

**ODISHA ELECTRICITY REGULATORY COMMISSION
BIDYUT NIYAMAK BHAWAN
PLOT NO.4, CHUNOKOLI, SHAILASHREE VIHAR,
BHUBANESWAR - 751021**

**Present: Shri U. N. Behera, Chairperson
 Shri S. K. Parhi, Member
 Shri G. Mohapatra, Member**

Case No. 07/2021

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

In the matter of: Application for approval of CAPEX plan for FY 2021-22 in compliance to the directions of the Commission in the vesting Order dated 28.12.2020 of OERC in Case No. 82/2020.

For Petitioner: Shri Gajanan Kale, CEO, TPWODL, Shri K.C. Nanda, DGM (RA & Strategy), TPWODL.

For Respondents: Shri B.K.Das, Sr. GM (RT & C), OPTCL, Shri R.P. Mahapatra, Shri L.K.Mishra, GRIDCO, Shri Ramesh Satpathy, Shri Prabhakar Dora, Shri Bibhu Charan Swain on behalf of Power Tech Consultant Pvt. Ltd. and UCCI and Ms. Sonali Patnaik, ALO, DoE, GoO.

ORDER

Date of Hearing: 29.06.2021

Date of Order:18.09.2021

1. The TP Western Odisha Distribution Limited (TPWODL), the Petitioner, has submitted an application for approval of Capital Expenditure to the tune of Rs.462.42 Cr. for FY 2021-22 to carry out various system improvement & safety activities in its area of operation. This application has been filed pursuant to the direction of the Commission at para 39 in the vesting order in Case No.82/2020.
2. TPWODL's licensed area is spread over 48,207 sq.km and serves a registered consumer base of around 21 lakhs. TPWODL procures power from GRIDCO through Odisha Power Transmission Corporation Limited (OPTCL)'s 220/132/33 kV grid sub-stations at sub transmission voltage level of 33 kV and then distributes the power at 33 kV/ 11 kV/ 440 V/ 230 V depending on the demand of the consumers. TPWODL receives electrical power at 33 kV level from 49 numbers of 220/33 kV or 132/33 kV transmission substations (OPTCL) located within and in the vicinity of TPWODL operational area. At present, there are ~154 numbers of 33 kV feeders with

a combined circuit length of approximately 4,723 km. supplying power to 278 numbers of 33/11 kV Primary Substation in the TPWODL area. The 33 kV supply is stepped down to 11 kV level through 608 numbers of 33/11 kV power transformers with an installed capacity of 2976 MVA at these primary substations. Nearly 1,000 numbers of 11 kV feeders emanates from the 33/11 kV primary substations having cumulative length of approximately 44,297 km and supply power to HT consumers connected at 11 kV level and other LT customers connected to 11/0.415 kV distribution sub-station. Approx. 64,500 numbers of distribution transformers are installed in all five circles with an installed capacity of 3,040 MVA. The length of the LT network is approximately 53,837 km. These LT feeders supply power to three phase and single-phase consumers.

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

“39. Capital investment plan

- (b) In its Bid submitted in response to the RFP, TPCL committed capital expenditure of Rs. 1,663 crore (Indian Rupee One Thousand Six Hundred and Sixty Three crore) only for period FY 2022 to FY 2026 as follows:*

Table 1: TPCL Capital Expenditure Commitment

<i>FY 2021-22</i>	<i>FY 2022-23</i>	<i>FY 2023-24</i>	<i>FY 2024-25</i>	<i>FY 2025-26</i>	<i>Total</i>
306	500	333	322	202	1663

(Value in Rs. crore)

- (c) To allow flexibility in the capital expenditure planning, the Commission stipulates that, in the capital expenditure plan to be submitted by TPWODL as per the license conditions, the capital expenditure commitment for each year of the period FY 2022 to FY 2026 must be such that capital expenditure proposed up to a year shall be at least equal to the cumulative capital expenditure committed up to that year in the Bid submitted by TPCL. For avoidance of doubt, the minimum cumulative capital expenditure to be proposed by TPWODL for the period FY 2022 to FY 2026 must be as provided in the table below:*

Table 2: TPWODL Cumulative Capital Expenditure for 5 years

<i>Up to 31-Mar-2022</i>	<i>Up to 31-Mar-2023</i>	<i>Up to 31-Mar-2024</i>	<i>Up to 31-Mar-2025</i>	<i>Up to 31-Mar-2026</i>
306	806	1,139	1,461	1,663

(Value in Rs. crore)

- (d) TPWODL would be required to seek the Commission’s approval on the detailed capital expenditure plan in line with the regulations. TPWODL shall satisfy the Commission that the capital expenditure plan submitted in line with regulations adheres to the capital expenditure plan submitted as part of the Bid.”*

4. Further, in line with the Odisha Electricity Regulatory Commission (Terms and Conditions for Determination of Wheeling Tariff and Retail Supply Tariff) Regulations 2014 the licensee is required to take approval from the Commission for undertaking Capex in the licensee served area. The relevant extract of the OERC Tariff Regulations, 2014 is provided as follows:

“Capital Investment

- 7.33 *Capital investment shall cover spending on capital equipment that augments fixed assets and capitalisation of corresponding interest expenses determined as per the applicable accounting policies and guidelines. Capital investments may address a variety of needs such as meeting load growth, refurbishment and replacement of equipment, reduction of losses, improvement of voltage profile, improvement of quality of supply and system reliability, metering, communication, computerisation etc.*
- 7.34 *The licensee shall propose in its filing a detailed capital investment plan. The plan must separately show ongoing projects that will spill into the year under review and new projects that will commence but may be completed within or beyond the tariff period. For the new projects, the filing must provide the justification as stipulated under relevant investment guidelines of the Commission.*
- 7.35 *In addition to the approved capital investment plan, the licensee can seek provision for additional capital expenditure anytime during the tariff year to meet natural calamities involving substantial investments. The Commission shall examine and if satisfied shall approve the corresponding costs for inclusion in revenue requirement in the next period.*
- 7.38 *The Commission shall review the licensees capital investment plan for approval and for this purpose may require the licensee to provide relevant technical and commercial details including corresponding transmission system feasibility. The costs corresponding to the approved capital investment plan of a licensee for a given year will normally be considered for its revenue requirement*
- 7.41 *Licensee could retain financial benefit arising out of savings in financing costs due to faster implementation at lower cost because of better project management or procurement practices. Financial loss on account of time and cost overrun is to be an account of the licensees only.”*
5. As per the Licence Condition 11 and 32 the investment above Rs. 5 Cr. is to be made by the distribution licensee in the licensed business area of operation with the approval of the Commission. The relevant provisions of Licence Condition 11 and 32 are stipulated as follows:

“11. INVESTMENTS

- 11.1 *Unless otherwise directed by the Commission, every licensee shall obtain prior approval of the Commission for making investment in the Licensed Business if such investment is above the limits laid down in Condition 32.*

- 11.2 *The Licensee shall duly comply with the Regulations, guidelines, directions and orders the Commission may issue from time to time in regard to the investments to be made in the Distribution Business.*
- 11.3 *The Licensee shall submit to the Commission investment plans as a part of the business plan under Condition 10.9 above giving details of investment schemes to be undertaken during the concerned period for the approval of the Commission. For new scheme formulated by the GoO, if TPWODL wishes to avail funding under such scheme, an agreement shall be signed between GoO/ GRIDCO/ OPTCL and TPWODL for utilisation of such grants. The Licensee shall demonstrate to the satisfaction of the Commission that:*
- (a) there is a need for such investments in the Distribution System;*
 - (b) the Licensee has made techno-economic analysis and environmental aspects of all viable alternatives to the proposal for investing in or acquiring new Distribution System assets to meet such need.*
 - (c) the investment plan is in conformance to the conditions for capital investment specified in the Vesting Order*
- 11.4 *In the application for investment approval, the Licensee shall furnish the following information or particulars:*
- (a) A detailed project report containing techno-economic analysis and environmental aspects of the investment together with the outline of the works to be undertaken the salient features and particulars demonstrating the need for investment;*
 - (b) The project cost together with the cost benefit analysis;*
 - (c) Whether the investment is in a new project or for expansion or up-gradation of an existing system;*
 - (d) Sanctions and statutory clearances required for execution of the project and status of such sanctions and statutory clearances;*
 - (e) Phasing of investment over the financial years and commissioning schedule;*
 - (f) The manner in which investments will be capitalised for the purposes of inclusion in the revenue requirements of the Licensee;*
 - (g) Constraints which the Licensee may face in making the investments or in implementing the project including constraints on information available;*
 - (h) Resource mobilisation and financial plans for meeting the investment;*
 - (i) Process for inviting and finalizing tenders for procurement of equipment, material and /or services relating to investment, in accordance with a transparent tendering procedure as may be approved by the Commission; and*
 - (j) Such other particulars as the Commission may from time to time direct.*
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- 11.10 *For the purposes of this Condition 11, the term "Major Investment" means any planned investment in or acquisition of Distribution facilities, the cost of which, when aggregated with all other investments or acquisitions (if any) forming part of the same overall transaction, equals or exceeds an amount*

contained in the Specific Conditions applicable to the Licensee or otherwise decided by the Commission from time to time by a general or special order (Refer Condition no. 32.1).

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

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

6. Accordingly, in line with the above, TPWODL has submitted the current petition for approval of Capital Expenditure Plan for FY 2021-22.
7. TPWODL has submitted that during initial examination post takeover, it is observed that the inherited power distribution network is not compliant up to requisite statutory standards at most of the places and is in a dilapidated state. Distribution lines are lengthy and most of the feeders are of radial nature. Even some of the spans have under-rated/ uneven sized conductor thus compromising the circuit capacity as per the lowest rated capacity of the conductor available in the network even if for a small section. Overhead network has worn out conductors, poor earthing, damaged/ tilted poles/ accessories resulting in abnormal sag. As a result, safety clearances are compromised at many locations, which poses a threat to the safety of employees, public at large and animals.
8. Similarly, 33/11 kV Primary sub-stations and 11/0.415 kV Distribution sub-stations are in very deteriorated condition. In Primary Substations, there are some faulty equipment, which are either bypassed or removed and supply is being managed without proper switching devices resulting in escalation of faults/ cascade tripping to upstream devices thereby impacting larger consumer base. In Distribution sub-stations the Air Break Switch, HG/DO Fuse units, LV Protection devices are not functioning at most of the locations. Apart from this, earthing system at Primary Sub-station, Distribution Sub-station and lines are in a deteriorated condition. Fuse arrangements installed at DSS are installed at lower height and exposed thereby creating a potential safety hazard for humans and animals.

9. Further, 33/11 kV Primary Substation's (PSS) boundary walls are broken and there is no fencing to the outdoor switch yards. This makes the PSS unsafe for stray animals and prone to unauthorized entry. Apart from this, many breakers and CTs are bypassed resulting in non-availability of basic protection system.
10. TPWODL has submitted that one of the burning problems observed is the presence of a large number of non-metered and defective meters resulting in poor billing efficiency. Additionally, meters installed at consumer premises are of mixed type such as electro-mechanical meters, consumer owned meters, electronic meters etc. Meter sealing to ensure revenue protection from unauthorized access to electricity is another area, which needs to be emphasized upon.
11. In addition, upgradation of civil infrastructure in terms of hygiene, sanitation and additional space at the workplace is required to be strengthened.
12. The present Capex proposal was submitted by TPWODL on 12.02.2021. TPWODL in its proposal highlighted various challenges as discussed above in the existing infrastructure and network against which it has proposed the capital expenditure.
13. TPWODL has submitted the Capital Expenditure under five different categories described as follows:

a) Statutory, Safety and Security:

TPWODL has proposed refurbishment of 33 kV, 11 kV and LV lines in a phased manner emphasizing on critical areas such as schools, hospitals, markets, and other key installations. During a survey conducted by TPWODL, it was observed that most of the 33 kV/ 11 kV / LT feeders are in deteriorated condition and pose safety threat to the humans and animals. Also, huge number of trippings were reported on 33 kV and 11 kV feeders in previous years due to tree branches/ creepers coming in contact with live conductors at many locations.

As per TPWODL, several severe incidents have occurred in the past due to non-availability of standard and well-maintained PPEs and desired testing tools and it has therefore proposed procurement of PPEs for the workforce. TPWODL has also proposed to commission 10 numbers of additional earth pit for PSS, 3 numbers of additional pits for DSS and earthing on every 5th pole to strengthen the earthing system in view of higher soil resistivity and poor earth mesh connectivity in existing primary sub-stations.

TPWODL has identified 29 locations for 33 kV feeder line upgradation to ensure safety and 23 locations across the TPWODL area for guarding on 33 kV & 11 kV road crossing. Further, procurement of safety tools, testing equipment, construction of boundary/fencing have been proposed as part of the Capex plan.

TPWODL has proposed to develop meter testing labs along with associated civil works in three Circles in accordance with the OERC (Conditions of Supply) Code, 2019 to ensure the statutory requirement of meter testing across the TPWODL. It has submitted that the existing test benches in all its meter test labs are in dilapidated condition.

The Petitioner has proposed a Capex of Rs. 98.48 Cr. against the various works under the Statutory, Safety and Security head.

b) Loss Reduction:

The Petitioner has proposed Capex towards replacement of burnt/ faulty/ electromechanical meters, implementation of smart metering along with back end IT infrastructure, and refurbishment/ augmentation of 33 kV/ 11 kV/ 0.415 kV network to reduce losses.

As per submission, 2,88,000 meters are reported defective and ~65,000 consumers have not been provided energy meters though connection is energized in books and energy is being consumed by the consumers. In FY 2021-22, TPWODL plans to replace/ install ~3.53 lakhs meters which are directly contributing to the non-technical losses as summarized below:

Type of meter	Reason for replacement	FY 2021-22 Qty
Single Phase meters	No Meters	61,679
	Old Defective Meters	210,500
	Electromechanical Meter	40,000
Three Phase Whole Current meters	No Meters	35,000
	Defective Meters	6,000
	Electromechanical Meter	-
Three Phase LT CT meters	No Meters	-
	Defective Meters	100
	Electromechanical Meter	-
Three Phase HT CT meters	No Meters	-
	Defective Meters	-
	Electromechanical Meter	-
Grand Total		353,279

TPWODL further submitted that in 'No meter' or 'defective meters' cases, it is estimated that service cable replacement would be required wherever found defective or missing and thus certain cost towards service cable is also considered in the plan. For installation of meters, meter box, accessories will also be installed to protect the meters from energy theft.

TPWODL submitted that it is in the process of deploying Advance Metering Infrastructure (AMI) throughout its territory which would include supply and installation of smart meters along with Head End System that has the ability to communicate with all cellular network platform. TPWODL plans to install the system in a span of next three years. The scheme involves installation of 27,811 smart meters and other backend IT infrastructure in FY 2021-22.

TPWODL in addition to above has also proposed Capex towards addition/ refurbishment of 33 kV/ 11 kV/ LT lines/ feeders to re-configure the existing lengthy feeders in such a way as to reduce the length and loading of feeders thereby benefitting in terms of reduced technical losses. TPWODL has proposed addition/ refurbishment of 74 ckt. kms, 483 ckt. kms and 69 ckt. kms of 33 kV, 11 kV and LT feeders, respectively.

The Petitioner has proposed a Capex of Rs. 167.40 Cr. against the various works under the Loss Reduction head.

c) Network Reliability:

To ensure highest reliability of power supply, TPWODL has proposed to replace faulty equipment causing frequent trippings, commission new equipment and introduce technology to ensure faster restoration of supply in case of any tripping.

In TPWODL, there are around 608 numbers of 33/11 kV power transformers with an installed capacity of 2,976 MVA. Nearly 1,000 numbers of 11 kV feeders emanate from the 33/11 kV primary substations having cumulative length of approximately 44,297 km. PSS being a vital installation between customer and utility, TPWODL has proposed to refurbish bay equipment such as incoming 33 kV line and Power Transformer breaker, relay and protection control panel, 11 kV Power transformer, LT and 11 kV feeder breaker, 33 kV & 11 kV CT, PT & LA, isolator and AB Switch to improve the reliability. Also, installation of 43 sets of Battery & Battery chargers (18 numbers of 48V and 25 numbers of 24V DC) have been proposed to strengthen the DC system in the 33/11 kV Grid Substations.

Since majority of 11 kV & 33 kV networks are overhead in nature with an average feeder length of more than 80 km and most faults occurring are transient faults caused by lightning and tree branches touching the live conductor, TPWODL has proposed to install 220 communicable type fault passage indicator, LORA system at strategic locations to assist the operator in faster decision making while restoring supply post failure which will reduce the breakdown of equipment, long duration shutdown and revenue loss.

TPWODL has proposed to improve the reliability of power supply in 11 kV and downstream network by strengthening the control and protection system at LT side at DSS level. The initiative will not only ensure availability of LV protection system at DSS but will also ensure positive isolation to maintain safe working condition.

Also, proposal to install additional AB Switches/ Isolator/ Insulator in high tripping feeders both in urban and rural areas have been provided.

The Petitioner has proposed a Capex of Rs. 48.91 Cr. against the various works under the Network Reliability head.

d) Load Growth:

TPWODL has proposed Capex towards strengthening of its network infrastructure to meet the load growth which is expected to be approximately 90K-100K new connections in FY 2021-22.

Based on site survey conducted by TPWODL, it was observed that most of the 33/11 kV Primary Sub-Stations are having single incoming 33 kV source resulting in shutdown of entire PSS and outage in downstream network. To overcome this issue, TPWODL has proposed to establish link line from alternative available source by connecting nearest 11 kV feeder in the vicinity and adjacent PSS 11 kV feeders which will also help in improving the voltage profile.

Accordingly, in order to address the upcoming demand and enhance the existing infrastructure, the Petitioner has proposed a Capex of Rs. 39.71 Cr. against the various works under the Load Growth head.

e) Technology and Civil Infrastructure:

TPWODL has proposed multiple works under this head which includes the following:

- Renovation of existing set-up at Customer care center/ Division/ Sub-division/ Section offices to ensure basic facilities and hygiene condition.
- Setting up the basic framework covering a robust and reliable communication system which will be required to support value added services like Video applications (Video Conferencing), Enterprise services, Commercial - ERP, CRM, Payment Gateway etc. to enable employees to work on automated systems. Also, front end computing devices (Laptop and Desktop along with UPS) are proposed for the employees for smooth handling of core business operations.
- Establish SCADA and GSAS System in the entire TPWODL distribution network covering all the 5 circles comprising of 315 numbers of 33/11 kV Primary Sub-Stations. Under ODSSP Scheme, over 142 numbers of 33/11 kV sub stations have been planned for commissioning in three phases. While these substations are automated and equipped with 33/11 kV CRPs, Numerical Relays, VCBs, Battery Chargers and Multi-Function Meters (MFMs) and are integrated at sub-station level with Data Concentrator Unit (DCU) or RTU. To achieve remote monitoring and control through SCADA system, TPWODL has proposed to integrate the Critical/ Urban/ Industrial sub-station of ODSSP scheme first while the remaining sub-stations are planned to be integrated sequentially.
- Improve the security system in terms of adequate lighting, access and internal road, storage platforms and fire protection system at four designated central stores located at Burla, Rajgangpur, Bolangir and Kesinga to adhere with safety & security of the material and personnel involved.
- Modernize the current existing infrastructure to provide hygienic, well ventilated, and spacious work environment. Additional civil infrastructure works such as upgradation of Road & Offices and construction of building for PSCC, IT, SCADA & GIS are proposed to accommodate all the necessary establishments.
- Capex towards procurement of new furniture, ready to use assets such as air-conditioners, water purifiers, water coolers etc. for its employees

Accordingly, the Petitioner has proposed a Capex of Rs. 107.92 Cr. against the various works under the Technology and Civil Upgradation head.

f) Others

TPWODL has provided estimate of Rs. 23 Cr. against Employee Costs and Rs. 20 Cr. against Interest During Construction (IDC) over and above the Capex proposed under various categories, the same has not been considered as part of the total Capex amount for FY 2021-22.

14. The table below summarises the overall Capex plan proposed by TPWODL for FY 2021-22:

Sl. No.	Particulars	Proposed Capex (Rs Cr)
A	Statutory, Safety and Security	
1	Life enhancement of feeder network in respect of maintaining safe horizontal / vertical clearances	20.54
2	Provision of Safety Equipment & PPEs to workforce	12.05
3	Earthing, Fencing and boundary wall	55.54
4	Meter Testing Lab	10.35
	Sub-Total	98.48
B	Loss Reduction	
1	Energy Meter replacement	81.63
2	Technical Intervention-Installation of Smart meters	47.37
3	Refurbishment /augmentation of 33 kV/11 kV/0.415 kV network to reduce Losses	38.40
	Sub-Total	167.40
C	Network Reliability	
1	Refurbishment/Life enhancement of 33/11 kV Primary Substation /Additional New Substations	20.16
2	Pilot Project for Installation of Fault Passage Indicator (FPI)	2.00
3	Augmentation of LV side protection System along with DT LA	12.45
4	Installation of AB switches/ Isolators/ Insulators on 33 kV and 11 kV Network	14.30
	Sub-Total	48.91
D	Load Growth	
1	Network enhancement / Unforeseen emergency Capex requirement	39.71
	Sub-Total	39.71
E	Technology and Civil Infrastructure	
1	Infrastructure for Customer Care, Call Centre, Payment Centre, and Section Offices	2.04

Sl. No.	Particulars	Proposed Capex (Rs Cr)
2	IT & Technology for process efficiency	42.02
3	GIS Implementation	9.37
4	SCADA Implementation	15.30
5	GSAS Implementation	9.52
6	Security system in Central stores	1.05
7	Improvement of Civil Infrastructure	23.62
8	Ready to Use assets for Offices	5.00
	Sub-Total	107.92
	Total	462.42*

**Exclusive of IDC and Project Employee Costs*

15. TPWODL submitted that since the takeover, it has done Capex of Rs. 4.10 Cr. during the three-month period from 01.01.2021 to 31.03.2021. Details are provided as follows:

Sl. No.	Particulars	Actual Capex (Rs Cr)
1	Refurbishment of Offices, washroom, workstation, and storage space	2.50
2	Procurement of safety tools, tackles, PPE's, and other items	0.60
3	Procurement of Laptop, Printer, Desktop etc.	1.00
	Total	4.10

16. The Commission sought the relevant Board approval from TPWODL in support of the Capex plan submitted for FY 2021-22. The Petitioner has proposed a Capex of Rs. 462.42 Cr. against the Board approval of Rs. 351.42 Cr.
17. In view of the variation observed between the Capex proposal and Board approval, justification was sought by the Commission. TPWODL clarified that considering the network condition it had planned an aggressive capital expenditure to obtain desired improvement. However, considering the time required for regulatory approval, Board has taken conservative view to the extent of Rs. 351.42 Cr. (excluding Rs. 60 Cr. of GRIDCO's contribution).
18. The Commission sought various queries across the major heads of Capex proposed by TPWODL against which the following additional information was submitted by TPWODL:
- a) General**
- i. The unit rates of the various equipment/material have been taken from approved Cost Data for FY 2018-19 for electrical equipments to be used in

distribution system of Discoms issued by Department of energy, Government of Odisha or previous Purchase Order copy or rates as discovered by Tata power Mumbai & TPDDL or TPCODL approved scheme rates. Further, overheads such as Contingency, Tools & Plants, Transportation, Erection Charges, others including supervision charges have been considered in accordance with the OERC (Conditions of Supply) Code, 2019. Additionally, GST has been considered over and above the total cost estimate.

- ii. TPWODL clarified that schemes implemented by Govt. of Odisha are different from that proposed by TPWODL in the petition and there is no duplication of any kind.
- iii. The availability of materials (DTs. Cables, etc) is not adequate for carrying out regular maintenance for Opex type of job in present condition. The existing stock for capital jobs has been considered as part of the proposed capital investment plan.

b) Safety, Statutory and Security

- i. Installation/Construction/Renovation of Boundary wall, fencing has been proposed at 103 locations which primarily cover sub-stations located at crowded places. Around 20% of the total requirement has been proposed in the Capex plan for FY 2021-22.
- ii. Around 60-65% of assets in PSS (33 kV/11 kV power sub-station) are operating in very poor condition and need refurbishment. Only 10% of the total requirement has been proposed in the Capex plan of FY 2021-22.
- iii. There are 4-meter testing labs available in TPWODL area. However, these meter labs are non-standard and non-functional. TPWODL submitted that the existing infrastructure of these labs shall be utilised with suitable modifications/ refurbishment. However, there is a need to install new test benches with associated hardwares and softwares at proposed locations.

c) Loss Reduction

- i. TPWODL provided the details of defective and unmetered cases for the last five years:

Sl. No.	Period/Year	Defective	Un-metered	Total
1	Sep-17	390,975	31,940	422,915

Sl. No.	Period/Year	Defective	Un-metered	Total
2	Sep-18	438,802	100,222	539,024
3	Sep-19	381,722	201,854	583,576
4	Sep-20	261,835	116,486	378,321
5	Dec-20	288,000	65,000	353,000
6	Mar-21	227,000	95,000	322,000

- ii. TPWODL submitted that there is a separate Smart metering project planned under “Smart City” drive which shall be funded through Central Government. In TPWODL area, Rourkela city is selected under Smart City drive with OPTCL being the nodal agency. Capex under smart metering scheme has been proposed other than the Rourkela Smart city Project.

d) Network Reliability

- i. Based on TPWODL’s initial survey, TPWODL has assessed requirement of Replacement/ Refurbishment of 60 battery chargers and 80 Battery Banks in FY 2021-22.
- ii. TPWODL has envisaged 10 % reliability improvement by undertaking the proposed Capex.

e) Load Growth

- i. The year wise consumer base, contract demand & consumption submitted by TPWODL is depicted as follows:

Sl. No	Year	Total Consumers	Contract Demand (kW/ kVA)	Consumption (MU)
1	FY 2013-14	955,521	2,304,602	4,201
2	FY 2014-15	1,142,631	2,509,685	4,552
3	FY 2015-16	1,150,509	2,496,525	4,598
4	FY 2016-17	1,215,067	2,800,651	4,799
5	FY 2017-18	1,353,488	3,323,042	5,378
6	FY 2018-19	1,521,700	3,529,260	5,972
7	FY 2019-20	1,801,240	3,864,823	6,115
8	FY 2020-21	2,142,094	4,141,628	5,726

- ii. TPWODL has proposed investments in new 33 kV and 11 kV new/ additional line to improve the power condition focussing primarily on voltage profile issues, system redundancy and future demand.

f) Technology and Civil Infrastructure

- i. Presently, no IT systems such as SCADA/ DMS/ GIS are available in erstwhile WESCO. To reduce AT&C losses and improve the power systems, it

is necessary to introduce IT along with relevant software systems. Hence SCADA/ DMS GIS along with hardware, software is planned to be implemented in a phased manner.

- ii. TPWODL submitted that it has used standard market rates for the IT items which were available during the preparation of the Capex plan. These items are also similar with TPCODL Capex plan rates for FY 2020-21.
 - iii. Earlier there was no Call Centre facility available in TPWODL area. TPWODL has commissioned one Call Centre at Sambalpur location with average of 300 numbers of calls handled per day. TPWODL is planning to replicate similar facilities in Redhakhol, Bargadh, Burla, Rourkela and Bolangir locations in a phased manner.
19. The comments received from respondent GRIDCO are summarised as follows:
- a) Detailed analysis of requirement/ augmentation/ refurbishment for different works/ services/ replacement of equipment provided in the Capex Plan should be submitted. The investment on network refurbishing, transformer & lines upgradation/ addition for reliability improvement should be detailed. Schemes/ works under loss reduction & load growth category should be proposed based on actual requirements and not on sample survey basis.
 - b) TPWODL should submit the reference of cost data taken in proposed Capex plan, rates, the basis/availability, price reference, work order copy, rate contracts, recent tender copy, etc.
 - c) Newly created sub-stations and sub-stations under commissioning stage under the ODSSP scheme need to be operationalized and taken over by TPWODL to meet the future load growth.
 - d) AMR implementation for all three phases (EHT/ HT/ LT) should be considered with replacement of Non-DLMS meters with DLMS meters.
 - e) Utilization of meters under the SAUBHAGYA scheme for unmetered consumers should be considered instead of procurement of new meters.
20. Respondent OPTCL submitted additionally as follows:
- a) Capex proposal towards earthing and fencing seems to be abnormally high.

- b) Proposal for setting up of three-meter testing laboratories in three circles is unjustified.
- c) No proposal has been submitted regarding construction of new 33 kV lines to connect new EHT Grids with the existing 33/11 kV sub-stations.
- d) Construction of 33/11 kV sub-stations under ODSSP, DDUGJY and IPDS Schemes which are not being taken over and made operational by the licensee may be taken into consideration by Hon'ble Commission while allowing the additional/ new PSS proposed by the licensee under its Capex plan for the FY 2021-22.
- e) Sale proceeds from the sale of existing/future scrap materials in the store yards/ fields should be accounted for.
- f) TPWODL should submit the report of Principal Chief Electrical Inspector regarding the condition of the existing distribution network.

21. Respondent M/s. Grinity Power Tech Pvt. Ltd submitted as follows:

- a) Huge investment may adversely impact tariff.
- b) Discoms should clarify that there should not be any likely tariff hike because of the Capex proposed and considering the likely AT&C Loss reduction tariff should rather reduce.
- c) Discoms may be directed to submit the likely AT&C loss reduction in FY 2021-22 based on the Capex plan submitted.
- d) Detailed Capex plan for each Industrial Park, MSME Cluster, new upcoming Industrial Estate along with definite timeline should be submitted.
- e) In the present Capex plan, there is no mention of mandatory procurement of Goods and Services from MSMEs of the State. Being public utilities and a Joint Venture Company of State Government, Tata Power should honestly adhere to the principle of mandatory procurement from MSMEs and waive the associated cost towards EMD, Tender Fees for the MSMEs as per the existing policy of MSME and should give preference to the local vendors, suppliers, contractors in implementation of Capex plan.
- f) TPWODL has submitted a Capex plan of Rs 462.42 Cr. including loss reduction project of Rs. 167.40 Cr., however the cost benefit analysis, loss

reduction potential, likely energy saving due to loss reduction, financial savings, and payback period arising due to above Capex investment has not been submitted.

- g) Discom should submit details of Network Reliability Index and SOP parameters and likely reduction in sustained and momentary interruption in rural and urban areas.
- h) Discom should submit a detailed plan of installation of Meter Testing Labs in all the proposed divisions.
- i) Discom should submit the sample rates, quotation, and specifications of 33 kV and 11 kV distribution line component, transformer, breakers, sample quotation, specification of meters etc. proposed in the plan. Backup documents like quotation for the supply of items, erection charges, and probable list of suppliers should be submitted.
- j) Discom should submit the Capital Structure, Capitalization Schedule, Financing Plan, Cost-Benefit Analysis, Performance Improvement envisaged due to Capex along with Division wise Capital Investment Plan.
- k) TPWODL is advised to submit the supporting data i.e. quotation, technical specification of CMRI, Clamp on Meter, Digital Camera, Accucheck etc. based on which the Capex has been proposed.
- l) No Capex has been proposed for implementing demand side measures at the consumer side for flattening of curve and reduction of peak drawl.
- m) TPWODL should provide the procurement procedure to be followed for implementation of SCADA in the TPWODL area.
- n) TPWODL should provide detailed plan for utilization of the old & replaced power transformers.
- o) TPWODL should provide details of utilization & storage plan of old materials i.e. LT bare conductor, cross arm, Insulators, etc.

22. Respondent Mr. Ramesh Chandra Satpathy submitted as follows:

- a) TPWODL should provide the progress of works of the various Central/ State Government schemes being undertaken in the licensee served area.

- b) TPWODL should provide details of lines and substations upgraded/ created under the 'Capex Programme' of Government of Odisha.
23. Another respondent Mr. R. P. Mahapatra submitted as follows:
- a) Public hearing should be held before disposing off the Capex plan of Petitioner.
- b) The Capex plan of the licensee for FY 2021-22 is to the tune of Rs. 462 Cr. i.e. higher by Rs. 156 Cr. than the commitment as per the Vesting Order. Further, investment in technology seems to be on a higher side.
- c) TPWODL has not indicated the actual AT&C loss for FY 2020-21. Further, TPWODL needs to provide a commitment that the proposed Capex shall lead to AT&C loss levels as stated in the Vesting Order.
- d) TPWODL needs to submit the fatal and non-fatal accidents with respect to its own employees and general public.
- e) No cost benefit analysis has been submitted for the proposed Capex. Further, TPWODL has not provided the targeted AT&C loss level for FY 2021-22.
- f) Details of feeders, PSS, DSS and other facilities which are to be constructed/ repaired/ renovated are to be provided. Also, anticipated AT&C loss and tariff increase due to capital expenditure for FY 2021-22 needs to be submitted.
24. The Respondent from M/s UCCI submitted additionally that the power sector plays an important role for the survival of Micro Small Medium Enterprise (MSME) and boost the economy of the sector as a whole. TPWODL should honestly adhere to the principle of mandatory procurement from MSMEs and waive the associated cost towards EMD, Tender Fees for the MSMEs as per the existing policy of MSME and should give preference to the local vendors, suppliers, contractors in implementation of Capex Plan.
25. In its rejoinder the Petitioner submitted as follows:
- a) The DPR covers all concerns and aspects raised by the stakeholders and the cost proposed and projected in the DPR is based on a realistic and pragmatic approach with detailed analysis.
- b) The benefit of higher Capex in the 1st year itself would yield early results and benefit the consumer. As per vesting order TPWODL is committed to adhere

to the AT&C loss reduction trajectory. Hence it is expected that there won't be any tariff impact.

- c) In the Capex plan, due care has been taken to accommodate new connections which may include MSME's, New industrial park under the head of Load Growth.
- d) As regards to MSME vendors, TPWODL is continuing with the same practice followed by erstwhile WESCO utility, such as waiving off tender fees and relaxation in EMD amount up to 50%. The licensee is procuring its material through open tendering process where all the vendors are invited and can participate without any reservation.
- e) With regards to Cost Benefit analysis, TPWODL is mandated through the vesting order to invest Rs. 306 Cr. during FY 2021-22. Benefits shall accrue in form of lower AT&C loss levels with a target to reach 9.8% by 31.03.2031.
- f) After completion of works proposed under network reliability there will be reduction in sustained interruption and momentary interruption.
- g) TPWODL in its Capex Plan for FY 2021-22 has considered location-based proposal and has provided the details of the locations/ GSS/ feeders where the Capex is proposed.
- h) As regards the Cost data, TPWODL has relied on the rates approved by Department of Energy, GoO for FY 2018-19 for arriving at the rate estimate. For items that are not a part of approved cost data book, rate reference has been taken from Tata Power Delhi, Mumbai and TPCODL where the material has been procured on competitive bidding basis.
- i) TPWODL is in the process of adding new store/ sub store at strategic locations in addition to existing 4 numbers of stores including Central Store at Burla. TPWODL has started segregation of scrap and re-usable material. The reusable material is tested and is being used as per requirement.
- j) Regarding funding of the Capex Plan, the Petitioner mentioned that the funding shall be done by 30% equity and 70% loan from Commercial Banks / FIs for which negotiation is going on.
- k) TPWODL submitted that despite of implementation of various Govt. Schemes towards capacity building/ strengthening and augmentation of distribution

system in the State, lot of work remains to be executed for ensuring safety, quality supply of electricity, metering, civil works, IT augmentation, etc.

- l) TPWODL has proposed earthing and construction of boundary wall at 80 Grid sub-stations, fencing of 1,400 numbers of 11/0.4 kV DTR sub-stations.
 - m) As regards development of meter testing laboratories, the proposal includes procurement of 4 single-phase bench test lab and 3 three-phase bench test lab. Hence, the cost is reasonable and there is no abnormality in the said cost.
 - n) Installation of meters (single/ three phase) has been proposed considering the existing consumer strength and excluding the meters already procured and installed under different Govt. Schemes. The procurement of meters and installations thereof under various Govt. Schemes does not cover all the defective meters or new meters to be installed in the future.
 - o) Procurement of goods and services is being done through the competitive bidding process.
 - p) Contingency, Tools & Plants, Transportation, Erection Charges, Other overheads (including supervision charges) etc. have been considered as per the OERC (Conditions of Supply) Code, 2019 and as per various mandates of Government of Odisha.
26. Heard the parties at length. Before going to the merit of the proposal of the licensee the Commission will discuss the background and provisions basing on which the investment plan shall be considered. As per Section 42 of the Electricity Act, 2003 read with Condition 7 of the Licence Condition and Regulation 4 of the General conditions of Distribution Licence of the OERC (Conduct of Business) Regulation, 2004, it shall be the duty of the distribution licensee to develop and maintain an efficient, coordinated, economical distribution system in its area of supply and to supply electricity in accordance with the provisions in the Act, Rules, Regulations and the direction of the Commission. The Commission is guided under section 61(c) of the Electricity Act, 2003 by the factors which would encourage, competition, efficiency, economical use of the resources, good performance and optimum investments while determining the tariff.
27. The Commission also decided to avail services of a third-party consultant to assist it in verification of each scheme, assessment of component wise requirements along

with the cost. The Commission engaged a third party consultancy firm for the evaluation of the Capital Expenditure Plan of TPWODL. The Consultants conducted some field visits and had several rounds of discussion with the concerned officials of Licensee and examined various aspects of the proposal including the requirement, investment priority, commercial rationale etc., keeping in mind the concerns raised by different stake holders during the process of hearing. The consultants submitted their report to the Commission. The Commission took this report also into consideration.

28. In the present case as per para 39(b) of the vesting order, the Petitioner committed capital expenditure of Rs. 1,663 Cr. for the period FY 2021-22 to FY 2025-26 as follows:

(Value in Rs. Cr.)					
FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26	Total
306	500	333	322	202	1663

- i. As per para 39(c) of the vesting order:

“To allow flexibility in the capital expenditure planning, the Commission stipulates that, in the capital expenditure plan to be submitted by TPWODL as per the license conditions, the capital expenditure commitment for each year of the period FY 2022 to FY 2026 must be such that capital expenditure proposed up to a year shall be at least equal to the cumulative capital expenditure committed up to that year in the Bid submitted by TPCL. For avoidance of doubt, the minimum cumulative capital expenditure to be proposed by TPWODL for the period FY 2022 to FY 2026 must be as provided in the table below:

Table 2: TPWODL Cumulative Capital Expenditure for 5 years

(Value in Rs. crore)				
Up to 31-Mar-2022	Up to 31-Mar-2023	Up to 31-Mar-2024	Up to 31-Mar-2025	Up to 31-Mar-2026
306	806	1,139	1,461	1,663

- ii. As per the Licence Condition 11 and 32 the investment above Rs.5 Cr. is to be made by the distribution licensee in the licensed business area of operation with the approval of the Commission.
29. The main objective of the investment plan is to develop and maintain an efficient, coordinated, and economical distribution system in its area of operation. TPWODL shall effect supply of electricity to consumers in accordance with the provisions of the Act, Rules, Regulations, Orders framed there under and the direction of the Commission. The Commission further considers the following major aspects while finalizing the investment plan proposed by TPWODL.

- i. Whether the scheme is required to meet the statutory standards set in the Act, specified under Regulations, standards etc.
 - ii. Whether it will be helpful to meet the consumer's expectations of economic, quality, and reliable power.
 - iii. Whether the investment is cost efficient?
 - iv. Whether the proposal shall have any tariff impact on the consumers?
30. The Commission has examined the Capex plan submitted by TPWODL in detail. The Commission, while examining the investment proposals has considered all the views/ objections/ suggestions expressed by the stakeholders in writing and during the public hearing to the extent they are relevant.
31. The Commission believes that the Board of Directors is the ultimate decision-making body on behalf of the company. Approval of Board is an integral aspect in undertaking important business initiatives. Further, the company shall be able to raise resources (debt as well as equity) to the extent of capital investment amount approved by the Board. Hence, the numbers approved by the Board have been considered while approving the numbers for various schemes.
32. The Commission for the purpose of approval of Capex has reviewed the as-is-status of the infrastructure, the quantity of equipment proposed, areas covered, and the unit rates assumed by TPWODL for the various equipment to be deployed. The scheme wise analysis has been provided in subsequent paras.

A. Statutory, Safety and Security:

33. The Commission has noted the submissions of the Petitioner under this scheme. The Commission has reviewed the unit rates of the various items proposed under the Capex plan which are found to be in accordance with the Odisha Cost Data Book. For items, whose rates are not available in the Cost Data Book, the rates for such items have been reviewed based on the rates as per past Purchase Orders or the rates approved by the Commission in Capex plan of TPCODL for FY 2020-21 against various schemes.
34. The activity wise analysis of the schemes is as follows:
- a) **Life enhancement of feeder network in respect of maintaining safe horizontal / vertical clearances**

TPWODL submitted that almost entire HV network is overhead, and nearly 31,114 kms. of LT network is also overhead. TPWODL also submitted that during field visits conducted it was observed that most of the 33/ 11 kV/ LT feeders are in deteriorated condition and pose safety threat to the human beings and animals. Also, most of the feeders have binding wire / multiple joints resulting in chances of snapping of conductors and subsequent electrocution of human beings/ animals since cradle guards are not provided. TPWODL further submitted that due to scarcity of staff and materials, no structured maintenance planning is done. TPWODL submitted that with poor condition of network and absence of maintenance activity, it is difficult for utility to ensure reliable and quality power supply to the end users. TPWODL also submitted that during site visits conducted it was observed that conductor of different sizes is being used in different phases which limits the circuit capacity.

TPWODL further submitted that over sagged wires in 33 kV or 11 kV feeders are posing major threat to the lives of human beings and animals and at some places, due to re-construction / widening of roads, vertical/horizontal clearances of the feeders have been reduced which is not only causing violation of statutory guidelines but also increasing the chances of accidents. TPWODL also submitted that around 60-65% of assets in PSS (33 / 11 kV power sub-station) are operating in very poor condition and need refurbishment and only 10% of the total requirement has been proposed in the Capex plan of FY 2021-22.

Owing to the imminent need to ensure safety and reliable power supply to end consumers, the Commission decides to approve Capex amount to the extent approved by the Board towards refurbishment of 33 kV, 11 kV and LV lines in a phased manner emphasizing on critical areas.

b) Provision of Safety Equipment & PPEs to workforce

TPWODL submitted that due to non-availability of required PPE, several accidents occurred while carrying out the operation and maintenance activities on network. TPWODL further submitted that the desired testing tools are not available. Also, the available PPE's and testing instruments are not up to the standard and well maintained.

To ensure safety and security of workforce, the Commission decides to approve Capex towards procurement of safety equipments and PPEs to the extent approved by the Board of the Petitioner.

c) Earthing, Fencing and Boundary Wall

To strengthen earthing system in existing primary sub-stations, TPWODL submitted for additional earth pit in view of higher soil resistivity, poor earth mesh connectivity. TPWODL submitted for 10 nos. of additional earth pit for PSS, 3 nos of additional pits for DSS and earthing on every 5th pole.

TPWODL has proposed for installation/ construction/ renovation of Fencing and Boundary wall at 103 locations which primarily cover sub-stations located at crowded places and only around 20% of the total requirement has been proposed in the Capex plan for FY 2021-22.

The Commission found the Petitioner's proposal to cover 80 numbers of boundary wall and 2,500 numbers of fencings in FY 2021-22 to be reasonable and accordingly decides to approve Capex claimed towards earthing, fencing and boundary wall to the extent approved by the Board of the Petitioner.

d) Meter Testing Lab

TPWODL submitted that presently there are 4 Meter test labs in TPWODL area at Burla, Balangir, Rajgangpur and Rourkela, which are non-standard and non-functional. The equipment in these viz. test benches are also in dilapidated condition. To ensure high quality in bulk supply of meters, TPWODL has proposed to develop meter test lab in three Circles of TPWODL. This is to ensure that the statutory requirement of meter testing across TPWODL is met. TPWODL further submitted that the existing infrastructure of the existing labs shall be utilised with suitable modifications/ refurbishment.

The OERC (Conditions of Supply) Code, 2019 also provides for setting up of Meter testing Lab in the area. As per the clause no. 102 (d) of OERC (Conditions of Supply) Code, 2019,

“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”.

Hence, in accordance with the provisions of the OERC (Conditions of Supply) Code, 2019, the Commission allows the expenditure proposed towards development of Meter Testing Labs to the extent approved by the Board of the Petitioner.

35. The summary of the analysis is provided as follows:

Sl. No.	Particulars	Proposed Capex (Rs Cr)	Board Approval (Rs Cr)	Approved Capex (Rs Cr)
1	Life enhancement of feeder network in respect of maintaining safe horizontal / vertical clearances	20.54	20.54	20.54
2	Provision of Safety Equipment & PPEs to workforce	12.05	12.05	12.05
3	Earthing, Fencing and boundary wall	55.54	55.54	55.54
4	Meter Testing Lab	10.35	10.35	10.35
	Sub-Total	98.48	98.48	98.48

36. Based on the above analysis and the Board approval received against each scheme, the Commission decides to allow Capex of Rs. 98.48 Cr. towards Statutory, Safety and Security schemes.

B. Loss Reduction:

37. The Commission has noted the submissions of the Petitioner under this scheme. The Commission has reviewed the unit rates of the various items proposed under the Capex plan which are found to be in accordance with the Odisha Cost Data Book. For items, whose rates are not available in the Cost Data Book, the rates for such items have been reviewed based on past Purchase Orders or rates approved for TPCODL in Capex plan of FY 2020-21 as submitted by the Petitioner.

38. The activity wise analysis of the schemes is as follows:

a) Energy Meter replacement

TPWODL has submitted that around 0.65 lakh no meters cases and 2.88 lakh defective meter cases exist in TPWODL area. From the past trends, TPWODL has estimated that additional 50,000 meters are likely to become defective in FY 2021-22 and around 40,000 electro-mechanical meters are needed to be replaced. TPWODL has proposed Capex towards replacement of such meters along with the associated costs of service cables, meter boxes and other accessories.

In FY 2021-22, TPWODL has proposed to replace/ install around 3.53 lakh meters which are directly contributing to the non-technical losses.

As per the provisions of the OERC (Conditions of Supply) Code, 2019, the cost of the defective/ burnt/ lost meters shall be only recovered through Meter Rent. The relevant provisions of the OERC Distribution (Conditions of Supply) Code Regulations, 2019 are as follows:

“Cost of Replacement of Defective/ Burnt/ Lost Meters

113. (i) If, as a result of testing it is established that the meter became defective/burnt due to technical reasons viz. voltage fluctuation, transients etc. attributable to the licensee/supplier, the cost of the meter shall be borne by the licensee/supplier. In that case, the licensee/supplier shall recover only the balance meter rent due from the consumer so far.

(ii) If, as a result of testing, it is established that the meter was rendered defective/burnt due to reasons attributable to the consumer such as defect in consumer installation, connection of unauthorized load by the consumer etc., the cost of the meter shall be borne by the consumer. The licensee/supplier shall inform the consumer to replace the meter and associated equipment as per provisions of this Code within 30 working days. In case the consumer fails to do so, the licensee /supplier shall install a new meter.

Provided that in case the licensee/supplier installs the new meter, they shall recover the cost of the new meter from the consumer as per the meter rent approved by the Commission.

.....

(iv) In case of loss of meter, the cost of new meter and other apparatus shall be borne by the consumer unless the meter was installed in the licensee/supplier’s office or substation. Provided that if the licensee/supplier replaces the meter, the cost of new meter shall be recovered from the consumer as per the meter rent approved by the Commission.”

From the above provisions it is clarified that the cost of meter is to be recovered through meter rent and hence the Commission is not inclined to allow the proposal for cost of the defective/ burnt/ lost meters, procurement of meter, meter box, metering accessories, etc. under Capex approval for FY 2021-22. Accordingly, the Commission decides to allow the cost claimed only for the replacement of old service cable for FY 2021-22.

b) Technical Intervention-Installation of Smart meters

TPWODL submitted that it is in the process of deploying Advance Metering Infrastructure (AMI) throughout its territory. TPWODL submitted that Smart meters will be installed in a span of next three years and the project includes installation of complete IT backend infrastructure along with installation of consumer meters. TPWODL proposed for installation of 27,800 numbers of smart meter in FY 2021-22. TPWODL further submitted that there is a separate Smart metering project planned under “Smart City” drive which shall be funded through Central Government. In TPWODL area, Rourkela city is selected under Smart City drive with OPTCL being the nodal agency. Capex under smart metering scheme has been proposed other than the Rourkela Smart city Project.

The Board has not approved Capex under this scheme. Hence the Commission is not inclined to approve Capex under this head as claimed by the Petitioner.

c) Refurbishment/ augmentation of 33 kV/ 11 kV/ 0.415 kV network to reduce Losses

TPWODL submitted that most of the 33KV, 11KV & LV feeders are connected radially and have long length by typical standards which are the potential source of technical losses and cause poor voltage condition in the network. TPWODL has proposed to introduce new 11 kV Feeders to re-configure the existing lengthy feeders in such a way as to reduce the length and loading of existing feeders and thus the technical loss.

Owing to the need to reduce exorbitant loss levels in the TPWODL area and the requirement of the vesting order to adhere to the AT&C loss trajectory, the Commission is inclined to allow the Capex of Rs. 38.40 Cr. proposed towards refurbishment/ augmentation of 33 kV/ 11 kV/ 0.415 kV network to reduce losses.

39. The summary of the analysis is provided as follows:

Sl. No.	Particulars	Proposed Capex (Rs Cr)	Board Approval (Rs Cr)	Capex Approved (Rs Cr)
1	Energy Meter replacement	81.63	18.00	4.08
2	Technical Intervention-Installation of Smart meters	47.37	-	-
3	Refurbishment /augmentation of 33 kV/ 11 kV/ 0.415 kV network to reduce Losses	38.40	38.40	38.40
	Sub-Total	167.40	56.40	42.48

40. The Commission decides to allow only Rs. 4.08 Cr. to meet the requirements of replacement of old service cables under the meter replacement head as against Rs. 81.63 Cr. submitted in the Petition.

41. Based on the above analysis and considering the importance of Loss Reduction in the Capital Investment Plan, the Commission decides to allow Rs. 42.48 Cr. against the proposed Capex of Rs. 167.40 Cr. claimed under the Loss Reduction schemes.

C. Network Reliability:

42. The Commission has noted and reviewed the various activities proposed under this scheme. The Commission has reviewed the unit rates of the various items proposed under the Capex plan which are found to be in accordance with the Odisha Cost Data

Book. For items, whose rates are not available in the Cost Data Book, the rates for the same have been reviewed based on previous Purchase Order copies or TPCODL's approved scheme rates for FY 2020-21.

43. The activity wise analysis of the schemes is as follows:

a) Refurbishment/Life enhancement of 33/ 11 kV Primary Substation/ Additional New Substations

TPWODL submitted that PSS being a vital installation between customer and utility, it is required to refurbish bay equipments to improve the reliability. The Petitioner has proposed works viz. replacement of incoming 33 kV line and power transformer breaker along with relay and protection control panel wherever applicable, replacement of 11 kV Power transformer, LT and 11 kV feeder breaker, 33KV and 11KV CT, PT, LA, Isolator and AB Switch. TPWODL has also proposed to install 10 numbers of bore wells at identified locations to supply water for earth pit. TPWODL has assessed requirement of replacement/ refurbishment of 60 battery chargers and 80 Battery Banks in FY 2021-22. TPWODL has proposed to replace 43 sets of Battery & Battery chargers (18 numbers 48V and 25 numbers 24V DC) in FY 2021-22.

The Commission believes that to ensure quality and reliable power supply to consumers, investments in network improvement schemes are necessary. Hence, the Commission is inclined to approve the Capex under this head to the extent approved by the Board of the Petitioner.

b) Pilot Project for Installation of Fault Passage Indicator (FPI)

TPWODL submitted that majority of 11 kV & 33 kV, networks are overhead in nature with average feeder length more than 80 kms. TPWODL also submitted that many OH feeders are passing through forest area and most faults that occur on OH lines are transient faults caused by lightning and tree branches touching the live line conductor. TPWODL proposed to introduce 220 communicable type fault passage indicator and LORA system at key strategic locations to assist operator in faster decision making while restoring supply post failure.

To ensure quality and reliable power supply to consumers, the Commission is inclined to approve the Capex under this head to the extent approved by the Board of the Petitioner.

c) Augmentation of LV side protection System along with DT LA

TPWODL submitted that most of the DSS protection and control are not operating properly and are affecting the supply of all customers connected on any faulty grid. To overcome this situation, TPWODL proposed to strengthen the control and protection system at LT side at DSS level which will additionally ensure positive isolation to maintain safe working condition. TPWODL further proposed to install 11 kV lightning arresters for distribution transformers along with LV protection.

d) Installation of AB switches/ Isolators/ Insulators on 33 kV and 11 kV Network

TPWODL submitted that 11 kV & 33 kV feeders are very long and in some cases more than 100 kms. In case of line fault, the entire feeder or long part of the feeder remains isolated until fault gets cleared. TPWODL has proposed to install/ replace AB Switches/ Isolator/ Insulator for improving the network reliability.

The Commission allows Capex proposed towards network strengthening to ensure reliability of supply to the extent approved by the Board of the Petitioner.

44. The summary of the analysis is provided as follows:

Sl. No.	Particulars	Proposed Capex (Rs Cr)	Board Approval (Rs Cr)	Capex Approved (Rs Cr)
1	Refurbishment/Life enhancement of 33/11 kV Primary Substation /Additional New Substations	20.16	20.16	20.16
2	Pilot Project for Installation of Fault Passage Indicator (FPI)	2.00	2.00	2.00
3	Augmentation of LV side protection System along with DT LA	12.45	12.45	12.45
4	Installation of AB switches/ Isolators/ Insulators on 33 kV and 11 kV Network	14.30	14.30	14.30
	Sub-Total	48.91	48.91	48.91

45. To ensure reliable power supply to all the consumers there is an imminent need to upgrade the existing infrastructure. Hence, the Commission decides to allow Rs. 48.91 Cr. claimed under the Network Reliability scheme.

D. Load Growth:

46. The Commission has noted and reviewed the various activities proposed under Load Growth scheme. The Commission has reviewed the unit rates of the various items

proposed under the Capex plan which are found to be in accordance with the Odisha Cost Data Book.

47. The activity wise analysis of the schemes is as follows:

a) Network enhancement

TPWODL submitted that during field visits conducted it was observed that most of the 33/ 11 kV Primary Sub-Stations are having single incoming 33 kV source and with its failure, entire 33/ 11 kV PSS gets shutdown thereby causing shutdown to all the downstream 11 kV & LT network consumers. Moreover, HT consumers on 33 kV and 11 kV are being fed through tapping points instead of a dedicated feeder and in case of technical fault at one of the HT consumers, it leads to tripping of incoming source and other connected HT consumers. To overcome this issue, TPWODL has proposed to establish link line and establish ring connectivity from alternative available source to improve the power condition focussing primarily on voltage profile issues, system redundancy and future demand.

In view of the need for investment to augment the existing infrastructure to cater to the demand, the Commission allows the Capex towards network enhancement.

48. The summary of the analysis is provided as follows:

Sl. No.	Particulars	Proposed Capex (Rs Cr)	Board Approval (Rs Cr)	Capex Approved (Rs Cr)
1	Network enhancement / Unforeseen emergency Capex requirement	39.71	39.71	39.71
	Sub-Total	39.71	39.71	39.71

49. With anticipated increase in demand and corresponding requirement to augment the existing infrastructure, the Commission decides to allow Rs. 39.71 Cr. as approved by the Board towards the Load Growth scheme.

E. Technology and Civil Infrastructure:

50. The Commission has noted the submissions of the Petitioner under this scheme. The Commission has reviewed the unit rates of the various items proposed under the Capex plan which are found to be in accordance with the Odisha Cost Data Book. The Capex towards implementation of GIS/ SCADA/ GSAS have been reviewed based on the scheme rates proposed by TPCODL and rates identified in Tata Power Mumbai and TPDDL as submitted by the Petitioner. Further, Capex towards procurement of

ready to use assets has been proposed on lumpsum basis which is considered in line with the Petitioner's submission.

51. The activity wise analysis of the schemes is as follows:

- a) TPWODL under this head has proposed multiple works including revamping of existing customer care centres/ Division/ Sub-division/ Section offices, establishment of call centre and customer care centres in TPWODL licensed area, IT interventions, GIS & SCADA implementation, Security system in Central Stores, renovation of other civil infrastructures and procurement of ready to use assets for offices.
- b) The Commission believes that there is a need to revamp the existing infrastructure to develop a robust consumer grievance redressal system and enhance the customer experience. Further, IT interventions are required to develop a robust, theft free and secure network that is in sync with the latest technological innovations happening around the world. Hence, the Commission allows the Capex towards upgradation of IT infrastructure to the extent approved by the Board.
- c) To develop a centralised monitoring system for efficient operations and in order to achieve full scale automation, the Commission allows Capex towards deployment of SCADA and GSAS systems to the extent approved by the Board of the Petitioner.
- d) With regards to GIS scheme proposed by the Petitioner, the Commission is of the view that TPWODL's initial priority should be towards 33/ 11 kV system strengthening and improvement schemes for enhancing network reliability and quality of supply for consumers. However, to start the GIS work on a pilot scale, the Commission approves an amount of Rs. 5.00 Cr against the Board approval of Rs. 9.37 Cr.
- e) TPWODL submitted that the store offices are in dilapidated condition and do not have adequate lighting, access and internal road, storage platforms and fire protection system thereby compromising with the Safety & Security of the material and personnel. The Commission allows the Capex for purchase of CCTV's, establishment of watch towers etc. along with other equipment needed to strengthen the infrastructure for Central Store to the extent approved by the Board.

- f) With regards to other civil infrastructure and procurement of ready to use assets, the Commission allows the Capex to the extent approved by the Board owing to the dilapidated condition of the existing infrastructure handed over to TPWODL and the need to develop a safe, hygienic and well ventilated working environment for the employees.

52. The summary of the analysis is provided as follows:

Sl. No.	Particulars	Proposed Capex (Rs Cr)	Board Approval (Rs Cr)	Capex Approved (Rs Cr)
1	Infrastructure for Customer Care, Call Centre, Payment Centre, and Section Offices	2.04	2.04	2.04
2	IT & Technology for process efficiency	42.02	42.02	42.02
3	GIS Implementation	9.37	9.37	5.00
4	SCADA Implementation	15.30	15.30	15.30
5	GSAS Implementation	9.52	9.52	9.52
6	Security system in Central stores	1.05	1.05	1.05
7	Improvement of Civil Infrastructure	23.62	23.62	23.62
8	Ready to Use assets for Offices	5.00	5.00	5.00
	Sub-Total	107.92	107.92	103.55

53. The Commission decides to allow Capex of Rs. 98.55 Cr. towards Technology and Civil Infrastructure against the proposed Capex of Rs. 107.92 Cr. claimed by the Petitioner.

54. In view of the necessity of the proposed capital investment plan, the Commission hereby grants in principle approval against various schemes summarised as follows:

Approved CAPEX Plan FY 2021-22

Sl. No.	Particulars	Proposed Capex (Rs Cr)	Board Approval (Rs Cr)	Approved Capex (Rs Cr)
A	Statutory, Safety and Security			
1	Life enhancement of feeder network in respect of maintaining safe horizontal / vertical clearances	20.54	20.54	20.54
2	Provision of Safety Equipment & PPEs to workforce	12.05	12.05	12.05
3	Earthing, Fencing and boundary wall	55.54	55.54	55.54
4	Meter Testing Lab	10.35	10.35	10.35
	Sub-Total	98.48	98.48	98.48
B	Loss Reduction			

Sl. No.	Particulars	Proposed Capex (Rs Cr)	Board Approval (Rs Cr)	Approved Capex (Rs Cr)
1	Energy Meter replacement	81.63	18.00	4.08
2	Technical Intervention-Installation of Smart meters	47.37	-	-
3	Refurbishment /augmentation of 33 kV/ 11 kV/ 0.415 kV network to reduce Losses	38.40	38.40	38.40
	Sub-Total	167.40	56.40	42.48
C	Network Reliability			
1	Refurbishment/Life enhancement of 33/11 kV Primary Substation /Additional New Substations	20.16	20.16	20.16
2	Pilot Project for Installation of Fault Passage Indicator (FPI)	2.00	2.00	2.00
3	Augmentation of LV side protection System along with DT LA	12.45	12.45	12.45
4	Installation of AB switches/ Isolators/ Insulators on 33 kV and 11 kV Network	14.30	14.30	14.30
	Sub-Total	48.91	48.91	48.91
D	Load Growth			
1	Network enhancement / Unforeseen emergency Capex requirement	39.71	39.71	39.71
	Sub-Total	39.71	39.71	39.71
E	Technology and Civil Infrastructure			
1	Infrastructure for Customer Care, Call Centre, Payment Centre, and Section Offices	2.04	2.04	2.04
2	IT & Technology for process efficiency	42.02	42.02	42.02
3	GIS Implementation	9.37	9.37	5.00
4	SCADA Implementation	15.30	15.30	15.30
5	GSAS Implementation	9.52	9.52	9.52
6	Security system in Central stores	1.05	1.05	1.05
7	Improvement of Civil Infrastructure	23.62	23.62	23.62
8	Ready to Use assets for Offices	5.00	5.00	5.00
	Sub-Total	107.92	107.92	103.55
	Total	462.42	351.42	333.13

55. The approved cost shall be passed in the ARR as per the norm subject to rational utilization by the Petitioner and prudence check through audit.
56. The Commission feels it appropriate to make an observation on the role of GRIDCO in the matter of TPWODL's CAPEX proposal. GRIDCO holds 49 % equity in

TPWODL and it has 4 out of 9 Directors in its Board. TPWODL is required to obtain approval of its Board of Directors while submitting its CAPEX proposal. Commission, as a matter of principle, limits its consideration to the amounts approved by the Board. GRIDCO as such has a substantial role in shaping the CAPEX proposal at its formulation stage itself. Instead of doing that, we observe that they have raised a number of objections in the case here. While we have considered the comments of GRIDCO in its perspective, we advise GRIDCO to play their role in the right earnest at the level of the Board of Directors of TPWODL.

57. The petitioner is directed to :

- a) submit CAPEX Proposal along with the copy of Board Approval from FY 2022-23 onwards.
- b) submit the Capital investment plan strictly adhering to the provisions of the Tariff Regulations, Vesting Order and the license conditions from FY 2022-23 onwards.
- c) submit quarterly progress report of the works along with the details of materials utilized vis-à-vis various activities shown in the DPR.
- d) take stock of the inventory available in the stores and make its effective utilization.
- e) procure the material/award the Contracts only after transparent open competitive bidding process.

58. Accordingly, the case is disposed of.

Sd/-
(G. Mohapatra)
Member

Sd/-
(S. K. Parhi)
Member

Sd/-
(U. N. Behera)
Chairperson