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PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

ENERGY DIVISION **RESOLUTION E-4201**
November 6, 2008

R E S O L U T I O N

Resolution E-4201. San Diego Gas & Electric Company (SDG&E) is authorized to enter into contracts with private vendors to implement Phase I of its Advanced Metering Infrastructure (AMI) Project as requested.

By Advice Letter (AL) 2016-E. Filed on August 13, 2008.

SUMMARY

This Resolution approves SDG&E's contracts with private vendors for AMI technology and installation to implement the final Phase I of its AMI project as requested.

The contracts SDG&E has signed with private vendors (main agreement and three supporting agreements) for procurement and installation of SDG&E's AMI technology system encompassing electric meters, gas modules and communication infrastructure meet the minimum functional requirements set by the Commission to establish utility AMI systems capable of supporting demand response.

Energy Division recommends approval of SDG&E's main contract with Itron (and three other supporting contracts for reselling, project planning services, and initial deployment) because these contracts will facilitate the implementation of the six functional AMI requirements set forth by the Commission in R.02-06-001. With these contracts, SDG&E has selected a technology for the meters that would allow establishing a system capable of collecting and storing data from the meters on an hourly basis**.** This capability lays the foundation for the implementation of time-varying electricity rates, including time-of-use and critical peak pricing.

In addition to enabling time-varying electricity rates, the contracts submitted via AL 2016-E will further facilitate demand response by enabling direct load control of customer energy use through Programmable Communicating Thermostats.

The contracts complement previously approved SDG&E contracts (on June 7, 2007 via Commission Resolution E-4094) that include software that will help SDG&E operate more efficiently by detecting energy theft. The proposed contracts also contain the option to license software designed to help customers manage their bills and lower energy costs.

The contracts submitted via AL 2016-E contain proprietary information and should remain confidential.

The contracts signed with Itron (and one supporting agreement with OneSource Distributors LLC) include pricing and product detail information that could adversely affect these companies if made public. For this reason, Energy Division recommends the contracts be protected from disclosure under the provisions of PU Code Section 583 and Commission's General Order 66-C. A redacted version of the contracts is available to the public.

SDG&E has offered to provide un-redacted versions of this advice letter to members of the sub-group of the Technology Advisory Panel (TAP) who have signed confidentiality agreements.

BACKGROUND

SDG&E's AMI project is a key step in advancing California's goal of increasing price responsive demand

The California Energy Action Plan (EAP) II lists demand response as a top-priority resource for meeting the state's growing energy needs. The EAP II specifies that 5% of system peak demand should be met by demand response by 2007 and that dynamic pricing tariffs be made available to all customers.

The installation of AMI for residential and small commercial and industrial customers moves the Commission closer to achieving its demand response goals as the advanced meters are a necessary device to enable participation in demand response programs and tariffs.

In August 2005, the Commission approved $9.3 million[1] in funding for SDG&E to carry out pre-deployment AMI activities through year-end 2006 (Phase 1), and

[1] D.05-08-028.

on April 12, 2007, the Commission approved a settlement via D.07-04-043 allowing SDG&E to move forward with its AMI project[2].

Commission approval of SDG&E's AMI project was contingent upon Energy Division's confirmation that SDG&E's AMI contracts with third-party vendors meet the minimum functionality criteria set forth in R.02-06-001.

A May 9, 2005 Assigned Commissioner/Administrative Law Judge Ruling in A.05-03-015 required SDG&E to show that its AMI project meets the functionality criteria set forth in Rulemaking (R.) 02-06-001:

1. Implementation of price responsive tariffs;

2. Collection of usage data at a level of detail (interval data) that supports customer understanding of hourly usage patterns and how those usage patterns relate to energy costs;

3. Customer access to personal energy usage data with sufficient flexibility to ensure that changes in customer preference of access frequency do not result in additional AMI system hardware costs;

4. Compatible with applications that utilize collected data to provide customer education and energy management information, customized billing, and support improved complaint resolution;

5. Compatible with utility system applications that promote and enhance system operating efficiency and improve service reliability, such as remote meter reading, outage management, reduction of theft and diversion, improved forecasting, workforce management, etc.; and

6. Capable of interfacing with load control communication technology.

The AMI business proposal by SDG&E included plans to replace and/or retrofit electromechanical watt hour meters and gas meters, discontinue manual meter reading, establish a two-way communications infrastructure, provide automated reading of meters, integrate customer information and billing systems, measure

[2] The settlement agreement added new functionality to SDG&E's original proposal and improved its overall cost-effectiveness.

energy use in 15 minute or one hour increments and enable electric demand response/load control devices to help reduce peak energy use.

At the time SDG&E's AMI project was approved in D.07-04-043, however, SDG&E had not selected an AMI technology and had not signed contracts with technology vendors. While the Commission approved SDG&E's AMI project, it was unable to make a specific finding that the project met the minimum functionality requirements as set forth in R.02-06-001[3]. Thus, the Commission made approval of SDG&E's AMI project conditional upon its review and approval of SDG&E's contracts with third-party vendors to ensure the contracts comply with these requirements.[4]

SDG&E has divided its AMI project into two phases. Phase 0, which involved the establishment of program requirements and other project startup activities, has been completed. Phase I, the construction and deployment of the AMI system, meters and communications network, was scheduled to begin in May 2007 and reach completion during second quarter 2011.

Phase I of SDG&E's AMI project consists of developing a new information technology system, integrating that system into the company's existing information and billing systems, preparing for AMI meter installation and physically installing the meters in customer premises and the associated communications infrastructure to collect and transmit electricity usage data.

SDG&E had plans to begin Phase I of its AMI project with the development of a Meter Data Management System (MDMS) that will be integrated into the utility's legacy systems. The purpose of the MDMS is to accept and process the vast amounts of data that the new meters will generate.

At the same time, SDG&E's plan was to begin planning and preparing for the deployment of the new meters and communication modules so that the deployment, scheduled to begin in the fourth quarter of 2008, will progress smoothly.

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[3] D.07-04-043, Conclusion of Law #1.

[4] D.07-04-043, Ordering Paragraph #2.

In October 2005, SDG&E issued Request for Proposals (RFPs) for program management, system integration, MDMS, installation services, as well as the actual AMI technologies for electric meters, gas modules and communication infrastructure. SDG&E evaluated the responses and selected two vendors, Capgemini and Itron, to provide the system integration, program management and MDMS products and services. SDG&E selected two other vendors for field testing of the AMI technologies in 2006 and 2007.

SDG&E selected Capgemini as its main strategic partner on the project and it will be involved in all aspects of the AMI installation during Phase 1, including Program Management and System Integration functions. SDG&E also signed an agreement with Itron, Inc., to license Meter Data Management software (and maintenance support) that would retrieve, validate and store interval consumption data from electric meters and daily reads from gas meters. Included in this agreement was a Revenue Protection Suite software that would "mine" the data to help SDG&E identify potential instances of energy theft.

The MDMS agreement included the option to license Mass Market Customer Care Residential Rate Analysis Module software, which could be deployed in SDG&E's customer web portal, allowing customers to view details of their daily consumption on a "day after" basis via the Internet. This software package provides tools that will help customers better manage energy consumption and lower monthly bills. This type of software is important because the effectiveness of demand response depends on customers' participation, and customers are more likely to participate if participation is easy and they see concrete benefits.

On June 7, 2007, the Commission approved Resolution E-4094, authorizing SDG&E to enter into contracts with private vendors Capgemini and Itron to begin implementing Phase I of its Advanced Metering Infrastructure (AMI) Project as requested by Advice Letter (AL) 1890-E filed on April 18, 2007.

An "RFP Addendum" (as part of the settlement agreement) was issued by SDG&E on May 10, 2007, for AMI project technologies and installation services. Responses were received by June 20, 2007, which were subsequently evaluated by SDG&E and resulted in the awarding of contracts submitted via AL 2016-E and are the subject of this resolution. A brief description of the new contracts follows (as described in AL 2016-E).

ITRON Main Agreement

This agreement formalizes Itron's role as SDG&E's AMI technology solution provider. Itron will be involved with SDG&E and their legacy systems integrator (CapGemini) in all aspects of design, implementation, and support of SDG&E's Smart Meter Program.

Major Itron responsibilities included in the agreement are:

- Providing Itron OpenWay AMI technology equipment including electric meters, gas modules, secondary (non-Itron) electric meter communications modules, network devices, installation tools, and associated accessories including:
    - OpenWay electric meters - OpenWay electric meters will provide full two-way communications and robust interval data collection functionality along with the ability to collect and store over 1 year of profile data. OpenWay electric meters will include an integrated, fully rated 200 AMP connect/disconnect switch for all residential customers 200 AMPs or less. In addition, every OpenWay electric meter includes a ZigBee-based interface.
    - OpenWay gas modules - OpenWay gas modules will attach to gas meters and transmit gas consumption and interval data to a nearby electric meter via ZigBee
    - Network devices - The network will include (i) a wide area network provided by one or more carriers selected by SDG&E to establish connectivity between network devices and the software headend system, (ii) a radio frequency local area network that establishes connectivity between the electric meters, (non-Itron) electric meters, and stand-alone cell relays, and (iii) a ZigBee Smart Energy communication network (Home Area Network or "HAN") that establishes connectivity between the network points, and gas modules, and HAN devices.
- Providing AMI technology software including an integrated headend solution and associated firmware;
- Providing professional consulting and implementation services including project management for all design, run, build, transfer, and support services; and

- Providing installation services including project management for all network devices, electric meters, and gas modules.

Three Supporting Agreements

OneSource Reseller Agreement: This agreement formalizes OneSource's role as an authorized reseller to be appointed by Itron within 60 days of the Main Agreement's effective date for nearly all of SDG&E's Itron's OpenWay electric meters and gas modules that will be installed by Itron's subcontractor during mass deployment. OneSource will assist with forecasting, issuing purchase orders to Itron, physical receipt of equipment, shipping inspection, warehousing facilities, delivering equipment, first in first out rotation, and inventory. This agreement provides for SDG&E to directly pay OneSource for warehousing, material handling, inventory and logistic services provided by OneSource as a subcontractor to Itron.

Bridge Agreement: The Bridge Agreement between SDG&E and Itron, effective February 8, 2008, was created to cover required project-related work until a comprehensive contract (the Main Agreement described above) for the entire project could be agreed upon. The Main Agreement will supersede the Bridge Agreement. The Bridge Agreement specified Itron's software and professional services including system design, installation, configuration, and testing of various OpenWay collection engine environments for the Smart Meter initiative until April 30, 2008.[5]

5K Agreement: The 5K Agreement between SDG&E and Itron, effective April 4, 2008, was entered into in connection with an initial deployment of approximately 5000 Smart Meters and related hosted software services. The Main Agreement will supersede the 5K Agreement.

NOTICE

Notice of AL 2016-E was made by publication in the Commission's Daily Calendar. SDG&E states that a copy of the Advice Letter was mailed and distributed in accordance with Section III-G of General Order 96-A as well as to parties in A.05-03-015 et. al.

[5] The Bridge agreement was later amended, extending the service term to June 30, 2008.

PROTESTS

Advice Letter 2016-E was not protested by any party.

DISCUSSION

SDG&E has requested confidential treatment of the agreements attached to AL 2016-E.

SDG&E asserts that the agreements attached to AL 2016-E contain proprietary terms and conditions, including pricing and product details, that would be harmful to SDG&E, and Itron if revealed. Energy Division agrees and recommends that the Commission afford confidential treatment to these documents under the provisions of PU Code 583 and Commission's General Order 66-C. Redacted versions of the contracts will be made available to the public.

Affording confidential treatment to these documents is consistent with the motion granted by the Assigned Administrative Law Judge during the February 27, 2007 hearing on the SDG&E AMI settlement agreement in which he agreed that making public the products and specifications agreed to by the Settling Parties would give vendors an advantage in formulating bids to the disadvantage of SDG&E and its customers.

Per its Settlement Agreement as approved in D.07-04-043, SDG&E has provided unredacted versions of the contracts to a sub-group of the Technology Advisory Panel (TAP) that have signed a non-disclosure confidentiality agreement. Members of that sub-group are the Division of Ratepayer Advocates staff, Energy Division staff, UCAN staff, and one other member selected by SDG&E. Drawing from the expertise of regulatory agencies, industry technology experts, other business partners and customer representatives across the spectrum of AMI and AMI-related technologies, the TAP was established "to provide advice and input to SDG&E regarding AMI customer and program needs in a cooperative and collaborative fashion for the professional exchange of ideas, advice and feedback. The TAP also provides a forum for input and collaboration with the stakeholders served by the AMI project and its related deployment"[6].

[6] D.07-04-043, Appendix A.

Commission approval of SDG&E's AMI project in D.07-04-043 stipulated that the utility must submit its contracts with third-party vendors to the Commission to ensure that the project meets the minimum AMI functionality criteria outlined in R.02-06-001.

Energy Division has evaluated the contracts SDG&E submitted with AL 2016-E and concludes that the AMI meter and communications technology and installation services being contracted for will be capable of meeting the Commission's minimum AMI functionality criteria. Energy Division therefore recommends that the Commission find that the contracts proposed in AL 2016-E meet the Commission's minimum AMI functionality criteria.

The following discussion covers the issue of whether the selected AMI technology will be capable of supporting the Commission's minimum AMI functionality requirements.

1. Implementation of price-responsive tariffs for:

a. Residential and Small Commercial Customers (200kW):

i. Two or Three Period Time-of-Use (TOU) rates with ability to change TOU period length;

ii. Critical Peak Pricing with fixed (day ahead) notification (CPP-F)

iii. Critical Peak Pricing with variable or hourly notification (CPP-V)

iv. Flat/inverted tier rates

The contracts SDG&E has signed with Itron specify that the procured meters will be capable of handling different time-of-use periods and changing the period lengths. Because the new system will collect and store data a minimum of once every hour, the system will have no problem differentiating various TOU rates, combining these rates with hourly customer usage and incorporating that information into the billing process.

The contracts also stipulate that the meter be capable of handling data generated by a Critical Peak Pricing program. The contracts state that although the final DR programs have not yet been defined, the system should be able to receive information related to the CPP DR event including participation, baseline, consumption and load reduction and export that information to other databases.

Inverted tier rates are the rates currently affecting residential customers in SDG&E's service territory. Since these rates are simpler and generate significantly less data than SDG&E's AMI project is equipped to handle, there is no reason to believe that the system discussed here would not be able to manage data produced by those rates.

2. Collection of usage data at a level of detail (interval data) that supports customer understanding of hourly usage patterns and how those usage patterns relate to energy costs.

SDG&E's AMI meters will collect and store interval data on an hourly basis for residential customers and every 15 minutes for commercial and industrial customers. Collection of data at this level of detail will enable customers to view their hourly usage patterns and understand how those patterns affect energy costs.

SDG&E's earlier agreement with Itron includes the option to license Mass Market Customer Care Residential Rate Analysis Module, software that can be deployed in the customer portal of SDG&E's website and allow customers to view details of their daily consumption on a day-after basis. This software package also includes tools that will enable customers to better manage energy use and lower overall costs.

3. Customer access to personal energy usage data with sufficient flexibility to ensure that changes in customer preference of access frequency do not result in additional AMI system hardware costs

With the contracted technologies, two methods are available to customers to access personal energy usage data that offer substantial flexibility. In the first method, SDG&E's AMI system based on the contracted meter and communications technologies, when coupled with the earlier contracted MDMS, will be capable of collecting and organizing data from residential meters on an hourly interval and from Commercial and Industrial meters on a 15-minute interval. SDG&E is planning to make this information available to customers (via a customer-specific web portal accessible through the Internet) by 8 a.m. on the day after the energy is used.

In the second method, the customer can access their personal energy usage data on a near real-time basis at whatever frequency they desire by connecting an optional in-home display device to a standardized wireless Home Area Network

interface of the AMI meter. The data exchange in this method does not increase the data load on the overhaul network back to the utility.

Energy Division believes these parameters will be sufficient to satisfy nearly all customer preferences for access frequency without changes in the system.

4. Compatible with applications that utilize collected data to provide customer education and energy management information, customized billing, and support improved complaint resolution

This requirement has already been addressed through the earlier contracted software previously approved by the Commission. The MDMS will store data collected on hourly or 15-minute intervals. Once the data is stored, SDG&E will be able to use that data provide customer education and energy management information, customized billing and improved complaint resolution.

5. Compatible with utility system applications that promote and enhance system operating efficiency and improve service reliability, such as remote meter reading, outage management, reduction of theft and diversion, improved forecasting, workforce management, etc.

This requirement has already been addressed through the contracted software previously approved by the Commission. SDG&E's MDMS and systems integration plan supports the improvements to operating efficiency and service reliability listed above. A central feature of this plan is remote meter reading. The proposal also calls for automatic detection of outages via AMI meters and infrastructure and the verification of outage restoration using that equipment.

Moreover, as part of SDG&E's agreement with Itron, SDG&E will license software capable of "mining" the data from the meters to detect energy theft and diversion. SDG&E plans to use the data generated by the AMI system, together with historical weather data, to improve its future load forecasting. By eliminating the on-site meter reading and connect/disconnect functions, SDG&E will be able to better manage its workforce.

6. Capable of interfacing with load control communication technology

SDG&E's systems integration plan includes the ability to utilize the wireless Home Area Network communications capability of the electric meter to augment or control usage at the customer premise. In addition to the capacity to interface with a wide variety of load-control communication technology, the contracts submitted by SDG&E specify the ability to receive and store information related

to customer Programmable Communicating Thermostats (PCTs). The MDMS will provide an interface that enables SDG&E to reduce a customer's energy use by controlling heating and air conditioning during a DR event.

COMMENTS

Public Utilities Code section 311(g) (1) provides that resolutions generally must be served on all parties and subject to at least 30 days public review and comment prior to a vote of the Commission. Section 311(g) (2) provides that this 30-day period may be reduced or waived upon the stipulation of all parties in the proceeding.

All parties in the proceeding have stipulated to reduce the 30-day waiting period required by PU Code section 311(g)(1) to 16 days. Accordingly, this matter will be placed on the first Commission's agenda following the mailing of this draft resolution. By stipulation of all parties, comments shall be filed no later than 9 days following the mailing of this draft resolution. Because there were no protests on the resolution, there shall be no reply comments on this draft resolution.

No comments were received on this draft resolution.

FINDINGS

1. D.07-04-043 directed SDG&E to file one or more Advice Letters containing signed vendor contracts to insure that SDG&E `s AMI technology meets the minimum functionality criteria set forth in the Joint Assigned Commissioner and Administrative Law Judge's Ruling Providing Guidance for the AMI Business Case Analysis issued February 19, 2004 in R.02-06-001.

2. The AMI contracts submitted by SDG&E via Advice Letter 2016-E stipulate the AMI meter and communication technologies and installation to be provided third-party vendors.

3. Terms and conditions of the contracts submitted with Advice Letter 2016-E could harm SDG&E and the vendors if made public, and therefore these contracts should remain confidential pursuant to the provisions of PU Code Section 583 and General Order 66-C.

4. SDG&E has provided unredacted versions of this advice letter to members of a sub-group of the Technology Advisory Panel that have signed a non-disclosure confidentiality agreement.

6. The contracts submitted with Advice Letter 2016-E meet the minimum functional criteria for utility AMI systems set forth in R.02-06-001.

7. The contracts submitted via Advice Letter 2016-E should be approved.

THEREFORE IT IS ORDERED THAT:

1. SDG&E's request to execute contracts in Advice Letter AL 2016-E is approved.

2. SDG&E's request for confidential treatment of the contracts submitted with AL 2016-E under the provisions of PU Code Section 583 and General Order 66-C is granted.

This Resolution is effective today.

I certify that the foregoing resolution was duly introduced, passed and adopted at a conference of the Public Utilities Commission of the State of California held on November 6, 2008; the following Commissioners voting favorably thereon:

/s/ Paul Clanon
Paul Clanon
Executive Director

MICHAEL R. PEEVEY
PRESIDENT
DIAN M. GRUENEICH
JOHN A. BOHN
RACHELLE B. CHONG
TIMOTHY ALAN SIMON
Commissioners