City of Fulton's

Advanced Metering Infrastructure

(AMI) Project

DOE WBS MBRP ARRA SGIG
PEP MISO IT MBE WBE
IEEE SIPRIS VIPER MDMS
OMB HAN WAN FAN LAN
SCADA HES GIS GPS PMB
RMP ERT ICCP DMP NIST
PMU FOA AMI AMR RFP

Why is Fulton going AMI?

- We were awarded a 1.5 million dollar Smart Grid Investment Grant.
- In theory, this should make a project like ours 50% more affordable!!!

Would we have went AMI without the grant?

- Maybe, but probably 10 to 15 years down the road or when forced.

How does Fulton read meters now?

- 3 meter readers with handheld computer devices read:
  - 5,000 water meters via touch read technology
  - 4,000 electric meters manually entered.
  - 1,500 electric meters entered via radio
  - 4,000 gas meters entered manually
- Handheld computer automatically downloads all meter reads into billing software.

How did Fulton get the SGIG?

- APPA informed us that the ARRA was funding a SGIG Program.
- Our Grant Writing Professional received the grant documentation (135 pages).
- Grant Writer and Utility Superintendent locked themselves in a room.
- Spiegel and McDiarmid was hired to review plan (40 pages) and ensure completeness.

What did we include in the Application to score the grant?

- 5,500 Smart Electric Meters complete with:
  - Remote connect/disconnect
  - Tamper Detection
  - Outage Reporting
  - Home Area Networks
  - Power Information
- Communication Network

- A Head End Computer System which interoperates with meters and billing.
- A poor boys outage management system.
- Web portal for customers
- 200 programmable controllable thermostats
- 100 in home displays
- 2 electric vehicle parking spaces with free electric hookups.

- Dynamic Pricing Programs
  - Time of Use
  - Peak Hour Rates
  - Load Management
- Interoperations with SCADA & MISO
- Cyber security
- Citizen education

October 30, 2009

- Fulton is one of 100 applicants selected for a Smart Grid Investment Grant.
- There were over 400 applicants.
- Fulton is the only entity selected from Missouri.

City must now provide DOE with:

- Project Execution Plan
- Cyber Security Plan
- Metrics and Benefits Plan

Before project can proceed.

Project Execution Plan (23 pages)

- Not just a Gantt Chart.
- Written plan which identifies:
  - All project tasks
  - All task leaders
  - Critical path
  - Work Breakdown Structure (WBS)
  - Cost vs. Time

Cyber Security Plan (33 pages)

- City hired N-Dimension to develop plan.
- Not just for AMI equipment but must secure all access points to AMI system which includes:
  - SCADA Computers and assets tied to SCADA.
  - Billing system.
  - Office environment
  - Communication network(s).
- Outlines personnel policies and procedures
- Establishes roles and responsibilities.
- Investigation team and procedures
- Living document

Metrics & Benefits Plan (51 pages)

- Jobs Reporting (How are we adding jobs?)
- Build metrics – physical equipment and programs.
- Impact metrics:
  - Average hourly customer electric usage for each class of customer (8760).
  - Peak generation, peak load, load shed
  - Annual costs to generate
  - Truck rolls
  - Meter costs
  - Pollution

Where are we now?

- Metrics and Benefits Plan is 95% complete.
- Draft RFP is developed and is being finalized this month.
- Security Plan, Project Execution Plan, and Metrics Plan will be part of RFP.

How are we going to Perform Project?

- City to install meters and fiber communication.
- Vendor responsible for everything else including:
  - Coordinating Interoperations with Billing, SCADA, and MISO Systems.
  - Cyber Security
  - Helping with Reporting Requirements

Questions?

- What percentage do you think we will save by accepting this grant? 50%?