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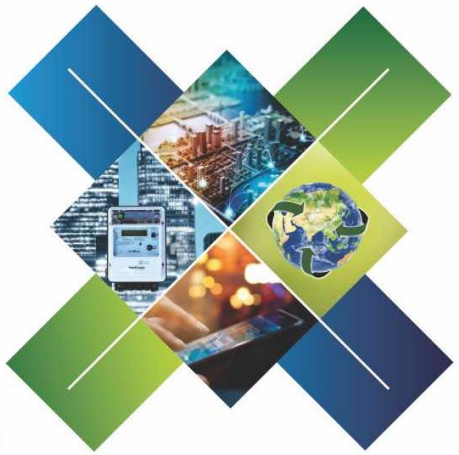
RDSS SMART METER PROGRAM: ADDRESSING THE VALUE-CHAIN ISSUES

Smart Metering Program – A massive digitalization and Socio-Economic Transformation opportunity



- The largest digitalisation program of the world touching more than a billion people at the household level
- Would have far reaching impacts on improving the systemic efficiencies of Discom as well as empowering consumers.
- Would save about USD 1.34 Trillion of losses to the utilities in next 10 years
- Potential to generate 250 Mn jobs in skilled and semi-skilled categories and trigger an investment cycle of more than USD 38.5 Billion
- Revitalise industry and ‘Make in India’ in manufacturing
- Integration of Renewables to grid
- Critical for EV rollout mission
- Have power to write the first script of consumer voice in the grid

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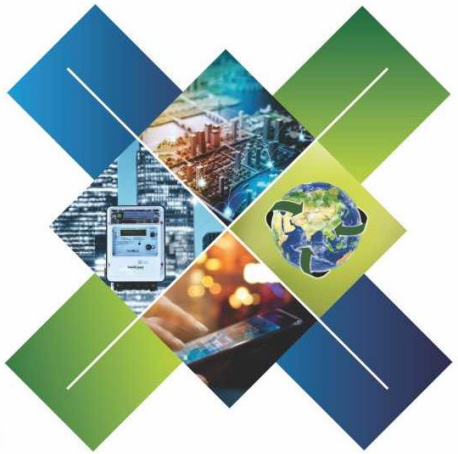
RDSS Smart Meter Tender Status



- So far, 220 Mn Smart Meters sanctioned and tenders for 190 Mn floated
- Tenders awarded so far for 106 Mn smart meters
- Bids for 17 Mn Smart Meters and are under evaluation

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SMART METER IMPLEMENTATION: CONCERNS & CHALLENGES

Discom Ownership

- Discom's current emphasis is on owning the contract and not co-owning the project execution
- A shift in mindset required to co-own the project and support rollout

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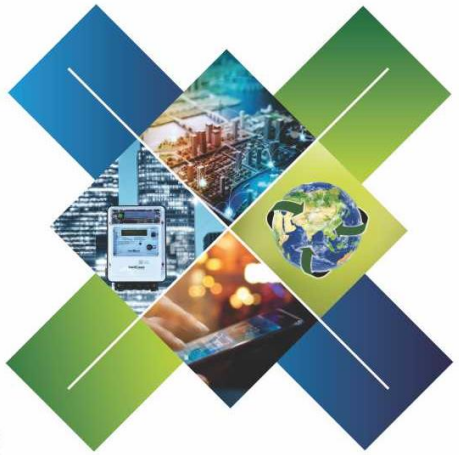
Micro-Specifications & Low Scope of Innovation



- Project implementation scope is overly regulated with minute specifications for every aspect of smart metering solutions
- Approach to project continues to bear an EPC mindset
- Micro specifications for every small component of the value chain like meter seals, meter design, meter rating plate, Current Transformer, metering unit rating, cables, etc.
- Discoms are inflexible to follow system meter installation process as per RFP, insisting on following conventional approach
- Ask for specific parameters for Guaranteed Technical Parameters (GTP) approval beyond SBD and even IS standards
- Testing meter prototype before manufacturing which is beyond the requirement of RFP as well as SBD
- Additional ask of Proof of Concepts along with the approval of smart meter GTP

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Overbearance of Smart Meter Testing

- SBD gives utilities the right to carry out meter accuracy tests with suggested sample size of 5% which can be modified by individual Discoms as per their discretion leading to some Discoms requiring 100% accuracy testing
- While the BIS certification is mandatory, Currently, smart meters are type tested at several checkpoints.
- Excessive additional testing by utilities to lead to redundancy & delay in project execution
- SBD needs to either do away with the additional testing provision or provide firm sample size

Installation Aspect of Feeder & DT Meters

- As per SBD, smart meter projects require 100% installation of feeder meters in 9 months including back-end integration and Digital Inputs (DI)
- In both Feeder and DT meters, DI is not as per standard designs and practices and requires additional hardware efforts by way of hardware development and mechanical designs and their compliances.
- The timeline stringency in view of the scale of the programme should be revisited by the Government to ensure its success

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Billing & Collection System Efficiency

- Discom’s current billing and collection system is archaic with weak data management capacity.
- Discoms should focus on holistic upgradation of the billing and collection system to be able to manage the large cache of data that smart meters will generate

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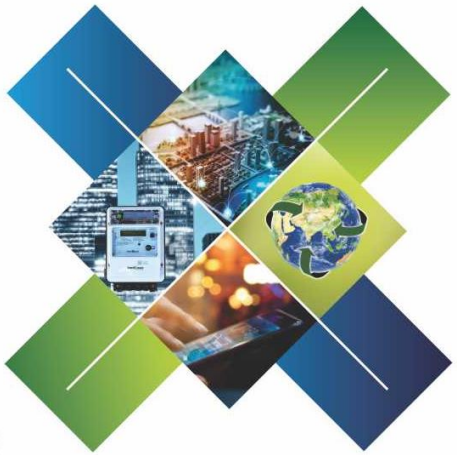
Consumer Engagement

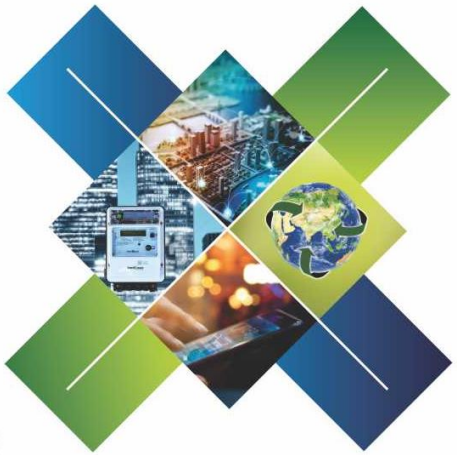


- A holistic shift in intent and approach required among Discoms and AMISPs to make the smart meter program a ‘pull effect’ phenomenon instead of a ‘push effect’ one
- Tender documents should specify the level of consumer engagement requirements; enumerate AMISP and Discom responsibilities in details

Communication Bottlenecks

- Negligible option to support fall back of 4G communication in areas with inadequate network coverage, as 3G is already obsolete and 2G operating at minimalistic level.
- Reliability on RF for communicating large amount of data continues to be an issue

Workforce Skilling



- For sustaining backend infrastructure of 250 Mn smart meters, the industry will require 100,000 skilled resources on regular basis for at least 3 years.
- Currently, projects are being implemented by creating digital silos as tendency is to come out with small projects. For 250 Mn smart metering program there could be as high as 250 separate projects in the country at an average of 1 Mn meters per project.
    - Digitalization only holds value at scale and creating so many projects leads to digital silos. Would require huge quantum of highly skilled resources to handle these projects.
    - The consideration should be to create a single digital pool to harbor 500 projects to achieve economies of scale and make the program productive

There is a need to build a skilling ecosystem to make provision for the humungous employment need of the industry and support the job creation capability of the smart metering program

Data Privacy & Data Analytics

- Gaining momentum of smart metering program necessitates deeper approach to cyber security; requires mandating of cyber security regulations
- Smart meter AMI system throws humongous quantum of data, required to be analysed and used fruitfully – needs a deeper program around it.

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Prospect: Digitalisation of Power Distribution

- Smart meter AMI enable AMISPs to extend a bouquet of Value-Added Services (VAS) to Discoms to boost their financial & operational efficiencies.
- The government should develop a supportive policy to help AMISPs explore the potential of AI/ML-based data analytics services
- Data analytics services will enable Discoms to create Demand Response programs to improve consumer experience and create new revenue streams
- Smart metering can enhance the industry to unlock Distributed Energy Resources (DER) programs and create new opportunities to ramp up financial position
- Smart meter data is crucial for the success of establishment of a viable P2P trading platform to make micro grids a success and further support RE integration in the grid

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THANK YOU

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