

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

Case No: ____ of 2026

IN THE MATTER OF:

Application under para 3.2 of the OERC (Terms and Conditions for Determination of Wheeling Tariff and Retail Supply Tariff) Regulations, 2022 and Retail Supply Tariff Order dated 24.03.2026 for approval of Capital Investment Plan phased over period from FY 2026-27 to FY 2030-31 in the Licensed Area of TP Central Odisha Distribution Ltd. for implementation of the various directives stipulated in the Retail Supply Tariff Order dated 24.03.2026.

IN THE MATTER OF:

TP Central Odisha Distribution Ltd., Corporate Office, Power House, Unit 8, Bhubaneswar- 751 012 represented by its Chief-Regulatory & Legal.

...Petitioner

IN THE MATTER OF:

M/s GRIDCO, M/s. OPTCL, M/s. SLDC, Department of Energy, Govt. of Odisha and All Concerned Stake Holders

...Respondent

Affidavit

I, Bharat Kumar Bhadawat, aged about 54 Years, son of late Shri Shankar Lal Bhadawat residing at Bhubaneswar do hereby solemnly affirm and say as follows:

1. I am the Chief-Regulatory & Legal of TP Central Odisha Distribution Ltd. the petitioner in the above matter and I am duly authorized to swear this affidavit on its behalf.
2. The statements made in the submission herein shown to me are based on information provided to me and I believe it to be true.

Bhubaneswar.

Dated: 8th June 2026


Bharat Kumar Bhadawat

Chief-Regulatory & Legal

The above named deponent(s) being duly identified by Sr. J. N. MEJAYA KAUTRAY, Advocate, Bhubaneswar, appears before me on 08 JUN 2026 at _____ A.M./P.M. States on oath the contents of this affidavit are true to the best of his / her / their knowledge and belief.

Deponent(s) Notary, Bhubaneswar

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IN THE MATTER OF: TP Central Odisha Distribution Ltd., Corporate Office, Power House, Unit 8, Bhubaneswar- 751 012 represented by its Chief-Regulatory & Legal.

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IN THE MATTER OF: M/s. GRIDCO, M/s. OPTCL, M/s. SLDC, Department of Energy, Govt. of Odisha and All Concerned Stake Holders.

.... Respondents

Most Respectfully Sheweth,

1. That, the Petitioner DISCOM, has taken over the distribution business from erstwhile CESU utility w.e.f 01.06.2020 as per terms of vesting order. TP Central Odisha Distribution Limited (TPCODL) is a joint venture between Tata Power and the Government of Odisha with equity participation in the ratio of 51:49.
2. That, the Petitioner is the Distribution Licensee, as per License Condition dated 24.08.2020 of the Hon'ble Commission, in central part of Odisha having five Distribution Circle namely Bhubaneswar-I, Bhubaneswar-II, Cuttack, Dhenkanal and Paradeep with area of operation of 29354 Sq.Km.
3. That, the Petitioner DISCOM is required to "supply electricity" in accordance with the provisions as laid down under section 42 of the Electricity Act, 2003 which provides for duties of the Distribution Licensee.
4. That, as per mandate of Vesting Order, the Petitioner is procuring power from GRIDCO, who is the state designated entity to procure power for all the 4 DISCOM(s) from different generators like Thermal, Hydel, Renewable etc. located in and outside Odisha.



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A. Background for Submission of the Petition

5. In compliance with the directives stipulated in the Vesting Order dated 26.05.2020 as well as the Odisha Electricity Regulatory Commission (Terms and Conditions for Determination of Wheeling Tariff and Retail Supply Tariff) Regulations 2014 and 2022, TPCODL since its commencement of operation has been submitting its Capital Investment plan every year for the approval of the Hon'ble Commission.
6. The Odisha Electricity Regulatory Commission (Terms and Conditions for Determination of Wheeling Tariff and Retail Supply Tariff) Regulations, 2022 (hereinafter referred to as "Tariff Regulations, 2022") requires submission of a Capital Investment Plan for each year of the Control Period. The relevant regulatory framework provides as follows:

"3.2.1. The Distribution Licensee shall submit detailed capital investment plan, financing plan and physical targets for each year of the Control Period for strengthening and augmentation of distribution network, meeting the requirement of load growth, reduction in distribution losses, improvement in quality of supply, reliability, metering, reduction in congestion, etc., to the Commission for approval, as a part of the Business Plan applicable for the entire control period and annual proposal for each year of the Control Period.

"3.2.2. The Distribution Licensee shall file a separate annual Capital Investment Plan comprising of capital investment plan, financing plan and physical targets for each year of the Control Period as per the timelines specified in Annexure-I."

7. In compliance to the above provision of the Tariff Regulations, 2022 the petitioner has submitted its Capital Investment Plan for FY 2026-27 vide submission dated 10.09.2025 (registered as Case No-77 /2025). The Hon'ble Commission has approved the Capital Investment Plan of the petitioner for FY 2026-27 vide order dated 15.05.2026.
8. The Hon'ble Commission, in its Retail Supply Tariff (RST) Order for FY 2026-27 dated 24.03.2026, has issued certain directives for implementation by the petitioner in various areas including safety, protection, metering, AT&C loss reduction, and improvement of voltage profile in the distribution network. It is submitted that , implementation of these directives require capital investment . Further, as the capital Investment Plan for FY 2026-27 was filed by the petitioner in September 2025 , these directives were not part of the scope of the Capital Investment plan FY 2026-27 submitted by the petitioner and approval accorded by the Hon'ble Commission in order for Case No. 77 of 2025, dated 15.05.2026.
9. The directives that are issued by the Hon'ble Commission in Retail Supply Tariff Order dated 24.03.2026 , implementation of which requires additional Capital Investment is provided below.

- a. Metering of 33 & 11 kV feeders ,DTRs and Consumers (Para 267)



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(XXXVII) Issue of Metering of all 33 kV & 11 kV feeders, associated DTRs and Consumers

267. During the Annual Performance Review for FY 2024-25, the information submitted by the DISCOMs reveal that the metering of all 33 kV feeders is yet to be completed. As per the data, metering of 33 kV feeders with correct meters of TPCODL, TPWODL, TPNODL & TPSODL are 63.74%, 100 %, 51.52%, and 96.84% respectively. While one DISCOM has achieved 33 kV feeder metering of 100%, the rest of the DISCOMs are required to complete the metering in the ensuing financial year. Further, the data indicate that about 97.63% of all the 11 kV feeders are metered. This is appreciable, however, in the absence of 100% metering of all the 33 kV & 11 kV feeders and DTRs upto a certain capacity, necessary energy audit cannot be carried out, which is essential to identify the loss-making pockets. It has been brought to the notice of the Commission that not a single 11 kV feeder is in operation that has meters at all level (DTRs & Consumers connected to that feeder) in the operating area of any of the DISCOMs (TPNODL, TPWODL, TPSODL TPCODL). Details of no. of 11 kV feeders, which are completely metered in all respect (i.e. metering of 11 kV feeder, metering of all associated DTRs of the feeder and metering of all consumers supplied through that feeder) need to be submitted along with total load on the feeder. If no such feeders are there, then details of no. of 11 kV feeders with metering of all associated DTRs (i.e. metering upto DTR level) need to be submitted within three months of issue of this order. **Based on loading level, all 11 kV feeders having high loss level need to identified and prioritized, for metering upto consumer level (at least upto DTR level) and the target/time frame for completion of such work need to intimated within next 3 months. The metering of at least 2 to 3 nos. of 11 kV feeders in each division (with high revenue earning) and associated DTRs & consumers need to be completed in all respect by the end of financial year 2026-27 to assess actual technical loss and AT&C loss.**

(Emphasis Supplied)

b. Metering of Distribution Transformers (DTRs) (Para 268)

(XXXVII) Issue of Metering of all 33 kV & 11 kV feeders, associated DTRs and Consumers

267. During the Annual Performance Review for FY 2024-25, the information submitted by the DISCOMs reveal that the metering of all 33 kV feeders is yet to be completed. As per the data, metering of 33 kV feeders with correct meters of TPCODL, TPWODL, TPNODL & TPSODL are 63.74%, 100 %, 51.52%, and 96.84% respectively. While one DISCOM has achieved 33 kV feeder metering of 100%, the rest of the DISCOMs are required to complete the metering in the ensuing financial year. Further, the data indicate that about 97.63% of all the 11 kV feeders are metered. This is appreciable, however, in the absence of 100% metering of all the 33 kV & 11 kV feeders and DTRs upto a certain capacity, necessary energy audit cannot be carried out, which is essential to identify the loss-making pockets. It has been brought to the notice of the Commission that not a single 11 kV feeder is in operation that has meters at all level (DTRs & Consumers connected to that feeder) in the operating area of any of the DISCOMs (TPNODL, TPWODL, TPSODL TPCODL). Details of no. of 11 kV feeders, which are completely metered in all respect (i.e. metering of 11 kV feeder, metering of all associated DTRs of the feeder and metering of all consumers supplied through that feeder) need to be submitted along with total load on the feeder. If no such feeders are there, then details of no. of 11 kV feeders with metering of all associated DTRs (i.e. metering upto DTR level) need to be submitted within three months of issue of this order. **Based on loading level, all 11 kV feeders having high loss level need to identified and prioritized, for metering upto consumer level (at least upto DTR level) and the target/time frame for completion of such work need to intimated within next 3**



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months. The metering of at least 2 to 3 nos. of 11 kV feeders in each division (with high revenue earning) and associated DTRs & consumers need to be completed in all respect by the end of financial year 2026-27 to assess actual technical loss and AT&C loss.

(Emphasis Supplied)

- c. Issue of Interruption in an area due to Solitary Fault in one Consumer Premises (Para 269)

(XXXIX) Issue of Power supply interruption in an area due to solitary fault in one Consumer premises

It has been brought to the notice of the Commission, that the fault in one DTR of a 11 kV feeder affects the power supply of the neighbouring/ adjoining consumers/area.

*Further, numbers of small/medium category of industrial consumers are connected to common 33 kV or 11 kV feeder without proper protection system including SA to isolate the faulty section. This leads to power supply interruption of other industrial/other category of consumers connected to that feeder because of fault in one consumer's system. As per the submissions of the DISCOMs, they are installing auto re-closers, Sectionalizers, Ring main unit (RMU) and Fault Passage Indicator at strategic locations across the network to enable quick fault detection and sectional isolation. However, such issues continue to occur which not only affects the consumers but also the distribution business. **Therefore, DISCOMs must deploy the best practices in the distribution sector to ensure that the faulty section is easily isolated from the healthy section to maintain the continuity of supply. The DISCOMs are advised to segregate the industrial feeders, wherever feasible or where industrial load exceeds 60% of total load. The required protection system complete in all respect including Circuit Breakers, protection relays, Surge Arresters etc. must be provided to ensure reliable power supply to such category of consumers. The frequency and duration of outage (SAIDI & SAIFI) of such feeder(s) need to be submitted to the Commission by each DISCOM based on the data collected from the smart meters installed upto consumer level. (Emphasis Supplied)***

- d. Issue of segregation of loss making feeders (end to end metering) (Para 271 & 272)

(XLI) Issue of segregation of loss making feeders (end to end metering)

*271. The Commission has approved huge investment under CAPEX and the Government has also supported the cause in the form of Government grants to strengthen & expand the Distribution system of the State. It is a fact that there are 11 kV feeders operating with losses more than 80%. Given the fact that loss is an expenditure in the ARR, the cost of such loss, irrespective of the cause is an extra burden to the paying consumers of the state. Immediate action is necessary by the DISCOM in such areas where the loss level is so high (>80%). As per the submission of TPWODL, there are still 47 high loss 11 kV feeders with loss greater than 80% and majority of such feeder is in Bargarh District. Similarly, in TPNODL operational area, there are 13 feeders which exhibit AT&C loss greater than 80%. **Therefore, the Commission directs the DISCOMs to install Smart Meters upto consumer level in all such 11 kV feeders where the AT&C loss is greater than 50% from end to end. Further, the concept coined by TPWODL as Model Village is noteworthy and initiative should be taken by all the DISCOMs to materialise this concept in such high loss-making areas by necessary planning, considering ground realities.***



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272. Each DISCOM is directed to list out such feeder and prioritize them based on quantum of load catered through such feeders and to take appropriate action to reduce the AT&C loss from present loss level by end of financial year 2026-27 in following manner.

Table-40	
11 kV feeders with technical loss level	Technical loss level reduction by end of the FY 2026-27
>80%	By 50% of existing level of loss
Between 50% to 80%	By 30% of existing level of loss
Between 20% to 50%	By 20% of existing level of loss

(Emphasis Supplied)

- e. Power Quality Monitoring (Para 287)

(L) Power Quality Monitoring for Industries injecting Harmonics to the system.

287. DISCOMs have to **initiate power quality monitoring primarily to identify the industries responsible for injection of harmonics into the system and causing flickering & fluctuation in voltage etc. Accordingly, penalty would be introduced by the Commission if adequate remedial measures are not taken by industries to reduce harmonics injection at the point of coupling with the grid.**

(Emphasis Supplied)

- f. Issue of Uninterrupted Power Supply in Urban areas : (Para 289)

(LII) Issue of Uninterrupted Power Supply in Urban Areas .

289.

TPNODL has already declared 15 sq. km. of Balasore area covering important Government establishments to provide uninterrupted power supply by March 2026 in line with direction of the Commission. Such initiative for development of distribution network infrastructure is to be extended to entire city of Balasore and other cities & other areas in phases. **Similarly, other three DISCOMs (TPCODL, TPWODL, TPSODL) are directed to declare/ensure 24x7 power supply with minimum/zero interruption to some areas (in sq.km.) of the major cities in their area of operation, which are to be extended to other areas of operation of the DISCOM(s) in phases**

(Emphasis Supplied)

- g. Guard Wire for Road Crossings : (Para 299)

(LXII) Guard Wires for Road Crossings .

299. **Provision of Guard wires have to be made for 33 kV & 11 kV overhead lines crossing over National & State Highway, roads in populated areas and the work has to be completed by each DISCOM (TPNODL, TPSODL, TPWODL, TPCODL) by FY 2026-27.**

(Emphasis Supplied)

- h. Metering and Protections for DTRs : (Para 300)

(LXIII) Failure of DTRs & Provision for Required Metering and Protection.

300. It is understood that about 10,000 Nos. of DTRs in the Distribution System are failing every year resulting in loss of about Rs.100 Cr. per annum. As reported, DTR failures are primarily



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due to lightening and inadequate protection on HV & LV side. Therefore, protection of DTR including provision of Surge Arresters is essential and all DTRs must be provided with required protection on HV & LV side to minimize the failure. **All DISCOMs are directed to provide required metering and protections on HV & LV side of (a) DTRs of 63 KVA and above by FY 2026-27 and (b) DTRs of 25 KVA and above upto 63 KVA by 2027-28 (c) DTRs below 25 KVA in subsequent financial years indicating time line for completion or replacement of DTRs of less than 25 KVA by higher capacity DTRs..**

(Emphasis Supplied)

- i. Length of LT Feeders and Low Voltage issues : (Para 301)

(LXIV) Length of LT feeders and low voltage issue in Urban & Rural Areas

301. The long LT feeders is considered to be one of the main reasons for low voltage in certain pockets. Hence, each DISCOM is directed to provide information relating to number of LT feeders which are more than 500 meters (from the DTRs) in their area of **operation and remedial measures being taken to reduce the length of such LT feeders. The time line for addressing low voltage issue, particularly in urban area & major cities shall be submitted to the Commission by the DISCOMs within 3 months of issue of this tariff order.**

(Emphasis Supplied)

10. The above directives of Tariff Order dated 24.03.2026 are in the nature of mandatory compliance requirements for which capital investments are required and hence form the basis of the Capital Investment Plan being submitted in this instant petition for the approval of the Hon'ble Commission.

B. Submission of the Petitioner

11. For implementation and compliance of the above directives of the Tariff Order dated 24.03.2026 in a time-bound manner, the petitioner has prepared a Capital Investment Plan consisting of Detailed Project Report (DPR) under three broad heads, namely: (A) AT&C Loss Reduction and Distribution Network Metering; (B) Protection & Safety Enhancement across the Distribution Network; and (C) Addressing Low Voltage Issues in Urban and Major City Areas.
12. The Board of Directors of TPCODL, at its meeting held on 22nd April 2026, has accorded approval of Rs. 2,240 Cr towards above proposed Capital Investment over FY 2026-27 to FY 2030-31. A certified true copy of the Board Approval is enclosed as **Annexure-5** of the Appendix to this submission. Of the aforesaid approved amount, the Hon'ble Commission has already approved Rs. 28 Cr. in the Capex Order for FY 2026-27 dated 15.05.2026 under the DTR metering head. Accordingly, the balance amount of Rs. 2,213 Cr. (rounded off i.e., Rs. 2240 Cr. minus Rs. 28 Cr. already approved) is being submitted for approval through this petition.

Summary of the Proposed Capital Investment Plan

13. The detailed Capital Investment Plan consisting of Detailed Project Report (DPRs) that includes scheme-wise scope, technical justification, phasing of investment, cost breakup, and cost-benefit analysis is provided in the **Appendix** to this petition.



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14. The summary of the proposed Additional Capital Investment Plan is provided in the table below:

Table A: Summary of Capital Investment Plan

SL. No	Description	Unit	Quantity	Amount (Rs. in Cr.)
A. AT&C Loss Reduction and Distribution Network Metering				
1	AT&C Loss Reduction and Distribution Network Metering			
1.1	Complete metering of 2-3 Nos. of 11kV feeders & associated DTRs and Consumers in each Division	No's	224	29.12
1.2	DTR Metering up to and including 63kVA DTR with Backend Infrastructure	No's	26,574	58.23
1.3	LT Bare to AB Cable for AT&C Loss Reduction in 11kV feeders	Ckm	2,150	250.43
	Sub-Total – AT&C Loss Reduction (Rs. in Cr.) (1)			337.78
B. Protection & Safety Enhancement across the Distribution Network				
2	Installation of Guard Wires and HT Underground Cable for 33kV & 11kV Overhead lines			
2.1	Installation of Cradle/Guard in Overhead feeders at road crossings (33kV & 11kV)	No's	1,453	67.76
2.2	Laying of Underground Cable at NH/SH and other road crossings (33kV and 11kV)	Ckm	38.48	67.84
3	Protection system on LV side of DTRs of 25 KVA & above			
3.1	Installation of LV Protection up to 63kVA DTR	No's	31,807	445.30
3.2	Installation of LV Protection for 100kVA DTR	No's	9,702	175.61
3.3	Installation of LV Protection DTR 200kVA & above	No's	2,993	149.68
4	Protection system on HV side of DTRs of 25KVA & above			
4.1	Installation of HT Protection DTR below 200kVA	No's	93,574	115.09
4.2	Installation of HT Protection DTR 200kVA & above	No's	7,205	571.71
4.3	Installation of Lightning Arrester at Distribution Substation	No's	43,733	195.19
	Sub-Total – Protection & Safety (Rs. in Cr.) (2+3+4)			1,788.49
C. Addressing Low Voltage Issues in Urban and Major City Areas				
5	Low Voltage Issues in Urban and Major City Areas			
5.1	Augmentation of existing DTR/Installation of New DTR along with associated lines near to load centre	No's	303	82.70
5.2	LT Network Extension/Conversion of 1-Ph LT Network with 3-Ph	Ckm	35	3.94
	Sub-Total – Voltage Profile Improvement (Rs. in Cr.) (5)			86.64
	Total Proposed CAPEX (Rs. in Cr.)			2,212.91



The above capital investment (Rs. 2,213 Cr.) represents Hard Cost only, i.e., without considering Employee Cost capitalized and Interest During Construction (IDC). The Employee Cost associated with the projects and the IDC on the Debt Component (70%) shall be in addition to the Hard Cost and shall be allowed to be capitalized as per applicable regulatory provisions.

15. It is submitted that Employee Cost associated with the projects covered under this Capital Investment Plan would also form a part of the Capex and would be eventually capitalized along with the respective capital expenditure scheme. The cost towards employees working on such projects shall be separate, i.e., in addition to the Hard Cost amount proposed in this petition.

16. Similarly, the Interest During Construction (IDC) is required to be worked out on the Debt Component (70% of the Capex) and would depend on the quantum and timing of capital expenditure incurred during each year. The IDC amount shall need to be added to the Hard Cost and Employee Cost for the purposes of capitalization.

Phasing of the Capital Investment Plan

17. This proposed capital investment shall be implemented in a phased manner over FY 2026-27 to FY 2030-31. The tentative phasing of the investment is as detailed in the table below: The Detailed time frame of expenditure is attached as **Annexure-2** of the Appendix.

Table B: Year-wise Phasing (Rs. in Cr.)

Sl.	OERC Directive (RST Order FY 2026-27)	Total Cost (Rs. Cr.)	Year wise Budget Break-Up					Scope of Work
			FY-27	FY-28	FY-29	FY-30	FY-31	
1	Complete metering of 2-3 Nos. of 11kV feeders & associated DTRs and Consumers in each Division	29	5	12	12	-	-	11kV meters at critical feeder branches; 56 high-loss feeders prioritized.
2	DTR Metering up to and including 63kVA with Backend Infrastructure	58	20	15	10	14	-	DT energy meter for 23,929 DTRs (25kVA & 63kVA) with backend system.
3	AT&C Loss Reduction in 11kV feeders - LT Bare to AB Cable	250	50	50	50	50	50	Total LT bare network available is 4019Ckm, out of which 259ckm has been approved in CAPEX FY'26-27 and 2150 Ckm proposed under this DPR in 5Yrs.



4	Installation of Guard Wires for 33kV & 11kV overhead lines crossing and Underground cable at National & State Highway	136	10	40	40	46	-	Cradle guard and Underground cable at critical locations.
5	LV Protection – DTRs up to 63kVA (31,807 Nos.)	445	2	111	111	111	111	LTDB installation for protection of 25kVA & 63kVA DTRs.
6	LV Protection – 100kVA DTR (9,702 Nos.)	176	5	43	43	43	43	LTDB installation for protection at 100kVA DTRs.
7	LV Protection – DTRs 200kVA & above (2,993 Nos.)	150	18	33	33	33	33	LTDB installation for protection at 200kVA & above DTRs.
8	HT Protection – DTRs below 200kVA (93,574 Nos.)	116	15	25	25	25	26	AB Switches & DO Fuses for HT-side protection.
9	HT Protection – DTRs 200kVA & above (7,205 Nos.)	572	40	130	130	135	136	Single Breaker RMU for HT protection.
10	Lightning Arresters at DSS (43,733 Nos.)	195	15	45	45	45	45	LA for protection against lightning & surge at DTR locations.
11	Addressing Low Voltage Issues in Urban & Major City Areas (394 locations)	87	37	50	-	-	-	New DTR/DTR augmentation with HT & LT extension; 1-Ph to 3-Ph conversion.
TOTAL COST (Rs. in Cr.)		2,213	217	553	498	502	443	



C. Prayers

TPCODL Prays that the Hon'ble Commission may kindly be pleased to:

1. Approve the Capital Investment of Rs. 2213 Crores (Hard Cost) to be incurred over FY 2026-27 to FY 2030-31 which is required for implementation of the various directives stipulated in the Retail Supply Tariff Order dated 24.03.2026.
2. Allow Employee Cost and Interest During Construction (IDC), based on actuals, to be capitalized over and above the approved Capex (Hard Cost) for the aforesaid period.
3. Permit carrying forward of any unspent Capital Expenditure under this Capex Plan to subsequent financial years.
4. Condone any delay in compliance to the directives of the Capex Order dated 15.05.2026 in the matter of Case No-77 /2025 in view of absence of approved Capital Investment , practical difficulties and other conditions/ constraint.
5. That, the petitioner craves leave for submission of further /additional reply as and when required by the Hon'ble Commission.
6. Grant any other relief as deemed fit and proper in the facts and circumstances of the case.
7. Pass any other direction as the Hon'ble Commission may think appropriate.

Bhubaneswar

Dated: 08th June 2026



Bharat Kumar Bhadawat

Chief – Regulatory & Legal



APPENDIX

List of Content

Annexure 1 – Detail Proposal

Annexure 2– Time frame of the expenditure

Annexure 3– Location

Annexure 4– BoQ

Annexure 5– Board Approval Copy

Capital investment schemes details for In-Principal approval

Overview of the Detailed Project Report	
Index with the documents Page No.	Attached in Page No-vi
Name of Applicant	TP Central Odisha Distribution Limited
Name of the Capital Investment Work	Capital Expenditure in Compliance with Direction of the Hon'ble Commission (RST Order FY'2026-27)
Nature of capex Scheme (New/ Resubmitted / revised / modified / extended)	New CAPEX scheme is being submitted as per Direction of the Hon'ble Commission (RST Order FY'2026-27)
Details of the Location	Attached Annexure-3
Date of Approval by Competent Authority designated by the Board of Directors of the Company	Date of Approval 22-04-26. Certified True Copy attached in Annexure-04
Category of DPR	As Per Para 3.9 of Draft CAPEX Regulation-2026 1. System strengthening for enhancing capacity 2. Capacity augmentation of distribution lines and transformers 3. Improvement in quality of supply, safety and reliability of distribution system 4. All metering other than consumer metering
Objective of the Capital Investment	To improve network safety, voltage profile, reliability of power supply, distribution infrastructure, and reduce AT&C losses through strengthening of HT/LT network, metering, protection systems, and system augmentation works.
Need Analysis	The scheme is proposed to address high AT&C losses, low voltage issues, overloaded network elements, inadequate safety & protection systems, in network, and gaps in feeder and DTR metering.
Overall cost-benefit analysis	Cost benefit analysis details mentioned in respected schemes in the Detailed Project Report
Brief Scope and Specifications of Work	Detail Scope of work and specifications considered under respective schemes mentioned in the DPR.
Estimated cost (Rs Cr.)	2213Cr
Time frame of the expenditure	Attached in Annexure -2
Benefits/Impact	Improvement in voltage profile, reduction in AT&C losses, enhanced safety and reliability, reduction in faults and outages, improved consumer service, and strengthening of overall distribution infrastructure

Need of the investment

TPCODL distribution network requires strengthening to address critical issues related to safety, reliability, voltage profile, and AT&C loss reduction.

Existing challenges such as aged infrastructure, unsafe overhead crossings, inadequate DTR protection systems, long LT feeders, higher technical losses and overloaded network elements are resulting in, public safety risks, and poor quality of supply.

The proposed capital investment is essential for compliance with the directives of the Hon'ble OERC under the RST Order FY'2026-27.

The proposed works will enhance operational safety, reduce electrical hazards and outages, improve voltage profile, strengthen asset protection, reduce AT&C losses, and ensure safe, reliable, and efficient power supply across the TPCODL license area.

Annexure 1 – Detail Proposal



DETAILED PROJECT REPORT (DPR)

FOR

Capital Investment Plan in Compliance with Direction of the Hon'ble Commission (RST Order FY 2026-27)

Submitted By

TP Central Odisha Distribution Ltd.

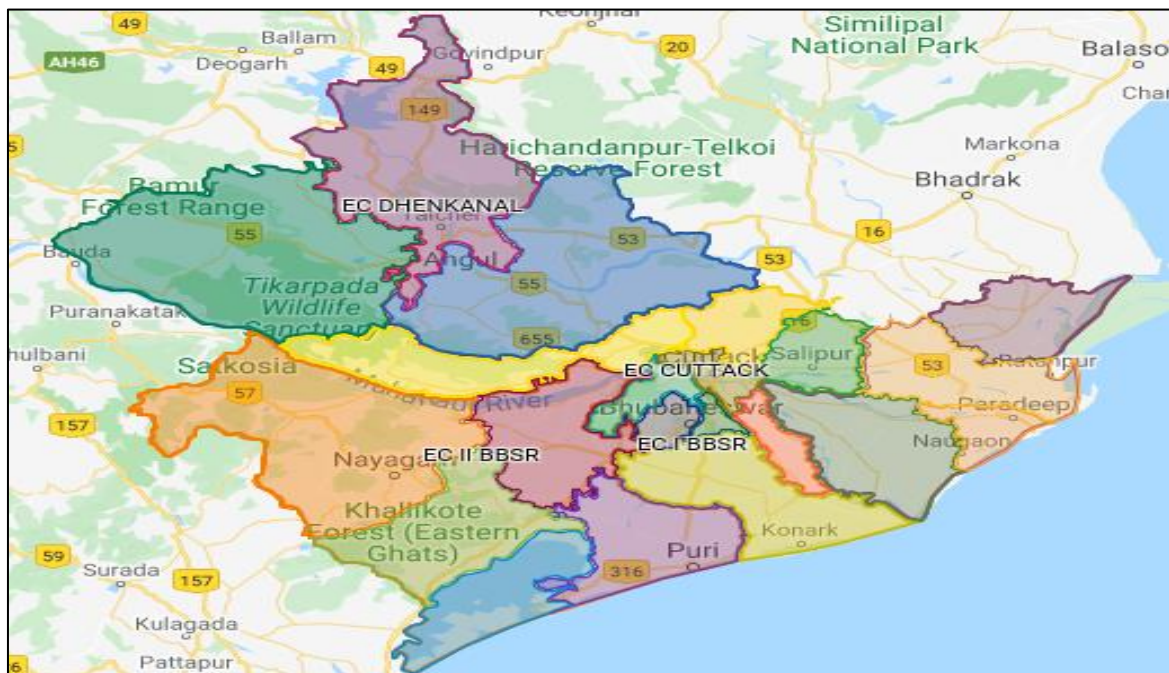


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1. Introduction

TP Central Odisha Distribution Limited (TPCODL) is a joint venture of Tata Power (51%) and Govt of Odisha (49%) on the Public-Private Partnership (PPP) model. Govt. of Odisha (GoO)'s share is held by it through its 100% owned company GRIDCO. TPCODL was vested the Utility of CESU for distributing and retail supply of electricity in the central part of Odisha, through a Vesting Order issued by the Hon'ble Odisha Electricity Regulatory Commission (OERC). The Hon'ble OERC regulates the working of the entire power sector of Odisha state, including determination of tariff chargeable to end consumers and establishing performance norms (mainly related to Loss reduction, Safety, Reliability of power supply and Consumer service delivery).

As per the Tariff Order for FY'2026-27, the Odisha Electricity Regulatory Commission (OERC) has issued specific directives, compliance requirements, and operational guidelines for DISCOMs. To ensure timely compliance with these directions, necessary capital investments are envisaged. Accordingly, this DPR is being submitted for approval of the proposed CAPEX in the TPCODL license area.

Under this DPR, TPCODL proposes a multi-year period investment of ₹2213Cr. focused on key areas including enhancement of network safety, improvement of voltage profile, strengthening of distribution infrastructure, and reduction of AT&C losses through a systematic and phased implementation approach.

The proposed investments aim to protect human lives, safeguard critical electrical assets, improve reliability and operational efficiency of the distribution network, reduce technical and commercial losses, and ensure compliance with statutory and regulatory requirements. The scheme will also support improvement in voltage profile in urban and major city areas and enable delivery of safe, reliable, and quality power supply to consumers.

2. TPCODL Network Overview

TPCODL license area is spread over a geography of 29,354 sq. km and serve the registered consumer base of 3.3million. TPCODL procures power from GRIDCO which is a state-owned company, engaged in the business of purchase of electricity in bulk from various generators located inside Odisha and the state share of power from Central generators for supply in all power distribution utilities, including TPCODL. It receives electrical power at a sub transmission voltage of 33kV from Odisha Power Transmission Company Limited's (OPTCL) 220/132/33 kV Grid Substations and then distributes the power at 33kV / 11kV / 440V / 230V depending on the demand of the consumers. For effective operations; license area is divided in 5 circles which is further sub divided in 20 Divisions and 65 Sub-divisions which manages the commercial and O&M activities in order to serve its consumer.

Key Information about TPCODL

Sl. No.	Particulars	Unit	Details
1	Area	Sq km	29,354
2	Number of Circle	Nos.	5
3	Number of Divisions	Nos.	20
4	Number of Sub Divisional Offices	Nos.	65
5	Number of 33kV feeders	Nos.	286
6	Number of 11kV feeders	Nos.	1,423
7	33kV Ckt length	CkM	4,500
8	11kV Ckt length	CkM	30,278
9	No. of 33/11kV PSS	Nos.	382
10	No. of 33/11kV PTRs	Nos.	840
11	No. of DT	Nos.	70,978
12	LT length	CkM	41,772
13	Installed Capacity (PTR)	MVA	5,813
14	Installed Capacity (DT)	MVA	5,471

3. Focus area in this DPR

The distribution network is presently facing critical challenges related to protection, network and public safety, relatively high AT&C Losses and delivery of quality and reliable power supply to end consumer. The legacy network inherited is in a deteriorated condition and lacks compliance with safety-statutory, reliable and quality power requirements.

There is an absence of 11kV feeders brance metering, associated DTRs and end consumers in several divisions, along with inadequate DTR metering from 25kVA upto 63kVA. This lack of granular energy accounting limits visibility of energy flow, affects accurate loss assessment and weakens control over both technical and commercial losses. Consequently, high AT&C losses persist in several 11kV feeders due to metering gaps, inadequate energy accounting and system inefficiencies, restricting effective identification and mitigation of high-loss pockets.

At several locations, long-span lines crossing National Highways (NH), State Highways (SH), roads, public places and areas near schools are unsafe for employees, the general public, and animals. The absence of proper guarding arrangements exposes the network to risks such as conductor snapping and accidental contact, thereby posing serious threats to life and property. These unsafe conditions also

hinder operation and maintenance activities and adversely affect supply reliability and customer satisfaction.

Many Distribution Transformers (DTRs) are operating without adequate HT and LT protection systems. Instances of damaged, bypassed or non-standard protection arrangements are prevalent, increasing the likelihood of faults, equipment damage, fire hazards and safety incidents.

Some of the tail-end consumers connected in Urban and high-density areas, LT network are experiencing low voltage issues. Primary cause is due to lengthy LT networks, overloading of DTRs and LT feeders, existing bare and undersized LT network and unbalanced load distribution. These issues result in poor voltage profile, increased technical losses and compromised quality of power supply.

In view of the above, this DPR focuses on addressing these challenges through targeted interventions aimed at enhancing safety, improving voltage profiles, ensuring comprehensive metering and reducing AT&C losses, while ensuring compliance with regulatory standards laid down by the Odisha Electricity Regulatory Commission and enabling a resilient, reliable, and efficient distribution network.

4. Proposed Plan

This document presents the details of existing network assets, their current condition and the key challenges associated with ensuring safety, reliability and quality power supply, ensuring comprehensive metering and reducing AT&C losses. It further outlines the proposed action plan to address these challenges through targeted interventions, aimed at improving network performance, enhancing safety standards and ensuring reliable and quality power supply to end consumers.

The DPR is prepared under following major heads to meet directive of the Commission: -

- 1. Complete metering of 2 or 3Nos. of 11kV feeders & associated DTRs and Consumers in each Division-** End-to-end metering of 2–3 selected 11 kV feeders in each Division, including associated DTRs and consumers, along with metering at interconnection and branch points, is proposed to enable accurate energy accounting, effective energy auditing, identification of high loss making pockets, and control of electricity theft, thereby supporting AT&C loss reduction and overall system efficiency improvement.
- 2. DTR Metering up to and including 63kVA -** To enable transformer-wise energy auditing, accurate assessment of technical losses, identification of loss- and theft-prone areas, and effective monitoring of transformer loading. This will support targeted network improvements, enhance billing efficiency, improve system reliability, and ensure compliance with regulatory requirements.
- 3. AT&C Loss Reduction in 11kV feeders -** 11kV feeders with high AT&C losses are identified and proposal are considered for reduction of AT&C Loss of these feeders. The plan includes

strengthening DTR metering to enable transformer-wise energy accounting and identification of loss pockets, installation of smart meters for all remaining consumers to ensure accurate billing, real-time monitoring, theft detection and conversion of LT bare conductors to LT AB cables in these areas to prevent pilferage and improve safety. These measures collectively aim to enhance feeder performance, improve billing efficiency, reduce technical and commercial losses and ensure sustainable AT&C loss reduction in compliance with regulatory requirements.

- 4. Laying of Underground Cables at NH / SH and other major crossings** - To provide a more robust and permanent solution, ensuring safety and minimizing disruption to traffic flow, reducing safety hazards with improving network reliability.
- 5. Installation of Cradle/ Guard Wires on overhead feeders at road crossings** - To prevent the risk of conductor snapping and accidental contact at road crossings, thereby reducing safety hazards, improving network reliability and ensuring compliance with regulatory directives.
- 6. Provision for DTR HV and LV Protection** – This includes provision and standardization of HT and LT protection systems for all DTR's to enable safe operation, effective fault isolation, improved asset protection and enhanced network reliability by providing Lightning arrester, AB Switch, DO Fuse, single breaker RMU and LTDB's. This will also support preventive maintenance, minimize outages and ensure compliance with regulatory directives.
- 7. Addressing Low Voltage issues in Urban & Major City Areas** - Tail-end consumers in urban and high-density areas are experiencing poor voltage profiles, and degraded quality of supply which in turn leads to higher technical losses. To address this power quality related issue, mitigation proposal is proposed like: LT Network Extension, Augmentation of DTR with LT Extension, Addition of new DTR with HT and LT Extension and 1-Ph LT Network replacement with 3-PH LT Network.

These measures will improve voltage profile, reduce overloading, meet load growth demand, and enhance the reliability and quality of power supply in compliance with regulatory directives.

For strengthening of the electrical network, standard network design principles have been adopted and the BoQ has been prepared accordingly. The proposed investments are aimed at AT&C Loss Reduction with energy accounting, strengthening network safety, ensuring compliance with statutory norms and improving overall system reliability.

Capital Investment Plan in Compliance with the Directions of the Hon'ble Commission (RST Order FY 2026-27)

The details of Projects mentioned in below table:

Summary of Total Schemes Estimated Cost

Sl. No.	Direction of the Commission (RST Order FY 2026-27)	Unit	Qty.	Amount (₹ in Cr.)
A. AT&C Loss Reduction and Network Metering				
1.1	Complete metering of 2-3 Nos. of 11 kV feeders & associated DTRs and Consumers in each Division	No's	224	29.12
1.2	DTR Metering up to and including 63kVA DTR with Backend Infrastructure	No's	26,574	58.23
1.3	LT Bare to AB Cable for AT&C Loss Reduction in 11kV feeders	Ckm	2150	250.43
Cost under AT&C Loss Reduction (in Cr.)				337.78
B. Protection & Safety Enhancement across the Distribution Network				
2	Installation of Guard Wires and HT Underground Cable for 33kV & 11kV Overhead lines			
2.1	Installation of Cradle/ Guard in Overhead feeders at road crossings (33KV & 11KV)	No's	1,453	67.76
2.2	Laying of Underground cable at NH / SH and other road crossings (33kV and 11kV)	Ckm	38.48	67.84
3	Protection system on LV side of DTRs of 25 KVA & above			
3.1	Installation of LV Protection on up to 63 KVA DTR	No's	31,807	445.30
3.2	Installation of LV Protection for 100KVA DTR	No's	9,702	175.61
3.3	Installation of LV Protection DTR 250KVA & above	No's	2,993	149.68
4	Protection system on HV side of DTRs of 25KVA & above			
4.1	Installation of HT Protection DTR below 200KVA	No's	93,574	115.09
4.2	Installation of HT Protection DTR 200KVA & above	No's	7,205	571.71
4.3	Installation of Lighting arrester at Distribution substation	No's	43,733	195.19
Cost under Protection & Safety (in Cr.)				1788.49
C. Addressing Low Voltage issues in urban and major city areas				
5.1	Augmentation of existing DTR/ Installation of New DTR along with associated lines near to load centre	No's	303	82.70
5.2	LT Network Extension/ Conversion of 1-Ph LT Network with 3-PH	Ckm	35	3.94
Cost under Voltage Profile improvement (in Cr.)				86.64
Total Cost of DPR (in Cr.)				2212.91

TPCODL proposes an expenditure of ₹ 2213 Cr. under this DPR.

Board approval of ₹ 2240 Cr. was taken but in CAPEX 26-27 order issued by Hon'ble commission has approved additional 28Cr. for DT metering. Therefor balance amount of ₹ 2213 Cr. is hereby submitted for approval.

A. AT&C Loss Reduction and Distribution Network Metering

I) Need of Investment

There is an absence of complete metering across 11kV feeders with associated Distribution Transformers and end consumers. This lack of energy accounting limits visibility of energy flow across the distribution network, affects accurate technical and commercial loss assessment, and monitoring and control over high-loss areas.

As a result, several 11kV feeders continue to exhibit high AT&C losses due to metering gaps, inadequate feeder-wise and transformer-wise energy auditing, theft-prone LT networks, and system inefficiencies. In absence of smart meter at feeder branches, energy flow cannot be monitored independently, making it difficult to identify specific high-loss pockets and take corrective action.

56No's High Loss Making 11kV Feeders											
Sl. No.	Circle	Division	Feeder Name	Feeder input (MUs) - Apr'25 to Feb'26	Billed (MUs) - Apr'25 to Feb'26	MU Loss Apr'25 to Feb'26	T&D Loss	Feeder Length (Ckm)	Total DTR	LT Bare (Ckm)	Unmetered DTR ≥ 25KVA
1	BBSR-1	BED	11 KV POKHARIPUT-2	20.80	5.91	14.89	72%	6.3	42	0.15	25
2	BBSR-1	NED	11 KV PIPILI	24.26	9.92	14.34	59%	51.1	209	14.62	136
3	Paradeep	PDP	11 KV CHOUMUHANI + BHUTAMUNDAI	12.68	2.97	9.71	77%	13.7	52	2.47	30
4	BBSR-2	PED	11 KV BRAHMAGIRI	12.35	3.03	9.32	75%	64.7	174	0	159
5	BBSR-1	NED	11 KV BUDHIPADA	16.09	6.90	9.18	57%	70.0	271	4.18	201
6	Dhenkanal	TED	11 KV TALCHER PALACE	13.40	4.71	8.69	65%	14.1	71	3.81	39
7	BBSR-1	BCDD-2	11 KV Patharagadia	12.41	4.00	8.41	68%	15.6	48	0	31
8	BBSR-2	KHD	11 KV BAIDESWAR	11.60	3.72	7.87	68%	45.8	123	4.18	78
9	Cuttack	CED	11 KV TOLA	11.38	3.63	7.75	68%	45.6	119	6.86	77
10	BBSR-2	BAED	11 KV CHANDAPUR	10.02	2.31	7.70	77%	4.3	22	1	11
11	BBSR-2	PED	11 KV MAUSIMA U/G	12.84	5.27	7.57	59%	4.4	12	0.01	9
12	BBSR-1	NED	11 KV DANDIPUR	13.22	5.85	7.37	56%	59.6	162	4.2	123
13	Paradeep	PDP	11 KV SANTARA	13.82	6.46	7.36	53%	32.7	130	12.43	92
14	Dhenkanal	DED	11 KV Chaulia/Khamar a	8.46	1.47	6.99	83%	30.4	73	7.55	49

Capital Investment Plan in Compliance with the Directions of the Hon'ble Commission (RST Order FY 2026-27)

56No's High Loss Making 11kV Feeders											
Sl. No.	Circle	Division	Feeder Name	Feeder input (MUs) - Apr'25 to Feb'26	Billed (MUs) - Apr'25 to Feb'26	MU Loss Apr'25 to Feb'26	T&D Loss	Feeder Length (Ckm)	Total DTR	LT Bare (Ckm)	Unmetered DTR ≥ 25KVA
15	Cuttack	CED	11KV PHULANAKHAR A	12.98	6.01	6.97	54%	11.1	70	0.21	52
16	Dhenkanal	ANED	11 KV PAIKASAH	8.74	1.78	6.96	80%	79.4	133	2.02	81
17	BBSR-1	NED	11 KV MANGALPUR	11.68	5.19	6.49	56%	27.0	88	6.49	54
18	BBSR-2	PED	11 KV DELANGA	13.85	7.39	6.46	47%	76.0	195	2.78	140
19	Cuttack	AED	11 KV KARIKOLA	11.89	5.61	6.29	53%	56.0	174	7.52	103
20	Cuttack	CED	11 KV CHHATIA	10.37	4.14	6.22	60%	22.3	90	6.03	55
21	Cuttack	AED	11 KV BINDHANIMA	8.78	2.59	6.19	70%	26.3	79	7.25	44
22	Paradeep	JED	11 KV AMBASALA	7.48	1.33	6.15	82%	11.3	33	0.58	25
23	Cuttack	CED	11 KV PODANA	8.65	2.59	6.06	70%	43.8	118	5.38	87
24	BBSR-2	PED	11 KV Baliapanda - Sri Mandira UG	15.51	9.45	6.06	39%	8.7	29	0.3	11
25	BBSR-1	BCDD-2	11 KV DASPUR	8.68	2.77	5.91	68%	15.9	72	0.27	42
26	BBSR-2	PED	11 KV 11kv Lokanath	17.27	11.47	5.80	34%	10.9	48	0.09	21
27	BBSR-2	KHD	11 KV TARABOI	11.12	5.34	5.79	52%	20.7	70	1.27	37
28	Dhenkanal	DED	11 KV TOWN-1 (K.Ngr)	10.24	4.92	5.32	52%	8.8	45	9.13	18
29	BBSR-2	KHD	11 KV KANTIA	7.12	2.06	5.06	71%	10.4	31	1.37	19
30	Cuttack	CED	11 KV CITY BARRAGE	10.68	5.67	5.01	47%	20.3	67	7.39	36
31	Cuttack	CED	11 KV SITHALO	7.63	2.71	4.93	65%	44.8	104	15.54	79
32	BBSR-1	NED	11 KV ASTARANGA	9.13	4.42	4.71	52%	40.1	147	16.67	73
33	Dhenkanal	ANED	11 KV DUDHIABEDA	12.17	7.47	4.70	39%	69.4	189	11.82	117
34	BBSR-2	PED	11 KV TALAMALA	6.41	1.95	4.46	70%	48.1	123	0	108
35	BBSR-1	BED	11 KV TRINATH BAZAR UG	7.31	2.86	4.45	61%	14.3	112	0.75	60
36	Cuttack	AED	11 KV BADAMBA TOWN	6.95	2.63	4.33	62%	13.4	80	1.28	52
37	BBSR-2	NYD	11 KV SINDURIA	12.14	7.84	4.30	35%	12.6	100	1.87	42
38	Cuttack	CED	11 KV KADAMPAL	6.33	2.03	4.30	68%	47.2	135	15.11	85
39	Paradeep	KED1	11 KV TALCHUA	9.84	5.57	4.27	43%	89.4	176	28.56	87
40	Cuttack	CED	11 KV CHARINANGALA	9.35	5.08	4.26	46%	55.7	186	12.79	99
41	Cuttack	CED	11 KV NUNTIKIRI	6.33	2.17	4.16	66%	21.6	58	2.89	45

56No's High Loss Making 11kV Feeders											
Sl. No.	Circle	Division	Feeder Name	Feeder input (MUs) - Apr'25 to Feb'26	Billed (MUs) - Apr'25 to Feb'26	MU Loss Apr'25 to Feb'26	T&D Loss	Feeder Length (Ckm)	Total DTR	LT Bare (Ckm)	Unmetered DTR ≥ 25KVA
42	Paradeep	JED	11 KV ROHIA	6.33	2.17	4.16	66%	21.3	52	0.77	42
43	BBSR-2	KHD	BALIPADA	5.57	1.60	3.97	71%	15.2	50	0	32
44	Dhenkanal	TED	11 KV KALAMCHHUIN	7.69	3.92	3.77	49%	38.9	103	10.97	68
45	BBSR-1	NED	11 KV BEGUNAI	8.00	4.23	3.76	47%	51.2	135	18.25	74
46	Cuttack	AED	11 KV NARANGABAST A MEGHA	7.28	3.53	3.75	51%	27.1	93	4.24	63
47	BBSR-2	PED	11 KV BALIAPANDA KACHERI	15.32	11.63	3.68	24%	4.2	40	0	26
48	BBSR-2	KHD	11 KV KUDIARY	7.83	4.30	3.52	45%	9.2	48	1.97	24
49	BBSR-1	NED	11 KV Sadamgoi	4.62	1.51	3.11	67%	32.8	76	3.24	55
50	Dhenkanal	TED	11 KV Kandar Singha	5.87	2.80	3.07	52%	43.5	115	2.95	72
51	BBSR-2	NYD	11 KV PANIPOILA	4.47	1.43	3.04	68%	24.7	70	0.23	40
52	BBSR-2	KHD	11 KV SANA PADAR	5.98	3.00	2.98	50%	46.1	133	4.35	91
53	Cuttack	CED	11 KV KANTAPADA	7.25	4.53	2.72	37%	33.6	118	10.51	88
54	BBSR-2	NYD	11 KV OLD TOWN	5.34	2.74	2.60	49%	10.0	51	0.46	25
55	Cuttack	SED	11 KV BAHUGRAM-1 ICHHAPUR	4.05	1.63	2.42	60%	10.7	63	7.61	39
56	BBSR-1	BED	11 KV RMU-20	2.27	0.74	1.53	67%	1.9	11	0	9
Total				559.82	238.97	320.85		1735	5418	292	3480

To address these issues, investment is proposed for strengthening the metering and LT distribution infrastructure in identified high AT&C loss making feeders. The proposed works include:

- Installation of 11kV HT metering at high-loss feeder branches for branch-wise monitoring and energy audit.
- Strengthening of DTR metering, to enable transformer-wise energy accounting and identification of loss /theft prone areas.
- Installation of smart meters for all consumers at identified high AT&C loss feeders to ensure complete consumer metering, accurate billing, real-time monitoring, and theft detection.
- Conversion of LT bare conductors to LT AB cables in theft-prone areas to reduce pilferage, improve safety, and enhance system reliability.

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The proposed investment will improve feeder monitoring, strengthen energy accounting, support targeted loss reduction measures, improve billing efficiency, and ensure sustainable reduction of AT&C losses in compliance with regulatory directives.

II) Timelines of the Project and Phasing of Investment

The proposed scheme shall be implemented in a phased manner over a period of 5Years from the date of approval. The tentative prioritisation and implementation schedule is as follows:

Sl. No.	Direction of the Commission	Total Cost (Cr.)	Description	Budget Breakup in 5Years(Cr.)					Scope of Work
	(RST Order FY 2026-27)			FY-27	FY-28	FY-29	FY-30	FY-31	
1	Complete metering of 2-3 Nos. of 11kV feeders & associated DTRs and Consumers in each Division	29	Cost in Cr.	5	12	12			11kV meter to be installed at critical branches.
			No of feeders	9	24	23	-	-	
2	DTR Metering up to and including 63kVA (25kVA-17736No's & 63kVA-6193No's, total-23929no's)	58	Cost in Cr.	20	15	10	14		Dt energy meter proposed for DTR 63kVA and below with Backend Infrastructure
			No of DT meter	6000	6693	4500	6736	-	
			DTR rating	a.63kVA DTR- 400no's b.25kVA DTR- 2000no's c. Backend Infrastructure	a.63kVA DTR- 2193no's b.25kVA DTR- 4500no's	25kVA DTR		-	
3	AT&C Loss Reduction in 11 kV feeders	250	Cost in Cr.	50	50	50	50	50	Total LT bare network available is 4019Ckm, out of which 259ckm has been approved in CAPEX FY'26-27 and 2150 Ckm proposed under this DPR in 5Yrs.
			LT bare to AB(Ckm)	430	430	430	430	430	
			Prioritising criteria	56No's High loss feeder- 292ckm and rest 138Ckm in other area	Sequentially in descending order of losses making area LT network.				
Total Cost in Cr.		338		75	77	72	64	50	

III) Proposed Capital Investment Scheme

The scheme includes installation of 11kV HT metering, DTR metering, smart consumer metering, and conversion of LT Bare Conductors to LT AB Cables, resulting in creation/improvement of fixed assets with useful life extending over several years.

Since, the proposed scheme involve creation of new infrastures for strengthening of distribution network assets with long-term technical, operational, and financial benefits to the utility, the expenditure is justified to be covered under CAPEX investment.

IV) Technical Justification

Presently at several 11kV feeders there is high AT&C losses due to incomplete metering infrastructure, weak energy accounting, and theft-prone LT distribution systems. Installation of 11kV HT meters at feeder branches will enable branch-wise monitoring and energy auditing, thereby improving visibility of energy flow and facilitating identification of abnormal/ high loss pockets. The energy recorded at these HT metering points can be audited against downstream connected DTRs for effective monitoring and corrective action.

Strengthening DTR metering from 25kVA up to 63kVA capacity is essential for transformer-wise energy accounting, technical loss assessment, monitoring transformer loading, and identification of theft-prone and high-loss areas. It will also support data-driven planning and targeted network strengthening measures.

Conversion of LT bare conductors to LT AB cables will reduce hooking and pilferage, improve public safety, minimize technical losses, and enhance reliability of power supply in theft-prone areas.

Further, Complete consumer metering through installation of smart meters will improve billing accuracy, enable real-time consumption monitoring, and facilitate theft detection and remote monitoring. Consumer metering is not part of this DPR.

The integrated implementation of these measures will strengthen energy accounting from feeder to consumer level and support sustainable reduction of technical and commercial losses.

a) Complete metering of 2-3 Nos. of 11kV feeders & associated DTRs and Consumers in each Division

In Tariff Order for FY'27, Hon'ble Commission has directed TPCODL to complete metering of at least 2 numbers of 11kV feeders in each division along with associated DTRs and consumers by the end of FY 2026-27 to assess actual technical loss and AT&C loss. In line with this direction TPCODL has identified 56 numbers of high loss making 11kV feeders along with associated DTRs and consumers for implementation of this activity.

TPCODL has already completed metering of all 33kV and 11kV feeders emanating from source substations (GSS/ PSS). Approval for installation of DT metering for 25 kVA and 63 kVA DTRs is covered under this proposal for DTR metering. For consumer metering, approval for replacement of

4.6 lakh meters is being sought under a separate CAPEX proposal and installation of consumer meters will be covered under that proposal. Additionally, metering & energy audit purpose it is required at meter to be installed at 11kV feeder interconnection points and branch feeders and the associated metering costs have been considered in this proposal. This will enable accurate recording of energy auditing, effective surveillance of electricity theft.

b) DTR Metering from 25kV up to 63kVA

DTR metering is essential to strengthen transformer-wise energy audit, improve technical loss assessment, identify loss-prone / theft-prone areas, monitor transformer loading, and support targeted network improvement measures. It will also enhance billing efficiency, improve reliability, and enable compliance with regulatory requirements.

DTR Metering Status (As on 31-03-2026)			
DTR Rating	Total Nos. of DTR	Metered DTR	Balance to be completed by 30th Sep 2026.
≥ 100kVA	19,838	17,193	2,645

c) AT&C Loss Reduction in 11kV feeders

As per directive of Hon'ble OERC TPCODL has identified 56No's 11kV feeders where AT&C loss is very high & same need to bring down with following activities.

- i. **Installation of DTR Meter on 11kV Feeders (56No's):** A total of 5,418 DTRs are installed on these feeders, out of which energy meters have already been installed for 1,064 DTRs of 100 kVA and above capacity. For the remaining DTRs installation of energy meters is proposed to enable better monitoring and identification of DTR-wise AT&C losses. Since the selected 11kV feeders have high AT&C losses, strengthening transformer-wise energy accounting is essential to identify high-loss pockets, detect pilferage or abnormal consumption, and implement focused loss-reduction measures. This initiative will improve feeder performance, enhance billing efficiency, and support compliance with regulatory directives. The cost of DTR metering has already been considered under the DTR metering component of this proposal.
 - In 56no's of high loss-making feeders 5418no's of DTR connected. Out of which 4429no's DTR are utility owned and 989 DTR private owned.
 - Out of 4429no's utility owned DTR 1040no's DTR, are with DT energy meter. Rest 3389 no's DTR are without DT metering.
 - In 989no's private owned DTR, energy meter installed at 30no's locations.
 - 4348 no's DTR including Utility & Private owned are not having DT energy meter.
 - a. 3389no's DTR are utility owned out of which – 777no's are below 25kVA which will not proposed for DT energy meter installation in DPR. 2612 no's DTR's, 25kVA and

above rating (1228no's 25KVA, 1208no's 63kVA and 176no's are 100kVA and above) are considered in this DPR for DT energy audit metering.

- b. 959no's DTR are Private owned out of which- 97no's are below 25kVA which will not proposed for DT energy meter installation in DPR. 862 no's DTR's, 25kVA and above rating (525no's 25KVA, 162no's 63kVA and 175no's are 100kVA and above) are considered in this DPR for DT energy audit metering.

Detail of DTR's without DT energy metering

Installation of Meter for DTR along with accessories.			Un-Metered DTR in 56No's High loss-Making Feeders				Un-Metered Utility owned DTR other than 56No's fdrs.				
Sl No	Rating of DT	Unit rate(Cr.)	Utility owned	Private owned	Total (Utility+Private)	Total Cost (Utility+Private)	Total	Left out after considering for 56no fdrs	Additional DTR to be covered under 20Cr. (Approved 28Cr. CAPEX 26-27, except 8Cr. For 56 Fdrs)	Left out for Metering	Cost considered in DPR (Cr)
		H=G/10 ⁷	I	J	K	L= K X H	M	N	O	P=N-O	Q= H X P
1	25 kVA	₹ 0.002	1228	525	1753	₹ 3.71	18964	17736		17736	₹ 37.51
2	63 kVA	₹ 0.002	1208	162	1370	₹ 3.30	15698	14490	8297	6193	₹ 14.93
3	100 kVA	₹ 0.003	176	175	351	₹ 1.04					
			2612	862	3474	8.05	34662	32226	8297	23929	52.44

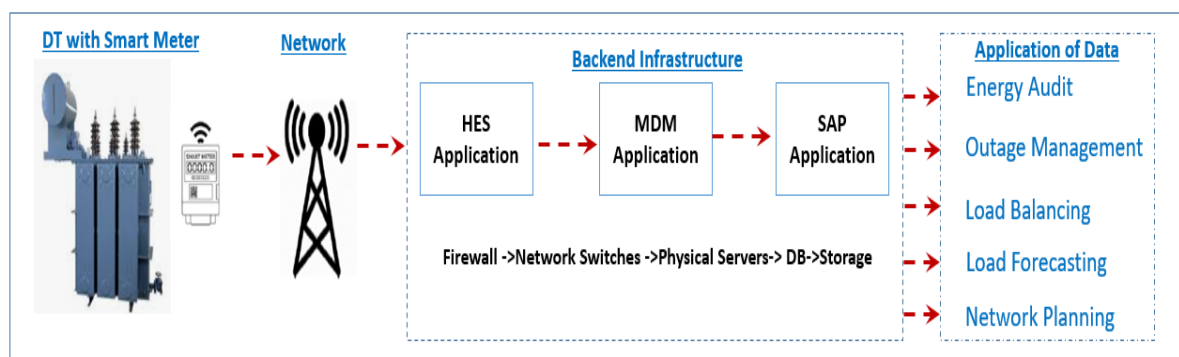
- OERC has approved additional 28Cr. in CAPEX 26-27 under metering head.
- Total 2612No's of utility owned Un-metered DTR's (25kVA, 63kVA & 100kVA) in 56 No's high loss-making feeders. In addition to these utility owned DTR, 862no's of private owned and maintained DTR's where consumers are billed through LT CT meter and there is requirement of energy accounting at DT. For better energy accounting in the 56no's feeders it is proposed to install energy audit meter on the DT LT side in all the DTR including private owned.
- To provide energy meter for these 3,474no's of utility & private owned Un-metered DTR's under 56No's high loss-making feeders required Total cost of 8.05Cr.
- Total 32,226no's Un-metered DTR's (25kVA and 63kVA) available other than above 56no's feeders to be provided with energy meter.
- In rest 20Cr. from approved CAPEX 26-27, total 8,297no's of 63kVA DTR to be provided with energy meter.

- Rest 23,929no's DTR's (25kVA and 63kVA) considered under DPR, with an estimated cost of 52.44Cr.

Backend Infrastructure for DT Smart Metering

The smart metering initiative undertaken by TPCODL represents a strategic investment aimed at modernizing the power distribution infrastructure, improving operational efficiency, ensuring regulatory compliance to provide smart and consumer centric services to consumer. This initiative outlines the anticipated benefits both financial, Operation & Consumer Satisfaction over the lifecycle of the project. TPCODL has installed more than 20 thousand smart DT meters as of May 2026. This has enhanced operational efficiency by enabling Remote Meter reading for Energy Audit, Outage management by integrating smart meter data with ADMS, Load balancing by studying the load curve and load for casting by analysis of every 15 minutes data of Smart meter. All of this has been made possible through robust, scalable backend major applications comprising the Head-End System (HES), Meter Data Management (MDM), and SAP.

Architecture of Advance Metering Infrastructure (AMI) for DT Smart Metering: -



Additional budget is seeking for scaling up of backend infrastructure (In-premises IT Infrastructure, Head End System (HES), Meter Data Management System (MDMS), data storage, etc.) to enable the deployment, operation, and lifecycle management of additional DT (Greater than 63Kva) and Feeder smart meters of 50K.

Budget Requirement: -

Backend Infrastructure for DT Smart Metering					
SL NO	Item Description	TYPE	Budget Required		
			Quantity	Unit Price incl. GST	Total Cost (Cr.)
1	Backend System Cost*	INFRA	Up to 1L	-	4.25
2	HES Licence	LICENCE	Up to 1L	95.58	0.96
3	MDM Licence	LICENCE	Up to 1L	12.83	0.13
4	SAP Licence	LICENCE	Up to 1L	28.57	0.29
5	Contingency @ 3%	-			0.17
TOTAL					5.79

* It has included, Physical Servers, Data Base Licence, Storage, Network Switches etc.

Associate Benefits of DT Metering: -

- **Energy Audit:** Remote meter reading ensures timely and accurate audit report generation, enabling proactive corrective actions.
 - **Enhanced Reliability:** Real-time outage alerts improve fault resolution speed, strengthening SAIFI/SAIDI indices and service benchmarking.
 - **Fault Resolution:** Remote diagnostics accelerate identification and restoration of supply interruptions, while improved GIS integration enhances network visibility.
 - **Strategic Planning Enablement:** Granular consumption data supports demand forecasting, infrastructure optimization, and CAPEX prioritization.
 - **Increase Operational Efficiency:** Smart meter data enables early detection of unbalanced load conditions, allowing timely corrective action before transformer damage occurs. Smart meters provide granular data to implement demand response programs, reducing stress on transformers during peak hours.
 - **Predictive Maintenance:** Continuous monitoring of transformer health indicators enables proactive maintenance scheduling, reducing downtime and extending asset life.
-
- i. **Installation of smart meters of consumes on 11kV Feeders (56Nos):** A total of 1,74,004 consumers are connected to the identified 56numbers of 11kV feeders having high AT&C loss. Out of these, TPCODL has already installed smart meters for 31,435 consumers. To achieve complete consumer metering on these feeders and strengthen energy accounting, the balance consumers are proposed to be covered under the present scheme. This will enable accurate billing, real-time consumption monitoring, theft detection, and support targeted AT&C loss reduction measures. Consumer metering is not considered in this DPR, and covered under a separate CAPEX proposal.
 - ii. **Conversion of LT Bare to AB Cable on high loss DTs across TPCODL:** The proposed conversion of LT bare conductor to AB cable in high-loss distribution transformer areas is essential to reduce technical and commercial losses, prevent power theft through illegal hooking, improve voltage profile, and enhance overall network safety and reliability. This intervention will also minimize breakdowns, reduce maintenance requirements, and support sustainable loss reduction in identified high-loss pockets.

Capital Investment Plan in Compliance with the Directions of the Hon'ble Commission (RST Order FY 2026-27)

LT Bare to LT AB Cable Conversion								
Sl. No	Division- wise AT&C Loss		LT Bare Conductor (Ckm)					
	Division	FY'25-26	Total Bare Ckm	Covered under CAPEX 26-27	Leftout Bare LT	Considered for 56 loss making feeders	Considered for DPR other than 56 feeders	Total considered for DPR Ckm
1	NED	42.93%	433	61	372	68	183	250
2	SED	32.21%	285	21	265	8	154	162
3	DED	28.70%	543	10	533	17	310	327
4	CED	28.67%	336	40	297	83	128	211
5	PED	28.54%	32		32	3	17	21
6	AED	27.19%	140	22	118	20	59	79
7	KED-II	24.80%	110	22	89		53	53
8	KED-I	24.23%	491	7	484	29	273	302
9	NYED	22.48%	165		165	3	98	100
10	JED	21.39%	276		276	1	165	166
11	BAED	19.45%	124	31	93	1	55	56
12	KHD	17.74%	227	0	227	13	128	141
13	ANED	16.38%	170		170	14	94	108
14	TED	14.46%	210	25	184	18	92	109
15	CDD-I	9.89%	7		7		7	7
16	BED	9.26%	38		38	1	7	8
17	CDD-II	8.13%	63		63		6	6
18	PDP	7.47%	302	12	290	15	22	37
19	BCDD-II	6.55%	57		57	0	6	6
20	BCDD-I	5.03%	10	10	0		0	0
			4019	259	3760	292	1858	2150

V) Statutory / Safety Requirement

The proposed scheme is essential for compliance with regulatory directives and statutory requirements related to energy accounting, loss reduction, and consumer metering.

The investment supports:

- Compliance with directives of the Electricity Regulatory Commission regarding for AT&C loss reduction and energy auditing under under **Retail Supply Tariff (RST) Order for FY'26-27**.
- Achievement of complete feeder, DTR, and consumer metering with smart meter, as per distribution sector reforms and utility standards.
- Strengthening of energy accounting and audit mechanisms required under applicable regulatory provisions.
- Improvement of public safety through replacement of LT bare conductors with XLPE insulated LT AB cables.
- Enhanced monitoring and control of unauthorized consumption and electricity theft.

Capital Investment Plan in Compliance with the Directions of the Hon'ble Commission (RST Order FY 2026-27)

The scheme also supports safe and reliable operation of the distribution network by improving monitoring capability and reducing overloading and unsafe LT practices.

VI) Cost Assessment /Cost Breakup.

Below is the detailed Estimated Cost Summary for completion of the proposed scope of work:

Sl. No.	Direction of the Commission (RST Order FY 2026-27)	Unit	Qty.	Amount (₹ in Cr.)
<u>AT&C Loss Reduction and Network Metering</u>				
1.1	Complete metering of 2-3 Nos. of 11 kV feeders & associated DTRs and Consumers in each Division (at critical branch in 56No's 11kV feeders)	No's	224	29.12
1.2	DTR Metering up to and including 63kVA with Backend Infrastructure	No's	26,574	58.23
1.3	LT Bare to AB Cable for AT&C Loss Reduction in 11kV feeders	Ckm	2150	250.43
Cost under AT&C Loss Reduction (in Cr.)				337.78

Please refer to **Annexure – 3** for Locations and **Annexure – 4** for details of BoQ for the above cost estimate covering the scope of work.

Note for cost estimate reference:

- All rate considered as per Cost Data Book approved by Energy department (GoO), Dt-05/05/2026.
- For items which are not covered under approved CDB, Material Supply, Civil and erection rate have been considered as per latest Rate Contract after competitive bidding or based on Budgetary Quotation from OEM's.

VII) Cost Benefit Analysis (Output and Outcome)

Implementation of the proposed scheme is expected to provide significant operational, technical & commercial benefits to the utility, including: -

- Reduction in AT&C losses through improved energy accounting and theft control.
- Improved billing efficiency and revenue realization through complete consumer metering.
- Reduction in pilferage and unauthorized consumption through LT AB cable conversion and smart metering.
- Enhanced feeder-wise and transformer-wise monitoring and energy auditing.
- Improved system reliability, power quality, and transformer loading assessment.
- Better preventive maintenance planning and reduced network failures.

- Improved consumer service through accurate billing and real-time monitoring.
- Strengthened regulatory compliance and utility performance indicators.
- Increase in billed energy and collection efficiency with reduction in unaccounted energy.
- Reduction in maintenance expenditure related to LT bare conductor failures and theft damage.
- Long-term operational savings through improved monitoring and reduced field intervention.
- These proposals will meet the Regulatory directives to reduce the high AT&C loss as per **table -40 of Retail Supply Tariff (RST) Order for FY'26-27.**

Table-40

11 kV feeders with technical loss level	Technical loss level reduction by end of the FY 2026-27
>80%	By 50% of existing level of loss
Between 50% to 80%	By 30% of existing level of loss
Between 20% to 50%	By 20% of existing level of loss

Cost Benefit Analysis for LT Bare to LT Ab Cable Conversion			
Sl. No	Description	UoM	Value
A	Span/km (1 span = 40m)	No	25
B	Hooking/ Span	No	5
C = A X B	Hooking/ km	No	125
D	Units/ hooking (after conversion to new consumers/ increase after parallel hooking removal)/month	Unit/hooking/Month	50
E = C X D	Units recovered per km per month	Unit/kM/ Month	6250
F = E X 12	Units recovered per km per year (12 months)	Unit/kM/Year	75000
G = F / 10 ⁶	Units recovered per km per year (12 months)	MU/kM/Year	0.075
H	Proposed LT Bare to LT AB conversion	Ckm	2150
I = G X H	Total Additional Energy due to reduction in Commercial Losses	MU	161
J	Additional Energy due to reduction in Technical Losses (Estimated)	MU	30.17
K = I + J	Total Additional Energy due to reduction in AT&C Losses	MU	191
L	LT ABR Approved in Tariff Order FY 2025-26	Rs/kWh	5.07
M = K X L	Additional Revenue	Rs. Cr.	970.49
N	Total Investment Proposed	Rs. Cr.	250.43
O = N/ M	Payback Period	Years	0.26
P	Payback Period	Months	3

The proposed investment is therefore economically and technically viable and is expected to generate sustainable operational and financial benefits through effective reduction of AT&C losses.

B. Protection & Safety Enhancement across the Distribution Network

I) Need of Investment

To enhance safety, reliability, and protection across the distribution network, several critical gaps have been identified in the existing overhead lines and distribution infrastructure. A large portion of the existing network presently operates through overhead lines without adequate guarding, underground crossing arrangements, or proper HT/LT protection systems, thereby posing significant risks to public safety, equipment reliability, and uninterrupted power supply.

At National Highways (NH), State Highways (SH), and other major road crossings, overhead electrical line crossings create potential safety hazards to vehicular traffic and the public. At many locations in overhead feeder lack of cradle-guard wire arrangements, increasing the risk of electrocution and accidents in the event of conductor snapping.

Presently several Distribution Substations are operating without proper HT and LT side protection systems. Damaged and bypassed safety equipments are unsafe for network and lifehood, resulting in higher risk of faults, fire hazards, equipment damage, and operational interruptions. Odisha being a lightning-prone state, provision of Lightning Arresters is also essential for protection of electrical equipment against lightning surges and transient faults.

II) Timelines of the Project and Phasing of Investment

The proposed scheme shall be implemented in a phased manner over a period of 5Years from the date of approval. The tentative prioritisation and implementation schedule is as follows:

Sl. No.	Direction of the Commission	Total Cost (Cr.)	Description	Budget Breakup in 5Years(Cr.)					Scope of Work
	(RST Order FY 2026-27)			FY-27	FY-28	FY-29	FY-30	FY-31	
1	Installation of Guard Wires for 33kV & 11kV overhead lines crossing and Underground cable at National & State Highway	136	Cost in Cr.	10	40	40	46	0	Cradle guard and Underground cable at critical locations
2	Protection system on LV side of DTRs of 25kVA & up to 63kVA-31807No's	445	Cost in Cr.	2	111	111	111	111	LTDB for safety and protection at DTR and LT network
			No of LTDB	154	7913	7913	7913	7913	
3	Protection system on LV Side of DTR 100KVA- 9702no's	176	Cost in Cr.	5	43	43	43	43	LTDB for safety and protection at DTR and LT network
			No of LTDB	250	2363	2363	2363	2363	
4	Protection system on LV Side of DTR 200KVA & above- 2993No's	150	Cost in Cr.	18	33	33	33	33	LTDB for safety and protection at DTR and LT network
			No of LTDB	363	660	660	660	650	
5	Protection system on HV Side of DTR below 200KVA- 93574No's	116	Cost in Cr.	15	25	25	25	26	AB Switch and DO Fuse for safety and switching at DT
			No of DO Fuse	10000	12200	12200	12200	13614	
			No of AB Switch	3500	7550	7500	7500	7310	
6	Protection system on HV Side of DTR 200KVA & above- 7205No's	572	Cost in Cr.	40	130	130	135	136	Single breaker RMU proposed for DTR HT protection
			No of single breaker RMU on HT side	505	1640	1640	1700	1720	
7	Installation of Lighting arrester at DSS- 43733no's	195	Cost in Cr.	15	45	45	45	45	LA for safety and protection at DTR
			No of LA	3500	10058	10058	10058	10058	
Total Cost in Cr.		1788		105	427	426	437	393	

III) Proposed Capital Investment Scheme

The scheme includes installation of Underground Cables, cradle-guard, AB switches, DO fuses, LTDBs, Lightning Arresters, resulting in creation/improvement of fixed assets with useful life extending over several years.

Since, the proposed scheme involve creation of new infrastructures for strengthening of distribution network assets with long-term technical, operational, and financial benefits to the utility, the expenditure is justified to be covered under CAPEX investment.

IV) Technical Justification

To address these issues and strengthen safety, protection, and reliability of the distribution network., the following measures have been proposed:

- Laying of Underground (UG) Cable at NH/SH and major road crossings.
- Installation of cradle/guard wires at critical road crossings overhead feeder sections.
- Provision of HT and LT protection systems for DTRs including AB switches, DO fuses, LTDBs.
- Provision of Lightning Arresters for protection against lightning surges.

The proposed scheme will improve public safety, enhance system protection, reduce fault occurrence, improve reliability of supply, and ensure compliance with statutory safety standards and regulations.

a) Laying of Underground Cable at NH / SH and other major crossings

To enhance the safety of the public and vehicular traffic, TPCODL proposes the implementation of underground cabling at National Highways (NH), State Highways (SH) and other major crossings where electrical feeders are required to traverse these routes. This initiative aims to eliminate the safety risks associated with overhead power line crossings in high-traffic areas and ensure compliance with statutory regulations. Moreover, underground cabling will significantly improve the reliability and resilience of the power supply infrastructure, minimizing outages and maintenance challenges. This proposal aligns with TPCODL's commitment to developing a safe, reliable, and regulation-compliant power distribution network.

Laying of Underground Cable at NH/SH and other major crossings				
Sl. No.	Proposal	UOM	Qty.	Amount (Rs in Cr.)
1	33kV Underground Cable with DP	Ckm	4.64	11.91

Laying of Underground Cable at NH/SH and other major crossings				
Sl. No.	Proposal	UOM	Qty.	Amount (Rs in Cr.)
2	11kV Underground Cable with DP	Ckm	33.84	55.93
	Total		38.48	67.84

The proposed scope of work includes 3CX400sqmm underground cable with spare, two numbers of DP structures with all accessories on either side of the Road along with switching facility through Isolator/ AB switch to provide ease of operation.

b) Installation of Cradle/ Guard wire in Overhead feeders at road crossings

The installation of cradle guards ensures that in the event of conductor snapping, the broken live conductor first makes contact with the cradle wire. This contact facilitates the completion of the electrical circuit, thereby enabling the protective relays installed at the substation to operate. As a result, the associated circuit breaker trips instantaneously, effectively mitigating the risk of electrocution or other hazards to human and animal life.

Presently, a substantial portion of the distribution network operates through overhead lines, many of which lack adequate guarding or cradle wire arrangements. This is particularly concerning in sections of the legacy network where conductor integrity has deteriorated over time, increasing the likelihood of snapping incidents. The absence of protective guarding in such areas poses a significant safety risk to the general public.

In view of the above, TPCODL proposes the installation of cradle/ guard wires at all critical road crossings and vulnerable locations within the network. This initiative aims to enhance public safety, minimize the risk of electrical accidents, and ensure full compliance with applicable electrical safety regulations and standards.

Installation of Cradle/ Guard wire in Overhead feeders at road crossings (33kV & 11kV)				
Sl. No.	Proposal	UOM	Quantity	Amount (Rs in Cr.)
1	For 33kV Feeders	Nos	201	10.59
2	For 11kV Feeders	Nos	1,252	57.17
	Total		1,453	67.76

The proposed scope of work includes Cradle/ Guard arrangement, two numbers of DP structures with all accessories at each crossing.

c) Provision for DTR HV and LV protection

Currently, a significant number of DSS lack adequate protection systems on both the HT and LT sides. Essential HT-side protection devices such as AB switches and DO fuses, along with LT-side protection in the form of LT Distribution Boxes are either absent or not in proper working condition. In several locations, protection systems are found to be damaged, burnt or bypassed.

AB switches and DO fuses are critical components for isolation and protection in distribution substations. They facilitate safe disconnection of transformer sections during maintenance, fault isolation and emergency operations. However, at many DTR locations, these HT-side protection devices are outdated, manually operated or have deteriorated due to prolonged environmental exposure, thereby compromising operational reliability and equipment safety.

These protective devices play a vital role in localizing faults and enabling operation and maintenance activities without interrupting power supply to a larger area.

HT Protection (AB Switch and DO Fuse)				
Sl. No.	Proposal	UOM	Quantity	Amount (Rs in Cr.)
1	HT Protection by providing AB Switches (for DTR rating below 200kVA)	Set	33,360	68.72
2	HT Protection by providing DO Fuses (for DTR rating below 200kVA)	Set	60,214	46.37
3	HT Protection by providing Single Breaker RMU (for DTR 200kVA and above)	Set	7,205	571.71
	Total			686.80

Damaged/ burnt LT protection devices are replaced with unsafe open fuse arrangements using LT shackles or bare conductors, posing serious risks to personnel and the public. The absence of proper protection increases the likelihood of faults, fire hazards, equipment damage and electrocution.

Provision of LTDBs on the LT side of DTRs will ensure standardized protection, improve safety and enhance overall system reliability.

LT Protection (LTDB)				
Sl. No.	Proposal	UOM	Quantity	Amount (Rs in Cr.)
1	LT Protection For 25kVA DTR	Nos	17,137	239.92
2	LT Protection For 63kVA DTR	Nos	14,670	205.38
3	LT Protection For 100kVA DTR	Nos	9,7027	175.61
4	LT Protection For 250kVA DTR	Nos	2,479	123.70
5	LT Protection For 500kVA DTR	Nos	508	25.35

LT Protection (LTDB)				
Sl. No.	Proposal	UOM	Quantity	Amount (Rs in Cr.)
6	LT Protection For 1000kVA DTR	Nos	6	0.58
	Total		44,502	770.54

The proposed scope of work includes LTDB, earthing arrangement, LT cable for DTR, LTDB and 1st LT pole with accessories connectivity and civil work.

Lightning Arresters (LAs) are essential for protecting electrical equipment from damage caused by lightning strikes. In Odisha, where lightning occurrences are frequent, it becomes absolutely necessary to provide LA protection for electrical installations to safeguard them against such natural events. Investing in effective lightning protection measures is a proactive step toward building a safer, more reliable and disaster-resilient electrical network in the state.

Installation of LA at DSS				
Sl. No.	Proposal	UOM	Quantity	Amount (Rs in Cr.)
1	11kV Lightning Arresters at DSS	Set	43,733	195.19
	Total			195.19

The proposed scope of work includes LA, GI flat with earthing arrangement for connectivity.

V) Statutory / Safety Requirement

The proposed scheme is essential for compliance with statutory safety regulations and electrical safety standards applicable to distribution utilities.

The investment supports:

- Compliance with directives of the Electricity Regulatory Commission regarding for Installation of Guard Wires, DTR HT & LT Protection system under **Retail Supply Tariff (RST) Order for FY'26-27**.
- Compliance with electrical safety regulations for distribution systems.
- Reduction of electrocution risks and public safety hazards.
- Safe operation and isolation of DTRs and feeder systems.
- Protection of electrical assets against lightning and surge-related failures.

- Improvement in operational safety for maintenance personnel and the public.

The proposed works will significantly improve safety and reliability of the distribution system while ensuring compliance with regulatory and statutory requirements.

VI) Cost Assessment / Cost Breakup.

Below is the detailed Estimated Cost Summary for completion of the proposed scope of work:

Sl. No.	Direction of the Commission (RST Order FY 2026-27)	Unit	Qty.	Amount (₹ in Cr.)
<u>Protection & Safety Enhancement across the Distribution Network</u>				
2	Installation of Guard Wires and HT Underground Cable for 33kV & 11kV Overhead lines			
2.1	Installation of Cradle/ Guard in Overhead feeders at road crossings (33KV & 11KV)	No's	1,453	67.76
2.2	Laying of Underground cable at NH / SH and other road crossings (33kV and 11kV)	Ckm	38.48	67.84
3	Protection system on LV side of DTRs of 25 KVA & above			
3.1	Installation of LV Protection on up to 63 KVA DTR	No's	31,807	445.30
3.2	Installation of LV Protection for 100KVA DTR	No's	9,702	175.61
3.3	Installation of LV Protection DTR 200KVA & above	No's	2,993	149.68
4	Protection system on HV side of DTRs of 25KVA & above			
4.1	Installation of HT Protection DTR below 200KVA	No's	93,574	115.09
4.2	Installation of HT Protection DTR 200KVA & above	No's	7,205	571.71
4.3	Installation of Lighting arrester at Distribution substation	No's	43,733	195.19
Cost under Protection & Safety (in Cr.)				1788.49

Please refer to **Annexure – 3** for Locations and **Annexure – 4** for details of BoQ for the above cost estimate covering the scope of work.

Note for cost estimate reference:

- All rate considered as per Cost Data Book approved by Energy department (GoO), Dt-05/05/2026.
- For items which are not covered under approved CDB, Material Supply, Civil and erection rate have been considered as per latest Rate Contract after competitive bidding or based on Budgetary Quotation from OEM's.

VIII) Cost Benefit Analysis (Output and Outcome)

Implementation of the proposed scheme is expected to provide significant operational, technical & commercial benefits to the utility, including: -

- Enhanced public and operational safety across the distribution network.
- Reduction in electrocution risk, conductor snapping hazards, and accident-related risks.
- Improved protection and reliability of DTRs and LT distribution network.
- Reduction in outages & interruption-related losses due to faults, equipment failures.
- Reduction in force outages to attend breakdown and maintenance activities on Distribution transformers and LT network.
- Improved network resilience and reliability through underground cabling.
- Enhanced protection against lightning and surge-related damage.
- Improved operational flexibility and ease of maintenance.
- Reduction in maintenance, breakdown, and equipment replacement expenditure.
- Long-term operational savings through strengthened protection infrastructure and reduced emergency maintenance activities.

The proposed investment is therefore technically justified and financially viable for strengthening safety, protection, and reliability of the distribution network.

C. Voltage Profile Improvement in Urban and Major City Areas

I) Need of Investment

To identify low voltage pockets in urban and major city areas, detailed field surveys and network assessments have been carried out in various city divisions. Based on the survey findings, several Distribution Transformers and associated LT networks have been identified under poor voltage profile and unreliable power supply. The major causes observed include excessively long LT feeder lengths, overloading of DTRs and LT feeders, inadequate conductor capacity, single-phase LT and unbalanced load distribution across the network.

Long LT feeder lines are resulting in excessive voltage drop and increased technical losses, particularly affecting consumers located at the tail end of the feeders. Existing overloaded DTRs and inadequate LT infrastructure are also causing poor voltage regulation, frequent interruptions, network stress and deterioration in quality of power supply.

Low Voltage DSS Location in District HQ						
Circle	Division	No of Low Voltage DSS	No of Consumers	Covered under ongoing/ Proposed scheme	Completed/ WIP under existing scheme	Proposal Required
BBSR-I	BCDD-I	11	1540	2		9
BBSR-I	BCDD-II	196	38455	18	8	173
BBSR-I	BED	139	19863	23	9	108
BBSR-II	KHD	15	2061			15
BBSR-II	NYED	8	632			8
BBSR-II	PED	26	9258	3		23
Cuttack	CDD-I	6	2357			6
Cuttack	CDD-II	31	5873	13		18
Dhenkanal	ANED	19	2798	7		12
Dhenkanal	DED	4	926			4
Paradeep	JED	9	2273	1		8
Paradeep	KED-I	10	1287			10
Total		474	87323	67	17	394

II) Timelines of the Project and Phasing of Investment

The proposed scheme shall be implemented in a phased manner over a period of 5Years from the date of approval. The tentative prioritisation and implementation schedule is as follows:

Capital Investment Plan in Compliance with the Directions of the Hon'ble Commission (RST Order FY 2026-27)

Sl. No.	Direction of the Commission (RST Order FY 2026-27)	Total Cost (Cr.)	Description	Budget Breakup in 5Years(Cr.)					Scope of Work
				FY-27	FY-28	FY-29	FY-30	FY-31	
1	Addressing Low Voltage issues in urban and major city areas (394no's locations)	87	Cost in Cr.	37	50				New DTR with HT and LT extension, DTR Aug. with LT extension, LT 1Ph to 3Ph conversion.
Total Cost in Cr.		87		37	50				

III) Proposed Capital Investment Scheme

The scheme includes installation of new DTR, DTR Augmentation, New HT and LT network extension, and conversion of 1Ph LT network to 3Ph LT network, resulting in creation/improvement of fixed assets with useful life extending over several years.

Since, the proposed scheme involve creation of new infrastures for strengthening of distribution network assets with long-term technical, operational, and financial benefits to the utility, the expenditure is justified to be covered under CAPEX investment.

IV) Technical Justification

To address present network deficiency like low voltage issues, overloading of LT feeders & DTRs, and poor quality of supply in urban and city areas it is required to upgrade existing network and addition of network to meet load growth to provide quality power supply.

This DPR is proposed to improve voltage profile of District HQ towns (Khurda, Puri, Nayagarh, Angul, Dhenkenal, Kendrapada, Cuttack & Jagat Singh Pur), including Bhubaneswar City divisions & Cuttack City divisions area.

The following measures have been identified to mitigate low voltage issues and provide reliable & quality power supply to end consumers:

- Addition of new LT feeders to reduce existing feeder lengths.
- Upgradation of existing LT feeder networks with higher capacity LT AB Cables.
- Augmentation of overloaded DTRs with higher capacity transformers along with new LT feeders.
- Installation of new DTRs with associated HT and LT network for load bifurcation of existing DTRs.
- Replacement of existing single-phase LT feeder network with three-phase LT feeder system.

Scope of Work Proposed for Mitigation of Low Voltage DSS Location in District HQ								
Circle	Division	Scope of Work under Proposed Additional DTR			Scope of Work under Proposed Augmentation DTR		Addit. LT AB Feeder Network	
		Total DTR	HT Extension (Ckm)	LT Extension (Ckm)	Total DTR	LT Extension (Ckm)	LT Extension (Ckm)	1ph- 3 Ph conversion (Ckm)
BBSR-I	BCDD-I	3	0.32	1.05	6	1.85		
BBSR-I	BCDD-II	74	23.05	33.3	40	13.45	17.8	
BBSR-I	BED	55	6.265	14.49	53	12.9		
BBSR-II	KHD	10	7.04	4.3	5	1.3		
BBSR-II	NYED	2	0.3	1.3	6	1.45		
BBSR-II	PED	1	0.3	0.5	8	3.6	5.5	
Cuttack	CDD-I	1	0.02	0.3	5	1.95		
Cuttack	CDD-II	1	0.2	0.3	11	3.4	3.2	
Dhenkanal	ANED	1	0.5	0.4	5	1.8	3.7	0.3
Dhenkanal	DED	3	0.77	1	0		0.5	
Paradeep	JED	1	0.5	0.6	3	1.25	1	0.9
Paradeep	KED-I	5	0.85	2	4	1.8	0.4	0.5
Total		157	40	60	146	45	32	2

a. Upgradation of existing LT feeder network and addition of New LT feeder

Long LT feeder lines are a primary cause of low voltage issues experienced by consumers at tail end of the feeder. Addition of new LT feeders will significantly reduce the length of existing feeders, thereby minimizing voltage drop and technical losses. This will help to achieve optimum feeder lengths to improve voltage profile at consumer end and enhance overall reliability of supply.

Upgradation of existing LT feeders with higher capacity AB Cable will reduce line resistance and associated voltage drop. Replacement of old and worn-out conductors with adequately rated aerial bunched cables will improve current carrying capacity, reduce losses and ensure stable voltage under varying load conditions, thereby enhancing quality of power supply.

LT Network Extension				
Sl. No.	Proposal	UOM	Quantity	Amount (Rs in Cr.)
1	Extension of new LT network	Ckm	32	3.74
	Total		32	3.74

b. Augmentation of existing DTR's with higher capacity, along with new LT feeders

Augmentation of overloaded Distribution Transformers with higher capacity will relieve stress on the existing system and improve voltage levels. Additional LT feeders proposal for new DTR, will enable better load distribution, prevent overloading, reduce network stress and enhance transformer life, ensuring reliable power supply to consumers.

Augmentation of DTR				
Sl. No.	Proposal	UOM	Quantity	Amount (Rs in Cr.)
1	Augmentation of lower size DTR with new 63kVA DTR	Nos	9	0.41
2	Augmentation of lower size DTR with new 100kVA DTR	Nos	19	1.10
3	Augmentation of lower size DTR with new 250kVA DTR	Nos	53	11.41
4	Augmentation of lower size DTR with new 500kVA DTR	Nos	61	18.85
5	Augmentation of lower size DTR with new 1000kVA CSS	Nos	4	2.57
	Total		146	34.3

LT Network Extension				
Sl. No.	Proposal	UOM	Quantity	Amount (Rs in Cr.)
1	Extension of new LT network	Ckm	45	5.21
	Total		45	5.21

c. Addition of new DTR's along with associated HT and LT network, to bifurcate load of existing DT

Installation of new DTRs along with associated HT and LT network infrastructure extension will facilitate effective load bifurcation of existing overloaded transformers. This will reduce loading on individual DTRs, improve voltage profile across the network and minimize technical losses. It also ensures better service reliability and flexibility in network operation.

Installation of New/ Additional DTR				
Sl. No.	Proposal	UOM	Quantity	Amount (Rs in Cr.)
1	Installation of new 63kVA DTR	Nos	9	0.66
2	Installation of new 100kVA DTR	Nos	58	4.92
3	Installation of new 250kVA DTR	Nos	89	20.32
4	Installation of new 1000kVA CSS	Nos	1	0.64
	Total		157	26.54

HT and LT Network Extension				
Sl. No.	Proposal	UOM	Quantity	Amount (Rs in Cr.)
1	Extension of 11kV HT network	Ckm	40	9.68
2	Extension of new LT network	Ckm	60	6.94
	Total			16.62

d. Replacement of 1-Ph LT feeder network with 3-Ph LT feeder

Replacement of single-phase LT feeders with three-phase systems will enable balanced load distribution and improve voltage stability across all phases. Three-phase networks support higher loads more efficiently, reduce phase imbalance and enhance system reliability, making them more suitable for urban and high-density load areas.

1-Ph LT Network replacement with 3-PH				
Sl. No.	Proposal	UOM	Quantity	Amount (Rs in Cr.)
1	1-Ph LT Network replacement with 3-PH	Ckm	3	0.20
	Total			0.20

The proposed scope of work includes conversion of 1Ph-LT bare conductor with new 3-Ph LT AB Cables, new PSC poles with earthing arrangement and all LT accessories.

The proposed scheme will strengthen the LT distribution network, improve voltage profile and power quality, reduce technical losses, enhance reliability of power supply, and ensure better consumer service in urban and city areas.

V) Statutory / Safety Requirement

The proposed scheme is essential for maintaining statutory voltage limits and improving safety and reliability of the distribution network.

The investment supports:

- Compliance with directives of the Electricity Regulatory Commission regarding for addressing Low Voltage issues in urban and major city areas under **Retail Supply Tariff (RST) Order for FY'26-27**.
- Compliance with regulatory standards related to voltage profile and quality of supply.

Capital Investment Plan in Compliance with the Directions of the Hon'ble Commission (RST Order FY 2026-27)

- Reduction of unsafe and overloaded LT network conditions.
- Improvement of public safety through replacement of old and deteriorated conductors with XLPE insulated LT AB Cables.
- Reduction in conductor snapping, leakage, and electrical hazards.
- Proper earthing arrangements and strengthening of LT infrastructure for safe network operation.
- Reliable and balanced three-phase power supply in urban and high-density load areas.

The scheme will help improve system reliability and ensure safe and efficient operation of the LT distribution network.

VI) Cost Assessment /Cost Breakup.

Below is the detailed Estimated Cost Summary for completion of the proposed scope of work:

Sl. No.	Direction of the Commission (RST Order FY 2026-27)	Unit	Qty.	Amount (₹ in Cr.)
<u>Addressing Low Voltage issues in urban and major city areas</u>				
1	Augmentation of existing DTR/ Installation of New DTR along with associated lines near to load centre	No's	303	82.70
2	LT Network Extension/ Conversion of 1-Ph LT Network with 3-PH	Ckm	35	3.94
Cost under Voltage Profile improvement (in Cr.)				86.65

Please refer to **Annexure – 3** for Locations and **Annexure – 4** for details of BoQ for the above cost estimate covering the scope of work.

Note for cost estimate reference:

- i) All rate considered as per Cost Data Book approved by Energy department (GoO), Dt-05/05/2026.
- ii) For items which are not covered under approved CDB, Material Supply, Civil and erection rate have been considered as per latest Rate Contract after competitive bidding or based on Budgetary Quotation from OEM's.

VII) Cost Benefit Analysis (Output and Outcome)

Implementation of the proposed scheme is expected to provide significant operational, technical & commercial benefits to the utility and consumer, including: -

- Enhanced reliability and power quality in the LT distribution network through voltage profile improvement.
- Minimised in DTR and LT feeder overloading, leading to reduction in network breakdowns and maintenance and prepare network to meet future load growth.
- Balanced load distribution through three-phase LT system.
- Enhanced safety through LT AB Cables and strengthening of old & aged network.
- Reduction in technical losses through optimized feeder length and higher capacity conductors.
- Improved consumer service through stable and reliable power supply.
- Increased asset life of DTRs and LT network components.

The proposed investment is therefore technically justified and financially viable for sustainable improvement of voltage profile and strengthening of the urban distribution network.

5. Conclusion

Under the proposed scheme, an amount of ₹ **2213Cr.** is hereby submitted for the kind consideration and approval of the Odisha Electricity Regulatory Commission. The Detailed Project Report (DPR) has been prepared with due emphasis on the critical need for implementing comprehensive safety measures to mitigate risks and hazards in compliance with applicable regulatory standards.

The DPR aims to safeguard human life and critical assets, enhance operational efficiency, and promote a strong safety culture across the network. The implementation of the proposed works is expected to improve voltage profile, strengthen system reliability, reduce risks and ensure reliable and quality power supply, thereby contributing to the development of a safe, resilient and efficient distribution network.

Annexure 2- Time Frame of the Expenditure

Sl. No.	Direction of the Commission	Total Cost (Cr.)	Description	Budget Breakup in 5Years(Cr.)					Scope of Work
	(RST Order FY 2026-27)			FY-27	FY-28	FY-29	FY-30	FY-31	
1	Complete metering of 2-3 Nos. of 11kV feeders & associated DTRs and Consumers in each Division	29	Cost in Cr.	5	12	12			11kV meter to be installed at critical branches.
			No of feeders	9	24	23	-	-	
2	DTR Metering up to and including 63kVA (25kVA-17736No's & 63kVA-6193No's, total-23929no's)	58	Cost in Cr.	20	15	10	14		Dt energy meter proposed for DTR 63kVA and below with Backend Infrastructure
			No of DT meter	6000	6693	4500	6736	-	
			DTR rating	a.63kVA DTR- 400no's b.25kVA DTR- 2000no's c. Backend Infrastructure	a.63kVA DTR- 2193no's b.25kVA DTR- 4500no's	25kVA DTR		-	
3	AT&C Loss Reduction in 11 kV feeders	250	Cost in Cr.	50	50	50	50	50	Total LT bare network available is 4019Ckm, out of which 259ckm has been approved in CAPEX FY'26-27 and 2150 Ckm proposed under this DPR in 5Yrs.
			LT bare to AB(Ckm)	430	430	430	430	430	
			Prioritising criteria	56No's High loss feeder- 292ckm and rest 138Ckm in other area	Sequentially in descending order of losses making area LT network.				
4	Installation of Guard Wires for 33kV & 11kV overhead lines crossing and Underground cable at National & State Highway	136	Cost in Cr.	10	40	40	46	0	Cradle guard and Underground cable at critical locations
5	Protection system on LV side of DTRs of 25kVA & up to 63kVA-31807No's	445	Cost in Cr.	2	111	111	111	111	LTDB for safety and protection at DTR and LT network
			No of LTDB	154	7913	7913	7913	7913	

Capital Investment Plan in Compliance with the Directions of the Hon'ble Commission (RST Order FY 2026-27)

Sl. No.	Direction of the Commission	Total Cost (Cr.)	Description	Budget Breakup in 5Years(Cr.)					Scope of Work
	(RST Order FY 2026-27)			FY-27	FY-28	FY-29	FY-30	FY-31	
6	Protection system on LV Side of DTR 100KVA- 9702no's	176	Cost in Cr.	5	43	43	43	43	LTDB for safety and protection at DTR and LT network
			No of LTDB	250	2363	2363	2363	2363	
7	Protection system on LV Side of DTR 200KVA & above- 2993No's	150	Cost in Cr.	18	33	33	33	33	LTDB for safety and protection at DTR and LT network
			No of LTDB	363	660	660	660	650	
8	Protection system on HV Side of DTR below 200KVA- 93574No's	116	Cost in Cr.	15	25	25	25	26	AB Switch and DO Fuse for safety and switching at DT
			No of DO Fuse	10000	12200	12200	12200	13614	
			No of AB Switch	3500	7550	7500	7500	7310	
9	Protection system on HV Side of DTR 200KVA & above- 7205No's	572	Cost in Cr.	40	130	130	135	136	Single breaker RMU proposed for DTR HT protection
			No of single breaker RMU on HT side	505	1640	1640	1700	1720	
10	Installation of Lighting arrester at DSS- 43733no's	195	Cost in Cr.	15	45	45	45	45	LA for safety and protection at DTR
			No of LA	3500	10058	10058	10058	10058	
11	Addressing Low Voltage issues in urban and major city areas (394no's locations)	87	Cost in Cr.	37	50				New DTR with HT and LT extension, DTR Aug. with LT extension, LT 1Ph to 3Ph conversion.
Total Cost in Cr.		2213		217	553	498	502	443	

Annexure 5- Board Approval Copy



**Certified True Copy of the resolution passed at the
Board Meeting held on 22nd April 2026**

"RESOLVED that multiyear Capital Expenditure (Capex) of the Company for below mentioned activities, be and is hereby approved, as under, subject to the approval of Odisha Electricity Regulation Commission (OERC):

Sl. No.	Direction of the Commission (RST Order FY 2026-27)	Total Cost (Cr.)	Budget breakup in 5 Years				
			FY-27	FY-28	FY-29	FY-30	FY-31
1	Complete metering of 2-3 Nos. of 11 kV feeders & associated DTRs and Consumers in each Division	29	5	12	12	0	0
2	DTR Metering up to and including 63 KVA (25KVA-19697No's & 63KVA-18735No's)	83	20	20	21	22	0
3	AT&C Loss Reduction in 11 kV feeders	250	50	50	50	50	50
4	Installation of Guard Wires for 33kV & 11kV overhead lines crossing and Underground cable at National & State Highway	136	10	40	40	46	0
5	Protection system on LV side of DTRs of 25KVA & up to 63KVA	445	2	111	111	111	111
6	Protection system on LV Side of DTR 100KVA & above	175	5	43	43	43	43
7	Protection system on LV Side of DTR 250KVA & above	150	18	33	33	33	33
8	Protection system on HV Side of DTR up to 200KVA	116	15	25	25	25	26
9	Protection system on HV Side of DTR 250KVA & above	572	40	130	130	135	137
10	Installation of Lighting arrester at DSS	195	15	45	45	45	45
11	Addressing Low Voltage issues in urban and major city areas	90	40	50	0	0	0
Total Cost in Cr.		2240	220	558	509	508	444

Note: The proposed CAPEX cost is exclusive of Employee Cost.

FURTHER RESOLVED that the Chief Executive Officer and the Chief Financial Officer of the Company be and are hereby severally authorized to do all such acts, deeds, matters, and things as may be necessary or expedient to give effect to this resolution."

Certified True Copy
For TP Central Odisha Distribution Limited

Suchitra Dash

(Suchitra Dash)
Company Secretary
ACS No. 24156
Address: Power House Square, Unit-8,
Bhubaneswar, Odisha-751012

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