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ODISHA ELECTRICITY REGULATORY COMMISSION  
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No.DIR (T)-368/09/19/ 1170

Dated- 08.10.2024

To

The Chief Executive Officer,  
TPCODL, 2nd Floor, IDCO Tower,  
Janpath, Bhubaneswar

Sub: **Record Note of Discussion on the Annual Review of Performance of TPCODL for the period from April 2023 to March 2024.**

Sir,

I am directed to send herewith the aforesaid Record Note of discussion during the Annual Performance Review of TPCODL for the period from April 2023 to March 2024 held on 28.08.2024 at 11.30 AM for your information and necessary action.

Encl: As above.

Yours faithfully,

SECRETARY

8/10/24

Copy to:

- i) The Principal Secretary, Department of Energy, Govt. of Odisha along with copy of the enclosure for favour of information.
- ii) The CMD, OPTCL, Janpath, Bhubaneswar along with copy of the enclosure for favour of information.
- iii) The MD, GRIDCO, Bhubaneswar along with copy of the enclosure for favour of information.

o/c

Record Note of Annual Performance Review of TPCODL held on 28.08.2024 at 11:30AM at OERC in the presence of the Commission

**Date of Review** : 28<sup>th</sup> August, 2024

**Period of Review** : April 2023 - March 2024

The performance of TPCODL for the Financial Year 2023-24, (April, 2023 to March, 2024) was reviewed by the Commission on 28<sup>th</sup> August, 2024 at 11:30 AM at OERC Conference Room. The Chief Regulatory, TPCODL presented the performance of TPCODL and senior officials of TPCODL were present during the review.

TPCODL started its operation w.e.f. 01.06.2020 through the vesting order dated: 26.05.2020 in Case No.-11/2020 of the Commission. The operational area of TPCODL spreads across 29,354 sq.kms. area of central part of Odisha including the state capital (Bhubaneswar). Distribution network comprising of 372 Nos. of 33/11 kV sub-stations (220 Nos. are SCADA enabled) with 5184 MVA Power Transformation capacity, 4129 kms. of 33 kV lines, 39560 kms. of 11 kV lines, 52851 kms. of LT lines & 36631 kms. of AB cable which caters to a consumer base of about 32.06 lakhs (as on 31.03.2024) covering 9 Nos. of Revenue Districts (5 Circles, 20 Divisions, 65 Sub-Divisions, 247 Sections & 5 GRFs).

TPCODL has taken number of initiatives for consumer satisfaction and grievance redressal through various platforms and camps. Initiatives have also been taken for providing reliable and quality power supply to the consumers and various employee centric programs were also conducted. The performance of TPCODL with respect to various aspects of the distribution system as submitted by them is discussed in the following paragraphs.

### **1. System at a glance**

TPCODL has seen a linear increase of 4-5 % every year in its consumer base since its takeover and the sales have also substantially increased over years from 6202 MUs in FY 2020-21 to 8853 MUs with peak demand of 2026 MW and Contract Demand of 6842 MW in FY 2023-24. The Gross Revenue is Rs. 5380 Crs. with employee strength of total 5020 which includes regular employees and contractual employees and the employees per 1000 Consumers ratio is 1.57. TPCODL has submitted that 131170 Nos. of consumers have been added during FY 2023-24 with 416 MW addition of CD. The total number of consumers as on 31.03.2023 was 3206600. In FY 2023-24 TPCODL has added 3 Nos. of 33/11 KV PSS and the total capacity of power transformers is 5184 MVA and distribution transformers is 5768 MVA.

### **2. Load Growth**

The peak demand and average demand for FY 2023-24 was 2026 MW and 1426 MW respectively.

### **3. Overall Performance**

Reduction in AT&C loss has been recorded with 21.23% for FY 2023-24 compared with the Commission's approval of 22.00%. TPCODL has also collected past arrears beyond the Arrear Recovery Commitment prescribed in the Vesting Order with arrear collection of 58 Crs. in the FY 2023-24 compared to target collection of 40 Crs. as per Vesting Order. The provisional billing percentage has also reduced to 4.69%. With continued effort for checking of theft and other illegal activities, TPCODL has booked 107 MW load under Section 135 (Theft of electricity) and 8 MW load under Section 126 (Assessment) thereby recovering an amount of Rs. 42 Crs. from enforcement activities. The SAIFI of TPCODL has decreased to 312 in FY

2023-24 as compared to FY 2022-23 which was at 341 whereas the SAIDI hours have considerably increased to 176 Hrs. in FY 2023-24 as compared to FY 2022-23 which was at 138 Hrs. TPCODL has submitted that the rise in SAIDI hours is a correction by way of registration and reporting since the data is completely system based while previously it was a mix of manual and system based data. The interruptions in their network system is summarised in the table below for FY 2023-24 and FY 2022-23.

FY	33kV Interruptions	11 kV Interruptions	DT failure %	PT Failure %
2023-24	9592	75910	3	0.43
2022-23	7161	134012	3.42	0.71

#### 4. AT& C and Distribution Losses

The division wise and Circle wise data of TPCODL area shows that in some areas the losses have increased while in other areas it has decreased. The losses have increased in case of BBSR Circle-I and AT&C losses have increased in BBSR Circle-II and CTC Circle. TPCODL has submitted that the private and government OTS collection has contributed in higher collection efficiency while the data sanitization activity resulting in identification of ghost consumers has resulted in lower billing efficiency. In Bhubaneswar peripheral area, the load growth has resulted in higher Distribution losses and necessary measures are under implementation as a special project. Various initiatives are also being undertaken by TPCODL for AT&C loss reduction. The overall AT&C loss of TPCODL was 20.42 % in FY 2022-23 which has increased to 21.23% and without considering past arrear as 21.86% in FY 2023-24.

#### 5. Overall and LT Realisation in Rs. Per unit.

The revenue realization of the overall system and LT system in FY 2023-24 is Rs. 4.79 per unit and Rs. 4.04 per unit against Rs. 4.85 per unit and Rs. 4.13 per unit respectively in previous FY 2022-23. TPCODL mentioned that there was a good amount of collection under OTS scheme in FY 2022-23 resulting in higher per unit cost realization which was not available in FY 2023-24.

#### 6. Sales Mix

The total sales have increased by 16% in the FY 2023-24 over FY 2022-23. The total sales of TPCODL in FY 2022-23 was 7657.79 MU and in FY 2023-24 was 8853.40 MU. The growth is attributed to improved reliability, effective load booking and increase in urbanisation, industrialisation & modernization.

#### 7. LT Performance

In FY 2023-24, the LT Billing efficiency has reduced to 73.79 % on account of data sanitization and Collection efficiency has reduced to 102.58% on account of reduction in collection under OTS during FY 2023-24 over the previous FY 2022-23. The LT Billing efficiency and Collection Efficiency in FY 2022-23 were 74.09 % and 106.44 % respectively. The LT Distribution loss and AT&C losses have also increased in FY 2023-24 to 26.51 % and 24.61% compared to FY 2022-23 which were 25.91% and 21.14% respectively.

#### 8. Cash Flow Statement

The total cash inflows into the company in FY 2023-24 was Rs. 6693.41 Crs., the cash outflow was Rs. 6306.46 Crs. and the net cash available with the company was 386.95 Crs.

#### 9. Voltage wise arrear collection and outstanding

Voltage Level	Overall (In Crs.)			Govt. Consumers (In Crs.)		
	Collection in FY 24	Arrear as on 31 <sup>st</sup> Mar'24		Collection in FY 24	Arrear as on 31 <sup>st</sup> Mar'24	
		Total	Post-Vesting		Total	Post-Vesting
EHT	1378	75	0	2	0	0
HT	1434	93	38	145	25	14
LT	2596	2765	676	98	60	47

Total	5408	2933	714 *	245	84.96**	61
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\*Rs. 438 Crs. -Active Consumers, Rs. 38 Crs. – Inactive Consumers, Rs. 238 Crs.- Temporary Disconnected Consumers.

\*\*Arrears outstanding from Panchayati Raj & Drinking water dept. is 76.38 Crs., from Housing & Urban Development dept. is Rs. 8.10 Crs. and from other govt. depts. is Rs. 0.48 Crs. as on 31.03.2024.

## 10. CAPEX, Capitalisation and Funding

The total CAPEX approval till FY 2023-24 is Rs. 1244 Crs. out of which Rs. 1093 Crs. has already been utilized by TPCODL for which subsequent GRIDCO's contribution is Rs. 198 Crs. For above CAPEX works the staff cost is Rs. 56 Crs and borrowing cost is Rs. 17 Crs. The funding mechanism for the total CAPEX amounting to Rs 1365 Crs. till 31.03.2024 is Rs. 206 Crs. from own equity, Rs. 198 Crs. from GRIDCO contribution and the rest Rs. 960 Crs. from loans.

## 11. Status of Energy Audit

TPCODL has developed an in-house energy audit application 'UDS' (Utility Data Stream) which is integrated with GIS, Billing system, Meter reading application and meter data management system for generation of Automated Energy Reports at different Voltage and administrative levels. Reports like 33kV loss, 11 kV loss, LT loss, Division and Section wise AT&C loss, NPP reports, BEE reports and tower and feeder wise AT&C loss reports are being generated from this software application. Energy audit activities are being carried out and reports are submitted to BEE as per regulations issued by BEE.

## 12. Status of Meter Installation

Smart meters are being installed for Government connections, 3 Phase meters, DT meters ( $\geq 100$  kVA), 11 kV feeder meters, 33 kV feeder meters and 1 phase meters ( $>200$  units). A total of 84,413 numbers of smart meters have been installed till 31.03.2024 and plan for installation of 175015 numbers in FY 2024-25 and 105886 numbers in FY 2025-26 is already in place and work is being done in this regard. A total number of 1,66,560 numbers of defective/burnt meters have been replaced in FY 2023-24.

## 13. Reactive Energy Study

A sample study was conducted on 33 kV network by considering 76 No's of PSS with smart meters. The result showed that only one PSS (Bhubaneswar Airport) has power factor  $<0.9$  for which necessary action shall be taken to improve the power factor. M/s Clariant Power has been engaged to carry out sample study on Distribution Transformers for the requirement of Reactive power compensation.

## 14. Facilitations for Consumers

Various portals have been created for facilitating the consumers to reach for their grievances through physical/ online/ customers care/ social media etc. 24 X 7 Call Centre, Customer Care Centre (20 Nos. including one mobile customer care center), TPCODL Mitra App., Mo-Bidyut portal, Bidyut Seva Kendras, its company website, and Digital Command Centre. Both online & offline modes of payment avenues are available for the consumers and efforts are being made to popularize the rebate. Mega Customer Awareness program and Awareness camps are being organized by TPCODL.

## 15. Challenges

- Enhancing Smart Meter base: A proposal has been submitted to the Commission for installation of Smart Meters under CAPEX for all the four DISCOMs of the state.
- Amendment required in OERC Distribution (Condition of Supply) Code, 2019.

- Short Allowance of CAPEX against 'New Connection' in CAPEX order for FY 2024-25: Approval of Rs. 10 Crs. against total proposal of Rs. 23 Crs. which is already exhausted due to inflow of huge numbers of new connection application. Letter has been submitted to the Commission on 14<sup>th</sup> Aug'24 for approval of another Rs. 10 Crs. for the above.
- Intra state ABT meters (Interface Meters) are not communicable and therefore visibility of the power flow for power demand management is not possible.
- Removal of 33kV feeder meters by OPTCL for commissioning of SAS at GSS and denial by OPTCL for replacement of non-smart meters by smart meters at the same location.
- Delayed Commissioning of upcoming/approved grid substations of OPTCL because of which the reliability is hampered and low voltage issues are observed at PSSs in the tail end.
- Provision for N-1 contingency fail in case of PTRs at OPTCL grid end.
- Consideration of Main and Check Interface meter interchangeably by SLDC for monthly energy accounting.

#### **16. OPTCL submission**

OPTCL has submitted that upcoming projects of Daspalla GSS and Kiakata GSS are affected due to forest clearance issues. 95% work of substation construction has been completed and effort is being made to complete the work associated with the transmission line. After receiving the forest clearance, the grids can be charged within two months. At Nayapalli grid, the 132 kV bus has been charged and the transformer is expected to be charged shortly. Further, Baliana grid is planned to be charged by the end of this Financial year (FY 2024-25).

**Commission's Observations/ Directions:**

- The Commission took cognizance of the presentation made by the TPCODL and analysed various performance parameters. The summarized crucial performance parameters for FY 2023-24 presented by the TPCODL along with previous years are given in the table below:-

<b><u>ANNUAL PERFORMANCE OF TPCODL as on 31.03.2023</u></b>				
<b>BULK SUPPLY</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>	<b>Commisson's approval 2023-24</b>
<b>DEMAND (MVA)</b>	1318.45	1620.00	2,243.82	2190.00
Energy input (MU)	8814.32	9902.97	11,299.17	11256
<b>SALE TO CONSUMERS (MU)</b>				
EHT	1148.79	1556.41	2020.14	1858.003
HT	1295.36	1590.31	2111.22	1946.71
LT	4288.45	4511.072	4722.04	5063.69
<b>TOTAL</b>	<b>6,732.60</b>	<b>7,657.79</b>	<b>8,853.40</b>	<b>8,868.41</b>
<b>% of LT Sale</b>	<b>63.70%</b>	<b>58.91%</b>	<b>53.34%</b>	<b>57.10%</b>
<b>DISTRIBUTION LOSS (%)</b>				
LT	25.51%	25.91%	26.51%	24.42%
HT & LT	27.16%	26.90%	26.36%	25.41%
<b>OVERALL</b>	<b>23.62%</b>	<b>22.67%</b>	<b>21.65%</b>	<b>21.21%</b>
<b>BILLING EFFECIENCY (%)</b>				
HT	92.00%	92.00%	92.00%	92.00%
LT	74.49%	74.09%	73.49%	75.58%
HT & LT	72.84%	73.10%	73.64%	74.59%
<b>OVERALL</b>	<b>76.38%</b>	<b>77.33%</b>	<b>78.35%</b>	<b>78.79%</b>
<b>BILLING TO CONSUMERS (CR.)</b>				
EHT	796.31	1117.44	1377.92	1218.12
HT	919.74	1104.64	1471.07	1339.06
LT	2223.01	2444.42	2530.80	2613.51
<b>TOTAL</b>	<b>3,939.07</b>	<b>4,666.50</b>	<b>5,379.78</b>	<b>5,170.69</b>
<b>COLLECTION RECEIVED (CR.)</b>				
EHT	797.21	1092.78	1377.92	1205.94
HT	943.66	1107.53	1434.38	1325.67
LT	2121.93	2601.79	2596.19	2587.37
<b>TOTAL</b>	<b>3,862.80</b>	<b>4,802.10</b>	<b>5,408.48</b>	<b>5,118.98</b>
<b>COLLECTION EFFICIENCY (%)</b>				
EHT	100.11%	97.79%	100.00%	99.00%
HT	102.60%	100.26%	97.51%	99.00%
LT	95.45%	106.44%	102.58%	99.00%
HT & LT	97.54%	104.52%	100.72%	99.00%
<b>OVERALL</b>	<b>98.06%</b>	<b>102.91%</b>	<b>100.53%</b>	<b>99.00%</b>
<b>AT &amp; C LOSS (%)</b>				
LT	28.90%	21.14%	24.61%	25.17%
HT & LT	28.95%	23.60%	25.83%	26.15%
<b>OVERALL</b>	<b>25.10%</b>	<b>20.42%</b>	<b>21.23%</b>	<b>22.00%</b>

2. The Sale of energy, distribution loss, Billing & Collection efficiency and AT&C loss relating to business operation of TPCODL for FY 2022-23 and FY 2023-24 are as follows: -

Description	As on 31.03.2023	As on 31.03.2024	Increase / Decrease	(↑↓) trend
EHT Sales (MU)	1556.41	2020.14	463.73	↑
HT Sales (MU)	1590.31	2111.22	520.91	↑
LT Sales (MU)	4511.07	4722.04	210.96	↑
Distribution Loss (%)	22.67	21.65	1.02	↓
Billing Efficiency (%)	77.33	78.35	1.02	↑
Collection Efficiency (%)	102.91	100.53	2.38	↓
AT & C Loss (%)	20.42	21.23	0.81	↑

From the above table it is observed that there is increase in sales by 463.73 MU (+ 29.79%), 520.91 MU (+32.75%) and 210.96 MU (+4.6%) for EHT, HT and LT category of consumers respectively compared to previous year. The rise in EHT and HT sales imply increase in financial viability of TPCODL and is an indication of industrialisation and economic growth. There is also increase in billing efficiency while the collection efficiency has reduced compared to previous FY attributable to the arrear collection in FY 2022-23 resulting in increase in overall AT&C loss. However, the distribution loss has reduced marginally.

3. The DISCOM (TPCODL) is expected to reduce the AT&C loss % but it is observed that the AT&C loss has in fact increased. The main reason behind this increase of AT&C loss is the decrease in LT cost realization and LT Billing efficiency for the FY 2023-24. Efforts are to be made for further reduction in losses since the **benefit of arrear collection is not expected to be available in the future**. The CAPEX investment by TPCODL, particularly for augmentation & strengthening of distribution network is essential in order to reduce technical loss.
4. There is enhancement in transformation capacity of power transformers by 321 MVA in FY 2023-24.
5. The total DTR capacity which was 5702.28 MVA in FY 2022-23, has increased by 1630.06 MVA to 5768 MVA in FY 2023-24 indicating the increase in consumer base. Efforts shall be made for optimum utilization of existing assets, reduction in associated technical loss and O&M cost.
6. In last few years it is observed that commercial performance of TPCODL has improved but sustained technical loss reduction is not visible as expected. In case of BBSR-1 and BBSR-2 Divisions, the technical losses have rather increased which is a matter of concern. In seven Divisions of TPCODL, the Distribution loss is found to be more than 30%. The reduction in technical losses as expected due to high CAPEX investments is not visible and the underlying issues needs to be addressed.
7. As per TPCODL's submission, the number of defective meters, which was 24785 in FY 2022-23, has increased to 37327 in FY 2023-24. The reason behind such increase needs to be analysed and early actions must be taken for replacement of these defective meters.

8. Even after four years of completion of operation of TPCODL, the metering at 33 kV and 11 kV is not complete (100%). Metering status of 33kV & 11 kV feeders and DTR metering are 83 %, 62% and 7% respectively. For energy audit of HT network, 100% metering of 33kV & 11 kV feeders and DTR's >100 kVA is required to identify loss prone areas and to estimate actual HT loss. The HT loss is being taken on normative basis as 8%. With network strengthening activities, the actual HT loss is expected to be less than 8%. TPCODL must endeavor to complete metering so that energy audit can be done and actual LT loss can also be calculated. TPCODL needs to take early necessary action in this direction and time frame needs to be indicated for completion of metering of 33 kV & 11 kV lines and DTRs of capacity 100 kVA & above.
9. The percentage of 33 kV and 11 kV audited feeders is only 52 % and 14 % respectively while that of DTR is merely 3%. In the FY 2023-24, only 34 Nos. of 33 kV feeders have been audited against 109 Nos. of 33 kV feeders in FY 2022-23. The installation of smart meters and energy audit needs to be prioritised.
10. The concept behind 33 kV and 11 kV group breakers and feeder breakers installed/ required may be submitted since there is mismatch in the numbers of 33 kV and 11 kV feeders and numbers of breakers. All 33kV & 11kV feeders/lines & 33/11 kV transformers are supposed to be provided with CBs, prioritizing 33kV system followed by 11kV system. Tapping of lines/feeders and Group control breaker arrangement at 33kV and 11kV level should be removed on priority basis to achieve the objective of reliable power supply. It appears that CBs have not been provided at tapping points of 33 kV or 11 kV lines.
11. The arrear accumulated by TPCODL since June-2020 onwards till 31.03.2024 (post Vesting period) is Rs. 713.68 Crs. resulting in an average arrear accumulation of Rs. 203.90 Crs. per year. Out of the total arrear of Rs. 713.68 Crs., the accumulated arrear from HT consumers till 31.03.2024 is Rs. 38 Crs. which is not expected except for consumers having restraining orders from the court. This is a matter of concern and such arrears must be collected at the earliest.
12. TPCODL shall submit details of Capacitive Compensation provided in Distribution network along with location of such installation. Further necessary steps must be taken to identify low voltage pockets and required capacitive compensation must be put in place for improvement of voltage. TPCODL is also directed to submit the list of PSSs where the average sending end voltage from OPTCL's GSS is less than 33 kV.
13. Action plan should be there to ensure that the protection system including provision of Surge Arresters, is in place complete in all respect at 33 kV & 11 kV level for all feeder/lines/cables, power transformers, etc. and timeline for completion needs to be mentioned. The provision of required protection for DTRs should be taken up and completed in phases as early as possible. The relay coordination should be done properly in consultation with OPTCL to avoid tripping at OPTCL end.
14. There is no improvement observed in the ratio of Bill generated per month to total No of consumers. It remains at 88% for FY 2022-23 and FY 2023-24. After addition of smart meters, the bill generation ratio is expected to increase. There should not be any average billing and meter reader should reach every consumer in each billing cycle.
15. Even after completion of four years of operation, asset Mapping and consumer indexing are not yet complete. Necessary steps must be taken to complete the same during current FY 2024-25.
16. As directed earlier, Consumer Average Interruption Duration Index (CAIDI) shall be estimated starting with Industrial & commercial consumers and extending it to other categories of consumers.



17. As advised earlier, the transformer rating (e.g. 5 MVA, 8 MVA, 12.5 MVA & 20 MVA) and MVA capacity in PSS (like 10 MVA, 20-25 MVA, 40 MVA) need to be standardized at PSS level along with associated foundation and technical specification keeping adequate space in PSS for future expansion to facilitate faster procurement, delivery, interchangeability, minimization of inventories and to avoid addition of unnecessary PSSs in nearby area of existing PSS. Similarly, efforts must be made to phase out lower rating DTRs (e.g. 10 KVA, 16 KVA etc.) so that maintenance can be carried out properly due to reduction in numbers. DTRs need to be provided with adequate protection to reduce burning of DTRs.
18. Steps may be taken to for installation of RMUs and Auto reclosures etc. to improve reliability of power supply to important cities by isolating the rural feeders.
19. Since the data submitted by the DISCOM is undergoing change frequently due to sanitization at different levels, DISCOM must submit the correct performance review data during tariff filing.
20. The DISCOM (TPCODL) is directed to segregate commercial loss and technical loss in AT&C loss.
21. TPCODL is directed to address very common complaint of consumers regarding :
  - (a) high meter reading (indicative higher energy consumption) after installation of smart meters compared to other types of meters.
  - (b) non-payment of rebate to consumers having smart meters
  - (c) non-awareness of consumers for availing rebate against digital mode of payment within due date.
  - (d) time taken to give new connection particularly where there is need for enhancement of capacity of DTR.
22. It is understood that the average line length of 33 kV and 11 kV lines are much more than normal length (i.e. about 20-30 kms for 33 kV line & 10-15 kms for 11 kV lines) and some of the lines are even more than 50 kms. There are numbers of direct tapping of 33 kV & 11 kV lines without provision of RMU/AR resulting in widespread outage and affecting power supply to numbers of consumers at a time in case of fault. Long lines are also creating low voltage problem. DISCOM (TPCODL) is directed to address such issues by providing RMU/AR linking GSS with as many PSS as possible, upgrading the existing PSS and diverting load to nearby PSS. The time frame to eliminate direct tapping of 33 kV and 11 kV line needs to be fixed.
23. The DISCOM is directed to provide the details of operational and commercial performance including safety of man & equipment and consumer grievance redressal mechanism to address various issues & increase awareness of consumers regarding various initiatives taken for their benefit in respect of the best Division in the area of operation of DISCOM (TPCODL).

  
Officiating Chairperson