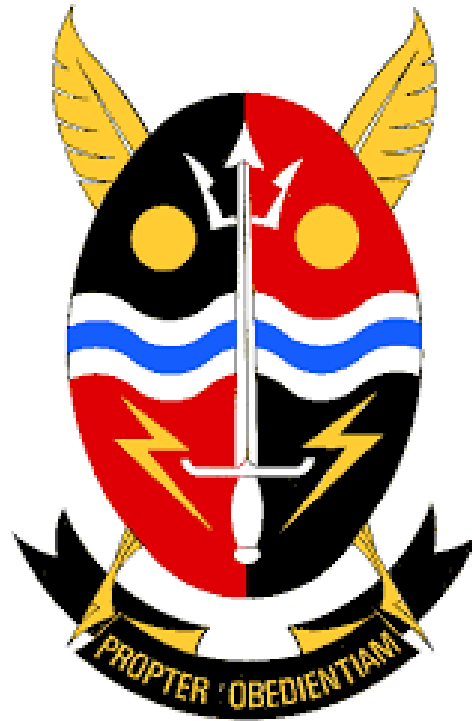




Smart Metering AMI Program - AFRICA

Advanced Revenue Program: Large Power Users

August, 2017

Abstract.....

Case Study: Prepayment, the bigger picture for a Smart Metering Program

- This presentation leads into the topic of “Advanced Revenue: Large Power Users” in a Smart Meter AMI Program.
- 1. What is the benefit of prepaid to the Bulk and LPU C&I consumers?
- 2. How does a Utility introduce complex electricity tariffs into LPU prepaid such as:
 - Linear
 - Tiered
 - Max Demand
 - Above linked to Time of Use (TOU) etc
- 3. How does a Utility manage the transition from “post-paid” to “prepaid” using a “Smart Metering AMI Advanced Revenue Program”?
- 4. How does a Utility managed “Disconnects | Reconnects” for LPU’s?

What the benefit is of prepaid to the consumer?

Large | Medium Power Users (LPU | MPU)

Large | Medium Power Users (LPU | MPU).

LPU	MPU
Multiple meters per account	Multiple meters per account
High Accuracy meters: (typically 0.2 and 0.2S three phase CT meters)	High and Medium Accuracy meters: (typically 0.5 to 1.0 three phase CT or DC meters)
Positive Cash Flow – typically minus 15 debtor days due to prepayment	Positive Cash Flow – typically minus 15 debtor days due to prepayment
Data is instant – not waiting for 30 – 60 days for bill to arrive with post-consumption meter data	Data is instant – not waiting for 30 – 60 days for bill to arrive with post-consumption meter data
Real time account reconciliation	Real time account reconciliation

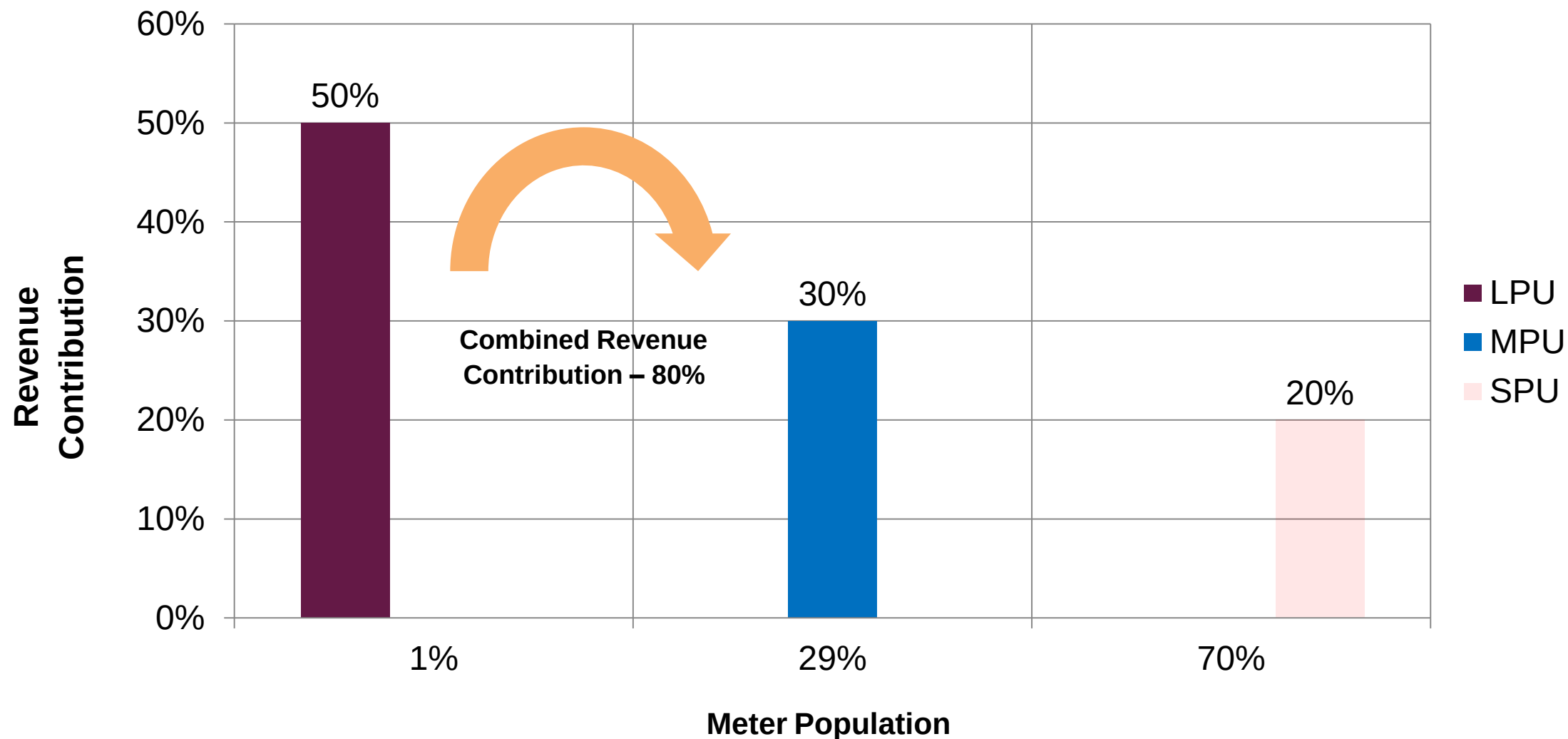
What the benefit is of prepaid to the consumer?

Large | Medium Power Users (LPU | MPU)

Large | Medium Power Users (LPU | MPU).

LPU	MPU
Real time complex tariff rating: TOU Max Demand etc	Real time complex tariff rating: TOU Max Demand etc
No manual meter reading and data capture – reduces inaccurate billing to zero	No manual meter reading and data capture – reduces inaccurate billing to zero
Meter tampering alerts and events – reduce NTL	Meter tampering alerts and events – reduce NTL
CT PT ratio detection	CT PT ratio detection
Phase data measurement and detection	Phase data measurement and detection
Meter Population: 1%	Meter Population: 29%
Total Revenue: 50%	Total Revenue: 30%

Large | Medium Power Users (LPU | MPU)



Prepayment for Large | Medium Power Users (LPU | MPU)

Large | Medium Power Users (LPU | MPU)

- **The benefits for LPU | MPU's in a prepayment environment are:-**

LPU users can download and view online data in terms of real time consumption , billing data etc

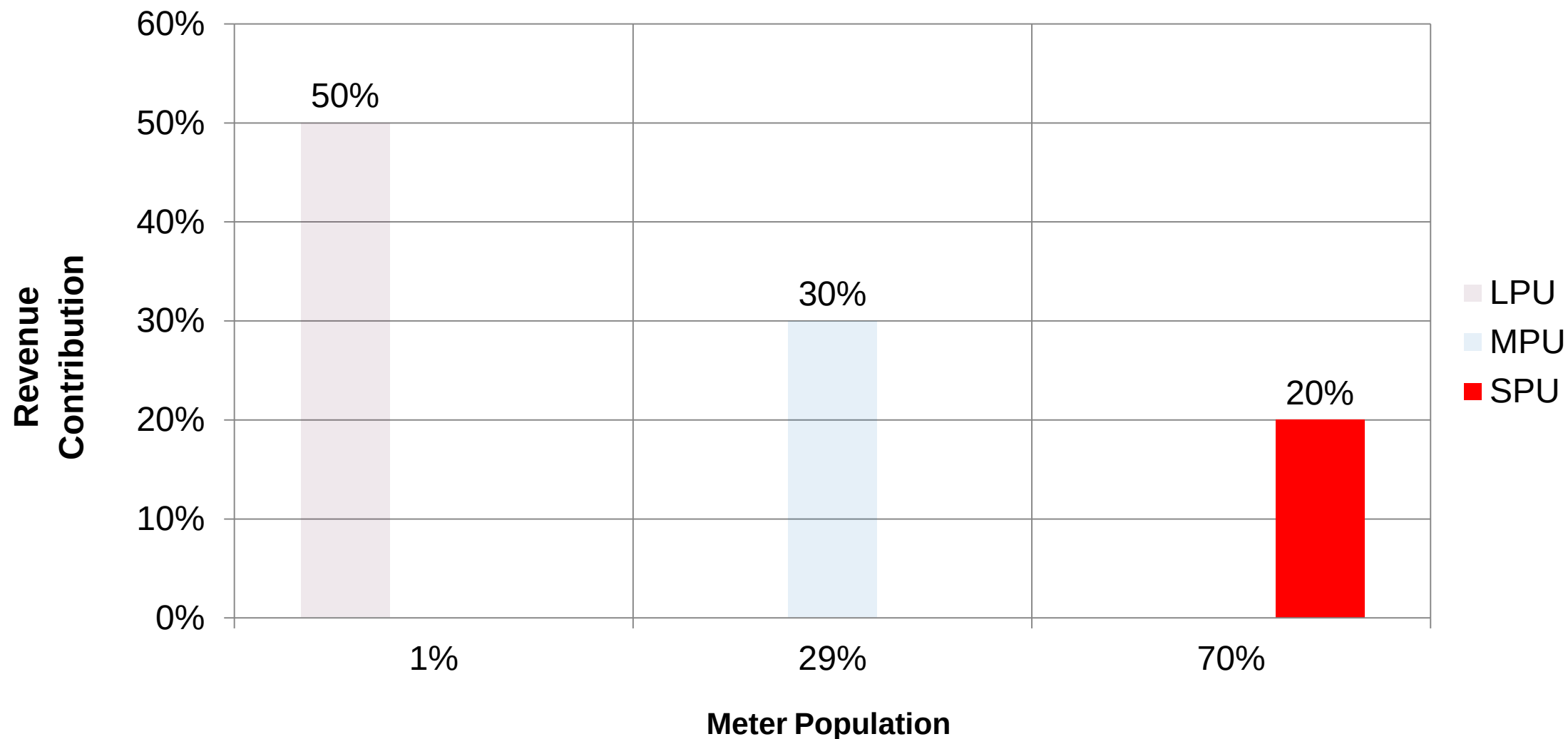
LPU consumer are able to plan according to real time data (e.g. when to switch on their smelter etc)

Account reconciliation happens in a real time mode
No manual meter reading and inaccurate data

Tariff rating is done in real time and therefore they can determine their costs despite the tariff codes being complex

Cash flow management – the customer can pay according to their cash flow and consumption plan | Strategy, as well as optimise cost saving etc

Large | Medium Power Users (LPU | MPU)



Siemens Prepayment “Central Wallet” portal

Prepayment “Central Wallet”



Benefits of full Smart Metering AMI advanced revenue to the Utility | Municipality

Prepayment Benefits

Benefits of AMI prepayment to Utilities | Municipalities are:-

Utility cash flow typically moves from 150 debtor days to minus 10 to 15 days

This means that the Utility gets cash in advance before electricity consumption – thus allowing for growth planning and strategy.

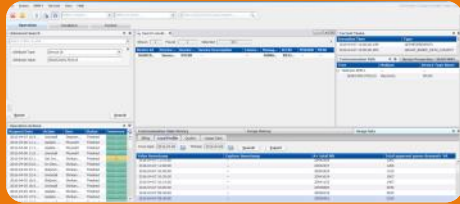
Real time data is available to the Utility

Allows for planning, growth and value add support to the end consumer, be it LPU's | MPU's or SPU's

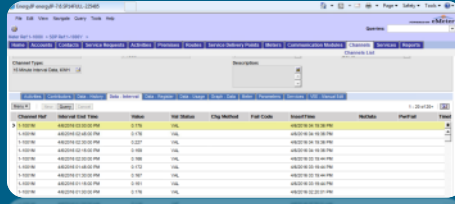
Grid control is enhanced as a real time view of load consumption and trends is available.

Depending on the MDM, this type of data can be linked into a SCADA system for grid control applications such as DRMS, Load Management etc

HES



MDM



PPES



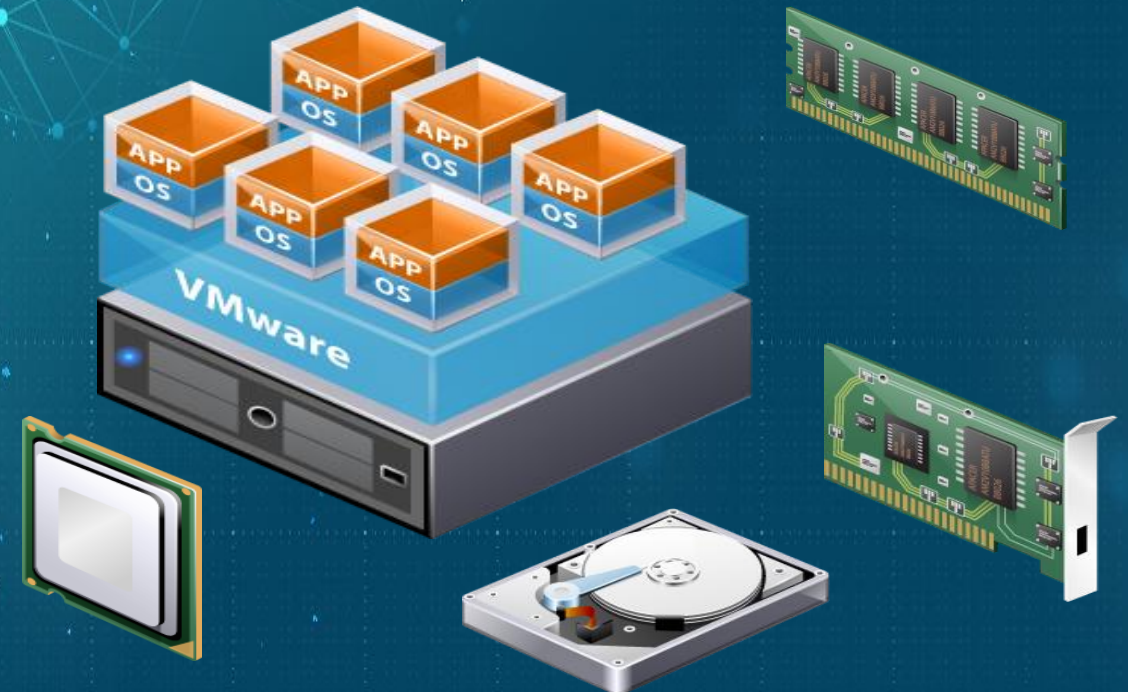
FWMS



Smart Metering Back-End-Solution

Restricted © Siemens AG 2016

siemens.co.za



Smart-Meter Backend-Solution

Core Applications of the Solution



Head End System – UDIS

Interfaces with meters to pull meter reads and events via secured connection. It also triggers additional services like remote (dis)connections. UDIS stores raw data in DB and pushes structured data to IEC adapter.



Meter Data Management System – MDM

Processes and analysis meter reads and events. It matches customer data with meter data. After processing it forwards reads and event data to PPES via DTS (Data Transfer Service).

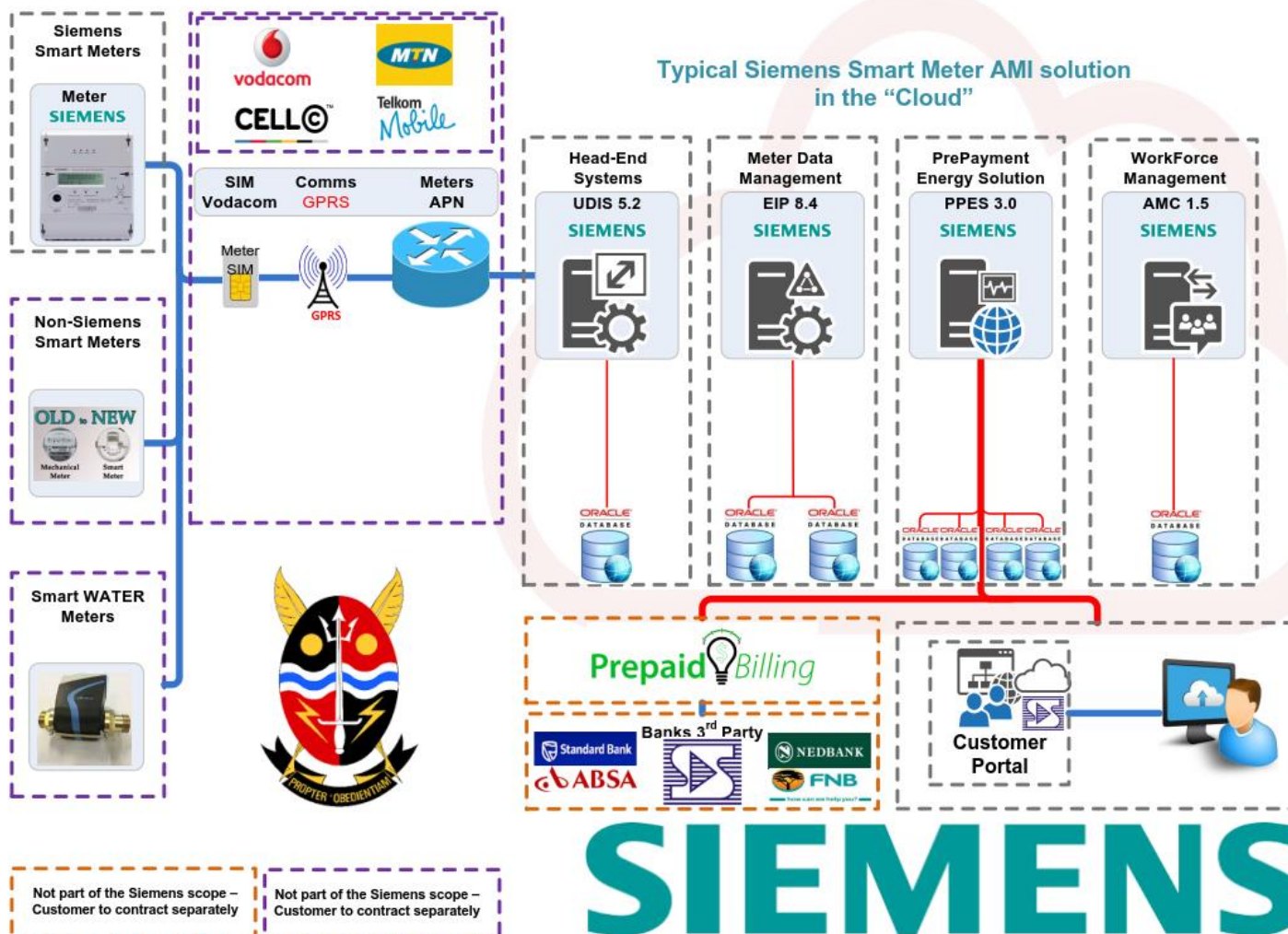


PrePayment Energy System – PPES

Applies different tariff structures to consumption data and performs rating of consumption data. It automatically triggers remote disconnect / reconnects as required via head-end system. Provides customer usage and payment portal and performs customer wallet deductions and recharges.

Benefits of combining Smart “Electricity | Water and Gas” Meters

Smart Electricity | Water and Gas



How do “Water and Gas Meters” interface into the same AMI Backend?

Smart Water and Gas

- One of the most pressing issues to a utility or municipality is revenue collection and profitability.
 - ❖ Electricity revenue is very important to both a utility and municipality as budget allocation is very high.
 - ❖ In a water department, there are high costs with, normally, large revenue losses and no profitability.
- Combining Electricity | Water and Gas Meters onto one system allows for:
 - ❖ Instant view of all the meters with one end user portal login.
 - ❖ Instant account and meter data visibility for the consumer – more consumer centric control?
 - ❖ Ease of information and electricity payment using smart phone apps etc.
 - ❖ Improved cash flow – i.e. reduce debtor days?
 - ❖ Combined “Central Wallet” allows for easy revenue collection and security of revenue

Applications on EnergyIP Platform



Contact



Martin Kuhlmann

Technical Sales Support Professional - Digital Grid SWS
Siemens (Pty) Ltd.
Johannesburg, South Africa

Mobile: +27 (72) 750 4497

E-mail: martin.kuhlmann@siemens.com