAL	AMR	
823	TPSODL	BHANJANAGAR	PED	G.UDAYAGIRI	TIKABALI	LABA	Tikabali	RURAL	AMR	
824	TPSODL	BHANJANAGAR	PED	G.UDAYAGIRI	TIKABALI	LABB	Beheragan/ Chakapada	RURAL	AMR	
825	TPSODL	BHANJANAGAR	PED	G.UDAYAGIRI	TIKABALI	LABC	Kainjhar	RURAL	AMR	
826	TPSODL	BHANJANAGAR	PED	G.UDAYAGIRI	CHAKAPADA	LACA	Chahali	RURAL	AMR	
827	TPSODL	BHANJANAGAR	PED	G.UDAYAGIRI	CHAKAPADA	LACB	KADAMI (Idle)	RURAL	OTHER	
828	TPSODL	BHANJANAGAR	PED	G.UDAYAGIRI	CHAKAPADA	LACC	Chakapada	RURAL	AMR	
829	TPSODL	BHANJANAGAR	PED	G.UDAYAGIRI	CHAKAPADA	LACD	Brahamanapada	RURAL	AMR	
830	TPSODL	BHANJANAGAR	PED	PHULBANI	PHIRINGIA	LBAA	Bandhagada	RURAL	AMR	
831	TPSODL	BHANJANAGAR	PED	PHULBANI	PHIRINGIA	LBAB	Tellapalli	RURAL	AMR	
832	TPSODL	BHANJANAGAR	PED	PHULBANI	PHIRINGIA	LBAC	Kellapada	RURAL	AMR	
833	TPSODL	BHANJANAGAR	PED	PHULBANI	PHIRINGIA	LBAD	Majhipada	RURAL	AMR	
834	TPSODL	BHANJANAGAR	PED	Baliguda	KNUAGAM	LBBA	Kudutuli	RURAL	OTHER	
835	TPSODL	BHANJANAGAR	PED	Baliguda	KNUAGAM	LBBC	Siritiguda	RURAL	OTHER	
836	TPSODL	BHANJANAGAR	PED	Baliguda	KNUAGAM	LBBD	Town Station	RURAL	OTHER	
837	TPSODL	BHANJANAGAR	PED	Baliguda	KNUAGAM	LBBD	MAHASINGH	RURAL	OTHER	
838	TPSODL	BHANJANAGAR	PED	Baliguda	BALIGUDA	LBCA	Baliguda High School	URBAN	OTHER	
839	TPSODL	BHANJANAGAR	PED	Baliguda	BALIGUDA	LBCB	Sudra	RURAL	OTHER	
840	TPSODL	BHANJANAGAR	PED	Baliguda	BALIGUDA	LBCD	Bataguda	RURAL	OTHER	
841	TPSODL	BHANJANAGAR	PED	Baliguda	BALIGUDA	LBCD	Church	URBAN	OTHER	
842	TPSODL	BHANJANAGAR	PED	Baliguda	BALIGUDA	LBCE	Sindirigaon	RURAL	OTHER	
843	TPSODL	BHANJANAGAR	PED	Baliguda	BALIGUDA	LBCF	Badagaon	RURAL	OTHER	
844	TPSODL	BHANJANAGAR	PED	Baliguda	TUMUDIBANDHA	LBDA	Mundigada	RURAL	AMR	
845	TPSODL	BHANJANAGAR	PED	Baliguda	TUMUDIBANDHA	LBDG	Kurtamagada	RURAL	AMR	
846	TPSODL	BHANJANAGAR	PED	Baliguda	TUMUDIBANDHA	LBDG	Tumudibandha Town	RURAL	AMR	
847	TPSODL	BHANJANAGAR	PED	Baliguda	TUMUDIBANDHA	LBDG	Medical	RURAL	OTHER	
848	TPSODL	BHANJANAGAR	PED	Baliguda	TUMUDIBANDHA	LBDE	Belghar	RURAL	OTHER	
849	TPSODL	BHANJANAGAR	PED	Baliguda	DARINGIBADI	LBEA	Daringibadi	RURAL	OTHER	
850	TPSODL	BHANJANAGAR	PED	Baliguda	DARINGIBADI	LBEB	Rukanbadi	RURAL	AMR	
851	TPSODL	BHANJANAGAR	PED	Baliguda	DARINGIBADI	LBEA	Dasingbadi	RURAL	AMR	
852	TPSODL	BHANJANAGAR	PED	Baliguda	DARINGIBADI	LBED	Simanbadi	RURAL	AMR	
853	TPSODL	BHANJANAGAR	PED	Baliguda	KOTAGADA	LBFA	Durgapanga	RURAL	AMR	
854	TPSODL	BHANJANAGAR	PED	Baliguda	KOTAGADA	LBFB	Kotogada Town	RURAL	AMR	
855	TPSODL	BHANJANAGAR	PED	Baliguda	KOTAGADA	LBFC	Subarnagiri	RURAL	AMR	
856	TPSODL	BHANJANAGAR	PED	Baliguda	SARANGAGADA	LBGA	Sarangada Town	RURAL	AMR	0.466
857	TPSODL	BHANJANAGAR	PED	Baliguda	SARANGAGADA	LBGB	Sasipada/ Dasiguda	RURAL	AMR	0.152
858	TPSODL	BHANJANAGAR	PED	Baliguda	SARANGAGADA	LBGC	Salaguda	RURAL	AMR	0.152
859	TPSODL	BHANJANAGAR	PED	Baliguda	SARANGAGADA	LBGD	Bandhaguda	RURAL	AMR	
860	TPSODL	BHANJANAGAR	PED	PHULBANI	DAHAPADAR/ GUNJUGUDA	LBHA	Gumagada	RURAL	AMR	
861	TPSODL	BHANJANAGAR	PED	PHULBANI	DAHAPADAR/ GUNJUGUDA	LBHB	Adasipada	RURAL	AMR	
862	TPSODL	BHANJANAGAR	PED	PHULBANI	DAHAPADAR/ GUNJUGUDA	LBHC	Phulabani Town/ Rujang	RURAL	AMR	
863	TPSODL	BHANJANAGAR	PED	PHULBANI	DAHAPADAR/ GUNJUGUDA	LBHD	Bisipada	RURAL	AMR	
864	TPSODL	BHANJANAGAR	PED		NUAPADAR	LBIA	Dimbiriguda	RURAL	OTHER	
865	TPSODL	BHANJANAGAR	PED		NUAPADAR	LBIB	Bhrungijodi	RURAL	OTHER	
866	TPSODL	BHANJANAGAR	PED		NUAPADAR	LBIC	Nuapadar	RURAL	OTHER	
867	TPSODL	BHANJANAGAR	PED		NUAPADAR	LBID	Sadangia	RURAL	OTHER	
868	TPSODL	BHANJANAGAR	PED	PHULBANI	KHAJURIPADA	LDAA	Dutipada	RURAL	AMR	
869	TPSODL	BHANJANAGAR	PED	PHULBANI	KHAJURIPADA	LDAB	Arapaju	RURAL	AMR	
870	TPSODL	BHANJANAGAR	PED	PHULBANI	KHAJURIPADA	LDAC	Khajuripada Town	RURAL	AMR	
871	TPSODL	BHANJANAGAR	PED	PHULBANI	KHAJURIPADA	LDAD	R. Nuagaon	RURAL	OTHER	
872	TPSODL	BHANJANAGAR	PED	PHULBANI	PHULBANI	LEAA	ilbani Town No.-I (Mark	URBAN	AMR	6.824
873	TPSODL	BHANJANAGAR	PED	PHULBANI	PHULBANI	LEAB	wn No.-II (MEDICAL/ Co	URBAN	AMR	4.630
874	TPSODL	BHANJANAGAR	PED	PHULBANI	PHULBANI	LEAC	ilbani Town No.-III (RUR	URBAN	AMR	3.037
875	TPSODL	BHANJANAGAR	PED	PHULBANI	PHULBANI	LEAD	ilbani SAHI (Kendupada	RURAL	AMR	9.169
876	TPSODL	BHANJANAGAR	PED	PHULBANI	PHULBANI	LEAE	ilbani COLLEGE (Jiringipa	RURAL	AMR	6.947
877	TPSODL	BHANJANAGAR	BOED	Boudh	CHARICHHAK	MAAA	Purunacuttack	RURAL	AMR	3.944
878	TPSODL	BHANJANAGAR	BOED	Boudh	CHARICHHAK	MAAB	Karanjakata	RURAL	AMR	
879	TPSODL	BHANJANAGAR	BOED	Boudh	CHARICHHAK	MAAC	Adenigada	RURAL	AMR	0.847
880	TPSODL	BHANJANAGAR	BOED	Boudh	CHARICHHAK	MAAD	haka Station (106 consu	RURAL	AMR	
881	TPSODL	BHANJANAGAR	BOED	Boudh	CHATRANGA	MABA	Kusanga	RURAL	AMR	
882	TPSODL	BHANJANAGAR	BOED	Boudh	CHATRANGA	MABB	Chatranga/ Harabhanga	RURAL	AMR	1.400
883	TPSODL	BHANJANAGAR	BOED	Boudh	CHATRANGA	MABC	Dhalapur	RURAL	AMR	0.487742
884	TPSODL	BHANJANAGAR	BOED	Boudh	CHATRANGA	MABD	Talagam	RURAL	AMR	1.442
885	TPSODL	BHANJANAGAR	BOED	Boudh	Rambhikata	MACA	BN PUR	RURAL	AMR	
886	TPSODL	BHANJANAGAR	BOED	Boudh	Rambhikata	MACB	TILESWAR	RURAL	AMR	3.135
887	TPSODL	BHANJANAGAR	BOED	Boudh	Rambhikata	MACC	LUNIBAHAL	RURAL	AMR	
888	TPSODL	BHANJANAGAR	BOED	Boudh	BAGHIAPADA	MBAA	Bhagiapada2	RURAL	AMR	
889	TPSODL	BHANJANAGAR	BOED	Boudh	BAGHIAPADA	MBAB	Olonda	RURAL	AMR	
890	TPSODL	BHANJANAGAR	BOED	Boudh	BAGHIAPADA	MBAC	Badhigam	RURAL	AMR	2.109
891	TPSODL	BHANJANAGAR	BOED	Boudh	BOUDH	MCAA	Boudh Town No.-I	URBAN	AMR	
892	TPSODL	BHANJANAGAR	BOED	Boudh	BOUDH	MCAB	Boudh Town No.-II	URBAN	OTHER	
893	TPSODL	BHANJANAGAR	BOED	Boudh	BOUDH	MCAC	amanda/ Baghiapada/ IR	RURAL	AMR	4.094
894	TPSODL	BHANJANAGAR	BOED	Boudh	BOUDH	MCAD	Karadi	RURAL	AMR	1.656
895	TPSODL	BHANJANAGAR	BOED	Boudh	BOUDH	MCAE	Medical	URBAN	OTHER	
896	TPSODL	BHANJANAGAR	BOED	Boudh	BOUDH	MCAF	Podapada	URBAN	OTHER	
897	TPSODL	BHANJANAGAR	BOED	Manamunda	Janapanka	PAAA	Janapanka	RURAL	AMR	1.154192
898	TPSODL	BHANJANAGAR	BOED	Manamunda	Janapanka	PAAB	Telibandha	RURAL	AMR	
899	TPSODL	BHANJANAGAR	BOED	Manamunda	Janapanka	PAAC	Kamalpur	RURAL	AMR	1.449
900	TPSODL	BHANJANAGAR	BOED	Manamunda	Baunsuni	PABA	Baunsuni	RURAL	OTHER	

901	TPSODL	BHANJANAGAR	BOED	Manamunda	Baunsuni	PABB	Gundilia	RURAL	AMR	
902	TPSODL	BHANJANAGAR	BOED	Manamunda	Baunsuni	PABC	Dahya-1	RURAL	AMR	40.681
903	TPSODL	BHANJANAGAR	BOED	Manamunda	Baunsuni	PABD	Ainalapalli	RURAL	AMR	
904	TPSODL	BHANJANAGAR	BOED	Manamunda	Baunsuni	PABE	Dahya-2	RURAL	AMR	0.931406
905	TPSODL	BHANJANAGAR	BOED	Manamunda	Baunsuni	PABF	Bahira	RURAL	AMR	2.240
906	TPSODL	BHANJANAGAR	BOED	Manamunda	Manmunda	PACA	Deuli	RURAL	AMR	
907	TPSODL	BHANJANAGAR	BOED	Manamunda	Manmunda	PACB	Bilaspur	RURAL	AMR	
908	TPSODL	BHANJANAGAR	BOED	Manamunda	Manmunda	PACC	Manamunda (Old Gobjor	RURAL	AMR	
909	TPSODL	BHANJANAGAR	BOED	Manamunda	Manmunda	PACD	Sahupada	RURAL	AMR	1.016
910	TPSODL	BHANJANAGAR	BOED	Manamunda	Manmunda	PACE	Gobjore New	RURAL	AMR	
911	TPSODL	BHANJANAGAR	BOED	Manamunda	Manmunda	PACF	Dapala	RURAL	AMR	2.286
912	TPSODL	BHANJANAGAR	BOED	Manamunda	Kantamala	PADA	Kantamal	RURAL	OTHER	
913	TPSODL	BHANJANAGAR	BOED	Manamunda	Kantamala	PADB	Kantamal PHD/ Medical	RURAL	AMR	0.216
914	TPSODL	BHANJANAGAR	BOED	Manamunda	Kantamala	PADC	Ghantapada/UDAYPUR	RURAL	AMR	0.187426
915	TPSODL	BHANJANAGAR	BOED	Manamunda	Kantamala	PADD	Sulia	RURAL	AMR	4.615
916	TPSODL	BHANJANAGAR	BOED	Manamunda	Ghantapada (DDSSP)	PAEA	Ghantapada	RURAL	AMR	0.231075
917	TPSODL	BHANJANAGAR	BOED	Manamunda	Ghantapada (DDSSP)	PAEB	Kultajore	RURAL	AMR	3.028
918	TPSODL	BHANJANAGAR	BOED	Manamunda	Ghantapada (DDSSP)	PAEC	Manikpur	RURAL	AMR	0.687465
919	TPSODL	BHANJANAGAR	BOED	Manamunda	Ghantapada (DDSSP)	PAED	Ambagoan	RURAL	AMR	
920	TPSODL	BHANJANAGAR	BOED	Manamunda	Ghantapada (DDSSP)	PAEE	Siletpada	RURAL	AMR	
921	TPSODL	BHANJANAGAR	BNED	Bhanjanagar-I	Bhanjanagar	JA	Bhanjanagar	URBAN	OTHER	12.025
922	TPSODL	BHANJANAGAR	BNED	SORADA	Bhanjanagar	JB	Sorada	URBAN	OTHER	6.728
923	TPSODL	BHANJANAGAR	BNED	Bhanjanagar-II	Bhanjanagar	JC	KB PUR	RURAL	OTHER	3.504
924	TPSODL	BHANJANAGAR	BNED	BELAGUNTHA	Bhanjanagar	JD	BELLAGUNTHA	URBAN	OTHER	12.204
925	TPSODL	BHANJANAGAR	BNED	Bhanjanagar-II	Bhanjanagar	JE	Gobindapur	RURAL	OTHER	
926	TPSODL	BHANJANAGAR	PED	G.UDAYAGIRI	G.UDAYAGIRI	KA	G.UDAYAGIRI	RURAL	OTHER	
927	TPSODL	BHANJANAGAR	PED	G.UDAYAGIRI	G.UDAYAGIRI	KB	RAIKIA	RURAL	OTHER	
928	TPSODL	BHANJANAGAR	PED	G.UDAYAGIRI	Phulbani	LA	KALINGA	RURAL	OTHER	3.496
929	TPSODL	BHANJANAGAR	PED	PHULBANI	Phulbani	LB	BALIGUDA	RURAL	OTHER	13.673
930	TPSODL	BHANJANAGAR	PED	PHULBANI	Phulbani	LD	KHAJURIPADA	RURAL	OTHER	3.922
931	TPSODL	BHANJANAGAR	PED	PHULBANI	Phulbani	LE	PHULBANI	URBAN	OTHER	7.409
932	TPSODL	BHANJANAGAR	BOED	Boudh	Boudh	MA	PURUNAKATAK	RURAL	OTHER	5.413
933	TPSODL	BHANJANAGAR	BOED	Boudh	Boudh	MB	BAGHIAPADA	RURAL	OTHER	1.797
934	TPSODL	BHANJANAGAR	BOED	Boudh	Boudh	MC	BOUDH	URBAN	OTHER	3.865
935	TPSODL	BHANJANAGAR	BOED	Manamunda	Sonepur	PA	MANAMUNDA	RURAL	OTHER	18.927
936	TPSODL						33kv Seva Paper-1 (Dedicat	MIXED	OTHER	
937	TPSODL						33kv Seva paper-2 (Dedicat	MIXED	OTHER	
938	TPSODL						33kv Sunabeda-idle	MIXED	OTHER	
939	TPSODL						33kv Upper kolab-1 (Dedica	MIXED	OTHER	
940	TPSODL						33kv Upper kolab-2 (Dedica	MIXED	OTHER	
941	TPSODL	BERHAMPUR	HED				ADAPADA	MIXED	OTHER	
942	TPSODL	JEYPURE	NED				ADHIKARIGUDA	MIXED	OTHER	
943	TPSODL	CITY	BED-I				Ambapua	MIXED	OTHER	
944	TPSODL	RAYAGADA	RED				AMLABHATA	MIXED	OTHER	
945	TPSODL	BERHAMPUR	HED				ASKA	MIXED	OTHER	9.530
946	TPSODL	RAYAGADA	RED				AUTONAGAR	MIXED	OTHER	
947	TPSODL						Badamadhappur (DEDICATE	MIXED	OTHER	
948	TPSODL	BERHAMPUR	GNED				BADAMADHAPUR	MIXED	OTHER	
949	TPSODL	BHANJANAGAR	BOED				BAGHIAPADA	MIXED	OTHER	2.053
950	TPSODL	BHANJANAGAR	PED				BALIGUDA	MIXED	OTHER	
951	TPSODL	JEYPURE	MED				Balimela/ Chitrakonda	MIXED	OTHER	
952	TPSODL	JEYPURE	NED				BEHEDA/ RAIGHAR	MIXED	OTHER	
953	TPSODL	BHANJANAGAR	BNED				BELLAGUNTHA	MIXED	OTHER	
954	TPSODL	CITY	BED-III				Berhampur-1	MIXED	OTHER	
955	TPSODL	CITY	BED-II				Berhampur-2	MIXED	OTHER	
956	TPSODL	BHANJANAGAR	BNED				Bhanjanagar	MIXED	OTHER	
957	TPSODL	RAYAGADA	RED				BISAMKATAK	MIXED	OTHER	
958	TPSODL	JEYPURE	JED				BOIPARIGUDA	MIXED	OTHER	
959	TPSODL	JEYPURE	JED				BORIGUMMA	MIXED	OTHER	
960	TPSODL	BHANJANAGAR	BOED				BOUDH	MIXED	OTHER	
961	TPSODL	ASKA	AED-II				BUDHAMBHA	MIXED	OTHER	
962	TPSODL	ASKA	AED-II				BUGUDA	MIXED	OTHER	11.373
963	TPSODL	BERHAMPUR	GNED				CHATRAPUR	MIXED	OTHER	
964	TPSODL	ASKA	GSED				Chikiti	MIXED	OTHER	
965	TPSODL	CITY	BED-III				Chikiti (Berhampur GSS)	MIXED	OTHER	
966	TPSODL	ASKA	GSED				CHIKITI (Digapahandi GS	MIXED	OTHER	11.728
967	TPSODL	JEYPURE	NED				DABUGAM	MIXED	OTHER	
968	TPSODL	RAYAGADA	PKED				DARINGIBADI/ MOHANA	MIXED	OTHER	
969	TPSODL	ASKA	GSED				DIGAPAHANDI	MIXED	OTHER	5.272
970	TPSODL						FEMAKEM(Dedicated)	MIXED	OTHER	
971	TPSODL	BHANJANAGAR	PED				G.UDAYAGIRI	MIXED	OTHER	
972	TPSODL	BERHAMPUR	GNED				GANJAM	MIXED	OTHER	
973	TPSODL	BHANJANAGAR	BNED				Gobindapur	MIXED	OTHER	
974	TPSODL	RAYAGADA	GED				Gudari	MIXED	OTHER	
975	TPSODL	RAYAGADA	PKED				GUMMA	MIXED	OTHER	
976	TPSODL	RAYAGADA	GED				GUMUDA	MIXED	OTHER	
977	TPSODL	RAYAGADA	RED				GUNUPUR-1	MIXED	OTHER	
978	TPSODL	RAYAGADA	GED				GUNUPUR-2	MIXED	OTHER	
979	TPSODL	BERHAMPUR	PSED				HATIOTA	MIXED	OTHER	
980	TPSODL	BERHAMPUR	HED				Hinjili	MIXED	OTHER	
981	TPSODL	BERHAMPUR	HED				Hinjili (PS PUR)	MIXED	OTHER	
982	TPSODL						IACR Feeder	MIXED	OTHER	
983	TPSODL	JEYPURE	NED				INDRAVATI	MIXED	OTHER	
984	TPSODL	JEYPURE	JED				Jeypore-1	MIXED	OTHER	
985	TPSODL	JEYPURE	JED				Jeypore-2	MIXED	OTHER	
986	TPSODL	JEYPURE	JED				Jeypore-3	MIXED	OTHER	
987	TPSODL	JEYPURE	NED				Jharigam	MIXED	OTHER	
988	TPSODL	JEYPURE	MED				KALIMELA	MIXED	OTHER	
989	TPSODL	BHANJANAGAR	PED				KALINGA	MIXED	OTHER	
990	TPSODL	RAYAGADA	PKED				KASINAGAR	MIXED	OTHER	
991	TPSODL	RAYAGADA	RED				Kasipur	MIXED	OTHER	
992	TPSODL	BHANJANAGAR	BNED				KB PUR	MIXED	OTHER	
993	TPSODL	BHANJANAGAR	PED				KHAJURIPADA	MIXED	OTHER	
994	TPSODL	BERHAMPUR	GNED				KHALIKOTE	MIXED	OTHER	
995	TPSODL	JEYPURE	NED				KODINGA	MIXED	OTHER	

996	TPSODL		#N/A				Konishi/Kanisi	MIXED	OTHER	
997	TPSODL	JEYPORE	KED				KORAPUT	MIXED	OTHER	1.496
998	TPSODL	ASKA	AED-II				KS NAGAR	MIXED	OTHER	8.819
999	TPSODL	JEYPORE	JED				KUNDRA	MIXED	OTHER	
1000	TPSODL	JEYPORE	KED				KUNDULI	MIXED	OTHER	
1001	TPSODL	JEYPORE	KED				LAXMIPUR	MIXED	OTHER	
1002	TPSODL	JEYPORE	KED				LAXMIPUR (Sunabeda)	MIXED	OTHER	
1003	TPSODL						Lift Irrigation Fdr MEGALIFT (DEI)	MIXED	OTHER	
1004	TPSODL	CITY	BED-III				Luchapada	MIXED	OTHER	
1005	TPSODL	JEYPORE	MED				MALKANIGIRI-2	MIXED	OTHER	
1006	TPSODL	JEYPORE	MED				MALKANIGIRI-3	MIXED	OTHER	
1007	TPSODL	BERHAMPUR	GNED				MALUD	MIXED	OTHER	
1008	TPSODL	BHANJANAGAR	BOED				MANAMUNDA	MIXED	OTHER	
1009	TPSODL	JEYPORE	MED				MATHILI	MIXED	OTHER	
1010	TPSODL	JEYPORE	NED				MEDENA	MIXED	OTHER	
1011	TPSODL	RAYAGADA	PKED				MEDICAL	MIXED	OTHER	0.097786
1012	TPSODL						MEDICAL (Dedicated)	MIXED	OTHER	0.158
1013	TPSODL	CITY	BED-I				MEDICAL EXPRESS	MIXED	OTHER	
1014	TPSODL						MEGA LIFT (DEDICATED)	MIXED	OTHER	3.199
1015	TPSODL						MES Bhanjavihar (Dedicate	MIXED	OTHER	
1016	TPSODL	JEYPORE	NED				NABARANGPUR-I	MIXED	OTHER	
1017	TPSODL	JEYPORE	NED				NABARANGPUR-II	MIXED	OTHER	
1018	TPSODL	JEYPORE	KED				NANDAPUR	MIXED	OTHER	
1019	TPSODL	CITY	BED-I				NARENDRAPUR	MIXED	OTHER	
1020	TPSODL	CITY	BED-III				NIMAKHANDI	MIXED	OTHER	
1021	TPSODL	BHANJANAGAR	BNED				NUAGAM	MIXED	OTHER	11.906
1022	TPSODL	RAYAGADA	GED				PADMAPUR	MIXED	OTHER	
1023	TPSODL	ASKA	AED-II				PAKAJAMUNA	MIXED	OTHER	7.398
1024	TPSODL	BERHAMPUR	PSED				Pandia	MIXED	OTHER	
1025	TPSODL	JEYPORE	NED				PAPADAHANDI	MIXED	OTHER	
1026	TPSODL	RAYAGADA	PKED				PARALAKHEMUNDI (NEW	MIXED	OTHER	
1027	TPSODL	RAYAGADA	PKED				PARALAKHEMUNDI (OLD)	MIXED	OTHER	
1028	TPSODL	RAYAGADA	PKED				PARALAKHEMUNDI/ (HELI	MIXED	OTHER	
1029	TPSODL	BHANJANAGAR	PED				PHULBANI	MIXED	OTHER	
1030	TPSODL	JEYPORE	KED				Podagada	MIXED	OTHER	
1031	TPSODL	JEYPORE	NED				PODAGADA (Tentulikhunti	MIXED	OTHER	
1032	TPSODL	BERHAMPUR	PSED				PSPUR	MIXED	OTHER	
1033	TPSODL	ASKA	GSED				PUDAMARI	MIXED	OTHER	
1034	TPSODL	BHANJANAGAR	BOED				PURUNAKATAK	MIXED	OTHER	
1035	TPSODL	BHANJANAGAR	PED				RAIKIA	MIXED	OTHER	
1036	TPSODL	BERHAMPUR	GNED				RAMBHA	MIXED	OTHER	
1037	TPSODL	JEYPORE	JED				RAMGIRI	MIXED	OTHER	
1038	TPSODL	CITY	BED-I				RANGEILUNDA/Bhanjabih	MIXED	OTHER	
1039	TPSODL	ASKA	GSED				Sidheswar	MIXED	OTHER	2.583
1040	TPSODL	RAYAGADA	RED				Siliput/ THERUBALI	MIXED	OTHER	
1041	TPSODL	RAYAGADA	RED				SIRIGUDA	MIXED	OTHER	
1042	TPSODL	BHANJANAGAR	BNED				Sorada	MIXED	OTHER	
1043	TPSODL	ASKA	AED-I				SORODA	MIXED	OTHER	29.095
1044	TPSODL						SUNKI (Dedicated)	MIXED	OTHER	
1045	TPSODL	ASKA	GSED				Surangi	MIXED	OTHER	1.528
1046	TPSODL	BERHAMPUR	PSED				TARATARINI	MIXED	OTHER	
1047	TPSODL	RAYAGADA	RED				TIKIRI	MIXED	OTHER	
1048	TPSODL	BERHAMPUR	GNED				TISCO	MIXED	OTHER	
1049	TPSODL						TITANIUM (DEDICATED)	MIXED	OTHER	
1050	TPSODL	JEYPORE	NED				UMERKOTE	MIXED	OTHER	
1051	TPSODL	RAYAGADA	PKED				Uppalada	MIXED	OTHER	