PSC REF#:83859

Public Service Commission of Wisconsin
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BEFORE THE
PUBLIC SERVICE COMMISSION OF WISCONSIN

Application of Wisconsin Power and Light Company for a Certificate of Authority to Purchase, Install and Place into Operation an Advanced Metering Infrastructure System in the Entire WPL Natural Gas Service Territory.	Docket 6680-CG-_____

Wisconsin Power and Light Company (WPL), pursuant to Wis. Stat. § 196.49 and Wis. Admin. Code § PSC 133.03(1), hereby applies for a Certificate of Authority (CA) to purchase, install and place into operation an Advanced Metering Infrastructure (AMI) system in the entire WPL natural gas service territory. The proposed system will also be used by WPL to serve its electric customers, but no CA is required for the electric portion of this project. Accordingly, WPL is applying only for a CA under the requirements of Wis. Admin. Code Ch. PSC 133, but will describe the system in its entirety.

OVERVIEW/EXECUTIVE SUMMARY

Advanced Metering Infrastructure (AMI) systems use a variety of technologies to collect more detailed energy usage information from customers, more quickly and less expensively, than is the case with traditional metering equipment and systems. AMI systems typically improve customer service and utility system operations through increased accuracy and timeliness of billing, improved outage management, remote access for account changes such as turn-ons or turn-offs, and detection of meter tampering and energy theft. In addition, AMI systems can provide the necessary platform for customers to easily obtain detailed energy usage information and participate meaningfully in various demand-side management initiatives and pricing options. WPL

believes that in order to maximize the benefits of an investment in an AMI system, that system should be capable of supporting both present and future opportunities for customers to manage their energy usage. Therefore, while WPL considered other alternatives for improving system operations such as drive-by automated meter reading (AMR) systems, WPL concluded that the proposed AMI system is preferable in light of the importance of enabling customers to assume a greater role in influencing the power generation and supply infrastructure needs.

Key features of WPL's AMI proposal include the following:

- When fully implemented, the system will cover all WPL customers, whether electric, natural gas, or both, in all customer classes. A single system will maximize the benefits of the system and will be less costly to operate than would multiple systems (e.g., different systems for natural gas meters and for electric meters). The equipment changes for natural gas meters and for electric meters to enable the AMI system are different – most natural gas meters will be retrofitted, while electric meters require replacement – but a single technology will be used to collect meter information and to carry out billing and other customer service functions.
- While WPL is requesting approval to install the AMI system across its entire natural gas service territory, once approval is granted WPL plans to phase in the AMI implementation over a three-year period, beginning in a single defined geographic area. Phase I, during which WPL anticipates implementing the AMI project throughout its Beaver Dam service district, will provide an opportunity for WPL to assess the project against the performance measures already established,

and use the information learned in Phase I in deploying the system throughout the rest of WPL's service territory. In Phase I, WPL will retrofit approximately 18,900 natural gas meters with AMI modules, and replace approximately 22,500 electric meters with electronic AMI-enabled meters. Phase I will begin in late 2007 (assuming the necessary Commission approval has been received) with a completion target of the second quarter of 2008. Full implementation should be completed by the end of 2010 with a total of approximately 173,100 natural gas meters retrofitted and 454,900 electric meters replaced.

- After studying alternative systems and approaches to AMI, WPL selected a technological solution which will cost effectively provide the greatest benefits from among the available alternatives, both with respect to system operations and with respect to enabling customers to take an active role in managing their energy use. As detailed in Section 1, WPL proposes to obtain meter data via a WPL-owned fixed radio frequency network, eliminating the need to physically access the meters or to walk or drive by the meter for readings. A system of Tower Gateway Base-stations (TGBs), supplemented where necessary with a pole-top repeater, will receive the data transmitted from the meters and deliver it to WPL's data center.
- WPL worked with independent experts in the course of identifying alternative systems and approaches to AMI, determining the specific technologies which best addressed WPL's needs, developing specifications for Requests for Proposals (RFPs), and evaluating RFP responses. Competitive procurement processes were used, and many vendors were invited to bid on one or more of the three key

system components, (1) the AMI technology system encompassing the advanced metering equipment and the communications network hardware and software, (2) the meter data management system (MDMS), and (3) meter installation services. Sixteen vendors submitted RFP responses, and those responses were critically evaluated by cross-functional teams and objectively ranked on the ability to meet technical requirements, as well as total cost of ownership. Through this process, WPL selected Sensus Metering Systems to provide the equipment for metering and communications networking; eMeter to provide the software for meter data management and maintenance and data interface with WPL's systems; and VSI Meter Services for end-point installation of the AMI modules with which WPL will retrofit natural gas meters, and the AMI-enabled meters which will replace current electric meters.

- Since site visits of natural gas meter installations will no longer be routinely performed by meter readers, WPL plans to accelerate its service leak survey program to cover one-third of all natural gas customers per year, so that all natural gas customer sites will be inspected at least once over the course of a three-year cycle.
- The measurable benefits of the AMI project, such as reduced meter reading and billing costs, will substantially outweigh the costs of the conversion. Less easily quantifiable, but very important, are the benefits of the project as an enabler of active customer participation in demand management, as well as the benefits of improved services to customers.

1. Project Description

WPL proposes to install an AMI System for its natural gas and electric customers in order to improve customer service and utility system operations and in order to support future rate options and demand-side management programs and opportunities. The AMI system will collect time-differentiated energy usage from advanced meters via a two-way fixed network system, either upon request or on a defined schedule. This system will be capable of providing usage information to energy customers, the utility itself, and other parties on at least a daily basis, thereby enabling them to participate in and/or provide electric demand response products, services and programs, and to offer and use alternative rate options. The AMI system will also support additional features and functionality related to system operation and customer service, such as outage management, power quality and voltage monitoring, remote turn-ons/turn offs, remote read-in/read-out for account changes, and tamper detection.

Over a three-year time period, WPL proposes to retrofit all existing natural gas meters[1] with AMI one-way communications modules, and to replace all electric meters with electronic AMI-enabled meters with two-way communications capability. The AMI System will provide meter reads and other data from its gas and electric meters via a WPL-owned fixed radio frequency network without the need to physically access the meters, or to have personnel walk or drive by the meters. The AMI-enabled meters and modules will communicate via a private, pre-licensed radio frequency to collectors, known as Tower Gateway Base-stations (TGBs), to be located on existing radio towers.

These towers are either owned by WPL, or they are towers where WPL has agreements for leasing space from third-party owners. In some cases a supplemental pole-top repeater, known as a Buddy Box, would be used where terrain or location creates challenges in achieving reliable communications directly between TGBs and meters or modules. The data collected at the TGBs would be delivered to WPL's data center by sharing backhaul communications paths existing at the towers.

The AMI Project will be rolled out in at least two phases. Phase 1 includes retrofitting approximately 18,900 natural gas meters with AMI modules and replacing approximately 22,500 electric meters with electronic AMI-enabled meters across a discrete portion of the WPL service territory. WPL anticipates that it will begin the project implementation in the Beaver Dam service district, which includes the following areas: Beaver Dam, Burnett, Cambria, Fox Lake, Horicon, Juneau, Kekoskee, Knowles, LeRoy, Mayville, Pardeeville, Randolph, Theresa and Waupun. WPL expects to begin installing AMI meters and equipment as part of Phase 1 starting in early 2008, and complete it during the second quarter of 2008. This multi-phase approach is an integral part of the AMI strategy for WPL. Phase 1 will help WPL to verify its ability to achieve business case benefits through assessment of key project, technical and operational performance measures prior to future deployments throughout the remainder of WPL's service territory. In subsequent phases, WPL will retrofit the remaining natural gas meters and replace the remaining electric meters across the WPL service territory, which total approximately an additional 154,200 natural gas meters and 432,400 electric meters. Once implementation of Phase 1 is underway, WPL may opt to begin implementation in

[1] A very small number of older gas meters may be replaced rather than retrofitted due to their incompatibility with the AMI module.

other geographic areas, depending on the information gained at various stages of the project. System wide completion of the AMI Project is targeted for early 2010.

On behalf of WPL, Alliant Energy Corporate Services contracted with Enspiria Solutions, Inc. for assistance in developing the AMI business cases and system specifications for the RFP process. In the fourth quarter of 2006, the company released three (3) Requests for Proposal (RFPs) for an AMI technology system, a meter data management system (MDMS), and end-point installation services. Copies of the RFP specifications are included as Confidential Exhibit 1. Twenty-five (25) vendors were selected to receive one or more RFPs, as indicated in Exhibit 2, and sixteen (16) vendors submitted responses. Responses were evaluated by cross-functional teams who rated vendors on their ability to meet the RFP technical requirements and risks in doing so. The RFP evaluation results, vendor demonstrations, total cost of ownership, and overall risk were ranked and used to select the AMI vendors. A variety of AMI technologies were offered by vendors, including radio frequency fixed and mesh networks and power line carrier, and were evaluated by WPL and its consultants. WPL has selected Sensus Metering Systems as the AMI Technology System vendor to provide its FlexNet AMI hardware and software for a radio frequency fixed network communications network, AMI modules for gas meters and AMI-enabled solid state electric meters. For the MDMS system, eMeter has been selected as the vendor to provide the software system to manage and maintain all meter data and provide the interface between the AMI Technology System and WPL's customer information system and other internal systems. VSI Meter Services has been selected as the end-point installation vendor to retrofit the natural gas meters with an AMI module and replace the electric meters with an AMI-

enabled meter. WPL also anticipates that it will use some internal resources to complete the installation of AMI metering at its more complex large commercial and industrial metering points and exchanging any non-compatible gas meters. Exhibit 3 provides more information about the technologies and services from the selected AMI vendors.

The AMI Technology System utilizes a single solution for all urban, suburban, and rural areas within the WPL service territory which provide both natural gas and electric services or either of the two services independently of one another. All residential, farm, commercial and industrial natural gas and electric customers will be served by the system. The AMI Technology System is designed to collect, transmit and store meter reading data on a daily basis from all natural gas and electric customers. The system is also capable of monitoring natural gas consumption and metering equipment for abnormal load conditions due to equipment failure or diversion. The TGBs are capable of communicating with AMI modules and meters from a number of miles away, thus reducing the communications infrastructure needed to install and maintain the system.

2. Estimated Cost and Proposed Method of Financing

The total cost of the AMI Project for WPL is estimated to be $91,072,000. The gas portion of the AMI Project cost is estimated at $20,453,000. Details of the cost estimates are provided in Exhibit 4 attached to this application. The costs for the gas and electric systems are determined by the specific costs for each utility service. Common costs are allocated by the number of meters for each utility service, consistent with the fact that the costs are incurred on a per-meter basis.

The net present value (NPV) of the revenue requirement in 2007 dollars is estimated at $9,627,900 for natural gas and $58,704,500 for electric. This assumes an annual rate case starting in 2009. A fifteen-year life for both the AMI modules for gas meters and the AMI-enabled electric meters is assumed, and the meters are considered in service when installed; thus, no allowance for funds used during construction (AFUDC) is applicable. A 9% discount rate is used which is the same as or similar to the discount rate used for NPV analysis for the sale of the Kewaunee Nuclear Power Plant analysis and the analysis of the Sheboygan Falls Generation Facility lease. Details of the revenue requirements are provided in Exhibit 5 attached to this application.[2]

The initial funding requirements for the acquisition, installation and operation of WPL's natural gas and electric service AMI project will be financed through a combination of internally generated funds and short-term debt. This initial funding of the project will ultimately be refinanced from long term capital sources including a combination of long-term debt; preferred stock and common equity.

3. Purpose and Necessity of the Project

The purpose of this project is to provide WPL the ability to gather more accurate and timely customer energy and consumption usage and billing data via a fixed radio frequency network, and to enhance customer service, improve operational efficiency and accelerate the revenue cycle. The AMI project is also a positioning platform for real-time data feedback to enhance each utility customer's awareness of economically achievable resource savings based on personal demand, the grid load, and environmental costs

[2] The Revenue Requirements Analysis has been completed over a 19 year period of time. This is based on a 4 year AMI deployment along with a 15 year book life of the AMI modules and AMI-enabled electric meters. The existing electric meters being retired are depreciated over the average remaining book life of 16.9 years.

inherent to generating electrical power. The customer thereby can become an interactive component of the power generation and supply infrastructure.

Other alternatives considered included continuing to read meters manually, or implementing a drive-by AMR solution. The greater short-term and long-term benefits of an AMI system, especially as an enabler of customer participation in demand-side management initiatives, weighed strongly in favor of the implementation of an AMI system.

4. Effect of the Project on Cost of Operation and on Quality and Quantity of Service

In addition to providing the foundation for real-time customer information and interaction as described above, the AMI system will reduce operating costs and improve service quality. As a result of purchasing, installing and operating this AMI system for natural gas customers, WPL expects to realize net operating expense savings of approximately $304,970 in 2010, $1,506,830 in 2011, and $1,671,740 in 2012 and each subsequent year during which the system remains operational. Details of the costs and benefits are provided in Exhibit 6 attached to this application. These costs and benefits are primarily in the following areas:

Reduced Meter Reading Costs – With the ability to read meters remotely, this system is expected to eliminate the need for approximately 85 meter reading positions and the costs associated with manual meter reading processes.[3] This includes costs for visiting premises to conduct all on-cycle billing reads and off-cycle reads for billing inquiries, misreads, and move-in/move-outs. Automated meter reading will also

[3] WPL meter-reading personnel read both electric and gas meters; accordingly, the impact on employee positions reflects the combined effect of automating both gas and electric meter reading.

eliminate the need for approximately 85 vehicles, thereby reducing fuel consumption and reducing emissions of pollutants into the air otherwise generated by the vehicles' use.

While the elimination of positions will have an impact on employees, WPL has been working with bargaining unit leadership to minimize that impact, and WPL will continue to work closely with the affected employees and their bargaining unit leadership to manage the impact of position eliminations. In anticipation of an AMI project in the near future, bargaining unit leadership agreed with WPL to allow meter reading position vacancies over the past two years to be filled as special temporary positions. This strategy, together with reduction of positions through attrition, will minimize the impact of the AMI project on permanent employees.

With the reduced customer site visits by meter readers, WPL intends to comply with Wis. Admin. Code § PSC 135.723(cw)(6) by accelerating its natural gas service leak survey and inspection program to cover one-third of all customers every year, or all customers every three years, instead of every 5 years. Additionally, beginning in 2003, WPL implemented a combined hazard / atmospheric corrosion visual inspection program that is completed once every three years. The most recent such inspection was completed in October of 2006. In addition, as part of WPL's two to three year AMI deployment, each gas metering installation will be visited by qualified personnel, providing additional opportunities for identifying hazards and/or atmospheric corrosion during the AMI module installation process.

A positive impact on employees from the AMI project is a reduction in employee exposure to safety hazards. The project reduces the need for WPL to routinely access customer property, where hazards of slips, trips and falls, and animal contact have been

major contributors to employee injuries and accidents. Eliminating manual meter reading also reduces the associated risks of damage to customer property, and reduces the risks associated with employees driving

Reduced Billing-Related Costs and Improved Billing Accuracy – Customer service will be enhanced by having more accurate and timely meter readings, which will result in fewer estimated bills. Consequently, we anticipate reduced billing inquiries into the call center and increased efficiencies in billing processing due to re-bills and billing exceptions.

Improved Services to Customers – With an AMI system, customers will be able to access and monitor their usage with more timely and detailed consumption information, facilitating effective energy conservation. It will also provide WPL the ability to offer new and improved rate options and energy management solutions to its customers.

Reduced Outage Restoration Costs – Other improved services include proactive notification and verification of customer outages which provide WPL the ability to respond and restore customers more timely and efficiently.

Improved Revenue Cycle – The AMI System will facilitate same-day billing, which will accelerate the revenue cycle by approximately 1-2 days for single billed accounts and approximately 3 days for summary billed accounts.

5. Description and Cost of any Property Being Replaced

There will be no natural gas property replaced as a result of this AMI system, except for possible replacement of a very small number of older gas meters that may not

prove to be economically viable for retrofitting due to AMI module incompatibility.[4] WPL is not aware of any adverse environmental consequences or risks of flooding with the deployment of this AMI System.

6. Consistency with Future Overall Projects

The construction, installation and operation of the AMI System supports WPL's strategic goals of improving the quality of service to WPL natural gas customers, and it is in the best interest of WPL natural gas customers. Such an AMI System is also a positioning platform for providing new and improved rate options to customer, supported by timely data feedback to enhance the awareness of each utility customer of the impacts of their energy usage and rate choices.

7. Public Utilities, Municipalities, and Others Principally Affected by the Project, and Notifications Given

The installation of this AMI System will not affect any public utilities and municipalities; therefore, no notifications are required. Others affected include WPL employees with meter reading related responsibilities, who are represented by IBEW Local 965.

8. List of Authorizations Required from Other Government Authorities

The installation of this AMI System will not affect any historic property, and there are no known authorizations required from other governmental authorities.

[4] Gas meters will be retrofitted with an AMI module. Electric meters currently in service, in contrast, must be replaced. Even with the increased capital costs associated with meter replacement, the electric portion of the AMI project yields substantial net cost savings, as shown in Exhibit 6.

Wherefore, Wisconsin Power and Light Company requests that the Commission issue a Certificate of Authority to WPL to purchase, install and place into operation an AMI system to serve customers throughout the entire WPL natural gas service territory. Dated this 12th day of October, 2007.

WISCONSIN POWER AND LIGHT COMPANY

/s/ Theresa M. Hottenroth
Theresa M. Hottenroth
Senior Regulatory Attorney

Request for Proposals – Advanced Metering Infrastructure System

1. **AMI Technology System RFP**
   Confidential Exhibit 1-1 - RFP for AMI Technology Requirements

2. **Meter Data Management System RFP**
   Confidential Exhibit 1-2 - RFP for MDMS Information Systems

3. **AMI End-Point Installation RFP**
   Confidential Exhibit 1-3 - RFP for End Point Installation

Request for Proposals – Advanced Metering Infrastructure System

Confidential exhibits have been redacted.

Vendors Issued Request for Proposals – Advanced Metering Infrastructure System

AMI Technology System RFP

1. Badger Meter
2. Cannon Technologies
3. Cellnet
4. Comverge
5. DCSI
6. Elster
7. Hexagram
8. Hunt Technologies
9. Itron
10. Sensus Metering Systems
11. SmartSynch
12. Trilliant

Meter Data Management System RFP

1. eMeter
2. FirstPoint Energy
3. Itron
4. Lodestar
5. Nexus
6. WACS

AMI End-Point Installation RFP

1. Corix
2. Honeywell
3. TruCheck
4. VSI Meter Services
5. Wellington
6. PieperLine
7. SCOPE Services

Overview of Selected AMI Vendors – Advanced Metering Infrastructure System

Exhibit 3-1 - Sensus AMI Technology System.

Exhibit 3-2 - eMeter EnergyIP Software Overview.

Exhibit 3-3 – VSI Meter Services.

FlexNet

AMI Technology Overview

ALLIANT ENERGY

SENSUS METERING SYSTEMS

AMI Solution for Alliant Energy

FlexNet

About Sensus Metering Systems

- $600M in Annual Revenue
- 3,840 Employees
- Profitable
- 100 Years in Utility Meters
- 20 Years in AMR/AMI
- 3,800 Project Deployments
- 4,000,000 Endpoints Installed
- Exciting AMDS Acquisition in June 2006
- Breakthrough Value and Reliability in AMI

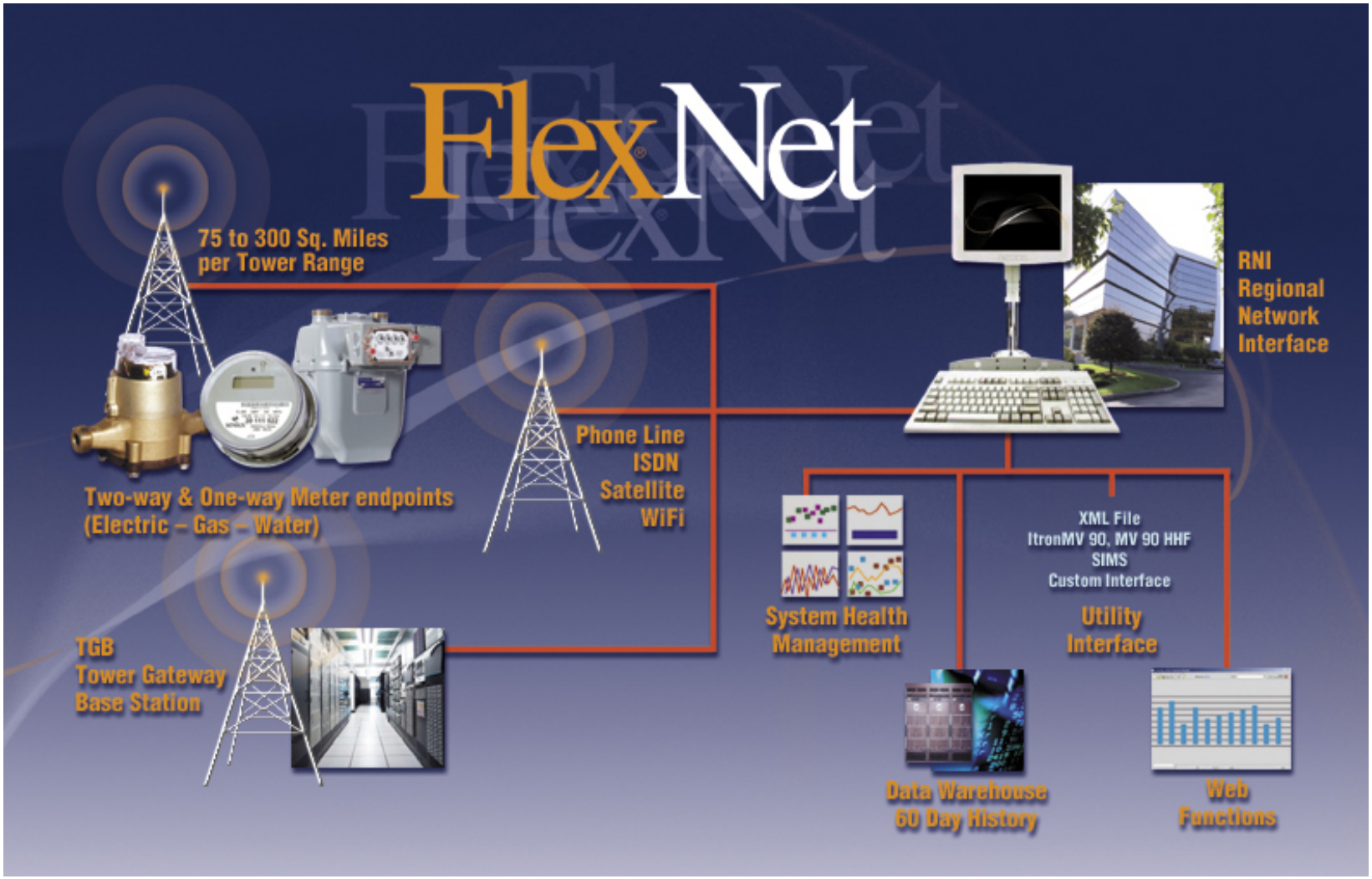
SENSUS METERING SYSTEMS ALLIANT ENERGY

About the FlexNet Solution

- Cost-Effective, Secure, Turnkey Wireless Network Solution
- Advanced, Two-Way, Primary Use, Licensed Frequency RF
- Breakthrough Reductions in RF Infrastructure Requirements
- Best-of-Breed Urban and Rural Wireless Coverage
- Under Glass Integration of Electric Meters
- Single Solution For Any Mix of Gas, Water, Electric
- Proven Operational Results and Economic Advantages
- Ready to Deploy

FlexNet

System Architecture



SENSUS METERING SYSTEMS
ALLIANT ENERGY

Simple

- Elegant Architecture (Simple is Safer)
- No complex distributed data bases or thousands of store-and-forward nodes
- Lowest Cost Infrastructure
- Reduces capital, installation and maintenance cost
- Single network provides broad AMI feature set
- Tower-only System Does Not Require Negotiated Access To Easements

FlexNet®

Flexible

- Low Cost Two-way Capability
- C&I meters, remote disconnect/reconnect, load shed, SCADA, demand reads, TOU
- System Supports Diverse Deployment Topography
- Field proven in flat, hilly & mountainous terrain
- Boost Mode and Buddy Mode help insure initial install success
- Scalable System: From Sparse To Dense Deployment
- Rural, C&I, Hard-to-Read, Residential, Urban

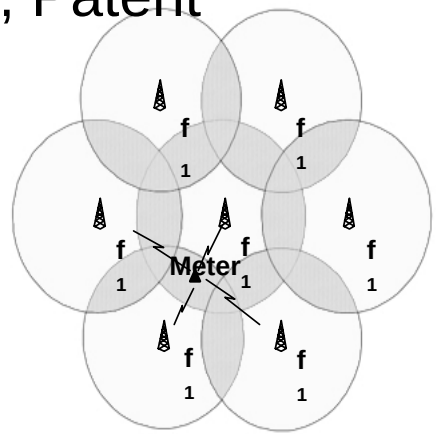
SENSUS METERING SYSTEMS ALLIANT ENERGY.

Best Range

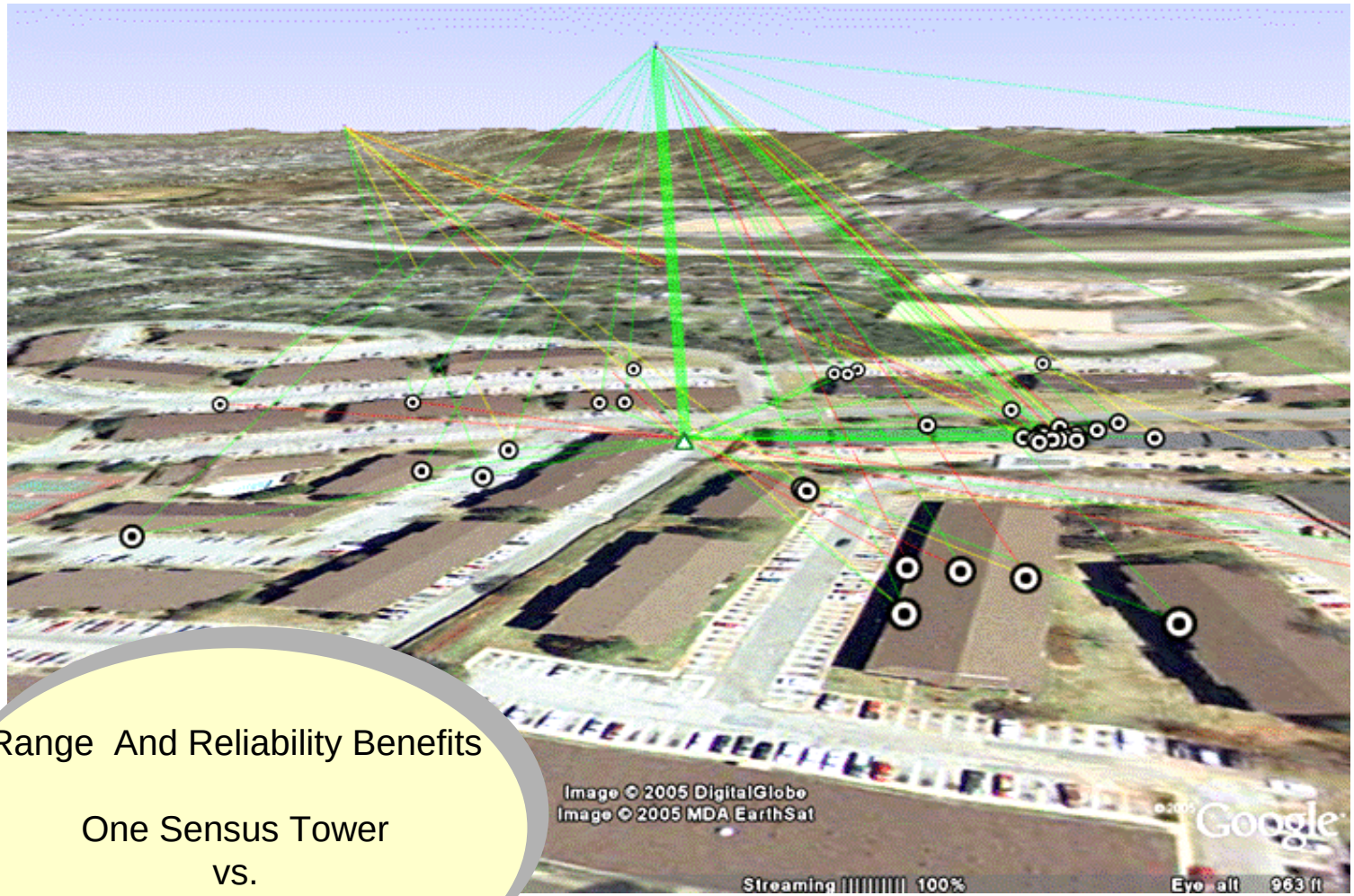
	FlexNet	Competition
1) Antenna Height	80’ to 600’	4’ to 20’
2) Transmit Power	2 Watts	1mW to 500 mW
3) Sensitivity	-130 dBm	-100 dBm to -110 dBm
4) In-Band Noise	1-3 dB typ	10 dB to 40 dB

Reliable

- Spectrum for 20+ Year Life Expectancy
- Only Sensus Operates on FCC Protected, Primary-Use, Licensed Spectrum
- Highest Network Reliability
- 24x7x365 System Monitoring and Repair
- 30 Day Data Back-up and 8 Hour Power Back-Up in Tower Receiver
- Redundant Communications from Tower to RNI, Optional
- Temporal Redundancy in Meter Messages, Patent Pending Modulation is Doppler Immune
- 32 Bit Error Detection, Error Correction,
- Viterbi Encoding, 128 Bit Encryption



Rapid Low-Cost Installation



Range And Reliability Benefits

One Sensus Tower
vs.
400 Competitive Pole Tops

Best Installation Services

- Operations and Deployment Plans Based on National Best Practices
- Experience Performing Meter Changes and AMR Conversions for Gas, Water And Electric Utilities Nationwide
- Project Plan
  - Installation Plan and Schedule
  - Project Deliverables
  - Accountabilities
- Clear Lines of Communication and Reporting Protocol with Customer

Best End-Point Metrology

- Electricity

- Gas

- Water

SENSUS METERING SYSTEMS
ALLIANT ENERGY

FlexNet®

Gas Meter Module

FEATURES:

2 Watts

20 Year Battery Life

Supports Hourly Reads

SUPPORTED WIRED INTERFACES:

American

Sensus/Equimeter/Invensys

Schlumberger/Actaris

SENSUS METERING SYSTEMS

ALLIANT ENERGY.

FlexNet®

Gas Features and Benefits

- Hourly or Daily Reporting Options
- Eliminates Bad Reads, Estimated Reads and Curbside Reads
- Provides Move-In/Move-Out Reads
- Applicable for C & I Meters
- 20 Year Battery Life
- Flexible Programming Options
- Automated Reporting of Indoor Meters
- Supports Gas Demand-Side Rationing Programs
- Delivery of Information that Can Reduce Gas Theft
- Provides Reads for Customer Accessible Web-site

SENSUS METERING SYSTEMS ALLIANT ENERGY.

Gas AMI Transmitter - Meter Compatibility Chart

Model No.	Meter Manufacturer	Compatible Meter Models
1	American Meter	W75AL, AL175, AC175, AT175, ALC175, AT210, AL225, AL250, AR250, AC250, AT250, AM250, AL310, AL350, AT350, AL425, AC630
2a	Rockwell/Equimeter/Invensys/Sensus	R175, R200, RT200, RT230, R275, RT275, R315, 250, 310, S110, S200, 175S, S120, T120, T110
2b	Rockwell/Equimeter/Invensys/Sensus	R415, RT100, RT360
2c	Rockwell/Equimeter/Invensys/Sensus	MR8
2d	Rockwell/Equimeter/Invensys/Sensus	MR12
3	Sprague/Schlumberger/Actaris	175, 175WC, 210, 240, 250, 250WC, METRIS 250, 400, 400A (All w/ 3 Hole Index Cover)
4	National Meter/Lancaster*	175, U175, 250
5	EMCO/Rockwell/Equimeter/Invensys/Sensus	750, 1000, 1600, 3000, 5000, 10,000, #2½, #3, #4, #4½, #5
6	American Meter	AL800, AL1000, AL1400, AL2300, AL3000, AL5000, 35B, 60B, 80B, 250B, 500B
6	Sprague/Schlumberger/Actaris	675A, 800A, 1000A (Requires Actaris adapter P/N 80005901 available from Actaris)
7	Remote Mount (External)	All meters with pulse output

Gas Meter Module

Item	Sensus Gas Module
Battery Size	C (Bid)
Anticipated Battery Life (1)	20+
Warranty	Full warranty for 10 years after purchase and prorated for years 11-20
Boost Mode Operation (2) Provides Most Current Read	Yes
Boost Mode Operation (2) Provides Current Read and Prior Interval Read History	Yes
Field Replaceable Provision	External, separate detachable battery module
Normal and Buddy Mode Can Provide Hourly Interval Data	Yes
Boost Mode (2) Can Provide Hourly Interval Data	Yes
34 Days of Hourly Read Data Available Via TouchRead	Yes
Module Availability	Now
Field Selectable Bubble-up Drive-by Mode	No

FlexNet

Electricity Features and Benefits

- Lowest Cost / Most Reliable Network
- Proven MV90 Integration
- TOU Billing
- Remote Disconnect / Reconnect
- AC Load Shed Transition to Two-Way
- Customer Display
- Wireless Thermostat Supports
  - Utility Load Control
  - Customer Comfort Override Button
  - Customer Web Accessible
  - Rate Change Display
- Single Network for Simple Residential and Advance C&I Applications

SENSUS METERING SYSTEMS
ALLIANT ENERGY

FlexNet

Best Customer Service Reporting

SENSUS METERING SYSTEMS

HOME BACK

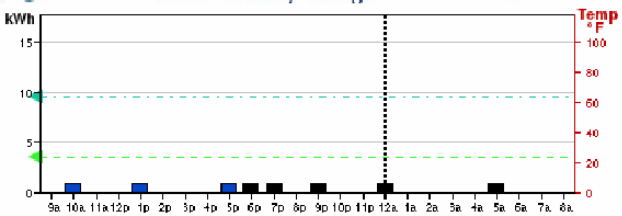
Latitude: 21.306080
*Longitude:*157.837921
*SN:*PX518496

1615 LIHOLIHO ST #305
Honolulu, Hi

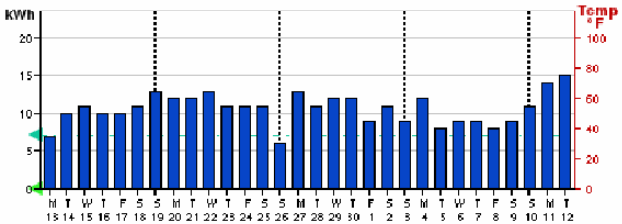
*Last kWh Reading:*545
12/12/06 5:00 AM
*15 Min Peak Demand:*0 kW
12/12/06 5:00 AM

GIS DATA | Electric Meter | *ID:*110808

KWh Hourly Usage



KWh Daily Usage



Comments

Last 24 hours/30 days usage cost: $1.55/$38.61

SENSUS AMR Features

Power fail (None in last 30 days)
Ignore outages < 120 sec
Outage duration 0 hr 0 min 0 sec
Power restore (None in last 30 days)
Ignore restorals < 120 sec
Meter tamper (None in last 30 days)
Power theft (None in last 30 days)
Low AC Volts (None in last 30 days)
Minimum low Voltage threshold 200 VAC
Ignore events < 120 sec
Meter Voltage on 12/12/06 7:37 AM
AVG (VAC) 120
Min (VAC) 120
Max (VAC) 122
Click Count last event (None in last 30 days) 0
Ignore transients < 66 ms

iCon Meter Status

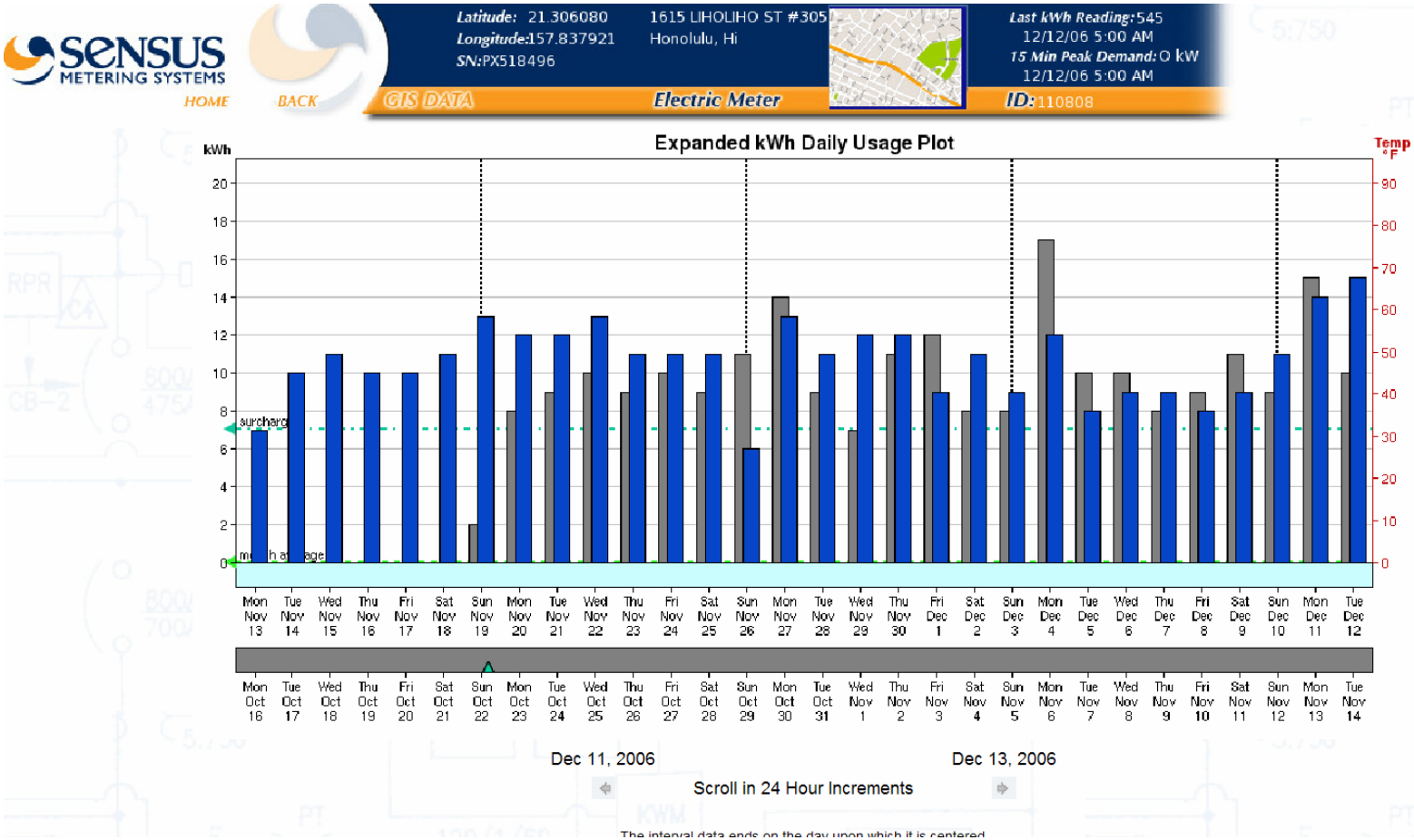
2-Way Commands

Communications

Raw message throughput	16.99%
Read interval success	100.00%
Distance to nearest tower	2.07 mi

SENSUS METERING SYSTEMS ALLIANT ENERGY.

Detailed On-Line Readout



FlexNet®

Total Service Solution

- Electric
  - Real Time Two-Way to the Meter
- Gas
- Water
- FCC-Protected Dedicated Spectrum
- Simple Fixed-Based Network
- Unmatched Communications Range and Reliability
- Long-term ROI Confidence
- Tangible, Measurable Results
- Strategic, Rural, Urban and Difficult Terrain

SENSUS METERING SYSTEMS ALLIANT ENERGY.

FlexNet®

www.sensus.com

SENSUS METERING SYSTEMS

ALLIANT ENERGY.

Advanced metering information systems: the key to realizing AMI benefits

Solution Overview

Only eMeter delivers proven AMIS technology

THE TOPLINE VIEW

- eMeter's solution is deployed at utilities across the country
- eMeter's EnergyIP software manages and automates utility processes and enriches enterprise business processes with AMI data
- eMeter's SOA-Compliant, technology-neutral platform accommodates new AMI and demand response technologies, enhancing organizational agility
- eMeter's AMIS increases overall efficiency, reduces operating costs, and enables improved customer service

Achieving the full benefits of AMI requires overcoming the daunting challenge of legacy systems integration. Utilities simply cannot afford to "rip and replace" legacy applications and the infrastructure that supports them. To justify the sizeable capital expenditure required to deploy AMI technology, utilities must be able to bridge the gap between their IT infrastructures and the rich data provided by AMI systems. Bridging that gap is the role of an advanced metering information system (AMIS) - software that goes well beyond meter data management (MDM) by adding a broad suite of AMI business process management applications and incorporating a robust, flexible, and real-time integration platform.

eMeter—The leader in advanced metering information systems

eMeter is a software, implementation services, and strategic consulting company serving the utility marketplace. eMeter's field-tested, enterprise-class AMIS—EnergyIP™—is deployed at utilities across the country including Oncor Electric Delivery, JEA, and CenterPoint Energy. eMeter's proven deployment expertise minimizes project risk for the utility, lowers implementation costs, and helps ensure faster ROI.

With robust business process management (BPM) capabilities, EnergyIP delivers unparalleled accuracy, end-to-end visibility, and real-time control over utility business processes such as outage management while enriching business processes across the enterprise with meter data.

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By seamlessly integrating AMI data with utility business processes, EnergyIP:

- **Increases overall efficiency**
- **Reduces operating costs**
- **Enables improved customer service**

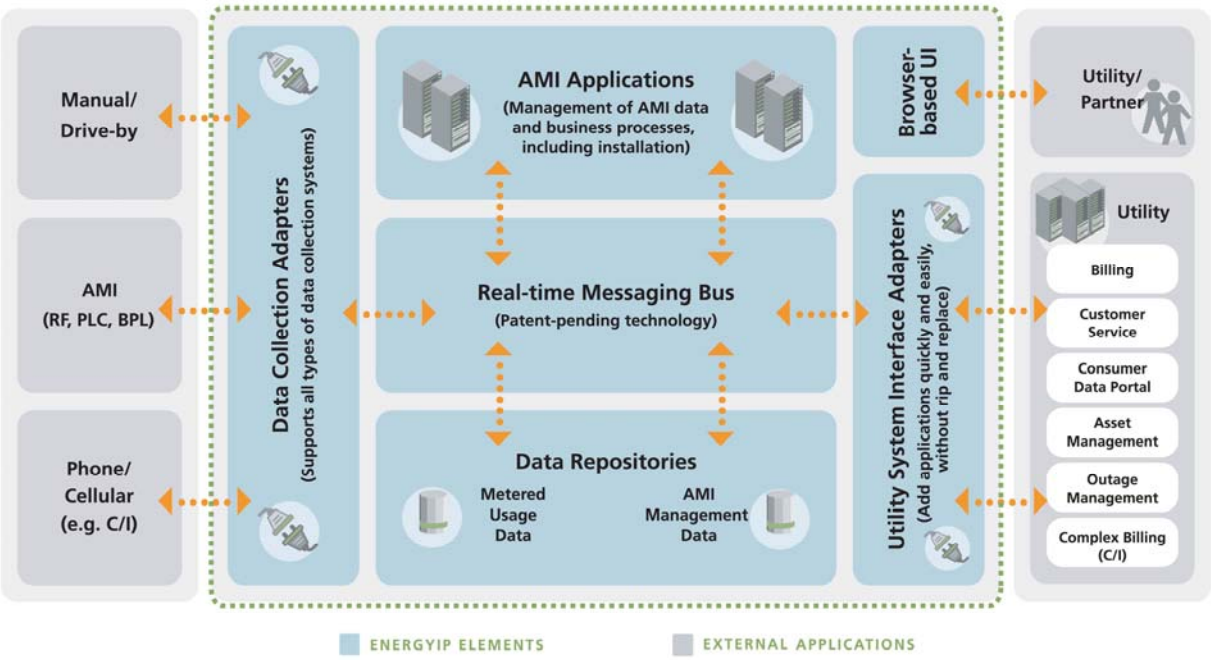
Solution overview

eMeter reduces the cost and complexity of supporting diverse advanced metering infrastructure (AMI) technologies. Without modifying or replacing legacy systems, eMeter enables you to deliver AMI data in real time from any AMI meter or communications network to manage and automate utility processes and enrich enterprise-wide business processes. With robust features and functionality, eMeter delivers unparalleled visibility and real-time control over utility processes while supporting customer energy programs such as demand response and critical peak pricing.

eMeter's AMIS solution includes both the EnergyIP software and associated professional services for installation and configuration (eMeter also works happily with a wide range of system integration partners).

EnergyIP features

Meter data management system (MDMS)
EnergyIP provides all the essential MDMS functions: receiving data from AMI systems, performing validation, editing, and estimation (VEE), and delivering billing-ready data to the utility billing system. The EnergyIP MDMS stores register reads, interval records, outage and restoration events, event logs, derived or computed data such as billing determinants and aggregated loads, and more. The AMI management database maintains the complex relationships among the meter, account, premise, communications node, AMI infrastructure, application services, and other attributes of the service delivery point. The EnergyIP synchronization engine synchronizes data between EnergyIP and other systems such as AMI data collection systems and core business applications.



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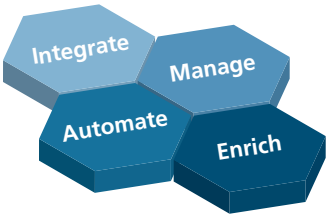

EnergyIP

Integrates your advanced metering infrastructure (AMI) with legacy systems

Manages AMI data in a common repository

Automates and streamlines utility business processes

Enriches enterprise processes with AMI data

SOA-compliant integration platform
eMeter's software has been certified as service oriented architecture (SOA) compliant. EnergyIP is a well-behaved member of the utility's IT "ecosystem," working in concert with new and legacy applications. With its smart, two-way interface adapters, EnergyIP enables allowing potentially any AMI technology to provide real-time and scheduled data to any utility legacy system – as well as any application system to request data or send control commands to AMI meters, disconnect switches, and demand response devices. The EnergyIP Real-time Messaging Bus provides a reliable, high-speed, high-capacity connection between all of the applications and processes within eMeter's software, ensuring ultimate scalability and performance through the addition of new applications or multiple application instances.

Business process application modules
EnergyIP provides comprehensive business process automation, monitoring, reporting, and exception management for all activities associated with AMI deployment and operations. Highly scalable application modules perform tasks such as AMI asset management; deployment planning and logistics; connect/disconnect automation; event filtering and notification; and data analysis and reporting. Web-based user interfaces provide administrators and personnel with user-friendly access to data.

As just one example, the Daily Estimation and Billing Read Optimizer generates daily usage estimates for accounts with missing reads, uses business rules to determine when an estimate should be used for billing, automatically updates the estimate with real data when available, and optimizes use of actual and estimated reads within the billing window to minimize manual reading.

Professional services

Strategic consulting
We work with clients to define their advanced metering and mass market demand response needs and architect the best possible solutions. We've developed strategies to ensure that utility AMI plans can meet today's needs that vary by customer, geography, business strategy and other factors – while future-proofing their solution by ensuring that exciting new AMI, demand response, and smart grid technologies can be seamlessly added down the road. We also support utility implementations of pricing and other demand response programs for residential end-users with low-cost, customer-friendly, leading-edge projects.

AMIS/MDMS Deployment support
eMeter has over 100 years of combined experience in advanced metering and communications. We apply this experience and our skills as technology and business innovators to the planning, installation, and configuration of your solution.

- **Planning** includes extensive process modeling to enable automation, increase efficiency, and streamline operations. We also design the software implementation using industry standards where available, using this and other strategies to reduce the risk of AMI technology obsolescence and vendor lock-in.
- **Installation** focuses on resolving scalability, reliability, and security issues while integrating advanced metering networks to utility CIS, billing, and outage management systems. Our team is known for successful installation of large, complex projects. We've met client cost and performance goals for AMIS systems supporting millions of meters and numerous AMI and system interfaces.
- **Configuration** ensures that your EnergyIP installation is fine tuned to deliver reliable, low-cost operations—collecting, processing, managing, and delivering accurate data seamlessly to utility systems. We configure the software with your specific business rules

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and preferences. We equip you to combine your superior energy expertise with new and robust AMI data to meet your strategic objectives: lower operating costs, reduced capital expenditures, and greater customer satisfaction.

Operations and Maintenance

You've purchased and we've installed for you EnergyIP to solve crucial business challenges and improve performance. eMeter professional services provides training, customer support, and software maintenance to make sure you can use the system to its full potential.

Using a train-the-trainer approach, our experts teach your training staff the essentials and provide a full set of documentation and training materials that walk through product usage step by step and cover each component. Training covers administrators, "super-users", and users. We offer customized programs that reflect your own business processes and organizational goals.

For those questions that come up from time to time from even your super users, our customer support team is available 24x7 to solve problems from highly critical to merely unusual – by phone, email, and even on-site if necessary (non-critical problems are handled during normal business hours).

eMeter's software maintenance service ensures that you always have the latest in EnergyIP software performance, from bug fixes to updates and new versions. It provides the peace of mind that comes from knowing that if anything goes wrong, eMeter stands ready to investigate, root-cause, and resolve the issue.

Future proof your automated metering infrastructure

eMeter empowers you to maximize the value of your advanced metering infrastructure (AMI) by fully integrating it with the complete range of your business processes. Our SOA-compliant, technology-neutral platform accommodates new metering technologies as they are brought to market—enhancing organizational agility and minimizing the risk of obsolescence for your AMR/AMI investments and essentially "future proofing" your AMR/AMI investments.

While increasing the longevity of legacy systems, eMeter's EnergyIP:

- **Promises maximum adaptability and flexibility**
- **Ensures performance and reliability**
- **Reduces integration cost and complexity**
- **Solves scalability and security issues**
- **Eliminates AMI vendor lock-in**
- **Lowers total cost of ownership (TCO)**

Get the power of eMeter

Find out how eMeter and EnergyIP can unleash the power of your meter data. Call us today at 650-631-7230 or visit us online at www.emeter.com.

eMeter

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The Outsourcing Solution

VSi

METER SERVICES

VSI Meter Services, Inc.

Table of Contents

- Introductions
- Brief Corporate Overview – Asplundh/Utilicon/VSI
- VSI Overview of Proposal
- Demonstration
- Break
- Discussion Topics

Introductions

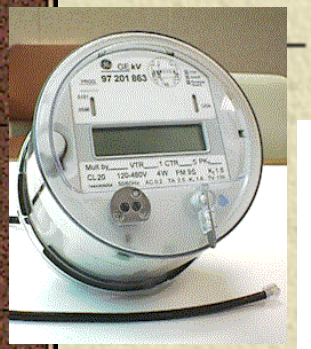
- Ted Fiala – VP Operations
- Fritz Matthews – IT Director
- Kevin Campbell – Sales Director
- David McGinley – VP Strategic Development and Sales

ASPLUNDH

UtiliCon Solutions, Ltd.

- Privately held for over 75 Years
- Largest Vegetation Management Company in the US
  - Working for Utilities in nearly every state in the US, with over 28,000 employees.
- And Provide a full range of Utility Services - Utilicon
  - Utility Construction Services – Aerial and Underground
  - Underground Locating Services
  - Meter Services – VSI Meter Services, Utility Meter Services (approx. 900 employees)
  - Over 5,500 employees within UtiliCon Solutions

VSI Meter Services ~ Overview



- Philadelphia, PA headquarters
- Founded in 1990
- Premier metering services:
  - Over 4,500,000 electric, gas and water meters installed
- Clients
  - Utilities (gas, electric, water)
  - Meter manufacturers
  - AMR technology providers
  - Municipalities

215

VSI Project Experience

- PECO Energy – 2.1 M accounts (G&E)
- Baltimore Gas and Electric – 1.1 M accounts (G&E)
- Bangor Hydro Electric – 110k accounts (E)
- Southwest Gas – 500k accounts (G)
- Progress Energy – 900k accounts (E)

SOUTHWEST GAS CORPORATION

Emera

Progress Energy

Exelon

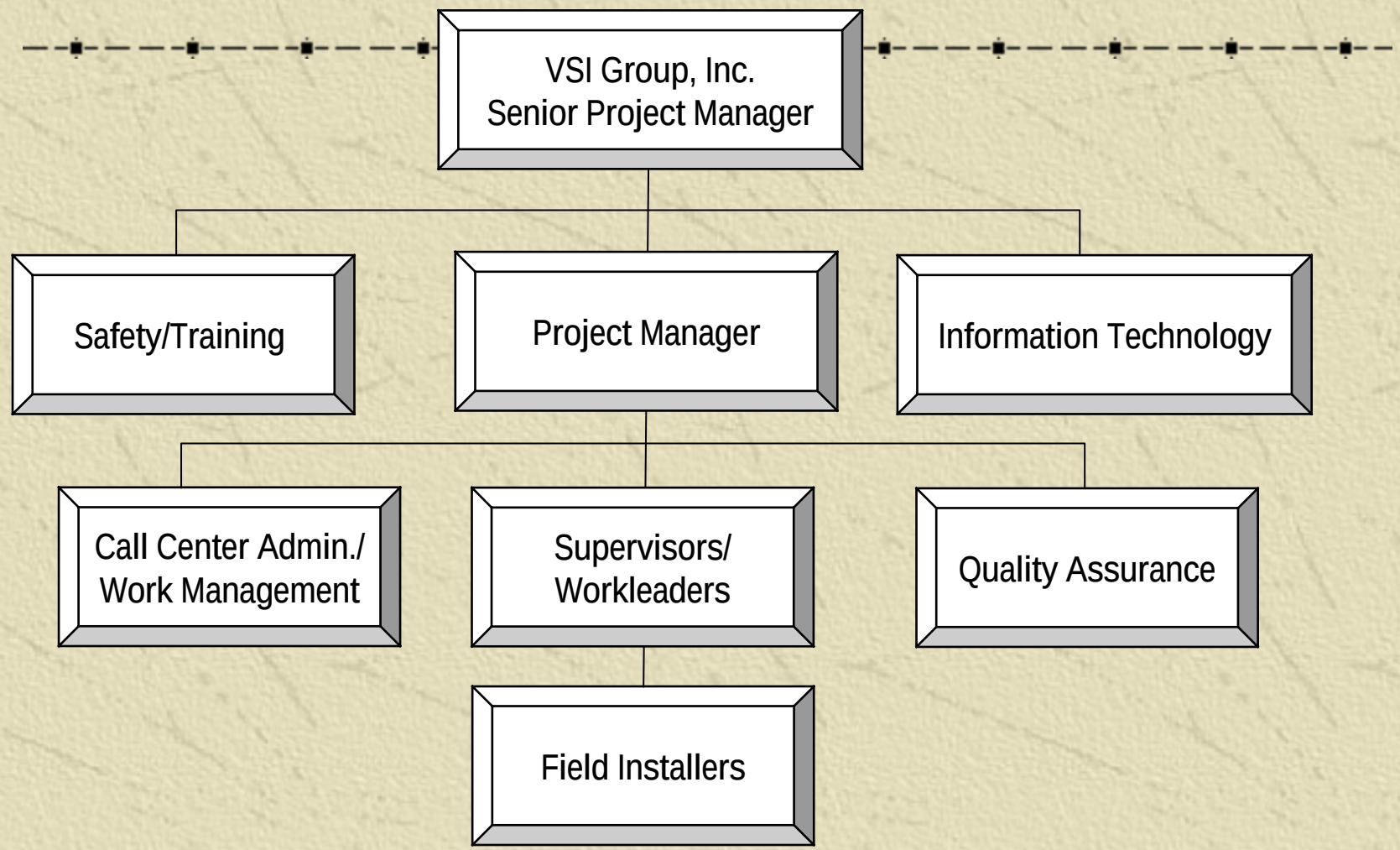
216

BGE
A Constellation Energy Company

How does this translate to you?

- *VSI has learned what is necessary for successful AMR deployments, and will bring this to bear for this Project.*
  - Across all aspects of the project:
- **Safety**
- **Start-up (Training, Staffing, Process Development)**
- **Quality Control**
- **Information Technology**
- **Customer Satisfaction**
- **Management of Logistics (Vehicles, Inventory, Manpower, Equipment)**
- **Scheduling and Cost Controls**

AMR Project Management Team*



218

Start-up

- <u>Comprehensive Start up plans are created collaboratively with the Client:</u>
- Staffing plans (Advertising, Screening, Hiring, Training)
- Training plans (Safety, Skills, Ambassador, Driving)
- Communications Plan
- Process Development (Data Transfers, Call Center, Deployment Schedule, Inventory Management, Claims, Exceptions)
- A period of acceptance testing
- Quality Assurance and Quality Control
- *We provide project plan templates and process templates*

Hiring and Quality Control

- There are several ways to ensure high levels of quality:
- Proper pre screening of new employees:
  - Wonderlic Aptitude Screening/Personality Profiling
  - Background Checks (Criminal and Driving), Drug and Alcohol Screening.
- Initial Training and Follow up:
  - 100% of a new hires' work is audited for the first week
  - 5% ongoing quality assurance audits are performed
- Process Controls
  - Bar-coding of materials (meters, AMR devices)
  - Handheld Devices for Installation Technicians – Confirming Reads

Safety

- **Initial Training**
- Skills Training
- Defensive Driving Course
- OSHA, Gas Safety
- CPR, First Aid, Hazmat, etc.
- **Safety Program**
- Staff Safety Professionals
- Organizational Safety Meetings (Tailgates, Executive Safety Mtgs.)
- Standard Communications (Bulletins, ACE Reports, Accident Notifications)
- Behavioral Approach to Safety – Audits are performed
- Appropriate Personal Protective Equipment

Information Technology

- Data Processing is one of the most critical elements of the project's success.
  - Developed MATS (Meter Access Tracking System) in MS SQL Server database to track all scheduled work and accompanying data elements
  - Disaster Recovery Plan – 4 hour back up program with daily off-site storage. (tape)

Customer Satisfaction

- Communications Plan
  - Letters, mailers, door hangers and phone calls.
  - Timing and Content – Experience and Examples
  - Call Center – Scripts, FAQ's, Training
- Field Technicians
  - Ambassador Training
  - Professional Appearance
  - Background Checks
- Claims Procedures
  - Documented Processes

Schedule and Cost Controls

- Strict Adherence to Project Management Principals and Tracking of all Key Performance Indicators allows for Project Control and helps Control Costs
- Pre-planning identifies issues and avoids costly delays
- Project review meetings with the customer are held monthly
- The Project status is always well known and communicated
- Weekly project review meeting with COO
- Unit costs allow for price certainty

Demonstration

- Work Order Management System
  - MATS – Meter Access Tracking System
    - Work Orders
    - Call Center
    - Scheduling
    - Event Tracking
    - Data Transfers

Key Performance Indicators

- We will document all key performance indicators:
  - Safety Statistics
    - OSHA, RVA
  - Call Center Statistics
    - % of calls handled, Avg. wait time, Appointments made, etc.
  - Operations Statistics
    - Productivity, schedule adherence, route saturation, quality assurance
  - Customer Satisfaction
    - Complaints, claims

Discussion Topics

- Review and Discuss

Differentiating Services

- Project management expertise
  - Processes for successful start-ups
  - Project controls
  - Performance indicators
- Back office operations
  - Call Center
  - Work Management
- Successful history with large-scale AMR deployment projects
- Ability to dedicate professional project managers with “Utility” experience.

VSI Project Experience

PECO Energy – Full System Deployment

- 2 Million meters (gas, electric)
- Completed in 31 months
- 143,000 Meters a month at its height.
- 40% Indoor accounts required an extensive back office and call center.
- A staff of over 300 employees

VSI Project Experience

Baltimore Gas and Electric – AMR System Deployment

- 1.0 Million meters (gas, electric)
- On-going
- Completed all meters within the Beltway
- 45% Indoor accounts requires a back office and call center.
- A staff of 80 employees

VSI Project Experience

Bangor Hydro Electric – Full System Deployment

- 110,000 meters (electric)
- TWACS by DCSI
- Large geographic coverage, completed in 12 months.
- A staff of 35 employees

Emera

VSI Project Experience

Progress Energy – AMR Deployment

- 850,000 meters (electric)
- Itron was Prime
- Installed 600k in the Carolinas and 250k in Florida
- Extremely aggressive schedule.
- Multiple cross dock openings.

Progress Energy

VSI Project Experience

Southwest Gas – AMR Deployment

- 571,000 Gas Modules
- Itron is Prime
- Installed 130k in the Phoenix area to date
- Las Vegas and Tucson to follow

SOUTHWEST GAS CORPORATION

VSI Project Experience Cont'd

PECO Energy – Current Field Services

- Transfer work completed to-date
  180,780

- Gas meter exchanges completed to-date:
  68,200

VSI Project Experience Cont'd

Baltimore Gas and Electric – Current Field Services

- Gas meter exchanges completed to-date: 170,270
- Recipients of the BGE

2004 "Outstanding Customer Service Award"

Summary of Cost Estimates – Advanced Metering Infrastructure System

Project Capital Investments ($000's)	**Gas**	**Electric**	**Total**
AMI Meters, Modules and Installation	$14,168	$54,134	$68,302
AMI Network and Installation	$2,105	$5,466	$7,572
AMI Software, MDMS, and Systems Integration – WPL Share[1]	$2,582	$6,720	$9,303
Data Center Computer Hardware	$176	$404	$580
Project Management and Miscellaneous Costs	$943	$2,454	$3,396
Sales Tax	$478	$1,441	$1,919
Total Project Capital Investment	**$20,453**	**$70,619**	**$91,072**
Total Meters	**173,100**	**454,900**	**628,000**

[1] The AMI and MDMS software will be owned and licensed to Alliant Energy Corporate Services in support of both Wisconsin Power and Light Company and Interstate Power and Light Company (IPL) creating economies of scale. The figures listed represent WPL's share of the costs based on number of meters at each utility.

Revenue Requirement Analysis – Advanced Metering Infrastructure System

Exhibit 5-1 – WPL Gas Revenue Requirement.

Exhibit 5-2 – WPL Electric Revenue Requirement.

Exhibit 5-3 – WPL Total Revenue Requirement.

AMI
Revenue Requirements Analysis
Prepared for the PSCW
($000s)
WPL **Gas**

		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
							(C-E)		(D-G)	(-H x 40.2%)			(F-J)	((K+L)/2)	(M x 12.74%)			(N+O+P)	
Year		AMI Capital Additions-SERVCO	AMI Capital Additions-WPL	AMI Gross Plant- WPL	Book Depreciation-AMI Equipment	Accumulated Depreciation-Book	Net Plant	Tax Depreciation	Book Depreciation-Tax Depreciation	Deferred Tax Balance	Accumulated Deferred Tax Balance	Beginning Net Rate Base	End Net Rate Base	Avg. Net Rate Base	Pre-tax Revenue Requirement-Return	Depreciation	Net Operations & Maintenance Expense	Total Revenue Requirement	Discounted Rev. Req. (@ 9%)
1	2007	$639	$1,008.8	1,008.8	33.6	33.6	975.1	38.4	(4.8)	1.9	1.9	0.0	973.2	486.6	62.0	116.8	184.3	$363.1	$347.8
2	2008	$1,529	$4,715.2	5,724.0	224.5	258.2	5,465.8	250.8	(26.2)	10.5	12.5	973.2	5,453.3	3,213.3	409.4	584.4	318.3	$1,312.1	$1,153.0
3	2009	$414	$10,941.7	16,665.7	746.7	1,004.9	15,660.8	819.1	(72.4)	29.1	41.6	5,453.3	15,619.3	10,536.3	1,342.4	1,339.0	466.6	$3,148.1	$2,537.9
4	2010	$134	$1,071.4	17,737.1	1,147.3	2,152.2	15,584.9	1,208.2	(60.8)	24.5	66.0	15,619.3	15,518.9	15,569.1	1,983.7	1,781.8	(305.0)	$3,460.4	$2,559.4
5	2011		$0.0	17,737.1	1,183.1	3,335.3	14,401.8	1,157.7	25.4	(10.2)	55.8	15,518.9	14,346.0	14,932.4	1,902.5	1,801.7	(1,506.8)	$2,197.4	$1,491.0
6	2012		$0.0	17,737.1	1,183.1	4,518.3	13,218.8	1,070.9	112.1	(45.1)	10.8	14,346.0	13,208.0	13,777.0	1,755.3	1,702.9	(1,671.7)	$1,786.4	$1,112.1
7	2013		$0.0	17,737.1	1,183.1	5,701.4	12,035.7	990.6	192.5	(77.4)	(66.6)	13,208.0	12,102.3	12,655.2	1,612.4	1,458.5	(1,724.5)	$1,346.4	$769.0
8	2014		$0.0	17,737.1	1,183.1	6,884.5	10,852.6	916.3	266.8	(107.2)	(173.9)	12,102.3	11,026.5	11,564.4	1,473.4	1,254.1	(1,779.7)	$947.9	$496.6
9	2015		$0.0	17,737.1	1,183.1	8,067.5	9,669.6	850.4	332.7	(133.7)	(307.6)	11,026.5	9,977.2	10,501.8	1,338.0	1,196.8	(1,834.2)	$700.6	$336.8
10	2016		$0.0	17,737.1	1,183.1	9,250.6	8,486.5	803.3	379.8	(152.7)	(460.3)	9,977.2	8,946.8	9,462.0	1,205.6	1,183.1	(1,892.6)	$496.0	$218.8
11	2017		$0.0	17,737.1	1,183.1	10,433.7	7,303.4	792.7	390.3	(156.9)	(617.2)	8,946.8	7,920.6	8,433.7	1,074.5	1,183.1	(1,952.8)	$304.8	$123.3
12	2018		$0.0	17,737.1	1,183.1	11,616.7	6,120.4	792.0	391.1	(157.2)	(774.4)	7,920.6	6,894.8	7,407.7	943.8	1,183.1	(2,014.8)	$112.1	$41.6
13	2019		$0.0	17,737.1	1,183.1	12,799.8	4,937.3	792.1	391.0	(157.2)	(931.6)	6,894.8	5,868.9	6,381.8	813.1	1,183.1	(2,075.9)	($79.7)	($27.2)
14	2020		$0.0	17,737.1	1,183.1	13,982.9	3,754.3	792.0	391.1	(157.2)	(1,088.8)	5,868.9	4,843.0	5,356.0	682.4	1,183.1	(2,141.4)	($275.9)	($86.2)
15	2021		$0.0	17,737.1	1,183.1	15,165.9	2,571.2	792.1	391.0	(157.2)	(1,246.0)	4,843.0	3,817.1	4,330.1	551.7	1,183.1	(2,208.9)	($474.1)	($135.9)
16	2022		$0.0	17,737.1	1,149.4	16,315.4	1,421.8	792.0	357.4	(143.7)	(1,389.6)	3,817.1	2,811.4	3,314.3	422.3	1,149.4	(2,278.3)	($706.6)	($185.8)
17	2023		$0.0	17,737.1	958.5	17,273.9	463.2	792.1	166.5	(66.9)	(1,456.6)	2,811.4	1,919.8	2,365.6	301.4	958.5	(2,346.8)	($1,086.8)	($262.2)
18	2024		$0.0	17,737.1	436.4	17,710.3	26.9	792.0	(355.6)	143.0	(1,313.6)	1,919.8	1,340.5	1,630.1	207.7	436.4	(2,420.1)	($1,776.0)	($393.1)
19	2025		$0.0	17,737.1	26.8	17,737.1	0.0	792.1	(765.2)	307.6	(1,006.0)	1,340.5	1,006.0	1,173.2	149.5	35.7	(2,495.6)	($2,310.3)	($469.1)
		$2,716.0	$17,737.1		$17,737.1			$15,234.7	$2,502.4	($1,006.0)					$18,231.2	$20,914.3	($29,679.7)	$9,465.8	$9,627.9
		Total	$20,453.1							40.2%					12.7%				9.0%

Notes:
Column D Assumes 15-yr book life
G Assumes 20-yr tax life
O In addition to AMI equipment depreciation, includes WPL's portion of SERVCO equipment depreciation and interest expense.

AMI
Revenue Requirements Analysis
Prepared for the PSCW
($000s)
WPL **Electric**

		A	B	C	D (B+C)	E	F	G	H (D-G)	I	J (E+F-I)	K (-J x 40.2%)	L	M	N (H-L)	O ((M+N)/2)	P (O x 12.74%)	Q	R	S (P+Q+R)	T
Year		AMI Capital Additions-SERVCO	AMI Capital Additions-WPL	Net Book Value-Existing Assets	Total Plant-WPL	Book Depreciation-AMI Equipment	Book Depreciation-Existing Meters	Accumulated Depreciation-Book	Total Net Plant	Tax Depreciation	Book Depreciation-Tax Depreciation	Deferred Tax Balance	Accumulated Deferred Tax Balance	Beginning Net Rate Base	End Net Rate Base	Avg. Net Rate Base	Pre-tax Revenue Requirement-Return	Depreciation	Net Operations & Maintenance Expense	Total Revenue Requirement	Discounted Rev. Req. (@ 9%)
1	2007	$1,664	$2,104.2	15,522.0	17,626.2	70.2	918.5	988.6	16,637.6	998.6	(10.0)	4.0	4.0	0.0	16,633.6	8,316.8	1,059.6	1,205.1	479.7	$2,744.4	$2,628.6
2	2008	$3,978	$15,780.7		33,406.9	346.3	918.5	2,253.4	31,153.5	1,664.5	(399.7)	160.7	164.7	16,633.6	30,988.8	23,811.2	3,033.8	2,260.1	816.9	$6,110.8	$5,369.8
3	2009	$1,076	$41,694.8		75,101.7	1,595.2	918.5	4,767.1	70,334.5	3,763.9	(1,250.2)	502.6	667.3	30,988.8	69,667.3	50,328.0	6,412.3	4,160.1	1,172.0	$11,744.4	$9,468.1
4	2010	$350	$3,971.0		79,072.6	3,193.1	918.5	8,878.6	70,194.0	5,263.0	(1,151.5)	462.9	1,130.2	69,667.3	69,063.8	69,365.5	8,837.9	5,869.5	(964.0)	$13,743.4	$10,164.8
5	2011		$0.0		79,072.6	3,440.3	918.5	13,237.4	65,835.2	5,085.9	(727.2)	292.3	1,422.5	69,063.8	64,412.7	66,738.3	8,503.1	6,054.5	(4,152.2)	$10,405.4	$7,060.6
6	2012		$0.0		79,072.6	3,777.3	918.5	17,933.1	61,139.5	4,773.6	(77.8)	31.3	1,453.8	64,412.7	59,685.7	62,049.2	7,905.7	6,106.1	(4,594.3)	$9,417.4	$5,862.6
7	2013		$0.0		79,072.6	3,938.2	918.5	22,789.8	56,282.9	4,484.2	372.4	(149.7)	1,304.1	59,685.7	54,978.8	57,332.2	7,304.7	5,617.9	(4,739.9)	$8,182.7	$4,673.3
8	2014		$0.0		79,072.6	4,000.1	918.5	27,708.3	51,364.3	4,216.9	701.6	(282.1)	1,022.0	54,978.8	50,342.3	52,660.5	6,709.5	5,121.9	(4,892.1)	$6,939.2	$3,635.9
9	2015		$0.0		79,072.6	4,202.4	918.5	32,829.1	46,243.5	3,975.3	1,145.5	(460.5)	561.5	50,342.3	45,682.0	48,012.1	6,117.2	5,168.6	(5,042.9)	$6,242.9	$3,001.0
10	2016		$0.0		79,072.6	4,365.2	918.5	38,112.8	40,959.8	3,797.5	1,486.2	(597.5)	(35.9)	45,682.0	40,995.7	43,338.9	5,521.8	5,261.6	(5,204.0)	$5,579.4	$2,460.6
11	2017		$0.0		79,072.6	4,478.4	918.5	43,509.7	35,562.9	3,757.8	1,639.1	(658.9)	(694.8)	40,995.7	36,257.8	38,626.8	4,921.4	5,364.5	(5,370.2)	$4,915.7	$1,988.9
12	2018		$0.0		79,072.6	4,600.8	918.5	49,028.9	30,043.7	3,755.1	1,764.1	(709.2)	(1,404.0)	36,257.8	31,447.7	33,852.7	4,313.2	5,476.7	(5,541.3)	$4,248.5	$1,577.0
13	2019		$0.0		79,072.6	4,647.2	918.5	54,594.6	24,478.0	3,755.4	1,810.3	(727.7)	(2,131.8)	31,447.7	26,609.8	29,028.7	3,698.6	5,523.1	(5,710.6)	$3,511.1	$1,195.7
14	2020		$0.0		79,072.6	4,843.0	918.5	60,356.1	18,716.6	3,755.1	2,006.4	(806.6)	(2,938.3)	26,609.8	21,654.9	24,132.3	3,074.7	5,665.1	(5,891.6)	$2,848.3	$889.9
15	2021		$0.0		79,072.6	4,968.3	918.5	66,242.8	12,829.8	3,755.4	2,131.4	(856.8)	(3,795.2)	21,654.9	16,624.9	19,139.9	2,438.6	5,784.3	(6,078.1)	$2,144.9	$614.8
16	2022		$0.0		79,072.6	5,123.8	918.5	72,285.1	6,787.5	3,755.1	2,287.2	(919.4)	(4,714.6)	16,624.9	11,502.1	14,063.5	1,791.8	5,861.4	(6,270.0)	$1,383.2	$363.7
17	2023		$0.0		79,072.6	4,126.9	826.6	77,238.6	1,834.0	3,663.5	1,290.0	(518.6)	(5,233.2)	11,502.1	7,067.2	9,284.6	1,183.0	4,976.0	(6,459.8)	($300.8)	($72.6)
18	2024		$0.0		79,072.6	1,730.5	-	78,969.1	103.5	2,836.7	(1,106.2)	444.7	(4,788.5)	7,067.2	4,892.0	5,979.6	761.9	1,737.5	(6,662.5)	($4,163.2)	($921.4)
19	2025		$0.0		79,072.6	103.5	-	79,072.6	0.0	2,836.9	(2,733.4)	1,098.8	(3,689.7)	4,892.0	3,689.7	4,290.8	546.7	135.6	(6,871.4)	($6,189.1)	($1,256.7)
		$7,068.0	$63,550.6	$15,522.0		$63,550.6	$15,522.0			$69,894.4	$9,178.2	($3,689.7)					$84,135.4	$87,349.6	($81,976.4)	$89,508.6	$58,704.5
		Total	$70,618.6				$ 15,522.0 million					40.2%					12.7%				9.0%
							16.9 years														

Notes:
Column E Assumes 15-yr book life
F Assumes 16.9-yr amortization
I Assumes 20-yr tax life
Q In addition to AMI equipment depreciation, includes WPL's portion of SERVCO equipment depreciation and interest expense.

AMI
Revenue Requirements Analysis
Prepared for the PSCW
($000s)
WPL Total

		A	B	C	D (B+C)	E	F	G	H (D-G)	I	J (E+F-I)	K (-J x 40.2%)	L	M	N (H-L)	O ((M+N)/2)	P (O x 12.74%)	Q	R	S (P+Q+R)	T
Year		AMI Capital Additions-SERVCO	AMI Capital Additions-WPL	Net Book Value-Existing Assets	Total Plant-WPL	Book Depreciation-AMI Equipment	Book Depreciation-Existing Meters	Accumulated Depreciation-Book	Net Plant	Tax Depreciation	Book Depreciation-Tax Depreciation	Deferred Tax Balance	Accumulated Deferred Tax Balance	Beginning Net Rate Base	End Net Rate Base	Avg. Net Rate Base	Pre-tax Revenue Requirement-Return	Depreciation	Net Operations & Maintenance Expense	Total Revenue Requirement	Discounted Rev. Req. (@ 9%)
1	2007	$2,303.5	$3,113.0	15,522.0	18,635.0	103.8	918.5	1,022.3	17,612.7	1,037.0	(14.7)	5.9	5.9	0.0	17,606.8	8,803.38	1,121.64	1,321.88	664.00	$3,107.5	$2,976.5
2	2008	$5,506.6	$20,495.9	-	39,130.9	570.8	918.5	2,511.6	36,619.3	1,915.3	(426.0)	171.2	177.2	17,606.8	36,442.1	27,024.44	3,443.18	2,844.48	1,135.22	$7,422.9	$6,522.8
3	2009	$1,489.7	$52,636.5	-	91,767.4	2,341.9	918.5	5,772.0	85,995.4	4,583.0	(1,322.6)	531.7	708.9	36,442.1	85,286.5	60,864.32	7,754.72	5,499.10	1,638.60	$14,892.4	$12,006.0
4	2010	$484.1	$5,042.4	-	96,809.7	4,340.4	918.5	11,030.8	85,778.9	6,471.2	(1,212.3)	487.4	1,196.2	85,286.5	84,582.7	84,934.61	10,821.52	7,651.22	(1,268.92)	$17,203.8	$12,724.3
5	2011	$0.0	$0.0	-	96,809.7	4,623.4	918.5	16,572.7	80,237.1	6,243.7	(701.8)	282.1	1,478.4	84,582.7	78,758.7	81,670.71	10,405.67	7,856.14	(5,659.01)	$12,602.8	$8,551.6
6	2012	$0.0	$0.0	-	96,809.7	4,960.3	918.5	22,451.5	74,358.3	5,844.5	34.3	(13.8)	1,464.6	78,758.7	72,893.7	75,826.22	9,661.02	7,808.93	(6,266.06)	$11,203.9	$6,974.7
7	2013	$0.0	$0.0	-	96,809.7	5,121.3	918.5	28,491.2	68,318.6	5,474.8	564.9	(227.1)	1,237.5	72,893.7	67,081.1	69,987.40	8,917.10	7,076.33	(6,464.35)	$9,529.1	$5,442.3
8	2014	$0.0	$0.0	-	96,809.7	5,183.1	918.5	34,592.8	62,217.0	5,133.2	968.4	(389.3)	848.2	67,081.1	61,368.8	64,224.95	8,182.90	6,376.04	(6,671.83)	$7,887.1	$4,132.6
9	2015	$0.0	$0.0	-	96,809.7	5,385.4	918.5	40,896.7	55,913.1	4,825.7	1,478.2	(594.2)	253.9	61,368.8	55,659.1	58,513.98	7,455.27	6,365.39	(6,877.09)	$6,943.6	$3,337.8
10	2016	$0.0	$0.0	-	96,809.7	5,548.3	918.5	47,363.4	49,446.3	4,600.7	1,866.0	(750.1)	(496.2)	55,659.1	49,942.5	52,800.84	6,727.36	6,444.70	(7,096.64)	$6,075.4	$2,679.3
11	2017	$0.0	$0.0	-	96,809.7	5,661.5	918.5	53,943.4	42,866.4	4,550.5	2,029.5	(815.8)	(1,312.0)	49,942.5	44,178.4	47,060.48	5,995.98	6,547.56	(7,323.01)	$5,220.5	$2,112.2
12	2018	$0.0	$0.0	-	96,809.7	5,783.8	918.5	60,645.7	36,164.1	4,547.1	2,155.2	(866.4)	(2,178.4)	44,178.4	38,342.5	41,260.45	5,256.99	6,659.73	(7,556.11)	$4,360.6	$1,618.6
13	2019	$0.0	$0.0	-	96,809.7	5,830.3	918.5	67,394.4	29,415.3	4,547.4	2,201.3	(884.9)	(3,063.3)	38,342.5	32,478.7	35,410.59	4,511.66	6,706.21	(7,786.54)	$3,431.3	$1,168.5
14	2020	$0.0	$0.0	-	96,809.7	6,026.1	918.5	74,338.9	22,470.8	4,547.1	2,397.4	(963.8)	(4,027.1)	32,478.7	26,497.9	29,488.30	3,757.10	6,848.20	(8,032.97)	$2,572.3	$803.7
15	2021	$0.0	$0.0	-	96,809.7	6,151.4	918.5	81,408.8	15,401.0	4,547.4	2,522.4	(1,014.0)	(5,041.1)	26,497.9	20,442.1	23,469.99	2,990.31	6,967.37	(8,286.95)	$1,670.7	$478.9
16	2022	$0.0	$0.0	-	96,809.7	6,273.2	918.5	88,600.5	8,209.3	4,547.1	2,644.6	(1,063.1)	(6,104.2)	20,442.1	14,313.5	17,377.78	2,214.10	7,010.83	(8,548.35)	$676.6	$177.9
17	2023	$0.0	$0.0	-	96,809.7	5,085.4	826.6	94,512.5	2,297.2	4,455.6	1,456.4	(585.5)	(6,689.7)	14,313.5	8,987.0	11,650.23	1,484.36	5,934.52	(8,806.52)	($1,387.6)	($334.8)
18	2024	$0.0	$0.0	-	96,809.7	2,166.9	0.0	96,679.4	130.4	3,628.7	(1,461.8)	587.6	(6,102.1)	8,987.0	6,232.5	7,609.71	969.55	2,173.86	(9,082.58)	($5,939.2)	($1,314.5)
19	2025	$0.0	$0.0	-	96,809.7	130.3	0.0	96,809.7	0.1	3,629.0	(3,498.6)	1,406.5	(4,695.6)	6,232.5	4,695.7	5,464.06	696.18	171.37	(9,366.96)	($8,499.4)	($1,725.8)
		$9,783.9	$81,287.7	$15,522.0		$81,287.7	$15,522.0			$85,129.0	$11,680.6	($4,695.6)					$102,366.6	$108,263.9	($111,656.1)	$98,974.4	$68,332.4
		Total	$91,071.6														12.7%				9.0%
	check	9783.9041	81287.7456	15522	0	81287.68947	15522	0		85129.0479	11680.6416	-4695.61792					102366.6007	108263.8927	-111656.0925	98974.40091	68332.3636

Summary of Net Operating Expense Impacts – Advanced Metering Infrastructure System

	(Benefits)/Costs by Year ($000's)	Gas	Electric
2007	WPL Benefits		
	Reduced Meter Reading Costs	-	-
	Reduced Billing Related Costs	-	-
	Reduced Outage Restoration Costs	-	-
	Improved Revenue Cycle	-	-
	Total WPL Benefits	-	-
	AMI System Support Costs	184.32	479.68
	2007 Net WPL Impact:	**184.32**	**479.68**
2008	WPL Benefits		
	Reduced Meter Reading Costs	(165.26)	(434.31)
	Reduced Billing Related Costs	(0.65)	(1.72)
	Reduced Outage Restoration Costs	-	(6.91)
	Improved Revenue Cycle	(9.39)	(24.67)
	Total WPL Benefits	(175.30)	(467.61)
	AMI System Support Costs	493.60	1,284.54
	2008 Net WPL Impact:	**318.30**	**816.92**
2009	WPL Benefits		
	Reduced Meter Reading Costs	(610.33)	(1,604.01)
	Reduced Billing Related Costs	(2.77)	(7.29)
	Reduced Outage Restoration Costs	-	(25.52)
	Improved Revenue Cycle	(39.84)	(104.69)
	Total WPL Benefits	(652.94)	(1,741.52)
	AMI System Support Costs	1,119.55	2,913.50
	2009 Net WPL Impact:	**466.61**	**1,171.98**

2010	WPL Benefits		
	Reduced Meter Reading Costs	(1,237.03)	(3,251.07)
	Reduced Billing Related Costs	(64.96)	(170.72)
	Reduced Outage Restoration Costs	(7.10)	(153.57)
	Improved Revenue Cycle	(66.81)	(175.58)
	Total WPL Benefits	(1,375.90)	(3,750.94)
	AMI System Support Costs	1,070.93	2,786.99
	2010 Net WPL Impact:	**(304.97)**	**(963.95)**
2011	WPL Benefits		
	Reduced Meter Reading Costs	(2,015.42)	(5,296.76)
	Reduced Billing Related Costs	(129.71)	(340.89)
	Reduced Outage Restoration Costs	(14.69)	(212.01)
	Improved Revenue Cycle	(71.59)	(188.16)
	Total WPL Benefits	(2,231.41)	(6,037.81)
	AMI System Support Costs	724.58	1,885.63
	2011 Net WPL Impact:	**(1,506.83)**	**(4,152.18)**
2012	WPL Benefits		
	Reduced Meter Reading Costs	(2,159.73)	(5,676.04)
	Reduced Billing Related Costs	(134.13)	(352.51)
	Reduced Outage Restoration Costs	(15.19)	(222.40)
	Improved Revenue Cycle	(74.03)	(194.57)
	Total 2012 WPL Benefits	(2,383.09)	(6,445.52)
	AMI System Support Costs	711.35	1,851.20
	2012 Net WPL Impact:	**(1,671.74)**	**(4,594.32)**

The above benefits are based on current salaries and loadings, expenses, overtime costs, and interest.