

**APS ORIGINAL**



0000108773

Leland R. Snook  
Director  
State Regulation & Pricing

Tel. 602-250-3730  
Fax 602-250-3003  
e-mail Leland.Snook@aps.com

RECEIVED  
Mail Station 9708  
PO Box 53999  
Phoenix, Arizona 85072-3999

2010 MAR -5 4 11

50

AZ CORP COMMISSION  
DOCKET CONTROL

March 5, 2010

Docket Control  
Arizona Corporation Commission  
1200 West Washington  
Phoenix, Arizona 85007

RE: MARCH 2010 AMI PLAN BIENNIAL ACC REPORT  
DECISION NO. 68112  
DOCKET NO. E-01345A-03-0775 and E-01345A-04-0657

Pursuant to Paragraph 32(e) of the Proposed Settlement Agreement attached to Decision No. 68112:

“For the next six years, APS shall provide the Commission with biannual reports related to the status of the remote meter reading pilot and implementation plan. The reports shall provide a description of the meter reading technology being implemented, APS’ plan for implementation, the number and type of customers involved in the pilot program, the cost associated with implementation, and the operational efficiencies associated with implementation.”

Attached please find the March 2010 AMI Biannual ACC Report.

If you should have any questions regarding the information contained herein, please call me at 602-250-3730.

Sincerely,

Leland R. Snook

LRS/jjb

Attachments

Cc: Brian Bozzo  
Barbara Keene

Arizona Corporation Commission  
**DOCKETED**  
MAR - 5 2010

DOCKETED BY

**Arizona Public Service  
AMI Plan Biannual ACC Report  
March 2010**

**Introduction**

Decision No. 68112 requires Arizona Public Service (APS) to provide the Arizona Corporation Commission ("ACC") with biannual reports through 2011 related to the status of APS's remote meter reading implementation. This report provides a description of the meter reading technology being installed, APS's implementation plan, information regarding the customers involved in the program, and the costs and operational efficiencies associated with implementation. This is the ninth biannual filing addressing the status of the Advanced Metering Infrastructure (AMI) Plan and details the progress made in implementation since September 2009.

**AMI Project Overview**

APS began installing smart meters as part of an AMI initiative in 2006 which will result in the ultimate deployment to over 950,000 APS customers territory wide. This meter communication network will drive software applications allowing APS and its customers to utilize smart meter data to reduce costs and maximize energy use.

APS utilizes two different AMI systems provided by Elster Electricity LLC, the AMS 9000® and EnergyAxis® systems. By the end of 2008, APS had installed 156,000 AMS 9000® meters. In May 2008, APS awarded a contract to Elster for an additional 800,000 smart meters for residential, commercial and industrial customers. Both AMI systems provide a platform for APS to improve operations and customer service with features such as voltage monitoring and outage notification through bi-directional communication for both residential and commercial meters. In addition, most EnergyAxis® meters provide remote connect and disconnect capabilities.

The software APS is using to manage the significant increase in meter data driven by AMI is the Aclara Energy Vision® Meter Data Management System (MDMS). Energy Vision® provides the foundation for the integration of the next generation of tools that will leverage AMI. The Aclara MDMS stores and provides a common interface to customer data transmitted to and from smart meters. The MDMS software provides APS with a suite of advanced service capabilities, including:

- Management of interval meter data and meter reads
- Interoperability with multiple meter technologies
- Integration with existing APS applications such as the Customer Information System (CIS) and aps.com
- A common interface to APS applications enabling APS to rapidly process service orders (connects, disconnects, rate changes, on-request reads and interval usage)

The MDMS is the database of record for all interval electricity usage data and supports a number of new operational and customer applications.

In May 2009, APS installed the Aclara Bill Prism®, a web portal that integrates smart meter data with CIS and the aps.com website allowing APS residential customers with AMI smart meters to view their detailed electricity consumption graphically on-line and provides information to assist customers in managing their energy usage. Bill Prism® provides an in-depth bill analysis function using smart meter data as well as a carbon calculator which assists them in quantifying and reducing their personal carbon footprint.

Other applications that APS expects to install during this project include energy theft mitigation and system load analysis software. In addition, APS will integrate MDMS data with current applications in use such as the Distribution Outage Management System (DOMS), and FeederAll, a distribution asset management product.

## **Project Status**

### *Meter Deployment:*

By the end of 2009, more than one quarter of APS customers had smart meters. As of February 2010, approximately 353,000 smart meters have been installed throughout the APS service territory. This includes approximately 36,000 meters that were successfully installed in the City of Flagstaff. These meters are a critical element of the Flagstaff Smart Grid initiative.

Since the September 2009 biannual report, APS has deployed an additional 90,900 AMI smart meters and expects to install another 192,000 smart meters by year end. This includes the meters that will be installed to support the City of Phoenix's application to the U.S. Department of Energy for the Green Rail Corridor Retrofit Ramp-Up Program. This project, developed by the City of Phoenix in partnership with Arizona State University, is an innovative, energy-efficiency project that targets residential, commercial and institutional buildings adjacent to a 10-mile stretch of the new Phoenix light-rail corridor in order to produce substantial energy and cost savings.

Over the next six months APS will install smart meters in the following areas:

- The Northwest area of Metro Phoenix
- City of Yuma
- Portions of Central Phoenix

### *Systems Integration:*

Over the last year the project focus has been twofold: (1) integrating the AMI systems EnergyAxis® and AMS9000® with the Aclara MDMS; and (2) completing the implementation of the base MDMS and Bill Prism®.

Since the September 2009 filing, the following milestones have been achieved:

- Phase 1 integration of AMI systems with DOMS in order to expedite creation of trouble reports, analysis of probable outage source, quicker dispatching of outage-response resources, and timely outage resolution. In this phase, the functionality was enabled in the Flagstaff area to understand the behavior of the meters in the field under actual outage conditions.
- Initiation of system work that will support billing for the new Critical-Peak and Super-Peak rates
- The Geographic Information System (GIS) utilized by APS to manage the day-to-day operations of AMI meters was enhanced
- Significant progress was made in the integration of the Aclara MDMS system with multiple legacy systems such as CIS, MV90 and additional business service functionality

*Costs:*

This project has three main cost components: meters and meter installation, monthly cellular communications, and interface development.

*Meters and Installation:*

The average installed cost of an Elster meter for this reporting period was approximately \$164.87. This includes single phase, three phase and collector meters.

*Monthly Cellular Communications:*

APS has contracted with KORE Wireless to provide cellular service for meter communications. Through February 2010 the average monthly per meter communication cost was approximately \$0.14. As APS deploys additional meters, the cost of communication is expected to further decrease on a per meter basis.

*Interface Development:*

APS has spent approximately three million dollars on information technology (IT) integration during this reporting period. This cost includes hardware, software license fees and the development of interfaces to APS systems.

**Operational Efficiencies**

The ability to read and program meters remotely provides immediate operational efficiencies as well as the potential to significantly reduce the cost of implementing new rate designs.

The table below illustrates the number of field visits eliminated during the last six months for customers with AMI meters\*.

YYYY/MM	Change Names	Rate Change & Verify	Connects	Disconnects	Total
2009/09	9,909	1,564	822	868	13,163
2009/10	9,930	1,653	1,140	1,153	13,876
2009/11	8,850	1,294	1,179	1,039	12,362
2009/12	9,275	1,458	1,317	1,298	13,348
2010/01	8,242	1,773	1,202	1,036	12,253
2010/02	8,889	2,130	1,512	1,525	14,056
<b>Total</b>	<b>55,095</b>	<b>9,872</b>	<b>7,172</b>	<b>6,919</b>	<b>79,058</b>

\*As of March 2, 2010

Reduction of field trips results in lower fuel consumption and reduced emissions, which support APS's effort to reduce its carbon footprint. Reducing field trips also supports the APS corporate value of safety, by reducing the potential for vehicular accidents and other safety-related events.

### Summary

Since the September 2009 report, APS has:

- Installed approximately 90,900 Elster meters
- Completed Phase 1 integration of AMI systems with DOMS
- Initiated system changes that will support billing for the new Critical Peak and Super Peak rates
- Enhanced the AMI GIS system for improved management of meters in the field
- Made significant progress in the integration of the Aclara MDMS system with multiple internal and external systems

Within the next six months APS plans to:

- Continue deployment of Elster smart meters
- Continue expanding the Aclara MDMS system by adding an array of business service functionality such as providing generation data for the Converge Demand Response (DR) project
- Support the Residential Demand Response (DR) pilot testing of various technology alternatives
- Explore additional applications that leverage smart meter data

In conclusion, over the past six months APS has made significant progress in building the foundation to manage smart meter data. Through these efforts, APS is creating an advanced technology platform to meet growing customer expectations for better management of electricity consumption and costs.

The next biannual report will be submitted by APS to the Commission in September 2010.