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. 41/2021

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

In the matter of: **Application for approval of CAPEX Plan for the FY 2021-22 in compliance to the directions of the Commission in the Vesting Order dated 25.03.2021 passed in Case No. 09/2021.**

For Petitioner: Shri Bhaskar Sarkar, CEO, TPNODL.

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, Shri Majoj Panda and Ms. Sonali Patnaik, ALO, DoE, GoO.

ORDER

Date of Hearing: 29.06.2021 **Date of Order:18.09.2021**

1. The petitioner, Tata Power Northern Odisha Distribution Limited (TPNODL), has submitted an application for approval of Capital Expenditure (CAPEX) to the tune of Rs. 275.4 Crore for FY 2021-22 to carry out various system improvement and safety activities in its area of operation. This application has been filed pursuant to the direction of the Commission at para 39 of the vesting order in Case No. 9/2021.

2. TPNODL's licensed area is spread over a geographical area of 27857 sq.km and it serves a registered consumer base of around 19 lakhs. TPNODL procures power from GRIDCO through Odisha Power Transmission Corporation Limited (OPTCL)'s 220/132/33 kV grid substations at sub transmission voltage level of 33 kV and then distributes the power at 33 kV/11 kV/440 volt/230 volt depending on the demands of the consumers. TPNODL has submitted that it has inherited the power distribution network in dilapidated state at some places, which is not compliant with the requisite statutory standards and poses threat to consumers, staff etc. Further, underrated/ undersized/ worn out conductors, poor earthing,

presence of either faulty equipments or non-availability of equipments/ switchgears/ protection devices are creating potential safety hazards to the employees, consumers, children, animals, public, etc. TPNODL has therefore come up with this Capital Investment Plan with the primary objective of ensuring safe reliable power supply and ensuring best customer service to its end consumers. TPNODL has categorised the various activities of the Capital Investment Plan under 5 major broad subheads i.e. (i) statutory and safety, (ii) loss reduction, (iii) network reliability, (iv) load growth (v) technology and civil infrastructure.

3. The petitioner has submitted that every area under its operation has different characteristics and thus has different challenges. However, some common challenges have been identified for taking up the work in the first year of its operation. TPNODL receives power from 26 nos. of Grid Substations and handles about 4000 MU by serving around 19,81,382 nos of consumers. It has 215 no. of 33/11 kV substations (484 nos. of transformer), 33/0.415 kV substations (2457 nos. transformer)] and 69646 nos. of 33/0.415 kV, 11/0.415/0.230 kV DTR. There are 2788 ckt. km. of 33 kV line, 36865 ckt. km. of 11 kV line, 22215 ckt. km. of bare LT line and 44047 ckt. km. of ABC LT line.

4. The petitioner has submitted that due to vast geography, wide spread network and absence of preventive maintenance, the existing network has become very weak to serve the consumers. Major factors causing damage to the poles/lines include structural deterioration of poles due to flood, cyclone, heavy vegetation, etc. The petitioner has proposed to replace the damaged poles, replace worn out conductors, do re-stinging of the conductor, install the mid-span pole, install stay-wire at start and end of the line and at every H pole. The petitioner has also proposed to strengthen earthing system by introducing fresh earthing in both Distribution Sub-Station (DSS) and Primary Sub-Station (PSS) as a part of refurbishment activity, which will enhance the life of the equipment with proper functioning of protection relays. The petitioner has also proposed various activities required to be performed for the aforesaid job.

5. The petitioner has further submitted that most of the 33/11 kV and 11/0.415 kV substations either have broken boundary fence or no boundary fence. Hence, it has proposed to put up fencing/build boundary wall under Statutory and Safety head. The petitioner has also proposed to procure Personal Protective Equipment (PPE) and safety equipment for its staff to ensure safety to which the Licensee is mandated to comply as per the prevailing Regulations.

6. Accordingly, TPNODL has submitted the Detailed Project Report (DPR) for CAPEX plan of Rs. 275.40 Crore for FY 2021-22 categorised under the following five broad subheads.

(i) **Statutory & Safety** – which includes purchase of PPEs, safety and testing

equipments, providing Cradle guard at major road crossings, Fencing of Distribution substations (DSS), Boundary wall for Primary substations (PSS) and establishment of meter testing lab.

(ii) **Loss Reduction** – which includes Equipment for Meter data downloading, AMR enabled equipment, conversion of Bare LT conductor to AB Cable and Field Testing equipment – Metering and enforcement.

(iii) **Network Reliability –** which includes 33 kV and 11 kV Network refurbishment, installation of 33 kV and 11 kV AB Switch, PSS and DSS Refurbishment, installation of LV protection at DSS , installation of Auto reclosure/ sectionalisers, RMU and FPIs, Trolley Mounted Pad Substations, Package Distribution Substations, Underground cable Fault Locating Van and oil filtration machine , Testing equipment for PSS, Earthing of Power Transformers and Distribution Transformers and 33 kV & 11 kV Lightning Arrestor.

(iv) **Load growth –** which includes augmentation of power transformers and distribution transformers to meet load growth and addition of 11 kV and 33 kV line.

(v) **Technology and Civil infrastructure –** Technology includes Data Center (DC) Development Cost, IT Infrastructure Hardware Cost, End user Devices i.e., Laptop, desktop, Printer, scanner, Software Licenses, Communication Network Infrastructure at DC and office locations, SCADA and GIS implementation, Smart Metering Infrastructure (HES and MDM on 4G/ NBIOT Communication) and Call Centre Implementation (System and Infrastructure). Further, Civil works includes development of Civil infrastructure, Civil Work for Meter Test Bench, Civil work for Customer Care Center and PSCC, establishment of DT workshop, High mast light in the Central store and Building shed for material storage with racking system.

7. The petitioner has submitted various documents/ information in the Annexures of its DPR as listed below:

- **Annexure-1**: Sample Pictures of existing poor network condition and violation of statutory compliance posing safety threat to public, employees and animals.
- **Annexure-2**: Statutory Guidelines of CEA's Safety Regulations which requires that lines, poles, earthing, transformer mounting, substation (S/S) fencing etc. should be in order.
- **Annexure-3**: DPR for Safety and Testing Equipment has been submitted. The total projected cost is Rs. 8.5 Crore. This shall ensure benefit in the shape of reduced

physical harm/ hazards, improved quality of work, reduced man-hour loss and quick decision on attempting work on an equipment.

- **Annexure-4**: DPR for Cradle guard at major road crossings has been submitted where Rs. 1.06 Crore is proposed for cradle guard for 33 kV line and Rs. 1.40 Crore is proposed for cradle guard for 11 kV line. Total projected cost shall be Rs. 2.46 Crore. It avoids accidents caused by snapping of conductors of overhead MV feeders.
- **Annexure-5**: DPR for fencing of DSS has been submitted. The total projected cost is Rs. 9.8 Crore. This shall ensure safety to stray animals and public at large and DSS failure will be reduced, hence power cuts will decrease.
- **Annexure-6**: DPR for Boundary wall of PSS has been submitted. The proposed cost is Rs. 6.84 Crore. This shall ensure benefit safety to stray animals and public at large.
- **Annexure-7**: DPR for establishment of meter testing lab has been submitted. The proposed cost is Rs. 2.20 Crore. It shall create environment for meeting the statutory requirement.
- **Annexure-8**: DPR for Equipment for Meter data downloading has been submitted. It is proposed to procure CMRI's for data collection & analysis which will help in identification of any problematic meters and take corrective action. The total projected cost shall be Rs. 0.28 Crore.
- **Annexure-9**: DPR for AMR enabled equipments has been submitted. GSM Modem is used for AMR communication which cost Rs. 1.37 Crore. It has proposed to install 2500 nos. for consumers having load above 20 KW which shall improve revenue cycle of the DISCOM.
- **Annexure-10**: DPR for Conversion of Bare LT conductor to AB cable costing Rs. 13.56 Crore. This shall improve the safety factor, minimize the safety accident risk, reduce the chances of fault and strengthen existing 415 V network.
- **Annexure-11**: DPR for Field Testing equipment – Metering and enforcement has been submitted. It helps in identifying faulty meters at site and take required corrective action, The total projected cost shall be Rs. 1.76 Crore.
- **Annexure-12**: DPR for 33 kV Network refurbishment and AB switch has been submitted, refurbishment of selected 33 kV feeder assets so as to restore the

efficiency of the S/S and feeders and improve the safety and reliability of network assets including enhancing the operational life of the equipment. Some are to be refurbished with 232 sq.mm. AAAC and some with 148 sq.mm. AAAC, totaling to Rs. 21.12 Crore. This shall result in benefits in the form of improved voltage profile, reduced outages, increased vertical clearance, reduced downtime of the equipment, reduced un-served energy, enhanced reliability of supply and reduced accidents. Further, 33 kV AB switch is proposed which shall cost Rs. 1.84 Crore. The projected cost shall be Rs. 22.96 Crore.

- **Annexure-13**: DPR for Refurbishment of 33 kV/11 kV Primary Substation (PSS) has been submitted and the projected cost shall be Rs. 17.5 Crore.
- **Annexure-14**: DPR for 11 kV Network refurbishment and AB switch, which is to be refurbished with 100 sq.mm. AAAC costing Rs. 20.82 Crore. Further, for 11 kV AB switch the projected cost is Rs. 5.31 Crore. Total projected cost shall be Rs 26.13 Crore.
- **Annexure-15**: DPR for Refurbishment of 11 kV/0.415 kV Distribution Substation (DSS) has been submitted. It involves major overhauling of the existing DSS' by providing switchgear-controlled LV protection and appropriate switches. The refurbishment of 500 kVA DSS' shall require Rs. 2.51 Crore, refurbishment of 250 kVA DSS' shall require Rs. 4.73 Crore and refurbishment of 100 kVA DSS' shall require Rs. 1.76 Crore totaling to Rs. 8.99 Crore of investment.
- **Annexure-16**: DPR for LV protection at DSS has been submitted. MCCBs shall be installed in the pole mounted 100 kVA (447 nos.) at the cost of Rs. 2.70 Crore, 250 kVA (180 nos.) at the cost of Rs. 2.08 Crore and ACB-500 kVA (72 nos.) at the cost of Rs. 1.96 Crore. This shall ensure lower power cuts, reduction of consumer complaints, better reliability, and improvement in SAIFI/SAIDI. This shall be at a cost of Rs. 6.74 Crore.
- **Annexure-17**: DPR for Auto-Recloser, Sectionaliser, FPI, RMU and AB switches at 33 kV and 11 kV Feeders at a cost of Rs. 6.77 Crore has been proposed, comprising Rs. 1.34 Crore for Auto reclosure, Rs. 3.91 Crore for 11 kV sectionaliser, Rs. 0.20 Crore for FPI, Rs. 1.32 Crore for 4-way RMU. These shall provide benefit of easy fault location, reduced power outage, ensuring continuous power supply, ensuring safety to the operator, providing better flexibility to isolate faulty feeders only.
- **Annexure-18**: DPR for Trolley Mounted Pad substations has been submitted.

Trolley Mounted Pad substations of 10 nos. shall be installed at the cost of Rs. 2.34 Crore.

- **Annexure-19**: DPR for Underground cable Fault Locating Van and oil filtration machine has been submitted. It is required to pin point the cable fault along with the location of fault and minimise the downtime of the cable. Oil filtration is required to filter the transformer oil.FLC van of 1 no. shall be installed at the cost of Rs. 2.65 Crore and 5 nos. of oil filtration machine at the cost of Rs. 0.35 Crore. The total projected is Rs. 3 Crore.
- **Annexure-20**: DPR for Testing equipment for PSS has been submitted which cost Rs. 6.48 Crore. This shall ensure to check the condition of equipment for reliable operation as well as maintenance of 33/11 kV PSS and the associated lines.
- **Annexure-21**: DPR for Earthing of PTR, DTR & Lines has been submitted. This shall ensure equipment safety and for network reliability. The projected cost shall be Rs. 0.91 Crore.
- **Annexure-22**: DPR for 33 kV & 11 kV Lightning Arrestor shall ensure the protection of equipments and human life. The total projected cost shall be Rs. 1.69 Crore.
- **Annexure-23**: DPR for Augmentation from 5 MVA to 8 MVA Power Transformer has been submitted. For 9 nos. of transformer, it shall require Rs. 8.96 Crore. This shall provide benefits in the reliable power supply by ensuring N-1 reliability at PTR level and shall reduce over burdening of existing PTR and hence Power Cuts.
- **Annexure-24**: DPR for Augmentation from 200/250 to 315 kVA Distribution Transformer has been submitted. For 50 nos. of transformer, it shall require Rs. 5.19 Crore. This shall ensure benefits in the reduction of chances of failure and hence interruption and reduction in over burdening of existing DT' resulting reduced power cuts.
- **Annexure-25**: DPR for Augmentation from 200/250 to 315 kVA Distribution Transformer has been submitted. For 60 nos. of transformer, it shall require Rs. 4.11 Crore. This shall ensure benefits in the reduction of chances of failure and hence interruption and reduction in over burdening of existing DT' resulting reduced power cuts.
- **Annexure-26**: DPR for Addition of 11 kV Overhead Line, shall ensure reliable power supply. The projected cost is Rs. 1.68 Crore.

- **Annexure-27:** DPR for Addition of 33 kV Overhead Line, shall ensure reliable power supply. The projected cost is Rs. 2.06 Crore.
- **Annexure-28**: DPR for Data Centre (DC) Development has been submitted. It is required to rehabilitate the space for accommodating three bays for Call Centre, IT Hub and PSCC along with refurbishment of area with all basic amenities required for setting up the above three bays. The projected cost is Rs. 5.39 Crore.
- **Annexure-29**: DPR for IT Infrastructure Hardware has been submitted. This shall ensure better employee services and centralized salary processing through ERP, better monitoring and governance system, better asset management and accounting through ERP. The total project cost shall be Rs. 5.31 Crore.
- **Annexure-30**: DPR for End user Devices i.e., Laptop, desktop, Printer, scanner has been submitted. The projected cost shall be Rs. 16.34 Crore.
- **Annexure-31**: DPR for Software Licenses has been submitted. This shall ensure better connectivity leading to benefits of governance till last mile (section offices). The projected cost shall be Rs. 15.14 Crore.
- **Annexure-32**: DPR for Communication Network Infrastructure at DC and office locations has been submitted. This shall ensure better connectivity leading to benefits of governance till last mile (section offices). The projected cost shall be Rs. 4.98 Crore.
- **Annexure-33**: DPR for Mini SCADA Implementation (20 nos. ODSSP & 10 nos. Old PSS) has been submitted. This shall ensure the improvement in System Reliability, automatic generation of MIS, predictive and analytic tools for efficient management and decision making, Disturbance Data Collection and analysis. The projected cost is Rs. 2.55 Crore.
- **Annexure-34**: DPR for GIS Implementation for One Division, which provides accurate network hierarchy for Energy Audit and acts as backbone for Smart Grid, the projected cost shall be Rs. 7.91 Crore.
- **Annexure-35**: DPR for Smart Metering Infrastructure (HES and MDM on 4G/ NBIOT Communication) has been submitted. This benefits DISCOM to control the entire billing and collection very effectively and less billing disputes as 100% correct bills issued on actual meter reading, the projected cost is Rs. 10.50 Crore.
- **Annexure-36**: DPR for Call Center Implementation (System and Infrastructure) has

been submitted, the projected cost shall be Rs. 5 Crore.

- **Annexure-37**: DPR for Civil Works, Store and Administration, which has got 5 parts, viz.:

(i)	High mast light at store	: Rs. 0.75 Crore
(ii)	Racks at Balasore stores	: Rs. 2.3 Crore
(iii)	Upgrading DT Workshop	: Rs. 3.60 Crore
	Fire extinguisher & Storage	: Rs. 0.95 Crore
(iv)	Civil Infrastructure (Office Buildings, Meter Test Lab, Customer Care Center, Records Rooms, PSC)	: Rs. 17.31 Crore
(v)	Administration	: Rs. 5.23 Crore
	TOTAL	**: Rs. 30.14 Crore**

8. The summary of the CAPEX as proposed by the petitioner for FY 2021-22 is mentioned in the table below:

Sl. No	Major Category	Activity	DPR Cost (In Rs. Crore)
1	Statutory & Safety	Safety & Testing equipments	8.51
		Cradle guard at major road crossings	2.46
		Fencing of Distribution substations	9.8
		Boundary wall for Primary substations	6.84
		Establishment of Meter Testing Lab	2.2
		Total	**29.81**
2	Loss Reduction	Equipment for Meter data downloading	0.28
		AMR enabled equipment	1.37
		Conversion of LT Bare conductor to AB Cable	13.56
		Field Testing equipment - Metering and enforcement	1.76
		Total	**16.97**
3	Network Reliability	33 KV Network refurbishment & AB switch	22.96
		Refurbishment of 33KV/11KV Primary Substation (PSS)	17.5
		11 KV Network refurbishment & AB switch	26.13
		Refurbishment of 11KV/0.415 KV Distribution Substation (DSS)	8.99
		Installation of LV protection at DSS	6.74
		Installation of Auto reclosure / Sectionalizers ,RMUs, &FPIs	6.77
		Trolley Mounted Pad Substations	2.34
		Underground cable Fault Locating Van and oil filtration machine	3
		Testing equipment for PSS	6.48
		Earthing of Power Transformers and Distribution Transformers	0.91
		33KV & 11 KV Lightning Arrestor	1.69
		Total	**103.51**

Sl. No	Major Category	Activity	DPR Cost (In Rs. Crore)
4	Load Growth	Augmentation from 5 MVA to 8 MVA Power Transformer	8.96
		Augmentation from 200/250 to 315 KVA Distribution Transformer	5.19
		Augmentation 63/25 to 100 KVA Distribution Transformer	4.11
		Addition of 11 kV Overhead Line	1.68
		Addition of 33 kV Overhead Line	2.06
		Total	**22**
5	Technology & Civil Infrastructure	Data Center (DC) Development Cost	5.39
		IT Infrastructure Hardware Cost	5.31
		End user Devices i.e. Laptop, desktop, Printer, scanner	16.34
		Software Licenses	15
		Communication Network Infrastructure at DC and office locations	4.98
		Mini SCADA Implementation (20 Nos. ODSSP & 10 Nos. Old PSS)	2.55
		GIS Implementation for One Division	7.91
		Smart Metering Infrastructure (HES & MDM on 4G/ NBIOT Communication)	10.5
		Call Center Implementation (System & Infrastructure)	5
		Civil Infrastructure (Office Buildings, Meter Test Lab, Customer Care center, Records Rooms, Power System Control)	17.3
		Establishment of DT workshop	3.6
		High mast light in the Center store	0.75
		Assets for Offices	5.23
		Building shed for material storage with racking system	3.25
		Total	**103.11**
Grand Total			**275.4**

9. In addition to the above, the Petitioner has submitted the following details, which are dealt in different annexures as stated above:

(a) Details of availability of Safety items and PPE at store as on 31.03.2021.

(b) Circle-wise actual performance for the period from FY 2016-17 to FY 2020-21 and Circle-wise projected performance for FY-2021-22.

(c) AT&C Loss Vesting Order (Commitment) Vs Present Proposal for the period from FY 2021-22 to FY 2025-26.

(d) Submitted that they are preparing and developing couple of Demand Side Management Schemes which will be finalized and submitted by November, 2021.

(e) Year-wise details of SAIDI, SAIFI for the period from FY 2016-17 to FY 2020-21 and year-wise details of projected SAIDI and SAIFI for the period from FY 2021-22 to FY 2025-26 has furnished as follows:

The reliability figures are calculated based on the data received from the field. The reliability figures are varying to a very large extent each month. Therefore, it would be imprudent to forecast the reliability trend for the next five years based on the existing figures. TPNODL is taking measures to put in place monitoring systems and software applications to accurately capture the feeder interruptions and outage events without any manual intervention.

(f) Circle-wise details of the interruptions and outages for the period from FY 2016-17 to FY 2020-21 which includes the abstract of outages due to tripping's of HT feeder, Failure of Transformer (Nos.) and Major disturbances due to EHT failure.

(g) Details of consumer related information like T1-Consumption details, T6-Consumer Commercial Information, P10-Information on System Demand for the period from FY 2016-17 to FY 2020-21 and for FY 2021-22.

(h) The applications for new service connections pending on 01.04.2021 was for a total load of 140 MW and projected load to be added during FY 2021-22 is 201 MW.

(i) Details of consumer category-wise service connection proposed to be released during FY 2021-22 are as follows:

Proposed New Connection and Load During FY 2021-22		
Category of consumer	**No. of consumers**	**Connected Load/Contract Demand (KW)**
LT	100370	125594
HT	33	18271
EHT	4	56750
Grand Total	**100407**	**200615**

(j) Status of division-wise loading data, load growth and the location of the transformer (PTR/DTR).

(k) Status of division-wise details of UG cable with feeder name, voltage level, fault length (metre).

(l) Circle-wise details of 11 kV feeder.

10. The replies of Respondents are summarized in the paragraphs below:

The Respondent Shri Bijay Kumar Das, on behalf of OPTCL submitted that:

a) The petitioner should make a Provision for taking over of all new 33/11 kV substations constructed by OPTCL under ODSSP, DDUGJY and IPDS and any other such schemes.

b) There are number of Bays in NESCO, which has not been utilised till date and there is no such plan to construct new 33 kV lines to connect new EHT grid with 33/11 kV substation.

11. Another Respondent on behalf of M/s. Grinity Power Tech. Pvt. Ltd. and M/s Utkal Chamber of Commerce & Industry Ltd. submitted as follows:

a) There should not be any likely tariff hike because of above CAPEX and considering the likely AT&C Loss Reduction, the Tariff should reduce in future.

b) AT&C Loss Reduction Trajectory for FY 2021-22 has to be submitted as there is an increase in CAPEX as compared to earlier approved figure of Vesting Orders.

c) The petitioner is required to submit the details of CAPEX planning for each Industrial Park, MSME Cluster, new upcoming Industrial Estate along with definite time line which is not included as part of the proposed CAPEX plan.

d) The petitioner should submit an undertaking for mandatory procurement of Goods and services from the local MSMEs.

e) Petitioner should submit the financial saving, payback period and probable outcome, and likely benefits foreseen due to the proposed CAPEX Investment.

f) The individual quotation and supporting documents and details of supplier or installer or offer details and technical specification of CMRI, clamp on meter, digital camera, single phase and three phase meters have to be submitted.

g) CAPEX plan for Demand Side Management (DSM) program has not been submitted.

h) Item-wise specification, star rating, quotation, likely supplier for the major transformers, SCADA system and the detailed plan for utilization of the old and replaced transformers has to be provided.

i) The various documents like Capital Structure, Capitalization Schedule, Financing Plan, Cost-Benefit Analysis, performance improvement envisaged due to CAPEX along with Division wise Capital Investment Plan has not been submitted.

j) The petitioner should install Meter Testing Lab in Each Division as this will help in early replacement of defective meters, early testing of consumer meter.

k) The petitioner has not submitted Network Reliability Index and SOP parameters and likely reduction in sustained interruption, momentary interruption in rural area and urban area.

12. Respondent Shri Prabhakar Dora submitted that

a) The detailed expected returns on the investment have not been submitted.
b) The petitioner should provide Cost Benefit Analysis, which provides the pros and cons of the project for a go ahead.
c) The justification for the investment and the impact on the future ARR and Tariff has to be provided.

13. The Respondent Shri Manoj Panda and others have submitted that:

a) The details of works along with corresponding expenditure and cost estimates has not been displayed on the website.
b) Owing to high cost in nature, the capital expenditure towards Smart Meters and SCADA may be implemented after network implementation and loss reduction.
c) The capital expenditure plan does not include the details of works to be carried out.

14. In its rejoinder the petitioner submitted as follows:

a) The works against the ODSSP, DDUGJY and IPDS schemes referred under annexure 2(a), 2(b) & 2(c) are yet to be completed by the respective vendors, the work executed by the vendor is of poor quality and have several issues due to which MOM has been issued. Despite regular meetings and site visit the work has not been completed so far. TPNODL is ready to take over the projects once all rectification/balance work is completed.

b) As regards to 33 kV bays which have been constructed in NESCO area, the petitioner has stated that those are being utilised and for balance bays as per annexure-1, work on 9 nos. of 33 kV feeder are under execution and 2 feeders are under preliminary stage of planning. The balance work is in progress considering the loading of power transformer and radial connectivity and shall be submitted for approval after finalisation of proposal in upcoming years.

c) As regards the impact on tariff, petitioner submitted that the capital investment will help in reducing the AT&C loss substantially and in turn help in reducing the tariff. Further it gives impetus to the consumer services also.

d) As regards the details of CAPEX planning for each Industrial Park, MSME Cluster,

new upcoming Industrial Estate, the petitioner assures that all facilities as per the provisions of applicable Regulations will be provided in development of Power supply infrastructure for such industrial corridors. As these schemes are largely funded by the Developers the same are not the part of Capex petition. The petitioner also stated that they will execute these projects as and when the Developers like IDCO come up with such proposal under the various provisions of the supply code.

e) On mandatory procurement of goods and services from the local MSMEs, the petitioner has submitted that they observe and fulfill the statutory requirements in their Procurement Policy.

f) As regards the financial saving, payback period and probable outcome, and likely benefits foreseen due to the proposed CAPEX investment, the petitioner has submitted that the benefits of various schemes including those for reduction of losses have been presented in the Capex under the five major heads of capital expenditure. Some of the expenditures are proposed as a statutory measure for the safety and lives of the human, animals and also the distribution equipment.

g) As regards individual quotation and supporting documents of safety equipment, the petitioner has submitted that the rates have been taken from Government Cost data book FY 2018-19. Wherever the rates are not available for some materials, same are taken from recent purchase orders placed by their group companies viz. TPDDL, TPCODL, TPC on reputed vendors. The above rates are considered for the purpose of estimation only however procurement shall be taken through competitive bidding process.

h) As regards provisioning for DSM, the petitioner has submitted that keeping in view the five broad areas like Safety, Reliability, Loss Reduction, Load Growth and Infrastructure, the capital investment proposal has been prioritised.

i) The petitioner stated that all the procurement would be done through competitive bidding only, where any eligible vendor can participate.

j) As regards utilisation of transformer, the petitioner has submitted that Power transformer augmentation is required in some substations due to load growth. TPNODL has done load flow studies to identify such power transformers. TPNODL to optimise the costs will use the old power transformers to either augment the capacity or replace other sick transformers. There are chances of failure of such transformers if not replaced which will eventually impact reliability of power

supply.

k) As regards submission of capital investment plan, the petitioner has submitted the present Capex Plan as per the requirement of the vesting order within the stipulated time period.

l) As regards the installation of meter testing lab, the petitioner has proposed the lab in two locations to cater the meter testing requirements as planned which is adequate in the present scenario.

m) As regards Network Reliability index, the petitioner has submitted that the present investment plan under this head shall give the measuring tool to quantify the reliability of the network and to meet SOP Parameters. So, it is too early to measure the Network Reliability index without improving the present network.

n) As regards updating of details in website, the petitioner has submitted that suggestion of the objector shall be taken care of.

o) The petitioner submitted that the implementation of Smart Meter & SCADA should go side by side along with the development and strengthening of network system and it is intrinsic to the reduction of loss process.

p) As regards detailed work to be carried out under capital investment, the petitioner has stated that the DPR of the Capex Plan has been prepared with due care to the existing and proposed assets located in the TPNODL Area with location wise.

q) As regards the return on the Capital investment, the petitioner has stated that it is already prescribed in the Vesting Order under Para 39(g) which may be referred. Further the above investment proposal shall be guided as per Regulations of OERC.

r) The petitioner has committed to reduce the AT&C loss as envisaged in the Vesting Order and the benefits in form of revenue can only be generated if adequate Capex is infused. TPNODL has suitably planned that the benefits in form of revenue generation and customer satisfaction shall surpass the cost as envisaged in the Capex proposal.

15. The Commission conducted hearings through Video Conferencing in the Virtual Court on 08.06.2021. The public notice was issued on 09.06.2021 inviting suggestions/objections to the CAPEX Plan of the DISCOMs for FY 2021-22 which were to be filed on or before 25.06.2021. The public hearing in the matter was held on 29.06.2021. The Commission during hearing heard the respondents who had filed their written views and participated in

the hearing and the Stakeholders present during hearing.

16. Heard the parties at length. Before going to the merit of the proposal of the Licensee we will discuss the background and provisions based on which, the CAPEX plan shall be approved. As per Section 42 of the Electricity Act, 2003 read with Condition 7 of the Licence condition and Regulation 4 of the General conditions of Distribution License and 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 by Section 61(c) of the Electricity Act, 2003 i.e., by the factors which would encourage, competition, efficiency, economical use of the resources, good performance and optimum investments while determining the tariff.

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

"Capital Investment:

7.34 The licensee shall propose in its filing a detailed capital investment plan. The plan must separately show ongoing projects that will spill into the year under review and new projects that will commence but may be completed within or beyond the tariff period. For the new projects, the filing must provide the justification as stipulated under relevant investment guidelines of the Commission.....

7.36 The Capital investment plan shall be division wise/scheme wise and with respect to each division/scheme, shall include---

a) Purpose of investment (i.e. replacement of existing assets, meeting load growth, technical loss reduction, non-technical loss reduction, meeting reactive energy requirements, customer service improvement, improvement in quality and reliability of supply etc.);

b) Capital Structure;

c) Capitalization Schedule;

d) Financing plan;

e) Cost-benefit analysis;

f) Performance improvement envisaged in the Control Period.

7.37 While presenting the justification for new projects, the licensee shall detail the specific nature of the works and outcome sought to be achieved. The detail must be shown in the form of physical parameters, e.g., new capacity added, to be added, meters replaced, customer service centers set up etc., so that it is amenable to physical verification. This is necessary to ensure that the approved investment plans are implemented and the licensee does not derive improper financial benefit by delaying or

neglecting to make the proposed investment."

18. As per the above provisions in the OERC Tariff Regulations, the Commission asked the petitioner to submit the details of cost benefit analysis, capital structure, capitalisation schedule, financing plan and specific details of work. TPNODL in its reply has submitted the capitalisation schedule and financing plan. TPNODL submitted that the DPR has been prepared within 45 days based on the inputs received from the work field. The Commission at this stage has considered and analysed the Capex plan for FY 2021-22 based on the submissions made by TPNODL. However, the Commission directs the TPNODL to submit the Capex Plan from FY 2022-23 onwards strictly complying with the provisions of OERC Tariff Regulations.

19. In the present case as per para 39(b) of the Vesting Order, the petitioner committed capital expenditure of Rs.1270 Crore for the period FY 2021-22 to FY 2025-26 as follows :

(Value in Rs. Crore)

FY 22	FY 23	FY 24	FY 25	FY 26	Total
246	376	259	247	141	1,270

As per para 39 (c) of the Vesting Order:

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

Table 2: TPCL Cumulative Capital Expenditure for 5 years

Cumulative Capex Expenditure (INR Cr)				
Upto 31-Mar- 2022	***Upto 31-Mar-2023***	***Upto 31-Mar-2024***	***Upto 31-Mar-2025***	***Upto 31-Mar-2026***
246	*622*	*882*	*1,129*	*1,270*

20. TPNODL has proposed the Capex Expenditure for FY 2021-22 higher than the Capex Expenditure as per Vesting Order.

21. As per the Licence Conditions No. 11 and 32, the Investment above Rs. 5 Crore is to be made by the Distribution Licensee in the licensed business area of operation with the approval of the Commission The relevant extracts of the Licence Conditions are as follows:

"*11. INVESTMENTS*

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

11.2 The Licensee shall duly comply with the Regulations, guidelines, directions and orders the Commission may issue from time to time in regard to the investments to be made in the Distribution Business.

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

(a) there is a need for such investments in the Distribution System;

(b) the Licensee has made techno-economic analysis and environmental aspects of all viable alternatives to the proposal for investing in or acquiring new Distribution System assets to meet such need;

(c) the investment plan is in conformance to the conditions for capital investment specified in the Vesting Order.

....."

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

32.1. For the purposes of Condition 11.10, the term "major investment" means any planned scheme wise investment in or acquisition of distribution facilities like rural electrification, system improvement, major renovation & modernization works, the cost of which, when aggregated with all other investments or acquisitions (if any) forming part of the same overall transaction/ scheme, equals or exceeds Rs. 5 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.

....."

22. The main objective of the investment plan is to develop and maintain an efficient, coordinated and economical distribution system. TPNODL 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 TPNODL.

(i) Whether Capital Investment Plan has received approval of the Board of Directors?

(ii) Whether the scheme is required to meet the statutory standards stipulated in the Act, or specified under Regulations, standards, etc.

(iii) Whether it will be helpful to meet the consumer's expectations of quality and reliable power ?

(iv) Whether the investment is cost efficient?

(v) Whether the proposal shall have any tariff impact on the consumers?

23. The Commission has examined the investment proposed by the petitioner. 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.

24. The Commission has observed that there is variation in the CAPEX value stipulated in the Vesting Order, DPR and the Board Approval, as shown below:

(Value in Rs. Crore)

Capex as per Vesting Order	**Capex as per DPR Submitted**	**Board Approved Capex Value**
246*	275.4	275.40 and 322.86 including GRIDCO share**

**Capex Commitment by TPCL*

*** Total Capex value is Rs. 322.86 Crore with TPNODL's Share – Rs. 275.40 Crore and GRIDCO's share - Rs. 47.46 Crore*

25. In TPNODL, TPCL is having 51% (fifty one percent) equity shares and Government of Odisha ("GoO") through GRIDCO is having 49% (forty nine percent) equity shares. The Commission notes that since Board is the governing body of TPNODL, any Capital Investment Plan should have received approval of TPNODL's Board of Directors before it is considered by the Commission. Accordingly, the Commission decided to limit the Capital Expenditure for various works proposed in the DPR to the extent approved by the Board.

26. The Commission has analysed each activity in the submission of TPNODL's CAPEX DPR and evaluated the same considering the following methodology:

(a) Assessment of the present condition of the Distribution Network.

(b) Verification of the Schemes proposed in line with the provision of various OERC Regulations.

(c) Analysing the requirement of the activity/work proposed for FY 2021-22.

(d) Verification of the quantity requirements as claimed in the proposal.

(e) For Cost Analysis, comparison of the cost submitted in the DPR with the cost of materials provided in the Cost Data Book, 2019 issued by Government of Odisha has

been done. For the materials which are not mentioned in Cost Data Book, 2019, the reference rates of other States like Maharashtra and Telangana or prevailing market rates have been considered.

27. The Commission has noted that there is variation between the Cost submitted in DPR and the Cost approved by the Board. Further, the Commission also observed that some of the activities dealt in the DPR of TPNODL have been re-organised in the Board Approval. These instances have been discussed in detail in subsequent paras of this Order. Considering the importance of the Capex plan and its impact on the tariff, the Commission decides to limit the Cost of each activity to that approved by the Board. The Scheme wise analysis is done in the subsequent paragraphs in line with the above methodology for the evaluation of the Capital Expenditure claimed by TPNODL.

28. 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 TPNODL. 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.

29. The Commission has examined the investments proposed by the petitioner. 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. The Commission also took the report of the Consultants into consideration.

A. <u>Statutory Compliance/Safety:</u>

30. The Commission notes the importance of all the parameters considered under the Statutory Compliance/Safety head viz. Safety & testing equipments, Cradle guard at major road crossings, Fencing of Distribution substations (DSS), Boundary wall for Primary substations (PSS) and establishment of meter testing lab. While comparing the Unit Rates of various items proposed in the DPR with the Cost Data Book, the Commission observed some deviations in the rates considered for Safety & Testing Equipment and considering the rates as per the Cost Data Book, the total cost under this head works out to Rs. 7.78 Crore as compared to claimed amount of Rs. 8.51 Crore and cost for Establishment of Meter Testing Lab works out to Rs. 6.24 Crore as compared to claimed amount of Rs. 6.84 Crore. Under

such cases, the Commission has considered Unit Rate as per Cost Data Book while arriving at the total cost and approved the lower cost between the analysed cost and Board approved cost.

31. The Commission during scrutiny of the documents has also observed that based on the Accident Reports submitted by TPNODL, on an average for the last 10 years, fatal accidents amount to almost 64% (Humans + Animals) of which 55% relate to humans. The Commission is of the view that the proposals submitted by TPNODL under Statutory & Safety considerations are essentially required to effectively curtail the rate of accidents in the upcoming years.

32. The summary of Capex proposed in the DPR, Capex approved by the Board and the Capex approved by the Commission towards Statutory Compliance/Safety are as follows:

Description	Capex as per DPR (Rs. Crore)	Board Approved Capex (Rs. Crore)	OERC Approved Capex (Rs. Crore)
Safety & Testing Equipment	8.51	8.51	7.78
Cradle guard at major road crossings	2.46	2.46	2.46
Fencing of Distribution substations (DSS)	9.8	9.8	9.8
Boundary wall for Primary substations (PSS)	6.84	6.24	6.24
Establishment of Meter Testing Lab	2.2	2.2	2.17
Total	**29.81**	**29.21**	**28.45**

As discussed above, the Commission decides to approve CAPEX amount of Rs. 28.45 Crore under Statutory Compliance/Safety. The Commission also expects that with the investments considered under Statutory Compliance/Safety, there should be substantial reduction in accident rates.

B. <u>Loss Reduction:</u>

33. The Commission has noted the schemes and claims of the petitioner under the Loss Reduction Scheme. While comparing the Unit Rates of various items proposed in the DPR with the Cost Data Book, the Commission observed some deviations in the rates considered for several schemes. Under such cases, the Commission has considered Unit Rate as per Cost Data Book while arriving at the total cost and approved the lower between the analysed cost and the Board approved cost.

34. The Commission observed some deviations in the rate for equipment for meter data

downloading and considering the rates as per the Cost Data Book, the total cost under this head works out to Rs. 0.16 Crore as compared to claimed amount of Rs. 0.28 Crore. Further, for other activities, the Commission feels that the Board Approved values are reasonable.

35. The summary of Capex proposed in the DPR, Capex approved by the Board and the Capex approved by the Commission towards loss reduction are as follows:

Description	Capex as per DPR (Rs. Crore)	Board Approved Capex (Rs. Crore)	OERC Approved Capex (Rs. Crore)
Equipment for Meter data downloading	0.28	0.28	0.16
AMR enabled equipment	1.37	1.37	1.37
Conversion of LT Bare conductor to AB Cable	13.56	13.1	13.1
Field Testing equipment - Metering and enforcement	1.76	1.76	1.76
Total	**16.97**	**16.51**	**16.39**

Based on the above analysis and considering the importance of Loss Reduction in the Capital Investment Plan, the Commission decides to allow Rs. 16.39 Crore against the proposed CAPEX amount of Rs. 16.97 Crore claimed under Loss Reduction.

C. <u>Network Reliability:</u>

36. The Commission has noted the schemes and claims of the petitioner under the Network Reliability Scheme. Considering the present condition of the distribution network of TPNODL, the Commission is of the view that all the schemes covered under the Network Reliability which aims to strengthen the network are allowable. While comparing the Unit Rates of various items proposed in the DPR with the Cost Data Book, the Commission observed some deviations in the rates considered for several schemes. In such cases, the Commission has considered Unit Rate as per Cost Data Book while arriving at the total cost and approved the lower cost between the analysed cost and the Board approved cost.

37. The Commission has noted that the Board has considered several activities viz. Augmentation from 5 MVA to 8 MVA Power Transformer, Augmentation from 200/250 to 315 KVA Distribution Transformer, Augmentation from 63/25 to 100 KVA Distribution Transformer and High mast light in the Center store under Network Reliability and approved the amount of Rs.122.31 Crore. During the DPR submission, the TPNODL has considered Augmentation from 5 MVA to 8 MVA Power Transformer, Augmentation from 200/250 to 315 KVA Distribution Transformer, Augmentation from 63/25 to 100 KVA Distribution Transformer under Load Growth and High mast light in the Center store under

Technological & Civil infrastructure which has resulted in reduction in cost under Network Reliability to Rs. 103.51 Crore. The Commission finds that the categorisation considered under the DPR are more appropriate and decides to approve the above activities as per the DPR submitted.

38. The summary of Capex proposed in the DPR, Capex approved by the Board and the Capex approved by the Commission towards Network Reliability are as follows:

Description	Capex as per DPR (Rs. Crore)	Board Approved Capex (Rs. Crore)	OERC Approved Capex (Rs. Crore)
33 KV Network refurbishment & AB Switch	22.96	22.96	22.96
Refurbishment of 33KV/11KV Primary Substation (PSS)	17.5	17.5	16.29
11 KV Network refurbishment & AB Switch	26.13	26.13	26.13
Refurbishment of 11KV/0.415 KV Distribution Substation (DSS)	8.99	8.9	8.9
Installation of LV protection at DSS	6.74	6.74	6.49
Installation of Auto reclosure / Sectionalizers ,RMUs, &FPIs	6.77	6.67	5.07
Trolley Mounted Pad Substations	2.34	2.34	1.15
Underground cable Fault Locating Van and oil filtration machine	3	3	0
Testing equipment for PSS	6.48	6.48	4.9
Earthing of Power Transformers and Distribution Transformers	0.91	0.91	0.81
33KV & 11 KV Lightning Arrestor	1.69	1.67	1.65
Total	**103.51**	**103.3**	**94.35**

While comparing the Unit Rates of various items proposed in the DPR with the Cost Data Book, the Commission observed some deviations in the cost for Refurbishment of 33KV/11KV Primary Substation (PSS). The cost as per Cost Data Book works out to Rs. 16.29 Crore as compared to claimed amount of Rs. 17.5 Crore. The cost for Installation of LV protection at DSS works out to Rs. 6.49 Crore as compared to claimed amount of Rs. 6.74 Crore, cost for Installation of Auto reclosure / Sectionalizers, RMUs, &FPIs works out

to Rs. 5.07 Crore as compared to claimed amount of Rs. 6.77 Crore, cost for Trolley Mounted Pad Substations works out to Rs. 1.15 Crore as compared to claimed amount of Rs. 2.34 Crore, cost for Testing equipment for PSS works out to Rs. 4.9 Crore as compared to claimed amount of Rs. 6.48 Crore, cost for Earthing of Power Transformers and Distribution Transformers works out to Rs. 0.81 Crore as compared to claimed amount of Rs. 0.91 Crore and cost for 33KV & 11 KV Lightning Arrestor works out to Rs. 1.65 Crore as compared to claimed amount of Rs. 1.69 Crore.

39. Further, the Commission notes that TPNODL has very little underground cable infrastructure as compared to its overhead lines. Hence, the Commission has decided to disallow the cost claimed for purchase of Underground cable Fault Locating Van at this stage.

40. The Commission observes that TPNODL has not submitted any scheme for utilization of the 11 kV feeders emanating from 33/11 kV substations. Further, in some 33/11 kV substations, there is only single 11 kV outgoing feeder, which results in improper utilization of the network and affects the reliability of the system.

Hence, the Commission decides to allow the CAPEX amount of Rs. 94.35 Crore under Network Reliability. The Commission directs TPNODL to properly utilize the spare 11 kV bays available in the 33/11 kV substations for strengthening the Distribution Network. The Commission also directs TPNODL to submit the information related to utilisation of 11 kV bays available in 33/11 kV substations in the Capex proposal for next year i.e. FY 2022-23.

D. <u>Load Growth:</u>

41. The Commission has noted the schemes and claims of the petitioner under the Load Growth Scheme. After analysing the annual growth rate from FY 2016-17 to FY 2019-20 for different category of consumers, it was observed that category-wise Sales Growth is in the range of 2% to 7% with overall CAGR of around 3% in Sales and CAGR of Load Growth is around 6%. Load growth has been showing incremental trend, which justifies the requirement of addition to 11 kV line, PTR, DTR and LT line to meet load growth. While comparing the Unit Rates of various items proposed in the DPR with the Cost Data Book, the Commission observed some deviations in the rates considered for several schemes. Under such cases, the Commission has considered Unit Rate as per Cost Data Book while arriving at the total cost and approved the lower between the analysed cost and Board approved cost.

42. The Commission notes that the TPNODL Board in its approval has considered

Establishment of DT workshop under Load Growth. The DPR, the TPNODL has considered Establishment of DT workshop under Technological & Civil infrastructure. Further, as discussed under the Network Reliability, the Commission decides to consider Augmentation from 5 MVA to 8 MVA Power Transformer, Augmentation from 200/250 to 315 KVA Distribution Transformer, Augmentation from 63/25 to 100 KVA Distribution Transformer under Load Growth as per the DPR. The Commission notes that the Board Approved value of Load Growth scheme is Rs. 8.92 Crore. Further, considering the shifting of activities from Network Reliability to Load Growth (Augmentation from 5 MVA to 8 MVA Power Transformer, Augmentation from 200/250 to 315 KVA Distribution Transformer, Augmentation from 63/25 to 100 KVA Distribution Transformer), the total Board Approved value comes to Rs. 23.58 Crore.

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

Description	**Capex as per DPR (Rs. Crore)**	**Board Approved Capex (Rs. Crore)**	**OERC Approved Capex (Rs. Crore)**
Augmentation from 5 MVA to 8 MVA Power Transformer	8.96	8.96	8.70
Augmentation from 200/250 to 315 KVA Distribution Transformer	5.19	5.19	5.19
Augmentation from 63/25 to 100 KVA Distribution Transformer	4.11	4.11	4.08
Addition of 11 kV Overhead Line	1.68	3.26	1.68
Addition of 33 kV Overhead Line	2.06	2.06	2.06
Total	**22**	**23.58**	**21.71**

While comparing the Unit Rates of various items proposed in the DPR with the Cost Data Book, the Commission observed some deviations. Adopting the Cost Data Book, the cost for Augmentation from 5 MVA to 8 MVA Power Transformer comes to Rs. 8.70 Crore as compared to claimed amount of Rs. 8.96 Crore, cost for Augmentation from 63/25 to 100 KVA Distribution Transformer comes to Rs. 4.08 Crore as compared to claimed amount of Rs. 4.11 Crore.

Based on the above analysis, the Commission decides to approve Rs. 21.71 Crore under the

Load Growth Scheme against the claim of Rs. 22 Crore in the DPR.

E. Technology and Civil Infrastructure:

44. The Commission has noted the schemes and claims of the petitioner under the Technology and Civil Infrastructure Scheme. The Commission is of the view that the requirement of the CAPEX proposed under the Technology and Civil Infrastructure has to be considered in view of the long-term benefits as there are many schemes in IT infrastructure development, which are one-time investments.

45. As discussed under the heads of Network Reliability and Load Growth, the Commission finds it more appropriate to approve the costs claimed under the activities - Establishment of DT workshop and High mast light in the Center store under Technology and Civil Infrastructure in line with the TPNODL's DPR.

46. **GIS Implementation –** The Commission understands importance of Geographical Information System to have better asset management and to strengthen various other business processes viz. energy audit process, technical feasibility, dues verification, network planning and developing Outage Management System. Considering the current condition of the distribution network, GIS may be considered in a limited scale now. Considering the fact that it will be done for one division only this year, Commission approves an amount of Rs. 3.00 Cr for 2021-22.

47. The summary of Capex proposed in the DPR, Capex approved by the Board and the Capex approved by the Commission towards Technology and Civil Infrastructure are as follows:

Description	Capex as per DPR (Rs. Crore)	Board Approved Capex (Rs. Crore)	OERC Approved Capex (Rs. Crore)
Data Center (DC) Development Cost	5.39	5.39	5.39
IT Infrastructure Hardware Cost	5.31	5.31	5.31
End user Devices i.e. Laptop, desktop, Printer, scanner	16.34	16.02	16.02
Software Licenses	15	15	15
Communication Network Infrastructure at DC and office locations	4.98	4.98	4.98
Mini SCADA Implementation (20 Nos. ODSSP & 10 Nos. Old PSS)	2.55	2.55	2.55
GIS Implementation for One Division	7.91	7.91	3.00
Smart Metering Infrastructure (HES & MDM on 4G/ NBIOT Communication)	10.5	10.5	10.5
Call Center Implementation (System	5	5	5

Description	Capex as per DPR (Rs. Crore)	Board Approved Capex (Rs. Crore)	OERC Approved Capex (Rs. Crore)
& Infrastructure)			
Civil Infrastructure (Office Buildings, Meter Test Lab, Customer Care center, Records Rooms, Power System Control)	17.3	17.3	17.3
Establishment of DT workshop	3.6	3.6	3.6
High mast light in the Center store	0.75	0.75	0.75
Assets for Offices	5.23	5.23	5.23
Building shed for material storage with racking system	3.25	3.25	3.25
Total	**103.11**	**102.79**	**97.88**

48. The Commission finds that most of the claims in the DPR submitted are in line with the Board Approved cost except for one activity of End user Devices i.e. Laptop, desktop, Printer, scanner, for which the Board Approved amount of Rs. 16.02 Crore is marginally lower as compared to the claimed amount of Rs. 16.34 Crore.

49. The Commission decides to limit the CAPEX amount under Technology and Civil Infrastructure to the Board Approved amounts for various works. Hence, the Commission allows Rs. 94.88 Crore under Technology and Civil Infrastructure.

50. In view of the necessity of the proposed capital investment plan, the Commission hereby grants in principle approval to the following proposals.

Approved CAPEX Plan FY 2021-22

Sl. No	Major Category	Activity	DPR Cost (Rs. Crore)	Board Approved Cost (Rs. Crore)	OERC Approved Cost (Rs. Crore) (Considering Board approved Cost, Cost as per Cost data book and disallowance of certain schemes)
1	Statutory & Safety	Safety & Testing equipments	8.51	8.51	7.78
		Cradle guard at major road crossings	2.46	2.46	2.46
		Fencing of Distribution substations	9.8	9.8	9.8
		Boundary wall for Primary substations	6.84	6.24	6.24
		Establishment of Meter Testing Lab	2.2	2.2	2.17
		Total	**29.81**	**29.21**	**28.45**

Sl. No	Major Category	Activity	DPR Cost (Rs. Crore)	Board Approved Cost (Rs. Crore)	OERC Approved Cost (Rs. Crore) (Considering Board approved Cost, Cost as per Cost data book and disallowance of certain schemes)
2	Loss Reduction	Equipment for Meter data downloading	0.28	0.28	0.16
		AMR enabled equipment	1.37	1.37	1.37
		Conversion of LT Bare conductor to AB Cable	13.56	13.1	13.1
		Field Testing equipment - Metering and enforcement	1.76	1.76	1.76
		Total	**16.97**	**16.51**	**16.39**
3	Network Reliability	33 KV Network refurbishment & AB switch	22.96	22.96	22.96
		Refurbishment of 33KV/11KV Primary Substation (PSS)	17.5	17.5	16.29
		11 KV Network refurbishment & AB switch	26.13	26.13	26.13
		Refurbishment of 11KV/0.415 KV Distribution Substation (DSS)	8.99	8.9	8.9
		Installation of LV protection at DSS	6.74	6.74	6.49
		Installation of Auto reclosure/ Sectionalizer, RMUs, &FPIs	6.77	6.67	5.07
		Trolley Mounted Pad Substations	2.34	2.34	1.15
		Underground cable Fault Locating Van and oil filtration machine	3	3	0
		Testing equipment for PSS	6.48	6.48	4.9
		Earthing of Power Transformers and Distribution Transformers	0.91	0.91	0.81
		33KV & 11 KV Lightning Arrestor	1.69	1.67	1.65
		Total	**103.51**	**103.3**	**94.35**

Sl. No	Major Category	Activity	DPR Cost (Rs. Crore)	Board Approved Cost (Rs. Crore)	OERC Approved Cost (Rs. Crore) (Considering Board approved Cost, Cost as per Cost data book and disallowance of certain schemes)
4	Load Growth	Augmentation from 5 MVA to 8 MVA Power Transformer	8.96	8.96	8.7
		Augmentation from 200/250 to 315 KVA Distribution Transformer	5.19	5.19	5.19
		Augmentation 63/25 to 100 KVA Distribution Transformer	4.11	4.11	4.08
		Addition of 11 kV Overhead Line	1.68	3.26	1.68
		Addition of 33 kV Overhead Line	2.06	2.06	2.06
		Total	**22**	**23.58**	**21.71**
5	Technology & Civil Infrastructure	Data Center (DC) Development Cost	5.39	5.39	5.39
		IT Infrastructure Hardware Cost	5.31	5.31	5.31
		End user Devices i.e. Laptop, desktop, Printer, scanner	16.34	16.02	16.02
		Software Licenses	15	15	15
		Communication Network Infrastructure at DC and office locations	4.98	4.98	4.98
		Mini SCADA Implementation (20 Nos. ODSSP & 10 Nos. Old PSS)	2.55	2.55	2.55
		GIS Implementation for One Division	7.91	7.91	3.00
		Smart Metering Infrastructure (HES & MDM on 4G/ NBIOT Communication)	10.5	10.5	10.5
		Call Center Implementation (System & Infrastructure)	5	5	5
		Civil Infrastructure (Office Buildings,	17.3	17.3	17.3

Sl. No	Major Category	Activity	DPR Cost (Rs. Crore)	Board Approved Cost (Rs. Crore)	OERC Approved Cost (Rs. Crore) (Considering Board approved Cost, Cost as per Cost data book and disallowance of certain schemes)
		Meter Test Lab, Customer Care center, Records Rooms, Power System Control)			
		Establishment of DT workshop	3.6	3.6	3.6
		High mast light in the Center store	0.75	0.75	0.75
		Assets for Offices	5.23	5.23	5.23
		Building shed for material storage with racking system	3.25	3.25	3.25
		Total	**103.11**	**102.79**	**97.88**
Grand Total			**275.4**	**275.39**	**258.78**

51. 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.

52. 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 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.

53. Accordingly the case is disposed of.

Sd/-	Sd/-	Sd/-
(G. Mohapatra)	**(S. K. Parhi)**	**(U. N. Behera)**
Member	**Member**	**Chairperson**