BEFORE THE HON'BLE
ODISHA ELECTRICITY REGULATORY COMMISSION
BIDYUT NIYAMAK BHAWAN
PLOT NO.4, CHUNOKOLI, SHAILASHREE VIHAR, CHANDRASEKHARPUR, BHUBANESWAR

Case No. ___ of 2024

In the matter of: **An application for approval of Capital Investment Plan for installation of Smart Meters for FY 2025-26 to FY 2031-32 in the Licensed Area of TP Western Odisha Distribution Ltd.**

AND

In the matter of:

TP Western Odisha Distribution Ltd. ,

Corporate Office, Burla, Sambalpur - 768 017

.... Applicant

AND

M/s GRIDCO, OPTCL, SLDC, Department of Energy, Govt. of Odisha & Others

.... Respondent

AFFIDAVIT

I Kshirod Chandra Nanda, aged about 55 years, S/o. late Radhanath Nanda working as the Sr. GM (RA & Strategy), do hereby solemnly affirm and state as follows:

1. That, I am authorized representative of the TPWODL, the Applicant in the instant case and competent to swear this affidavit for and on behalf of the licensee.
2. That, I have gone through the contentions in this application and understood the contents thereof.
3. That, the facts stated in the application are true to the best of my knowledge & belief and are as per available records.

Deponent

Verified that the contents of above affidavit are true and correct, no part of it is false and nothing material has been concealed there-from. Verified at on this day of November, 2024.

Deponent

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Most respectfully Sheweth,

1. That, the Applicant has taken over the distribution business from erstwhile WESCO utility w.e.f 01.01.2021 as per terms of Order dated 28.12.2020 (hereinafter referred to as "Vesting Order"). TP Western Odisha Distribution Limited (TPWODL) is a joint venture between Tata Power and the Government of Odisha with equity participation of 51% by Tata Power Company Ltd.

2. That, the Applicant is the Distribution Licensee as per license condition dated 26.03.2021 of the Hon'ble Commission and distributes electricity in western part of Odisha having 09 revenue districts namely Sambalpur, Jharsuguda, Deogarh, Sundargarh, Bargarh, Bolangir, Sonepur, Kalahandi and Nuapada with 48000 Sq KM area of operation.

3. That, as per mandate of Vesting Order, TPWODL is procuring power from the GRIDCO, who is the state designated entity to procure power for all the 4 DISCOM(s) from different generators like thermal, hydel, renewable etc. Now as per BST order

dt.13.02.2024 the approved BST is **Rs. 3.80/unit** with a BSP surcharge of **Re. 0.35/ unit** which is payable quarterly apart from transmission charges of **Rs. 0.24/ unit**.

A. Background for submission of the Application –

4. That, TPWODL in its ARR application for FY 2024-25 has submitted a proposal for recovery of meter cost through CAPEX instead of monthly meter rent, to which the Hon'ble Commission has stipulated following in the Tariff Order for FY 2024-25 dated 13.02.2024:

> "***93. Tariff Related Issues***
> ....
> - ***Meter Cost to be recovered under CAPEX***
>
> *The Commission thoughtfully analysed the proposal. Though the proposal appears to be plausible, still it requires thorough analysis. There will be no issue as far as inclusion of meter cost in CAPEX, where the new meters will be installed. But there may be many Consumers who have already paid the meter rent in full and there may be other Consumers those who have paid the meter rent in part. In those cases, abolishing meter rent may create problem in financial adjustment. Therefore, the DISCOMs are required to file a fresh proposal by giving all the details related to meter rent, number of Consumers in different metering categories, legal implications, if any, and detail plan for implementation etc. Accordingly, the Commission will examine the proposal for recovery under CAPEX."*

5. That, in compliance to the directive of the Hon'ble Commission, TPCODL vide letter dated 18th March 2024 has submitted a proposal for installation of both Smart Meters and BLE Meters commencing FY 2024-25 to FY 2026-27 showing the impact on Retail Tariff.

6. That, subsequently, it was realized that sooner or later all meters are eventually required to be converted into Smart meters based on the mandate of various Regulatory frameworks (provided in following sections), thrust of the Government of India on Installation of Smart Meters, inherent benefits of the Smart meters and also to achieve the Solar initiatives target of the Govt. of India (e.g. PM Suryaghar Muft Bijli Yojana, PM Kusum Schemes, Rooftop Solar schemes etc.). Further, the common consumer will be the biggest beneficiary as all consumers can benefit out of Smart meters without paying any meter rent with very minimal impact on tariff as the Meter CAPEX will be socialized in the ARR.

7. That, accordingly, a comprehensive and combined proposal for all DISCOMs for a longer plan for Smart Meter installation covering all consumers was submitted to

the Hon'ble Commission vide TPCODL letter No. TPCODL /Regulatory/ 2024/91/5422 dated 12th August 2024. Subsequently, a presentation was also made before the Hon'ble Commission on the proposal and it's impact.

8. That, through this instant application, the Applicant is submitting the Capital Investment Plan for Installation of Smart meters covering following for approval of the Hon'ble Commission.

i) Replacement of all existing Non-Smart Meters in TPWODL's licensee area with Smart Meters

ii) All New Connections to be provided through Smart Meters only.

Benefits of Smart Meters: The benefits of Smart Meters are quite significant, some of which are presented below.

a) Cost Savings: With availability of real time data on energy usages, the consumers will be able to find areas of inefficiency and excess consumption thereby taking prompt action to reduce unwanted consumption for optimization of energy consumption.

b) Improved Accuracy: Smart meters are much more accurate than traditional meters and without any human intervention, which means consumers will receive more accurate bills and less complaints related to billing errors.

c) Better Planning and Forecasting: With availability of real time data, the Discoms will be able to plan their power purchase more efficiently thereby reducing burden of excess power purchase on the consumers.

d) No Meter Rent in Bill: Relief to Consumers from Monthly Meters rent in their bills.

e) Compliance: The State will be able to meet the target set by the Central Government with respect to Smart Meter Installation.

f) Better Measurement of Reliability Indices: Through IT and OT integration the interruption duration can be more accurately captured resulting in better measurement of Reliability Indices.

g) Increased uptake of distributed electricity generation: Smart meters can help increase the uptake of distributed electricity generation, which can help reduce the carbon footprint and combat global warming.

h) **Faster repairs:** Smart meters can be accessed remotely by energy providers, which can help identify issues with the energy supply more quickly.

i) **Improved grid performance:** Smart meters can help improve the performance and quality of service for customers by providing information on the status of the electricity grid.

j) **Reduction in Meter Reading cost:** Consumer shall be directly benefited for the reduction in the meter reading cost as the energy consumption data shall be directly fetched by the system for generation of electricity bills.

k) **No Pilferage of Revenue:** Possibility of manipulation in meter reading leading to revenue pilferage shall be minimized. Also, detection of theft would be faster as smart meter data transmission may give early warning.

B. Regulatory Frameworks for Smart Meters Installation

9. That, as per clause no 97(iv) (3) of the OERC Supply Code 2019, Smart Meters are to be installed in the next 3 years starting from 2019 as reiterated below:

> *"The licensee/supplier shall gradually move on to **prepaid/smart/pre-paid smart meters** as and when available preferably **within three years**. In case pre-paid meter is installed, the meter shall conform to the technical requirements as specified in Central Electricity Authority (Installation and Operation of Meters) Regulations, 2006 and amendments thereof."* **(Emphasis Supplied)**

10. That, Clause No. 3 of the Central Electricity Authority (Installation and Operation of Meters) (Amendment) Regulations 2022 stipulates the following:

> *"3 (b) All consumers in areas with communication network, shall be supplied electricity with **Smart Meters working in prepayment mode**, conforming to relevant IS, within the timelines as specified by the Central Government:*
> *Provided that all consumer connections having current carrying capacity beyond that specified in relevant IS, shall be provided with meters having **automatic remote meter reading facility or Smart Meters as per relevant IS**.*
> *Provided further that in areas which do not have communication network, installation of prepayment meters, conforming to relevant IS, shall be allowed by the respective State Electricity Regulatory Commission"* **(Emphasis Supplied)**

11. That, the timelines for replacement of the Meters have been specified in the MoP Notification CG-DL-E-19082021-229126 issued through Gazette of India dated 19th Aug' 2021 which has been subsequently amended vide notification CG-DL-E-26052022-236032 published on dated 26.05.2022, the relevant extract of which is reproduced below for ready reference:

*"2.1 All consumers (other than agricultural consumers) in areas with communication network, shall be supplied electricity with **Smart Meters** working in prepayment mode, conforming to relevant IS, within the timelines specified below:*
All Union Territories, all electrical divisions with high AT&C Loss
(Urban Areas with AT&C loss >15% and rural areas with AT&C loss >25%), Industrial and Commercial consumers, all Government offices at Block level and above, shall be metered with smart meters, with prepayment mode, by 31st December, 2023:
Provided that these areas shall also be covered for smart Distribution Transformer (DT) metering by the Advanced Metering Infrastructure Service Provider (AMISP), on a priority basis, by 31st March, 2023;
***Provided also that the State Regulatory Commission may, by notification, extend the said period of implementation, giving reasons to do so, only twice but not more than six months at a time, for a class or classes of consumers or for such areas as may be specified in that notification**;*
*(ii) All other areas shall be metered with **smart meters, with prepayment mode**, by 31st March, 2025:*
Provided that in these areas smart Distribution Transformer (DT) metering shall be completed by 31st December, 2023;
(iii) All feeders shall be metered by 31st December, 2022;
(iv) All the feeder meters shall be made communicable under National Feeder Monitoring System (NFMS) by 31st December, 2022 and shall have Automatic Meter Reading (AMR) facility or shall be covered under Advanced Metering Infrastructure (AMI)."

(Emphasis Supplied)

12. That, the Operational Guidelines for Implementation of **PM Surya Ghar: Muft Bijli Yojana** for component "CFA to Residential Consumers" released by MNRE on 07.06.2024 stipulates following:

*"6(i) **Meter Installation and Agreement:** The meter shall be installed by DISCOM after rooftop installation is complete and the DISCOM and the consumer will sign the appropriate metering agreement as per state regulations**. The net meter will be provided by the DISCOM or the consumer may procure the net meters from enlisted meter vendors. A model net metering agreement is shown at Annexure 4.** However, the actual agreement may vary. All metering arrangements (net metering, gross metering, net billing, virtual net metering, group net metering etc.) approved by the respective Electricity Regulatory Commissions of States/UTs shall be covered under the scheme.*

*"**8 (ix) Generation and Benefits Tracking:** The National Portal will receive generation data from connected inverters/**smart meters** for providing better analytical services to the consumer as well as to assist DISCOMs in collecting data. In case the RTS generation data (intermittent or real-time or near real-time) of an RTS is being received by the vendor through SIM/dongle/Wi-Fi etc., access to that data shall be provided by the vendor to the National Portal. This will enable tracking of the RTS generation data on the National Portal."* **(Emphasis Supplied)**

13. That, prior to the above the Hon'ble Commission's Order dated 19.08.2016 on **'Net Metering / Bi-Directional Metering & their Connectivity with respect to Solar Projects'** stipulates following:

*"**10. Metering Arrangement:***
……In case of multiple solar generations sources in a single premise, separate solar meters would have to be installed by the solar power generator/prosumer for each of the sources

*with facility for installation of modem along with all the solar meters for **remote recording of monthly generation data** through GSM or GPRS to the concerned distribution licensee. …… One net meter/bi-directional meter (single phase or three phase as per requirement) capable of recording import and export of power in KWh is to be installed which shall be accepted by all for commercial settlement. These meters should be MRI and AMR complaint."*

(Emphasis Supplied)

14. That, further under **PM KUSUM** scheme the comprehensive guidelines for (MNRE Order dated 17.01.2024) stipulate the following:

*"6.3.6 (iii) All solar Agriculture pumps sanctioned under the Programme shall be provided with remote monitoring system by the vendor. It will be mandatory to submit performance data of solar power plant online to MNRE in the manner and format prescribed by MNRE. The remote monitoring system may consist of **smart meters**, communication hardware/ IoT devices, software interface, web and mobile application and internet connection."*

(Emphasis Supplied)

15. That, the Hon'ble Commission vide letter No. OERC/Engg/2/2017/609 dated 03.05.2023 has stipulated that the Clause 97 (iv) (3) of Supply Code,2019 , Regulation 4 of CEA (installation and operation of Meters) Regulations,2006 as amended on 28.02.2022 ; and Ministry of Power Notification dated 23.05.2022 on CEA (installation and operation of Meters) (Amendment) Regulations,2019 desires Smart meters shall be installed for new connection; consumer without meter, consumer with defective meter or electromechanical meters; all 33kV and 11 kV feeders ;and Distribution Transformers (DTs))(i.e. all feeders and DTs to conduct energy audit).

Further, the Hon'ble Commission has stipulated following priority order for installation of Smart meters.

"(i) Government Department and other sub-ordinate offices/PSUs/ Bodies (including the PRIs and ULBs, cooperative societies, etc.; Industrial Consumer (with meters more than 5 year old); three phase consumer with static meter (more than 5 years old) having consumption of more than 200 units per month; and the consumer willing for such installation in areas with communication network;
(ii) Single phase consumer with static meter (more than 5 years old) in areas with communication network;
(iii) Three phase consumer with static meter (more than 5 years old) having consumption of less than or equal to 200 units per month in areas with communication network."

16. That, in view of the above statutory provisions, installation of smart meter is mandatory and accordingly the applicant is submitting this proposal for approval of the Hon'ble Commission.

C. Regulatory Framework for submission of Capital Investment Plan

17. That, meter installation is a CAPEX activity. The Hon'ble Commission in the Order of Case No. 82/2020 ("Vesting Order") had directed TPWODL to seek the approval of the Capital Expenditure Plan in line with the regulations. The extracts from the Vesting Order are as follows:

"39. Capital investment plan
(d) TPWODL would be required to seek the Commission's approval on the detailed capital expenditure plan in line with the regulations. TPWODL shall satisfy the Commission that the capital expenditure plan submitted in line with regulations adheres to the capital expenditure plan submitted as part of the Bid."

18. That, the Odisha Electricity Regulatory Commission (Terms and Conditions for Determination of Wheeling Tariff and Retail Supply Tariff) Regulations 2022 (herein referred to as "Tariff Regulations, 2022") requires submission of Capital Investment Plan for each year of Control period and also a separate Annual Capital Investment Plan for each year of Control Period. The relevant extract from the Tariff Regulations, 2022 is provided below:

"3.2. Capital Investment
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."*

(Emphasis Supplied)

19. That, in compliance to the Tariff Regulations,2022, TPWODL had filed its Business Plan for FY 2023-24 vide affidavit dated 30.01.2023 (registered as Case No. 13/2023) and Business Plan for FY 25 to FY 28 vide submission dated 31.05.2023 (registered as Case No. 44 /2023). The Business Plan application of TPWODL comprised of capital investment plan along with other components of Business Plan as per Tariff Regulation, 2022 for the Control Period. The Business Plan application for FY 2023-24 was disposed of by the Hon'ble Commission on 14.09.2023 and has stipulated following with regards submission of Capital Investment Plan:

"33. Capital Investment
…
j. ***The Commission opines that the Capital expenditure involves multidimensional aspects which undergoes changes due to rapid urbanization & industrial growth. Ensuring reliability of power supply, reducing interruptions & AT&C loss and***

providing electricity at an affordable tariff to the consumers etc. are major challenges*. In view of such dynamism in the system, the Commission* ***directs the DISCOMs to submit the year wise Capex plan for the control period for approval of the Commission****. The Commission also observes that the DISCOMs are required to catch up in capitalization with the approval by the Commission."*

(Emphasis Suppled)

20. That, as per the above provisions/ Order, before incurring any CAPEX, prior approval from the Hon'ble Commission is mandatory. Therefore, the Applicant is filing this instant application in addition to the regular investment plan which had already been submitted and listed for hearing vide Case No. 50/2024 and Hon'ble Commission vide interim order dated on 12.11.2024 has taken a view and directed that the this Case shall be taken for hearing along with the hearing of Annual Revenue Requirement & Retail Supply Tariff Application of TPWODL for the ensuing Financial Year 2025-26.

21. That, since the instant application is for replacement of all existing meters with smart meters which may take at least 7 years and installation of smart meter in new connection cases being an ongoing activity, therefore, the Applicant is submitting consolidated proposal for 7 years including meters to be used for new connections.

D. Proposal

22. That, the detailed proposal of Capital Investment Plan for FY 2025-26 to 2031-32 for installation of Smart Meters as below:

Position of category of Consumer Meters

1) Since commencement of operations wef. January 1, 2021, TPWODL has taken tremendous efforts for replacement of the defective and mechanical Meters. The present position of Meters are as follows:

Table 1: Status of Installed Meters in TPWODL area as on 31.10.2024

SL NO	Meter Type	Smart	Static	BLE	Mechanical	Total
1	Single Phase	256856	1553024	133710		1943590
2	Three Phase (WC)	78993	57789	-		136782
3	LTCT	3536	-	-		3536
TOTAL		**339385**	**1610813**	**133710**	**0**	**2083908**

2) The different types of meters mentioned above have been installed in both government and private consumers of TPWODL. In the plan, TPWODL proposes

to initially install smart meters in government consumers and other private consumers with strong communication infrastructure, before moving on to other consumers. The scope of work for smart meter installation/replacement is as follows:

Table 2: Scope of work for Installation/Replacement of Smart Meters

Sr No	CATEGORY	Installed Meters			Smart Meters Installed			Meters to be installed/Re		
		GOVT	PVT	TOTAL	GOVT	PVT	TOTAL	GOVT	PVT	TOTAL
1	3PH LT	10618	129700	140318	10618	71911	82529	0	57789	57789
2	Single Phase	27200	1916390	1943590	17694	239162	256856	9506	1677228	1686734
3	**Total**	**37818**	**2046090**	**2083908**	**28312**	**311073**	**341670**	**9506**	**1735017**	**1744523**

Apart from the above additional 2285 nos of Smart Meter have already been installed for HT Consumers across TPWODL Licensee area.

a) <u>Proposal to Install Smart Meters</u>

<u>Existing Meter Replacement :</u>

3) As can be seen from the above, there are about 17.44 Lakh smart meters in the present electrical consumer base that is required to be installed/Replaced. However, this will take some time and will be implemented in phases. In areas where the communication network is not reliable, the installation of smart meters will be deferred. The broad plan for installing smart meters in the TPWODL licensed area is outlined below:

   i. Single Phase Static Meters would be replaced over the period of 7 years i.e from FY 2025-26 to FY 2031-32.
   ii. Three phase Whole (WC) Current Meters would be carried out in FY 2025-26 and FY 2026-27.
   iii. There is no plan for LTCT Meter installation/replacement as it has already been replaced.
   iv. For EHT Consumers, there is no plan to install any Smart Meters as ABT meters are already there.

Table 3: Plan for replacement of Existing Non-Smart Meters by Smart Meters

Non Smart Meters as on 31.10.2024										
			Replacement Plan of Non Smart Meters (nos)							
SL NO	Meter Type	Non Smart Meters (nos)	FY-26	FY-27	FY-28	FY-29	FY-30	FY-31	FY-32	Total
1	Single Phase	1686734	250000	250000	250000	250000	250000	250000	186734	1686734
2	Three Phase (WC)	57789	20000	37789						57789
3	LTCT	0	0							0
	TOTAL	**1744523**	**270000**	**287789**	**250000**	**250000**	**250000**	**250000**	**186734**	**1744523**

<u>New Consumers :</u>

4) Considering the Government of India's emphasis on the installation of smart meters, TPWODL proposes to install smart meters for all consumers. However, it may be noted that TPWODL has already committed to purchase 60,000 BLE meters. These meters were ordered because they are less expensive than smart meters, and the meter rent for BLE meters (Rs 40 per month for 60 months) is lower than that for smart meters (Rs 60 per month for 96 months). Additionally, BLE meters have the advantage of being readable from a distance of 30 meters, a feature not available with smart meters. However, the installation of BLE meters has been limited to the ordered quantity only. Further, As soon as the life of the BLE meters are over and outlived their life we will replace the same with smart meters at the later stage.

5) Accordingly, the Smart Meter Plan for new consumers has been made after accommodating the above commitment made by the Discom for BLE Meters. Based on the same, the plan for installation of Smart Meters is as given below:

Table 4: Plan of Smart Meters for New consumers

			Smart Meters against New Connection							
SL NO	**Meter Type**	**New Connection_ Annual**	**FY-26**	**FY-27**	**FY-28**	**FY-29**	**FY-30**	**FY-31**	**FY-32**	**Total**
1	Estimated Single Phase Connnections	80000	80000	80000	80000	80000	80000	80000	80000	560000
2	Less BLE Meters already committed		30000	30000						60000
3=1-2	**Single Phase**		**50000**	**50000**	**80000**	**80000**	**80000**	**80000**	**80000**	**500000**
4	Three Phase (WC)	12000	12000	12000	12000	12000	12000	12000	12000	84000
5	LTCT	600	600	600	600	600	600	600	600	4200
6	HT	400	400	400	400	400	400	400	400	2800
TOTAL		**93000**	**63000**	**63000**	**93000**	**93000**	**93000**	**93000**	**93000**	**591000**

b) <u>Proposal for BLE Meters</u>

6) As mentioned earlier, TPWODL has already made a commitment to the purchase of certain BLE meters which needs to be honored. The implementation of such BLE Meters whose order has been placed is planned as follows:

Table 5: Plan of BLE Meters for New consumers

Sr No	Meter Type	FY-26	FY-27	FY-28	FY-29	FY-30	FY-31	FY-32	Total
1	BLE Meters	30000	30000	0	0	0	0	0	60000

7) As installation of smart meters would be a challenge for the remote locations where the communication network is poor. For such consumer segments there

is a need for the installation of Static meter. Therefore, The Hon'ble Commission is requested to provide guidance in this regard.

c) Summary of Meter Installation Program

8) Based on the explanation provided above, the Meter Installation Program for TPWODL is as provided below:

Table 6: Meter Installation Plan (both Smart and BLE)

Sr No	Meter Type	FY-26	FY-27	FY-28	FY-29	FY-30	FY-31	FY-32	Total
A	**Smart Meters Replacment**								
1	Single Phase	250000	250000	250000	250000	250000	250000	186734	1686734
2	Three Phase (WC)	20000	37789	0	0	0	0	0	57789
5	***Total***	***270000***	***287789***	***250000***	***250000***	***250000***	***250000***	***186734***	***1744523***
B	**Smart Meters New Connection**								
6	Single Phase	50000	50000	80000	80000	80000	80000	80000	500000
7	Three Phase (WC)	12000	12000	12000	12000	12000	12000	12000	84000
8	LTCT	600	600	600	600	600	600	600	4200
9	HT	400	400	400	400	400	400	400	2800
10	***Total***	***63000***	***63000***	***93000***	***93000***	***93000***	***93000***	***93000***	***591000***
C=A+B	**Total Smart Meter Installation Plan**								
11	Single Phase	300000	300000	330000	330000	330000	330000	266734	2186734
12	Three Phase (WC)	32000	49789	12000	12000	12000	12000	12000	141789
13	LTCT	600	600	600	600	600	600	600	4200
14	HT	400	400	400	400	400	400	400	2800
15	***Total***	***333000***	***350789***	***343000***	***343000***	***343000***	***343000***	***279734***	***2335523***
D	**BLE Meters**								
16	Single Phase	30000	30000	0	0	0	0	0	60000
17	***Total***	***30000***	***30000***	***0***	***0***	***0***	***0***	***0***	***60000***

d) Price of Various types of Meters

9) The detailed breakup of the cost of various meters is summarized in the table appended below:

Table 7: Cost of Meters considered for Capital Investment Plan of Meters

SL NO	Meter Type	UoM	FY-26	FY-27	FY-28	FY-29	FY-30	FY-31	FY-32
A	**Replacement of Meters by Smart Meters**								
1	Single Phase	Rs/Meter	3993	3993	3993	3993	3993	3993	3993
2	Three Phase (WC)	Rs/Meter	7968	7968	7968	7968	7968	7968	7968
3	LTCT	Rs/Meter	8361	8361	8361	8361	8361	8361	8361
4	HT	Rs/Meter	31652	31652	31652	31652	31652	31652	31652
B	**New Connections by Smart Meters**								
1	Single Phase	Rs/Meter	3993	3993	3993	3993	3993	3993	3993
2	Three Phase (WC)	Rs/Meter	7968	7968	7968	7968	7968	7968	7968
3	LTCT	Rs/Meter	19261	19261	19261	19261	19261	19261	19261
4	HT	Rs/Meter	145321	145321	145321	145321	145321	145321	145321
B	**BLE Meters**								
1	Single Phase	Rs/Meter	1766	1766	1766	1766	1766	1766	1766

Note: As can be seen from the above table, there is a difference in the cost of LT CT Meters and HT Meters for replacement and such meters for new connections. The same is due to the cost of CT-PT units which would not be required to be changed when the meter is replaced. Further, the costs considered above

are purely based on the prevailing market rate & used for estimation purpose. The actual cost may vary DISCOM to DISCOM.

10) The detailed cost breakup of the various meters is provided in tables below:

Table 8: The detailed Cost breakup of Meter - New Connection

Sr No	Particulars	Units	Single Phase	Single Phase	Three Phase WC Meter	LT CT Meter	HT CT Meter
			1-5 KW	1-5 KW	> 5 KW		33KV
1	Type of Meter		Smart	BLE Meters	Smart	Smart	Smart
2	Meter Cost	Rs/Meter	3367	1140	6344	6160	9505
3	Meter& Box Installation cost (**including Meter/Box**)	Rs/Meter	608	608	1601	2147	22056
4	Meter Seals	Rs/Meter	18	18	22.7	54.48	90.8
5	Meter Box (LTCT(avg cost of 100/5, 200/5 & 400/5) & HT)	Rs/Meter				10900	1879
6	Metering Unit	Rs/Meter					108560
7	Control cable (HT Metering @10mtr per installation)	Rs/Meter					3230
8	Employee Costs capitalised	Rs/Meter	0	0	0	0	0
9	NB IoT Modem						
10:sum(1:9)	**Total cost of meter installation**	**Rs/Meter**	**3993**	**1766**	**7968**	**19261**	**145321**

Table 9: The detailed Cost breakup of Meter - Replacement

Sr No	Particulars	Units	Single Phase	Single Phase	Three Phase WC Meter	LT CT Meter	HT CT Meter
			1-5 KW	1-5 KW	> 5 KW		33KV
1	Type of Meter		Smart	BLE Meters	Smart	Smart	Smart
2	Meter Cost	Rs/Meter	3367	1140	6344	6160	9505
3	Meter& Box Installation cost (**including Meter/Box/MU Removal Costs**)	Rs/Meter	608	608	1601	2147	22056
4	Meter Seals	Rs/Meter	18	18	22.7	54.48	90.8
5	Meter Box (LTCT(avg cost of 100/5, 200/5 & 400/5) & HT)	Rs/Meter					
6	Metering Unit	Rs/Meter					
7	Control cable (HT Metering @10mtr per installation)	Rs/Meter					
8	Employee Costs capitalised	Rs/Meter	0	0	0	0	0
9:sum(1:8)	**Total cost of meter installation**	**Rs/Meter**	**3993**	**1766**	**7968**	**8361**	**31652**

e) Backend Infrastructure Cost (HES MDM System)

11) At present, Back End Infrastructure in terms of Head End System (HES) and Meter Data Management (MDM) System for Smart Meters is capable of handling only 4.24 Lakh Smart Meters as the same initially was not planned for incorporating implementation of single-phase Smart Meters. Considering the above addition planned (i.e. replacement of existing non smart meters with smart meters and smart meters for new connections), there would be a need for investing in Back End infrastructure

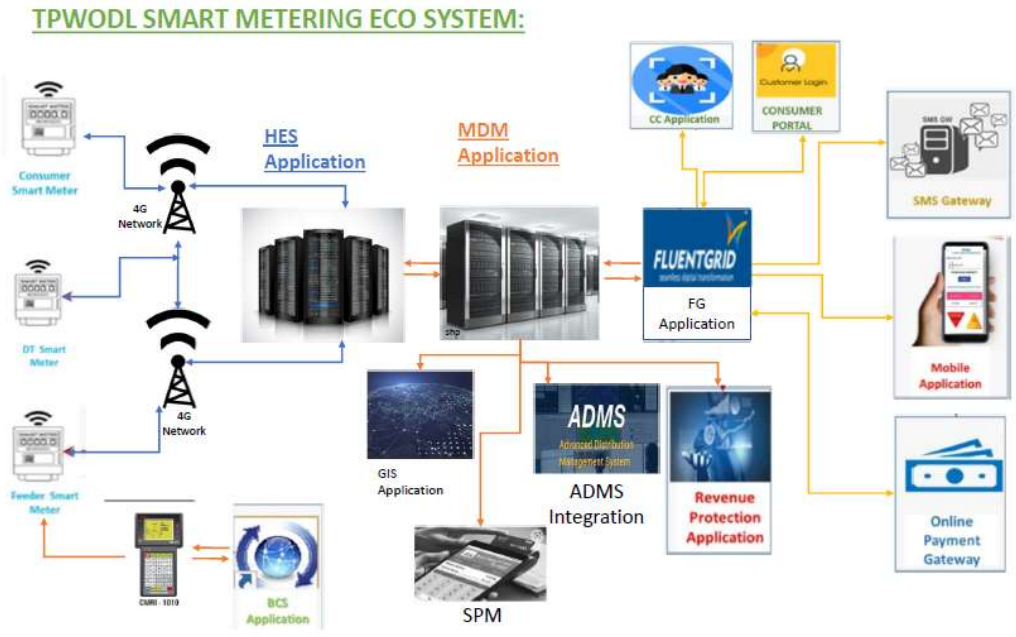
i. Head End System (HES)

- HES is required to acquire meter data automatically avoiding any human intervention and monitor parameters acquired form meters.
- HES has the capability to receive or pull all meter related data.
- The HES reports the real time data reading as stored in meter memory, consumption and events to the MDM system.

ii. Meter Data Management (MDM) software

- MDM is the central repository for all type of data from all consumer meters covered under AMI.
- The MDM system can maintain and process the repository of all meter data such as interval usage data, event logs, register data & outage history for all the connected meters.
- The system will also have a facility to upload meter data collected through MRIs.
- MDM system will be integrated with billing system and data analytic system and other IT/OT systems etc. to have full scale benefit of the MDMS.

The schematic of the HES and MDM is as shown below:



iii. Cost Breakup of Back End Infrastructure

- Based on the current estimate, the capital cost (per meter) for the backend infrastructure is provided in the table below:

Table 10: Backend Infrastructure Capital Investment Cost (Per Meter Cost)

SL No	DETAILS	UoM	Amount	Remark
1	MDM developmen & Application Licence	Rs/Meter	55.00	It includes strengthening
2	Streangthening IT Infratructure Setup for MDM, Smart Prepaid, Module and SMOC (Smart Metering Operation Centre)	Rs/Meter	35.00	It infrastructure of MDM & associated infra cost and integration of
3	G AMI	Rs/Meter	28.57	
4	ontigency (3%)	Rs/Meter	3.56	
	TOTAL	Rs/Meter	**122.13**	

Sr No	Particulars	Unit	Value
1	Smart Meters planned to be installed upto FY 31	No	2335523
2	Smart Meters already installed	No	341670
3	Total	No	2677193
	Less		
4	Present Back end System capacity	No	-425000
5	Additional Capacity Required	No	2252193

- Based on the above, the CAPEX towards backend infrastructure has been computed for after accounting for capacity for which backend infrastructure is already in place.

f) Capital Investment in Meters and Backend Infrastructure (HES MDM System)

12) The following table summarizes the quantum of Capital Investment in the Meters and Backend Infrastructure System.

Table 11: Capital Investment in Meters (Rs. Cr.)

in Rs. Crores

Sr No	Meter Type	FY-26	FY-27	FY-28	FY-29	FY-30	FY-31	FY-32	Total
1	Smart Meters Replacement	115.76	129.93	99.83	99.83	99.83	99.83	74.56	720
2	Smart Meters- New Connection	36.49	36.49	48.47	48.47	48.47	48.47	48.47	315
3	BLE Meters	5	5	0	0	0	0	0	11
4	HES & MDM	23.97	0	0	0	0	0	0	24
5	**Total**	**181.52**	**171.73**	**148.30**	**148.30**	**148.30**	**148.30**	**123.04**	**1069**

g) Un recovered cost in existing Installed Meters

13) TPWODL has made investments in the various years for meter installation and has recovered Meter Rent as per the rates approved in Tariff Orders. Once this proposed scheme (i.e. recovery of the meter cost through CAPEX route) is

approved, the meter rent for all consumers will be stopped. Hence, the unrecovered cost of exiting installed meters needs to be recovered.

14) The Hon'ble Commission may kindly allow recovery of unrecovered cost on existing installed meters in the retail supply tariff through appropriate mechanism.

8 Prayers

23. That, TPWODL prays that the Hon'ble Commission may kindly be pleased to:

a) Allow recovery of Meter Cost under Capex i.e. through Retail Supply Tariff instead of monthly Meter Rent.

b) Meter Rent may be abolished from the date of launch of this Scheme for all Consumers.

c) Allow the installation of Smart meters under the Capex route and approve the trajectory of Smart meter installation.

d) Allow the Capital Investment Plan for Smart Meter Installation (Hard Cost) for FY 2025-26 to FY 31-32

e) Allow Employee Cost and Interest during Construction based on actuals to be capitalized over and above the Capex (Hard Cost) for FY 2025-26.

f) Allow recovery of the unrecovered cost of existing meters in the Retail Supply Tariff so that the meter rent for all consumers can be stopped from the date of launch of this scheme.

g) Permit Carrying forward of the unspent Capital Expenditure to subsequent years.

h) The consequential impact of the above proposal may kindly be allowed as per the applicable Regulations.

i) Permit making additional submission required in this matter.

j) Grant any other relief as deemed fit and proper in the facts and circumstances of the case.

k) Any other direction as the Hon'ble Commission may think appropriate.

Date:

Place: Deponent