

# TPNODL

TP Northern Odisha Distribution Ltd.



**Presentation on  
ARR & Tariff Petition for FY 2022-23  
(Case No.108 of 2021)**

**Before Hon'ble  
ODISHA ELECTRICITY REGULATORY COMMISSION  
25<sup>th</sup> Feb, 2022**



Lighting up Lives!



**About TPNODL**



**Background of ARR**



**Aggregate Revenue Requirement for FY.22-23**



**Tariff Rationalization Measures &  
Prayer**

# About TPNODL



TPNODL - A joint venture of Tata Power and Govt. Odisha, started on 01<sup>st</sup> Apr-21 vide vesting order of Hon'ble OERC 25<sup>th</sup> Mar-21 in Case No. 9/2021

33/11 kV PSS: 232

STS Capacity: 2354 MVA

Distribution Capacity: 2634MVA

33KV Line: 2890 KM

11KV Line: 37395 KM

LT Line: 66521 KM

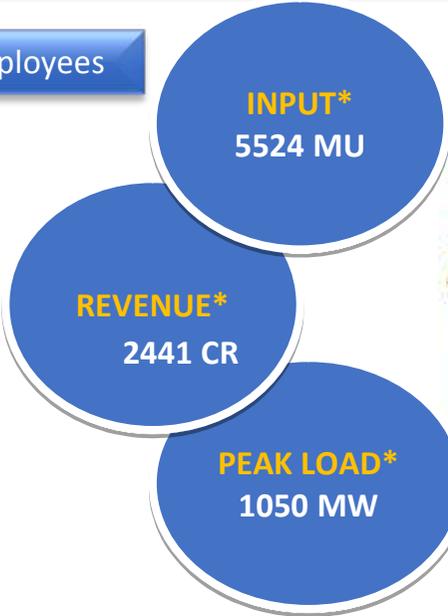
20.54 lakh customers base, 27,920sq.km Area, 2672 Employees

**01** 5 Revenue Districts of Odisha

**02** 5 Circles  
Balasore, Bhadrak, Jajpur, Keonjhar, Baripada

**03** 16 Division & 50 Sub-divisions

**04** 159 Sections  
115 Rural Section, 24 Urban & 20 Mix Sections



\* Estimated for FY.22

# **Key Achievements in 10 months Journey**

# Safety Highlights



Creation of Safety culture through mandatory use of PPEs  
 Safety Policy, Consequence Management Policy Launched  
 Suraksha Kawach App – Online Permission to Work (PTW)



TPSDI training Centre inaugurated  
 Suraksha Portal Launched for reporting safety issues  
 Mandatory safety training covering 100% employee



On site demonstration of neon tester, harness & safety zone.  
 Practice yard at Bhadrak & Balasore, WIP in other circles  
 Prasikshan – Sensitization & Certification to all PSS operators  
 Fire Drills carried out to create awareness at PSS level.



Fire detection, alarm and protection system planned for store and corporate office.



Public safety awareness drive  
 Safety Training of new BA employees – coverage 6656  
 Project specific safety training for engineers 33  
 Job specific safety & quality training for 6% depository BAs



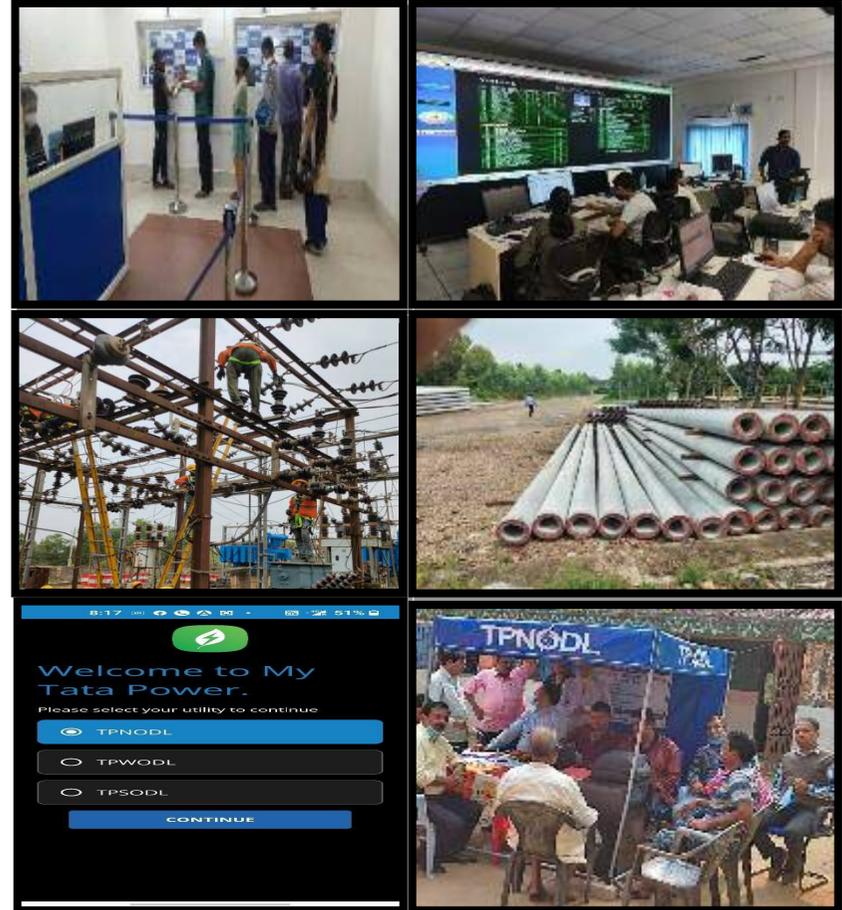
# Exceptional Achievement in 10 months



- 1
Safety
➔
*Building the Culture*  
*(Safety Training Centre with TPSDI)*
- 2
Project Cleanup
➔
*Triggering the Change*  
*(82% 33kV, 66% 11kV Line Cleaned)*
- 3
Project Light House
➔
*Creating Model Feeders*  
*(159 feeders, 1 in each Section)*
- 4
Yass Cyclone
➔
*Record 5 day Restoration*  
*(Appreciation by Govt. & Consumers)*
- 5
Enforcement
➔
*Consumption Discipline*  
*(60MW theft Booked, 11 Cr. Realized)*
- 6
Project Nishtha, Sparsh
➔
*Collection Improvement*  
*(Issue Resolution, Correction & Collection)*
- 7
PSC
➔
*State of the Art Facilities*  
*(Automated remote network operations)*
- 8
AMC
➔
*Separate team for 33 & 11kV*  
*(Field Team energized & Empowered)*
- 9
PTR Bonchao
➔
*On Site Repairing of PTR*  
*(Project Neela, Bhoomi, Taapman).*

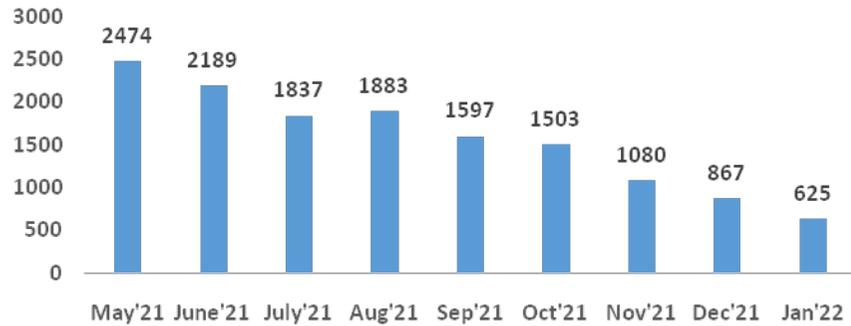


1. 24 \* 7 Call centre and Customer Care Centre started, Customer Service Executive has been posted in each section (Total 159), CRM app. has been launched for registering, tracking, reporting & feedback of all technical & commercial complaints
2. Unmanned network operations through SCADA: 10 No. 33/11KV S/S under remote operations from Balasore, another 16 Nos. integrated & planned for 30 Nos. in total by end of FY.22.
3. Spun Concrete Pole – Pursued by TPNODL & approved by GoO for the first time in Odisha to create a disaster resilient network.
4. Project TAAPMAN – Thermo scanning of entire Distribution N/W to identify and repair hotspots.
5. Project Raksha – 100% Survey & Action Planning for all distribution transformers  $\geq 63\text{KVA}$
6. 33 kV Line Maintenance: 100% Feeder survey & work in Progress
7. In-house CB repair Work: 49 No. of CB repaired by in-house team
8. Successful transition of 1 $\phi$  billing from CREST system to FG system in all Circles.
9. Launched Various Payment avenues – Payment Gateways / Wallet / Online Banking/Bharat Money. My Tata Power- Consumer App
10. Engaged KPMG to work on innovative rural service delivery

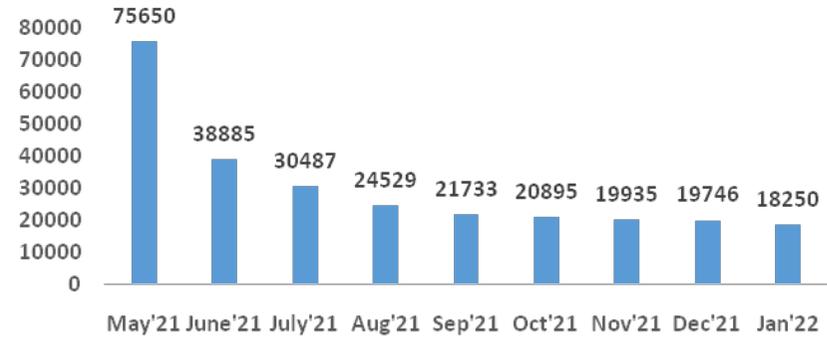




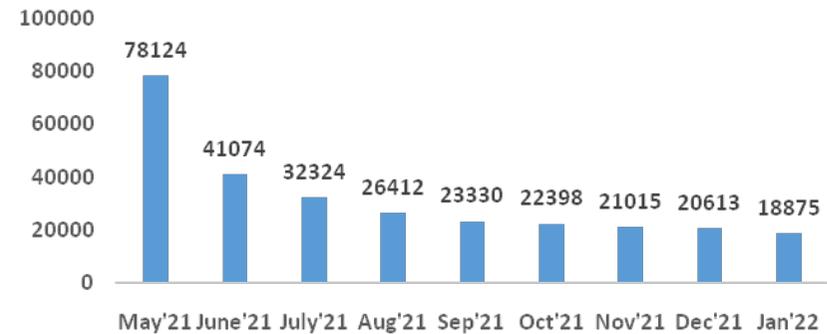
### 33 kV Trippings



### 11 kV Trippings



### Total Trippings



- ☐ 8% reduction in total tripping in Jan'22 w.r.t. Dec'21.
- 33 KV – 27.9% Reduction
- 11 KV – 7.5 % Reduction



  
 GOVERNMENT OF ODISHA  
 OFFICE OF THE ENGINEER-IN-CHIEF ELECTRICITY-CUM-  
 PRINCIPAL CHIEF ELECTRICAL INSPECTOR, ODISHA,  
 UNIT-V, POWER HOUSE SQUARE, BHUBANESWAR  
 Tel.-0674-2394873, Fax-0674-2391255  
 Email: eic-epcei@nic.in  
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By Email

No. Tech-TCL-987/21/ 319 (10E)/ Dated, Bhubaneswar the 19-01-2022.

To  
 The Chief Executive Officer, TPNODL, Balasore/  
 The Chief Operation & Services, TPNODL, Balasore.

Sub: Regarding use of spun poles in distribution network.

Ref: 1. Letter No. 10738 dated 15.11.2021 of Dept. of Energy.  
 2. Email dated this 01.11.201 of Chief Operation Services, TPNODL.  
 3. This office letter No. 3705 dated 18.11.2021.

Sir,  
 Regarding the use of spun poles in place of H pole was discussed in a meeting on 28.10.2021 under Chairmanship of Principal Secretary to Govt., Deptt. of Energy. It was asked to assess the feasibility of spun poles in place of H pole in consultation with OPTCL & DISCOM. Subsequently, a technical details of spun pole was received from TPNODL. After study of the technical details, a discussion was held on 04.12.2021 with the technical team of TPNODL to examine wind load design of spun pole and to understand it's suitability in the Distribution network in the cyclone prone areas.

The technical requirements for taking up working load, average permanent load and ultimate transverse load as per Indian Standard vis-à-vis the wind speed of the cyclone prone areas have been studied with reference to the requirements of other reference standard like REC, IEC, IS and CEA safety Regulation. The following observations are made on the use of spun poles comparing with other similar poles normally/ specially used in distribution network upto 33KV.

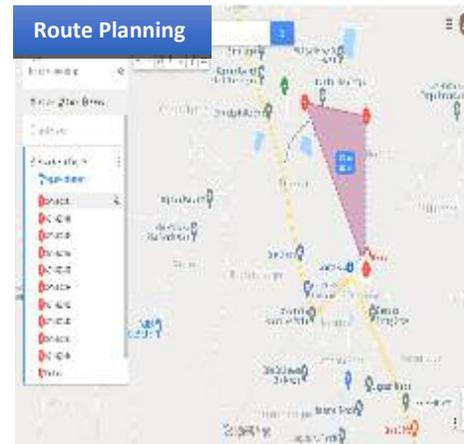
1. In IS 13158:1991, i.e Indian Standard for prestressed concrete circular spun poles for overhead power, different heights of pole ranging from 6m to 21m is recommended.



- Spun Pole approved by GoO for the first time in Odisha
- After rigorous verification, Queries & several round of VC
- Developing OEM at Odisha for Lower Transportation Cost
- M/s Nilanchal was the bidder of Odisha in our tender other than HBL of AP



- Latitude & Longitude of meter locations are collected
- One Hexacopter drone programmed to fly through the path connecting the above lat-long of the meters
- One BLE mobile device was attached to the drone
- After take off, drone flown through the above path at an altitude of 80m from the sea level, came down near the meter at 30m level & captured the meter reading
- Subsequent to successful reading, the drone flown to the next location & sent the reading to central server
- After return, drone sent for another route with second set of battery
- Capturing live HD videos & photographs of Hooking on live conductors, meter bypassing or any other means of energy theft in meters



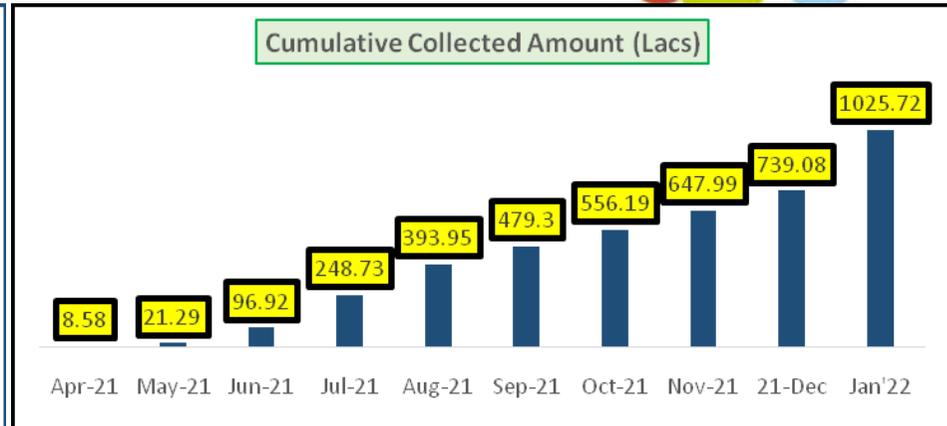
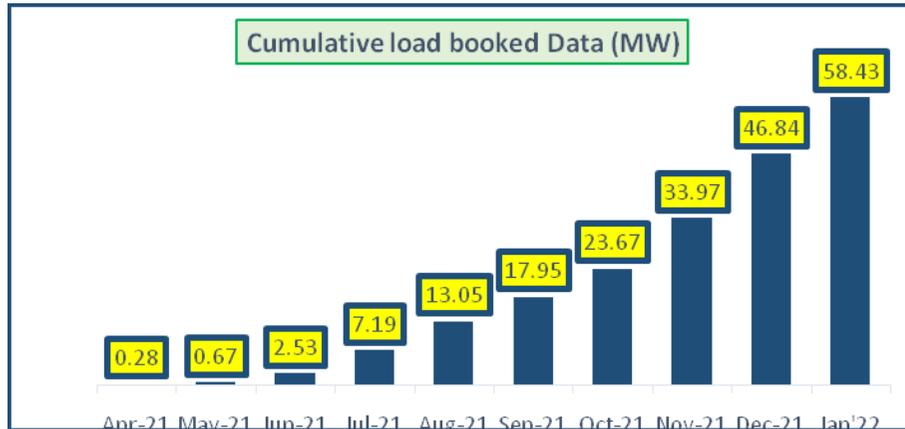


- 1 Ring Main Unit (RMU)
- 2 Auto Reclosure & Sectionalizers
- 3 Overhead FPI
- 4 Covered Conductors
- 5 LT ACB & MCCB
- 6 Spun Pole



- Improved Reliability
- Reduction in number of outages
- Reduction in tripping
- Easy & Faster fault identification & Quick Restoration.
- Reduction in asset & equipment damage
- Enhanced Safety for Public & animals

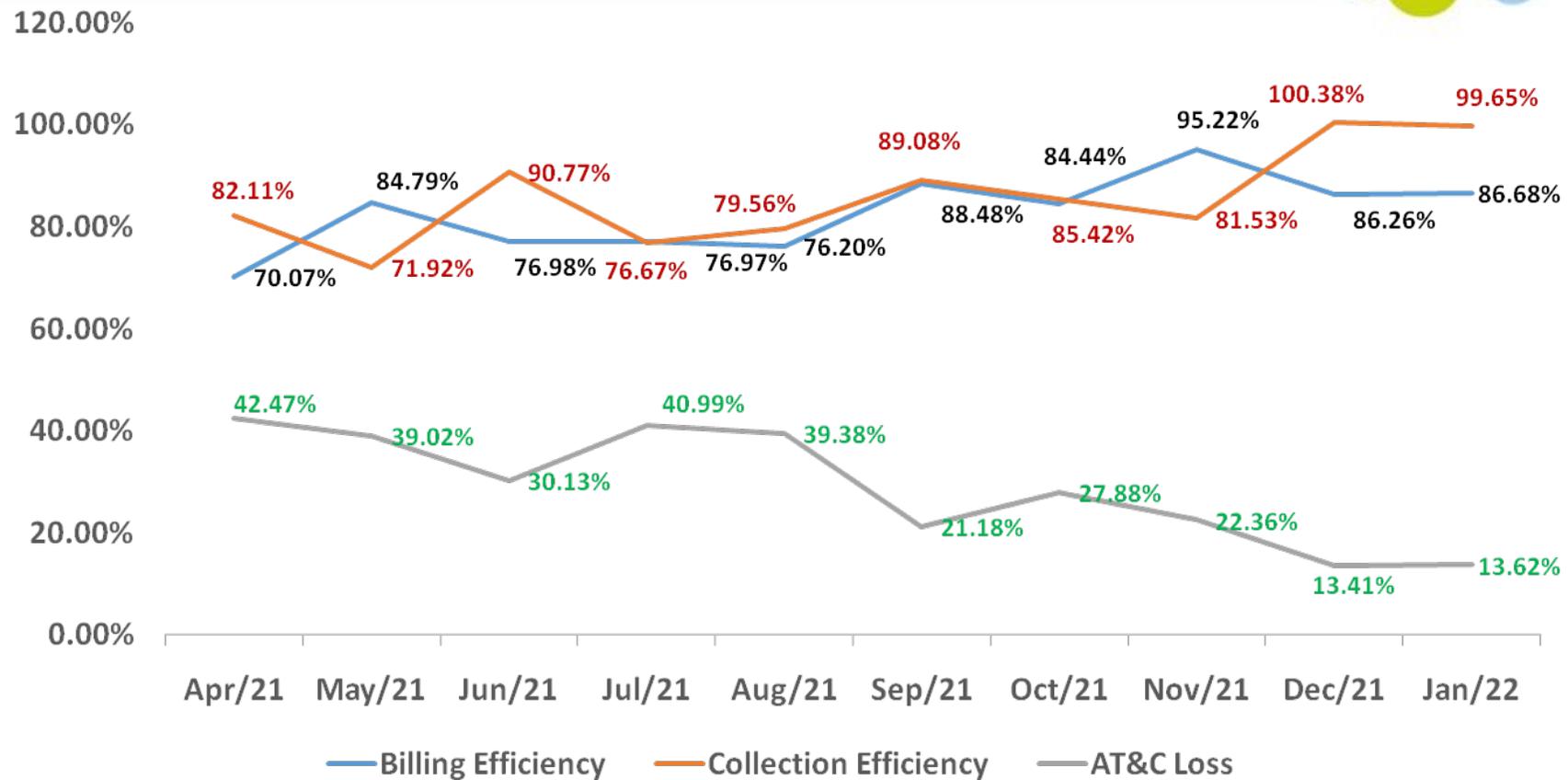
# Enforcement Achievement



Circle	Q-1 (FY 21-22)		Q-2 (FY21-22)		Q-2 (FY21-22)		Jan'22		Total	
	Load Bkd (KW)	Amount Real. (Lacs)	Load Bkd (KW)	Amount Real. (Lacs)	Load Bkd (KW)	Amount Real. (Lacs)	Load Bkd (KW)	Amount Real. (Lacs)	Load booked (KW)	Amount Real. (Lacs)
Balasore	693	25.32	3717	72.01	6513	65.02	2820	62.88	13743	225.23
Bhadrak	682	20.43	3311	104.77	4868	69.28	1502	26.74	10363	221.22
Baripada	332	17.03	2262	45.09	5850	31.17	2572	68.96	11016	162.25
Jajpur	523	18.6	3113	101.34	6185	61.31	2779	55.75	12600	237
Keonjhar	299	15.55	3014	59.16	5473	33	1920	72.31	10706	180.02
<b>Total</b>	<b>2529</b>	<b>96.93</b>	<b>15417</b>	<b>382.37</b>	<b>28889</b>	<b>259.78</b>	<b>11593</b>	<b>286.64</b>	<b>58428</b>	<b>1025.72</b>

**Till 5th Feb 2022 Cumulative load of 59.55 MW booked & cumulative realization 1050 Lacs.**

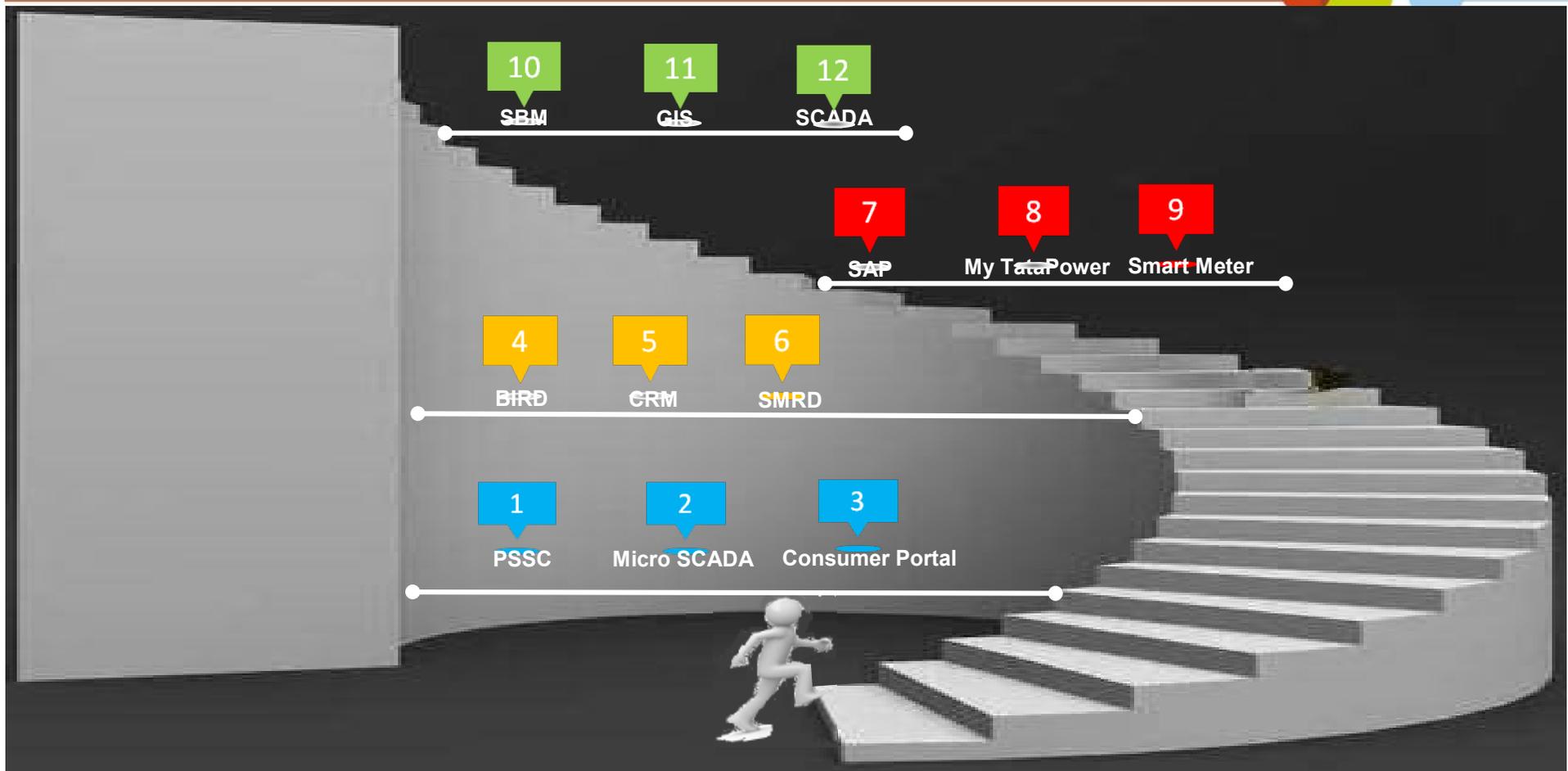
# TPNODL Trend: Billing, Collection Efficiency & AT&C



TPNØDL



# Technology Adoption





L&D initiatives	Activities/ Batches/ Participant	No of Man days
<b>Prarambh</b>	➤ Senior Leadership program (Prarambh, Strategy workshop and BE-connect)	➤ YTD 150 man days
<b>Pehechan</b>	➤ New Joinee induction	➤ YTD 606 man days
<b>Pratingya</b>	➤ 21 batches	➤ 515 man days
<b>Prerana</b>	➤ 9 batches (38 participant)	➤ 124 man days
<b>Parichay</b>	<ul style="list-style-type: none"> <li>➤ CEO Town Hall</li> <li>➤ Circle level interaction</li> <li>➤ Chief-HR Jan Sampark- connect</li> </ul>	<ul style="list-style-type: none"> <li>➤ YTD 05 nos</li> <li>➤ YTD 12 nos at 5 Circle</li> <li>➤ YTD 17 at Circle &amp; Division</li> </ul>
<b>Parivar</b>	➤ Competitions during Diwali, Children's Day and Quality Month	➤ 27 employees' children recognised
<b>Paathshala</b>	<ul style="list-style-type: none"> <li>➤ Weekend learning of employees</li> <li>➤ Gyankosh</li> <li>➤ Safety Awareness</li> <li>➤ Knowledge sharing programe with TPDDL &amp; APEPDCL</li> </ul>	<ul style="list-style-type: none"> <li>➤ YTD 117 man days</li> <li>➤ Adoption rate 76 %</li> <li>➤ YTD 4516 man days</li> <li>➤ 98 Attendees</li> </ul>
<b>Prashansa</b>	➤ Reward & Recognition	<ul style="list-style-type: none"> <li>➤ Quarterly award for Best performing Circle/Division: YTD 06, Star of the Month: YTD 19, Going beyond: YTD 99, Spot award: YTD 134</li> <li>➤ MS Office Quiz – 10 winners</li> <li>➤ SAP Quiz- 10 winners</li> <li>➤ Gyankosh Reward - 15</li> </ul>



- Oxygen Concentrator Donated at Hospital
- Tree Plantation Drive” on World Environment Day
- Engagement with WSHG
- Awareness on Energy Conservation at Schools





- ❑ Abdul Kalam Island - the Integrated Test Range missile testing facility is located on the island & serves as the test facility for most of India's missiles.
- ❑ No Electricity as on date
- ❑ **Approx. 1000 Ltr. Of Diesel is burnt every day** for Power Supply
- ❑ DRDO was trying hard for electrification since very long

- ❑ TATA Power to Set up Solar Micro Grid
- ❑ Joint site visit by TATA Power - Conducted
- ❑ Location Finalized
- Microgrid Design by TATA Power–Prepared & submitted.
- Submission of Estimates
- Installation – TATA Power
- Finance by DRDO



# **Aggregate Revenue Requirement for FY 2022-23**

## Projection of Operational Parameters



Particulars	UoM	FY 20-21			FY 21-22			FY 22-23
		Approved	Apr-20 to Dec-20 (Actual)	FY.21 (Actual)	Approved	Apr-21 to Dec-21 (Actual)	FY.22 (Estimated)	Projected
Power purchase	MUs	6570	3687.51	4941.19	5880	4040.66	5523.89	5980.1
Sales	MUs	5364.41	2954.26	3921.63	4801.02	3300.11	4418.01	4882.8
Distribution Loss	%	18.35%	19.88%	20.63%	18.35%	18.33%	20.02%	18.35%
Collection Efficiency	%	99.00%	82.87%	94.28%	99.00%	84.14%	97.27%	99.00%
AT&C Losses	%	19.17%	33.61%	25.17%	19.17%	31.28%	22.20%	19.17%

TPNODL has projected AT&C loss as determined by Hon'ble OERC for FY.23, as compared to 22.32% committed in vesting Order

## Sales Projection (MU)



Category	FY 2021-22 (Estt.)	FY 2022-23 (Proj.)	Increase (%)
LT	2364.985	2734.908	16%
HT	463.969	485.799	5%
EHT	1589.053	1662.052	5%
<b>TOTAL</b>	<b>4418.007</b>	<b>4882.759</b>	<b>11%</b>

▪ **Projected Growth in LT:**

- 14% due to domestic consumer growth under different Govt schemes as well as normal growth.
- 41% in Allied Agro Activity category considering prawn cultivation in a large scale in the coastal area
- 38% in Specified Public Purpose category considering re-opening of educational and religious institution.
- 19% in other LT category.

▪ **Projected Growth in HT:**

- Reduction of load in power intensive industry like M/s IDCOL Ferrochrome from 10700 KVA to 555 KVA.
- In spite of above, 5% growth considering efforts taken in revival of some PDC consumers.

▪ **Projected Growth in EHT:**

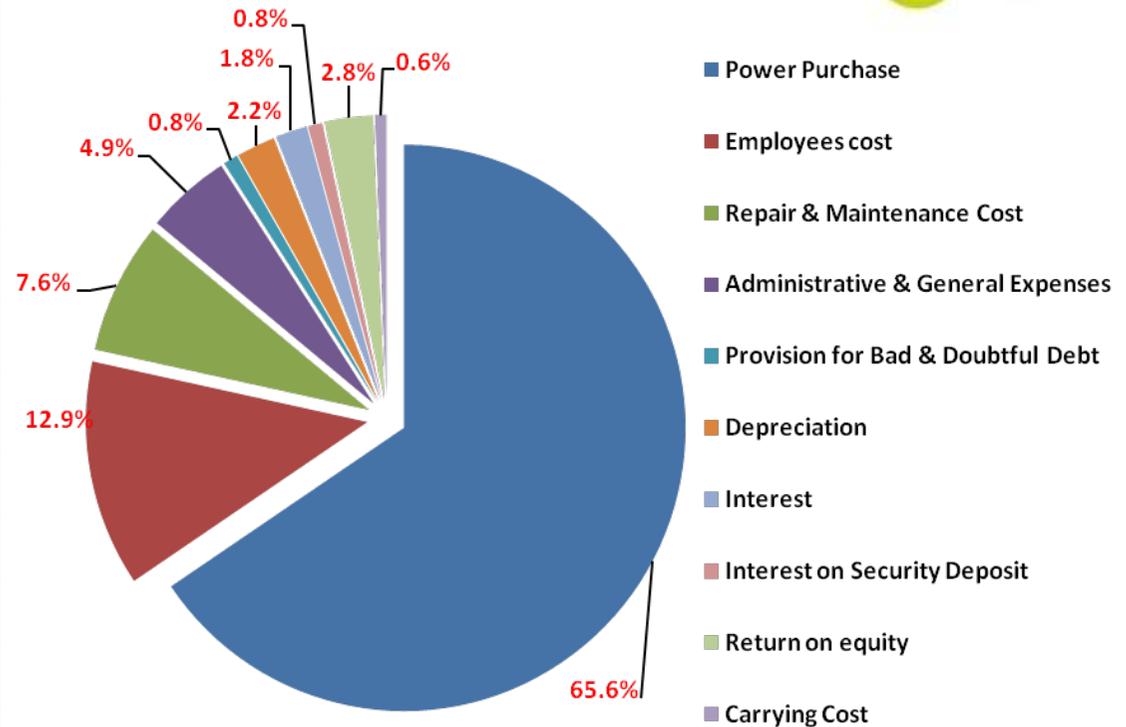
- Increasing trend of open access, CGP,
- Closer of large industries like BAL etc during Covid-19 pandemic.
- Upcoming consumer growth including railway.



Sl No	Particulars	FY 2021-22	FY 2022-23
1	Improvement Schemes initiated in FY 2021-22	185.71	<u>73.07</u>
2	Improvement Schemes Initiated in FY 2022-23	-	<u>424.50</u>
3	<b>Hard Cost</b>	<b>185.71</b>	<b>497.57</b>
4	Employee Cost Capitalised	11.97	23.95
5	Interest Cost Capitalised	0.40	1.24
6	<b>Total Cost</b>	<b>198.08</b>	<b>522.76</b>
7	Additional Capitalisation	34.13	90.07
<b>Total Capitalisation Cost (6 +7)</b>		<b>232.21</b>	<b>612.83</b>



Particulars	Amount (Rs.Crs.)
Power Purchase	2082.09
Employees cost	408.93
Repair & Maintenance Cost	240.01
A&G Expenses	155.18
Provision for Bad & Doubtful Debt	26.57
Depreciation	70.78
Interest	57.94
Interest on Security Deposit	26.22
Return on equity	88
Carrying Cost	20.51
<b>Total Revenue Requirement</b>	<b>3176.23</b>





Sl.No.	Revenue Requirement	FY 2021-22 (Approved)	FY2021-22 (Estimated)	FY2022-23 (Projected)
1	Power Purchase Cost	2047.25	1923.33	2082.09
2	Employee Cost	357.24	359.76	<u>408.93</u>
3	Repair & maintenance Cost	114.23	147.49	<u>240.01</u>
4	Administrative & General Expenses	49.20	81.87	<u>155.18</u>
5	Provision for bad & doubtful debts	14.84	24.41	26.57
6	Depreciation	32.86	39.80	70.78
7	Interest on Term Loan	0.00	5.76	<u>26.75</u>
8	Interest on Working Capital	0.00	26.62	31.19
9	Interest On security Deposit	26.78	25.35	26.22
10	Return on equity	40.00	58.42	88.00
11	Carrying Cost	0.00	3.70	20.51
12	<b>Total</b>	<b>2682.40</b>	<b>2696.51</b>	<b>3176.23</b>
13	Revenue from sale of Power	2545.61	2440.84	2657.21
14	Non Tariff Income	137.42	152.56	154.15
15	<b>Total</b>	<b>2683.03</b>	<b>2593.40</b>	<b>2811.36</b>
16	<b>REVENUE GAP</b>	<b>0.63</b>	<b>-103.11</b>	<b>-364.87</b>

# Tariff Rationalization Measures



Sl. No.	Rationalization Measures	Justification	Impact on GAP
1	Increase of digital rebate from 2% to 3% for LT single phase Dom, GP and Irrigation. Additional 2% Digital rebate for rural domestic consumer	<ul style="list-style-type: none"> <li>Incidental cost towards collection can be avoided.</li> <li>Consumer Coverage and Collection efficiency will improve.</li> <li>No impact on Tariff</li> </ul>	Cash flow will improve
2	Discount to Domestic Rural Consumers (paid within due date, consumed on actual meter reading) to be increased from 5p/u to 10p/u	<ul style="list-style-type: none"> <li>Incidental carrying cost towards collection can be avoided.</li> <li>Consumer will be encouraged to draw through correct meter</li> <li>Lead to payment of bills in time</li> </ul>	Rural LT sector coverage will improve.
3	Special Tariff to Steel industry at 33KV load >1MW & No CGP (75-80)% LF :-8%, (80-90)% LF :-9%, (> 90)% LF :-10% discount on total energy charges)	<ul style="list-style-type: none"> <li>Shifting of Industries to adjacent states due to cheaper price will be discourage.</li> <li>Consumption of HT consumption will improve.</li> <li>Higher subsidizing sales volume would lead to lower tariff of subsidized categories</li> <li>To protect such industries it is proposed to provide special tariff to all steel industry having load &gt;1MW at 33 KV level &amp; No CGP.</li> </ul>	Sales Volume will increase GAP will reduce
4	Special tariff for industries those who have closed their units if reopen/starts discount of 50 p/u on incremental units over & above the average monthly consumption of twelve months prior to closing of the industry	<ul style="list-style-type: none"> <li>An attempt to reopen the closed industries</li> <li>Running of industries will help growth of industrialization</li> <li>Create employment opportunity</li> <li>Improvement in national GDP</li> <li>Benefit to subsidized category of consumers</li> </ul>	Sales Volume will increase GAP will reduce Cash Flow will improve



Sl.No.	Rationalization Measures	Justification	Impact on GAP
5	Special tariff for existing industries who have no CGP for drawl of additional power beyond CD of 10 MVA if industry assures consumption of 85% LF No demand charges for the additional quantum beyond existing CD limited to 2 times of existing CD. Flat rate for the consumption beyond 60% L.F (HT: Rs.4.85 p/u, EHT: Rs.4.80 p/u)	<ul style="list-style-type: none"> <li>Consumer will get power at a discount rate.</li> <li>This will help the consumer to compete in the market with other industries</li> <li>The industry has to assure consumption of 85% LF by which EHT consumption will increase.</li> <li>Benefit to subsidized category of consumers</li> </ul>	<p>Sales Volume will increase GAP will reduce Cash Flow will improve</p>
6	Special tariff for Existing industries having CGP if assured 80% LF of existing CD. To be settled through bi-partite agreement/bidding . Landed cost of IEX Power - 10paise per unit slot wise ( 15 minutes) having lower capping as highest BSP +Transmission charges+ approved % upside on BST	<ul style="list-style-type: none"> <li>Industries are having their CGP and drawing less power (10% L.F. to 20% LF)</li> <li>Industries higher consumption yield higher tariff up to 80% L.F. State surplus power can be sold for benefit of all stake holder</li> <li>Industries can get cheaper/competitive power</li> <li>Industries may avoid open access power</li> <li>Industries can opt to close their CGP</li> <li>Lead to economic development of the state</li> <li>Lead to tariff reduction</li> </ul>	<p>Sales Volume will increase GAP will reduce Cash Flow will improve</p>
7	Increase of demand charge of MI category from Rs.150/- per KVA to Rs.250/- per KVA	<ul style="list-style-type: none"> <li>Demand charges of GP category with load of &gt;70 KVA &amp; &lt;110 KVA and SPP category is Rs.250/- per KVA.</li> <li>To avoid disparity consumers availing power supply under HT category.</li> </ul>	<p>GAP will reduce.</p>
8	Rationalization of MMFC for LT category of consumers with a single rate for 1st KW as well as additional KW	<ul style="list-style-type: none"> <li>In case of Domestic, General purpose, Specified Public Purpose &amp; PWWS the rate is same as for 1st KW as well as additional KW.</li> <li>Other category like SI, MI etc the rate for additional KW and part thereof is very much lower for which the revenue of the utility is highly affected as well as creating discrimination among LT category of consumers.</li> </ul>	<p>GAP will reduce</p>



Sl.No.	Rationalization Measures	Justification	Impact on GAP
9	Levy of CSS and WC on RE Power	<ul style="list-style-type: none"> <li>Most of the states have already abolished exemption on CSS</li> <li>Cost of RE power has reduced considerably</li> <li>Procurement of RE power has increased drastically</li> </ul>	GAP will reduce
10	Increase of Charges for line extension to LT single phase connection up to 5 Kw from existing Rs.5000/ span to Rs.9300/span for single phase & Rs.12000/span for three phase	<ul style="list-style-type: none"> <li>Actual cost is much higher in many cases</li> <li>Even if for single pole or two poles cases the transportation, loading &amp; unloading, erection cost is much higher</li> </ul>	Extra cost saved can be utilized in O&M
11	Introduction of amnesty arrear clearance scheme for LT non-industrial category.	<ul style="list-style-type: none"> <li>Past arrear will be recovered.</li> <li>Additional collection of past arrears</li> <li>Will help encouragement for out of court settlement</li> <li>Will increase the collection efficiency.</li> </ul>	Cash flow will improve
12	De-Allocation of high cost power of GRIDCO	<ul style="list-style-type: none"> <li>De-allocation of high cost power from Farakka (I &amp; II) Bundled Power, KHSTPS - I Bundled Power, Barh STPS -1, TSTPS -1 Farakka-III and KHSTPS-II the total power purchase cost is coming down to Rs.8,580.20Cr for 29506.41MU in place of proposed Rs. 9431.04Cr for 29354.67MU</li> </ul>	Average BSP will come down leading to lower power purchase cost
13	Rebate on prompt payment of BST bill - 2% rebate on full payment within 5 days - 1.5% up to 20 Days thereafter - 1 % if cleared within 30 days	<ul style="list-style-type: none"> <li>Rebate is being allowed to industrial consumer (HT) if payment is made within 3days and rest categories it is 7 days.</li> <li>Cash flow of GRIDCO will improve.</li> <li>Collection from consumer and payment to GRIDCO will match.</li> </ul>	GAP will reduce Cash Flow will improve



**In the aforesaid facts and circumstances, the applicant most humbly prays before the Hon'ble Commission to kindly :**

- **Take the ARR application and Tariff Petition on record.**
- **Approve the Aggregate Revenue Requirement for FY 2022-23.**
- **Bridge the Revenue Gap for the FY 2022-23 through increase in Retail Supply Tariff or reduction in Bulk Supply Tariff (BST) wherever possible**
- **Allow the Tariff rationalisation measures as proposed**
- **Any other relief, order or direction which the Hon'ble Commission deems fit**

# TPNODL

TP Northern Odisha Distribution Ltd.



**Presentation on  
Application for Determination of Open Access Charges  
FY 22-23**

**(Case No.112 of 2021)**

**Before Hon'ble  
ODISHA ELECTRICITY REGULATORY COMMISSION  
25<sup>th</sup> Feb, 2022**



Lighting up Lives!



**An application has been filed before Hon'ble Commission by TPNODL vide Case No-112/2021 with the following prayers:**

- Determination of Open Access Charges viz Wheeling Charges, Cross Subsidy Surcharge, Additional Surcharge & Stand by charges (as applicable) for the financial year 2022-23, in accordance with the para 22, 23, 24 & 25 of chapter 5 of OERC (Terms and Conditions of Intra state Open Access) Regulation, 2020, applicable to open access customers for use of intra-state transmission/ distribution system, in view of section 42 of the Electricity Act-2003.
  
- Withdrawal of concessional charges viz (a) Nil Cross Subsidy Surcharge and (b) 20% of the Applicable Wheeling Charges for sourcing Renewable Power on Open Access

## Status of Open Access



Source	FY.2019-20	FY.2020-21	FY.2021-22 (upto Dec-21)
Conventional	102	411	276
Renewable Energy	17	14	169
CGP	1158	1097	725
<b>Total</b>	<b>1277</b>	<b>1522</b>	<b>1170</b>

OA drawal from RE source has been increased 10 times in comparison to FY.20

# Calculation of Open Access Charges FY 22-23

## Calculation of Wheeling Charges for FY.2022-23



Sl.No.	Particulars	Cost as proposed in the ARR for 2022-23 (Rs.Lacs)	Remarks
1	Operation & Maintenance Exp	52,344	(1.1+1.2+1.3)
1.1	Employee Expenses	24,536	
1.2	Administration & General Exp	6,207	
1.3	Repair & Maintenance Exp	21,601	
2	Depreciation	6,370	
3	Interest on Long Term loan Capital	2,407	
4	Interest on Working Capital	312	
5	Interest on Security Deposit	-	
6	Interest on Power Bond		
7	Provision for Bad debts		
8	Contingency Reserve	-	
9	Carrying cost	513	
10	Return on Equity with Tax	7,920	
11	Distribution Cost for Wheeling	69,866	
<b>12</b>	<b>Wheeling charges (paise/ unit)</b>	<b>162</b>	

Particulars	EHT	HT	LT	Total
<b>Total Sale (MU)-proposed for 22-23</b>	1662	486	2735	4883
<b>Input (MU)-Proposed for 22-23</b>	1662	831	3487	5980
<b>Loss (MU)</b>	0	345	752	1097
<b>Input received in the system(MU)</b>	<b>5980</b>	<b>4318</b>	<b>3487</b>	



## Calculation of Surcharge for EHT category of Consumers

Total EHT Sales proposed for FY 2022-23 in MU	Proposed Revenue from sale for EHT Category Rs in Crore	Average Tariff (P/KWH) (T)	Cost of power Purchase (P/KWH) (C)	Wheeling Charge (P/KWH)( D)	System Loss (%) (L)	Regulatory Asset (P/KWH) (R)	Surcharge (P/KWH) ( T - ( C/ (1-L/100)+D+R))
1662.05	1080.16	649.9	348.17	0	0	0	302

## Calculation of Surcharge for HT category of Consumers

Total HT Sales proposed for FY 2022-23 in MU	Proposed Revenue from sale for HT Category Rs in Crore	Average Tariff (P/KWH) (T)	Cost of power Purchase (P/KWH) (C)	Wheeling Charge (P/KWH)( D)	System Loss (%) (L)	Regulatory Asset (P/KWH) (R)	Surcharge (P/KWH) ( T - ( C/ (1-L/100)+D+R))
485.80	323.89	666.72	348.17	162	8	0	129

**Rationale for withdrawal of concessional  
charges for RE Open Access**

## TPNODL Arbitrage between Conventional and Renewable Source



### Components Contributing to Arbitrage between Conventional and Renewable Source-HT Consumer

Sl. No	Particulars	Unit	Value	HT consumer Sourcing Conventional Power	HT consumer Sourcing Renewable Power	Difference
1	Rate of Source of Power	Rs/KWH		3.00	3.00	0.00
2	All India Loss	%	3.40%	0.10	0.00	0.10
3	Central Transmission Charges	Rs/KWH		0.43	0.00	0.43
4	Transmission Charge	Rs/KWH		0.28	0.06	0.22
5	Wheeling charge	Rs/KWH		0.94	0.19	0.75
6	Cross Subsidy Surcharge	Rs/KWH		0.67		0.67
7	<b>Total</b>	<b>Rs/KWH</b>		<b>5.43</b>	<b>3.24</b>	<b>2.18</b>

### Components Contributing to Arbitrage between Conventional and Renewable Source-EHT Consumer

Sl. No	Particulars	Unit	Value	EHT consumer Sourcing Conventional Power	EHT consumer Sourcing Renewable Power	Difference
1	Rate of Source of Power	Rs/KWH		3.00	3.00	0.00
2	All India Loss	%	3.40%	0.10	0.00	0.10
3	Central Transmission Charges	Rs/KWH		0.43	0.00	0.43
4	Transmission Charge	Rs/KWH		0.28	0.06	0.22
5	Wheeling charge	Rs/KWH		0.00	0.00	0.00
6	Cross Subsidy Surcharge	Rs/KWH		1.41	0.00	1.41
7	<b>Total</b>	<b>Rs/KWH</b>		<b>5.23</b>	<b>3.06</b>	<b>2.17</b>



❑ Adequate Renewable Capacity Addition( as detailed in next slide):

- India is now at 4th Global position for overall installed renewable energy capacity
- Solar capacity increased in the last 7.5 years from around 2.6 GW to more than 46 GW
- Renewable energy has a share of 26.53% in the total installed generation capacity in the country
- Renewable energy expansion programme 175 GW till 2022

Hence, earlier initiatives taken to promote consumption of renewable energy may not be so relevant in the current context

# TPNODL Present and future growth of RE in India



## Present Capacity of the RE Sources

Programme/Scheme wise Physical Progress in 2020-21 & Cumulative upto Aug, 2021

Sector	FY- 2021-22		
	Cumulative Achievements (as on 31.03.2021)	Achievements (Apr-Aug 2021)	Cumulative Achievements (as on 31.08.2021)
<b>I. Installed RE Capacity (CAPACITIES IN MW)</b>			
Wind Power	39247	444.1	39691.15
Solar Power - Ground Mounted	35646	3168.86	38814.49
Solar Power - Roof Top	4440	1046.54	5486.28
SPV Systems (Off-grid)	1151	160.46	1311.14
Small Hydro Power	4787	21	4807.81
Biomass (Bagasse) Cogeneration	9374	25	9398.56
Biomass (non-bagasse) Cogeneration/Captive Power	772	0	772.05
Waste to Power	169	0	168.64
Waste to Energy (off-grid)	219	14.24	233.2
<b>Total</b>	<b>95803.4</b>	<b>4880.2</b>	<b>100683.32</b>

Source: MNRE Website

## Capacity proposed to be added in future

Sector	Target by 2022	Installed capacity	Under Implementation	Tendered	(in GW)
					Total Installed/Pipeline
Solar Power	100	38.79	36.03	23.87	98.69
Wind Power	60	38.68	8.68	1.20	48.56
Bio Energy	10	10.31	0.00	0.00	10.31
Small Hydro	5	4.76	0.44	0.00	5.20
Wind Solar Hybrid	0	0	2.55	0.00	2.55
Round the Clock (RTC)/ assured Peak Power supply	0	0	1.60	2.50	4.10
<b>Total</b>	<b>175</b>	<b>92.54</b>	<b>49.30</b>	<b>27.57</b>	<b>169.41</b>

Extracts 1 : Extracts from Standing Committee of Parliament Report

Current RE capacity of 100GW is expected to reach 169.41GW by 2022



### Substantial reduction in cost of generation of Solar and Wind power

The rate of Solar Energy which was above Rs. 12 per Unit in 2012 has now fallen to about Rs. 2.50 per Kwh. Similarly, the Wind Tariffs which were earlier around Rs. 5 per Kwh have now come down to Rs. 2.75 per Kwh.

### Provision under National Tariff Policy

*Extracts : Extracts from National Tariff Policy*

*6) In order to further encourage renewable sources of energy, no inter-State transmission charges and losses may be levied till such period as may be notified by the Central Government on transmission of the electricity generated from solar and wind sources of energy through the inter-state transmission system for sale.*

Hence in line with Tariff policy, it may not be necessary to extend the concessional CSS and Wheeling/Transmission Charges.



## ❑ Draft OA Rule ,2021 proposed by MoP for Green Energy contemplates levy of Cross Subsidy Surcharge

Draft Electricity (Promoting renewable energy through Green Energy Open Access) Rules, 2021 dated 16th August 2021 issued by the Government of India, levy of CSS is envisaged. In-fact, it also envisages a situation for subsequent increase in CSS.

The relevant extract of the Draft Rules in this regard are reproduced below:

*Cross Subsidy Surcharge shall be levied on consumers who are permitted open access as per the provisions of Tariff policy notified by the Central Government under the Electricity Act 2003:*

*Provided that the surcharge for green open access consumer purchasing green energy, from a generating plant using renewable energy sources, shall not be increased, during twelve years from the date of commissioning of the generating plant using renewable energy sources, by more than fifty percent of the surcharge fixed for the year in which open access is granted.*

*Provided further that Additional surcharge shall not be applicable for green open access consumers;*

*Provided further that Cross Subsidy Surcharge and Additional Surcharge shall not be applicable in case power produced from a Waste-to-Energy plant is supplied to the open access consumer*

## Wheeling & CSS in other states



State	State Transmission Losses	State Transmission charges	Wheeling Losses	Wheeling Charges	Additional Surcharge	Cross Subsidy Surcharge
Madhya Pradesh	No waiver	No waiver	No waiver	No waiver	No waiver	No waiver
Maharashtra	No waiver	No waiver	No waiver	No waiver	No waiver	No waiver
Gujarat	No waiver	No waiver	No waiver	No waiver	Sale Outside State- 100% Waiver Sale Inside State- 50% Waiver	Sale Outside State-100% Waiver Sale Inside State- 50% Waiver
Andhra Pradesh	No waiver	No waiver	No waiver	No waiver	100% waiver	No waiver
Assam	No waiver	100% waiver	No waiver	100% waiver	100% waiver	100% waiver
Bihar	No waiver	100% waiver	No waiver	100% waiver	100% waiver	No waiver
Chhattisgarh	No waiver	100% waiver	No waiver	100% waiver	100% waiver	100% waiver for Solar, 50% waives on others
Karnataka	No waiver	50% waiver	No waiver	50% waiver	50% waiver	50% waiver
Odisha	No waiver	80% waiver	No waiver	80% waiver	100% waiver	100% waiver
Tamil Nādu	No waiver	50% waiver	No waiver	50% waiver	100% waiver	30% waiver
Telangana	No waiver	No waiver	No waiver	No waiver	No waiver	No waiver
Uttarakhand	No waiver	No waiver	No waiver	No waiver	No waiver	No waiver
Rajasthan	No waiver	No waiver	No waiver	No waiver	No waiver	No waiver

## Landed Cost for EHT Consumer



Landed cost of power with Withdrawl /Reduction of concessions( Sample Calculation for a EHT Consumer taking rate of source power Rs.3/KWh

Sl. No	Particulars	Unit	Value	EHT Consumer	EHT Consumer	EHT Consumer with no Concession
				with concession	with 50% Concession	
1	Rate of Source of Power	Rs/KWH		3.00	3.00	3.00
2	All India Loss	%	3.40%	0.10	0.10	0.10
3	OPTCL Loss	%	3.00%	0.09	0.09	0.09
4	Central Transmission Charges (Odisha)	Rs/KWH		0.00	0.00	0.00
5	Transmission Charge	Rs/KWH		0.06	0.14	0.28
6	Cross Subsidy Surcharge	Rs/KWH		0.00	0.70	1.41
7	<b>Total</b>			<b>3.25</b>	<b>4.03</b>	<b>4.88</b>

Even with no concession EHT consumers enjoy saving with respect to RST of Rs. 6.26/unit

## Landed Cost for HT Consumer



Landed cost of power with Withdrawl /Reduction of concessions( Sample Calculation for a HT Consumer taking rate of source power Rs.3/KWh

Sl. No	Particulars	Unit	Value	HT Consumer	HT Consumer	HT Consumer with no Concession
				with concession	with 50% Concession	
1	Rate of Source of Power	Rs/KWH		3.00	3.00	3.00
2	All India Loss	%	3.40%	0.10	0.10	0.10
3	OPTCL Loss	%	3.00%	0.09	0.09	0.09
4	Wheeling loss	%	8.00%	0.24	0.24	0.24
5	Central Transmission Charges (Odisha)	Rs/KWH		0.00	0.00	0.00
6	Transmission Charge	Rs/KWH		0.06	0.14	0.28
7	Wheeling charge	Rs/KWH		0.19	0.47	0.94
8	Cross Subsidy Surcharge	Rs/KWH		0.00	0.33	0.67
	<b>Total</b>			<b>3.68</b>	<b>4.37</b>	<b>5.32</b>

Even with no concession HT consumers enjoy saving with respect to RST of Rs. 6.25/unit



The licensee most humbly prays before the Hon'ble Commission to kindly:

(1) Consider the proposal of the applicant in this application for determination of Wheeling Charges and Cross Subsidy Surcharge on record.

(2) Approve the Wheeling charges and Cross Subsidy Surcharge prayed before the Hon'ble Commission for the FY 2022-23.

(3) Revisit the concessions allowed towards Cross Subsidy Surcharge and wheeling charges on power sourced through Open Access from Renewable Sources and consider the proposal for levying Cross Subsidy Surcharge (CSS) and wheeling charge on power sourced through Open Access from Renewable Sources in full.

(4) Issue any other relief, order or direction as deem fit



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Description	FY 21-22			FY 22-23
	Approved (ABP)	Actual (Apr-Oct.)	Total Estt.	Projection
Existing (As on 31.03.21)	333.39	159.25	347.97	388.12
New Recruitments	24.00	11.19	23.76	44.76
<b>TOTAL</b>	<b>357.39</b>	<b>170.44</b>	<b>371.73</b>	<b>432.88</b>
Less: Capitalisation			11.97	23.95
<b>Net Total</b>	<b>357.39</b>	<b>170.44</b>	<b>359.76</b>	<b>408.93</b>

### Increase during Ensuing Year 2022-23

- Existing employees: Impact of balance arrear of 7th pay revision, DA 37%, HRA 20%, medical allowance 5% and other allowance 10% of basic salary.
- New Employees: Rationalization of employee cost by induction of trainees (GET /DET / CT)



Rs. In Cr.

Particulars	FY 21-22		FY 22-23	Remarks
	Approved (ABP)	Estimated	Projected	
Buildings	3.90	3.90	3.50	
Plant & Machinery	38.75	38.75	57.36	
Lines, Cables & Network Assets	103.90	103.90	178.15	Order for 11KV & 33KV networks AMC around Rs.200 Crs has already been placed.
Furniture, fixtures, other equip, vehicles	0.94	0.94	1.00	
<b>TOTAL</b>	<b>147.49</b>	<b>147.49</b>	<b>240.01</b>	

If we consider the norms (@5.4% on opening GFA), projected for FY22-23 will be Rs.275.86 cr. However the cost has been rationalized by considering actual cost discovered through competitive bidding/ negotiations.

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Description	FY 21-22		FY 22-23	Remarks
	Approved (ABP)	Total Estt.	Proj.	
Rent , Rates and Insurance		8.85	21.82	Proposed medical policy for erstwhile Nesco (2100) employees and new joinees, incremental insurance of PPE.
Communication		1.95	3.38	Consequential to increase of employee
Professional Charges		5.14	7.10	Legal, Consultancy related to valuation and verification
Conveyance & Travelling		10.30	13.61	Consequential increase of employee
MBC		37.48	60.06	New MBC contract
IT / OT,AMR		2.48	17.46	AMC of Fluent Grid, IT help desk , AMR
Enforcement		0.00	1.00	New enforcement drives.
Other Expenses		15.67	30.75	Security & Surveillance and contract manpower, Advt, training, facility management, etc
<b>TOTAL</b>	<b>78.72</b>	<b>81.87</b>	<b>155.18</b>	



Particulars	FY 21-22		FY 22-23
	Approved	Estimated	Projection
Interest on SD	26.78	25.35	26.22
Interest on WC	0	26.62	31.19
Interest on Capital Loan	0	6.16	27.99
<b>Total</b>	<b>26.78</b>	<b>58.13</b>	<b>85.40</b>
Less: Capitalisation		0.4	1.24
<b>Net Total</b>	<b>26.78</b>	<b>57.73</b>	<b>84.16</b>

**Rate of Interest on loan for Ensuing Year 2022-23**

1. Working capital - @10.45% pa
2. Capital Loan - @7.97% pa
3. Security Deposit-@4.25%pa



**Rs. In Crs.**

Major Category	Approved for FY-22	Capitalisation plan	
		FY 2021-22	FY 2022-23
<b>Statutory &amp; Safety</b>	28.45	20.03	8.42
<b>Loss Reduction</b>	16.39	11.25	5.14
<b>Reliability</b>	94.35	64.43	29.92
<b>Load Growth</b>	21.71	17.81	3.90
<b>Technology &amp; Civil Infrastructure</b>	97.88	72.19	25.69
<b>Total Hard Cost</b>	<b>258.78</b>	<b>185.71</b>	<b>73.07</b>

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**Rs. In Crs.**

Major Category	Capex Plan FY-23	Capitalisation plan
		FY 2022-23
Statutory & Safety	54.48	38.14
Loss Reduction	43.41	30.38
Reliability	92.02	64.41
Load Growth	230.33	161.23
Technology & Civil Infrastructure	186.19	130.34
<b>Total Hard Cost</b>	<b>606.43</b>	<b>424.50</b>

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