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ODISHA ELECTRICITY REGULATORY COMMISSION
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No.DIR (T)-368/09/19/1199

Dt: 17-10-2024

To

The Chief Executive Officer,
TPNODL, Januganj,
Balasore, Odisha-756019

Sub: **Record Note of Discussion on the Annual Review of Performance of TPNODL for the FY 2023-24.**

Sir,

I am directed to send herewith the aforesaid Record Note of discussion during the Annual Performance Review of TPNODL for the period from April 2023 to March 2024 held on 29.08.2024 at 11.30 AM for your information and necessary action.

Encl: As above.

Yours faithfully,

SECRETARY

17.10.24

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.

Record Note of Annual Performance Review of TPNODL held on 29.08.2024 at 11:30AM at OERC in the presence of the Commission

Date of Review : 29th August, 2024

Period of Review : April 2023 - March 2024

The performance of TPNODL for the Financial Year 2023-24, i.e. for the period starting from April, 2023 to March, 2024 was reviewed by the Commission on 29th August, 2024, 11:30 AM at OERC Conference Room. The Chief Executive Officer, TPNODL presented the performance of TPNODL and senior officials of TPNODL were present during the review.

TPNODL started its operation w.e.f. 01.04.2021 through the vesting order dated: 25.03.2021 in Case No.-09/2021 of the Commission. The operational area of TPNODL spreads across 27,857 sq.kms. area) of northern part of Odisha. Distribution network comprising of 247 Nos. of 33/11 kV sub-stations (85 Nos. are SCADA enabled) with 564 Nos. of Power Transformer having transformation capacity of 2704 MVA, 3226 ckt. kms. of 33 kV network, 41108 ckt. kms. of 11 kV network, 68139 ckt. kms. of LT network out of which 47194 ckt. kms. consists of AB cable caters to a consumer base of about 19.55 lakhs (as on 31.03.2024) covering 5 Revenue Districts (5 Circles, 16 Divisions, 50 Sub-Divisions, 159 Sections & 4 GRF's).

TPNODL has seen a positive growth in EHT and HT consumers in FY 2023-24 over FY 2022-23 by 2.44 % and 13.51 % respectively. But the LT consumer base has seen a negative growth by 4.27 % due to sanitization of data base of consumers. The total numbers of consumers as on 31.03.2024 is 19,54,513 out of which 83,349 Nos. of consumers have AMR metering facility. The energy sales have also substantially increased over years from 5410.05 MUs in FY 2022-23 to 5996.358 MUs in FY 2023-24 with an average demand of 804.47 MW in FY 2023-24. The Gross Revenue is Rs. 3660 Crs. in FY 2023-24. It has an employee strength of total 2206 and the employees per 1000 Consumers ratio is 1.13. During the review. TPNODL submitted that it is facing challenges due to unavailability of 33 kV bay from various GSS such as Balasore-06 Nos., Bhadrak- 04 Nos., Keonjhar-01 Nos., low voltage issues from GSS level due to non-availability of Automatic OLTC in PTR, ROW issue and consumer demand for 3 shift operation in Rural areas.

TPNODL has taken number of initiatives for consumer satisfaction and grievances redressal through customer engagement, customer meet program and electrical safety awareness program. The introduction of condition based maintenance, predictive maintenance, use of river crossing towers at 33 kV level, creation of 33 kV PSS ring and introduction of trip free town concept for Balasore are some of the initiatives for providing reliable power supply. TPNODL has also taken number of initiatives like aerial meter reading of LI consumers using drone, OCR based meter reading and aerial enforcement activities using drone fitted with high resolution night vision cameras. The solar microgrids and stand alone solar units in Keonjhar and Mayurbhanj district has resulted in electrification of 5439 Nos. of tribal households (3075 households under stand alone solar and 2364 households under microgrid solar) as green initiatives. In addition, number of programs under CSR has been undertaken in areas of education, health care, vocational training etc.

OPTCL submission

OPTCL submitted that Balasore, Somnathpur and Chandipur Grid S/s are within 10-12 kms radius. Balasore grid has a load of 94 MW with 12 Nos. of feeder bays. Further availing power from that grid substation is not advisable since the load can be fed from other nearby grid substations. As regard to Bhadrak substation, the peak load is 90 MW with 7 feeder bays. Therefore, load rearrangement may be done accordingly. The requirement as regards to Keonjhar grid substation will be looked into by OPTCL. Further shifting of load from Soro grid substation to Agarpada grid substation by TPNODL is appreciated and it is requested that such load shifting/ rearrangements may be considered at other grid substations which would be better for system integration and load sharing arrangement by OPTCL.

TPNODL is also requested to submit the demand forecast in prescribed format of OPTCL as such information is very much required for transmission system planning.

Commission's Observations/ Directions:

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

Annual Performance of TPNODL-As on 31.03.2024				
BULK SUPPLY	2022-2023	2023-24	Commisson's approval 2023-24	Increase/ Decrease in FY24 over FY23 (%)
AVG. DEMAND (MVA)	1022.211	1123.83	1280.00	9.94
Energy input (MU)	6473.32	7047.15	7508	8.86
SALE TO CONSUMERS (MU)				
EHT	2651.93	3115.166	2953.3	17.47
HT	625.42	685.813	685.58	9.66
LT	2132.70	2195.379	2649.11	2.94
TOTAL	5,410.05	5,996.36	6,287.99	10.84
% of LT Sale	39.42%	36.61%	42.13%	-7.13
DISTRIBUTION LOSS (%)				
LT	26.21%	25.11%	24.41%	-1.10
HT & LT	27.82%	26.72%	26.79%	-1.10
OVERALL	16.43%	14.91%	16.25%	-1.51
BILLING EFFECIENCY (%)				
LT	73.79%	74.89%	75.59%	1.10
HT & LT	72.18%	73.28%	73.21%	1.10
OVERALL	83.57%	85.09%	83.75%	1.51
BILLING TO CONSUMERS (CR.)				
EHT	1648.37	1976.4167	1813.86	19.90
HT	427.95	466.1096	459.07	8.92
LT	1127.59	1217.6623	1286.09	7.99
TOTAL	3,203.91	3,660.19	3,559.02	14.24
COLLECTION RECEIVED (CR.)				
EHT	1721.61	2044.88	1795.72	18.78
HT	451.84	461.74	454.48	2.19
LT	1224.47	1291.36	1273.23	5.46
TOTAL	3,397.92	3,797.97	3,523.43	11.77
COLLECTION EFFICIENCY (%)				
EHT	104.44%	103.46%	99.00%	-0.98
HT	105.58%	99.06%	99.00%	-6.52
LT	108.59%	106.05%	99.00%	-2.54
HT & LT	107.76%	104.12%	99.00%	-3.65
OVERALL	106.06%	103.76%	99.00%	-2.29
AT & C LOSS (%)				
LT	19.87%	20.58%	25.17%	0.71
HT & LT	22.22%	23.71%	27.52%	1.49
OVERALL	11.36%	11.71%	17.09%	0.34

From the above table it is observed that there is increase in sales by 463.235 MU (+17.47%), 60.396 MU (+9.66%) and 62.675 MU (+2.94%) for EHT, HT and LT category of consumers respectively compared to previous year. Major increase is seen in EHT sales with its contribution increasing to 52% of the total sales of TPNODL indicating progressive industrial growth in the area and improvement of financial viability of TPNODL.

2. Distribution loss has reduced to 14.91% which is basically because of the increase in EHT sales. Since HT sales are not increasing and data sanitization is under process for HT and LT consumers, the distribution loss might not be less for the future years and considered actions must be taken for system improvement to check the losses.
3. As per the submission of TPNODL, the overall AT&C loss of almost all the Divisions are more than 20% except 5 Divisions. Despite huge investment in CAPEX, the loss reduction is not as per expectation.
4. TPNODL has presented various steps taken for improvement in AT&C loss reduction which has resulted in improvement in commercial loss. However, reduction of technical losses is also necessary and steps must be taken to identify the loss prone areas through energy audit. The percentage of audited feeders in 33 kV level is 100% and at 11 kV level is 77%. The energy audit data must be studied, analysed and corrective actions must be taken to minimise the losses after identification of the issues.
5. The DISCOMs are expected to reduce the AT&C loss % but it is observed that the AT&C loss has in fact increased. The overall AT&C loss of TPNODL in the FY 2023-24 was 11.71% against 11.36% in FY 2022-23. But the AT&C loss % without considering past arrear collection in FY 2023-24 was 14.91 % as against 19.74 % in FY 2022-23.
6. The system improvement can be identified from the details in the table below:

<u>PERFORMANCE OF TPNODL - SYSTEM IMPROVEMENT</u>			
Particulars	As on 31st March 2022	As on 31st March 2023	As on 31st March 2024
No. of consumers			
EHT	37	41	42
HT	614	659	748
LT	2,088,432	2,040,888	1,953,723.00
Total	2,089,083	2,041,588	1,954,513.00
No. of New Connection	114,201	87,701	103,760.00
Network System			
Length of 33 KV Line (km.)	2895	3024	3226
Length of 11 KV Line (km.)	37591	40189	41108
Length of LT KV Line (km.)	66672	67486	68139
No. of 33 KV feeders (excluding GRIDCO interface)	98	108	115
No. of 11 KV feeders	797	825	853
No. of 33 / 11 kV transformers	524	550	564
No. of Distribution transformers (11/0.4 & 33/ 0.4 kv)	72323	74726	77688
MVA Capacity of DTRs	2657	2787	2932
No of Interruptions in 33 KV Feeders	16750	11571	11423
No of Interruptions in 11 KV Feeders	339516	288140	331251
SAIFI (Nos.)	731	621	576
SAIDI (Hrs)	129	378	349

7. TPNODL has added 1120 ckt. kms. of HT lines and 653 ckt. kms. of LT lines to its existing network in the FY 2023-24. The percentage of AB cable in the LT network is 65%. The greater share of AB cable in LT network system ensures less interruptions, better reliability of power supply and less prone to tapping/theft.

8. TPNODL should take necessary steps to identify low voltage pockets and capacitive compensation must be put in place for rectification. TPNODL is also directed to submit the list of PSSs where the average incoming voltage from OPTCL grids is less than 33 kV.
9. The numbers of fatal accidents are very high even after taking number of safety measures and awareness programs. Hence further effort is required to increase awareness among employees and public regarding risks associated with working on electrical equipment. The sagging of conductors and timely patrolling of lines and maintaining the safety clearances would reduce animal accidents.
10. The number of defective meters in FY 2022-23 were 2,58,521 which has reduced to 47,272 in FY 2023-24. The numbers of consumers without meters in the FY 2022-23 were 42,571 which has decreased to 3,978. The effort made by TPNODL in improving the metering status of the consumer base is appreciable and further action must be taken to replace the defective metes and reduce the scope of provisional billing.
11. TPNODL has achieved capitalization of Rs. 855.34 Crs. against OERC's approval of Rs. 1018.42 Crs as on March-2024.
12. Even though there has been improvement in metering status, the current position of smart metering is only 90,717. TPNODL has presented a roadmap for replacement of conventional meters with smart meters and installation of smart meter connection for new consumers by FY 2030-31. The smart meters have many advantages in the optimum operation of the power system and should be a priority while installing any new meter.
13. The percentage of 33 kV and 11 kV audited feeders is 100% and 77 % respectively while that of DTR is merely 4%. TPNODL has 100% metering at 33 kV and 11 kV level. The actual HT loss may be calculated by TPNODL and submitted to the Commission.
14. The HT loss is taken on normative basis at 8%. With network strengthening activities, the actual HT loss is expected to be less than 8%. Since TPNODL has achieved 100% metering at 33 kV, 11 kV level and DTRs of 100 kVA and above, TPNODL must endeavor to complete the energy audit soon so that the actual HT & LT loss can be calculated and loss prone area can be identified. This would help them to focus the real loss prone areas which is otherwise shielded from corrective actions.
15. 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.
16. The arrear accumulated by TPNODL post-vesting is Rs. 330 Crs. Majority of the sales is dominated by EHT consumers while LT and HT percentage is comparatively less. Steps must be taken to avoid such arrear accumulation as it directly impacts the financial viability of the sector.

17. 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.
18. Even after completion of three 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.
19. 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.
20. 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.
21. Steps may be taken to towards installation of RMUs and Auto reclosures etc. to improve reliability of power supply to important cities.
22. The DISCOM (TPNODL) is directed to segregate commercial loss and technical loss in AT&C loss.
23. TPNODL is directed to address very common complaint of consumers regarding :
 - (a) high meter reading 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 on 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.
24. 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 (TPNODL) 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.
25. 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 (TPNODL).

26. Following data should be submitted by TPNODL to the Commission:

- (i) Voltage wise arrear status separately for pre-vesting and post-vesting period.
- (ii) Funding mechanism of the already purchased and installed 90,717 smart meters.
- (iii) Actual HT loss of the system as per energy audit data.
- (iv) Status of RMU installation and sectionalizers at tapping points.

↓
9/2/2024
Officiating Chairperson