Annual Business Plan Opex submitted

For

FY 2021-22

Submitted By

TP Southern Odisha Distribution Ltd

CONTENT

Glossary

AB SWITCH	Air Break Switch
AC	Alternating Current
ADMS	Advanced Distribution Management System
AMC	Annual Maintenance Contract
AMI	Automatic Meter Infrastructure
AMR	Automated Meter Reading
APS	Area Power System
AT&C	Aggregate Technical and Commercial
BA	Business Associate
BCC	Backup Control Centre
BO	Business Output
BPL	Below Poverty Limit
BW	Business Warehouse
CAIDI	Customer Average Interruption Duration Index
CAPA	Corrective Action and Preventive Action
CAPEX	Capital Expenditure
CC	Control Centre
SOUTHCO	Southern Electricity Supply Utility of Odisha
CIS	Computerised Information System
COTS	Commercial of the shelf
COVID	Corona Virus Disease
CPSCC	Central Power System Control Centre
CRM	Customer Relationship Management
CSR	Corporate Social Responsibility
CT	Current Transformer
CWIP	Current Work In Progress
CYMDIST	Distribution System Analysis Package of CYME
DC	Direct Current
DCP	Data Collection Point
DD	Drop Down
DMS	Distribution Management System
DPR	Detailed Project Report
DSS	Distribution Sub-Station
DT	Distribution Transformer
EHT	Extra High Tension
ELCB	Earth Leakage Circuit Breaker

EPC	Engineering Procurement and Construction
ERP	Enterprise Resource Planning
FCC	Fuse Call Centre
FPI	Fault Passage Indicator
FY	Financial Year
GIGO	Garbage in, garbage out
GIS	Geographical Information System
GoI	Government of India
GoO	Government of Odisha
GRIDCO	Grid Corporation of Odisha
GSAS	Grid Station Automation System
GSS	Grid Sub Station
HMC	Hub Maintenance Crew
HOTO	Handing over taking over
HT	High Tension
HTCT	High Tension Current Transformer
HVAC	Heating, Ventilation and Air Conditioning
HVDS	High Voltage Distribution System
IEC	International Electro technical Commission
IED	Intelligent Electronic Devices
IMS	Integrated Management System
ISU	Industry Specific Solution Utility
IT	Information Technology
ITIA	IT Implementation Agency
JE	Junior Engineer
KM	Kilo meter
KV	Kilo Volt
KVA	Kilo Volt Ampere
LDMS	Local Data Monitoring System
LT	Low Tension
LTCT	Low Tension Current Transformer
LV	Low Voltage
MBC	Metering Billing and Collection
MCC	Master Control Centre
MCCB	Moulded Case Circuit breaker
MM	Material Management
MMG	Meter Management Group
MPG	Maintenance Planning Group
MPLS	Multi-Protocol Label Switching
MRT	Meter Reading & Testing

MS	Microsoft
MTTR	Mean Time to Repair
MU	Million Unit
MV	Medium Voltage
MVA	Mega Volt Ampere
MW	Mega Watt
NABL	National Accreditation Board for Testing and Calibration Laboratories
NCC	No Current Complaint
O&M	Operation & Maintenance
ODSSP	Odisha Distribution System Strengthening Project
OEM	Original Equipment Manufacturer
OERC	Odisha Electricity Regulatory Commission
OFC	Optic Fibre Cable
OMS	Outage Management System
OPEX	Operational Expenditure
OPGW	Optical Ground Wire
OPTCL	Odisha Power Transmission Corporation Limited
OS	Operating System
OT	Operational Technology
PBMC	Performance Based Maintenance Contracts
PC	Personal Computer
PGCIL	Power Grid Corporation of India Limited
PoC	Proofing of Concept
POSH	Policy on Sexual Harassment
PP	Production Planning
PSCC	Power System Control Centre
PT	Potential Transformer
PTR	Power Transformer
PTW	Permit To Work
R&R	Reward & Recognition
RCA	Root Cause Analysis
RMU	Ring Main Unit
SAIDI	System Average Interruption Duration Index
SAIFI	System Average Interruption Frequency Index
SAP	System Application and Products
SBM	Spot Billing Module
SCADA	Supervisory Control and Data Acquisition
SD	Sales and Distribution
SDO	Sub Divisional Officer

SHG	Self-help Group
SITC	Supply Installation Testing and Commissioning
SLA	Service Level Agreement
SLDC	State Load Dispatch Centre
SLMC	System Line Maintenance Crew
SMC	Substation Maintenance Crew
SMS	Short Message Service
SOP	Standard Operating Procedure
SSL	Secure Sockets Layer
STS	Sub Transmission System
STS	Sub transmission system
TPSODL	TP Southern Odisha Distribution Limited
T&D	Training & Development
TBEM	TATA Business Excellence Model
TCOC	TATA Code of Conduct
U/G	Under Ground
UPS	Uninterrupted Power Supply
VPN	Virtual Private Network

Background

Pursuant to the direction of Honb'le Commission vide suomotu proceeding in Case no 83/2020 dated 28.12.2020, para 57, TPSODL is supposed to file the Annual Business plan w.r.t. Employee cost, R&M, A&G expenses for the year FY 21-22 within forty five days (45) from the date of effective date i.e. (1.01.2021). Accordingly, the Company had submitted the ABP for O&M expenses plan before Hon'ble Commission on 12th Feb-21. The submission was made through an additional submission to the ARR of Southco utility vide Case No-77 of 2020 with a view that the matter could be heard along with ARR on the scheduled date & time (which was scheduled to be heard on 19th Feb-21.

During the course of hearing on 19th Feb-21, Hon'ble Commission has also instructed to restrict the presentation to the extent of original filing as because the objectors to the main petition might not be aware about the additional submission of the new licensee.

Now Hon'ble Commission in the RST order dt.26.03.2021 has observed as follows;

Para 403 ***In the meantime TPWODL and TPSODL came into operation w.e.f. 01.01.2021 which is later than the submission of the ARR petition for FY 2021-22. In terms of their respective vesting order, TPWODL and TPSODL have also made additional submission with regard to the O&M cost for the current FY 2020-21 and further projections for FY 2021-22 beyond the ARR projections as per the petitions submitted on 30.11.2020 by the utilities WESCO and SOUTHCO. The Commission in such a scenario will consider such additional submission towards Annual Business Plan of TPSODL and TPWODL and hear the same from different stakeholders before approving the same. In the present order the Commission has taken into consideration the proposal made in the original ARR petition for FY 2020-21.***

Due to the change scenario for improving the reliability of power supply, the operation and maintenance cost of the company would undergo some changes on account of new recruitment, additional A&G cost towards MBC, IT automation, Energy Audit, Insurance. Similarly, under R&M, AMC for network assets, repair of Govt funded assets etc. related costs needs to be increased to certain extent.

1. Executive Summary

TP Southern Odisha Distribution Limited (TPSODL) is a joint venture of Tata Power (51%) and Govt of Odisha (49%) on the Public-Private Partnership (PPP) model. Govt. of Odisha (GoO)'s share is held by it through its 100% owned company GRIDCO. TPSODL was vested 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). As per the Vesting Order, while TPSODL shall be issued a separate License, presently, the license issued to SOUTHCO has been transferred to TPSODL. The Hon'ble OERC regulates the working of the entire power sector of Odisha state, including determination of tariff chargeable to end consumers and establishing performance norms (mainly related to Loss reduction, Safety, Reliability of power supply and Consumer service delivery).

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.

Under the existing Bulk Supply Agreement between TPSODL and the GRIDCO, TPSODL is required to purchase power from GRIDCO at a regulated price to be determined by Hon'ble OERC. The power procurement price is the Bulk Supply Price at which GRIDCO supplies power to Distribution utilities. GRIDCO files its Aggregate Revenue Requirement (ARR) before OERC for determination of the Bulk Supply Price (BSP) for each of the Distribution Utilities, including TPSODL. The BSP is determined based on the ability of each Discom to pay the energy charges to GRIDCO. The 100% Government owned Odisha Power Transmission Company Limited (OPTCL) transmits power to TPSODL for which the Transmission Tariff is also determined by the Hon'ble OERC.

TPSODL licensed area is spread over a geography of 48751 Sq.Km and serve the registered consumer base of 2.3 million with a peak load of around 650 MW. It receives electrical power at a sub transmission voltage of 33KV from **O**disha **P**ower **T**ransmission **C**ompany **L**imited's (OPTCL) 220/132/33 kV Grid Substations and then distributes the power at 33KV / 11KV / 440V / 230V depending on the demand of the consumers. For effective operations, the license area is divided into 6 circles which is further sub divided into 19 Divisions and 51 Sub-divisions which manage the commercial and O&M activities in order to serve its consumers.

In FY 19–20, against the total input energy of 3469 MU, billed energy was 2620 MU resulting into billing efficiency of around 76%. Out of this 2620 MU billed energy, Approximately, 53.2% of the energy billed in a particular year is supplied to Domestic Consumers with Commercial and Industrial Consumers contributing to 10.4% and 20% of the total billing (in terms of units) respectively. Balance 16.4% energy is billed to Others like Railways/Public Street Lighting/Public Water Work/Irrigation and Agriculture etc. In terms of Revenues, Domestic Consumers contribute to around 43.2%, Commercial 14.9%, Industrial 24.4% and others 17.5% respectively.

Overall input has reduced by 5% in FY 19-20 vis a vis FY 18-19, maximum reduction in billed MU is of HT customer as it has reduced by around 6% from 285.3 MU in FY 18-19 to 269.7 MU in FY 19-20.

From network perspective, there are 110 numbers of 33KV feeders emanating from OPTCL GSS with a combined route length of approximately 3636 Ckt. KMs, supplying power to 224 numbers of 33/11KV Primary Substation (Structures). The 33KV supply is stepped down to 11KV level through 459 numbers of 33/11kV power transformers at these primary substations with an installed capacity of 2986 MVA. Nearly 794 numbers of 11kV feeders radiates from the 33/11KV primary substations having length of approximately 40487 Ckt. KMs and supply power to HT consumers connected at 11KV level and LT customers connected to 11/0.415KV distribution substation. 53658 numbers of distribution transformers are installed in all six circles with an installed capacity of 2250 MVA. The length of the LT feeders is 36637 Ckt. KMs approximately. These LT feeders supply power to three phase and single-phase consumers right from large Industrial to BPL.

33/11KV Primary Substations under ODSSP are SCADA compatible and it is planned that these 69 nos. Substations will be remotely monitored and controlled from Control centre located at Berhampur and with backup control centre in future at Sambhalpur

The distribution arm of the power sector ensures its overall viability as it connects to the last mile customer who actually pays for the product – electricity. Transformation of Distribution segment needs focused approach for providing reliable power supply, enhanced customer services and reduce the existing AT&C losses by well-planned CAPEX, infusion of technology, Customer Centric Process, community engagement and effective change management.

Major issues are mentioned below:

Major issues associated inherited from erstwhile SOUTHCO are mentioned below:

1. **Old network and Safety related issues:**

TPSODL has taken over the assets of erstwhile SOUTHCO on “as is where is” basis. Majority of these assets are not in good operating condition and in a large number of cases, the required safety equipment is not in place. Further the network is old and in majority of cases **not compliant to statutory guidelines** and poses threat to safety of employees, public at large and animals.

One of the major reason is absence of structured preventive maintenance and systematic investment for past many years. The 11 kV circuits are radial and very long ranging from an average length of 40-50 Kms to 120-130 Kms in rural areas. Most of the 11 kV circuits have underrated, uneven sized & worn out bare conductors with extremely long span lengths. The LV circuits are also very long and radial. Most of HV & LV circuits have a large number of damaged /bent/tilted poles, poor workmanship in jointing & jumpers, compromised safety clearances and are devoid of guard wires on road crossing. 11/0.415 kV Distribution Substations (DSS) have no fencing, the LT side fuse box/MCCB box are missing, earthing system is in very bad condition, most of the AB switches are bypassed, DD fuse are bypassed/broken.
As a result of above, the interruption at 11 kV feeder level is too high with respect to present Indian utility standards. In one year, total trippings are at a staggering 1.93 lacs.

Further, due to lack of maintenance, failure rate of Distribution Transformer is also very high at nearly 3.5 % of total Volume. In year 18-19, 1656 Distribution Transformers have failed and in year 19-20, 1425 DTs have failed with a failure rate of 3%. Due to such high DT failure rate and 11 kV feeder interruptions, availability of supply in the different areas of TPSODL varies from 14 hrs to 22 hrs per day.

The Scarce resources and lack of preventive maintenance has led to delay in response on Safety Hazards reported by Public and employees. This has resulted in consistently high number of accidents (Fatal/Non-Fatal including Human and Animal) in FY 17-18 (43), FY18-19(24) and H1 FY 19-20 (77).

2. Disaster Management - Natural Calamities

Apart from the vast geographical area, Odisha being a costal State, it repeatedly encounters devastating storms / Cyclones. The loss due to these storms / cyclones are huge which is a major challenge for a distribution utility. The main concern related to these natural calamities are that not only it results in disruption of power supply to consumers over extended period but also it damages the power distribution infrastructure resulting into requirement of huge funds to re-fix the network infrastructure. A permanent solution to address the issue of virtually annual disruption of supply and repeated infusion of CAPEX to restore/replace damaged infrastructure need to be developed.

3. High Aggregate Technical and Commercial (AT&C) Losses

The reported AT&C Losses for FY 2019-20 is 36.29% with Billing Efficiency of around 75% and Collection Efficiency as 82%. The problem is compounded with tariff is not cost reflective as it is based on lower than the actual AT&C losses. It is consequently required that the actual AT&C loses be expeditiously reduced to ensure a commercially viable Distribution Utility.

One of the major reason for low Billing Efficiency is leakages in meter reading process clubbed with inaccurate or no recording of reading in meter due to faulty/no meter in approximately 3.98 *(2.86 lakh – Defective + 1.12 lakh No Meter)* customers.

Non-availability of new meters has resulted into high number of faulty/defective meters in the network as meters are not replaced timely leading to high level of provisional billing coupled with dissatisfaction to consumers. Further, it has also resulted into no meter cases where connections are energized without meters.

In addition to above, collection efficiency need to be enhance through targeted measures as overall collection efficiency is 90.51%, the CE in domestic is only about 84.18%.

4. Limited Customer Touch Points and Inefficient Processes:

Limited customer touch point and non-availability of dedicated manpower for timely customer service delivery lead to customer dissatisfaction as Customer has to spend time, money and effort in visiting the office for registering basic complaints. Further, insufficient avenues for payment of electricity bill has compelled the company to do the door to door collection.

The process related with New Connection, Complaint Processing, Bill Correction, Attribute Change are currently being processed manually. This practice leads to undue delay in processing of customer request, updation of customer payment/record, and reconciliation of material and inconsistency of data in system.

Customers need to do follow up visits for processing or query about the status leading to customer dissatisfaction. Therefore, in line with the motto of "Mo Sarkar" initiative of GoO needs to be dovetailed with existing regulatory guideline aiming to ease out the process value chain related with Time, Cost and Procedures as new connection is the beginning of customer life cycle and prime reflection of service delivery by DISCOM. Further, processes also need to be reviewed for enhancing the service delivery during customer life cycle.

Delay in assessment, rectification of in-correct bills, and inordinate delay in replacement of defective meters is resulting in provisional billing for long period. Further, defined recovery process was not followed judicially and connections are not disconnected in time on account of non-payment has led to accumulation of Significant Arrears.

5. Outdated IT infrastructures:

IT infrastructure being used are bespoke applications on an obsolete technology i.e. FoxPro for billing and Java/.Net based applications for new connection and complaints management. These customized solutions are not designed as Enterprise Level Solutions to fully cater the needs of Discom like Customer Contact Centre, Revenue Cycle Management, Material Management, Network Management, Project Management etc.

In addition to above, these systems are very fragile and prone to intrusion/sabotage by external system. Further, the landscape of the system is Standalone, disintegrated and decentralized. Thus, data integration and security of data is one of biggest challenge in addition to outdated network which are disrupting the process on frequent manner.

Further the IT infrastructure being used in franchisee area is separate without any on-line data exchange options. Thus, building common IT infrastructure with Enterprise Level Solution with due data security is need of the hour.

6. Human Resource:

The most significant challenge at TPSODL related to Human Resource are

a) A*n aging workforce*,
b) *Lack of required skill set*,
c) *Shortage of Competent Manpower*,
d) Rising employee grievances
e) Pending legal cases and non-compliances
f) *Poor Gender Diversity*,

a) An aging workforce

TPSODL has inherited the entire existing manpower of SOUTHCO in line with provision of the RFP. Presently, there are 389 executives and 1610 non-executives with average age of 43 years. Non-induction of any new manpower during last one decade has increased the average age. In executive cadre, more than 6% employees are in age range of 54-60 yrs. while for non-executives it is at 20% (approx.). Almost 18% employees are going to be separated within next five years. These employees are working in areas of O&M, Commercial, finance, administration etc.

b) Lack of required skill set

In absence of structured Training and Development program, employees have limited option to enhance their competency level in this fast-changing business environment. Competency enhancement in terms of internal job rotation either horizontal or vertical movement is also not visible. Fresh competency also did not enter to workforce during last one decade and this has destabilized the workforce demography at SOUTHCO including technical competency. For example, in technical cadre (Non-Executive), more than 25% employees are less than 10th qualified. There are around 500 ITI technical employees (Non-Executives) but only few (approx. 40-50 may have supervisory licence). This indicates poor state of technical competency. More so, in order to enhance network reliability, network safety, fast resolution of operational and commercial complaints, many new functions like Power System Control Centre (PSCC), Quality, Engineering, Consumer services, safety, security, CSR, Training & Development etc. needs to be started. In addition to this, many new technologies are to be adopted for better

control and faster resolution of issues like SAP, SCADA, Mobile Apps, and GIS etc. for which appropriate competencies are required. Hence, it is essential to upgrade competency level of existing employees to work in new functions and on new technology platforms.

c) Shortage of Competent Manpower

On manpower font, acute shortage of manpower is very much visible and reason of massive employee dissatisfaction also. SOUTHCO was not allowed to induct fresh manpower during last decade. Total approved manpower in SOUTHCO is 5625 (approved in year 1999.The consumer strength in 1999 was approximately 3.3 lakh while present consumer strength is approximately 23 lakhs). Presently there are 4999 (approx. includes all contractual manpower). This establish the massive shortage of manpower at SOUTHCO and real challenge for seamless operation.

d) Rising employee grievances

Employees at SOUTHCO had to witness few major transitions during last 25 years. It started from GRIDCO to BSES to Reliance to SOUTHCO. During these transitions, employees' issues piled up. Slow resolution sensitive issues have been impacting employee morale and productivity also apart from overall industrial relations.

e) Pending legal cases and non-compliances

It has been reported that several legal cases are pending at Supreme Court, High Court and other lower Courts. It is crucial to analyse all such human resource related challenges and strategize for short term and long-term resolution with an objective of converting weakness into opportunities.

f) Poor Gender Diversity

On Gender diversity, overall ratio is at 7.28% which is low. It is essential to ensure adequate representation of women employees in the workforce across all cadre.

7. Poor Civil Infrastructure: TPSODL have offices in all the six circles and subdivisions. Some of them are owned and others are on rented property. The office space is currently crowded and haphazardly planned for seating arrangements, moreover, most of the circulation area has been occupied with files, documents etc.

The furniture available at offices are nearly 10- 15 years old and are in non-serviceable condition. New furniture is to be procured for various offices, Customer Care Centres, Call Centres, etc. and also to cater to new employees.

Currently there are 5 stores located at Berhampur, Phulbani, Bhanjanagar, Jeypore and Rayagada are not in condition and need urgent roofing and civil repairs.

Whereas main store at Berhampur, shed is unutilized due to dilapidated condition especially in the aftermath of Cyclone.

8. **Governance challenges:** Currently process related with Material Management, Maintenance Management, Meter Installation, Complaint Management, Customer services are being practiced without standardization and do not have focus on customer satisfaction. These practices leads to undue delay in processing of customer request, updation of customer payment / record, reconciliation of material and inconsistency of data capturing. It is proposed to carryout extensive BPR in all areas of the distribution business along with automation to meet the multiple objectives of enhancing efficiency, productivity, consumer delight and governance practices.

TPSODL has identified the most critical issues across the spectrum through in-depth study and has worked diligently to propose the most suitable and feasible action plan to address the issues. It has also prioritized the list of measures with the most impactful measures taking the highest priority for implementation.

Plan is prepared keeping focus on following aspects:

1. **Network refurbishment and Structured Maintenance for enhancing Safety:** To Improve Safety of public through systematic refurbishment of lines & Distribution Substations and putting up a structure to ensure that network adhere to statutory requirements. Improving response time and frequency of interruptions by following good preventive maintenance practices and putting up a structure of teams in prioritized manner.

   It is proposed to carry out technical audit of the 33KV & 11KV feeders to identify defects and carry out refurbishment of the selected feeders to improve the outage and reliability performance. Refurbishment of feeders will comprise of replacement of dangerous towers/poles, provision of intermediate towers/poles, replacement of worn out / undersize conductor, replacement of other defective accessories, and strengthening of earthing of towers/poles. The refurbishment will also involve restoration of vertical and lateral clearances in line with existing regulations. Similarly, refurbishment of 33/11KV Primary Substation and Distribution Substation is also planned to improve the safety of the man & material apart from ensuring reliable power supply to end users.

Refurbishment of PSS, DSS & feeders will help to improve the safety of workforce, general public and animals. Besides, it will help to reduce number of outages, outage duration, unserved energy, and technical losses.

2. **Disaster Management – Natural Calamities**: The power network of 33KV, 11KV and Low tension network is mostly overhead with towers, mild Steel (MS) AND Reinforced Concrete cement (RCC) poles and negligible 33KV & 11KV underground network. During the last year cyclone, FANI, it was observed that underground networks at erstwhile CESU had not suffered any damage and as a result, related areas had their power supply restored within 3 to 5 days of disaster. Therefore, as a preventive measure, TPSODL shall assess the network condition along the coastal areas and prepare a phase wise plan for conversion of Overhead network to Underground cable network. Funding for this initiative is required to be taken up with state government to avoid any tariff impact on general public.

3. **Aggregate Technical and Commercial (AT&C) Loss Reduction**: In FY 21 – 22, Target of AT&C loss is fixed to 35.29% and TPSODL is striving to achieve this target by taking various measures. Reducing losses by replacing defective/faulty meters (Approx. 2.72 Lakhs), testing of meters and installation of Smart Meters for Distribution Transformer (DT) meter is key indicator. Meter procurement and installation at faster rate is one of the priority areas. This will help in reducing provisional billing and ensure correct recording of consumption.

   Further, for ensuring timely and accurate meter reading, tight control and monitoring of meter reading agencies is to be ensured. To improve the efficiency of agencies, we propose for differential rates for the rural areas having low density of population and difficult terrain. This way of incentivizing agencies will improve the actual reading based bill generation which is hovering around 50% currently. Further reduction in billing update cycle by 3 days to be ensured, by improving the billing data preparation and update in master data at month end in the billing system. Further, introduction of Optical Character Read (OCR) based reading will ensure correctness and quality of meter reading and billing.

   To improve the collection activities, offline payment acceptance in RCS App will be ensured. Automation of the process for entering manual receipts into the system will also be developed. To further improve on the collection, reach out, Mobile collection

van will also be introduced as pilot in few remote locations. Further, strategizing to motivate customers for payment either at Counter or On-line in order to systematically shift from Door to Door collection to other mode of payments like Payment Counter, Online Payment, and Mobile Wallet etc.

Similarly, in rural area, services of Self Help Group (SHG) will be enhanced for meter reading, collection and promoting energy conservation initiatives.

4. **Introduction of Customer Touch Points and Customer Centric Processes:** It is proposed to establish new/upgraded existing payment cum customer care centres at Division/Sub-Division/Section with better facilities for enhancing customer experience. These centres will be manned by dedicated staff in order to provide single window solution to customers.

   Introduction of new payment avenues will help in increasing payments at counters clubbed with dedicated recovery marshals at section level will help in reducing the accumulated live as well as disconnected dues through focused collection/recovery drives. Further, to reduce the dues, dispute redressal drive will be initiated for rectifying the bills or resolving the customer queries.

   Call Centre infrastructure is proposed to be upgraded to 50 Seats for improving the connectivity, registration of complaints like No current, Billing error etc. and request like New connection, Attribute change etc., providing status and query response over the call. This will help in providing easy access to utility for complaint redressal as well as new connection etc. Additionally, proactive communication through SMS during various stages like Bill Generation, Complaint Registration, and Due Date Reminder etc. is also proposed. To ensure the early dispute resolution, it is proposed to hold Dispute Redressal Camps at different locations to resolve long pending issues of consumers.

   In addition to above customer touch point, the organization structure and processes will be reviewed and revised to enhance the customer centricity, efficient and effective process execution and control leading to enhancement in customer experience during the life cycle from New Connection to disconnection.

5. **Technology adoption:** Key technological interventions like MBC application (Customer Care, Meter to Cash processes), ERP, and SCADA are planned to be implemented in phased manner. Similarly, other interventions like Smart metering,

Analytics, Smartphone based spot billing are being considered to unleash full potential of technology and reap the consequent benefits. TPSODL is also planning on establishing reliable communication network that will act as a backbone for other technological initiatives. This will help in improving the process efficiency and ensure better services to our end users.

6. **Human Resource Plan:** A consolidated Human Resource Strategy (Short term and Long term) is being developed keeping in mind existing challenges and future expectation towards building an organization of engaged workforce, structured talent management, a culture of high performance and excellence apart from creating a conducive Industrial Relation atmosphere.

   Progressive employee centric people policies shall be the backbone of TPSODL towards ensuring highly engaged and high performing workplace. TPSODL will be exploring and adopting best practices & policies with the Tata group including its other distribution.

   TPSODL with the focus on enhancing diversity in its workforce and women empowerment through various policy guidelines. Keeping in mind continuous learning and acquiring niche skills, TPSODL shall be implementing training & development policy for continuous competency enhancement of existing workforce. Use of online e-learning module shall be encouraged to ensure maximum participation of its employees.

   Identification and nurturing of high potential employees shall be priority for management towards ensuring successors in pipeline. Every year, all critical position shall be identified along with high potential employees. Potential of every employee shall be assessed, and training needs shall be identified through gap analysis. Specific program shall be designed and executed for their competency enhancement.

   Structured employee grievance redressal mechanism shall be set up with an objective of speedy resolution of employee issue and building a culture of care across the organization.

7. **Strengthening of Civil infrastructure**

   To ensure safe, hygienic, well ventilated and spacious working environment for employees as well as consumers, various proposals are recommended like renovation of existing buildings to enhance the additional seating capacity for

employees, renovation of old buildings to enhance the structural strength and enhance the life of the buildings, renovation of the stores to improve the safety and security of the material kept inside the badly damaged sheds / roofs. Further, it is also planned to provide additional workstations, conference tables to ensure employee friendly work environment.

The ultimate goal of DISCOM is to provide reliable, quality and uninterrupted services to the Consumers at optimal tariff with efficient customer services delivery.

CAPEX/OPEX requirement

A. CAPEX Plan

TPSODL has identified a number of challenges related to Safety, 33KV/11KV/0.415KV network, Metering infrastructure, Customer Services, and Technology usage. These challenges are planned to be addressed through a systematic investment plan by TPSODL. The proposed Capex plan represents a justified and efficient level of total capital investment estimated by TPSODL to meet the service obligation; improving safety, reliability of network, level of service standards

Based on the various initiative and action plan for the year, TPSODL has prepared a comprehensive CAPEX and OPEX plan.

TPSODL proposes Capital Expenditure of INR 408.47 Cr. for FY 21–22 to carry out various activities under 5 major categories i.e.

1. Statutory & Safety
2. Loss Reduction
3. Reliability
4. Load Growth
5. Technology & Infrastructure

Summary of Capex required in FY 21 -22 is as under:

S. No.	Major Category	Activity	DPR Cost TPSODL(In Crores.)
1	Statutory & Safety	PPEs, Safety & Testing Equipment	19.98
		Cradle guard at major road crossings	8.53
		Fencing of Distribution substations (DSS)	15.00
		Boundary wall for Primary substations(PSS)	15.40
		Establishment of Meter Testing Lab	2.47
		Total (1)	**61.37**
2	Loss Reduction	Input Energy Monitoring System (ABT/AMR) -IEMS	10.97
		Replacement of burnt, Faulty and Electromechanical meters and meter installation at no Meter cases	62.98
		LT Bare to ABC conversion	11.98
		Demand Side Management	5.00
		Total (2)	**90.93**
3	Reliability	33 KV Network refurbishment	10.08
		Installation of 33 KV AB Switch	2.23
		PSS Refurbishment	12.17
		11 KV Network refurbishment	11.16
		Installation of 11 KV AB Switch	5.00
		DSS Refurbishment	10.00
		Installation of LV protection at DSS	10.09
		Installation of Auto reclosure / Sectionalizers & RMU,FPI	8.72

		Trolley Pad Mounted Substations	1.31
		Package Transformer 630 KVA	1.64
		Total (3)	**72.41**
4	Load Growth	Network augmentation / addition to meet load growth/11 KV line, PTR,DTR,LT line	26.52
		Meter Installation for all new connection	12.71
		Total (4)	**39.23**
5	Technology & Civil Infrastructure	Installation of Smart Meters along with back end IT Infrastructure	28.28
		Augmentation of IPDS Software licenses pan TPSODL	18.24
		IT Infrastructure (H/W & Field office infra for augmentation of IPDS application licenses)	29.26
		Communication Network Infra	5.38
		SCADA Implementation	16.71
		GIS Implementation	10.46
		Civil Infrastructure	20.00
		Civil Work for Meter Test Bench	2.00
		Civil work for Call Centre &PSCC	4.00
		Upgradation of DT workshop	1.00
		Security system in Central Store	4.25
		Ready to Use assets for Offices	4.95
		Total (5)	**144.53**
Grand Total (1+2+3+4+5)			**408.47**

B. OPEX Plan:

Particulars	OERC ARR (Proposed) Apr'21– Mar '22	Total TPSODL ABP(Proposed) Apr' 21 – Mar'22
Employee Cost	**416.27**	**545.67***
Salaries , Wages, Allowances & Benefits including existing outsourced	240.45	**369.85**
Contribution to / Provision for P.F, Pension	144.88	**144.88**
Arrears of 7th Pay Commission	30.94	**30.94**
R & M Cost	**86.81**	**115.81**
Transformer Maintenance	38.25	**41.64**
Distribution line Repairs and Maintenance	30.93	**32.98**
Consumer Service Maintenance	6.4	**9.45**
Other repairs and maintenance	0.56	**0.56**
Civil Repairs and Maintenance	1.43	**9.00**
Additional Repair and Maintenance for RGGVY & BGJY	9.25	**9.25**
Safety		**1.32**
PSCC		**0.11**
IT and Automation		**11.5**
A & G Cost	**58.23**	**104.36**
Property related expenses	3.27	**13.18**
Communication	0.83	**0.89**
Professional Charges	1.1	**1.4**
Conveyance and travelling	10.26	**25.05**
Other expenses	15.86	**32.63**
Material related expenses	0.56	**0.56**
Additional A&G Expenses	26.36	**30.65**
Total OPEX	**561.31**	**765.84**

*. Establishment Cost is Gross of Capitalisation.

1. It is acknowledged that the proposed expenditure or variance (higher) to the norm specified by the Hon'ble Commission in its regulations.
2. It is submitted that the estimated OPEX cost have been worked out based on Zero based budgeting approach and the details of the same is provided in the relevant section.
3. It is submitted that O&M expenditure, at-least in the initial years, need to be allowed at actuals considering that significant expenditure is required to be incurred under each of the three heads (Establishment Costs, R&M and A&G) considering the years of neglect of network, grossly inadequate since the expenditure is proposed to be incurred with due

prudence and through the norm formulated by the Commission for allowance of R&M cost.

The cost does not factor in various expenses currently being incurred (e.g. DF share of incremental unit input, Rebate offered to customer, etc.) in addition to estimated and legitimated cost that are required to be incurred by any efficient and compliant utility including cost of insurance, Security, AMC for Software/Hardware, Preventive maintenance etc.

2. TPSODL Profile

TP Southern Odisha Distribution Limited (TPSODL), a Joint Venture of TATA Power Company Limited and Government of Odisha (GoO), is engaged in the business of distribution and supply of power in Southern Odisha from Jan 1, 2021. The business is regulated by Odisha Electricity Regulatory Commission (OERC) responsible for fixing retail tariffs chargeable to consumers, the tariffs, as per the present Regulations, are ascertained based on revenue of Distribution Company's (DISCOM) Costs 'plus' Assured Returns subject to achievement of Regulatory Targets.

Odisha was the first state to undertake sector wide reforms in 1994, with the passing of the Orissa Electricity Reform Act 1995. The Southern Electricity Supply Company of Odisha Ltd (SOUTHCO) was incorporated on 19th Nov 1997. Pursuant to the Odisha Electricity Reforms Act 1995 and Odisha Electricity Reforms Rules 1998, all the assets of GRIDCO pertaining to the Distribution Business in the Southern Zone of GRIDCO comprising district of Ganjam, Ganapati, Boudth, Kandhmal, Rayagada, Koraput, Nabrangpur and Malkangiri were transferred to SOUTHCO. On 1st April 1999, 51% sales of GRIDCO, in SOUTHCO were transferred to BSES Limited, selected through competitive bidding process. Under section 19 of the Electricity Act 2003, OERC revoked licence of SOUTHCO which was with Reliance with effect from 4th March 2015 and appointed CMD, GRIDCO as the administrator and vested the Management and Control of SOUTHCO utility along with assets, interests and rights with CMD GRIDCO Limited.

The key objectives of the proposed sale of the Utility to a prospective purchaser were as follows:

i. To bring about improvement in operational efficiencies and to reduce overall Aggregate Technical & Commercial ("AT&C") Losses, and ease the burden of inefficiency on its consumers;

ii. To improve the quality of service to its consumers, including improving the quality, security and reliability of the supply system and to make available electricity at a competitive price;

iii. To bring in effective and professional management of the Utility through hiring and deployment of efficient, experienced and seasoned senior staff and distribution experts;

iv. To effectively plan and effect the collection of Past Arrears from consumers, in

lieu of an incentive

v. To ensure necessary capital investments to support future demand growth, improvement to the distribution system, and leverage on technology to bring in interventions in the metering, billing and collection procedures;

vi. To ensure consumer indexing, and in implementing robust energy accounting and auditing processes into the functioning of the Utility; and

vii. To bring in and implement best practices in distribution & retail supply to enhance productivity of its employees and enhance growth and opportunities in the sector.

TPSODL has a licensed area geographically spread across approx. 48751 square km having geographical diversity as well as economic diversity of residents ranging from the industries to Below Poverty line customers with total registered customer base of around 2.32 million with a peak load of around 650 MW.

Most of the customers are domestic and very few i.e. less than 10% are commercial, industrial and government/public utilities. Thought the EHT & HT consumers are very few in numbers but sharing highest revenue contribution to the TPSODL total annual revenue.

TPSODL operational area is spread across 48751 Square KM covering 8 Revenue Districts of Odisha State, namely: Ganjam, Gajapati, Kandhamal, Boudh, Koraput, Rayagada, Nabrangpur and Malkangiri. For effective operations; the entire license area is split into 6 circles which is further divided into 19 Divisions, 51 Sub divisions and 136 Sections. Most of the commercial and O&M activities are managed by sub-divisions and Sections which are interface points for customers.

Overall snapshot of TPSODL is given in the below table:

Circle	CITY CIRCLE	BERHAMPUR CIRCLE	ASKA CIRCLE	BHANJANAGAR CIRCLE	RAYAGADA CIRCLE	JEYPORE CIRCLE	Total
No. of Consumers	214928	327546	245094	417818	383260	736131	**2324777**
No of 33/11KV Substation	18	24	20	42	52	68	**224**
Transformer 33/11 (No's)	41	64	53	81	87	133	**459**
Transformation capacity 33/11 (No's / MVA)	226.2	1233.75	244	363.45	374.3	544.1	**2985.8**
Transformation Distribution	2246	5116	3754	13073	7858	21611	**53658.0**
Transformation capacity 33/0.415 11/.415/0.230 (No's/MVA)	249.357	333.749	212.716	394.832	286.479	773.177	**2250.3**
33KV Line (O/H-Ckt Km)	139.23	373.94	227.9	819.88	797.6	1273.51	**3632.06**
33KV Line (U/G-Ckt Km)	3		0.9				**3.9**
11KV Line (O/H-Ckt Km)	1114.84	3370.57	2116.24	9876.87	7972.12	15989.52	**40440.2**
11KV Line (U/G-Ckt Km)	7.08	11.11	8.95	20.1	0	0	**47.2**
LT Line (Bare-Ckt Km)	1024	1092.72	646.13	1525.28	2759.26	2552.76	**9600.15**
LT Line (ABC-Ckt Km)	557.97	3251.99	1531.7	6853.3	3670.12	11171.87	**27036.95**

3. Existing System:

Apart from the vast geographical area of TPSODL, Odisha is a hub of natural calamities. In last few years Odisha has seen a number of devastating storms of history. The loss due to these storms are huge which is a major challenge for a distribution utility.

Name	Lowest Pressure(mbar)	Year	Winds(km/hr)
Odisha Cyclone	912	1999	276
Phailin	940	2013	215
Hudhud	950	2014	185
Titli	978	2018	110
Fani	932	2019	250

Source: https://en.wikipedia.org/wiki/List_of_tropical_cyclones_that_affected_India

So it can be seen from the history that Odisha is prone to the natural disastrous cyclones which effected erstwhile SOUTHCO in a very bad manner and will surely be a major natural challenge for TPSODL. Apart from this there are other natural challenges like

1. Low land areas
2. Saline Coastal weather which deteriorates the electrical assets
3. Different forest ranges through which rural lines are running prone to unsafe situations

We will now discuss about challenges related to the processes of various departments

3.1 Statutory & Safety

One of the major challenges for TPSODL is the public and employee safety. Present network condition is such that it is directly posing a threat to the safety of employees, public at large and animals and it is also pertinent to mention that at most of the places the network is not compliant to the statutory and regulatory guidelines.

All the lines irrespective of voltage levels (33 KV, 11 KV and LT lines) are very long to cater extreme points in rural areas. There are multiple T-off connections on single feeder without any predefined number. Very few lines are parallel. At most of the places the property of undersize of the conductor observed making it a big threat for safety. The conductors also are worn out at most of the places. They not only have joints in between with various other

size of conductors but also having kinks in them. The poles carrying the lines are bent, tilted having joints and somewhere innovation observed by passing through the line over wooden support. Regardless to mention that guard wire observed at very few places, in some places guard wires are not just below the live conductors defeating the purpose what they are for.

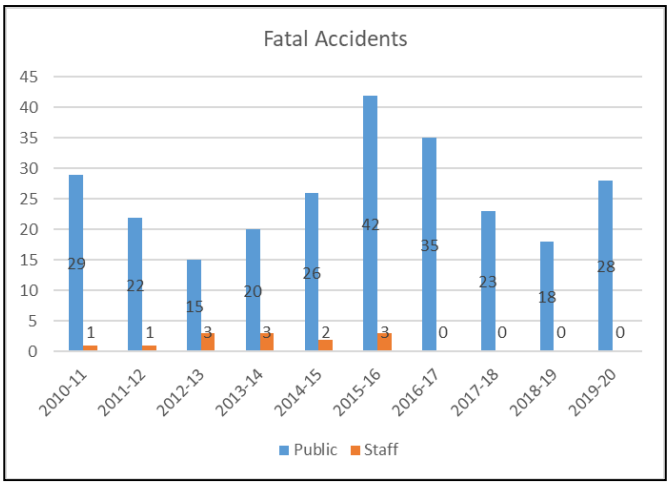
11/0.415 kV Distribution Substations (DSS) don't have fencing at most of the places, posing major safety threat to public at large and animals. Most of the AB switches and DD fuse are bypassed/damaged. The LT protection is visibly there with fuse wires but they are largely bypassed technically since they are either oversized or bypassed at secondary side of most Distribution Transformers. In place of LT Fuse box/MCCB box; aluminium wire are used as fuses on the secondary side of the distribution transformers at almost all substations. These fuse units are installed at very low height in all the places; it is a potential safety threat to general public and animals. Earthing system is in very bad condition in almost all feeders and substations. All these factors contribute to the unsafe working condition and unsafe condition for any trace passer and other living animal.

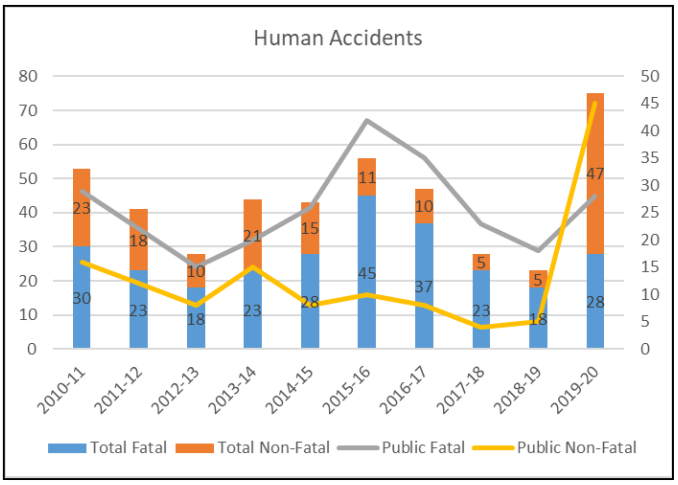
It is observed that almost all 33/11 KV primary substations (Structures) except those built in ODSSP schemes are practically having boundary walls broken and there is no fencing between the substation premises and 33KV outdoor switchyard. Due to this fact the PSS is highly unsafe and may initiate any accident/ incident by intrusion of unauthorised person and animal. The existing earthing system is in very bad condition and ineffective. Many circuit breakers and CTs are lying bypassed since long for want of spares. Automobile batteries and underrated battery chargers are used at many substations due to non-availability of standard equipment in stores. This may lead to loss of DC system resulting basic protection system inoperative in case of any fault which may not get isolate due to absence of DC. This puts the basic protection system at bay and there are chances of major damage to substation capital intensive equipment if the defects are not attended / addressed urgently.

Having done analysis of last ten years' accident data, it is observed that major reasons of accidents includes earth leakage in metal structures used in overhead networks, non-availability of fences, and Low Ground clearances and snapping of conductors.

Table below shows Year wise details of Fatal / Non-fatal Electrical accidents occurred under erstwhile SOUTHCO's operational area during Calendar Year 2010-2020.

Accident Analysis FY 2011 to 2020





Public
26/Year
Staff
1.3/Year

Total Victims Affected - 463 Total Public Affected - 396

Sl No	Financial Year	Human			Animal			TOTAL Victims
		Fatal	Non-fatal	Total	Fatal	Non-fatal	Total	
1	2010-11	30	23	**53**	23	0	**23**	**76**
2	2011-12	23	18	**41**	39	0	**39**	**80**
3	2012-13	18	10	**28**	29	0	**29**	**57**
4	2013-14	23	21	**44**	26	0	**26**	**70**
5	2014-15	28	15	**43**	33	0	**33**	**76**
6	2015-16	45	11	**56**	40	0	**40**	**96**
7	2016-17	37	10	**47**	16	0	**16**	**63**
8	2017-18	23	5	**28**	15	0	**15**	**43**
9	2018-19	18	5	**23**	1	0	**1**	**24**
10	20219-20	28	47	**75**	2	0	**2**	**77**
11	2020-21(till Dec'20)	21	4	**25**	10	0	**10**	**35**
TOTAL		**273**	**165**	**438**	**224**	**0**	**224**	**662**

It is pertinent to mention here that the number of fatal accidents as well as non-fatal accidents are having significant numbers and no trend is getting established for both Human and Animals. Further, **almost 60% of fatal accident involved humans, which is very serious**.

3.2 Poor Condition of Network

As-is Condition of network and practices:

The operational area is spread over 48751 Sq.km. TPSODL receives power from 28 numbers of OPTCL transmission substations through 110 numbers of 33KV feeders. TPSODL has huge asset base to deliver power supply to over 2.32 million customers. One of the major challenges for TPSODL is poor network inherited from erstwhile SOUTHCO. The 33 kV and 11 kV feeders are mostly overhead, radial and lengthy with an average length of 40-50 KMs in urban / peri-urban areas to 100-120 KMs in rural areas. These feeders have undersize, uneven sized and worn out conductors. The LV circuits are also very long and radial. Both MV & LV circuits have large number of damaged / bent / tilted poles, poor joints, compromised safety clearances and are devoid of guard wires on road crossing.

Trees are interfering with live conductor in overhead feeders at multiple location. Present maintenance practices are reactive. There is no / inadequate maintenance setup resulting into large number of interruptions on 33 and 11KV feeders. The records show that there are nearly 15 tripping / per 33KV feeder per annum and similarly 243 tripping per 11KV feeder per annum. The large number of tripping have caused adverse effect on the health of network equipment.

Due to absence of structured maintenance, failure rate of Distribution Transformers is also very high at 3,5% of total population. In year 18-19, 1656 Distribution Transformers have failed.

Due to large number of feeder interruptions and DT failures, availability of supply in the different areas of TPSODL varies from 14 hours to 22 hours per day. In City area the availability of supply ranges from 20-22 hours, in Towns it ranges from 18-20 hours and in rural area it ranges from 14-18 hours.

Presently entire network right from 33KV feeders to LT consumers are owned and maintained by Junior Engineer (O&M) along with his team comprising of Lineman A/B/C, Helper, and Jr. Technician posted in respective sections. EMR section extend support to section staff for maintenance of 33/11KV primary substations. As sufficient manpower is not available in EMR section, currently only corrective maintenance is being done.

In the absence of sufficient support staff at sub-divisions/sections level, the MTTR for 33 kV & 11 kV breakdown is quite high. Due to scarce manpower, breakdowns in many sub-divisions / sections are attended during day time only. The maintenance practices are

reactive and the distribution assets are rarely maintained. Faulty equipment / distribution transformer is not replaced even for months' in rural areas.

Due to excessive tripping on 11KV feeders, the switchgear installed at 33/11KV substations are subjected to great stress and requires frequent maintenance. Since the 33KV system is backbone of power distribution network, the same needs proper attention in ensuring quality and reliable supply.

3.3 Operational Inefficiencies

In operational inefficiencies we shall discuss the existing processes of operations in maintaining the huge asset base with scarce manpower and inefficient processes resulting in operational inefficiencies

3.3.1 No Current Complaints:

At present customers of TPSODL are visiting to their respective Division / Sub Division / Section office for registering supply related complaints. However, while visiting to these offices, Customers have to spend time, money and effort in registering basic complaint like No Power Supply, Billing issues etc. Considering the vast geographical area, it is difficult to attend the complaints during night hours and even this becomes terrible in rural area. This leads to increase in restoration time and customer dissatisfaction as well. Moreover, In Division/Sub-Division/Section Office, no dedicated official is available for customer interaction. At section office, limited manpower available to attend these complaints and therefore customers have to rely on private electricians which resulted into unsafe act from customer part.

Apart from the consumer footfall to these offices, Customer can also register their complaints through Call center. However, due to limited lines, customers are not able to connect to the call center for registering the complaints.

3.3.2 Poor Maintenance Management:

There is acute shortage of manpower for operation and maintenance of the network. There is no structured, and documented maintenance system in place for feeders and substation equipment. There is no preventive or condition based maintenance program for timely identification and removal of defects to maintain the efficiency of the equipment and for planning the replacement actions. Likewise, 33KV feeders, there is no dedicated 24X7

breakdown crew to attend breakdowns and preventive maintenance crew for upkeep of substations. As a result, the sub-division officer has to assemble manpower both from EMR and sections (sometimes from OEMs and contractors) to attend breakdowns. At times, it becomes difficult to restore power supply if the breakdown happened during odd hours resulting into delays and customer dissatisfaction.

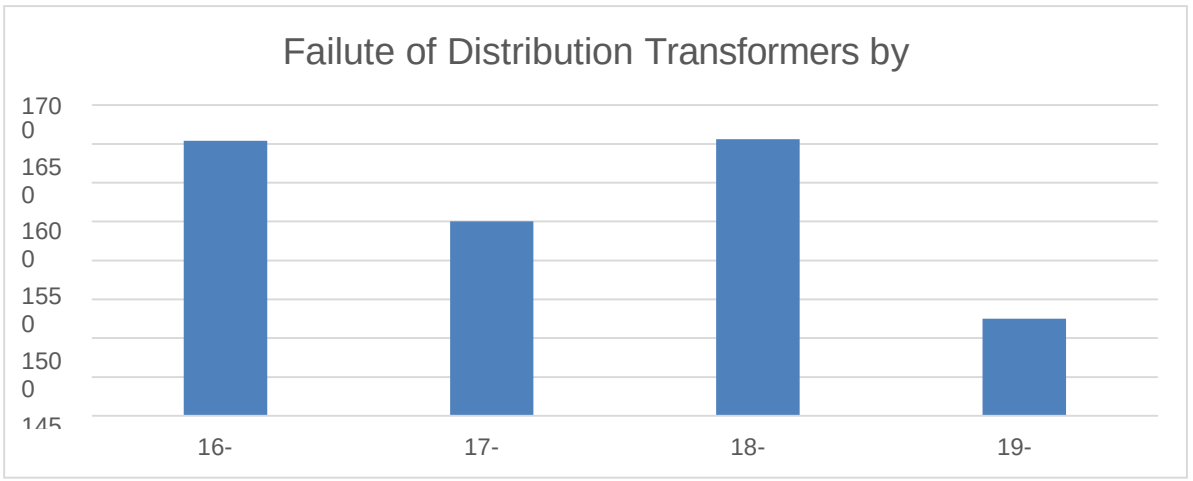
Since there is no structured maintenance system, and testing of equipment is not done, the internal health of various power distribution equipment is not known. Many of the equipment especially power transformers are more than 25 years old. The physical condition of some equipment is also reported to be bad.

As a result of above, the interruption at 11 kV feeder level is too high with respect to present Indian Utility standards. In one-year total tripping of 11kV feeders are at a staggering 1.93 lacs.

3.3.3 Poor Health / upkeep of Transformers

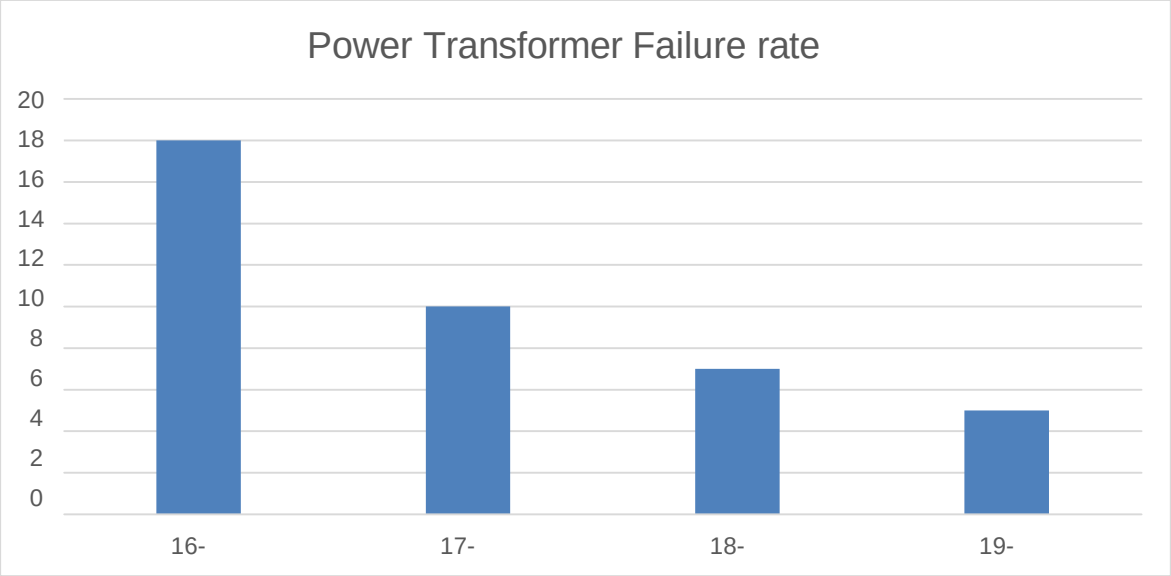
Many of the transformers are more than 25 years old and have extremely low insulation resistance values. Due to non-availability of Capacitance and Tan Delta measurement equipment, it is not known if the transformers are on the verge of abrupt failure. Similarly, there is no dissolved gas analysis of furan analysis being done on power transformers which can help to check incipient faults.

The failure rate of distribution transformers is more than 3.5% as of date. The DTs are repaired by local repairers and quality of workmanship is reported to be bad. Failure of DTs cause power outage to all customers fed from the DT. It also takes time to replace faulty DT thus increasing the equipment downtime.



Trend as shown in above graph suggests that there is decreasing trend in Distribution Transformers failure but still it is very high figure which needs to be brought down to less than 1%.

Failure rate of power transformers is not that high but many power transformers are ported to have extremely poor insulation resistance values increasing the possibilities of their abrupt failure in case if remedial actions are not taken. There are no hot standby power transformers of rating 10/12.5 MVA available for replacement in case of exigency.



Failure of power transformer results huge area outage along with major drawback in customer satisfaction. The failure rate of power transformer is also significantly high showing major operational inefficiencies. It should be taken care of that the failures of DT and PTR results in huge OPEX which is again burden on utility and ultimately on the stakeholders.

3.4 AT&C Loss

Major reason for high AT&C losses are listed below:

A) Defective, No Meter, Mechanical Meter in network lead to inaccurate or no recording of meter reading. Currently, 3.98 Lakhs meter need to be replace in phased manners details are as follows:

1. 2.86 Lakhs defective meters and 1.12Lakh unmetered connections are leading to loss of revenue to utility due to provisional billing and erroneous bills.

2. Currently customer bought meter are installed during energization of connection leading to non-standardization of meters and lack of Anti tamper features.

B) Meter Reading and Spot Billing:

Meter reading is assigned to Meter reading agencies across Division /Sub Division on fixed cost basis per reading in SOUTHCO area and agencies has deployed their manpower for reading. Meter reader visit consumer site for a period of 15 days i.e. from 7th to 22nd of every month, based on reading route sequence allotted to him. Meter reader takes and punch the reading in spot billing application, which delivers the spot bill to the consumer during the same visit.

In this process the gaps are listed below:

- Existing billing engine allows to complete the billing cycle within 15 days beginning from 7th to 22nd of the month. Since Meter reading to be completed in 15 days, meter reader is engaged limited to 15 days in each month leading to non-adherence of Minimum wages to meter reading staff.
- No Quality check parameters are available in spot billing system prone to wrong readings/bills.
- High no of pending assessment cases leading to non-payment of bills and customer disputes.

In addition to above, customer indexing is not available leading to variety of problems like non availability of proper location of consumer as well as details about the Poles, Transformer etc.

C) Collection Process:

Payment collection counters are provided at Division/Sub-Division level for customers to deposit the bills. At these counters, the cashier collects the payment in cash and issue cash receipt to customers. This system of payment acceptance is working online and in case of network failure, payment from consumers can't be accepted. Currently, the due dates are schedule in short window of 7 days' duration due to which long queue at payment counters during due dates is visible. This lead to customer dissatisfaction as customer has to spend time, energy for bill payment. Beside above avenues, Business Associates (BAs) have been deployed for door to door collection by visiting the customer premise and issue manual receipt.

Following are the challenges in this process:

1. Door to Door collection through Revenue Collection System (RCS) has become the norms of payment collection over a period of time. Under such scenario, customer is not inclined/encouraged to make regular payment by visiting office/using online payment avenues which otherwise is the norm of payment in utility sector. This practice lead to accumulation of arrear.

2. Due to network issue at many locations RCS system is not working, which results in non-acceptance of payments in several cases.

3. Non-availability of alternate system for payment acceptance have resulted in increased manual payment acceptance through manual receipts books. Manual Cash receipt updation process in system is prone to error as multiple entries at different level are being done manually. Further, it also delays the posting of credit in customer's account.

3 Manual reconciliation of payment prone to error leading to customer dispute.

4 Retention and Storage of Hard Copy Receipt occupies considerable space in Division Office.

D) Meter Testing:

Meter testing labs are established in TPSODL at 3 locations (Berhampur, Aska and Jeypore) to cater meter testing requirements. Presently, in 3 labs, 3-meter test benches are operational for testing of Single Phase and Three Phase meter. Key challenges in this testing processes are:

1. Existing 3-meter test benches are not fully functional for testing of meters in Labs.
2. Sufficient field testing equipment are not available with TPSODL to perform testing at site for EHT/HT and LTCT meters against statutory compliance and against consumer complaints of fast/slow meters.

. **The details of three test benches installed across 3 locations are as follows:**

Sr. No.	Lab Name	Test Bench Details
1.	MRT Berhampur	a. MTE make: One Bench Single Phase 10 position bench (Pre 2000 Manufacturing Yr.)-Defunct b. Pyro Gyr. make: 2 Bench 10 position each (1995 Manufacturing Yr.)

		c. Local Assembled : One 5 Position 3 Phase Bench (Pre 2000 Manufacturing Yr.)
2	MRT Aska	Pyro Gyr make: 1Bench 10 position each
3	MRT Jeypore	Pyro Gyr make: 1 Bench 10 position each

Pyro Gyr Company ceased to exist in operation long ago. No standard spare part of these benches are available through OEM or with SOUTHCO. Hence, these test benches are maintained by Lab staff, by purchasing spare parts of local manufacturers / intermittent arrangements for ensuring business continuity. This often disrupts the testing of meters on regular basis leading to high pendency of meter testing.

The infrastructure and equipment of Meter Testing Lab at Berhampur, Aska and Jeypore, (details mentioned at Sr. No 1, 2 & 3 in above table) are not in a condition that business continuity can be sustained in long term. In addition, **NABL accreditation as per clause no 102 of Supply code 2019** cannot be attained for these labs.

Meter Testing group is responsible for performing the following testing activities on day to day basis:

1. Sample meters are to be tested in NABL accredited lab prior to installation, so as to ensure high quality of the meters is maintained. However, existing 7 benches are not fully functional to carry out tests as per NABL requirements due to aging.
2. As per Requirement of Statutory testing, meters installed at Grids, HT & LT customers' needs to be tested in pre-defined time, based on voltage level, on which meter is serving. Officials have to undertake testing of these meters at site as per IS 15707, with calibrated standard meters, specific for defined voltage levels. In order to perform these testing, sufficient equipment is not available with TPSODL.
3. Consumer complaints regarding fast / slow meters after meter installation / during life cycle of meters need to be addressed by testing meters at site as per IS 15707. In order to perform these testing, sufficient equipment is not available with TPSODL.

E) DT Metering:

It has been observed that, meters are not installed at all Distribution Transformers. As a result, it is not possible to determine the level of energy input and hence the AT&C losses at DT level.

Total Transformers > 50 KVA	No of metered Transformer	No of unmetered Transformers
15742	850	14892

Currently DT meters are not installed in 14892 transformers, due to which following challenges have been identified:

1. Lack of focused approach for loss reduction as no provision for identifying high loss pockets is available.
2. Wastage of resources due to random inspections without any data analysis.
3. High Transformer failure rate due to over loading and load unbalancing.

3.5 Outdated Technology

Operational efficiencies when matched with Technological applications, results into great face change for a utility. As far as technology is concerned erstwhile SOUTHCO had done no major investment in Technology till start of MBC and ERP implementation under IPDS scheme which is planned to be rolled out in near future.

SCADA:

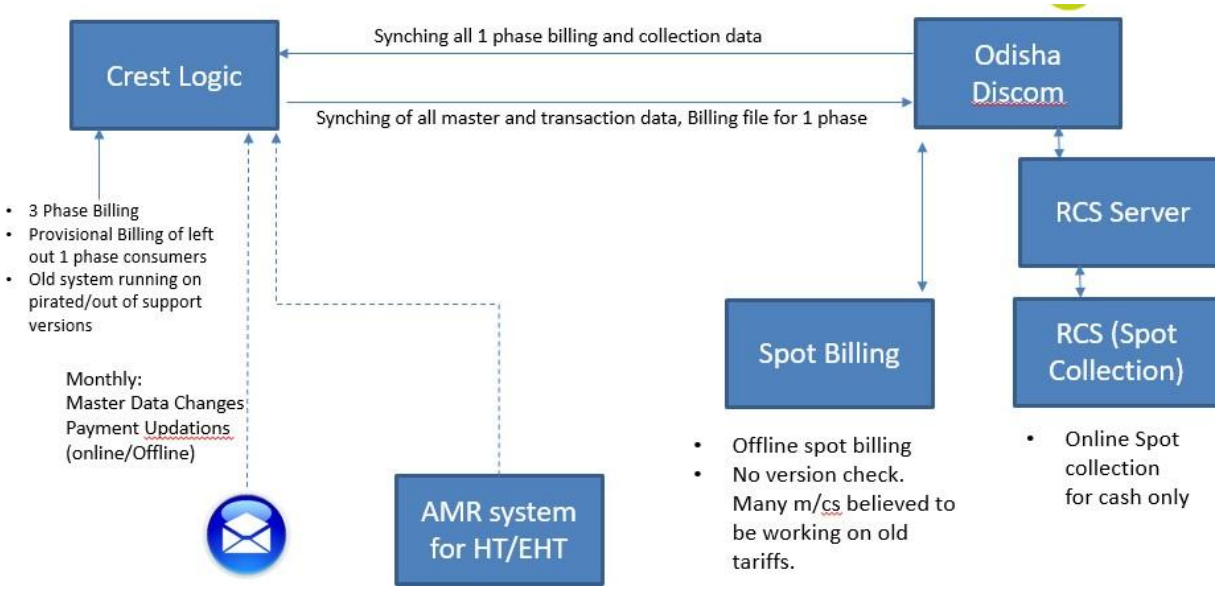
Currently there are total 224 Nos. of 33/11 substations in TPSODL areas out of which 99 no. of substations are developed/being developed under ODSSP scheme. Any of old or ODSSP PSS is not integrated to SCADA Control Center.

IT system

IT subject matter experts from Tata Power carried out a study of IT applications of SOUTHCO to evaluate the as - Is condition and identification of gaps w.r.t. requirements of the to be Core IT Applications. Following are the key findings of the study

a) **Bespoke Applications Managed by Gridco IT Team** – These mainly include Legacy Oracle based billing system developed by Reliance Energy along with Java and .Net based applications developed/managed by Gridco for Spot Billing, Online Payments New connection. and complaints management. Along with this a mobile based cash collection application is developed by Tech Mahindra. These systems work for around 23 Lakh consumers. Mobile apps and In-house Application already used are not integrated and data is fed manually or though bulk upload process, lacking security best practices hence data sanctity and vulnerability is at risk. These customized solutions are not designed as Enterprise Level Solutions to fully cater the needs of Discom and are interoperable and ready for integration with upcoming Other Standard IT/OT

Solutions. These application are not integrated with each other in real time and data is updated



b) Common Transaction and MIS platform – SOUTHCO has a single Oracle based system for organization's common MIS platform and also various transaction based application are hosted on the same system.

Key Concerns / Issues in Current IT Setup:

- Current billing being done with existing reliance system has serious loopholes, like billing with old tariff in several mobile devices, huge amount of direct data corrections without tracking, and need to be immediately replaced.

- Standalone, disintegrated, decentralized and diverse Solution Landscape
  - Non Standard Processes
  - Weak Billing Process
    - Less or no Billing Quality Measures available
    - Billing data resides on individual PC level in Divisions
    - Absence of a Standard process of Assessment
  - Challenging Data Reconciliation mechanism

- Absence of a strong ERP solution for efficient and effective enterprise processes
- Online payment is being routed to third party gateways and no SSL in place, hence security is at stake here.
- Tally – Accounting software used but runs in standalone basis
- Customer complaint recording system is in place however the complete management of root cause analysis, its corrective /preventive action and information dissemination is lacking
- AMR system is in place however huge dependency on Analogy proprietary software and Data Analysis (Theft etc.) is missing which is the key requirement of the solution
- Android based Billing and collection app which needs seamless integration with billing system

Applications need to be designed with secured coding guidelines to make them cyber safe which is a major threat today

3.6 Customer Services

TPSODL has a customer base of around 23.2 Lakh spread across approx. 48751 square kilometre having geographical diversity as well as economic diversity of residents ranging from the industries to Below Poverty line customers.

TPSODL's customers are visiting various offices and interacting for following:

1. Registration of request like New Connection, Attribute Change etc. *(Approx. 1.20 Lakh per annum)*,
2. Bill Payment and Query Resolution
3. Complaint registration for commercial or supply related issue

Following avenues are currently available for customer interaction:

A. Division (19) /Sub Division (51) /Section Office (136): Customers are normally visiting the mentioned office for registering complaint/request, Query resolution, Follow up and payment.
B. Call Centre: Customers are calling at call centre for query resolution, registration of commercial and supply related complaint. Currently, one Call Centres with 5 lines is available for handling commercial and supply related calls of 19 divisions.
C. No Customer Care Centre (CCC): is operating across Southco area.

Limited customer touch points are leading to following customer dissatisfaction:

1. Customer has to spend time, money and effort in visiting the office for registering basic complaint like No Power Supply, Billing or asking queries like new connection document, attribute change etc. Most of these queries/complaints can be easily responded with satisfaction at Call Centre by improving the connectivity.
2. Customers are not able to connect to Call Centre as limited lines are available.
3. In Division/Sub-Division/Section Office, no dedicated official is available for customer interaction. Therefore, customer has to visit from one desk to another as complaint required processing at multiple steps before resolution.
4. No proactive communication to customer like Bill Generation, Bill amount, Due Date, Demand Note Generation, Demand not Payment etc. leading to increase in customer footfall for basic queries. Further, this at times lead to disruption in normal working as well as undesirable arguments between customer and officials at Division/Sub-division office.

In addition to above, the process related with New Connection, Complaint Processing, Bill Correction, Attribute Change are currently being processed without system. This practice leads to undue delay in processing of customer request, updation of customer payment/record, and reconciliation of material and inconsistency of data in system.

Customers need to do the follow up visits for processing or query about the status leading to customer dissatisfaction. Therefore, in line with the motto of “Mo Sarkar” initiative of GoO needs to be dovetailed with existing regulatory guideline aiming to ease out the process value chain related with Time, Cost and Procedures as new connection is the beginning of customer life cycle and prime reflection of service delivery by DISCOM. Further, other processes also need to be reviewed for enhancing the service delivery during customer life cycle.

Delay in assessment, rectification of in-correct bills, and inordinate delay in replacement of defective meters leading to provisional billing for long period. Further, defined recovery process was not followed judicially and connections are not disconnected in time on account of non-payment has led to accumulation of arrear to Rs.1988 Crs. (Live Arrear - Rs.1585 Crs., Disconnected – Rs.403 Crs)

3.7 Human Resource

All the existing manpower of SOUTHCO will be part of TPSODL in line with license agreement. Presently, there are 389 executives and 1610 non-executives are there with average age is 43 years. Non-induction of any new manpower during last one decade has increased the average age. Representation of women employees are less at 7.28%. In

executive cadre, more than 6% employees are in age range of 54-60 yrs. while for non-executives it is at 20% (approx.). These employees are working in areas of O&M, Commercial, finance, administration etc.

Category	Type of Employee	Number	Service Rules / HR Policy
C2	Executive (SOUTHCO)*	**389**	Service Rules
C3	Non-Executive - Ministerial	**462**	OSC (Orissa Service Code)
C4	Non-Executive	**1148**	Standing Order
Total	*(10 Exe. On deputation)	**1999**	

However, in order to enhance network reliability, network safety, fast resolution of operational and commercial complaints, many new functions like PSCC, Quality, Engineering, Consumer services, safety, security, CSR, Training & Development etc. to be started. In addition to this, many new technologies also to be implemented for better control and fast resolution of issues like SAP module, SCADA, Mobile Apps, GIS etc.

Hence, it is essential to upgrade competency level of existing employees of SOUTHCO to work in new function and in new technology platforms. However, due to absence of fresh recruitment for last few years, option must be explored to induct competency through new recruitment or transfer from internal divisions Moreover, skill set of the existing workforce is not matching with the TPSODL future plans. There was no formal process for projecting manpower requirement based on erstwhile SOUTHCO's objectives and deliverables.

3.8 Poor Civil Infrastructure

TPSODL currently have offices in all the six circles and subdivisions but largely they are rented so a huge expenditure is involved in paying rent of the civil assets. Majority of the buildings are really in very bad shape and requiring maintenance / major refurbishment. Currently the Offices in Berhampur are accommodating office and associated services staff. The challenges exist in TPSODL using current buildings and infrastructure is to accommodate more employees and providing a hygienic, well ventilated and spacious working environment with minimum expenditure. It may also be noted that no annual repairs or refurbishment in all office buildings have been made in recent years, hence, immediate rehabilitation of the said buildings is required. Stores are also in very bad shape.

Water loggings observed. It was also learnt that theft of material is also an issue in the store. Store function is far from the world class practice of inventory management.

4. Initiative proposed in FY 21 - 22

As we emerge in the function of TPSODL it is obvious we need to mitigate the challenges faced by erstwhile SOUTHCO to contribute towards Odisha by making it a world class distribution utility. In the journey towards excellence in the first financial year i.e. FY 21-22 we vow to mitigate part of the challenges mentioned in previous section by initiating few steps which is to be discussed in coming consecutive sections.

4.1 Network Refurbishment

As discussed in executive summary and existing challenges section that major drawback is the dilapidated network which if not attended will not only impacted the reliability of power supply but also continue the accidents to happen. Therefore, a systematic network refurbishment activity would be required to initiate immediately after take over.

i. Refurbishment / life extension of 33 & 11 KV feeders

The network will be modelled in planning tool such as CYMDIST to identify the overloading and losses so that the remedial / refurbishment actions can be planned.

The feeders design, conductor type, size and other accessories will be standardised to optimize the inventory.

Since 33KV system is backbone of TPSODL operations and a large area is affected in case of a 33KV outage, it is proposed to carry out technical audit of the 33KV feeders to identify defects and carry out refurbishment of the selected feeders to improve the outage and reliability performance. Similarly, 11 KV feeders will be planned for maintenance based on the priority decided for the FY 21-22.

The refurbishment of feeders will comprise of placement of replacement of dangerous towers/poles, provision of intermediate towers/poles, replacement of worn out / undersize conductor, replacement of other defective accessories, and strengthening of earthing of towers/poles. The refurbishment will also involve restoration of vertical and lateral clearances in line with existing regulations.

Refurbishment of 33KV feeders will help to improve the safety of workforce, general public and animals. Besides, it will help to reduce number of outages, outage duration, unserved energy, and technical losses.

Along with this poles/ structures wherever defective to be replaced on priority basis.

ii. Refurbishment / life extension of PSS & DSS

Nearly 69 numbers of 33/11KV substations are planned to be controlled, and monitored through SCADA in current FY. Action plan has been prepared to install required equipment at these substations to operate these substations through SCADA in the order of priority.

In order to operate and monitor the substations through SCADA, detailed technical audit of substation and all power distribution equipment will be carried out in current FY to identify the defects in civil structures, and electrical plant.

Loading parameters of power transformers and other equipment will be done to identify overloaded equipment if any to align/realign augmentation plan. Testing of equipment will also be arranged to identify the major/minor defects. This will help to prepare and prioritize equipment replacement plan.

Operation of equipment through SCADA will help to improve the reliability of power supply, reduce equipment downtime, reduce unserved energy, optimization of network, reduction in losses, reduce operational expenditure, and improve the safety of workforce.

For 11 KV substations first priority will be eliminating joints in LV and HV connections. Proper rating of fuses to be installed. Plinth of the transformer to be made proper wherever required. Boundary to be ascertained and to be made safe for general public as well as from the aesthetic point of view.

iii. Installation of wedge connectors in feeders and substations

There are many poor joints in the existing feeders. Multiple binding wire joints have been observed in single span of feeders at many locations across TPSODL area. These joints are prone to failure and may result in fatal accidents. As cradle guards are not provided beneath 33KV and 11 KV feeders, there are high chances of fatal accidents due to snapped conductor falling on ground or on human beings / animals moving beneath these conductors. It has been observed that many times the conductor after falling on ground remains live and human beings / animals are electrocuted when they came in arcing zone of such conductors accidentally.

iv. Repair / Servicing of circuit breakers

Existing manpower is able to carry out minor repair but for major repairs, OEM service engineer is called. Until now many of the circuit breakers were under warrantee but the same is now over and it is difficult to avail the services of OEMs during exigency. Many of the circuit breakers are reported bypassed due to defects.

TPSODL therefore intends to establish rate contract with the following circuit breaker manufacturers / authorise dealers for deputation of service engineer on call basis and procurement of circuit breaker spares for a period of three years.

(1) Ceekay for BHEL/Schneider/Siemens
(2) CGL
(3) ABB
(4) Stelmac
(5) Megawin
(6) Easun Reyrole

4.2 Structured Maintenance

The most modern organisations now-a-days implement centralize maintenance planning and decentralize maintenance execution for optimization of cost, efforts, reducing reworks, and maximizing the assets life. In order to improve the maintenance management, TPSODL is planning to form centralize Maintenance Planning Group (MPG) under Sub-Transmission System with the responsibility of establishing a process driven approach for planning, scheduling, monitoring, and analysing maintenance program. The Maintenance Planning Group will be centrally located and work on the basis of outage data captured by power system control. MPG will have the following roles & responsibilities

- ✓ Planning, Scheduling and Monitoring of Maintenance Activities
- ✓ Material and Services Management
- ✓ Reliability Analysis
- ✓ Technology adoption for system improvement

Maintenance planning group will establish the documented procedures for operation, maintenance and breakdown management. Also, they will ensure the availability of annual maintenance plan for sub-transmission and distribution system (preventive and condition based) and to carry out maintenance in structured manner, they will prepare and implement the maintenance checklists for all power distribution equipment to guide maintenance activities. They will also analyse each tripping and identify the root cause analysis so that either SOPs can be revised or training can be provided depending on the action point derived from the RCA.

This arrangement will help transformation of maintenance management system in TPSODL.

TPSODL will gradually implement condition based maintenance system to optimize maintenance costs and efforts. Condition Monitoring Tools such as infrared cameras for hot spot detection, Ultrasonic Equipment to detect incipient faults in indoor switchgear, Dissolved Gas Analyser to detect problems in power transformers and Partial Discharge Measurement equipment to detect problems in cable system, will help to ensure highest equipment availability.

Maintenance Planning Group will also monitor the network availability, reliability parameters such as SAIDI, SAIFI, CAIDI, by capturing and analysing outage data and plan corrective actions to improve the system reliability. MPG will also monitor health of power transformers in STS and shall plan actions to extend the life of this capital intensive equipment.
Apart from Systematic Maintenance Group, bare minimal manpower for Breakdowns teams and 966 Fuse Call center teams works out to 5115 respectively.

In TPSODL, currently there are close to 1500 manpower available for operations activity after leaving aside some manpower for commercial works. We shall utilize the services and experience of the existing employees of TPSODL in their area of expertise especially FCC and Breakdown Maintenance.

For balance manpower we need to place Annual maintenance contracts with provision of vehicles.

Asset Maintenance:

While maintenance of 100% assets would be the best, however it is not possible to ensure preventive maintenance of 100% assets in first year itself. But maintenance of almost 30-40% of asset base would be required as bare minimum. We have estimated resources required for maintaining 30-40% asset base.

Description of Asset	Unit	Population as on 01.02.2021 A	Considered in Refurbishment B	Balance C	% of Balance considered for Maintenance in Year 1
DT 250 KVA and above	**No**	**1073**	**327**	**746**	**80%**
DT <250 but >=63 KVA	**No**	**14096**	**0**	**14096**	**50%**
DT < 63 KVA	**No**	**37967**	**0**	**37967**	**25%**
11 kV O/H Line	**Ckt Km**	**40487.4**	**110**	**40377.4**	**90%**
LT O/H Line	**Ckt Km**	**36637.1**	**172**	**36465.1**	**5%**

To optimize the requirement further we have planned to curtail the manpower in the Fuse Call Centers. We shall put all three shifts A, B &C (Night, Morning and Evening) only for urban areas and two shifts B&C (Morning and Evening) for rural areas.

This way we shall be able to strike a balance in services and overall expenditure.

iv. Performance Based Maintenance Contracts for feeders and substations

Annual Maintenance Plan along with standard check list for inspection of 33KV feeders and substations will be prepared and rolled out in the current FY. Condition based maintenance systems such as dissolved gas analysis, thermography and ultrasonic detection system will be used to identify the maintenance requirements. As there is acute shortage of manpower in TPSODL and also since expert manpower is not available, annual maintenance contracts will be established with expert market agencies for all 6 circles. The network shall be inspected regularly to identify the defects and attend breakdowns in quick time, and perform maintenance activities to enhance system reliability.

The Performance Based Maintenance Contract will also include 24X7 Breakdowns Crews for restoration of 33KV feeders and substation equipment. Besides, preventive maintenance activities will be performed as per the maintenance plan and schedule prepared by TPSODL.

a. Maintenance of DC system at 33/11KV substations

Maintenance and upkeep of substation DC system is highly specialized job. Separate maintenance contract shall be established for substation DC system comprising of battery bank and battery chargers as the same requires higher knowledge and competency. The contractor will maintain the substation DC system once in a month and attend the breakdowns on 24X7 basis. Like Substations and Feeders, TPSODL will establish performance based maintenance contract for DC system.

This arrangement will also help to reduce number of breakdowns, reduce equipment downtime, reduce unserved energy, increase in the life of assets, reduce/eliminate accidents, and improve customer satisfaction.

b. Testing, Overhauling, and Reconditioning of Transformers

There are more than 10 numbers of power transformers and nearly 1000 numbers of distribution transformers stored in Central stores in Berhampur. There are many transformers lying at site. The condition of these transformers is also not known. These transformers are stored for more than 4-5 years and can't be used unless tested/overhauled/reconditioned. TPSODL is planning to procure the services of expert

market agency for testing, overhauling, and reconditioning of power and distribution transformers at transformer repair workshop and sites. The activities are planned to be performed by manpower supply by the service contractor.

Through this arrangement, TPSODL intends to use available transformers in stores, and overhaul / recondition at least 12-15 number of power transformers at various site in the year 2021-22.

a. Repair / servicing of Load Tap Changers of Power Transformers

TPSODL intends to establish rate contract for maintenance and upkeep of load tap changers through the original equipment manufacturer (OEM). The rate contract would include the hiring charges of services of competent engineer on per day basis for overhauling of tap changer to make them operational through mechanical and electrical (both local, and remote).

d. Procurement of Materials / Spares for upkeep of Network

TPSODL is making arrangements for periodic inspection and maintenance of 33KV feeders, 33/11KV substations, Spares for primary equipment such as Power Transformers and Circuit Breakers etc., and Secondary Equipment such as relays, battery chargers, batteries, AC distribution boards etc. to improve safety and reliability of power supply. Most of the maintenance materials are not available in stores as a result equipment downtime is high. In emergency the material is taken from business associates at higher cost for low quality materials.

Maintenance of feeders and substation equipment will also help to reduce the numbers of accidents / incidents.

Availability of materials in stores will help to reduce numbers of breakdowns, reduce equipment downtime, reduce unserved energy, and reduction is accidents.

4.3 AT&C Loss Reduction

Proposed Initiatives for replacement of Defective/Mechanical / No Meter

To curb the loss level in TPSODL, it is proposed that in next three years all No Meter, Defective meters shall be replaced with Static Meters. In no meter or defective meter cases, it is estimated that service cable replacement would be required wherever found defective or missing and thus certain percentage of service cable is also considered in

plan. For installation of Meters, Meter boxes will also be required to protect the meters from energy theft and environmental hazards.

In FY 21-22, it is planned to replace around 3.86 Lacs faulty meters which are directly contributing to the losses and accordingly Capex investment of Rs.62.98 Crores will be incurred.

Following table enumerates the requirements of meters along with its supply cost and installation cost which are considered for replacement in next 3 years for as loss reduction in different categories of meters.

Type of meter	Reason for replacement	Qty. - (No.)	Total Cost (In Crores)
Single Phase meters	No Meters	2,129	43.27
	Old Defective Meters***	3,00,000	
	New Defective Expected	77,589	
	Electromechanical Meter	0	
Three Phase Whole Current meters	No Meters	0	1.62
	Defective Meters	4,808	
	New Defective Expected	230	
	Electromechanical Meter	0	
Three Phase LT CT meters	No Meters	0	0.08
	Defective Meters	66	
	New Defective Expected	5	
	Electromechanical Meter	0	
Three Phase HT CT meters(11kV/110V)	No Meters	0	8.89
	Defective Meters	1,422	
	New Defective Expected	15	
	Electromechanical Meter	0	
Three Phase HT CT meters(33kV/110V)	No Meters	0	0.44
	Defective Meters	35	
	New Defective Expected	2	
	Electromechanical Meter	0	
Grand Total		3,86,301	54.29

Cable Requirement:

In “no meter” and “defective meter” cases, it is expected that in majority of cases will be there in which cable replacement will be required on account of defective or poor condition of cable. It is pertinent to mention here that armoured service cable will be used as they are more robust and their failure rate is less as compared to unarmoured cable.

Metering Accessories requirements:

Below mentioned accessories are mandatory for installation of meters and to ensure communication of right revenue meters. These are Modems, Polycarbonate Box, Seals, Terminals etc.

To maintain the uniqueness in seals, embossed and laser printed nos. will be used on poly carbonate seals. In addition, separate colour seals will be used in different circles to ensure seals are not misused in other geographical area. Further, manufacturer specific identification marks will be provided to identify duplicate seals.

In near future, we are going to introduce talk back seals which have special composition of material, which can be cannot be duplicated. The genuineness of the seal can be identified by using a scanner provided by manufacturer.

Seal

Polycarbonate Bus Bar and Distribution Box

Proposed Initiative for Smart meter installation in High end consumers and DTR

It is essential to install meters at Distribution transformers for carrying out energy accounting to identify high loss areas. This will help in making strategic plans to reduce the AT&C losses in specific pockets. Smart Meters will be installed on Distribution Transformers of 100 KVA & above in a span of next three years.

Further, the data recorded through DT meters will help in improving the network efficiency by optimizing the loading on the transformers and balancing of load on the LT feeders emanating from the transformers. Accurate information about transformer loading will help in taking corrective action in time to prevent transformer failure on account of overloading.

To leverage the latest metering technology in Energy auditing at DT level, it has been envisaged that Smart DT meters should be deployed. This will enable DT level energy auditing and in developing area specific strategy to reduce losses. This will enable real time alarms of Power failure and over loading, thus enabling reduced time of restoration of

supply and saving of transformer from burning. It will be PoC before full scale deployment of AMI project in future.

It is pertinent to mention here that the total cost of static meter Vs Smart Meter for DT excluding backend cost is nearly same, besides having many more advantages by putting Smart DT Meters in circuit.

Proposed Initiatives for accurate and timely Meter Reading:

Meter reading, billing and collection being a monthly activity with reflection to customer service delivery, it demands highest priority with respect to Quality and accurate service delivery. The same will not be feasible without adoption of technology in whole value chain of reading, billing and collection.

In order to improve meter reading, billing, collection cycle, the present reading cycle is planned to be staggered across full month in place of 15 days prevailing practice with due changes in the billing system.

To improve the quality of meter reading, reduction in provisional billing and timely generation of bills, following conditions are proposed in flat rate contract:

- Meter Readers will be engaged in Meter reading activity for full Month. This shall in turn improve the consumers reach out and actual reading based bills can be increased. In addition to this reading staff will get full month employment results in higher earning for them. Strict monitoring and control mechanisms for adherence to the reading schedules to be introduced by deployment of professional staff.
- To improve the efficiency of agencies, we propose for differential rates for the rural areas having low density of population and difficult terrain, which will result in incentivizing agencies for actual reading based bills.
- Additional information related to Theft and other Premises conditions will be captured from site.
- All Spot Bill and Non Spot Bill customers meter reading will be catered along with bill distribution to Non- Spot billing customers.
- To reduce the provisional billing, multiple follow up reading will be ensured.
- This contract will encompass the Door to door Collection and Bill distribution along with Meter reading Spot Billing.

In addition to above, following initiatives are planned to be rolled out to enhance Meter Reader productivity.

- Incentive scheme & Monthly R&R awards to each Meter reader for Exceptional/Good Performance based on high productivity, less number of customer complaints.
- Monitoring of Time Stamp Data of Meter Readers so that per day productivity of meter reader can be increased and gaps can be identified.
- Safety Equipment's will be provided to BA Staff such Tester, Gum for Notices pasting, Duster rain coats Boots in Water logging areas, Ladder for Meter at height cases to ensure 100 % safety.
- The possibility of providing cycle/two wheelers for covering large area will be explored.

In order to reduce the issues pertaining to quality of meter reading and customer complaints pertaining to meter reading issues due to human errors, Optical Character Read (OCR) is proposed which will ensure high level of accuracy in existing meter reading and billing system.

Steps involve in OCR is as follows:

1. The photograph shall be captured by Meter Reader from meter display unit which will be automatically saved in background with converted reading results.
2. The converted reading will be displayed to meter reader, meter reader either accept the converted reading or punch the reading and application compares punched reading with the converted reading. If there is a mismatch, it will ask for re-punching of meter reading.
3. After re-entering the reading, application will generate the bill on the punched reading and flag the cases for quality check at the backend in case it is different from converted reading.

Self Help Group

Govt. of Odisha (GoO) has approved Self Help Groups in Energy Franchise Agreement (SEFA) for collection of Energy Revenue and allied activates in Rural Area. In-line with GoO direction, SHG are being engaged in Meter Reading, Billing and Collection process in rural area.

Productivity and Quality of meter reading brought by SHG along with Collection activity will be reviewed in order to identify the impediments which comes in the way of completing the process in a timely manner. Accordingly, necessary interventions will be

planned to roll out in a systematic for effective compliance to the process and evaluating possibility of enhancing the scale of SHG engagement in near future.

Consumer Indexing

Consumer Indexing (CI) is proposed for identifying exact location of the consumer through which feeder, or transformer, or circuit number and or pole consumer is being supplied or what is the consumption pattern of a particular segment of a consumer. Accordingly, database of Consumers to be developed based on the outcome of door-to-door survey and the consumers related records available.
With the Help of Consumer Indexing, walk Route planning/ walking Sequence of meter readers can be planned which will help in more productivity of meter readers in same working hours and Collection management. Further, CI will help in proper tracking and updating of unauthorised and non-registered connections in to current database.

The information about physical condition of meter, Operational status of meter, sealing Status/theft/ Anomalies can be identified which will result in AT&C loss Reduction.

Proposed Initiatives for enhancing Collection and motivating customers to make payment at counter or online:

Payment process is a monthly activity, it demands highest priority with respect to timely and accurate updation of customer payment. The same will not be feasible without digitization of complete process.

Maintaining a high cash flow in the business is one of the top priority and to ensure regular and timely collection of electricity bills through cost effective mechanism, following initiatives have been identified:

1) Regular Door to Door Collection:

Customers are habitual to make the payment after knocking by bill collector. Thus, door to door collections process will be continue. To improve the collection activities, offline payment acceptance in RCS App will be ensured. Automation of the process for entering manual receipts into the system will also be developed. However, instead of issuing the manual receipts to customer which is prone to errors, receipt will be issued through offline cash collection application (RCS) for ensuring accurate and timely updation of payment.

2) Introduction of New Payment Channels/Avenues

1. Tie up with Bank and Post Office for accepting payment will be done in order to provide multiple avenues for timely payment by customers. Payment acceptance at local shop keepers/stores through retail chain of banks/Fin-tech companies to be explored.
2. To further improve on the collection, reach out, Mobile collection van will also be introduced as pilot in few remote locations. Collection by visiting Gram Panchayat on defined date (after Munadi) through Section/Sub-Division team will be initiated.
3. Mobile App with option for online payment will be proposed in addition to UPI interface in Bill Format (SBM/Non-SBM) for payment.

3) Motivational Schemes for Counter and On-line payment

To reduce Door to Door collection and improve the collection at counter and enhance the online payment following motivational schemes will be introduced:

1. Introduction of Pay and Win scheme for Online Payment to motivate the consumers for Digital Mode.
2. Introduction of Reward for Payment at Counter (in Village Area) in different division on Quarterly Basis.
3. Tie up with wallets will be explored for providing exclusive discounts to our customers for increasing the collection through online mode.

4) Creating Awareness about usage of Existing Online/Wallets/Card options

To enhance the payment through online mode, awareness program in following ways will be introduced:

1. Display of existing Online/Wallets/Card options at Division, Sub-Division and Section Offices through Video, Banners, and Posters will be initiated.
2. Information will be placed on website and mobile application.
3. Offer's details will be printed on the bill and SMSs will be send to customers regarding all available options of payment along with online Payment Link.

Proposed Initiatives for Meter Testing Lab and Field Testing

To ensure smooth operation of Meter Management and establish a robust supply chain of meters and accessories, meter testing labs need to be developed in 03 locations i.e. Berhampur, Aska and Jeypore with new test bench facility as appraised in table below. These facilities will be developed in phased manner over a period of three years. NABL

accreditation certification of these lab will be done subsequently. In three years all 03 test labs will be under NABL umbrella.

Material	Year 1 Qty	Year 2 Qty	Year 3 Qty
Single phase 20 Position Test Bench	2 (Berhampur)	1 (Aska)	1 (Jeypore)
Three phase 10 Position Test Bench	2 Berhampur	0	0
Total	**4**	**1**	**1**

In each lab, storage facility will be required to stack meters and allied equipment. Storage space needs to be developed for proper keeping of such equipment along with minor tolls for moving these materials like manual fork lifters where ever required.

NABL Accreditation requires the following pre-requisite criterion to be fulfilled:

1. Test Bench should have valid calibration certificate with traceability to National Physical Laboratory.
2. Humidity Level should be below 85%.
3. Temperature should be 27+/- 2 Degree centigrade.
4. Impact of Magnetic Field should not be there.
5. Earthing level should be below 1 Ohm.
6. UPS for continuous supply of power to test bench, ELCB for safety of employees and Equipment in test lab and Fire Extinguishers for faire safety.
7. Luminous level should be of adequate level for reading and testing

To qualify all the above mentioned requirements for NABL Accreditation Certificate in line with IS-17025: 2019, there will be requirement of adequate civil works with proper false celling, lighting, furniture and Air conditioning.

It is pertinent to mention here that, by getting NABL Accreditation certificate, it instils confidence in the minds of consumers that meters are of high quality and accurate in recording readings.

Testing of meters in field after Installation:

To ensure the statutory guidelines of testing of meters in field, and to address the meter testing on consumer request against fast/slow meter complaints, facilities needs to be developed in all divisions of TPSODL. In addition to consumer complaints, meters will also be tested to ensure proper working of meters in field. All HT CT Meters installed at 33 KV

and 11 KV voltage level will be tested once a year and all LT CT Meters installed at 415V level will be tested once in three years.

To perform this activity in field, below mentioned equipment are required to be procured in addition to already available equipment.

REQUIREMENT FOR HT-LT METER TESTING EQUIPMENT

Testing equipment	Estimated unit cost (Rs.)	Qty. (No.)	Cost (Rs.)	Total Qty.	Total Cost (in Rs.)
		Year-1	Year-1		
LT meter- testing equipment(onsite testing)	1,10,000	20	22,00,000	20	22,00,000
HT meter- testing equipment(onsite testing)	6,00,000	6	36,00,000	6	36,00,000
HT-CTPT testing equipment	10,00,000	6	60,00,000	6	60,00,000
TRMS Value Measuring Multi-meter With high Accuracy and High Insulation Class	14,000	20	2,80,000	20	2,80,000
TRMS Value Measuring Clamp on Meter With high Accuracy and High Insulation Class	3,840	20	76,800	20	76,800
CMRI with Bluetooth, Memory 500 MB	50,000	20	10,00,000	20	10,00,000
IR+PI Value Measurement in Step of 500V to 5KV (Megger)	14,000	20	2,80,000	20	2,80,000
Total					1,34,36,800

4.4 Technology Adoption

In the “Existing Challenges” section and “Outdated Technology” sub section SCADA and IT system majorly discussed as in FY 21-22 we are going to focus on limited adoption of technology. Then in subsequent years TPSODL will gear up for technology adoption in phased manner.

Implementation of SCADA System

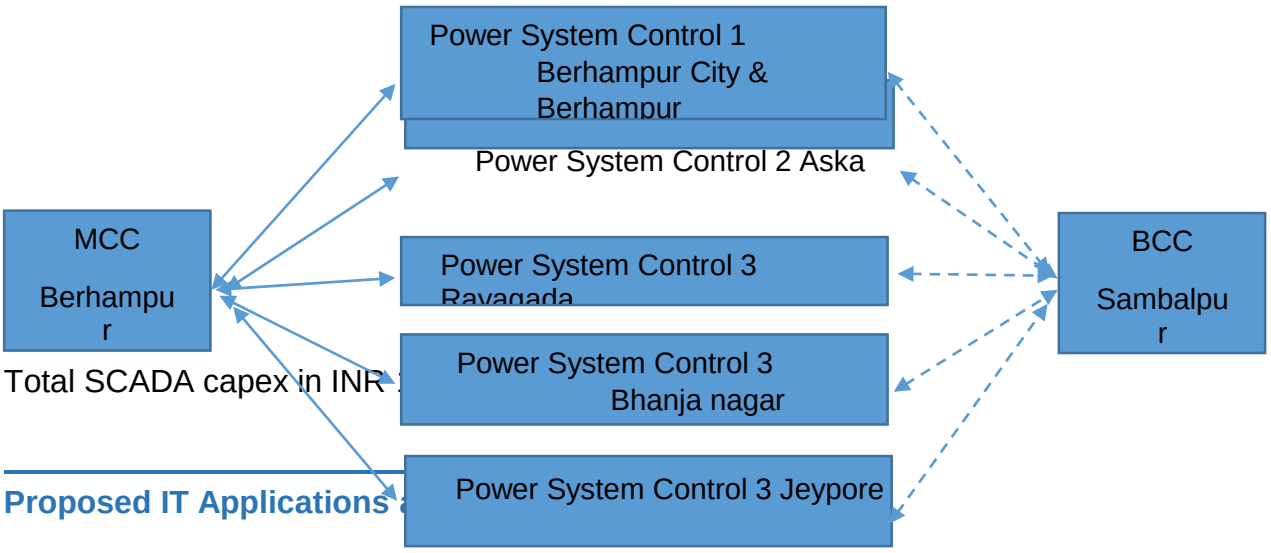
Currently there are total 224, 33/11 substations in TPSODL areas out of which 99 no. of substations are developed/being developed under ODSSP scheme and at present 69 ODSSP are taken in service

Name of PBS	Berhampur City & Berhampur (MCC)	Aska	Rayagada	Bhanjanagar	Jeypore	Total
Total Substations	**42**	**20**	**51**	**42**	**68**	**224**
ODSSP S/Stns (69 taken in service out of 99)	13	10	25	20	31	99

While Non ODSSP/Old Substations would take some time for modernization/revamping for making it SCADA ready, substations under ODSSP (being SCADA ready) can be very quickly integrated to Centralized Control Center. These substations are equipped with capabilities of being remotely managed with help of communicable devices viz. relays, IED, RTUs, etc. These new substations shall bring in higher levels of operational efficiency and system performance. TPSODL area is prone to frequent disaster situations such as cyclone, etc. and these substations shall not only help in managing the load efficiently but also reduce system downtime. Further, to harness the remote management capabilities of these substations it is must that these substations are integrated to Supervisory Control and Data Acquisition (SCADA) System. Through this system, all these substations shall be connected to a centralized control centre for the purpose remote monitoring, control & operations.

As a Phase wise approach it is considered that in FY22 69 nos. ODSSP substations would be connected to SCADA. In FY23 rest of ODSSP substations and 25 new Non ODSSP substations along with substations in Berhampur City and Berhampur and Aska Circle would be connected to control center.

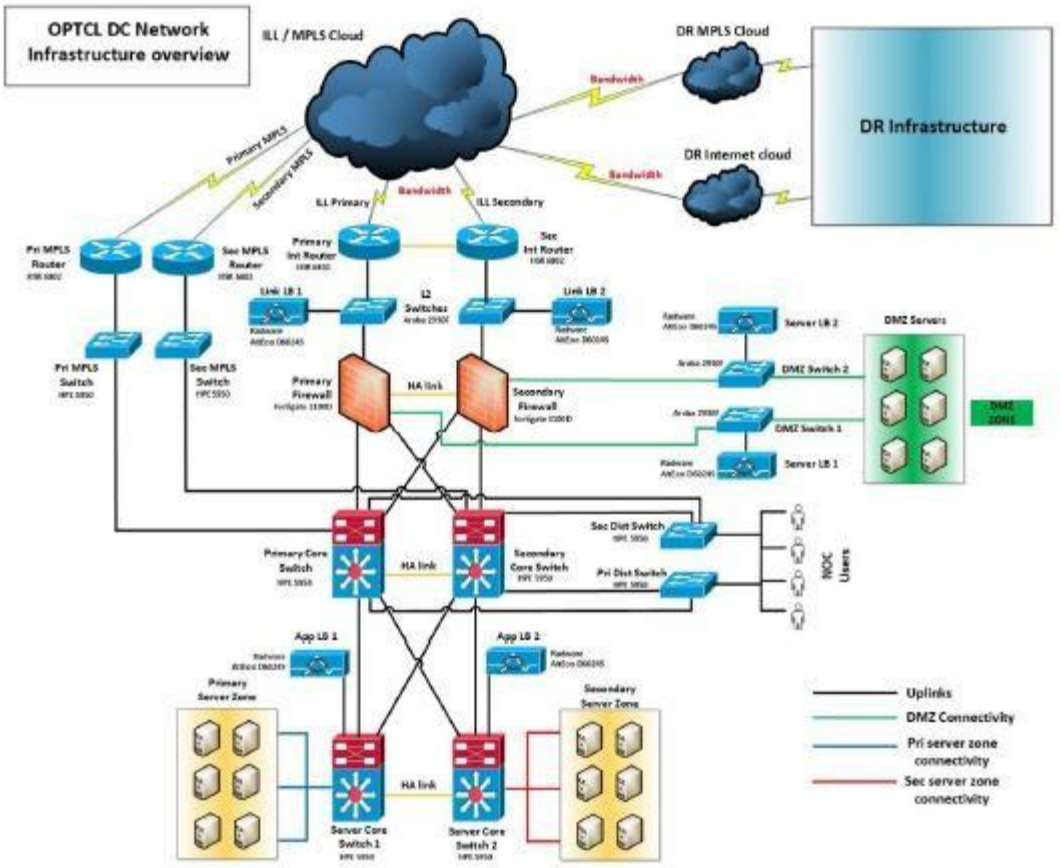
Further considering TPSODL being disaster prone area, we plan to set up both Master Control Center (MCC) and Backup Control Center (BCC) in Berhampur and Sambalpur respectively. While MCC will be set up along with proposed Data Center in Berhampur in FY22, BCC will be setup in Sambalpur in FY22. Also all Circle Offices will have dedicated Power System Control Rooms which will get feed from MCC and automatically switch to BCC in case of any disaster.



Total SCADA capex in INR

Proposed IT Applications

- In IPDS scheme Fluent Grid is implementing Customer Care Solution, Meter, Billing & Collection, New Connection and other Commercial Process, Energy Audit, MIS, Various ERP Modules. Apart from this TPSODL is planning to rollout Smart Metering MDM and HES system for all consumers above 5 KW.



Following are the key considerations for IT Landscape Transformation

IPDS Applications

a) Fluent Grid is a COTS solution with suitable for enterprise wide operation
b) As per existing scenario, 13 Lakh consumer licenses and 366 ERP User licenses are already available under IPDS. Additional consumer (12 lakh) and initially SAP ERP 1000 user licenses would be procured to enable PAN area implementation of Fluent Grid CIS/MBC and SAP ERP

c) An integrated contact centre for entire SOUTHCO area shall be dealt through the Aspect Contact Centre Solution (under IPDS implementation). This solution shall be scaled up to 50 seater call centre against current provisioning of 5 seater call center. The Core IT applications would include the following business critical modules / functionalities:

a) MBC and CIS

- New Connection
- Connection Management
- Disconnection & Reconnection
- Customer Move Out
- Metering and Material Process – Issue, Installation, Replacement, Removal and Reconciliation
- Billing – Scheduled, Unscheduled, Assessment, complaint handling
- Collection
- **SMRD** – Smart Meter Reading Devices - Mobile App for Meter Reading, Bill Distribution & follow up. This application is part of IPDS project and would be implemented by Fluent Grid.
- Customer Relationship Management
- Centralized Call Centre
- Energy Audit
- Customer Web Self Service

b) AMR being implemented by Genus

c) SAP ERP

- Material Management
- Finance and Controlling
- Plant Maintenance
- Human Capital Management
- Web Self Service
- Project Systems (This module is not part of IPDS but TPSODL put its own resource for its implementation. Module is very important for Management of executing works and Project cost control and budgeting)

d) Business Intelligence – SAP BW & BO //

- Data Warehousing
- Management Information System
- Dashboards

Applications outside IPDS Applications being implemented by TPSODL

- Customer Mobile App
- Enterprise Mobile Applications
- OT Technologies (SCADA, GIS, OMS)
- Smart Metering

SAP ERP

1. **SAP FI Module**

NON SAP or Bespoke Applications & Mobile Apps

Following In-House Applications are planned to be implemented at SOUTHCO

1. **Payment Gateway** – A centralized proprietary payment gateway is planned to be established which would seamlessly integrate with all collection touch points like website, mobile app, counters, partner agencies, mobile wallets into a single repository where verification and validation of payments would be done and would be posted to the SAP Billing platform to ensure no GIGO and keep the billing system safe and secured from direct external exposure
2. **Website** - Content management System with dynamic website would be placed with integrations to payment gateway and other key systems
3. **SOUTHCO Connect** – Mobile app which would run on all devices and with ease of use features and enablement's for customer satisfaction
4. **Suraksha Portal & Behaviour based Safety app** – As safety is a key aspect and needs to be woven in the company culture, best practices followed at Tata Power DDL will be implemented
5. **BIRD** – Bill Inward Recipient Desk is an application for submission, approval and processing of vendors invoices online, check status of the invoice and track the same
6. **Flash Application** - Platform to capture and evaluate reliability indices and a backbone to power system control team
7. **Complaint management system & Anubhav Portal** which is end to end feedback capture and CAPA closure with information dissemination to all stakeholders is planned to be implemented to bring transparency and effective response to customer needs
8. **MIS Application:** For offloading Oracle 10G server and MS Access system

Mobile Apps

1. **TPSODL Connect** - Bill Payment, Employee Verification, Outage Information, My Account enabled with Billing, Consumption & Payment History, Register & track Complaints, Smart Meter Data, Offer & Schemes, Report Safety issues, Apply New Connection, Streetlight Complaints & Energy Conservation Tips

Collection Mobile app will be integrated with the Payment Gateway application and billing system for up-to-date information

Following matrix lists the proposed requirement of licenses:

Sl. No.	Application	Total Licenses for TPSODL, TPWODL, NESCO	TPSODL	
			Allotment for TPSODL	Delta Requirement
1	CIS (MBC) Application (Consumers)	4000000	1300000	1200000
2	SAP Full use ERP Application users	1072	366	600
3	SAP Self-service users (employees)	868	294	1200
4	SAP – Payroll users	8500	2200	1000
5	MS Exchange Email	1145	312	1200
6	MS Active Directory	1145	312	1200

Benefits

Following are the key benefits of the Proposed Solution:

- Adoption of very strong integrated application landscape for enterprise wide implementation
- Ensure secured services to customers to safe guard the confidentiality, integrity and availability of IT systems
- Integrated processes with strong access control
- Drive the culture of safety and ethics among the workforce and all stakeholders
- Ensure customer delight and effective solutions for addressing needs
- Stringent data integrity to avoid any revenue leakage
- Increased Billing and collection efficiency
- Enhanced user experience with extensive standard features & functionalities
- Standardized process workflow across organization
- Centralized data base for synchronized data.
- Enhanced integration and automation capabilities with Non SAP applications
- Using SAP standard capabilities combined with customer presentment platforms for a delightful customer experience

Proposed IT Infrastructure

Current Data Center developed under IPDS scheme by OPTCL is combined data center for NESCO, TPSODL and TPWODL and only includes IPDS town's consumers which are approximately 60% of total consumer coverage. Also many other Smart Grid applications like SCADA, GIS, Meter Data Management/Head End System for Smart Metering are yet to be implemented along with many niche applications like mobile app for consumers, collection agencies and other web portal for safety management, Permit to Work, Outage Management etc. Current Data Center developed by OPTCL is not capable of scaling up to include non IPDS consumers and implementation of other Smart Grid Applications. Hence, we have proposed our own Data Center Setup in FY 22 at Berhampur for hosting additional Smart Grid applications like SCADA, GIS, Smart Metering. In FY23, existing IPDS applications hosted in OPTCL data Center at Bhubaneshwar would be moved to TPSODL Berhampur Data Center so as to scale up hardware for IPDS project implementation as mandated by rollout of Non IPDS area consumers along with IPDS town Consumers. Detailed analysis suggests that existing data center developed by OPTCL for IPDS project would be able to host only one Discom if operated for all 100% consumer base along with other Technology applications including GIS, SCADA, Smart

Metering system etc. Accordingly, as an outcome of analysis it was finalised that NESCO may keep existing data Center at Bhubaneshwar and TPSODL and TPWODL may develop their own data centers at their respective locations. As Technology transformation would also require huge focus on reliability of IT systems, own disaster recovery centers for TPSODL would be planned in Year FY23 & FY24.

Along with this, TPSODL is also focussed on digitisation till section level accordingly new laptops and additional desktops are planned to be made available to each person in TPSODL except people only engaged in field work.

Description	FY22
	Amt. (INR Cr.)
Data Center	4.55
Frontend devices (Laptops, desktops, printers/scanners)	14.70
DC Hardware	10.02

Benefits:

- Efficiency in performing critical business processes such as Metering, Billing and Collection.
- Meeting PA timelines leading to consumer satisfaction.
- Ensuring 24*7 availability of IT Services and Operation.
- Improved employee productivity.
- Scanning and Printing of official document and Bills.
- Robust and secure IT network connectivity at various locations.

Data Centre enablers provide reliable power, safe environment, Protection and optimum temperature for IT Servers.

Proposed Communication Network

While existing SOUTHCO connectivity is serving through internet bandwidth that too available till division level. There are lot of inconsistencies at subdivision and especially at sections level where employees are connecting through mobile hot spots. While connectivity is provisioned till section level under IPDS, we have found that bandwidth asked in IPDS is far less than requirement and also there needs to be a different approach for sustainable connectivity solution at subdivision and section level. Accordingly, TPSODL

is planning to have IP-MPLS connectivity at major locations i.e. Data Center, DR Center, Head Office, Central Store, Circle Offices and Division offices. Also Co-locations offices like circle, division, subdivision, section, customer care, cash collection on same/nearby locations will be connected to single link to optimise bandwidth cost. Also, TPSODL has planned to connect nearby and major locations with optical fibre to increase reliability of network and optimise bandwidth cost. For bandwidth at Subdivision and Section Level, TPSODL will currently provide good local internet connectivity till we try other sustainable solution like microwave RF etc.

Bandwidth provisioned for different locations is as follows:

Category	Link Type	Bandwidth ~ upgradable (MBPS)
Data Centre	MPLS	100 ~ 150 ~ 200
Disaster Recovery Centre	MPLS	100 ~ 150 ~ 200
Data Centre	Internet	100 ~ 150 ~ 200
Disaster Recovery Centre	Internet	100 ~ 150 ~ 200
DC - DR Replication	MPLS	100 ~ 150 ~ 200
DISCOM's Head Office	MPLS	50 ~ 100
Customer call Centre	MPLS	20 ~ 40
DISCOM's Circle Office	MPLS	10 ~ 20
DISCOM's Division Office	MPLS	10 ~ 20
DISCOM's Other Offices	MPLS	10 ~ 20
DISCOM's Collocated Sub Division Offices	MPLS	6 ~ 10
DISCOM's Collocated Section Offices	MPLS	6 ~ 10
Subdivisions & Sections	Internet	Good Internet bandwidth till permanent sustainable solution is explored.
Substations (except colocations/optical fibre connected locations)	MPLS	MPLS data Sims bandwidth till permanent sustainable solution is explored

Expenditure in Network Infrastructure: While in IPDS scheme, there is a provision to connect most of the office through Network Infrastructure, additional expenditure is planned to ensure network reliability till last mile.

Description	FY22
	Amt. (INR Cr.)
Network Infra	5.38

Benefits:

- Communication backbone network for business critical applications.
- Providing reliable power supply to consumers through availability of IT & OT services
- Ease in monitoring and control of network
- Meeting PA timelines leading to consumer satisfaction
- Efficiency in performing critical business processes

4.5 Customer services:

Customer Touch Points:

To improve the customer experience, customer touch points need to be augmented for providing ease of connectivity and single touch point at offices. Accordingly, following initiatives are proposed:

a) Establishing 50 seat Call Centre at Berhampur:

Call Centre is a convenient mode for providing service on 24X7 basis thereby customer is not required to go through the hardship of visiting the office. This demands the overhauling of existing infrastructure of call centre in order to improve the Call Centre connectivity. Keeping in mind to provide ease in customer experience, a unified Call Centre (one no. for TPSODL) is imperative to be made operational.

Considering the customer base of 23 Lakh consumers and providing service at call is the preferred mode of service in utility sector, initially, infrastructure of existing 4 seats call centre is proposed to enhance to 50 seats Call Centre at Berhampur. To encourage the customer to connect with unified Call Centre, its number will be advertised through Bill, Website and other medium for enhancing the call inflow.

Initially, Call Centre will have 15-20 agents per eight-hour shift *(average 50 agents per day)*. With the gradual increase in customer calls at unified call centre, number of agents will be enhanced to 50 agents in a shift in order to ensure connectivity at all time. It is pertinent to mentioned here that, similar experience happened whereby different industries like Telecom, Travel, and E-Commerce etc. are serving their consumers satisfactory by service delivery through Call Centre for most of customer's requirements.

It has been experienced that with the passage of time, call centre will become preferred mode of communication. Thus, increase call inflow is expected thereby it is imperative to have 2nd Call Centre location at alternate location *(after reviewing the call inflow)* in next

financial year for catering the increased call inflow. Further, it will also serve the purpose of Business Continuity during disaster situation at Bhubaneswar or vice-versa.

b) Opening of Payment cum Customer Care Centre at Division, Sub-Division and Section Office:

Currently, customers visit the office and stand in long queue for making electricity bill payment during due dates. Also, lack of basic amenities for the visiting customers like Seating space, water dispenser etc. at Section, Sub-Division and Division Level is experienced.

Payment cum Customer Care Centre is proposed at Division, Sub-Division, Section office with amenities *(based on location)* like Demarcated area for Customers with Queue Management System, Seating Space, water dispenser etc. for improving the customer experience.

Customer experience single window service in similar industries like Telecom, Bank etc. resulting in timely resolution with high customer satisfaction. It is imperative to depute designated customer care officials at customer care centre instead of current practice whereby customer visits one desk to another for complaint processing.

As the intensity of our initiatives pertaining to faulty meter replacement, Billing, Payment and Recovery may in-turn increase the customer queries, seeking clarification. Section being the nearest office for rural and town customers, some customer would still prefer to visit the office in-person for communicating related to any query/complaint. In line with this, footfall analysis will be done and manpower deputation at Section level will be reviewed in next financial year.

c) Proactive communication through SMS & Email:

Currently, SMSs are being send to limited customer that too at the time of Bill Generation only. It has been proposed that the communication through SMS and Email need to be enhanced by introducing SMS/Email at following stages:

a) Bill Generation
b) Bill Payment
c) No Power Complaint Registration
d) Commercial complaint registration and Closure
e) Due date reminder

In addition to above, communication to customer in following scenario will also contribute in enhancing collection efficiency.

a) Bill Default
b) Disconnection Notice
c) Disconnection Order Generation

d) Customer Centric Process (Process re-engineering):

In addition to above customer touch point, the organization structure and processes will be reviewed and revised to enhance the customer centricity, efficient and effective process execution and control leading to enhancement in customer experience during the life cycle from New Connection to consumer initiated disconnection.

Accordingly, the process will be mapped/designed in integrated IT system for 19 divisions for ensuring efficient processing, effective monitoring, proactive communication and timely reporting. In the system based process following initiative will be incorporated:

a. Performance Assurance System with Green, Yellow and Red indicator at executor level for prioritization of execution.
b. Escalation mechanism: Auto escalation of complaint wherever defined timeline is expired for the activity of the process.
c. Quality Check mechanism: Quality check parameter will be incorporated in the process for ensuring defect free service to customer.
d. Proactive communication at different stage of process will be send to customer.
e. Pilferage reduction through process related with material management, and meter installation.

Benefits:

Establishing Call Centre and Payment Cum Customer Care Centre will have following benefits:

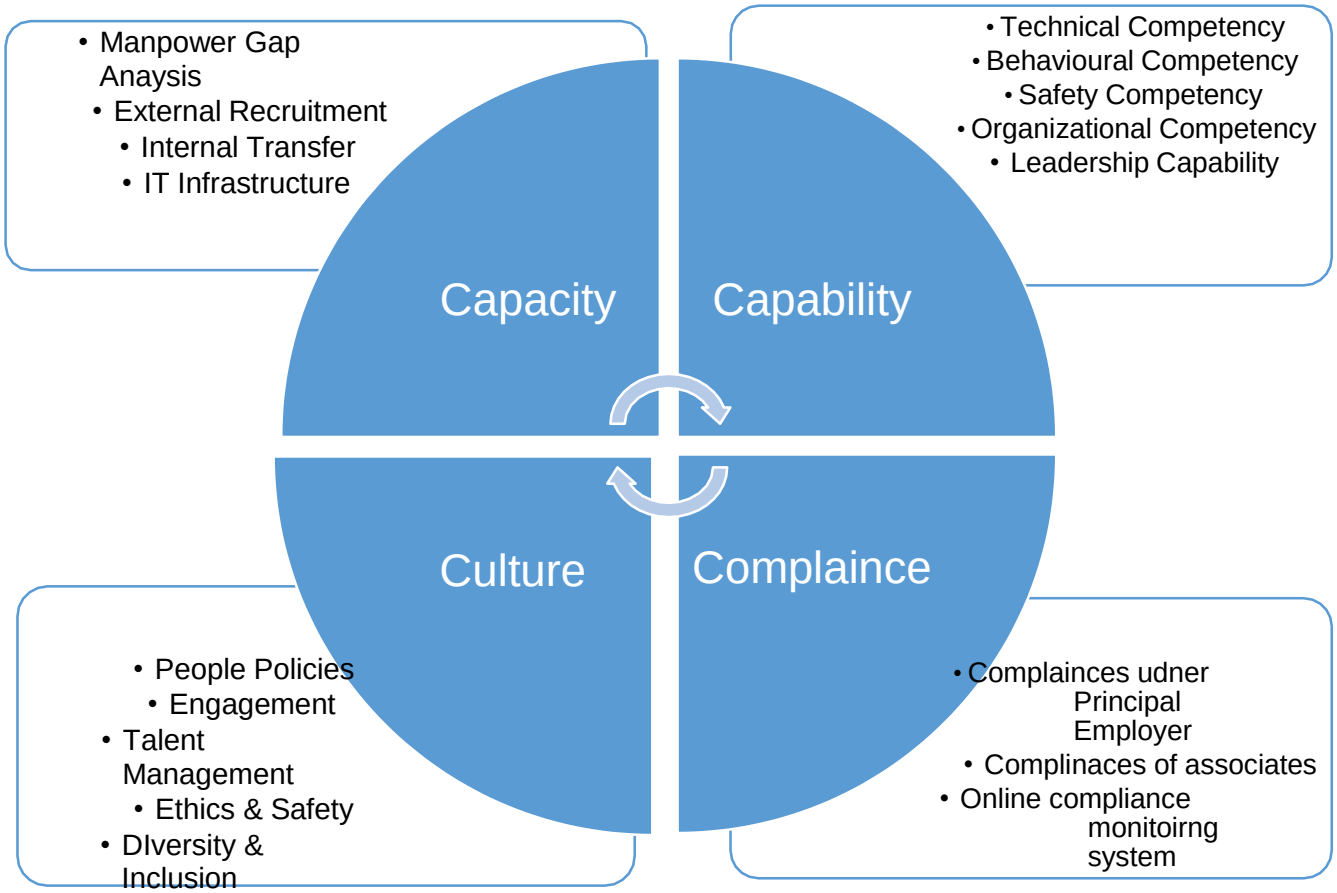
- Improved customer connectivity at Call Centre by establishing fully integrated system with the capacity of 50 seats.
- Enhanced customer convenience during bill payment, complaint registration at Payment cum Customer Care Centre at Division offices.
- Single window solution to customer at Payment cum Customer Care Centre deputed at Sub-Division and Section offices.

4.6 Human Resources

People strategy of TPSODL has been prepared keeping in mind various challenges, employee grievances, risk involved and also aspiration to convert this loss-making

organization into an engaged, high performing organization. TPSODL has prepared a booklet on Human Resource plan and can be referred for complete manpower planning. All strategic objectives have been bucketed under four broad categories with 4C theme.

1. Approach of People Management at TPSODL.



2. Capacity & Infrastructure

Strategic Workforce Planning

All existing manpower of SOUTHCO will be Transferred to TPSODL in line with license agreement. In order to enhance network reliability, network safety, fast resolution of operational and commercial complaints, many new functions like PSCC, Quality, Engineering, Consumer services, safety, security, CSR, Training & Development etc. to be

started. In addition to this, many new technologies also to be implemented for better control and fast resolution of issues like SAP module, SCADA, Mobile Apps, GIS etc.

Hence, it is essential to upgrade competency level of existing employees of SOUTHCO to work in new function and in new technology platforms. However, due to absence of fresh recruitment for last few years, option must be explored to induct competency through new recruitment or transfer from internal divisions.

Hence, while planning for manpower, TPSODL shall evaluate following aspects.

- Formation of new organization structure & Manpower requirements
- Assessment of existing manpower and their competency level
- Annual separation trend, attrition analysis & age distribution in each function / work level
- Critical competency requirement due to new technology adoption
- Transfer of competent employees from other division of Tata Power
- List of activities can be outsourced to competency third party agencies.

Based on detail analysis of above-mentioned factors, TPSODL has developed its short term and long-term manpower plan. It is estimated that 695 manpower must be recruited to fulfil the requirement over a period of two years in ration of 70% and 30%

Infrastructure Planning:

In order to successfully manage more than 1999 permanent manpower and more than 3000 business associates, TPSODL must implement appropriate technology to manage recruitment, payroll administration, statutory compliances, trust management, recognition etc. SAP HR Module apart from few other online platforms like Legatrix (to monitor compliances) and employee portal for internal communication, performance management system, travel management, guest house management to be installed in phases at TPSODL. Employees shall be equipped with Laptop / smart phone etc. wherever applicable. Some of the major activities planned for the year is mentioned below.

- ❖ Issuing laptop and smart phone to all executives
- ❖ SAP HR (Payroll) module shall be implemented and shall ensure that centralized payroll system runs for all employees
- ❖ E-learning platform shall be created or tied up with reputed e-learning agency to impart behavioural training

- Portal shall be launched to facilitate various employee services like payroll, leave management, reimbursement, Performance management, Travel and Guest house management
- All existing office building needs (All Circle office to cover in first year while Division and Sub Division Office shall be covered in subsequent years) to be renovated at least with 3S standard. Few important locations like Corporate Office, Consumer Centre, Laboratory, SCADA centre etc. to be developed at 5S standard
- To provide adequate training to newly inducted employees / associates, suitable training centre in each Circle office and at Corporate office to be developed

Capability Development

Continuous Upgradation of competency is the key success factor in this continuously changing business environment and technological revolution. Same is applicable to TPSODL also considering changes in business philosophy, new technology adoption and changing organizational structure.

Competency mapping shall be conducted across all positions and training program shall be designed and deliver through in-house development of training centre or sending executive to Tata Power (Delhi or Mumbai). Use of online e-learning training module shall be encouraged across all category of employees. Online e-learning module shall cover mostly behavioural training, Safety, Ethics etc. while technical training shall be imparted through training centres.

Considering diverse employee demography, capability development strategy at TPSODL needs to be customized keeping in mind changing business demands. Various types of training shall be finalized based on leadership discussion and presented through schematic diagram.

Safety Capability:

Each and every employee / associate at TPSODL shall be imparted basic safety induction training at the time of joining. E-learning module for safety induction shall be covered for 100% employees later.

In addition to this for long term training strategy, safety related training needs shall be identified for all employees based on job profile and this should be done in coordination with Safety department at the beginning of the year. Based on Training needs identification (TNI), annual training calendar shall be prepared for both employees and associates. Endeavour would be to cover maximum safety training through online while specific trainings can be conducted through training centre. Ownership of 100% compliance will be with divisional safety function while HR team will provide adequate support in conducting these training.

Technical Competency Development

Technical competencies are backbone for TPSODL operation since entire value proposition is linked with safe power distribution across 48751 sq. km of SOUTHCO area. Hence, training needs for technical operation shall be finalized during finalization of annual goal setting for all employees. At least one such needs must be identified for each employee. Based on TNI, annual training plan shall be finalized and faculties can be identified internally within TPSODL or from T&D cluster (Mumbai & Delhi). External faculties also can be invited based on critical requirement.

Behavioural Competency development

TPSODL being consumer driven business, behavioural competencies are also equally (if not more) important for TPSODL employees. Depending on job profile and goal for the year, one or two behavioural training needs shall be identified for each employee during annual goal setting. Newly developed Tata Power competency model shall be used as baseline during finalizing training needs.

Divisional HR Team shall ensure completion of maximum behavioural training needs through assigning courses at Gyankosh. This newly developed online e-learning platform has complete flexibility with respect to time, location and TPSODL must utilize this platform. Only in case of highly specific behavioural training, external trainer of repute shall be invited to impart training to TPSODL employees.

Organizational Training Needs & Focus Group Training (FGT)

TPSODL being part of Tata Group, is also responsible to uphold Tata values and implement various Tata management philosophies towards making it a consumer driven and performance-oriented organization apart from maintaining governance standard of Tata Group. In this context, various organizational capabilities are required to be developed for its managers and employees like TCOC / POSH / SAP / IMS / Risk Management System / TBEM etc. Apart from this, various statutory requirements need to be complied by TPSODL being separate legal entity. In this context, training on First Aid, POSH, TBEM, Labour Laws etc. must be imparted to all or focus group employees. Hence, separate training needs in Focus Group shall be identified every six months. Execution of such Focus Group training shall be done mainly through Gyankosh or hiring external faculties if such need be arises.

Leadership Competency Development:

Leadership in pipeline is always critical agenda keeping in mind multi-fold growth aspect of TPSODL, keeping in mind regular separation of experienced employee and formation of various functions. Hence, keeping in mind broad manpower planning, opportunity for junior employees and keeping manpower cost within desired limit, TPSODL must strategize in developing successors for critical positions for its future requirements. Process would comprise identification of critical position and identification of successors at the beginning of each year, identifying gaps in competencies and intervention of effective training program.

Training Plan FY 22

Type of Training	Target Group	Population Target	Training Method
Safety Induction	All employees	100%	Online / Classroom
Tata Code of Conduct / POSH	All employees	100%	Online / Classroom
Consumer Delight	Front Executives	100%	Class Room
SAP Modules	All SAP users – All Executives	100%	Class Room
Best Practices	Key Executives	Circle Heads / Division Heads	Visit to Delhi / Mumbai
SACRED – Tata Values	All Executives	100%	Class Room

Culture Building

Building desired culture is the most crucial agenda for leadership team in a newly formed organization like TPSODL. Culture is a set of rules, regulations which evolve through trial and error and shared meaning among key stakeholders. In this context, there are many cultural elements which TPSODL must focus while few specific elements are core to the organization concerned. Considering business objective, consumer expectation and employee productivity, TPSODL has identified following six elements are core cultural elements and wish to build on these elements towards making TPSODL a performance oriented & consumer centric utility across power sector.

Value System:

Tata Power has adopted SACRED value system means Safety, Agility, Care, Respect, Ethics & Diligence. Every employee / associate of TPSODL shall be aligned with this value system. Appropriate communication, training on value system shall be imparted to each employee on regular basis apart from joining induction. Those values shall be reinforced through every possible intervention like Town hall, sharing stories, leadership interaction etc. Demonstration of such values must be recognized while monitoring system shall be strengthened to ensure that such values are not deviated by any members.

Specific to Ethics, all employees must sign and acknowledge Tata Code of Conduct (TCoC) at the time of joining. Regular training and reinforcement on TCoC shall be conducted to uphold ethical standard of Tata Group. All employees / associates must be trained on Prevention of Sexual Harassment (POSH) module to ensure free and safe workplace for women colleagues.

Safety is also the core value of Tata Power and Tata Power has adopted ZERO tolerance at workplace safety including at TPSODL. All employees / associates shall be trained in various safety modules as applicable based on job requirement before actual deployment. Regular reinforcement in safety competency must be ensured through various training or workshop. Demonstration of good safety practices must be recognized while ignorance in safety won't be tolerated.

People Policies

People policies shall be backbone of TPSODL towards ensuring highly engaged and high performing workplace. Though, existing service rules / standing order as applicable to SOUTHCO employees but, TPSODL will explore and adopt best practices & policies from its other division like Delhi and Mumbai. Some of the important policies are proposed to be implement at TPSODL includes:

1. Tata Code of Conduct (TCoC), Tata Power Safety policy
2. Prevention of Sexual Harassment at Workplace (POSH)
3. Rewards & Recognition policy (Online), Fun at Workplace
4. Higher Education Policy
5. Diversity & Inclusion
6. Policy on Grievance Redressal, Whistle Blower Policy etc.
7. Training & Development (Specifically online e-learning training module)

These are some policies which would be implemented in phases with an objective of creating a safe & highly engaged workplace. TPSODL also would like to focus more on women representation in its workforce and women empowerment through various policy guidelines. Taking benefits of digital world, TPSODL shall implement various IT & IT enabled services (like web-based services, mobile app, SAP, GIS, SCADA etc.) for better consumer services. Accordingly, TPSODL shall formulate IT and Laptop orientated policies for its employees (specifically for executives). Keeping in mind continuous learning and acquiring niche skills, TPSODL shall implement training & development policy continuous competency enhancement of existing workforce. Use of online e-learning module shall be encouraged to ensure maximum participation of its employees.

High Performance & Talent Management

Building a culture of high performance is a need of survival in this competitive business world. Financial model of TPSODL has further necessitated higher productivity level and increasing bar of performance. Hence, performance management at TPSODL shall be conducted through online and annual increment / promotion of employees shall affected through annual assessment of Key result areas and Key Behaviour Attributes. Continuous monitoring of performance shall be conducted through continuous feedback. High of TPSODL. Every year, all critical position shall be identified along with high potential employees. Potential of every employee shall be assessed, and training needs shall be identified through gap analysis. Training plan shall be designed and executed during the year and efforts shall be ensured to promote all high potential employees at TPSODL. Employees shall be exposed to different job profile through internal job rotation policy.

Business Excellence

Tata Power always believe in excellence in its every operation. Taking the legacy of 100 years of rich culture, Tata Power is gearing for next 100 years through “theme” Tata Power 2.0. To achieve this challenging target and contribute Tata Power, TPSODL shall adopt Tata Business Excellence Model (TBEM) in near future. TPSODL will review all its processes and execute towards ensuring higher level of consumer delight and other business results in line with TBEM format. Some of the important initiatives under TBEM would be Quality Circle, LASER, Enterprise Process Module (EPM) development for all processes, Employer branding, Innovation council formation, Divisional Quality Index (DQI) etc.

Volunteering

Care for community is one of the core values of Tata Power and TPSODL also wish to initiate various community service related initiatives in areas of education, health, livelihood, women empowerment etc. These initiatives will give opportunity to employees in their inherent desire to giving back to society.

Engagement

Creating an enabling workplace environment and facilitating full utilization of employee potential are key strategic advantage of Tata Power. Hence, TPSODL also wish to create such working environment so that employees' / associates' engagement level reach to benchmark level. TPSODL wish to implement engagement model like Aon Hewitt and drive various engagement initiatives in areas of intellectual areas, fun at workplace, social & sports engagement, employee recognition, leadership communication. TPSODL wish to ensure that all its employees work at highest level of engagement and raise its excellence level on regular basis.

Culture Building Initiatives are tabled below:

Initiatives	Short Term Activities
Employee Engagement	Structured Leadership communication (Town hall, Digital Communication, Meet your CEO)
	Rewards & Recognition to employees
	Social Engagement, Sports calendar, Cultural Clubs, Ladies Club,
	Grievance Redressal Mechanism, Focus Group Discussion
Values	Implementing Tata Value System (SACRED) and reinforcing at every level of hierarchy
	Ethics Structure & Committee formation, Local Ethics Councillor, POSH committee & representative finalize, Annual Ethics calendar
	Adequate communication / awareness on Ethics / POSH with display
People Policies	Mentioned earlier
Talent Management	Competency mapping for Executives
	Competency Mapping for non-executives (Long term)
	Competency mapping of Grid Operators (Outsource)
	Job Description, KRA for all Executives; Non-Executives planned for long term

	Succession Plan for employees retiring during next 3 years
Business Excellence	L3 level process finalization – Only key processes; Balance processes planed for long term
	Participate in Tata Business Excellence Model (TBEM) in long term
	Quality Circle, Innovation council formation
Employee Volunteering	One blood donation camp to be conducted
	Tree Plantation in each circle to be organized
	School Education through volunteering – One school during FY 22 and at least one school in each sub division planned in long term.

Compliance

TPSODL, a new legal entity with almost 1999 permanent manpower and almost 3000 business associates through different agencies will be required to comply various statutory requirements as per applicable labour laws. Hence, TPSODL, will adopt two interlinked approaches to manage its statutory requirements as below.

Part 1: TPSODL as Independent legal entity and applicability of all acts including that of Principal Employer. Accordingly, legal ownership of compliances for all vendors engaged by TPSODL as Principal Employer. All compliances for TPSODL will be monitored through Legatrix software and shall be ensured all compliances timely.

Part 2: TPSODL will engage many business associates and separate cell shall be set up to monitor compliances under various laws through online. Strict monitoring measures will be set up to ensure not only compliances but also to workers' exploitation apart from workplace governance.

Major Compliance related Activities are tabled below:

Compliances / Initiatives	Activities
Registration under RPFC for PF and ESI	
Registration as Principal Employer (CLA)	Contract Labour Act (Abolition) 1970

Registration as Principal Employer	Building & Other Construction Workers Act 1996
Registration in Employment Exchange	
Online compliance Monitoring Software	New Software to be purchased
Compliance data of agencies to be verified for workers	One third party shall be engaged to monitor online compliances for all workers like Min wages, PF, ESI , Labour Welfare etc.

A separate booklet on Human Resource Plan has been enclosed along with this document.

4.7 Strengthening Civil Structure

TPSODL currently have offices in all the six circles, divisions, subdivisions & Sections. Strengthening of these existing structures will ensure proper utilisation of residual life of the property. Currently the Offices in Berhampur City circle Rural Circle & Corporate office are accommodating office and associated services staff. The challenges exist in using current buildings and infrastructure to accommodate more employees and providing a hygienic, well ventilated and spacious working environment with minimum expenditure. It may also be noted that conditions of offices & other structures need immediate rehabilitation of the said buildings on priority.

Corporate Office at Courtpeta, Berhampur: The office space is currently crowded and haphazardly planned for seating arrangements, moreover, most of the circulation area has been occupied with files, documents etc. In view of more people joining the office it will be difficult to accommodate the extra manpower in the same arrangement.

Training Center at Ambagada Berhampur: The existing building is a single story shed (3800 sqft) constructed in 1998 and is in poor condition. Currently building accommodates to Meter testing laboratory & Training Center for safety training and most of the space is utilized for record keeping / storage of meters. The roof of building is damaged at many places and needs rehabilitation. Water leakage & seepage is observed from roof, walls and floors. The existing building requires urgent replacement of rehabilitation of existing structure to enhance its structural strength and internal modification to accommodate seating space for 25 employees.

Old Store Shed at Ambagada Berhampur: The existing old shed is a single story double height shed (3500 sq. ft.) constructed in 1970, located at Ambadada - Berhampur. This

shed was earlier used as Store but has been abandoned since the Central Store has become operational at Khajuria. Currently, the shed is in dilapidated condition as same remained unutilized since long and require urgent rehabilitation of roofing, Structural & civil repairs. This shed can be used after rehabilitation and renovation.

Central Stores at Khajuria Berhampur: Currently the store is located centrally at Khajuria, Berhampur. All the materials required by 6 circles, Divisions and sub-divisions are provided from this location. Currently, the sheds are in dilapidated condition especially in the aftermath of Cyclone. These sheds remain unutilised since long and require urgent roofing & civil repairs. There are no sheds to store for storage of Consumable materials and indoor items after repairs. Also there is no storage yards, sheds for storage of costly identified scrap materials. Construction of Roads, drains, paving of area for storage of materials is essential.

Store shed: The roofs of existing sheds at various locations are badly damaged and beyond repairs due to cyclone effect. Also, due to zero maintenance of the sheds, the flooring and walls have developed cracks which needs urgent repairs and painting, with replacement of doors and windows. It is also envisaged that for smooth operation and maintenance we need to have decentralised stores at all six electrical circles. We need to construct two new sheds at Jeypore and Rayagada Circle to resolve logistics problem.

Furniture: Work- station, Conference Table, Meeting Table etc. which are bare necessity for day to day operation in offices are proposed. The furniture proposed are Modular in nature and can be dismantled and reassembled at any other location. Such Items can be subsequently, shifted to Divisional/sub-divisional offices.

S.No	Activity Description	Objective
A	Creation of office space at Corporate Office, Training Centre at Berhampur	To provide additional seating space for employees.
B	Structural Strengthening and remodelling of Old Stores shed at Ambagada	To enhance structural strength to old 1970 building and remodel it so as to have added seating space.
C	Structural strengthening of existing store Sheds.	To increase the utility of badly damaged roofs of sheds and make them serviceable, Currently, they are lying abandoned & can be used for indoor material.

S.No	Activity Description	Objective
D	Construction of new Store Shed	Circle stores do not have sheds in good conditions for storage of materials. Also, proposed to have drainage, roads, paving , Lighting arrangements, storage bins etc. for proper accounting and storage / delivery of materials.
E	Furniture	Work station, conference table, meeting tables etc. for providing employee friendly environment.

5 Capital Expenditure Plan

Detailed Capex Plan is filed to Hon'ble Commission for a total value of approx. 408.47Cr which includes detailed plan and cost estimation for each activity proposed in the plan. Brief details of the Capex Plan are mentioned below:

TPSODL has taken over the assets of erstwhile SOUTHCO on "as is where is" basis. These assets are not in good operating condition and in a large number of cases, the required safety equipment are not in place. Further the network is in dilapidated TPSODL has identified a number of challenges related to Safety, 33KV/11KV/0.415KV network, Metering infrastructure, Customer Services, and Technology usage. These challenges are planned to be addressed through a systematic investment plan by TPSODL. The proposed Capex plan represents a justified and efficient level of total capital investment estimated by TPSODL to meet the service obligation, improving safety, reliability of network, level of service standards. A total revamping of the network is required for providing reliable and quality power supply to the consumers. The network demands urgent refurbishment like re-conductoring of feeders, replacement of poles, provision of intermediate poles, replacement of joints, enhancing system protection, replacement of sick equipment and network augmentation to improve the reliability of power supply. The other interventions include installation of state of the art equipment to ensure better operation and control of the network and faster restoration of supply in case of interruptions.

Faulty Energy Meters replacement, introduction of advanced technologies and analytics will be prime focus area for improving the accuracy of the meter reading, contain tampering of the meters and providing better and effective customer services. Leveraging meter technology and conducting drives of meter replacement and installation of meters at distribution transformers shall be critical for improving energy accounting.

During the initial phase, capital investments are 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 and a modern, rich, and conducive work environment to all employees for better performance.

1) Statutory Compliance/Safety
2) Loss Reduction
3) Reliability Improvement
4) Load Growth
5) Technology & Infrastructure

For each of the above cost centers, the investment has been further segregated in the following sub-centers:

1. Statutory & Safety

i. Provision of Safety Equipment & PPEs to workforce
ii. Cradle guard at major road crossings
iii. Fencing of 11kV Distribution Substations (DSS)
iv. Boundary wall for Primary Substation(PSS)
v. Establishment of Meter Testing Lab.

2. Loss Reduction

A. Defective Meter Replacement

i. Input Energy Monitoring System (ABT/AMR)
ii. Defective Meter Replacement
    a. Burnt Meter Replacement
    b. Faulty Meter replacement
    c. Electromechanical meters Replacement
    d. Meter Installation at no Meter cases.
iii. LT Bare to LT ABC Conversion
iv. Demand Side Management

3. Reliability Improvement

i. 33 kV Network refurbishment

ii. Installation of AB switches in 33kV & 11kV feeders for sectionalisation at different locations
iii. Refurbishment/Life enhancement of 33/11kV Primary Substations (PSS)
iv. 11 kV Network refurbishment
v. DSS Refurbishment
vi. Installation of RMUs, Auto Reclosures, Sectionalizers , FPIs & AB Switches
vii. Installation of LV protection at DSS
viii. Trolley Mounted Pad Substations
ix. Package Distribution Substations

4. Load Growth

i. Network Addition or Augmentation (11 kV Lines, Distribution Transformers, Power Transformers & LT lines)
ii. Energy Meter Installation for all new Connections

5. Technology & Civil Infrastructure

i. Installation of Smart Meters along with back end IT Infrastructure
ii. Augmentation of IPDS Software licenses pan TPSODL
iii. IT Infrastructure (H/W & Field office infra for augmentation of IPDS application licenses)
iv. Communication Network Infra
v. SCADA Implementation
vi. GIS Implementation
vii. Security System in Central Store
viii. Improvement of Civil Infrastructure
ix. Admin assets

5.1 Safety & Statutory compliance

5.1.1. Statutory & Safety compliance in Network.

In TPSODL, every area has different characteristics and thus have different challenges. However, some common challenges which were witnessed during our limited site visits, appears to be unsafe network from safety point of view to our employees, public and animals.

During the preliminary analysis, the following issues were observed and the same needs urgent attention to make the network safe, reliable and statutory compliant:

- Unsafe horizontal / vertical clearances in 33 and 11KV feeders. **(Regulation 58)**
- Damaged Conductor / Poles / Stay wire / Boundary walls.
- No or poor earthing of the Poles & Structure. **(Regulation 41 & 72)**
- Absence of cradle wire in overhead MV feeders. **(Regulation 70)**
- Damaged / Missing fence at most of the Distribution Transformers Substations & 33/11KV Primary Substations (Structures) resulting into easy accessibility for Public and animals.
- Non-availability of Safety Equipment & PPEs.

Apart from high number of Accidents; other major problem is high number of DT failure and extremely high number of interruption at 11 kV and 33 kV level due to dilapidated network condition. This affects the supply system very badly.

5.1.2 Establishment of Meter Testing Lab:

At present, there are 3 labs in TPSODL where meter test bench is installed for testing of Single Phase and Three Phase meters. These test bench are in poor condition. To ensure high quality in bulk supply of meters, TPSODL has estimated that meter testing lab has to be developed in every Circle in next three years, these labs will ensure the statutory requirement of meter testing across pan TPSODL. Three years plan for developing three labs is given below, however in current DPR, CAPEX for activities in year one has been taken.

Relevant Clause as per Supply code 2019: As per the clause no. 102 (d) of OERC Supply code “The licensee/supplier shall set up appropriate number of accredited testing laboratories or utilize the services of other accredited testing laboratories. The licensee/supplier shall take immediate action to get the accreditations of their existing meter testing laboratories from NABL, if not already done”

Capex requirement for Statutory & Safety:

For FY 2021 - 22, TPSODL propose capital expenditure of INR 61.37 Cr to ensure Safety and Statutory compliant network. Since the geography is vast and huge investment is required to make the network fully compliant to safety and statutory standards, and since this huge investment is not possible in a single year, TPSODL shall address network deficiencies at critical locations. Table below suggest the activities to be performed along with funds required under Statutory and Safety Head.

S. No.	Major Category	Sub Category	Activity	DPR Cost TPSODL (In Cr.)
1	Statutory & Safety	Statutory & Safety	PPEs, Safety & Testing Equipment	19.98
			Cradle guard at major road crossing	8.53

			Fencing of Distribution substation (DSS)	15.00
			Boundary wall for Primary substation(PSS)	15.40
			Establishment of Meter Testing Lab	2.47
		Total (A)		**61.37**

5.2 Loss Reduction:

During limited site inspections, energy meters were not found at consumer's premises which were energized under Saubhagya scheme, an initiative of GoI. Further, at number of places where energy meters are installed and available at site, the same are not functioning properly. The above issues are resulting into reduction in billing efficiency, high AT&C losses, increased provisional billing, defective bills, and increased consumer complaints leading to customer dissatisfaction. Errors in bills leads to non-payment of bills and thus hampers the collection efficiency.

Further, it is also observed that, meters are not installed on all Distribution Transformers leading to no energy accounting at DT level. As a result, it is not possible to determine the level of energy input and hence the AT&C losses at DT level. Energy accounting provides the means to identify areas of leakages, wastage and inefficient energy usage.

Therefore, in this head, following activities are planned for execution:

- Replacement of Burnt / Faulty / Electromechanical Meters
- Installation of DT meters for Energy accounting
- Input Energy Monitoring System(ABT/AMR)
- LT bare to ABC Conversion

The CAPEX to cover all the existing points of input energy and creating a complete backbone with communication link is estimated to be around R 10.97 Cr which will be spent in year FY 2022. The benefits will start accruing immediately.

Sub Category	Activity	DPR Cost TPSODL(In Cr.)
Input Energy Monitoring System (ABT/AMR)	Input Energy Monitoring System (ABT/AMR))	10.97

Proposed Initiatives for replacement of Defective/Mechanical / No Meter

To curb the loss level in TPSODL, it is proposed that in next three years all No Meter, Defective meters shall be replaced with Static Meters. In no meter or defective meter cases, it is estimated that service cable replacement would be required wherever found defective or missing and thus certain percentage of service cable is also considered in plan. For installation of Meters, Meter boxes will also be required to protect the meters from energy theft and environmental hazards.

In FY 21-22, it is planned to replace around 3.86 Lacs faulty meters which are directly contributing to the losses and accordingly Capex investment of Rs 62.98 Crores will be incurred.

Following table enumerates the requirements of meters along with its supply cost and installation cost which are considered for replacement in next 3 years for as loss reduction in different categories of meters.

Type of meter	Reason for replacement	Qty. - (No.)	Total Cost (In Crores) Supply + Installation
Single Phase meters	No Meters	2,129	43.27
	Old Defective Meters***	3,00,000	
	New Defective Expected	77,589	
	Electromechanical Meter	0	
Three Phase Whole Current meters	No Meters	0	1.62
	Defective Meters	4,808	
	New Defective Expected	230	

	Electromechanical Meter	0	
Three Phase LT CT meters	No Meters	0	0.08
	Defective Meters	66	
	New Defective Expected	5	
	Electromechanical Meter	0	
Three Phase HT CT meters(11kV/110V)	No Meters	0	8.89
	Defective Meters	1,422	
	New Defective Expected	15	
	Electromechanical Meter	0	
Three Phase HT CT meters(33kV/110V)	No Meters	0	0.44
	Defective Meters	35	
	New Defective Expected	2	
	Electromechanical Meter	0	
Grand Total		3,86,301	54.29

Further there will be requirement of service cable, modem, polycarbonate seals etc.

LT Bare Line to ABC conversion:

In TPSODL, LT network plays important role of the Power supply distribution system and spread across TPSODL licensed area for power distribution. The bare overhead used is more prone to transient fault due to tree branch touching or any foreign particle fall on the line. Due to this, consumer's experiences frequent fault however, this can be reduced by structured maintenance. Moreover, Bare conductor is easier to maintain and faster to restore during any fault but at the same time, it requires more clearances. These bare conductor lines are more subject to electricity theft through direct hooking and thus causing revenue leakage in the system.

Although, LT AB cables exists in the system and constitute approx. 70% of the total LT network across TPSODL.

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 & stakeholders.

LT Bare Line to ABC conversion would encompass following scope:

1. LT Bare shall be replaced with LT ABC.
2. Erection of mid span pole.
3. Earthing of every 5th Pole and poles which are installed across the road.
4. Erection of Mid span pole wherever the span length is more than 40 Mtrs to reduce the Sag.
5. Installation of Distribution Box and removing of jumbling of service line cables

Benefit to customer:

By executing the proposals as made in this head, 415V network can be strengthened and we would be able to serve our consumers in much better way. Following benefits are envisaged from this investment:

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

To summarize, TPSODL proposes capital expenditure of 90.93 Cr for Loss reduction.

CAPEX requirement for AT&C Loss Reduction

S. No.	Major Category	Activity	DPR Cost TPSODL(In Crores.)
2	Loss Reduction	Input Energy Monitoring System (ABT/AMR) -IEMS	10.97
		Replacement of burnt, Faulty and Electromechanical meters and meter installation at no Meter cases	62.98

		LT Bare to ABC conversion	11.98
		Demand Side Management	5.00
		Total (2)	**90.93**

5.3 Network Reliability

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

- Identification and replacement of faulty / sick equipment causing frequent trippings.
- Introduction of technology to ensure faster restoration of supply in case of any tripping.

Various initiatives are proposed to improve the reliability of power supply in the network are given below

i. 33 KV &11 KV Network refurbishment to ensure Horizontal / Vertical clearances and as per Load flow distribution planning done by GRIDCO.

ii. Primary Substation(PSS) and Distribution Substation (DSS) Refurbishment

iii. Installation of Auto Reclosure & Sectionalizers in important and critical feeders.

iv. Installation of Communicable overhead FPIs for faster identification of faults.

v. Installation of LV protection at Distribution substation to arrest the LT faults at LT level itself instead escalating to the 11KV feeder level.

vi. Replacement of Battery & Battery Charger to strengthen the DC protection system in 33/11KV Grid Substations.

vii. Installation of AB switches at 33KV & 11KV lengthy feeders for improving Reliability during planned / unplanned outages.

33 KV & 11 KV Network Refurbishment

33KV or 11KV feeders are important asset for a distribution utility which connects various substations and provide power to end consumers. Proper upkeep of the feeders is important for ensuring safety and reliability of power supply. During site visits, it was observed that most of the 33KV / 11KV / LV lines are in very poor condition and pose safety threat to the human beings and animals.

To ensure safety of equipment and human beings / animals, refurbishment of 33KV, 11KV and LV lines is urgently required in phase manner starting from critical area where movement of public / animals is high. Refurbishment job would encompass following scope.

1. Straightening of tilted poles,
2. Replacement of damaged poles, insulators and accessories
3. Earthing of every 5th Pole and poles which are installed across the road.
4. Erection of Mid span pole wherever the span length is more than 50 Mtrs to reduce the Sag.
5. Restringing of conductor to increase the vertical clearance by reducing the sag.
6. Replacement of the conductor in the sections having multiple joints.
7. Installation of cradle guard wire in the feeder crossing roads. While installing the cradle guard wire, pole across the road shall be converted into double pole structure to increase the height and provide mechanical support to the section. All conductor in the section crossing the road shall be replaced if found to have even single joint.
8. Replacement of weak Jumpers and connections
9. Replacement of binding wire joints with wedge connector to remove hotspots.
10. Installation of Danger boards, Anti climbing devices, stay sets etc. to ensure safety & statutory compliance.

Refurbishment of Primary Substation (PSS)

To strengthen the existing network, it is suggested to replace the sick equipment in the existing network. Further, this replacement will help in utilization of the resource to the optimum level, managing the load in case of any exigency and mitigate the issue of overloading etc.

Additionally, 12.15Cr budget is proposed for Sick equipment replacement to improve reliability of Power supply and to ensure better operation & control of the network & faster restoration of supply in case of interruptions. Following activities are planned:

1. Replacement of the sick equipment in PSS.
2. Replacement / provision of AB switches.
3. Provision of new / additional earthing as per site requirement.
4. Carry out civil works as per site requirement.
5. 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.
6. Installation of palm connectors at HT and LT side of Power Transformers and ensuring that all connections are through palm connectors.
7. Replacement of all undersize bus bars with standard size to remove hotspot.
8. Installation of fencing to safeguard the equipment and to maintain safety clearances.

9. Carry out civil works as per site requirement.

Battery & Battery Charger:

During the field visits, it is learnt that some of the Battery and Battery charges are not operational and needs immediate replacement. Replacement of Battery & Battery Charger is essential to strengthen the DC protection system in 33/11KV Grid Substations to improve reliability. Installation of Battery & Battery charges have been proposed to strengthen the DC system in the 33/11KV Grid Substations. In this year, 50 sets of Battery & Battery chargers are proposed to be replaced.

Refurbishment of Distribution Substation (DSS):

Distribution Substation (DSS) comprises of various equipment which perform specific task to ensure delivery of power supply at appropriate voltage to the end consumers.

TPSODL proposes for 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.
- Installation of palm connectors at HT and LT side of Distribution Transformers and ensuring that all connections are through palm connectors.
- Replacement of all undersize conductors with standard size to remove hotspot.
- Replacement / provision of AB switch, DD Fuse units, LT ACB or 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.

Installation of Auto reclosure / Sectionalizers, FPI, RMU and AB switches:

Auto-reclosures are very efficient in minimizing outages from transient faults on overhead feeders. When installed along with Sectionalizers, they can isolate the faulty sections of the feeder while re- energizing the rest of the feeders. In case of very long circuits, the sectionalizers can also be connected in series.

In order to improve reliability of power supply at such substations, installation of auto-recloser, sectionalizers and Ring Main Units (RMU) is being proposed in phase manner. In first year a total of 12 numbers of autoreclosers and 36 numbers of sectionaliser have been proposed for installation.

TPSODL is also planning to install 18 numbers of RMUs to improve reliability. AB switches are proposed at lengthy 33KV & 11KV Feeders to have provision of isolation of section during any planned / unplanned outages. This will help in improving the reliability since currently entire feeder is forced tripped for such outages.

Fault Passage Indicator: Installation of overhead Fault Passage Indicators (O/H FPIs) is proposed for faster identification and restoration of faults on long 11KV feeders with multiple sections. In first year, 200 numbers of communicable FPIs are proposed for installation on pilot basis.

S.No.	Description	UOM	Priority based requirement (Nos.)	Quantity Considered in 1st Phase (Nos.)	Amount in Cr
1	Supply and Installation of Auto-recloser	EA	163	12	2.04
2	Supply and Installation of Sectionaliser	EA	260	36	3.09
3	Supply and Installation of FPI	SET	New product Introduced	200	1.34

4	Supply and Installation of 3 Way RMU	EA	102	21	2.26
5	Installation of AB Switch on 33KV Feeder	EA	494	70	2.23
6	Installation of AB Switch on 11KV Feeder	EA	2788	180	5
Total					**15.96**

Installation of LV protection at DSS

During site visit it was observed that there are no LT Protection at DT secondary side so any fault occurred during in 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 effected by the fault, which in turn reduces the reliability of the system.

In order to reduce the effect of LT fault on 11kV System, it is recommended to install the MCCB on Pole Mounting substation for 100 kVA and 250 KVA Distribution Substation and ACB on 500 KVA Substation.

S.No.	Description	UOM	priority based LT Protection requirement in DSS (Nos.)	Quantity Considered in 1st Phase (Nos.)	Amount in Cr
1	Supply and Installation of MCCB-100 KVA	EA	3282	500	3.33
2	Supply and Installation of MCCB-250 KVA	EA		400	4.17
3	Supply and Installation of ACB-500 KVA	EA		140	2.59
Total			3282	**1040**	**10.09**

Proposal for Trolley Mounted Pad Substation and Package Distribution Substations:

Trolley Mounted Pad Substation

In case of Refurbishment of a DSS or Distribution Transformer failure, about 10-12 hrs. are required to complete the total job of DSS refurbishment or change of DT for which the supply remains off for whole durations leads to customer dissatisfaction and loss of revenue.

Mobile trolley mounted Pad substations can rapidly restore electrical service. Compact and easy mobility for emergency Service, forced outage repairs, temporary service restoration and regularly scheduled maintenance. Supply interruption for this considerable amount of time leads to customer dissatisfaction apart from loss of MUs that would have been consumed. Inclusion of some Trolley mounted Pad substations will lead to: Flexible and faster temporary restoration-Total time for restoration is equal to that required to move the trolley at the location and to connect the HT and LT jumpers. In this proposal, TPSODL intends to procure 6 Nos. 630 kVA new trolley mounted Pad Substations on priority basis. In this scheme, TPSODL proposes use of trolley mounted Pad substations to make the process of immediate power restoration at the time of natural calamities like storms and cyclones more flexible.

1. This will reduce the restoration time, apart from lowering the requirement of man-hours.
2. Faster power restoration at time of DT failure
3. Public Safety
4. Lesser Road Congestion

Package Distribution Substation

The package substation is a combination of Ring Main unit, Transformer and Low-Voltage panel. These substations are used for effective electrical power distribution. The fully equipped package substation comprises of outdoor duty enclosure, medium voltage switchgear, distribution transformer, low voltage panel which is a state of art equipment for all power distribution requirements.

In this scheme, TPSODL proposes use of Package Distribution Transformers and following are the benefits

1. Public Safety.

2. Mitigation of space constraint cases where DTs are not being installed due to unavailability of space for installation of equipment although DTs are overloaded may be resulting into failure.
3. Improve Reliability as RMU included in the Package Substation.
4. LT protection as LT switchgear included in the Package Substation.
5. Easy to install and takes lesser time and complete weather proof solution.
6. Lesser Road Congestion in congested overcrowded area like city, town, public places.
7. New Technology to be introduced on pilot basis.

CAPEX requirement for Network Reliability

S. No.	Major Category	Activity	DPR Cost TPSODL(In Crores.)
3	Reliability	33 KV Network refurbishment	10.08
		Installation of 33 KV AB Switch	2.23
		PSS Refurbishment	12.17
		11 KV Network refurbishment	11.16
		Installation of 11 KV AB Switch	5.00
		DSS Refurbishment	10.00
		Installation of LV protection at DSS	10.09
		Installation of Auto reclosure / Sectionalizers & RMU,FPI	8.72
		Trolley Mounted Pad Substations	1.31
		Package Distribution Substations	1.64
		Total (3)	**72.41**

5.4 Load Growth

Every year DISCOM have to release applied new connection and in this FY 20-21 till September 73884 Nos. of new connections are released. In order to meet this load growth,

both network infrastructure needs to be extended, strengthened or augmented and new energy meters to be installed to release the new connection. Some of the connections can be released from the existing network and some may require augmentation/addition/extension before release of new connection.

The following tables represent the data for consumer, consumption for previous year, first half of the current year and project figures for 2021-22.

PREVIOUS YEAR (2019-20)			FIRST SIX MONTHS OF CURRENT YR (2020-21)		
No of consumers as on 1st April of the Previous Year	Connected Load/Contract Demand (KW)	Consumption (MU)	No of consumers as on 1st April of the Current Year	Connected Load/Contract Demand (KW)	Consumption (MU)
2068557	2368412.4	2619.974	2279223	2646636.81	1393.836

CURRENT YEAR (PROJECTED) 2020-21			ENSUING YEAR (PROPOSED) (2021-22)			
Contract Demand (KW)	Consumption (MU)	Annual Percentage Rise (%)	No of consumers as on 1st April of the Ensuing Year	Connected Load/Contract Demand (KW)	Consumption (MU)	Annual Percentage Rise (%)
2796946.24	2804.814	7.06%	2569254	2978380.93	3042.844	8%

Below table shows the details of upgradation/new installation of assets done in previous as well as current year.

Sl.No	Subject	Unit	Previous Yr.	Current Yr.(H1)
			19-20	20-21
A LT Less Transformers (HVDS)				
I	Installation of LT less transformers	Nos	415	26
B. Re-conductoring				
I	33 KV	KMs	38.81	22.75
Ii	11 KV	KMs	72.12	117.23
Iii	LT	KMs	89.2	35.96
C. Up gradation of transformers				

I	33/11 KV	Nos	21	13
Ii	33/.4 KV	Nos	0	0
Iii	11/.4 KV	Nos	120	16
D. Installation of new transformers				
I	33/11 KV	Nos	0	1
Ii	33/.4 KV	Nos	0	0
Iii	11/.4 KV	Nos	254	302

Failure of Transformer (Nos.)					
Transformer Type	**FY16-17**	**FY17-18**	**FY18-19**	**FY19-20**	**H1,FY20-21**
Power Transformers (HT)	18	NA	7	5	4
Distribution Transformers	1654	1550	1656	1425	814

Hence for carrying out network extension/ augmentation/addition, we propose expenditure to the tune of Rs 26.52 Crores under this head. To consider load growth, network extension / augmentation / addition is expected to be carried out to cater the new demand.

Benefit to customer: Better the availability of materials, faster will be process of providing new connection hence more will be the customer satisfaction.

Addition/ Augmentation of 33K & 11KV line, Power Transformers & DT

Addition/ Augmentation of 11KV new line, link line:

During site survey it is 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.

It is also observed that HT consumers on 33KV and 11KV are being fed through tapping point instead of a dedicated feeder. There are multiple HT consumers source also mixed with incoming source of 33/11KV PSS. In case of technical fault at one of the HT consumer leads to tripping of incoming source and other connected HT consumer.

To overcome this issue, it is proposed to establish link line from alternative available source.

At present 11KV feeders are radial and do not have ring connectivity with another 11KV feeder as per N-1 philosophy. It is proposed to study ring connectivity between nearest 11KV feeder in the vicinity and adjacent PSS 11KV feeders like Hospitals, town, commercial and key government establishments.

Addition/ Augmentation of Power Transformers

To cater the increasing load demand, PTR augmentation is required to avoid any overloading and N-1 fail situations. To avoid any overloading issues especially in urban areas where the load growth is high, it is required to augment some of the power transformers in city area which may get overloaded considering load growth for the next two years. It will give benefit to consumers as follows:

1. Reliable power supply by ensuring N-1 reliability at PTR level.
2. Reduce over-burdening of existing PTRs thereby reducing power cuts.

Addition/ Augmentation of Distribution Transformer:

To cater the increasing load demand, DT augmentation is required to avoid overloading of transformer leading to transformer failure and power interruptions. Also to ensure reliable power supply to our consumers,

When a distribution transformer loading exceeds 80% of the rated capacity of the transformer, then it is considered to be “overloaded”.

To avoid these overloading issues especially in urban areas where the load growth is high, it is required to augment the capacity of the Distribution transformers so as to mitigate the overloading issue. It will provide benefit to consumers as follows:

1. Reliable power supply by reducing chances of fault in network, thereby reducing power interruptions
2. Reduce over-burdening of existing Distribution transformers thereby reducing power cuts.

In this proposal, TPSODL intends to carry out Distribution Transformer’s augmentation for those DTs which are identified as overloaded at various locations. Total 100 nos. of Transformers are proposed for Augmentation to 315 KVA DTs are at different locations.

In this proposal, TPSODL intends to carry out PTR augmentation for those PTRs which are identified as overloaded at various locations. Total 04 nos PTR are proposed for Augmentation from 5 MVA to 8 MVA at different locations.

S.No.	Description	UOM	Qty	Amount in Cr
1	Augmentation to 8 MVA Power Transformer	EA	4	4.41
2	Augmentation to 315 KVA Distribution Transformer	EA	100	9.92
3	New 11 KV Overhead Line	CKT.KM	43	8.06
4	New LT ABC Line	CKT.KM	38	4.13
Total				**26.52**

Meter Installation for all new connection

Following table enumerates the requirement of the new energy meters and accessories which are envisaged against new connection in different load segments:

Meter Category	City	Berhampur	Bhanjanagar	Aska	Jeypore	Rayagada	TPSODL
Single Phase	7,453	2,727	3,682	2,041	4,082	4,656	24,641
Poly Phase	289	641	797	601	1,575	559	4,462
LTCT	34	23	24	26	31	17	155
HTCT - 11kV/110 V	49	41	30	22	44	44	230
HTCT - 33kV/110 V	5	5	5	5	5	5	30
Net Meter-Single Phase	4	4	3	3	3	3	20
Net Meter-Poly Phase	2	2	1	1	2	2	10
Net Meter – LTCT							-
Net Meter-HTCT							-
Grand total	**7,837**	**3,437**	**4,538**	**2,695**	**5,737**	**5,286**	**29,530**

For installation of Energy Meters suitable size of the service cable to extend the supply to the consumer premises has also been considered. Six different rating of service cable are considered in the plan according to the load demand and connection category.

Further, accessories like Modems & seals are required to extend the supply and to take energy readings from remote.

CAPEX Summary for Network Load Growth

S. No.	Major Category	Sub Category	Activity	DPR Cost TPSODL(In Cr.)
4	Load Growth	Addition / Augmentation	Network augmentation / addition to meet load growth-11 KV line, PTR,DTR,LT line	26.52
		New connection	Meter Installation for all new connection	12.71
Total (D)				**39.23**

5.5 Technology & Infrastructure

Existing Technology Legacy Landscape:

Operational efficiencies when matched with Technological applications, results into great face change for a utility. As far as technology is concerned erstwhile SOUTHCO had done no major investment in Technology till start of MBC and ERP implementation under IPDS scheme which is planned to be rolled out in near future.

Key considerations for IT Landscape Transformation

a. IPDS Applications

- Fluent Grid is a COTS solution with suitable for enterprise wide operation
- As per existing scenario, 13 Lakh consumer licenses and 366 ERP User licenses are already available under IPDS. Additional consumer (12 lakh) and initially SAP ERP 1000 user licenses would be procured to enable PAN area implementation of Fluent Grid CIS/MBC and SAP ERP
- An integrated contact centre for entire TPSODL area shall be dealt through the Aspect Contact Centre Solution (under IPDS implementation). This solution shall be scaled up to 50 seater call centre against current provisioning of 5 seater call center.

The Core IT applications would include the following business critical modules / functionalities:

b. MBC and CIS

- New Connection
- Connection Management
- Disconnection & Reconnection
- Customer Move Out
- Metering and Material Process – Issue, Installation, Replacement, Removal and Reconciliation
- Billing – Scheduled, Unscheduled, Assessment, complaint handling
- Collection
- SMRD – Smart Meter Reading Devices - Mobile App for Meter Reading, Bill Distribution & follow up. This application is part of IPDS project and would be implemented by Fluent Grid.
- Customer Relationship Management
- Centralized Call Centre
- Energy Audit
- Customer Web Self Service

c. AMR being implemented by Genus

d. SAP ERP

- Material Management
- Finance and Controlling
- Plant Maintenance
- Human Capital Management
- Web Self Service
- Project Systems (This module is not part of IPDS but TPSODL put its own resource for its implementation. Module is very important for Management of executing works and Project cost control and budgeting)

e. Business Intelligence – SAP BW & BO

- Data Warehousing
- Management Information System

- Dashboards

As current IPDS system is only planned for IPDS towns, following matrix lists the additional requirement of licenses for rolling it out across TPSODL

Sl. No.	Application	Total Licenses for TPSODL, TPSODL, NESCO	TPSODL	
			Allotment for TPSODL	Delta Requirement
1	CIS (MBC) Application (Consumers)	4000000	1300000	1200000
2	SAP Full use ERP Application users	1072	366	600
3	SAP Self-service users (employees)	868	294	1200
4	SAP – Payroll users	8500	2200	1000
5	MS Exchange Email	1145	312	1200
6	MS Active Directory	1145	312	1200

Capex in INR 18.24 Crs. Is proposed for implementing IPDS licensing in terms of buying additional licenses and procuring additional hardware to cater to entire TPSODL area consumers and load growth is as below

S. No.	Description	FY22
1	Call Centre	0.9
2	Customer Care Centre	1.31
3	DC software & Licenses (ERP, MBC,DB, OS etc.)	16.03
	Total	**18.24**

Other Niche Applications IT Applications being implemented by TPSODL

Following other Applications are planned to be implemented at TPSODL over and above IPDS landscape

Smart Metering:

In our assessment if one has to diligently carry out this, it would have to base its approach on the following

1. Deployment of Technology
2. Think differently
3. Free up resources from mundane jobs

4. Re-strategize recovery goals

Smart Meters and metering system is the technology that is currently available in the market and is a preferred solution to adopt for consumer metering. GoI has also given mandate to replace all 25 Cr meters by smart meters in next 3 years.

In line with the national mission and as a pilot project, TPSODL intends to roll out Smart Meter (SM) project under Advance Metering Infrastructure (AMI) which would cover around 0.80 lakh consumers to start with.

As far as EHT and HT consumers are concerned there are serious observations on which TPSODL has prepared action plan. Some of these are as listed below:

1. The existing AMR system of these category of consumers is virtually nonexistent. The reliability of the AMR is questionable and would remain so in future

2. The EHT and HT metering system itself has multiple flaws e.g. 3 phase 3 wire systems still in place, HT meters and metering units are old 3p3w system and need to be urgently changed, the systems have not been tested for many years etc.

3. The communication link fails every now and then and people need to physically go and take the meter readings and other data which delays the billing and also increases the burden on quality check process

The proposed SM AMI will offer multiple benefits to the DISCOM as well as consumers and hence it is recommended to approve this project.

The benefits are as follows

1. TPSODL will be able to control the entire billing and collection of more than 50% of its current billing very effectively

2. Less billing disputes as 100% correct bills issued on actual meter readings

3. Highly accurate meters

4. 100% Billing efficiency for 50% of the total billing which would free up the resources

5. The revenue cycle can be managed much better by spreading the meter reading dates

Sub Category	Activity	DPR Cost TPSODL(In Cr.)
Smart Metering(AMI)	**Installation of Smart Meters along with back end IT Infrastructure**	**28.28**

GIS:

TPSODL is also planning to implement GIS system to have better asset management. System once implemented will strengthen various other business processes viz. energy audit process, technical feasibility, dues verification, network planning. In fact, GIS will be backbone for implementation of outage management system in coming years. Being a large geography, GIS will be implemented in three phase as below

FY 22--Phase I (City & Berhampur Circle)	FY 22--Phase II (Aska & Bhanjanagar Circle)	FY 22--Phase III (Rayagada & Jeypore Circle)

Capex proposed for GIS is as below

Description	FY22
GIS	10.46

Benefits of Proposed IT Landscape

Following are the benefits perceived in proposed IT Landscape:

- Adoption of very strong integrated application landscape for enterprise wide implementation
- Ensure secured services to customers to safe guard the confidentiality, integrity and availability of IT systems
- Integrated processes with strong access control
- Drive the culture of safety and ethics among the workforce and all stakeholders
- Ensure customer delight and effective solutions for addressing needs
- Stringent data integrity to avoid any revenue leakage
- Increased Billing and collection efficiency

- Enhanced user experience with extensive standard features & functionalities
- Standardized process workflow across organization
- Centralized data base for synchronized data.
- Enhanced integration and automation capabilities with Non SAP applications
- Using SAP standard capabilities combined with customer presentment platforms for a delightful customer experience

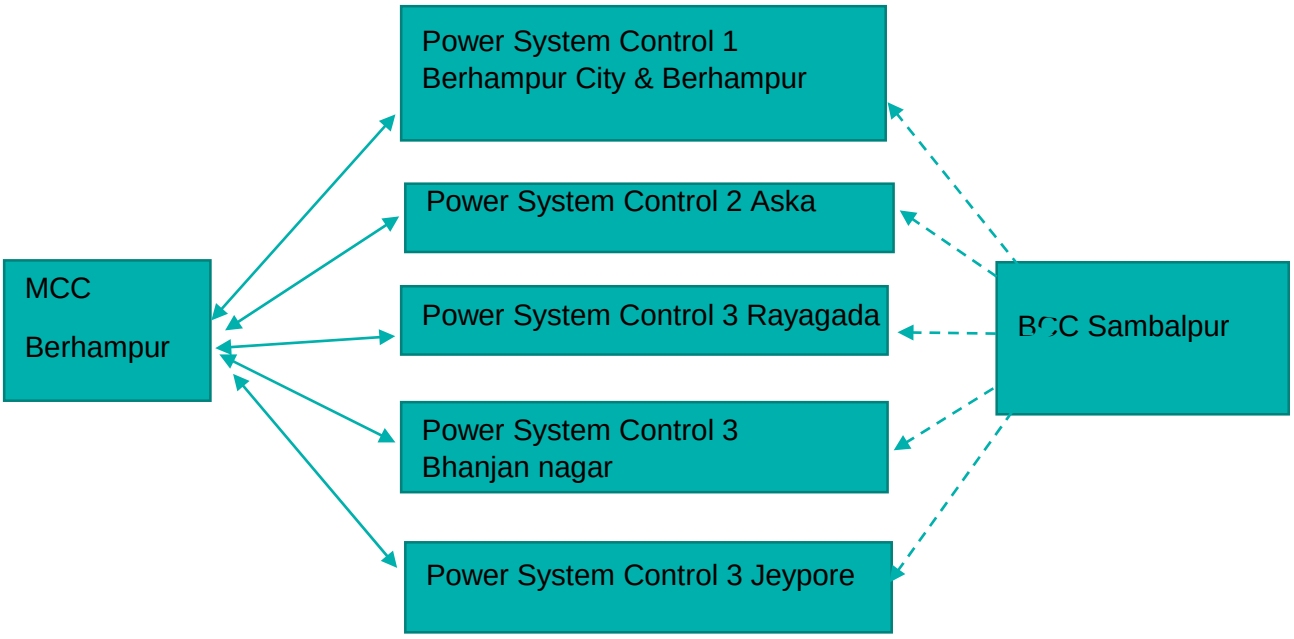
Operational Technology Landscape-SCADA

As a Phase wise approach it is considered that in FY22 70 nos. ODSSP substations would be connected to SCADA. In FY23 rest of ODSSP substations and 50 new Non ODSSP substations would be connected to control center.

Year 22	
ODSSP	Non ODSSP
70	0

Further considering TPSODL being disaster prone area, we plan to set up both Master Control Center (MCC) and Backup Control Center (BCC) in Berhampur and Sambalpur respectively. While MCC will be set up along with proposed Data Center in Berhampur in FY22, BCC will be setup in Sambalpur in FY22. Also all Circle Offices will have dedicated Power System Control Rooms which will get feed from MCC and automatically switch to BCC in case of any disaster. Total SCADA capex in INR 16.71 Crs. is planned for FY 22

Description	FY22
SCADA	16.71



Proposed IT/OT Infrastructure

Current Data Center developed under IPDS scheme by OPTCL is combined data center for NESCO, TPSODL and TPWODL and only includes IPDS town's consumers which are approximately 60% of total consumer coverage. Also many other Smart Grid applications like SCADA, GIS, Meter Data Management/Head End System for Smart Metering are yet to be implemented along with many niche applications like mobile app for consumers, collection agencies and other web portal for safety management, Permit to Work, Outage Management etc. Current Data Center developed by OPTCL is requires scaling up to include non IPDS consumers and implementation of other Smart Grid Applications. Hence, we have proposed our new/extension of Data Center Setup in FY 22 for hosting additional Smart Grid applications like SCADA, GIS, Smart Metering. As Technology transformation would also require huge focus on reliability of IT systems, own disaster recovery centers for TPSODL is also planned in Year FY23 & FY24.

Along with this, TPSODL is also focused on digitization till section level accordingly new laptops and additional desktops are planned to be made available to each person in TPSODL except people only engaged in field work.

Description	FY22
	Amt. (INR Cr.)
Data Center	4.55
Frontend devices (Laptops, desktops, printers/scanners)	14.7
DC Hardware	10.02
Total	29.27

Proposed Communication Network

TPSODL is planning to have IP-MPLS connectivity at major locations i.e. Data Center, DR Center, Head Office, Central Store, Circle Offices and Division offices. Also Co-locations offices like circle, division, subdivision, section, customer care, cash collection on same/nearby locations will be connected to single link to optimise bandwidth cost. Also, TPSODL has planned to connect nearby and major locations with optical fiber to increase reliability of network and optimise bandwidth cost.

Bandwidth provisioned for different locations is as follows:

Category	Link Type	Bandwidth ~ upgradable (MBPS)
Data Centre	MPLS	100 ~ 150 ~ 200
Disaster Recovery Centre	MPLS	100 ~ 150 ~ 200
Data Centre	Internet	100 ~ 150 ~ 200
Disaster Recovery Centre	Internet	100 ~ 150 ~ 200
DC - DR Replication	MPLS	100 ~ 150 ~ 200
DISCOM's Head Office	MPLS	50 ~ 100
Customer call Centre	MPLS	20 ~ 40
DISCOM's Circle Office	MPLS	10 ~ 20
DISCOM's Division Office	MPLS	10 ~ 20
DISCOM's Other Offices	MPLS	10 ~ 20
DISCOM's Collocated Sub Division Offices	MPLS	6 ~ 10
DISCOM's Collocated Section Offices	MPLS	6 ~ 10
Subdivisions & Sections	Internet	Good Internet bandwidth till permanent sustainable solution is explored.
Substations (except colocations/optical fibre connected locations)	MPLS	MPLS data Sims bandwidth till permanent sustainable solution is explored

Expenditure in Network Infrastructure: While in IPDS scheme, there is a provision to connect most of the office through Network Infrastructure, additional expenditure is planned to ensure network reliability till last mile.

Description	FY22
Network Infra	Rs.5.38 Crs.

Security System at Central Stores:

TPSODL Central stores at Berhampur is in poor condition and do not have adequate lighting and fire protection system thereby compromising with the safety & Security of the inventory kept in these stores. To address this challenge and ensure adequate lighting arrangement and fixed fire protection system in place, capital expenditure of Rs 4.25 Cr proposed in FY 21-22.

S.no	Item Description	Total Budget (In Crs)
1	High Mast arrangement	0.85
2	Fire Extinguishers	0.15
3	Store boundary wall with concertina wire	2.45
4	Storage of E-waste and Hazardous Scrap Material	0.8
Total		**4.25**

Civil Infrastructure:

TPSODL currently have offices in all the six circles, divisions, subdivisions & section office. Some of them are owned and others are on rented property. Currently the Offices in Berhampur City circle Berhampur rural section are accommodating office and associated services staff.

The challenges exist in TPSODL using current buildings and infrastructure is to accommodate more employees and providing a hygienic, well ventilated and spacious working environment with minimum expenditure. It may also be noted that no annual repairs or refurbishment in all office buildings have been made in recent years, hence, immediate rehabilitation of the said buildings is required.

To ensure safe, hygienic, well ventilated and spacious working environment for employees as well as consumers, a capital expenditure is proposed.

Administration:

In TPSODL, the office space is currently crowded and haphazardly planned for seating arrangements, moreover, most of the circulation area has been occupied with files, documents etc.

Some of offices are owned and others are on rented property.

The challenges exist in TPSODL using current buildings and infrastructure is to accommodate more employees and providing a hygienic, well ventilated and spacious working environment to them.

In order to provide best in class services to consumers, earn consumer delight, and improve satisfaction among other stakeholders and maintaining a clean & safe working environment, following infrastructures are required at above stated work place.

Office air conditioning systems are required to provide a comfortable working environment to bring and control Energy Efficiency, Humidity, Air Quality, and Reduction in Noise & Keeping Business Critical Equipment at the Right Temperature.

Water cooler & Purifiers are required for proper hydration employees and to ensure good health and improve overall efficiency. An employee should drink at least eight glasses of water a day to be properly hydrated as Water increases the amount of blood flow and oxygen to the brain and other body parts which in turn increases brain activity and attentiveness

Ergonomic office chairs for sitting long periods with ease. This naturally helps employees work more efficiently and productively. Another benefit is reduction in healthcare expenses related to poor posture from unsuitable office chairs.

Photocopier machines to offer a fast and easy way of getting single or multiple copies of documents & Improves Functionality of businesses.

Vehicles to provide car pool facility to the company staff as well as car facility to the sr. management team.

File cabinets are basic requirements to keep office space organized and tip-top. It helps store important papers, documents, photographs, magazines and training materials in one single place for easy and immediate access besides offering secure storage, it offers instant access to files of thousands of customers and employees.

Canteen facilities are the necessity of satisfying employees with a better range of foods and healthy options.

Technology and Infrastructure expenditure summary:

S. No.	Major Category	Sub Category	Activity	DPR Cost TPSODL(In Cr.)
5	Technology & Civil Infrastructure	Smart Metering(AMI)	Installation of Smart Meters along with back end IT Infrastructure:	28.28
		Information Technology	Data Center	4.55
			Front end devices excluding Call centre & CCC	14.70
			Call Centre	0.90
			Customer Care Centre	1.31
			DC Hardware	10.02
			DC software & Licenses (ERP, MBC,DB, OS etc.)	16.03
			Network Infra	5.38
			SCADA	16.71
			GIS	10.46
		Civil	Civil Infrastructure	20.00
			Civil Work for Meter Test Bench	2.00
			Civil work for Call centre, PSCC	4.00
			Upgradation of DT workshop	1.00
			Security system in Central Store	4.25
		Admin	Assets for Offices	4.95
		Total (E)		144.53

Summary:

TPSODL proposes Capital Expenditure of INR 408.47 Cr. for FY 21 – 22 to carry out various activities to ensure delivery of safe and reliable power supply to consumers with efficient operations.

S. No.	Major Category	Activity	DPR Cost TPSODL(In Crores.)
1	Statutory & Safety	PPEs, Safety & Testing Equipment	19.98
		Cradle guard at major road crossings	8.53
		Fencing of Distribution substations (DSS)	15.00
		Boundary wall for Primary substations(PSS)	15.40
		Establishment of Meter Testing Lab	2.47
		Total (1)	**61.37**
2	Loss Reduction	Input Energy Monitoring System (ABT/AMR) -IEMS	10.97
		Replacement of burnt, Faulty and Electromechanical meters and meter installation at no Meter cases	62.98
		LT Bare to ABC conversion	11.98
		Demand Side Management	5.00
		Total (2)	**90.93**
3	Reliability	33 KV Network refurbishment	10.08
		Installation of 33 KV AB Switch	2.23
		PSS Refurbishment	12.17
		11 KV Network refurbishment	11.16
		Installation of 11 KV AB Switch	5.00
		DSS Refurbishment	10.00
		Installation of LV protection at DSS	10.09
		Installation of Auto reclosure / Sectionalizers & RMU,FPI	8.72
		Trolley Pad Mounted Substations	1.31
		Package Transformer 630 KVA	1.64

		Total (3)	**72.41**
4	Load Growth	Network augmentation / addition to meet load growth/11 KV line, PTR,DTR,LT line	26.52
		Meter Installation for all new connection	12.71
		Total (4)	**39.23**
5	Technology & Civil Infrastructure	Installation of Smart Meters along with back end IT Infrastructure	28.28
		Augmentation of IPDS Software licenses pan TPSODL	18.24
		IT Infrastructure (H/W & Field office infra for augmentation of IPDS application licenses)	29.26
		Communication Network Infra	5.38
		SCADA Implementation	16.71
		GIS Implementation	10.46
		Civil Infrastructure	20.00
		Civil Work for Meter Test Bench	2.00
		Civil work for Call centre & PSCC	4.00
		Upgradation of DT workshop	1.00
		Security system in Central Store	4.25
		Ready to Use assets for Offices	4.95
		Total (5)	**144.53**
Grand Total (1+2+3+4+5)			**408.47**

5.6 Project Execution Plan.

As per the present Practice of SOUTHCO, majority of the GOI and GOO funded Projects, such as IPDS, RGGVY, ODSSP, DDUGJY, SCRIPS etc. ***are being coordinated and executed by OPTCL and SOUTHCO Project Monitoring Team/ Divisional O & M Team is simply facilitating charging of new Installations and Handing Over and Taking Over of these Projects from OPTCL/REC/NTPC*** due to which the much essential aspects of Project such as Quality Assurance of Execution as well as that of Materials, directly linked to reliability of Power Supply and longevity of life of the newly created assets, somehow, are getting compromised due to the fact that the adequate diligence/involvement of the SOUTHCO Team during execution stage is very low owing to the fact that SOUTHCO doesn't have dedicated Team to oversee the Projects works. Few smaller Projects of shifting and strengthening of Line and Equipment, such as Elephant Corridor Project, **D**evelopment project for **E**nergy **S**ystem **I**mprovement (DESI), Dedicated Agriculture and Fishery Feeder, Biju Gram Jyoti Yojna, Odisha Power Sector Improvement Projects (ODSIP), Biju Saharanchal Vidyut Yojna, NH expansion, School Anganwadi etc. are being executed by the Divisional Team of the O & M Wing of the SOUTHCO i.e. JE and SDO are being engaged to supervise these Projects. That is, in the present scenario, SOUTHCO doesn't have dedicated and structured CAPEX Planning, Coordination, Execution and Monitoring Team and same is made part of the O & M Team who are not able to pay due attention to supervise Project works as they are mainly loaded with O & M works, the focused and mainstream job of SOUTHCO, thus, somehow, this type of working philosophy is, certainly, resulting in deviation from the desired value of quality, safety, delivery timeline, customer satisfaction and cost of the Project works as well. Thus, responsibility of adherence to meet desired level of standard performance parameters of the Project works is solely left in the hand of the Contractor/Business Associate/Consultant/external executing Agency.

In view of the above, having felt the necessity to infuse efficiency and effectiveness both into O & M as well as CAPEX Planning, Monitoring and Execution front, it is planned to have dedicated and separate Team for CAPEX and OPEX to have focused approach in the respective area of Operation/Execution and therefore a Dedicated CAPEX/Project Team is being formed to oversee the overall CAPEX functionality of the entire TPSODL to ***take care of Concept to Commissioning of all CAPEX*** as well as GOI, GOO and External Agency/Private Party Funded Projects *to ensure better Safety, Quality, Timeline, Cost, Customer Satisfaction, Fastest Release of New Connection and enhanced Operational Efficiency too.*

Focused Responsibility of the CPEX/Project Management Team:

Action Planning Immediate after Taken Over of SOUTHCO:

- ✓ Formation of Dedicated Project Team in Circle/Division Level based on volume/quantum of CWIP and upcoming CAPEX approval.
- ✓ Formulation and aligning of Existing and New Process for efficient and effective execution and monitoring.
- ✓ Network Analysis and Identification of Area of Improvement in Network.
- ✓ Follow up for CAPEX approval from OERC approval.
- ✓ Planning, Monitoring, Quality Assurance, HOTO Process formalities of all existing Projects executed by OPTCL/Other Agency and Divisional Team.
- ✓ Execution Planning for Rs.408.47 **Cr**. CAPEX works scheduled for FY21-22.
- ✓ Proactive Engineering, Tendering and Material planning for CAPEX work.
- ✓ Liaising with Land owning authorities for ROW (Right of Way) and Electrical Inspector/Energy Department for evolving into a flexible Electrical Inspector Clearance Process for fastest clearance of NOC (No Objection Certificated by Electrical Inspector) which will certainly ensure the fastest release of new connection, Maximisation of Capitalisation and add feather to EODB (Ease of Doing Business).

Action after CAPEX Approval by OERC

- ✓ Dedicated Project Team will take charge of execution of New CAPEX approved by OERC
- ✓ **Focused area would be:**
  - Safety – Meticulous Safety Adherence Process
  - Quality – Execution as well as Materials Quality Assurance
  - Transparent Bill Certification/Verification Process and Timely Cash Flow to BA
  - Planning, Tracking, Monitoring and Controlling Timeline and Cost of the Project.
  - Commissioning of Projects, Creating Asset and finally Capitalisation.
- ✓ Continual Improvement of CAPEX Management Process

Priority of Execution:

Our main focused is to ensure Quality Power Supply to the Society/Consumers taking into consideration of Safety, Quality and Ethics at the Top of our Journey towards Excellence: Hence we will give Priority of execution as given below:

- ✓ ***Enhancing Safety of Human and Animal*** through the strengthening as well raising the height of the existing network/Equipment specially on Road Crossing, Elephant Corridor, School and Aaganwadi works
- ✓ ***Enhancing Reliability of Power through*** strengthening the existing networks and equipment specially focusing to strengthening of Primary Substation (PSS) and Distribution Substation (DSS) and Over Head Line and integration of GSS, PSS and introduction of FPI, RMU, Sectionalizer and Auto-reclosurer for fastest fault identification, Isolation and Power restoration.

Expected Gain Out of the Dedicated CAPEX/Project Management Process:

The Dedicated Project/CAPEX Team will be focused and responsible for Safe and Quality execution of all Projects in a time bound manner in coordination with all stakeholders such as Planning, Engineering, Contract & Store, Regulatory, Business Associates and Electrical Inspector etc. for seamless operation to ensure the following benefits for the Organisation, Consumer and Society:

- ✓ Safe Execution ensuring minimisation of Incident/Accident i.e. Journey towards “ZERO-TOLERANCE”.
- ✓ Enhancing Quality of Execution and Materials leading to enhanced life of asset and lowering the cost of re-work and OPEX.
- ✓ Faster Delivery of Projects leading to enhanced Reliability of Supply
- ✓ Faster Release of New Connection which will add feather to EODB

All the above outcome ultimately brings customer delight/satisfaction and Enhance Brand Value of Organisation.

6. Operation and Maintenance Expenses

6.1 Employee Cost: OPEX Requirement (Human Resources)

Total 1999 employees of erstwhile SOUTHCO has been transferred to TPSODL through vesting order which includes 389 executives. Tata Power has already deployed around 60 executives including Senior Management team who are experts in different fields of distribution functions. This team has assessed the existing processes and resource capabilities. Based on detail analysis and subsequent organisation design, TPSODL wish to reinforce existing team with additional 695 manpower (all are in executive cadre). Function-wise proposed structure, mapping with existing manpower has been explained in detail in TPSODL Human Resource Plan which is attached. However, TPSODL wish to recruit these new employees this year and around 60 employees shall be deputed from other division of Tata Power to TPSODL. Total Cost of manpower including erstwhile 1999 SOUTHCO employees and newly recruited employees shall be Rs.545.67 Cr. for the period April 2021 to March 2022. Hence, Hon'ble Commission is requested to approve the said employee cost for FY 2021-22. TPSODL will provide requisite documents to Hon'ble Commission for undertaking a prudence check of the aforesaid expenses as when directed.

Particulars	OERC ARR (Proposed) Apr'21– Mar '22	Total TPSODL ABP(Proposed) Apr' 21 – Mar'22
Employee Cost	**416.27**	**545.67***
Salaries , Wages, Allowances & Benefits including existing outsourced	240.45	**369.85**
Contribution to / Provision for P.F, Pension	144.88	**144.88**
Arrears of 7th Pay Commission	30.94	**30.94**

*Expenses on account of Salary, terminal benefits or 7th pay commission have been considered based on approved amount of OERC only, for existing employees of erstwhile SOUTHCO (other than 7th Pay Commission Arrear Payment). The expenses for outsourced are also considered with requirement for additional PSS). Actual expenditure shall be submitted to the Hon'ble Commission as part of True-Up Petition.

6.2 Repair & Maintenance (R&M) Expenses

As explained earlier the existing network of SOUTHCO area is deprived of maintenance due to lack of manpower, material and other support processes resulting in huge number of tripping, fatal non-fatal accidents of outsiders and insiders, transformer failure and high AT&C loss. All the four factors mentioned above are based on our analysis of whatever data is available from the verified sources. We don't have any data on the reliability indices. The tripping data is also not complete as neither all the tripping related data are properly captured in the record nor there is a centralised approach to calculated reliability indices feeder wise, area wise, voltage level wise and as per many other combinations. It is also seen from the interactions that number of transformer failure is very high. This is a double edged saw as it not only effects reliability but also by produces unhappy customers and huge expense towards rectification of faulty transformers. It is also mentioned earlier that safety of the working person to general public is at stake, this is indicated by a significant number of fatal and non-fatal accidents of all living creatures.

Presently entire network right from 33KV feeders to LT consumers are maintained by Junior Engineer (O&M) along with his team comprising of Lineman A/B/C, Helper, and Jr. Technician posted in respective sections. EMR section extend support to section staff for maintenance of 33/11KV primary substations. As sufficient manpower is not available in EMR section, only corrective maintenance is effected.

The Junior Engineer are responsible for attending breakdowns occurring in 33 kV and 11 kV systems with the limited manpower available at each section. For major breakdowns, contract manpower is hired on need basis as per the available OSOR's. SDO's and divisional manager also extend their support as per the requirements.

The scarce resources and lack of maintenance has resulted in large number of accidents in previous years. In last 21 months; 49 human fatal accidents have been reported.

In the absence of sufficient support staff at sub-divisions/sections level, the MTTR for 33 kV & 11 kV breakdown is quite high. Due to scarce manpower, breakdowns in many sub-divisions / sections are attended during day time only. The maintenance practices are reactive and the distribution assets are rarely maintained. Faulty equipment / distribution transformer is not replaced even for months' in rural areas.
This poor condition of the network may be extrapolated to the conditions of the buildings of SOUTHCO. Some buildings are in so much depleted condition that lack of maintenance in this field cannot be ignored. A small input is except new ODSSP sub-stations none the switchyard is free of long grasses. Sooner or later these ODSSP

sub-stations will also take shape like other sub-stations due to lack of maintenance activities. To make the scenario worse natural calamities always prevalently effect the SOUTHCO distribution area largely being the coastal area.

Our Plan towards systematic maintenance:

The TPSODL licensed area is spread across approximately 48751 sq. km area with forests and hills making it very difficult to maintain the network with existing manpower, leaving them in the **mode of run and repair.** There is no approach of preventive maintenance as mentioned in earlier sections making the network weaker with each passing year. The network conditions are also mentioned along with evidence in photographs in earlier part of the document.

In light of the above facts mentioned, our planning to address these burning issues is through discrete approach, i.e. focussing each problem separately and addressing them separately so that cumulative effect be huge in terms of **enhanced safety, sustained reliability, minimised failure rate and happy customers**.

In order to achieve above quality in supply and to ensure performance assurance according to power supply code we envisage to form following functions whose working and budget is given below

Safety:

Safety being the integral and foremost part in any industry, a major allocation should be there to ensure safety in largely spreading geographical area. Number of safety incidents and existing safety T&Ps indicate that there is a huge scope of improvement along with the mechanism in which existing workforce work at every site. Accordingly seeing the present practices building safety practices should be geared up. TPSODL is also planning to strengthen the safety by providing PPEs, FFEs, T&P, and testing equipment to the maintenance crews. By strengthening of safety system, the accident rate is expected to be reduced significantly. The allocated tentative budget for safety department is given below

Operations Expenses for Safety FY 22 .			
Sr. No.	Particulars	Amount in INR (Rs. Crs.)	Remark
1	Procurement of PPE	0.65	Initial approval obtained for immediate need of PPE
2	Safety Capability Building	0.15	

a	Competency Training recommended by Corp Safety - External (for Safety Advisors)	0.15	
b	Provision for fees to attend Safety Seminar / Conferences , when advised by Corporate safety, HR	0.025	
c	Safety Capability building based on learnings of Incident investigations / Safety observations / Audit points etc.	0.05	
3	Resources for Emergency preparedness	0.1275	
4	Public Safety initiatives	0.1	
5	AMC for fire safety assets	0.015	Applicable after approval of Capex plan & installation of firefighting equipment
6	3rd Party Safety Audit by external consultant	0.03	
7	Preparation of Safety posters, training materials, hand-outs etc., Lesson Learned short animation Clip for LTI	0.0925	
8	New Initiatives / Misc. expenses	0.02	
	Total Yearly OPEX in Rs. Crores	1.32	

Benefits:

The benefits of motivated safety drive will be as follows

1. Self-driven attitude of workforce
2. Minimised safety incidents of the workforce
3. Care/ drive for public safety
4. Joint effort with other associated organisation/ Government for safety of wild life
5. Theme based safety drive throughout the year will ensure motivated stakeholders for ensuring safety
6. Minimising safety incidents in the building or prevent any occurrences.
7. Training will further diversify safety amongst all stakeholders.

Area Power System:

In erstwhile SOUTHCO working system there is no dedicated preventive maintenance structure in any form except breakdown maintenance. Divisional officer, Sub Divisional officer and associated JEs are responsible for entire sub-transmission (33 KV) and distribution system (11 & 0.44 KV) with their associated workforce. While higher voltage always requires specialised task force at the same time the availability of this network is utmost important to cater EHT and HT customers along with provision of strong backbone of network for distribution network.

So we propose to carry a study to deploy dedicated team for sub-transmission system which will take care for the entire 33 KV network circle wise so that utmost focus can be given to this network for optimised availability. The maintenance team shall be divided into following structure under each circle maintenance team (Area Power System). This major team will be assisted by another group **Maintenance Planning Group (MPG)** which will take care of entire asset mapping of electrical network. This group will also play major role in providing feedback to APS regarding condition based maintenance and will centrally plan outages for entire voltage level (33 & 11 KV) of electrical network.

1. HMC – Round the clock availability for any kind of breakdown and helping other teams
2. SLMC – This team will work only for 33 KV network since it is largely radial so major focus to be given for 33 KV line network
3. SMC – This team will look after only 33/11 KV sub-stations.

In this way by discrete team management and maintenance management we will be able to ensure availability of network to a large extent, which is at a stack in present scenario.

In this head of operation of maintenance, we will be doing following activities as mentioned below with following associated budgets mentioned.

S. No.	Broad Category	Description	Budget (Rs Cr)	Justification
1	STS	Procurement of 33kV and 11kV Air Breaker Switch spares	**0.98**	The budget is based on estimated jobs to be performed, prevailing market rates (TPDDL), materials/ consumables and BA profit
2		Repair / Servicing of DC system at 33/11KV Substations	**0.36**	
3		Grid audit activity- Testing of major PSS equipment like Transformer, Circuit Breaker, Current Transformer, Potential Transformers etc.	**3.0**	The budget is based on estimated quantity and prevailing market rates (TPDDL)
4		Repair / Servicing of Circuit Breakers	**0.36**	

S. No.	Broad Category	Description	Budget (Rs Cr)	Justification
5		Installation of wedge connectors in feeders and substations	**0.36**	
6		Procurement of materials for overhead & underground feeders	**2.97**	No maintenance material (conductor, cables, connectors, joints, poles, hardware's) is available. The budget is based on estimated quantity and prevailing market rates
7		Procurement of materials for Power Transformers and related Services	**4.0**	No maintenance material (oil, bushings, accessories, cooling fans, hardware's) is available. The budget is based on estimated quantity and prevailing market rates
8		Procurement of materials for Circuit Breakers	**2.65**	No CB spares are available in stores. The budget is based on estimated quantity and prevailing market rates.
9		Procurement Protection Relays	**1.48**	No spare Protection Relays are available in stores. These will be required for replacement of defective relays. The budget is based on estimated quantity and prevailing market rates.
10		Procurement of Light fittings for PSS	**0.12**	No light fittings are available in stores for use in PSS to improve poor lighting condition. The budget is based on estimated quantity and prevailing market rates.
11		Strengthening of the Earthing in PSS and of lines above 11KV	**1.05**	At present the condition of the earthing pits is not good and the resistance value of the earthing are too high. Hence reconditioning/ strengthening of earthing pits is planned in this activity. The budget is based on

S. No.	Broad Category	Description	Budget (Rs Cr)	Justification
				estimated quantity and prevailing market rates.
	TOTAL		**17.33**	

Benefits:

Benefits will be as follows

1. Increased reliability both in terms of number of tripping and tripping duration
2. Reduction in operational technical loss
3. Reduction in number of incidents
4. Reduction in failure of the equipment
5. Quality supply to the consumer with better voltage regulation

Distribution System & Distribution Services:

The 11 kV circuits are radial and very long ranging from an average length of 40-50 KMs to 110-10 KMs in rural areas. 11 kV circuits have underrated, uneven sized & worn out bare conductors with extremely long span lengths. The LV circuits are also very long and radial. Both HV & LV circuits have a large number of damaged /bent/tilted poles, poor workmanship in jointing & jumpers, compromised safety clearances and are devoid of guard wires on road crossing.

11/0.415 kV Distribution Substations (DSS) have no fencing, the LT side fuse box/MCCB box are missing, earthing system is in very bad condition, most of the AB switches are bypassed, DD fuse are bypassed/broken. In place of LT Fuse box/MCCB box; open aluminium wire wound fuse are seen at every substation at very low height. All of the above makes the DSS prone to interruption and safety hazard for public specially kids, animals and employees.

As a result of above the interruption at 11 kV feeder level is too high with respect to present Indian utility standards. The table below gives a snapshot of 11 kV feeder tripping recorded at the 33/11 kV Substations in different Circles. In one-year total tripping are at a staggering 1.93 lacs. Total count of 11 kV feeder in FY 18-19 was 772 Nos. Hence, on an average basis each of the 11 kV feeder tripped 250 times annually.

11 kV Feeder Interruption:

SL NO	CIRCLE	Total no of interruptions each longer than 5 Min in the feeder	Total Number of interruptions each lesser than 5 minutes in the feeder
1	City circle	5887	4925
2	Berhampur Electrical Circle	18067	7248
3	Aska Circle	28359	8608
4	Bhanjanagar Electrical Circle	16236	14674
5	Rayagada Electrical Circle	16649	10343
6	Jeypore electrical Circle	39891	22069
Grand Total		125089	67867

Another major contribution of the existing dilapidated and unsafe network is scarce resources and weak Operation Structure. Presently entire network right from 33KV feeders to LT consumers are owned by Junior Manager (O&M) heading Sections along with his team comprising of Lineman A/B/C, Helper, Jr Technician. E&MR section extend support to Section staff for maintenance of 33/11KV primary substations.

The Junior Managers are responsible for attending all the B D/n occurring at 33 kV & 11 kV level in all the three Shifts with the limited manpower available at the Section. For attending Major B D/ns at 33 kV and 11 kV level, contract Manpower is hired on need basis as per the available OSOR's. SDO's and Divisional Manager also extend their support as per the requirements.

In absence of sufficient Support staff round the clock at the Sub Divisions/Sections the MTTR for 33 kV & 11 kV B D/ns is quite high and the DT's installed are rarely maintained. Faulty DT replacement is usually delayed and are not replaced even in month time in rural areas.

The Scarcity of resources has resulted in almost Zero Maintenance of the Network, although maintenance is done for few 33 kV / 11 kV feeders feeding to VIP areas.

In such a condition, focused preventive maintenance is mandatorily required to improve the reliability of supply and ensure safety of employees and public at large. While maintenance shall help in improving the reliability by reducing the interruptions; at the same time there is a need to put in place a structure which shall ensure promptly attends to the breakdowns and Fuse calls.

In view of above and in order to ensure proper Asset Maintenance and upkeep of Distribution system and to ensure Reliable, Quality & Safe Power to consumers living in Urban & Rural Areas, focused approach is required. As there is acute shortage of manpower in TPSODL and also since expert manpower is not available, performance based annual maintenance contracts will be established with expert market agencies for all 19 Divisions. The network shall be inspected regularly to identify the defects and attend breakdowns in quick time, and perform maintenance activities to enhance system reliability.

The Performance Based Maintenance Contract will also include 24X7 Breakdowns Crews for restoration of 11KV Lines and substation equipment. Besides, preventive maintenance activities will be performed as per the maintenance plan and schedule prepared by TPSODL. Annual Maintenance Plan along with standard check list for inspection of 11KV Lines and substations will be prepared and rolled out in the current FY. Condition based maintenance systems shall also be introduced to identify the maintenance requirements.

Major benefit of Annual Maintenance Contract is that trained and expert's technicians would get immediately deployed in the field to start delivering the objective. In this Annual Maintenance Contract (AMC), Business Associate (BA) shall undertake full responsibility of safety and assigned works which includes attending to emergency breakdowns, carrying out preventive maintenance of these equipment in various Sub Divisions. He will also undertake any work pertaining to above LT Distribution System as may be necessary for the maintenance of equipment for smooth working of LT Distribution system.

The Business Associate should carry out regular surveillance in his operational area for timely detection of abnormal operating conditions of the equipment as per the checklist provided by TP Southern Odisha Distribution Limited and report the findings to respective Area-in-Charge in structured format so that corrective/preventive actions can be initiated, implemented and monitored to prevent failures.

The Sub Divisional Manager for the respective Sub division would be the Engineer In-charge for the contract for the respective Sub division. The Divisional Managers will be overall in charge of the Contract for their respective Divisions.

Total OPEX requirement for Distribution system is as under:

S. No.	Broad Category	Description	Budget (Rs. Cr)
1	Distribution	Distribution and STS AMC Contract (Cost of Tools and Tackles)	**9.663**
2		Distribution Material (O/H)	**17.71**
3		Distribution Material (U/G)	**0.5**
4		Distribution Material (Trf)	**10.67**
5		RC - Testing, Overhauling and Reconditioning of Distribution transformers	**4**
6		Distribution LT Material and Protection	**11.68**
7		Strengthening of the Earthing in DSS and Lines up to 11KV	**2.57**
	Total		**56.79**

Benefits:

The advantages will be as follows:

1. Significant achievement in the availability of the network.
2. Immediate availability of skilled manpower for maintenance activity
3. Better voltage at the furthest due to transformed maintenance approach
4. Quality supply availability to the consumer doorstep
5. Better customer grievance handling due to operational issues
6. Less incidents due to improved and vigilante maintenance

Centralised Power System Control Centre (CPSCC):

It is proposed to establish a Central Power System Control Centre (CPSCC) on takeover of the operations of SOUTHCO. The intent of establishment of CPSCC is Real Time Control & Monitoring of 33 kV and 11 kV network operations of the license area. This will give an overall control of the HT network and ensure availability of network at all times and thereby ensure uninterrupted Power Supply to the consumers of the License area. In the process a robust communication channel with OPTCL will be established through PSCC.

Also, all the operations will be carried out as per the laid down Standards Operating Procedures through pre-established Operating Instructions so as to ensure Safe Operations & institutionalize the process of Permit to Work uniformly across the license area. Various Operational Expenses will be incurred to ensure smooth functioning of CPSCC. The budgetary details are mentioned as under

Particulars	Qty	Price	Amt(Rs)	Further Details
Mobile Charges per year	10	1000	120000	Data & Voice pack of this value (Rs.1000 /month) is envisaged since in the inception lot of handholding and exchange of information will take place before a confidence level is attained.
Hired Vehicle per year	12	20000	240000	P2P testing of stations for establishing SCADA controls, substation visits for feasibility for migration to remote operations.
Software Licenses	1	200000	200000	SLD Updation for network operations is planned to be carried out in Auto CAD, further as we migrate to SAP PM -all outages and permits would be through the system thus requiring licenses.
Travel Cost	1	200000	200000	Approximately four visit of Rs.50000 / each in a year including travel and stay as required.
Training Expenses per year	12	10000	120000	External training expenses are Rs.10000 per program. Provision for 12 such trainings is made.
Printing & Stationary	12	10000	120000	Permit books, Operating Instructions, SOP will be required in the course of operations
Subscriptions	12	1000	12000	Yearly subscriptions like Power line, T&D for keeping us abreast technologically @Rs.1000 /month as the prevailing rates.
Sundries	1	100000	100000	
Total Yearly Opex in Rs.			1112000	
Total Yearly Opex (in Cr)			0.1112	

Benefits:

Setting up CPSCC will create value in following manner

1. First ever real time reliability indices calculation in every possible aspect
2. Centralised channel for outside agency like OPTCL for any SOUTHCO related work. Firstly, plan is to cover 33 KV. Then in subsequent years 11 KV and LT level will be covered up.
3. Lesser number of incidents due to implementation of Central and Area wise PTW system.
4. Faster management of network for any major problem.
5. Centralised control centre during any disaster

Civil:

In entire TPSODL area there are very few buildings except new sub-stations which are in very good condition. Majorly all the building offices and sub-station buildings are in very bad condition and requires urgent attention. There is a huge scope for civil work to be done in all the buildings starting from corporate office. Stores are also in very bad condition. Somewhere it is real threat to work in the depleted building. The toilets are maintained in a very bad fashion and not state of the art. Civil team will work on this basic issues first to provide every employee the hygiene in the toilets and adequate in numbers so that everyone may work in congenial environment. On the other hand, in majority of the sub-stations are boundary less and plinth of the transformers are in really bad shape which needs immediate attention. The budgetary requirement goes as below:

S. No.	Description of work	Expenditure (in Crores)
		Opex
1	Repair of office buildings and CCR in SOUTHCO owned buildings in Circle, Division and Sub-division offices - 16 nos. (OLA)	2.0
2	Structural strengthening &Repair of Store Sheds in Circle, Division and Sub-division	1.0
3	PSS and DSS repairs jobs in TPSODL	6.0

Benefits:

1. State of the art presentation of aesthetics including building
2. Better hygiene provision for all the stakeholders
3. Safe workplace for everyone

4. Face improvement of TPSODL.
5. World class work centre development

OPEX Requirement (Technology and Automation)

1.0 ODSSP Substation Automation

The ODSSP substations are SCADA enabled and having RTUs, IEDs and Communication equipment. The IEDs are integrated and communicating to RTUs over IEC61850 communication protocols. To keep the substation automation system healthy, required regular supervision and maintenance of equipment and hardware.

Objectives:

1. Upkeep the hardware inventory to maintain the substation automation system.

2. To maintain the SCADA and Automation System for higher availability and reliability.

3. To resolve any issues related to RTU failure or RTU communication with IED/Relay.

4. To maintain the DCPS system for power-up the RTU and LDMS.

5. To maintain the communication system and equipment like Router, Ethernet Switch etc.

Benefits and Improvements:

1. Ensure higher availability of SCADA/DMS System.
2. Reduction in interruption/outage duration, leads to improve in System reliability by reducing SAIDI and SAIFI.

2.0 Support Services:

The Department needs various kinds of Support & Services to run the day to day business to meet the organizational goal.

Objectives:

1. Training required to develop the skill set to maintain the SCADA and Automation System on our own. Also abreast of various developments, technology adaption and new trends in Power sector.

2. Requirement of vehicles for day to day travel for resolving the Operational Variances (OVs) on time.
3. Various newsletters, magazines and periodicals of the Power Industry would be subscribed for the department for being cognisant of the happenings across the industry.

Benefits and Improvements:

1. Saving in AMC cost through training.
2. Reduction in interruption/outage duration, leads to improve in System reliability by reducing SAIDI and SAIFI.

Summary:

Therefore, total R&M cost required for operations is 115.81 Cr. and category wise distribution is as under:

Particulars	OERC ARR (Proposed) Apr'21– Mar '22	Total TPSODL ABP(Proposed) Apr' 21 – Mar'22
R & M Cost	**86.81**	**115.81**
Transformer Maintenance	38.25	**41.64**
Distribution line Repairs and Maintenance	30.93	**32.98**
Consumer Service Maintenance	6.4	**9.45**
Other repairs and maintenance	0.56	**0.56**
Civil Repairs and Maintenance	1.43	**9.00**
Additional Repair and Maintenance for RGGVY & BGJY	9.25	**9.25**
Safety		**1.32**
PSCC		**0.11**
IT and Automation		**11.5**

Justification:

The benefits to be accrued on the aforesaid Repair and Maintenance expenses on Sub-Transmission System (STS), Distribution, Safety, IT and Civil etc. has been described in the aforesaid para. This will result in improving quality, reliability and safe supply of power with lesser interruptions, which will enhance customer satisfaction to a greater extent. As is evident from the above zero based budgeting of expenditure, it is submitted that the existing norm of allowing 5.4% of Opening GFA as the R&M Expenditure is inadequate. Pending revision of the norm,' it is prayed to allow the additional expenditure of Rs.29 Crore for FY 21-22 (Rs.115.81 Cr. (proposed) – Rs.86.81 Cr. treating as special measures for improving safety, quality and reliability of the network meeting its bid commitments.

6.3 Administrative & General (A&G) Expenses:

1. Meter Reading and Collection Expenses

Currently, meter reading is assigned to Meter reading agencies across Division /Sub Division on fixed cost basis per reading. Meter reader visit consumer site based on reading route sequence allotted to him in a period of 15 days i.e. from 7th to 22nd of every month. Meter reader after taking punching the reading in spot billing application and deliver the spot bill to the consumer during the same visit. In some divisions, meter reading is also proposed with support of Self Help Group as part of Govt. of Odisha has approved Self Help Groups in Energy Franchise Agreement (SEFA) of Energy in Rural Areas.

Above mentioned, this practice, lead to high average and provisional bills around approx. 50% in 19-20 as reading is done only for 15 days, and that too without ensuring minimum wages to meter readers. Therefore, it has been proposed to change the reading cycle from 15 days to 30 days and by implementing the integrated IT system for ensuring timely meter reading with reduction in provisional bills.

Payment collection counters are provided at Division/Sub-Division level for customers to deposit the bills. Currently, the due dates are schedule in short window of 7 days' duration due to which long queue at payment counters during month end is visible. This lead to customer dissatisfaction as customer has to spend time and energy for bill payment.

In addition to payment collection counter, collaboration with many digital payment vendors has been done for accepting electricity payment along with on-line payment options through Website, Payment Wallets like Paytm etc.

Beside above avenues, Business Associates (BAs) have been deployed for visiting the customer premise for collecting the payment from customer mostly by issuing manual receipt. Knocking at all customer's doors during the month is a herculean task with multiple visits to the customers' residences, with eventual result of non-payment of bills. Therefore, performance based contract for Door to Door collection is proposed for ensuring timely recovery of payment. Further, promotional schemes for online payment and counter payment is also proposed.

The Estimated yearly cost is based on recently discovered price through open tenders

2. Customer Services and Communication Expenses

To improve the customer experience, customer touch points need to be augmented for providing ease of connectivity and single touch point at offices.

Call Centre is a convenient mode for providing service on 24X7 basis thereby customer is not required to go through the hardship of visiting the office. This demands the overhauling of existing infrastructure of call centre in order to improve the Call Centre connectivity. Keeping in mind to provide ease in customer experience, a unified Call

Centre is imperative to be made operational. For this, Rs 0.91 Cr is allocated under A&G head.

Currently, customers visit the office and stand in long queue for making electricity bill payment during due dates. Also, lack of basic amenities for the visiting customers like Seating space, water dispenser etc. at Section, Sub-Division and Division Level is experienced. For better experience at Customer care, operational expenditure of 1.77 Cr. is allocated to provide better logistics at existing Customer care centres.

Currently, SMSs are being send to limited customer that to at the time of Bill Generation. It has been proposed that the communication through SMS and Email need to be enhanced by introducing SMS/Email at following stages leading to enhancement of customer satisfaction. For this, 0.45 Cr is proposed under operational expenditure.

While the Call Centre Cost is as per discovered prices, the other are estimated based on prevailing prices.

S.no	Cost Component	Proposed Cost (In Crs)
1	Call Centre (50 Seats)	0.91
2	Customer Care Operations including Stationery/ Printing / Computer Consumables, Postage and Courier Charges	1.40
3	Toll Free Charges	0.50
4	Communication including SMS	0.60
Total Cost (with GST)		**2.6**

3. Meter Management Expenses

To ensure smooth operation of Meter Management and establish a robust supply chain of meters and accessories, meter testing labs need to be developed in 03 locations i.e. Berhampur, Aska and Jeypore with new test bench facility as appraised in table below. These facilities will be developed in phased manner over a period of three years.

Further, to ensure high communication percentage of meters installed with Modem already installed in field, there will be need for rectification / Trouble Shooting of modems and allied accessories like SIMS cards, Antennas etc. It is expected that 5% of modems and accessories will need rectification per month, so a budget of 0.33 Cr has been considered for same. This activity of modem rectification will be handled through performance contract under guidance of MMG TPSODL.

To operate these meter testing facilities and troubleshooting of modem and SIM, funds are required under operational expenditure and same is mentioned below. These costs are on estimated basis

Admin & General Expenses: Other Costs

Particulars	OERC ARR (Proposed) Apr'21– Mar '22	Total TPSODL ABP(Proposed) Apr' 21 – Mar'22
A & G Cost	**58.23**	**104.36**
Property related expenses	3.27	13.18
Communication	0.83	0.89
Professional Charges	1.1	1.4
Conveyance and travelling	10.26	25.05
Other expenses	15.86	32.63
Material related expenses	0.56	0.56
Additional A&G Expenses	26.36	30.65

Admin & General Expenses: Other Costs

Expenses on the other Heads have been carefully examined vis-à-vis the costs being currently incurred. A comparison of the same is provided in the Table in the earlier Sections. The increase over the previous year is generally on account of enhanced level of activity, increase in no. of employees resulting in higher A&G Expenses, inflation and incurrence of expenditure on certain activities which were hitherto either non-existent or minimal, such as Insurance, various Company related mandatory expenses relating to requirement of various statutory Audits and compliances, which would entail appointment of various Auditors as well as consultants to facilitate statutory compliances.

Insurances: As per good Risk mitigation practice, and as required by Lenders, the Company is proposing to take various insurances to ensure coverage of its Fixed Assets, Inventories, Moneys & Employees, etc. The significant Insurance covers would include amongst others, Industrial All Risk Insurance for Fixed Assets, Transportation of Goods, Fire & Allied Perils, Burglary, Money Insurance, Directors & Officers Liability, Cyber Security against Data Breach, Loss due to fraud, etc.,

Rents, Rates and Taxes: With increased no. of employees and to ensure proper seating, etc. for the same, additional space is required to be hired till such time that the Company is able to construct its own offices.

Legal, Consultancy & Professional Charges: With vesting of SOUTHCO's Utility in TPSODL, a Company incorporated under the Companies Act, 2013, statutory compliance requirements are going up multi-fold, which would entail additional expenditure on Audit, Consultancy and Professional Fee. In addition to the Annual Statutory Audit including ICFR (Internal Control over Financial Reporting) Audit, the Company is subject to Quarterly Reviews by the Statutory Auditors, Tax Audit, Secretarial Audit, Cost Audit, etc. SOUTHCO was hitherto subject to only the Annual Statutory Audit, and that too at significantly discounted fee.

Further, extensive Data cleaning, data – base creation/ reconciliation etc. is required for migration from the basic Tally Accounting System to the SAP ERP entailing additional costs.

With the Company now being a private company, legal expenses are envisaged to increase with the Company becoming more vulnerable to litigation as well as the requirement to more vigorously protect their and their stakeholder's interests.

IT Consumables: With extensive IT infrastructure being built, the corresponding IT Consumable requirement is expected to increase significantly.

House Keeping Expenses: The offices of the company are in extremely decrepit and shabby condition with virtually no housekeeping. In-order to provide a decent working environment to the employees which is a pre-requisite for ensuring productivity, retention of talent, building employee morale and pride in the Organisation, as well as for Consumers and other stakeholders, a separate budget for House Keeping has been proposed.

Justification:

The benefits to be accrued on the aforesaid Administrative & General (A&G) Expenses has been described in the aforesaid paras.

The norms specified by the Hon'ble Commission is a 7% increase over previous year's allowed normative expenditure together with certain expenditure for specific activities. It is submitted that the norm is grossly inadequate as the base (previous year's allowed expenditure), is insufficient considering the requirements as detailed above, including new expenses (such as Insurance, Audit / Professional Charges, which were hitherto either not or insignificantly being incurred.

The above expenditure has been carefully estimated and planned, and it will result in reducing AT&C losses, enhancing productivity and enhancing customer satisfaction to a greater extent. Pending revision of the norms, it is prayed to allow the additional expenditure of Rs.46.13 (Rs.104.36 Cr. as against Rs.58.23 Cr. proposed for FY 2021-22) beyond the amount currently allowed for reduction of AT&C Loss, improving collection efficiency, improving consumer satisfaction and meeting the bid commitments.

7. Procurement Plan

Procurement plan and policies shall be the backbone of TPSODL towards ensuring highly transparent, competitive, fair and reasonable procedure with ensuring quality. TPSODL will explore and adopt best practices & policies from its other division like Delhi and Mumbai. TPSODL will plan for Centralised procurement of high value services and items and local procurement for low value and emergency works. More focus on annual rate contracts for supply items and three years contract for services.

TPSODL shall focus more on optimizing costs, excelling in managing customer satisfaction, building strong suppliers performance management frame work, digitisation of vendor life cycle management, bringing better safety culture and enhancing capability and competency.

The processes include methodology to select Business Associates based on credentials and past service and / or material quality. All services and materials are evaluated for quality and performance by users. Incentive and penalty clauses in the contracts support better quality of delivery. Certain Business Associates are identified based on areas of their core-competency such as call-centre, CRC manning and attending low voltage faults in the distribution business. The SLAs with these Business Associates are made with an emphasis on higher performance than standards to enhance customer satisfaction. The quality of customer interaction of front-end staff is monitored and used as a feedback for improvement. Relevant training, based on these feedbacks, are also imparted to them to improve customer experience. The Business Associates who do not perform up to the expectation, are blacklisted. Feedback is also sought from Business Associates through a satisfaction survey and BA meets and actions are taken based on the findings.

Challenges on Procurement/Contracting post Covid period.

1) The Demand and supply gap will increase as, there will be huge demand.
2) There will be challenge to retain the existing Supplier and Contractor due to demand in market other than regulated business, where higher price can be accepted without tendering procurement process.
3) Manufacturing capacity remain unchanged as such higher profit margin will be expected by supplier. As such they may choose the buyer.

4) The market will be towards supplier/Contractor- Buyer will not have any choice
5) There will be cash crunch in the market, as such Supplier/Contractor will not agree for EMD against tenders.
6) Conditions like EMD/Tender free need to be reviewed.
7) Advance payment and Advance payment BG terms need to be reviewed, as supplier will not accept orders without advance payment.

PRAYER

Pursuant to the direction of Honb'le Commission vide suomotu proceeding in Case no 83/2020 dated 28.12.2020, Para 57, TPSODL is supposed to file the Annual Business plan w.r.t. Employee cost, R&M, A&G expenses for the year FY 21-22 within forty five days (45) from the date of effective date i.e. (1.01.2021). Accordingly, the Company had submitted the ABP for O&M expenses plan before Hon'ble Commission on 12th Feb-21. The submission was made through an additional submission to the ARR of Southco utility vide Case No-77 of 2020 with a view that the matter could be heard along with ARR on the scheduled date & time (which was scheduled to be heard on 19th Feb-21.

During the course of hearing on 19th Feb-21, Hon'ble Commission has also instructed to restrict the presentation to the extent of original filing as because the objectors to the main petition might not be aware about the additional submission of the new licensee.

Now Hon'ble Commission in the RST order dt.26.03.2021 has observed as follows;

Para 403 ***In the meantime TPWODL and TPSODL came into operation w.e.f. 01.01.2021 which is later than the submission of the ARR petition for FY 2021-22. In terms of their respective vesting order, TPWODL and TPSODL have also made additional submission with regard to the O&M cost for the current FY 2020-21 and further projections for FY 2021-22 beyond the ARR projections as per the petitions submitted on 30.11.2020 by the utilities WESCO and SOUTHCO. The Commission in such a scenario will consider such additional submission towards Annual Business Plan of TPSODL and TPWODL and hear the same from different stakeholders before approving the same. In the present order the Commission has taken into consideration the proposal made in the original ARR petition for FY 2020-21.***

Due to the change scenario for improving the reliability of power supply, the operation and maintenance cost of the company would undergo some changes on account of new recruitment, additional A&G cost towards MBC, IT automation, Energy Audit, Insurance. Similarly, under R&M, AMC for network assets, repair of Govt funded assets etc. related costs needs to be increased to certain extent. So, the costs needs to be factored in the ensuing year ARR

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Therefore, the licensee is duty bound to appraise and submit before Hon'ble Commission for consideration of the same and prayed as follows to:

1. Admit the Annual Business Plan of FY 2021-22.
2. Approve the Operation and Maintenance expenses towards Employee Cost, Repair & Maintenance and Administration & General expenses of Rs. 765.84 Crore for the period April 21 to March 22 as proposed by the TPSODL.
3. These Business Plan is being submitted in compliance with directions of the Honorable Commission as Para 45(e),Para-57 2021-22 of the Vesting Order & and Para-403 of the tariff 2021-22 order wherein the petitioner has been directed to provide detailed justification of the expenditures: -
   i. Salaries, wages, pension contribution and other employee costs
   ii. Administrative and General (A&G) expenses
   iii. Repair and Maintenance (R&M) expenses

The above all expenditure may be incurred in the first year of operation. It is submitted that these expenses are estimates based on current understanding of the conditions and the petitioner is in the process of placing various orders for carrying out various initiatives whose cost may turn out to be in variance to the Budgeted estimates. Further these expenditures and initial year expenditures are likely to be staggered especially for Employee Costs. The estimated cost is based on first year level of activities which the Honourable Commission shall appreciate, shall be ramped up steadily and shall reach a stable level of activity only in the next couple of years. In view of the above, it is prayed that the initial year estimates or actual expenditure may not be considered as a representative figure or base figure for determination of subsequent year's costs.

4. Grant any other relief as deemed fit & proper in the facts and circumstances of this submission.

Chief Executive Officer

TPSODL

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