

Smart Meters: Potential to add ~Rs. 4.5 Lakh cr Cumulative Revenue for Discoms

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Synopsis

- On an aggregate basis, the Aggregate Technical & Commercial (AT&C) loss of power distribution companies (discoms) has steadily declined from 20.73% in FY20 to 16.4% in FY22 and further to 15.4% in FY23. This is largely aided by an improvement in collection efficiency. CareEdge Ratings expects a gradual uptick in billing efficiency led by increased rollout of meter installations, which in turn shall bring down the aggregate AT&C loss to low teens in 3-4 years. However, other key components like timely tariff hikes as well as subsidy collections will remain crucial to ensure that discoms become self-sufficient.
- The smart meter installation pace- only, ~97 lakh installations till February 29, 2024, has been slow. While it is likely to gain rapid pace during CY24 and CY25, CareEdge Ratings expects the installation to be in the range of 40%-50% of the targeted 25 crore smart meters by December 2025.
- The structure of a Direct Debit Facility (DDF) covering counterparty credit risk, and front-ended cash construction support from the discoms reduces leverage and funding risk. These factors are likely to result in, attractive returns for service providers and thus result in interest from prospective developers/investors in the Advance Metering Infrastructure (AMI) space.
- The envisaged investment outlay for the installation of 25 crore smart meters is ~Rs. 1.1 lakh crore necessitating debt of ~Rs. 76,000 crore. The returns to discoms would be in the form of reduced losses and improved billing efficiency by the installation of meters. CareEdge Ratings estimates that AMIs are likely to provide additional cumulative revenue potential of around ~Rs. 4.5 lakh crore in the next 7 years i.e. FY24-31 for the discoms.

Policy push and adequate supply chain will be important for quick ramp-up of meter installation

There have been multiple schemes from the Ministry of Power (MoP) to promote the installation of smart meters such as the DeenDayal Upadhyay Gram Jyoti Yojana and Integrated Power Development Scheme. However, with the introduction of the Revamped Distribution Sector Scheme (RDSS) at an outlay of Rs. 3.03 lakh crore including gross budgetary support (GBS) of ~ Rs 97,000 crore during the FY22-FY26 period, the power distribution sector got a major push in terms of reduction of overall losses. Smart metering forms an integral part of RDSS. As on December 31, 2023, MoP had approved Rs. 1.2 lakh crore for loss reduction and Rs. 1.3 lakh crore towards smart metering. GBS for smart metering is estimated at Rs. 24,000 crore.

Exhibit-1: Sanctioned meters and GBS share

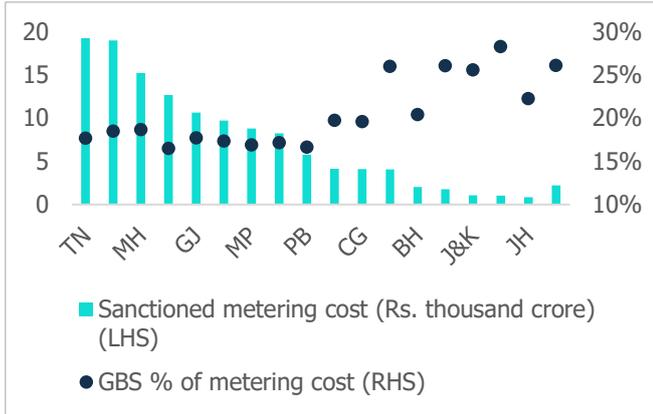
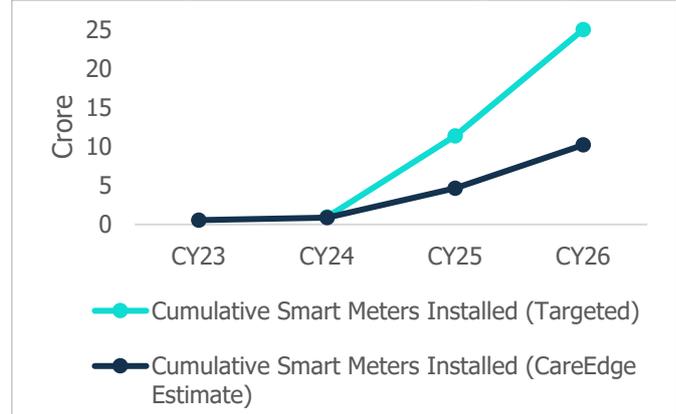


Exhibit-2: Expected installation trajectory



Source: NSGM, PIB, CareEdge Ratings

The discoms of Tamil Nadu, Uttar Pradesh, Maharashtra, West Bengal, Gujarat, Rajasthan, and Madhya Pradesh are some of the largest beneficiaries under this scheme evidenced by the quantum of sanctioned cost of metering, as shown in Exhibit 1. Roughly 18% of the meter cost is expected to be funded through GBS. As the implementation progress has been low, the GBS disbursed till Nov'23 was less than Rs. 6,000 crore. GBS provides support to the implementing agency through partial reimbursement of capex towards the early stage of the project life and hence is a key component in the scheme. As per the National Smart Grid Mission (NSGM), of the 11.29 crore smart meters awarded as on February 29, 2024, only 97.20 lakh meters have been installed.

The smart meter manufacturing capacity in India stands at ~ 7 crore units per annum, which is dominated by a few large players. which are operating at 65%-70% capacity utilization, as against the cumulative requirement of 25 crore smart meters. Semiconductor chips are a critical component of smart meters, and its seamless imports is a precursor to removing any supply bottlenecks to the sector. While the pace of installation is likely to pick up in next two years with an expected ramp-up in sanction/awarding as well as higher utilization of smart meter manufacturing capacity, CareEdge expects the installation to be in the range of 40%-50% of the target by December 2025.

Focus on states with high AT&C to play a crucial role in achieving desired results

The viability of the smart meter implementation project is closely linked to the average monthly billing to the consumer and prevailing AT&C loss. Thus, there exists the potential for the discoms to unlock value through smart meter installation in the high AT&C loss area. However, the installation of smart meters for consumers having very low average energy consumption may not yield significant benefits.

Exhibit-3 indicates the number of meters to be installed as well as the installation progress in 13 states which will account for ~21 crore installation. The high AT&C states have made marginally higher progress in terms of installation. Substantial progress i.e. above 80% in these states will have a major positive delta in the overall AT&C loss of the country.

Moreover, the gradual installation of meters is expected to provide a sizeable additional revenue benefit to the discoms. Assuming steady growth in input energy of around ~6% with improvement annual improvement in AT&C loss by 1% due to smart meter installation, CareEdge estimates the cumulative additional revenue potential of discoms to be ~Rs. 4.5 lakh crore in the next 7 years.

Exhibit-3: State wise installation status

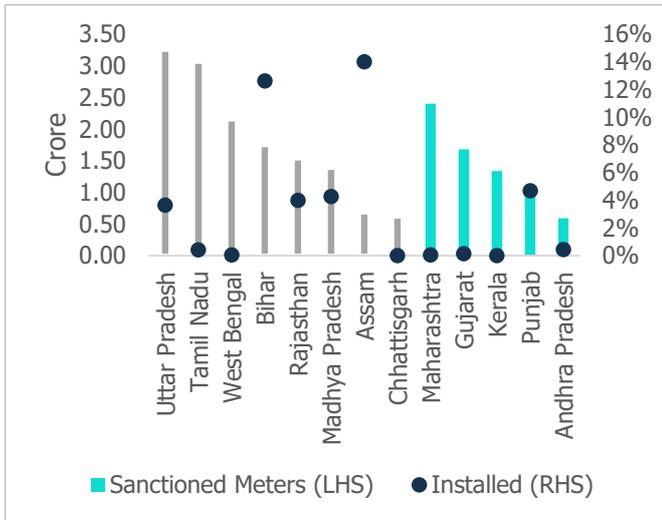
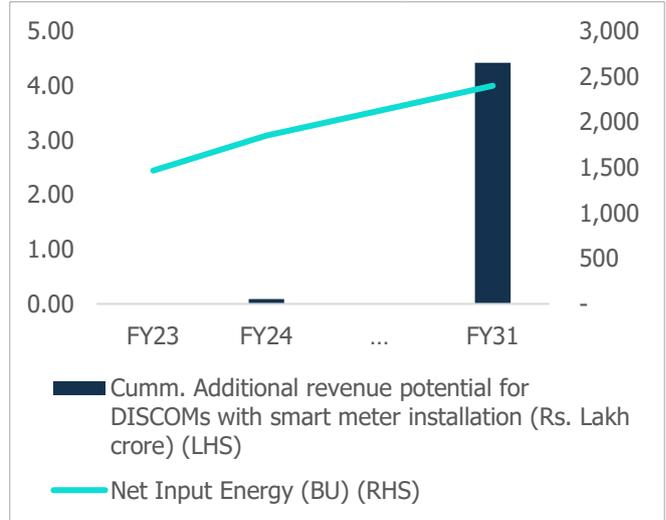


Exhibit-4: Additional revenue potential



Source: NSGM, PIB, CareEdge Analysis

Low and inconsistent digital penetration may temper effectiveness of DDF

The requirement of 5x cover in the DDF float balance provides very strong structural protection in terms of the monthly payment to the Advanced Metering Infrastructure Service Provider (AMISP). However, it remains to be seen whether the discoms with low digital collections can maintain such cover. The digital collection in India has rapidly grown from 27% in FY21 to 38% in FY23, albeit still low. While there are many discoms which have clocked high digital collection i.e. above 50% in FY23, there are many lagging discoms as well where the digital collection is yet to cross 25% of the total. Thus, the DDF pool and collection pattern may vary amongst states where digital collection is low.

Exhibit-5: Leading DISCOMs (Digital Collection)

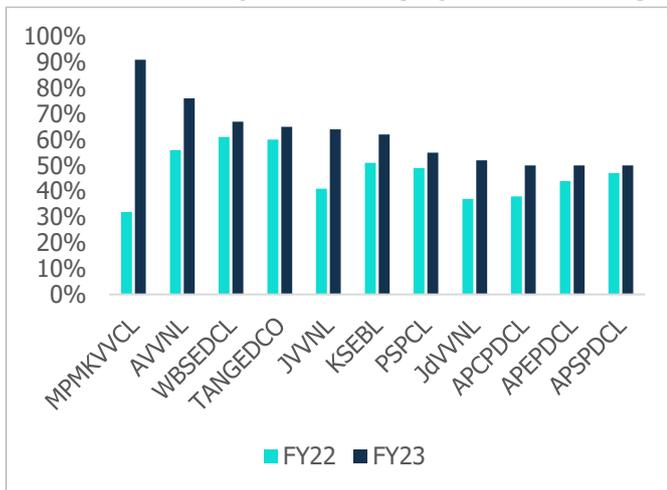


Exhibit-6: Lagging DISCOMs (Digital Collection)



Source: REC, CareEdge Ratings

Comfortable coverage metrics and strong payment mechanism to raise interest in the AMI segment

AMI model entails an inherently low leverage structure on account of cash construction support in the form of lump sum payment, which renders the coverage metrics comfortable. CareEdge Ratings has plotted the average debt service coverage ratio (DSCR) for an AMISP project. Assuming capital expenditure of Rs. 560 crore for installation of 10 lakh meters while receiving a monthly charge of Rs. 65/meter (exclusive of GST), the DSCR is likely to be

around 1.3x. In a scenario with higher interest cost and marginal cost overrun, CareEdge Ratings expects the DSCR levels to be comfortable. The space is expected to attract significant developer participation in the near to medium term owing to strong revenue visibility, lower investment horizon, the onset of cash inflows upon achievement of about 5% installation and the presence of a payment security mechanism.

Exhibit-7: Assumptions

Project Cost	Rs. Crore	Means of Finance	Rs. Crore
AMI Equipment Cost	382	Equity	112
Cable Cost	36	Lumpsum	84
System Integration Cost	6	Debt	364
Meter Installation Cost	76		
Contingencies	25		
IDC	35		
Total	560	Total	560

Project Cost	Number of Meters	Monthly Charge*	Lumpsum Payment*
1P Smart Meter	9,20,659	63	740
3P Smart Meter	29,919	86	
3P HT Smart Meter	3,308	280	
3P HT Smart Meter	376	307	
DT Meter	45,528	321	2,830
3P Feeder meter	209	281	5,170
Total Meters	10,00,000	65	

*Exclusive of GST

Exhibit-8: Scenario Analysis

Particulars	Base Case	Scenario 1	Scenario 2
Interest Rate (%)	9.50	10.00	10.50
Cost Overrun	-	105%	110%
O&M Expenses	HR – Rs.8/meter/month Admin & Misc. – Rs. 6.25 crore	103%	106%
Average DSCR (x)	1.30	1.24	1.20x

Source: CareEdge Ratings Analysis

CareEdge Ratings View

“It is very clear that smart meters have significant revenue potential for discoms which have been otherwise bleeding in the past due to inadequate billing. There is governmental impetus to drive the rollout quickly through financial support so that the power distribution sector makes a turnaround operationally. However, the implementation pace of smart metering sector has remained sluggish in last 1-2 years. The standard bidding document (SBD) prepared by NSGM for AMISP is adequately structured to safeguard the interest of both the AMISP as well as discoms thereby providing level playing field pan-India. The surprises during construction which may have significant impact on the project economics, have not fully emerged. Moreover, once the projects are operational, it will be interesting to observe to what extent is the counterparty credit risk mitigated for the AMISP. While smart metering may not be the panacea for discoms, it has the potential to cure the operational inefficiencies to a large extent.”, said Sabyasachi Majumdar, Senior Director, CareEdge Ratings.

Contact

Rajashree Murkute	Senior Director	Rajashree.Murkute@careedge.in	+91 - 22 - 6837 4474
Sabyasachi Majumdar	Senior Director	Sabyasachi.Majumdar@careedge.in	+91 - 12 - 0445 2006
Agnimitra Kar	Associate Director	Agnimitra.Kar@careedge.in	+91 - 12 - 0445 2019
Yogesh Rochani	Lead Analyst	Yogesh.Rochani@careedge.in	+91 - 12 - 0445 2041
Mradul Mishra	Media Relations	mradul.mishra@careedge.in	+91 - 22 - 6754 3596

CARE Ratings Limited

Corporate Office: 4th Floor, Godrej Coliseum, Somaiya Hospital Road, Off Eastern Express Highway, Sion (East), Mumbai - 400 022
Phone : +91 - 22 - 6754 3456 | CIN: L67190MH1993PLC071691

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Locations: Ahmedabad | Andheri-Mumbai | Bengaluru | Chennai | Coimbatore | Hyderabad | Kolkata | Noida | Pune

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