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PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

ENERGY DIVISION **RESOLUTION E-4094**
June 7, 2007

R E S O L U T I O N

Resolution E-4094. 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) 1890-E Filed on April 18, 2007.

SUMMARY

This Resolution approves SDG&E's request to contract with private vendors for implementation of Phase I of its AMI project as requested.

The contracts SDG&E has signed with third-party vendors for systems integration, program management and information technology 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 contracts with Capgemini and Itron because those contracts will facilitate the implementation of the six functional requirements set forth by the Commission in R.02-06-001. Although SDG&E has not yet selected a technology for the meters themselves, the contracts submitted with AL 1890-E would establish 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 rates, including time-of-use and critical peak pricing.

In addition to enabling time-varying rates, the contracts submitted with AL 1890-E will further facilitate demand response by laying the foundation for direct load control of customer energy use through Programmable Communicating Thermostats. The contracts also include software that will help SDG&E save money by detecting energy theft, and they contain the option to license software designed to help customers manage their bills and lower energy costs.

The contracts submitted via AL 1890-E contain proprietary information and should remain confidential.

The contracts signed with Capgemini and Itron 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 Technology Advisory Panel (TAP) that have signed confidentiality agreements.

BACKGROUND

Phase I is the implementation stage of SDG&E's proposal to install its advanced metering infrastructure (AMI) throughout its service territory, which the Commission approved recently in D.07-04-043.

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, and on April 12, 2007, the Commission approved a

[1] D.05-08-028.

settlement 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.

The 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.

At the time SDG&E's AMI project was approved, 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

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

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]

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.

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, is scheduled to begin in May 2007 and reach completion during second quarter 2011.

SDG&E 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 will 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.

In October 2005, SDG&E issued Request for Proposals (RFPs) for the system integration, program management and MDMS functions. SDG&E evaluated the responses and selected two vendors, Capgemini and Itron, to provide the system integration, program management and MDMS products and services.

Via AL 1890-E, SDG&E requests Commission approval of its contracts with Capgemini and Itron to provide these functions.

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

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

SDG&E has selected Capgemini as its main strategic partner on the project and it will be involved in all aspects of the AMI installation, including Program Management and System Integration functions.

Capgemini has been under contract with SDG&E to manage pre-deployment activities and will be involved in the project through completion of the meter installation in the second quarter of 2011.

During Phase I, Capgemini will run the program management office, which oversees all aspects of management, governance and tracking for the project from start to finish. Capgemini will also be responsible for system integration, including design, development, testing and implementation of new programs and interfaces to support the AMI program.

SDG&E has signed an agreement with Itron, Inc., to license Meter Data Management software and maintenance support.

The main component of the Itron agreement is the MDMS software, which will retrieve, validate and store interval consumption data from electric meters and daily reads from gas meters. Included in this agreement is Revenue Protection Suite software that will "mine" the data to help SDG&E identify potential instances of energy theft.

The agreement includes the option to license Mass Market Customer Care Residential Rate Analysis Module software, which could be deployed in SDG&E's customer portal, allowing customers to view details of their daily consumption on a "day after" basis. 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.

NOTICE

Notice of AL 1890-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.

PROTESTS

Advice Letter 1890-E was not protested by any party.

DISCUSSION

SDG&E has requested confidential treatment of the agreements attached to AL 1890-E.

SDG&E asserts that the agreements attached to AL 1890-E contain proprietary terms and conditions, including pricing and product details, that would be harmful to SDG&E, Capgemini 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 have been provided to the public.

Affording confidential treatment to these documents is consistent with the motion granted by Administrative Law Judge David Gamson during the February 27, 2007 hearing on the SDG&E AMI settlement agreement. In that motion, ALJ Gamson stated, "In this case, 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 this advice letter to a sub-group of the Technology Advisory Panel 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 two other members selected by SDG&E.

Energy Division has evaluated the contracts SDG&E submitted with AL 1890-E and concludes that the system integration/MDMS and program management functions will be capable of meeting the minimum AMI functionality criteria. Energy Division therefore recommends that the Commission find that the contracts proposed in AL 1890-E meet the Commission's minimum AMI functionality criteria.

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.

In October 2005, SDG&E issued a request for proposal in two specific areas: system integration/MDMS and meter communications technology. SDG&E evaluated the responses and signed contracts with two vendors to provide system integration and MDMS technology. SDG&E has not yet selected a vendor to supply the meters themselves or communications technology. Thus, the following discussion covers only the issue of whether system integration and meter data management system will be capable of supporting minimum AMI functionality provided that the meters and communications system support that functionality.

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 Capgemini and Itron specify that the MDMS 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 with Capgemini and Itron also stipulate that the MDMS 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.

SDG&E's contracts do not specify that MDMS will notify customers of the CPP events. Although this function is required in the minimum AMI functionality,

Energy Division believes customer notification is outside the scope of the MDMS, which has the primary function of storing and organizing data from the meters, rather than transmitting information to customers.

Since customer notification can be executed by a variety of means and may depend on technology selected in the future, Energy Division concludes it is acceptable to exclude this function from the contracts for installing MDMS. Moreover, the agreement requires MDMS be capable of supporting notification via customer in-premise device, if such a device becomes available.

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 data management 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.**

The MDMS 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 agreement with Itron, Inc. 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**

The MDMS is 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 by 8 a.m. on the day after the energy is used. 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**

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.**

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, Inc. 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 augment or control usage at the customer premise. Because the system is being created using a Service-Oriented Architecture, the SDG&E will be able to integrate its AMI system with different load-control technologies, regardless of the communications platform that eventually connects the meter to the appliances.

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.

No party has protested AL 1890-E, and SDG&E has agreed to shorten the comment period so that the resolution may receive a vote at the June 7 Commission meeting. Shortening the comment period is in the public interest here because timely approval of the contracts filed with AL 1890-E is necessary for SDG&E's AMI project to proceed on schedule.

Accordingly, this matter will be placed on the Commission's agenda for a vote at the June 7 meeting. Comments on this draft resolution shall be filed no later than Wednesday, May 30. Reply comments shall be filed no later than Monday June 4.

SGE&E provided informal comments that clarified which vendor technology it had selected on page 7 of the draft resolution. Energy Division accepted those changes.

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 AL 1890-E stipulate work to be done by third-party vendors on system integration, program management and meter data management, as well as licenses for related software.

3. Terms and conditions of the contracts submitted with AL 1890-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.

5. Neither a metering technology nor a meter communication vendor has yet been selected by SDG&E.

6. The Commission finds that the contracts submitted with AL 1890-E meet the minimum functional criteria for utility AMI systems set forth in R.02-06-001.

THEREFORE IT IS ORDERED THAT:

1. SDG&E's request to execute contracts with Capgemini and Itron as requested in Advice Letter AL 1890-E is approved.

2. SDG&E's request for confidential treatment of the contracts submitted with AL 1890-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 June 7, 2007; the following Commissioners voting favorably thereon:

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Paul Clanon
Executive Director

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