

PCMA

POWER-C METERING AFRICA

REVENUE
ENHANCEMENT
SYSTEM: IN
SMART GRID
NETWORK FOR
IMPROVED REVENUE
SECURITIZATION



Agenda

Challenges for Utilities

Benefits of Smart Grid

Success Stories

Workforce Automation

Outage Management

Mobile Money

Demand Side Management

Smart Metering

Micro Grid

Loss Reduction

STS Vending management

Asset Management



Challenges for Utilities

- Funding to implement revenue enhancements projects
- Reliable communications to each customer meter
- Tariff structures - Time of Use (TOU), block/step tariffs assigned to individual customer
- Enhance Revenues - Reduce tampering
- Protect network assets in overload situations
- Selectively reduce load during peak demand
- Support smart grid applications as Outages, Collection, and more...
- Reduce customer service calls and disputes
- Flexibility to remotely switch meters between post and prepayment
- Interoperability and Flexibility

Utilities which purchased **hundreds of thousands** of cheap prepayment meters found that they failed to provide enhancement of revenue, and therefore have left a substantial stock of meters in their warehouse.

Project Financing

- Many municipalities face a prohibitive financial scenario, imposing significant challenges to the development of infrastructure projects.
- Support of Private Sector Partners may be needed to implement smart grid programs.
- A full vendor financed project model leverages the knowledge gained from experience in similar projects, which have demonstrated the significant underlying value which can be realized to all parties.
- The relatively large initial investment of a smart meter solution, compared to that of an outdated simple prepayment system, is minuscule to the savings that will be realized in the short and long term.

Municipalities can benefit from an immediate improvement in cash flow, from the first meter that is installed, without any capital outlay.

Customer Engagement Empowering Consumers

Smart Phone App



- Configure automatic alerts – Email or SMS, triggered when user specified events occur or alerts from the utility (planned power outages).
- News from the utility.
- Consumption and cost data (in user selected intervals and a variety of forms including export); compare consumption to prior periods and against comparable consumers; forecasted monthly cost.
- Tariff prices.
- Net metering (consumer generated energy) information.
- Online bills.
- Purchase credit.

Community Engagement

- Communication of benefits
- Community consultation
- Empowering local community

Energy Fraud Management Loss Analysis



1000 KwH

Date	Master [KWh]	Master Meter Count [#]	Slave [KWh]	Slave Meter Count [#]	Lost [KWh]	Percent [%]	UnRead Master Meters [#]	UnRead Slave Meters [#]
4/21/2018 12:00:00 AM	1214	1(0)	1175.11	76(0)	38.89	3.203	0	0
4/22/2018 12:00:00 AM	1305	1(0)	1271.36	76(0)	33.64	2.578	0	0
4/23/2018 12:00:00 AM	1110	1(0)	1075.93	76(0)	34.07	3.069	0	0
4/24/2018 12:00:00 AM	1096	1(0)	1061.39	76(0)	34.61	3.158	0	0
4/25/2018 12:00:00 AM	1099	1(0)	1064	76(0)	35	3.185	0	0



Concentrator
And Master
Meter



100 KwH



130 KwH



220 KwH



190 KwH



160 KwH

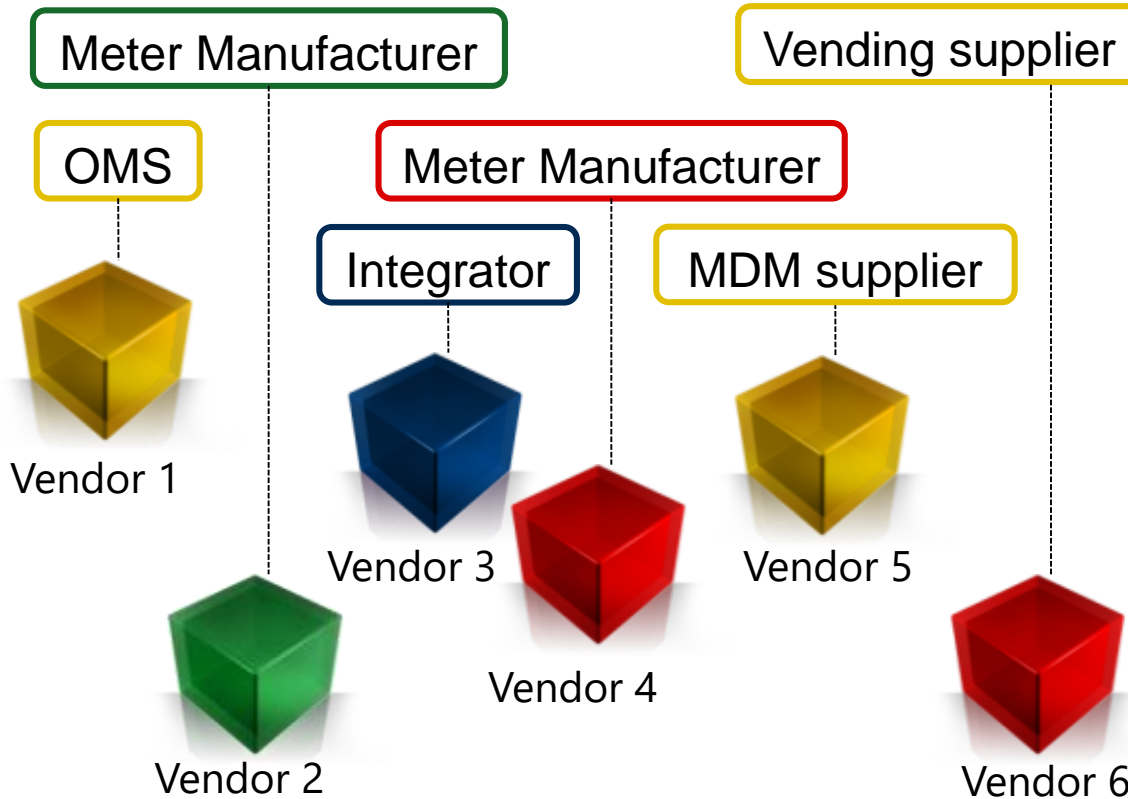
Total Loss of
200 KwH

=

Total of 800
KwH

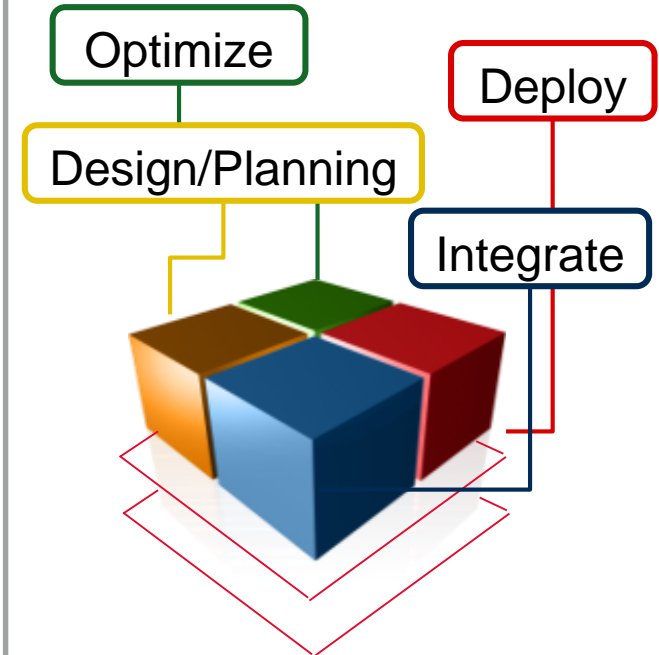
End to End Solution

Dependency on Many Vendors



- Responsibility issues
- Time to completion
- Additional cost

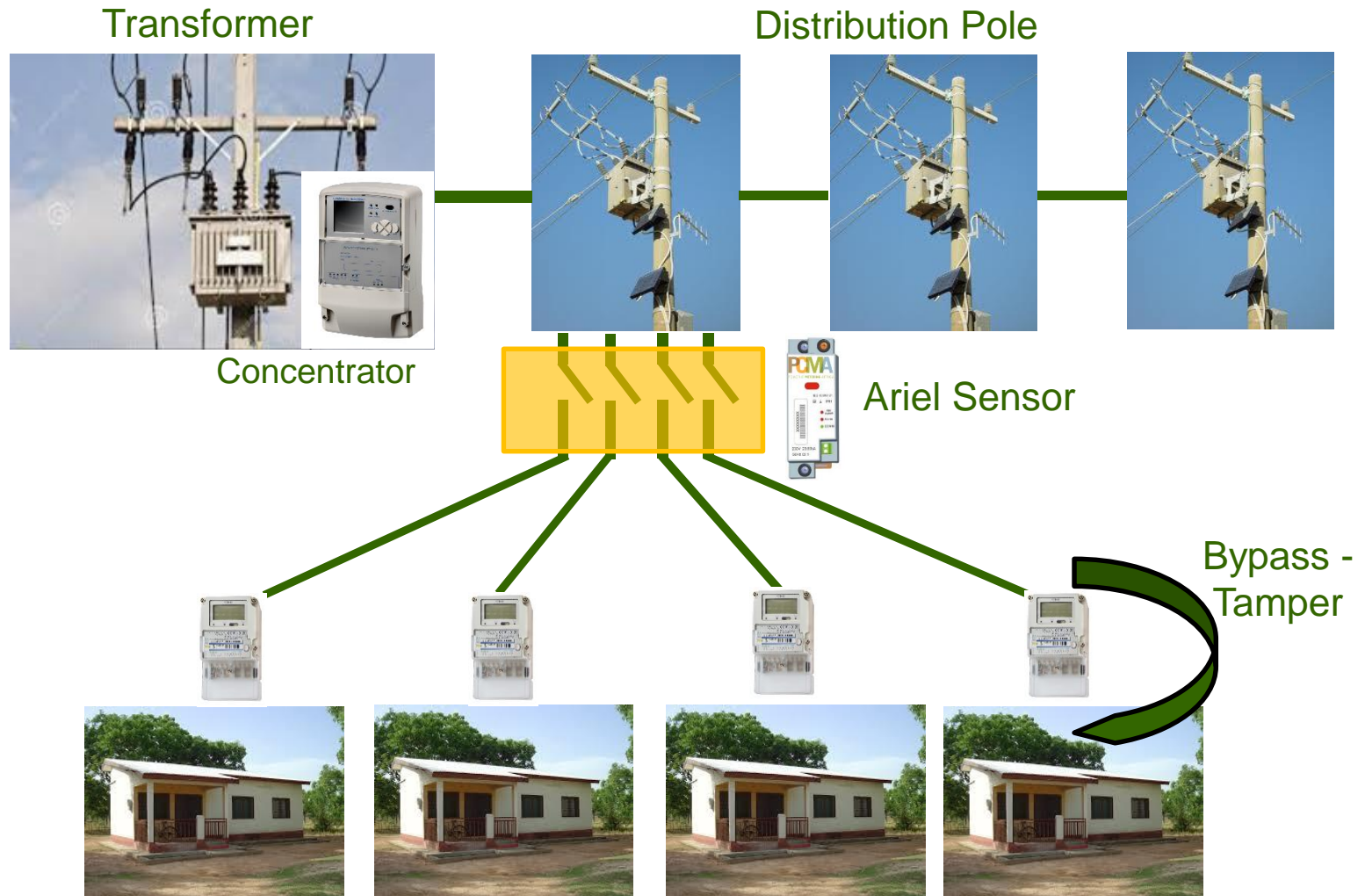
End-to-end, turn-key



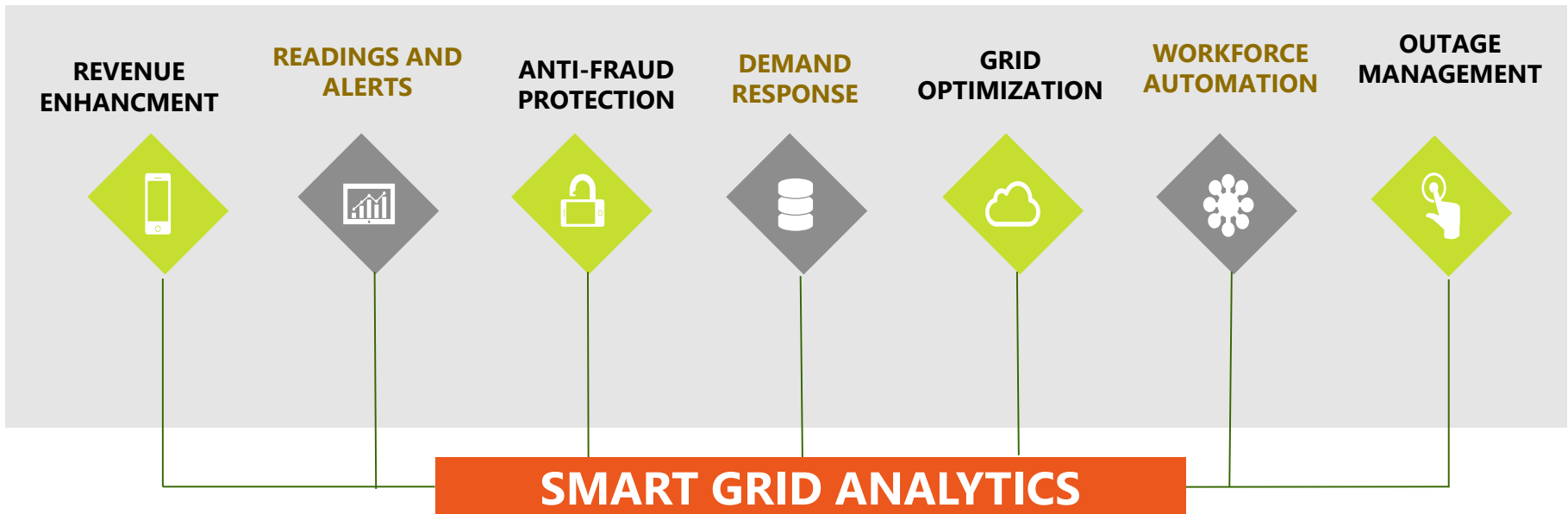
End-to-End Advantage

- Single vendor
- Seamless delivery
- Bound by SLA
- Option – fully funded

Extended Fraud Management Enforcement Unit



Analytics Suite of Applications



Success Story

Jerusalem District Electric Co. (JDECO)



Utility Profile

- Providing electricity for more than 280,000 customers in West Bank

Challenges

- Simple prepayment used to increase collection, however tampering was still high.

Solution

- Smart meters using Dynamic PLC technology;
- Meter data management (MDM); and
- Integration with billing software

Benefits

- Non- technical losses reduced from 65% to 8.8%.

Loss Reduction



Success Story

Tripura State Electricity Corporation



Utility Profile

- State Power utility in the state of Tripura, India with 1M customers.

Challenges

- High non-technical losses
- Poor experience with simple prepaid meters

Solution

- Meter Data Management System.
- Smart Meters with Dynamic Power Line Communications.
- Loss Analysis and tamper detection.



Benefits

- Commercial losses were brought down by 25% by monitoring the data continuously and identifying the pilferage areas.

Success Story

Thabazimbi Local Municipality



Challenges

- Previously billing only 36.33% of the potential revenue.

Solution

- Full smart platform involving all consumers, with: Smart meters; Meter Data Management System (MDMS); Vending Management System (VMS), Outage Management System (OMS), Asset Management System (AMS).

Benefits

- Collections have increased to 90% plus - three times the amount compared to prior project implementation.
- Eskom has ceased load shedding owing to non-payment.

Success Story

Mogale City



Challenges

- The municipality could not collect revenue due to tampering and it was impossible to properly meter and read electricity consumption.

Solution

- Smart grid platform using meters, communication and Meter data management (MDM).
- Installation of Smart meters, MDMS and VMS to municipal customers.

Benefits

- Residents who never paid for electricity in the past are paying diligently and without complaint. The fact that the consumption data is accurate and that the system is online 24/7, is conducive to fostering a payment culture.
- The municipality is enforcing payment of rates and taxes, with remote disconnections.

Success Story

City of Johannesburg



Challenges

- Revenue Enhancement. Low income customers with high unpaid bills. Embarked on a search for a transparent and scalable solution to control utility services by upgrading the metering infrastructure. Reviewed many service providers and manufacturers over many months, and many were found lacking.

Solution

- Fully integrated smart metering solution, with web-based access; 100% collection of revenue; user friendly and powerful real time reporting; diagnosis and data retrieval remotely; high degree of security; and load management.

Success Story

Uganda Electricity Distribution Company (UEDCL)

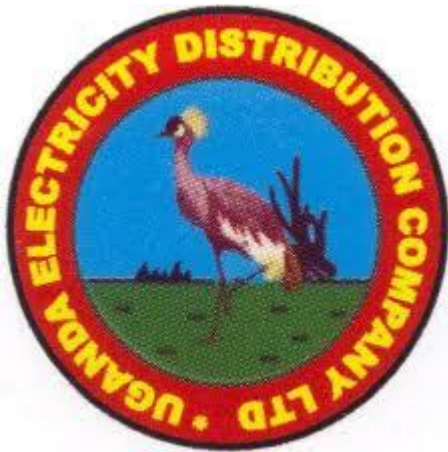


Utility Profile

- Privatized utility in Uganda
- 100,000 customers

Challenges

- High non-technical losses
- Poor experience with simple prepaid meters- unmeasured consumption



Solution

- Smart meters (PLC and GPRS); keypads
- Meter Data Management
- Mobile Money and POS Vending
- Integration with billing software

Benefits

- Plug & play installation
- Significant improvement in collections

Closing Summary

- Comprehensive, end-to-end solution
- Accurate data in real-time- elimination of estimates
- Rapid response to unauthorized usage- Energy balancing.
- Service model approach- ongoing knowledge transfer to Municipality officials
- Pre-Project Community education & participation- to avoid resistance during implementation

Capitalize on
proven experience
and latest smart
grid innovations



For further Information, please contact:

Clifford Ntshudisane

Chief Commercial Officer

Mobile: +27 82 308 7021

Skype: cclifford628

Email: clifford@pcma.co.za

Telephone: +27-11-887-5698

Fax: +27-11-440-4715

Office Address: 4 Campbell Street,
Waverley, Johannesburg

Website: www.pcma.co.za

Smart Grid For a Smarter World