

Smart Metering What's the deal?

Presented by Michael J Rhode

Knysna Municipality, AMEU, SARPA

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Conclusion



"Smart Metering in an AMI system is the best technology for prompt and cost effective Revenue Protection out there today!" - Michael J Rhode, SARPA President

World bank findings



"Utilities around the world are increasingly combatting electricity theft through the use of Smart Metering...

...In an area in North Delhi losses was reduced from 53% to 15% within 5 years as a consequence of the roll out of Smart Meters...

...In another example in the Dominican Republic one utilities' investment in Smart Metering was repaid in seven months" – Pedro Antmann, World Bank

Problem statement



"High electricity losses cripple a utility's ability to properly invest in its system and provide stable service", Bob Gohn, Pike Research

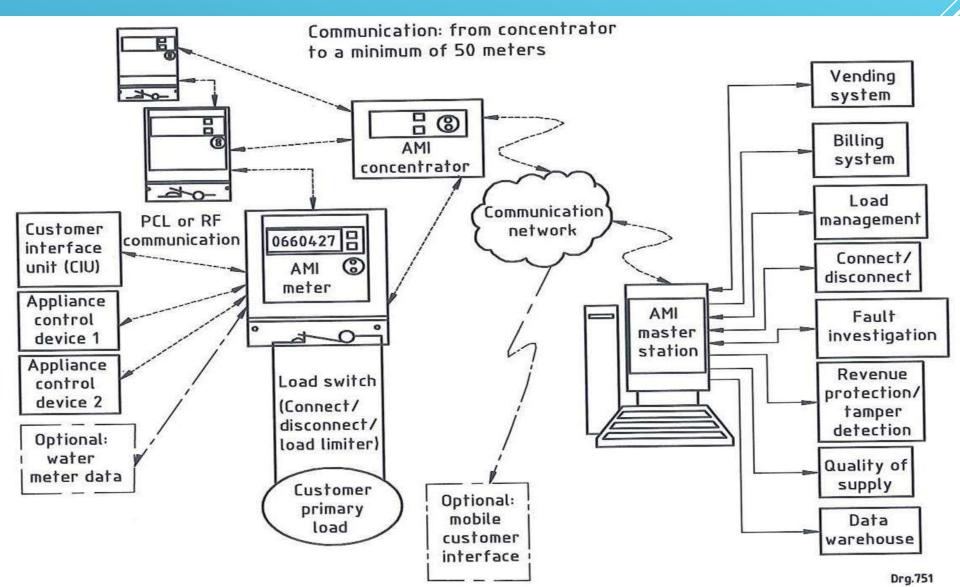
What is a Smart Meter?



- Defined in GN 773 to the ERA, 2006 as a meter that allows for;
 - a) TOU energy measurement
 - b) Two way communication
 - c) Storage of data and transfer it remotely
 - d) Remote load management
- All customers consuming in access of 1000kWh/month
- NRS 049 specifies the smart meter

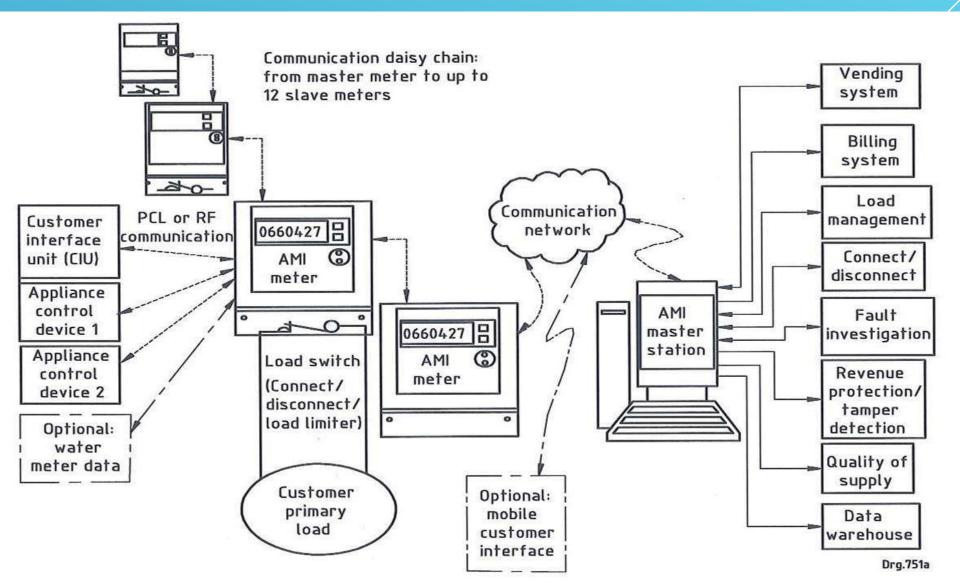
Smart meter configuration 1





Smart meter configuration 2

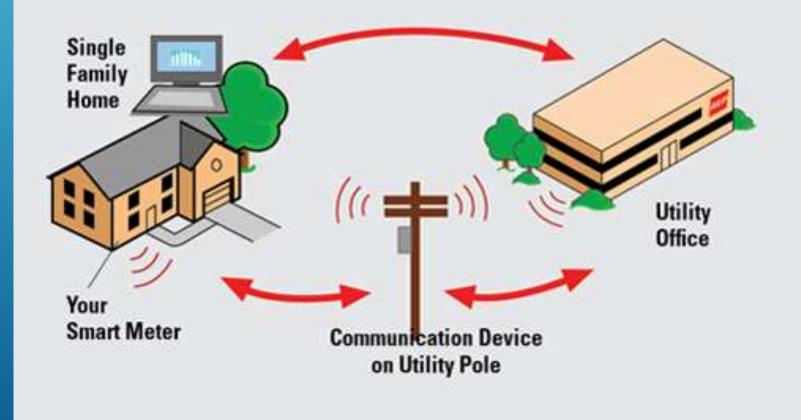




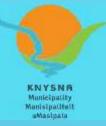
Smart meter view



How Smart Meters Work



Revenue Protection benefits



- Split meter technology @
 - meter remote from customer
 - can be made relatively secure
 - saves on multiple visits to meter

Revenue Protection benefits



- Immediate detection of meter tampering @
 - saves on meter auditing costs
 - saves on fuel, perhaps even fleet, costs,
 - reduce carbon emissions
 - avoids prolonged undetected tampering
 - saves on lengthy back office investigations
 - continuous monitoring

Revenue Protection benefits



- Speedy detection of usage pattern changes /
 - saves on meter auditing costs
 - saves on fuel costs
 - reduce carbon emissions
 - avoids prolonged undetected bypassing
 - to the minute calculation of stolen energy
 - continuous monitoring



- No more manual meter reading @
 - save on meter reader staffing costs
 - save on fleet costs
 - reduce carbon emissions
 - reduce fraudulent collusion with staff



- No more manual dis- & reconnections @
 - saves on technical staffing costs
 - saves on fleet costs
 - reduce carbon emissions
 - immediate & effective action
 - continuous monitoring



Enhance customer service ©

- provides real time energy usage information
- provides real time energy cost
- automated & accurate bills
- reduce customer irritation wrt estimates
- facilitate use of Intelligent Appliances
- potential reduction in advertising costs

Customer interface units









Typical bill







- Encourages TOU & Demand response @
 - relieves pressure on national grid
 - reduce revenue (typically 33c for each */ Wh)
 - reduce bulk purchases



- Facilitates small scale generation @
 - reduce carbon footprint
 - possible network implications
 - reduce revenue (typically 33c in each (Wh)
 - reduce bulk purchases



- Immediate detection of power outages

- reduce outage response times
- enhance customer satisfaction



- Provides a conduit for other services
 - can capture water and gas readings
 - Make readings available in real time

Observations



- Smart metering is the LAW!
- Not for ALL customer categories
- Can be used in post or pre payment/mode
- Had reduced in price (R700k to R/2/200)
- The key functionality is two-way/comms
- AMR vs AMI systems
- Choosing the right comms/médium is key
- Tariffs for TOU to be designed properly
- Data privacy
- Health issues?
- Cyber security?

Closing remarks



"As a foundational component of the grid smart meter adoption is not optional; it is inevitable" – Matthew Spaur, Itron Washington

"AMI provides powerful tools to reduce total losses and increase collection rates"-Pedro Antmann, World Bank

Thank you



QUESTIONS/COMMENTS