Alternate to Agenda ID # 9223
Ratesetting
4/8/2010 Item 50a

Decision **PROPOSED ALTERNATE DECISION OF COMMR. GRUENEICH** (Mailed 2/9/2010)

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Application of Southern California Gas Company (U904G) for Approval of Advanced Metering Infrastructure.	Application 08-09-023 (Filed September 29, 2008)

DECISION ON APPLICATION OF SOUTHERN CALIFORNIA GAS COMPANY FOR APPROVAL OF ADVANCED METERING INFRASTRUCTURE

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DECISION ON APPLICATION OF SOUTHERN CALIFORNIA GAS COMPANY FOR APPROVAL OF ADVANCED METERING INFRASTRUCTURE

1. Summary

In this proceeding, Southern California Gas Company (SoCalGas) requests authority to develop and deploy a gas-only advanced metering infrastructure (AMI) system throughout its service territory. SoCalGas estimates that this new metering and communications system would cost, in present value terms, approximately $1.0396 billion to implement and maintain over the life of the system, and would provide total benefits of $1.0669 billion, resulting in a project benefit-to-cost ratio of 1.03 and a margin of net benefits of $27 million.

We find that extending AMI functionality to SoCalGas' service territory is consistent with several of the state's energy objectives. Furthermore, we find that the business case presented in favor of the SoCalGas AMI proposal provides reasonable assurance that the project can be cost-effective given adequate safeguards. We approve this application, with certain modifications in order to offer greater security to ratepayers and SoCalGas' current meter-reading workforce. In particular, we authorize contingency funding at 7%, consistent with past AMI projects approved by this Commission, and modify the risk sharing mechanism for cost-overruns. Additionally, we direct SoCalGas to develop and present in a public workshop a dedicated plan for AMI outreach and conservation support, along with semiannual reporting on the gas conservation impacts of this project.

Finally, the decision recognizes that SoCalGas' AMI project will, over time, eliminate full-time and part-time meter reading positions. We are concerned with the impacts of the project on SoCalGas employees, especially in the current challenging economic climate. To assist SoCalGas employees displaced by the

project, we direct SoCalGas to increase funding allocated for employee retention and retraining by $1 million. This transition fund should be utilized to extend severance, vocational training, and other transitional opportunities to affected meter reading employees

With these modifications, we authorize funding for SoCalGas' AMI proposal at $1.0507 billion. This proceeding is closed.

2. Procedural Background

On September 29, 2008, Southern California Gas Company (SoCalGas) filed an application seeking authorization of a proposal for advanced metering infrastructure (AMI) deployment activities and associated cost recovery mechanism.[1] In this application, SoCalGas requests Commission approval to deploy a stand-alone gas AMI system at a cost of $1.079 billion. The proposal would involve the installation of approximately 6 million AMI gas modules between 2009 and 2015. SoCalGas also requests approval of a balancing account as a cost-recovery mechanism for its AMI deployment costs.

On October 2, 2008, SoCalGas filed a motion in this proceeding requesting expedited approval of $12.4 million in pre-deployment funding to support project management office set-up, vendor evaluation and selection, and information technology systems and integration activities related to requirements and design. In this motion, SoCalGas argues that its proposed pre-deployment activities will be necessary to the implementation of an approved AMI system within the company's service territory, and that the $12.4 million is

[1] AMI consists of both metering and communications infrastructure.

not in addition to, but part of, the amount requested in the initial application. The assigned Administrative Law Judge (ALJ) extended the deadline for responding to this motion to November 3, 2008, to ensure parties had adequate time to review the application and motion before filing their responses.

SoCalGas estimates that its AMI proposal will deliver about $27.3 million in net benefits, with operational savings covering approximately 84.5% of the AMI lifecycle costs. SoCalGas expects that the AMI system will provide usage information to customers leading to a reduction in customer energy usage, and that the resulting energy conservation benefits will cover the additional costs of the system and provide some net benefits. SoCalGas initially requested a decision on this application by June 2009.

The Commission received two timely protests to this application. On October 31, 2008, the Division of Ratepayer Advocates (DRA) filed a protest. DRA questioned both whether the proposed stand-alone gas-only AMI system is consistent with Commission policy directives, as claimed by SoCalGas, and whether the project as proposed will be cost effective. DRA recommended that the Commission either deny the application outright, or hold hearings to more thoroughly examine the factual and policy issues raised by this proposal. On November 3, 2008, The Utility Reform Network (TURN) filed a protest questioning the estimates for both operational and conservation benefits provided in the SoCalGas application, and suggesting that any conservation benefits may be achieved through other, less expensive means. Both DRA and TURN expressed an intention to conduct an analysis of several aspects of the proposed system including its cost effectiveness, and suggested a schedule that included evidentiary hearings for resolving issues found to be within the scope of this proceeding.

The ALJ assigned to this proceeding held a prehearing conference (PHC) on December 8, 2008, to create a service list, discuss the October 2, 2008 motion for an expedited decision on pre-deployment funding, develop a schedule, identify issues, and address other matters as necessary for the expeditious processing of the case. At this PHC, the ALJ denied the motion for an expedited decision on pre-deployment funding.

Assigned Commissioner Grueneich and ALJ Hecht issued a Scoping Memo and Ruling on January 6, 2009 establishing a schedule for this proceeding, under which DRA and other parties were to serve testimony by March 9, 2009. On March 6, 2009, SoCalGas served errata to its opening testimony, and on March 26, 2009, a ruling established an updated schedule to allow parties an opportunity to assess the SoCalGas errata before finalizing their testimony. DRA, TURN, and the Utility Workers Union of America (UWUA) served opening testimony on April 23, 2009, and SoCalGas served rebuttal testimony on May 7, 2009. Four days of hearings took place between May 22, 2009, and May 28, 2009, and parties filed opening and reply briefs by July 2, 2009.

3. Late-Filed Exhibits

Four exhibits were received from parties after hearings. At hearings on May 28, 2009, the ALJ authorized SoCalGas to provide supplemental testimony in response to TURN Exhibit 212 by June 1, 2009, and identified this testimony as Exhibit 33. SoCalGas served this supplemental testimony as required, and no parties objected to the admission of this testimony. Exhibit 33 is hereby received.

On June 12, 2009, TURN filed a motion to admit a SoCalGas data response related to this supplemental testimony into evidence, in lieu of cross examining the SoCalGas sponsoring witness. No parties objected to including this exhibit in the record. This document is identified as Exhibit 214, and is hereby received.

Also at hearings, the ALJ required DRA to provide an affidavit from its Witness Jennings, adopting his testimony as being true and correct. This exhibit was identified as Exhibit 120, and was served on parties as required on June 1, 2009. No parties objected to the admission of Exhibit 120, which is hereby received.

On June 11, 2009, UWUA filed a motion for admission into the record of a late-filed exhibit consisting of most of the SoCalGas response to UWUA Data Request 04. This data response contains information on the race, ethnicity, and gender breakdown of the SoCalGas workforce, and how it would be affected by the elimination of meter reader positions. UWUA asserts that this baseline employment data is "pertinent to an assessment of whether SoCalGas' proposal in this proceeding is consistent with the Commission's diversity goals and SoCalGas' diversity commitments."[2] On June 24, 2009, SoCalGas filed a response asserting that the Commission should deny the UWUA motion because: (1) the Commission is preempted by federal law from interfering in the collective bargaining process; (2) the Motion seeks admission of evidence that is beyond the scope of this proceeding; and, (3) the evidence the Motion seeks to have admitted in this proceeding is best considered in a proceeding of wider scope.[3] SoCalGas further argues that if its data response is admitted, the complete data response should be entered into the record; UWUA prefers that

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[2] Motion of Utility Workers Union of America, Local 132 to Admit Late-Filed Exhibit, June 10, 2009, at 3.

[3] Response of Southern California Gas Company to Motion of Utility Workers Union of America, Local 132 to Admit Late Filed Exhibit, June 24, 2009, at 2.

the last sentence of the data response be stricken as conclusory. UWUA did not file a reply to the SoCalGas response.

The objections raised by SoCalGas to admitting this proposed exhibit into evidence are not persuasive. First, SoCalGas argues that the data response should not be admitted because the Commission is preempted by federal law from interfering with the collective bargaining process. It is not clear how admitting information on the composition of the existing SoCalGas workforce with and without meter readers would interfere with collective bargaining between SoCalGas and its employee unions. SoCalGas further argues that this information is beyond the scope of this proceeding, and is best considered in a proceeding of wider scope. UWUA suggests that the diversity of the SoCalGas workforce, and the effect of the SoCalGas AMI proposal on that diversity, is relevant to the determination of whether this proposal should be adopted. The scope of this proceeding encompasses any information reasonably necessary for the Commission to make findings on certain questions contained in the scoping memo. As discussed in Section 5, below, these questions include whether this proposal is consistent with state energy policy objectives or desirable for other policy reasons; employee diversity is an area of policy interest for this Commission. It is reasonable to consider information on workforce diversity in this proceeding, and we will allow it into the record. Whether or not this information may also be relevant in a broader proceeding does not affect its relevance in this case. This data response, identified at hearings as Exhibit 301, is hereby received.

The record is composed of all documents that were filed and served on parties. It also includes all testimony and exhibits received at hearing, and the four exhibits discussed here, Exhibits 33, 120, 214, and 301. Also, the ALJ sealed

as confidential various exhibits and filings. We affirm all assigned Commissioner and ALJ rulings in this proceeding. All motions not previously ruled upon or addressed in this decision are denied.

4. Summary of the Application

In this application, SoCalGas seeks authorization to deploy AMI and recover the associated costs from ratepayers through a balancing account mechanism. SoCalGas requests Commission approval to construct and operate a stand-alone gas AMI system at a cost of approximately $1.079 billion, including a 10% project contingency, and estimates that net present value benefits will exceed costs by approximately $27.3 million dollars, for a benefit cost ratio of approximately 1.03. SoCalGas expects to deploy approximately 6 million gas AMI meter modules, of which approximately 2.4 million would require new gas meters, whose costs would also be covered by this project. SoCalGas contends that this project will benefit ratepayers by reducing residential bills within two years of the completion of deployment. The SoCalGas estimate of benefits depends on several assumptions, including but not limited to estimates of conservation savings, and estimates of terminal value based on the continuing use and usefulness of a small portion of modules installed to replace failed meters and meet growth following the end of the AMI meter roll-out period.

5. Standard of Review and Criteria for Review of Proposals

SoCalGas bears the burden of proof in this proceeding. The company's burden in this application is to establish that its proposal is reasonable, technically feasible, cost effective (i.e., beneficial to ratepayers), and consistent with the Commission's policy objectives.

In order to approve this application, we must find that the proposed AMI system affirmatively answers the following questions, as identified in the scoping memo:

1. Should the Commission approve SoCalGas's proposed AMI deployment activities and funding, either as proposed in this application or with modifications?
    a. Are the various elements of the proposed SoCalGas AMI business case and deployment plan reasonable?
    b. Are the technology choices proposed by SoCalGas appropriate and technically feasible? Specific elements of the technology plan that should be evaluated include (but are not limited to):
        i. Is the proposed SoCalGas-only communication system reasonable? What if any additional communication options, such as shared communications infrastructure between SoCalGas and other utilities with overlapping jurisdictions, should be considered?
        ii. Is the battery proposed to power the AMI system reasonable? What if any additional options for powering the meters and communications systems should be considered?
    c. Is the SoCalGas AMI proposal for a gas-only AMI system consistent with state energy policy objectives or desirable for other policy reasons?
    d. Is the SoCalGas AMI proposal cost-effective, and will it provide lasting value for SoCalGas's customers?
2. If the proposal meets all of the criteria listed in question 1, above, should the Commission adopt the ratemaking treatment proposed by SoCalGas for the recovery of costs associated with any approved AMI deployment activities?

Technology choices are discussed in Section 7 below. Consistency with state policy objectives is discussed in Section 8, and cost effectiveness issues are discussed in Section 9.

6. Overview of Party Positions

DRA, TURN, and UWUA all participated actively in this proceeding. All three parties oppose the SoCalGas AMI proposal, for a variety of reasons.

6.1. DRA

DRA provided analysis on several issues in this case. DRA focused much of its participation in this proceeding on the cost effectiveness of the SoCalGas AMI proposal. In addition, DRA questions the need for a gas-only AMI system, given that gas does not offer demand response benefits. DRA also disputes several aspects of the SoCalGas cost effectiveness analysis, arguing that SoCalGas overestimates the benefits of its proposal (including the cost savings from elimination of meter readers and benefits attributable to gas conservation enabled by gas usage feedback to customers) and underestimates certain costs.

6.2. TURN

Like DRA, TURN focused much of its participation in this proceeding on the cost effectiveness of the SoCalGas AMI proposal. In addition, TURN rejects the SoCalGas claim that Commission policy as established in the Energy Action Plan and other sources supports deployment of AMI for a gas-only utility. TURN asserts that SoCalGas overestimates the benefits of its AMI proposal. TURN also agrees with the DRA recommendation that the conservation benefits claimed by SoCalGas should be reduced, and asserts that if these changes are made to the business case, the SoCalGas proposal would no longer be cost effective.

6.3. UWUA

Like DRA and TURN, UWUA argues that the SoCalGas AMI proposal is not cost effective. In addition, UWUA notes that a large part of the benefits SoCalGas claims from this project would be due to operational savings from the

elimination of meter readers in the post-deployment period. UWUA concurs with DRA and TURN that SoCalGas overestimates certain benefits and underestimates costs, and asserts that most of the costs of the AMI proposal would occur in the near future, whereas the benefits would accrue much later in the analysis period for the business case.

7. Reasonableness and Feasibility of Technology Choices

In assessing reasonableness and feasibility we look in part to prior decisions issued by the Commission on previous utility AMI deployment proposals by other utilities. Commission Decisions (D.) 05-09-044, D.07-04-043, and D.08-09-039 assess the reasonableness and feasibility of utility AMI systems based on a set minimum functionality requirements for electric utilities.[4] These criteria were designed to apply to electric AMI systems. One of these requirements, related to supporting dynamic pricing or time differentiated tariffs, is specific to electric usage and not relevant to a gas-only AMI system, and so does not apply to the evaluation of a gas AMI proposal. Similarly, the applicability of the criterion requiring AMI systems to have the ability to interface with load control communication technology is not clear. SoCalGas does not discuss in detail the potential for its proposed AMI system to interface with load control, nor the availability of load control equipment for gas devices. Still, four of the minimum functionality requirements defined in R.02-06-001 and addressed in previous proceedings on AMI proposals may provide guidance for the reasonableness of any AMI project, and it is helpful to refer to this guidance

[4] See for example, D.05-09-044 at 5.

in evaluating the SoCalGas technology choices. The minimum functionality criteria that are potentially relevant to a gas AMI system are:

1. 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.
2. 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.
3. Compatibility with communications protocols and applications that utilize collected data to provide customer education and energy management services, customized billing, and support improved complaint resolution.
4. Compatibility 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.[5]

The SoCalGas AMI proposal meets the first of these criteria by collecting hourly gas meter reads, providing the ability to support customer knowledge of hourly gas usage patterns.[6] It is not clear whether the proposed SoCalGas system would meet the second of the above criteria, providing flexibility to support changes to the frequency of customer access to usage without incurring additional hardware costs. Under the SoCalGas proposal, the AMI system would transmit information to the utility approximately two to three times per

[5] February 19, 2004 Assigned Commissioner's Ruling in R.02-06-001.

[6] SoCalGas Exhibit 1, p. I-4.

day,[7] and the system has been designed to allow data transmission up to four times a day.[8] This may or may not allow customers to track and adjust their energy usage during a given day, though it should provide sufficient information for customers to access usage on at least a daily basis and respond to this information through changes to gas usage.[9] If daily usage information is considered sufficient to meet customer needs, the SoCalGas proposal should be considered consistent with this criterion.

Based on representations by SoCalGas, it appears that the proposed SoCalGas AMI system will meet the third criterion listed above by utilizing collected data to provide customer education and energy management information, customized billing, and support improved complaint resolution. SoCalGas Exhibit 4 outlines how the proposed information technology system will collect data and utilize it to validate meter reads and support billing activities, and Exhibit 24 describes how the AMI system will provide customers with access to customer-specific usage profiles and historical usage information. SoCalGas estimates that there will be a reduction in customer contacts, including complaints, due to a reduction in meter reading errors,[10] and the ability to access detailed usage data is also likely to support improved complaint resolution. While parties may disagree on whether the system collects the optimal amount of information or processes it most efficiently, it appears to meet this criterion for

[7] SoCalGas Exhibit 1, p. I-4.

[8] SoCalGas Exhibit 2, p. II-14.

[9] SoCalGas Exhibit 4, p. IV-6.

[10] SoCalGas Exhibit 3, p. III-37.

collecting, processing, and utilizing information to support various utility operations.

According to SoCalGas, its AMI proposal is also designed to meet the fourth criterion listed above, promoting and enhancing system operating efficiency and improving service reliability. Benefits SoCalGas attributes to AMI implementation include such "intangible" benefits as allowing more rapid detection of energy theft, and quicker detection of higher-than-usual usage allowing earlier investigation of possible problems. SoCalGas asserts that AMI implementation will improve monitoring of gas pressure and identification of high pressure problems throughout the gas system. Though parties may dispute the value and details of these benefits, the increased availability of data under the SoCalGas proposal should promote and enhance system efficiency and improve reliability, meeting this criterion.

In summary, it appears likely that the SoCalGas AMI proposal meets those functionality criteria defined by the Commission for previous (electric or dual fuel) AMI proposals that are relevant to a gas AMI system. Sections 7.1 through 7.3 evaluate features of the proposed AMI system in more detail to determine whether the SoCalGas AMI proposal is reasonable, appropriate, and technically feasible overall, as required by the questions in Section 5, above.

7.1. Communications System

7.1.1. SoCalGas Proposal

SoCalGas proposes implementation of its own radio frequency (wireless) communications technologies to create a local area network (LAN) to communicate to and from an endpoint device such as a meter to a collection device, and a wide area network (WAN) to bring collected information from the higher-level connective device to the utility's data center. According to

SoCalGas, "multiple technologies are available from the marketplace that can satisfy functional requirements,"[11] and the company investigated options through a request for proposal process and discussions with vendors. SoCalGas does not describe a specific technology or vendor for either its LAN or its WAN, but expects to utilize a two-way radio frequency LAN system powered by batteries,[12] and describes WAN options that include wireless technologies, landline telephone, and ethernet.[13]

SoCalGas provides a detailed discussion of its efforts to design a "hybrid" communications system for gas and electricity usage that would utilize communication systems developed by Southern California Edison Company (SCE) in the SoCalGas/SCE overlap territory.[14] SoCalGas states that a hybrid system taking advantage of SCE technology is not a viable option for several reasons. Specifically, SoCalGas asserts that the SCE communications infrastructure is not designed to split meter reads for different companies, and would require several modifications in order to collect and process SoCalGas meter reads.[15] In addition, SoCalGas notes that even if it used SCE communications infrastructure for some customers, it would need to develop a stand-alone system for customers outside of the SCE territory. SoCalGas argues that it would be costly to then interface and integrate those two communication

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[11] SoCalGas Exhibit 4, p. IV-7.

[12] SoCalGas Exhibit 4, pp. IV-7 and IV-8.

[13] SoCalGas Exhibit 4, p. IV-8.

[14] SoCalGas Exhibit 2, p. II-7.

[15] SoCalGas Exhibit 2, p. II-6.

and data collection solutions.[16] SCE estimates that once the increased costs of interfacing two different systems and the incremental cost of any service fees SCE would require to provide access to its system are included in the hybrid analysis, the net benefits of a stand-alone gas system would exceed those of a hybrid system by approximately $121 million.

7.1.2. Party Positions on Communications System

In its opening brief, DRA notes that it "disagrees with SoCalGas's assessment of the purported obstacles to hybrid development and the magnitude of associated costs," but acknowledges that integrating the two systems would be complex, and therefore does not contest the SoCalGas assertion that the option is not viable. DRA does not endorse the SoCalGas choice for communications technology, noting that SoCalGas does not yet know and so has not yet specified the details of its AMI communications technology choices. DRA notes that this lack of specificity causes uncertainty in cost estimates and makes it difficult to ensure that SoCalGas does not ultimately overpay for system components or procure duplicate functionality solutions from different vendors. Neither TURN nor UWUA specifically address the SoCalGas communications system proposal in their briefs.

7.1.3. Discussion of Proposed Communications System

Based on the information available in the record, the radio frequency communications system proposed by SoCalGas appears to be reasonable, appropriate, and technically feasible. Several different communications options, most utilizing wireless radio frequency technologies, are available in the

[16] SoCalGas Exhibit 2, p. II-8.

marketplace, and appear appropriate to serve the needs of a gas-only AMI system. Parties do not dispute that these technologies are adequate to support collection of hourly interval data and have the potential for two-way communication. To ensure that SoCalGas' AMI system can interoperate with consumer-owned devices, we expect SoCalGas to select two-way communications technologies that comport with widely adopted standards and communications protocols.

The specifics of the SoCalGas AMI communication systems have not yet been finalized, and there appear to be several communication possibilities that SoCalGas has not yet investigated in detail. Combined, these factors make it difficult to determine whether SoCalGas has chosen the most reliable or cost effective options for its particular communications needs. For example, SoCalGas does not address the possibility of using the SCE communications solution throughout SoCalGas territory, which could avoid the integration costs of having two different communications systems. SoCalGas appears to assume that, even if the SCE communications system could be used in the SCE area, a completely different communications solution would be needed in non-SCE areas, requiring additional work to integrate these different systems. SoCalGas also does not provide an analysis of the costs and benefits of providing AMI only in SCE overlap areas, while leaving SoCalGas meters in the non-SCE overlap territory to be served by conventional means or through expansion of the previously approved implementation of remote automated meter reading systems. SoCalGas contends that this would divide the SoCalGas customer base into "haves" and "have-nots," and that "SoCalGas would then be required (in the interest of fairness and equity) to implement a standalone AMI system for the SoCalGas customers located in the non-SCE areas of SoCalGas territory,"

bringing the company back to a hybrid solution.[17] This argument presupposes that customers without AMI will be at a serious disadvantage compared to customers with AMI.

Despite these shortcomings in the analysis, SoCalGas does provide a persuasive argument that a stand-alone system is preferable to a hybrid system that requires two different communication solutions. We find that the stand-alone communications equipment contemplated by SoCalGas is reasonable and appropriate in that it will support the collection of hourly usage data and other system information, and that it is technically feasible, as it is currently available through existing vendors.

7.2. Battery Choice

SoCalGas proposes powering its AMI modules using batteries, asserting that batteries "provide a safe and cost effective power source for the gas AMI meter module's internal radio transmitter."[18] SoCalGas considers the battery that powers a gas AMI meter to be "integral to the product itself and not typically replaced during the product's useful life."[19] In supplemental testimony provided in response to a request by the assigned ALJ and Commissioner, SoCalGas describes the lithium thionyl chloride ($Li/SoCl_2$) battery that the company intends to use in its gas meter modules, providing detailed information on the battery's development, testing, and expected useful life. SoCalGas bases its estimates of the useful life of the batteries to be used in its AMI modules on the use of mathematical models that account for the conditions to which the

[17] Exhibit 2, p. II-7.

[18] SoCalGas Exhibit 12, p. III-1.

[19] SoCalGas Exhibit 12, p. III-1.

batteries will be exposed. On the basis of vendor calculations using these models, the company believes that the batteries are suitable to last for the lifetime of the proposed AMI system, with a reasonable failure rate, even when considering real-world conditions such as temperature profiles, expected power requirements, and the need to transmit information from the modules at defined intervals over the battery's life.[20] SoCalGas also describes several types of testing undergone by the batteries and modules, including simulations of energy use to confirm the mathematical calculations of expected lifetime, and testing to simulate read world environmental conditions.[21] SoCalGas asserts that equipment failure rates for the chosen vendor will be lower than the rates assumed in the cost effectiveness analysis, ensuring that the need to replace equipment will not exceed the estimated failure rates. SoCalGas addresses possible concerns that batteries may not be available in the event of equipment failures in the final years of its AMI system by stating its intention to contractually obligate the selected vendors to ensure that AMI gas meter modules compatible with the SoCalGas system remain available from multiple suppliers throughout the life of its AMI system, ensuring that failed equipment can be replaced.[22] SoCalGas suggests the possibility that it may explore purchase of a warranty on the gas meter modules for part of the life of the system.

7.2.1. Party Positions

UWUA and DRA both question the SoCalGas estimates of battery life and potential battery failure rates. UWUA notes that the estimates provided by

[20] SoCalGas Exhibit 12, p. III-3.

[21] SoCalGas Exhibit 23, p. III-4.

[22] SoCalGas Exhibit 12, p. III-6.

SoCalGas "do not reflect substantial long term field experience with the type of battery and module being proposed."[23] Neither party specifically questions the appropriateness of the battery choice by SoCalGas, but both argue that SoCalGas may underestimate costs of battery and module replacement, and that the uncertainty in the batteries' performance could lead to an increase in project costs if the batteries experience higher-than-anticipated failure rates.

7.2.2. Analysis

SoCalGas provides substantial information in support of its choice of battery technology, including descriptions of extensive analysis and testing to ensure that the chosen battery technology will meet all anticipated needs of the proposed AMI system. The fact that the chosen battery technology has been developed recently necessitates evaluation of this technology without the benefits of long term field testing of the technology. Though this does introduce uncertainty in the analysis of the chosen SoCalGas battery technology and supports claims that the technology is as yet "unproven," the same arguments can be made about any new technology or product with an expected useful life longer than its current age. This does not automatically disqualify new technologies from being adopted; instead, it necessitates thorough analysis of the potential technology and testing of new products to validate theoretical engineering and mathematical models.

In its supplemental testimony, SoCalGas describes several types of analysis and testing that support its choice of battery technology and estimates of failure rates. Based on the information in the record, the choice of battery

[23] UWUA Opening Brief, at 17.

technology to power the SoCalGas AMI system is reasonable, appropriate, and technically feasible.

7.3. Additional Elements

DRA questions the appropriateness of the functionality SoCalGas proposes for other aspects of its AMI system, including its Meter Data Management System (MDMS) and data processing solutions. Specifically, DRA suggests that SoCalGas "might be purchasing more functionality in its MDMS than it needs," and that the SoCalGas proposals may not be appropriate because they are not the result of competitive bids.[24] SoCalGas justifies its choice of MDMS on several grounds, including its use of a consultant, Enspiria Consulting, for guidance, and describes the DRA concerns about possibly unneeded functionality as "short sighted."[25] SoCalGas notes that it has not yet finalized its system requirements or entered into specific contracts, and therefore that current cost estimates are just that estimates.

DRA also questions the SoCalGas choice of device management, arguing that such a function could be unnecessary, depending on the choice of MDMS. SoCalGas responds that its data device management choice is supported by both the MDMS vendor and independent consultant Enspiria.[26]

7.3.1. Analysis of Additional Elements

SoCalGas provides adequate evidence that its MDMS, data processing, and device management systems are reasonable, appropriate, and technically feasible. The fact that SoCalGas has not yet finalized its system requirements

[24] DRA Opening Brief, at 37.

[25] SoCalGas Exhibit 24, at 10.

makes it difficult to assess DRA's concerns about possible unneeded functionality. SoCalGas does not base its estimates on a competitive solicitation, and it acknowledges that its requirements have yet to be finalized (as was the case with the San Diego Gas & Electric Company (SDG&E) AMI case when it was approved). SoCalGas bases its preliminary technology choices on discussions with vendors and consultants, and has additional experience to draw on from the development of the SDG&E AMI system approved in 2007.[27] The SDG&E AMI system was approved on the basis of similar information. The SoCalGas proposal appears to be reasonable, and should be assessed on the basis of its consistency with state energy policy objectives and customer benefits.

8. Consistency with State Energy Policy Objectives

SoCalGas asserts that its AMI proposal is consistent with state energy policy objectives, as established in previous Commission actions and documents such as the state Energy Action Plan, as well as in previous Commission decisions on AMI proposals from electric and dual-fuel utilities. SoCalGas points to Commission policy expressed in the Energy Action Plan and elsewhere that favors energy conservation and efficiency measures for both electricity and gas use. Specifically, SoCalGas asserts that a high priority in the Energy Action Plan "is to meet California's energy growth needs while optimizing energy conservation and resource efficiency" for both electricity and natural gas,[28] and that demand side management options (including conservation, energy

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[26] SoCalGas Exhibit 24, at 10.

[27] SoCalGas Exhibit 24, at 7.

[28] SoCalGas Exhibit 1, at I-5.

efficiency, and demand response) are preferred ways for meeting future energy needs. SoCalGas argues that by providing customers with frequent consumption information, its AMI proposal will encourage energy conservation and provide customers with opportunities to better manage their energy use, consistent with this policy. In addition to empowering consumers, SoCalGas argues that implementation of AMI in its service territory would result in environmental benefits supported in previous Commission policy statements, such as a reduction in greenhouse gas emissions.[29]

SoCalGas also notes that the Commission directed SDG&E, Pacific Gas and Electric Company (PG&E), and SCE to develop and submit applications to implement AMI systems, and has now authorized all three of these companies to implement AMI systems throughout their service territories; the systems approved for SDG&E and PG&E include gas as well as electric AMI components. SoCalGas argues that these previous decisions show a Commission interest in encouraging AMI systems (whether for electricity or gas) as a means for increasing demand side management.

8.1. Party Positions

DRA, TURN, and UWUA note that previous Commission statements on the desirability of AMI systems focused on the ability of those systems to support time-differentiated tariffs for electricity. TURN suggests that the Commission originally encouraged AMI systems in order to support dynamic pricing tariffs and encourage demand response and reductions of energy use at specific times of peak electric demand. DRA states that "demand response, the

[29] SoCalGas Exhibit 1, at I-6.

primary electric AMI benefit identified by the [Energy Action Plan], does not apply to natural gas."[30] DRA asserts that the fact that the Commission has encouraged AMI for electric and dual fuel utilities does not mean that the same policy would support a stand-alone gas AMI system. Like TURN, DRA argues that statements in favor of demand-side management to meet energy needs in the Energy Action Plan and elsewhere really support these strategies as an alternative to electric generation, and that the same principles do not necessarily apply to reducing gas usage.

8.2. State Policy Supports Development and Implementation of Cost Effective AMI for Gas or Electric Utilities

As noted by DRA and other parties, previous Commission statements about the desirability of AMI systems have focused on their usefulness as a tool for managing electric usage, especially at times of peak energy demand. Despite this initial focus on electricity, however, many of the potential benefits of AMI are equally applicable to natural gas systems. Commission policies in favor of demand-side management, especially conservation and energy efficiency, are as relevant to natural gas usage as to electric usage. This is reflected in existing energy efficiency programs, which are targeted at natural gas as well as electric end uses and customers. Although the absence of demand response benefits from a gas-only AMI system eliminates a potential category of benefits from the business case analysis for such as system, it does not negate our expressed policy interest in encouraging demand side management options to meet the state's existing and future energy needs. This principle applies not only to electric use,

[30] DRA Opening Brief, at 3.

but also to natural gas. In addition, conservation results in real (if sometimes difficult to quantify) environmental benefits consistent with Commission policy to reduce greenhouse gas emissions and combat global climate change.

In addition, we favor expanding the information and tools available to consumers in order to empower them to manage their usage of electricity and gas, so they can better and more efficiently meet their own energy needs. Providing consumers with more, and more timely, information on their energy usage enables customers to make more educated choices on conservation, energy efficiency, and energy consumption in general, enabling them to save money on energy bills. We expect a well-designed, cost effective gas AMI system to support Commission policy by educating consumers about their own energy use, and encouraging them to explore options for managing their energy use and saving money.

In these ways, a gas-only AMI system is consistent with Commission energy policy objectives of increasing energy conservation and demand-side management, reducing greenhouse gas emissions, and providing customers with information and tools that allow them to manage and make educated decisions about their energy use.

9. Cost Effectiveness

Cost effectiveness is one major criterion in determining whether to approve the SoCalGas AMI deployment proposal. The Commission evaluated previous AMI applications primarily on the basis of whether they are cost effective over the life of the project. Parties to this proceeding agree that approval of an AMI system should be contingent on its being found cost

effective; the SoCalGas policy witness acknowledged this requirement during hearings.[31] The SoCalGas business case estimates that the present value revenue requirement benefits of this project proposal are $27 million greater than its costs, and on this basis, SoCalGas asserts that the proposal is cost effective and should be approved. This section assesses the major elements of the SoCalGas cost effectiveness calculation, covering issues raised related to benefits (including treatment of terminal value, benefits from the elimination of meter readers, and estimates of energy conservation benefits), as well as issues related to the costs.

9.1. Benefits

9.1.1. Terminal Value

One of several benefits included in the SoCalGas analysis that is questioned by the parties is the estimated terminal value of $26.4 million. SoCalGas defines the terminal value as "the stream of annual benefits per gas meter module discounted back to 2034 dollars."[32] SoCalGas suggests that, because the gas modules have a useful life of 20 years, the AMI meter modules deployed for growth and meter failure in years 2016 through 2034 (the end of the business case analysis) will have remaining value beyond the end of the AMI project in the years 2034 through 2053. SoCalGas calculates an annual average benefit per meter and multiplies that average benefit by the estimated remaining meter population in each year. SoCalGas further suggests that, as the costs of post-deployment meters are incorporated into total project costs, their remaining

[31] SoCalGas witness Mueller RT, Volume 2, at 140, lines 16-19.

[32] SoCalGas Exhibit 7, at 8.

value at the end of the analysis period should be included as a benefit in the business case.

Both DRA and TURN reject the concept of terminal value as defined by SoCalGas and applied in this case. DRA notes the possibility that evolving technologies may make the chosen AMI solution functionally obsolete by 2040, in which case the meters may not be useful throughout some or all of the years 2034-2053 and would not have value during that time.

Parties differ with regard to Commission precedence on the treatment of terminal value. TURN asserts that the Commission rejected a similar calculation of terminal value benefits of an AMI system in its evaluation of the SDG&E AMI deployment case. SoCalGas argues to the contrary that both SDG&E and PG&E AMI upgrade cases accepted the concept of terminal value in final cost-effectiveness analyses.

While the methodology SoCalGas presents to calculate its terminal value differs from that applied in SDG&E and PG&E's case, including a terminal value benefit is in concept consistent with what the Commission has done in the past. The implication of assigning a terminal value of zero in cost benefit analysis is that the remaining assets (post-2034) will be rendered immediately useless at the end of the analysis period. In reality, however, the AMI system that is initially deployed (2009-2015) will gradually be replaced prior to 2034. It is plausible, therefore, to assume that the gas modules installed in later years of the analysis period for normal failure replacement and customer growth will represent a continuum of technological change, and be upwardly compatible as the AMI system evolves.

If the terminal value benefit were to be excluded from SoCalGas' cost-benefit showing, SoCalGas would need significantly to alter its assumptions

regarding the installation of replacement and growth meters post-deployment. In particular, it would invite the assumption that installing meters post deployment is not an economically rational action for the company. At a minimum, it would require that the company exclude post-deployment meter costs from its business case. This change in assumptions would not accurately reflect the reality of expenses and benefits to result from initial AMI deployment.

We will count SoCalGas' estimated terminal value benefit as an element of the project's overall cost-effectiveness, to reflect, in a logical manner, the residual value of the project elements at the end of the analysis period.

9.1.2. Cost Savings from Elimination of SoCalGas Meter Reading Workforce

A second major component of the SoCalGas business case that is questioned by parties is the estimated savings from the elimination of the SoCalGas meter reading workforce. SoCalGas calculated the benefits for this item assuming that it would be eliminating a meter reading staff comprised of full time employees, and reported that the workforce savings attributable to its AMI proposal under this assumption will be $757.5 million. DRA, TURN, and UWUA note that only 10% of the SoCalGas meter reading workforce currently consists of full time employees, with 90% employed part time. DRA asserts that if SoCalGas calculated this benefit assuming that the current (90% part time and 10% full time) meter reading workforce breakdown will still be in place, benefits from this item would be reduced by approximately $48.4 million.

In contrast, SoCalGas asserts that the DRA analysis is incorrect, and fails to consider the impacts of recent labor agreements. SoCalGas states that under the terms of these labor agreements, basing the savings calculation on the current distribution of part time and full time employees extrapolated to 2016

would result in a $65.7 million increase (not decrease) from its original benefits estimate from this category.

All parties agree that SoCalGas' meter reading costs are low. SoCalGas began using a predominantly part-time labor force in 1998, and that use of a part-time meter reader workforce was negotiated and agreed to by SoCalGas labor unions to reduce operating costs and help prepare for implementation of automated meter reading technology. SoCalGas' alleges that, in the absence of an approved AMI decision, meter reader compensation will return to market levels by 2016.

We find SoCalGas' assumptions regarding labor costs acceptable for two principal reasons. First, the record in this proceeding supports SoCalGas' position that the estimated benefits in this category are reasonable, and potentially understated. There is ample evidence that the company's labor costs in this category are increasing, and approaching market rates. For instance, the company cites recent labor negotiations whose outcomes suggest it may be difficult for SoCalGas to maintain its low labor costs into the future. Whereas SoCalGas had initially forecast its meter reader labor costs would increase by $48.4 million beginning in 2016, the new SoCalGas Labor Agreement resulted in a $17.8 million increase being incurred in 2009. Considering that SoCalGas could enter into two additional Labor Agreements prior to 2016, it is a reasonable projection that cost increases in excess of the remaining $27.4 million forecast by SoCalGas as "Avoided Meter Reading Costs" could materialize within the relevant timeframe.

Second, we find the policy implications of the alternative assumption illogical. SoCalGas' ability to manage its workforce in anticipation of AMI should not undermine its efforts to cost-justify its project. Every other utility that

has come before this Commission with an AMI case has had substantially larger costs in this category. A plausible implication of the alternative finding on this point, for instance, might be that SoCalGas is encouraged to transition back to a full-time labor force, thus making the case for AMI more attractive under our frame of analysis, only to eliminate those positions as soon as the numbers pencil out in favor of AMI. We accept SoCalGas' forecast benefits from the avoided Meter Reading costs, for the purposes of determining the cost-effectiveness of this application.

9.1.3. Conservation Benefits

Another significant fraction of the benefits SoCalGas claims from its proposed AMI system consist of savings gained when customers use information feedback about their past gas usage to reduce gas usage in the future. SoCalGas estimates these gas conservation benefits at about $148 million.

DRA, TURN, and UWUA all argue that SoCalGas overstates the level of conservation benefits, and DRA provides possible alternative assumptions for calculating conservation benefits, under which it calculates conservation benefits of $49 million.

9.1.3.1. SoCalGas Methodology for Estimating Conservation Benefits

SoCalGas considers data from existing studies of customer behavior when provided with timely information on energy usage, and uses this data on customer savings along with assumptions of customer participation when provided with this feedback to estimate levels of conservation benefits from its proposed AMI system. SoCalGas differentiates between mechanisms for direct feedback, such as from an in-home display that automatically shows recent gas usage, and indirect mechanisms, which include Web-based interfaces where

customers can look up their recent usage. SoCalGas assumes that in the first year in which its AMI system is fully operational, 6.5% of customers will utilize direct feedback mechanisms to monitor their gas usage, and another 6.5% will utilize indirect feedback mechanisms. SoCalGas further estimates that customers utilizing direct feedback mechanisms will reduce their usage by 10% over the course of one year, whereas customers utilizing indirect feedback will reduce their total gas usage by 5%. Under these assumptions, a total of 13% of customers would reduce their total gas usage by an average of 7.5% in the first year of full AMI functionality. SoCalGas further estimates that conservation benefits will increase annually from this base level during the life of the project. The SoCalGas calculations result in total conservation of just under 1% of the SoCalGas customer usage, with an associated savings of $148 million. This is the amount SoCalGas includes as a conservation benefit in its cost effectiveness analysis.

9.1.3.2. Party Positions on Conservation Benefits

Parties disagree with SoCalGas on several aspects of the SoCalGas calculation, including the percentage of customers likely to take advantage of information feedback in order to reduce usage, the amount by which participating customers would reduce usage, and the degree to which any observed savings can be credited to AMI deployment. DRA also argues that the cost of a dedicated in-home display or other display device should be included in the cost effectiveness analysis. In addition, parties suggest that the SoCalGas cost effectiveness analysis should have been conducted using the traditional cost effectiveness tests mandated for Commission-authorized energy efficiency programs in California, including the Participant Test, Ratepayer Impact Measure Test, the Total Resource Cost Test, and the Program Administrator Cost

Test.[33] These tests would include a wider variety of costs than those included in the SoCalGas analysis.

DRA and TURN suggest that SoCalGas has overestimated the conservation effect to be expected from customers utilizing either direct or indirect feedback, suggesting that the appropriate savings by participating customers is 4%. In addition, DRA estimates that initial customer participation would be lower than the 13% estimated by SoCalGas, though it could ramp up to a higher level than SoCalGas estimates in later years. Based on these alternative assumptions, DRA estimates that the conservation effect from the SoCalGas proposal would begin at 0.32%, rather than the 1% estimated by SoCalGas, and would reach a maximum level of 0.64% during the project period, still below even the initial SoCalGas estimate.

UWUA and other parties question the applicability of the studies of the effect of information feedback on customer usage and conservation relied on by SoCalGas in calculating its conservation benefits. UWUA asserts that the studies do not reflect California or SoCalGas usage characteristics, prices, or demographics,[34] and notes that most of the studies focus on electric usage and conservation.[35] For these reasons, UWUA does not accept that the results of these studies constitute a valid basis for calculating conservation estimates for this project. UWUA also asserts that the effect of a 5% bill savings on a

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[33] See California Standard Practice Manual, http://www.energy.ca.gov/greenbuilding/documents/background/07-J_CPUC_STANDARD_PRACTICE_MANUAL.PDF.

[34] UWUA Opening Brief, at 9.

[35] UWUA Opening Brief, at 10-11.

customer's bill would be relatively low, and questions whether an expensive project should be based on "such a minor impact."[36]

9.1.3.3. Discussion of Conservation Benefits

Gas conservation impacts are a new category of benefits in the Commission's consideration of AMI cost-effectiveness. While both PG&E and SDG&E have previously proposed and received approval from this Commission for deployment of gas AMI systems, in both cases the utility proposed gas AMI as part of a larger project that included electric AMI deployment. In neither case did the Commission consider gas conservation benefits as part of the business case used for determining cost effectiveness. Each application did, however, contemplate and include conservation benefits on the electric side as part of the business case analysis.

Given their novelty, it is difficult to foresee the exact magnitude of gas conservation benefits which will follow from customers' improved access to their own natural gas usage data, and much effort has been expended in this proceeding to examine the assumptions underlying SoCalGas' forecasts in this area. In the absence of former Commission action or empirical data on the conservation impacts of a stand alone gas AMI system, we are left to make an informed judgment. Our task is to determine whether the assumptions made by SoCalGas serve as a suitable basis for analysis.

In this regard, there are three main issues to assess underlying SoCalGas' conservation estimate – participation rates, conservation rates for participating customers, and attribution of potential savings to the SoCalGas AMI investment.

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[36] UWUA Opening Brief, at 10.

On the topic of participation rates, SoCalGas has assumed an initial 13% participation rate for its customers, and growing at 1% per year. SoCalGas' estimate of participation is based on a Customer Insight Panel which asked customers whether the gas usage would be influenced if the daily data on usage and cost were made available. As both SoCalGas and DRA testify, 38% of the panel strongly agreed with the statement, while 30% somewhat agreed, and 19% were neutral. To determine their participation rate assumptions, SoCalGas counted the first two categories of respondents as responsive, whereas DRA only counted the first. The second category is clearly on the positive side of neutral, and it would not be unreasonable to include some portion of the neutral respondents as potential participants, if encouraged by focused outreach efforts. For these reasons, SoCalGas' participation assumptions could reasonably be considered conservative when viewed in this light.

With regard to conservation rates of participating customers, SoCalGas has assumed between 5% and 10%, depending on the mode of feedback. These numbers are drawn from the mid-points of ranges of conservation estimates from 13 studies of conservation response in the face of information feedback. Several parties have expressed concerns that the studies used as the basis for the SoCalGas conservation estimates may not be fully applicable to natural gas usage by SoCalGas customers.

Parties note that few of the data describing gas conservation estimates cited in SoCalGas' supporting testimony come from California. This is by necessity, as this application would represent California's first large scale deployment of gas-only AMI. However, the chosen sample of studies is not irrelevant to California. To the contrary: the sample is relevant because in spite of differing climatic conditions, housing types and cultural practices across the

sample, these studies observed effects that illustrate the common finding that when a largely invisible process (gas or electricity use) is made more visible, there is measurable conservation response on an order comparable to what SoCalGas has put forth in its application.

It is also true, as parties raise, that the end uses of gas by customers (primarily space and water heating) differ somewhat from electric end uses, and the total conservation impact from any information feedback will depend at least in part on the scope for conservation in customers' homes. While there may be fewer discretionary uses for gas than for electricity, the record shows that there is indeed opportunity for behavioral change affecting space heating and water heating to achieve the conservation levels on the order assumed by SoCalGas. To the extent that the opportunities in gas are limited relative to electricity, compensation for this fact can be found in the lower participation rates and conservation rates assumed by SoCalGas, relative to what has been assumed in the electric AMI cases.

In addition to the estimated conservation response, it is important to recognize that AMI can serve to support broad and ambitious goals articulated by this Commission. The California Long Term Energy Efficiency Strategic Plan (Plan) (www.californiaenergyefficiency.com) sets targets for deep energy reduction and envisages a "rapid evolution in both technology and customer behavior to make energy efficiency 'a way of life' among Californians by 2020." (pp. 2-3) The energy use reductions considered in the Plan and other policy documents at local, state and federal levels are far in excess of the estimates made by SoCalGas in its application. In order to achieve a 40% reduction in energy use, or Zero Net Energy Homes, as envisioned by our Plan and policy

goals, a whole suite of initiatives will have to be employed. In this context, our review here is as much strategic as it is technical.

In our view, SoCalGas has made a number of conservative judgments in composing its conservation estimate. It has taken a middle of the road estimate for both participation and conservation rates. The 5% and 10% indicative figures represent the mid range of 13 relevant studies. They relate to savings in the short- to medium-term, from behavioral change arising from increased awareness. Several of the studies on energy information feedback that were reviewed for testimony in this case were conducted before advanced metering was available. They were deemed relevant because they involved changes in the energy users' information environment of the type proposed by SoCalGas, i.e., more timely, accurate information. However it is highly plausible that with higher quality information, such as that afforded by AMI, will come greater responsiveness. SoCalGas has also not included any conservation benefits for higher volume core commercial and industrial customers, which may represent an area of further potential. We are confident that the assumptions put forth by SoCalGas do not represent the upper bound of what is achievable in the way of gas conservation following from increased customer feedback, but rather a moderate middle ground.

Finally, with regards to parties' concerns over attribution, the estimates drawn from to inform the basis of SoCalGas' conservation rates excluded in all cases energy reductions flowing from efficiency measures. The conservation rates represent solely those energy use reductions which would flow from behavior changes in response to energy use feedback. As there are currently no other programs to motivate those reductions there is no apparent risk of double-counting in this regard. Future programs targeting the same reductions

would occur in the context of our energy efficiency portfolios, which are subject to rigorous measurement and verification, in order to isolate the impacts of energy efficiency funds from those reductions stemming from other factors. We therefore, do not view double-counting as a major issue within the context of SoCalGas' business case here.

9.2. Costs

9.2.1. Project Contingency Funding

SoCalGas requests a contingency fund of $98.1 million on a total deployment funding request of $1.08 billion, or a 10% contingency fund. Specifically, this contingency encompasses deployment capital and O&M expenses, to cover unanticipated, unknown or irreducible risks that may impact project schedule, resource availability, functional requirements and other circumstances. The proposed contingency funding is higher that that proposed or authorized for the electric utilities AMI applications.

TURN and DRA note that its contingency request represents an additional 2% over the approximately 8% adopted for SDG&E and PG&E in their AMI applications. They argue that the Commission should reduce the proposed contingency funding accordingly. TURN notes that SoCalGas has already reduced its level of risk through its RFP process to determine cost estimates for its application. Because of this, TURN posits that the Commission should recognize SoCalGas' efforts to reduce its risk and lower the contingency funding to a more appropriate level – a risk allowance that is somewhere between 6% and 8% of SoCalGas' proposed deployment cost of $981 million.

SoCalGas argues that for a project of this financial magnitude and the long duration of the deployment period (2009-2015), a 10% project contingency is a prudent and reasonable amount. No other utility has had to change out so many

meters, it argues. While this is indeed the case, SoCalGas has not adequately explained why the larger number of installations should increase the risk contingency 2%. Indeed, given the experience accumulated through California's AMI roll out to date, any differences between prior AMI cases and this one point directionally towards lower cost risk.

In general, the risk-based allowance adopted by the Commission for the PG&E, SCE, and SDG&E AMI cases has been in the range of 7.4% to 8.0%. Based on Commission precedent, and the fact the previous experience and RFPs have reduced the cost uncertainty for SoCalGas, we reduce the project's contingency funding allowance to 7%. This results in a $68.7 million allowance for contingencies.

9.2.2. Workforce Impacts and Retention Funding

SoCalGas asserts that attrition in both the part-time and full-time meter reader job classifications is significantly higher than the average annual attrition rate at SoCalGas. Over the last seven years the average attrition rate for part-time meter readers has been 83% and the attrition rate for full-time readers has been 42%. SoCalGas alleges that meter reading attrition may be impacted by the transitory nature of the manual meter reading work. Because SoCalGas expects greater meter reader attrition during the deployment period, it has included $225,000 in its cost benefit analysis for anticipated employee retention and retraining expense.

SoCalGas also alleges that it will seek to provide job opportunities to employees impacted by the project. Some management employees may take advantage of retraining opportunities while others may elect to retire during the deployment period. To support retraining, and workforce transition, SoCalGas has included $62,000. Some retraining opportunities include Customer Services

Field Training -- SoCalGas personnel who retrofit meters with gas AMI meter modules and change meters that have pre-installed gas AMI meter modules will be trained in how to perform the work and operate the required handheld installation and diagnostic tools. SoCalGas has included costs for this training at a level of $55,000.

In sum, SoCalGas has included $117,000 to support retraining and retention of the workforce impacted by this project. SoCalGas employs on average about 970 meter readers. While a number of activities within the meter reading department will continue to be necessary after AMI is deployed, we find that SoCalGas' planned funding to assist the transition of the workforce affected by this project inadequate. In order to better protect the employment interests of this displaced workforce we direct SoCalGas to increase by $1 million its funds allocated for employee retention and retraining. This transition fund should be utilized to extend severance, vocational training, and other transitional opportunities to affected meter reading employees.

9.3. The SoCalGas AMI Proposal is Cost Effective

The initial business case presented by SoCalGas estimates, in present terms, the total costs of this project as $1,039.6 million, with total benefits of $1,066.9 million over the analysis period, leaving a margin of net benefits of $27.3 million. Based on our analysis, we find that SoCalGas' benefit assumptions are, individually and in the aggregate, sound and reasonable.

On the cost side, however, we find two adjustments necessary. First, to maintain consistency with past AMI authorizations and reflect the reduction in risk inherent in deployment following prior experience, we reduce the authorized contingency from 10% to 7%. This reduces the contingency fund associated with the project from $98.1 million to $68.7 million, reducing overall

project costs $29.4 million. Conversely, we require that SoCalGas augment by $1 million its funds for workforce transition and retraining for those members of its workforce impacted by the AMI project. With these modifications, the project is cost effective; the benefit to cost ratio is approximately 1.06 because benefits exceed costs by approximately $56 million. While this is by some measures a slim margin, the cost-benefit ratio of the SoCalGas AMI proposal is comparable and in some cases an improvement over electric AMI projects this Commission has approved in the past. Based on SoCalGas' showing, this AMI project will provide operating benefits of over $2.9 billion to customers over the next 25 years. The proposal also provides system-wide technology platform with the ability to expand operating benefits as new applications emerge. We hope and expect that this AMI system will yield further, unforeseen benefits in the future, improving customer service, allowing utilities to operate more safely and efficiently, and reducing utility operating costs. Finally, we fully expect that SoCalGas will use this opportunity not only to induce behavioral conservation but also to scale-up participation in energy efficiency programs. The dramatic expansion in available energy usage information to customers should fundamentally alter their relationship with energy, and encourage greater subscription and utilization of the energy efficiency programs offered through the utility and others. While unaccounted for in the cost-effectiveness showing here, we view this synergy to be central to the opportunity afforded by AMI.

9.4. The SoCalGas AMI Project is Approved

For the reasons stated above, the Commission authorizes SoCalGas to proceed with the implementation of a gas AMI system in its service territory, subject to the modifications described below. With this approval, we complete AMI coverage in all major energy utility service areas under our jurisdiction.

9.5. Ratepayer Protections

9.5.1. Sharing Mechanism

SoCalGas proposes a symmetrical sharing mechanism for actual costs experienced above and below the authorized level. Under its sharing mechanism proposal SoCalGas shareholders will be responsible for 10% of cost exceeding the authorized level and retain 10% of the savings below the authorized level with a maximum reward/penalty of +/- $10 million (i.e., a $100 million sharing band around the requested authorized deployment expenses of $1,079). This mechanism is similar to the sharing mechanism adopted in the SDG&E AMI decision (D.07-04-043).

Both DRA and TURN argue that if approved the Commission should alter SoCalGas' proposed risk sharing mechanism, because SoCalGas's AMI proposal already allocates substantial risk to ratepayers, since the project is not cost-effective solely on an operational basis. Its cost-effectiveness turns on actions by consumers which SoCalGas' showing presumes, but for which the company is not liable. Because of this, DRA and TURN propose alternate sharing mechanisms, which reallocate the balance of risk among shareholders and ratepayers.

TURN proposes that all cost over-runs less than $100 million be allocated 50/50 to shareholders and ratepayers with an explicit showing by SoCalGas demonstrating that the cost over-runs were caused by forces not controllable by the utility. Cost over-runs above $100 million would trigger a reasonableness review by the Commission with a similar requirement for the utility to demonstrate that cost over-runs were outside of its control. All cost under-runs and cost savings, under TURN's proposal, would be passed 100% back to ratepayers. DRA proposes a similar mechanism whereby shareholders bear

50% of cost over-runs. For cost under-runs, DRA recommends that the ratepayer/shareholder split remain at 90%/10%. Furthermore, DRA recommends that the size of the risk sharing band be +/- $60 million rather than +/- $100 million as SoCalGas proposes.

SoCalGas agues that such changes are not warranted, pointing to its projections that approximately two years after completion of AMI deployment, SoCalGas ratepayers wills see lower average bills compared to 2008 bill levels. SoCalGas also points out that no other Commission approved AMI case has shown so high a percentage of AMI life cycle costs covered by operating benefits, and thus SoCalGas customers will see a rapid reflection of AMI benefits.

Given the margin of net benefits on the overall cost-effectiveness of the business case, and because the business case relies on future ratepayer actions, we find that changes to SoCalGas' proposed sharing mechanism are warranted to provide ratepayers with greater protection.

Our approved mechanism represents a combination of the proposals on record. For cost overruns, we believe it is reasonable that ratepayers and shareholders share the burden 50% / 50%. However, we do not accept DRA and TURN's arguments that 90% to 100% of cost under-runs should be returned to ratepayers. In theory a risk sharing mechanisms should provide SoCalGas with an incentive to manage and control overall AMI project costs and return such benefits back to customers. We therefore, leave the cost under-run sharing rate at 90%/10% between ratepayers and shareholders as originally proposed by SoCalGas. The risk sharing band to which this mechanism applies shall remain +/- $100 million. The cost recovery mechanism proposed by SoCalGas is approved as proposed.

9.5.2. Access to AMI Data

Because the cost-effectiveness of this proposal is reliant on the fact that the forecast conservation benefits are indeed realized, and we indeed view this project as a driver for greater conservation across SoCalGas' service area, we must take special care to ensure that the gas conservation impacts in the order of magnitude assumed within the business case are realized.

Part of this task can be met by ensuring the increased information flow generated by the advanced meters can be put to its highest possible use. In some cases customers will respond to relatively basic data. In other cases it will require that this data be processed, by either SoCalGas or potentially a third party, into customized diagnostics and actionable steps to improve a given customer's energy utilization. Thus, in our view, a critical component of this project entails providing customers and authorized third-parties access to gas usage data in a streamlined and straightforward manner.

In the context of our Smart Grid rulemaking, R.08-12-009, we have adopted concrete timelines for the provision of electric price and electric usage information to customers and authorized third-parties.[37] In order to maintain consistency in our AMI policy and the rigor we expect in returning the benefits promised by AMI projects, we will require the same here for gas prices and usage.

Accordingly, we will set a deadline by which SoCalGas must be provide access to authorized third parties, provide access to near-real time gas usage data directly to consumers, and provide retail and wholesale prices to customers on a

[37] D.09-12-046 at 54.

real-time or near real-time basis in a machine readable form. We will require that SoCalGas meet these requirements concurrently with meter installation.

We recognize that there are certain concerns that must be addressed relating to third party access to such information, such as confidentiality, the security of a customer's information, and processes relating to customer consent. Upcoming workshops within R.08-12-009 will explore these issues. We direct SoCalGas to participate in these workshops and utilize any resulting direction to meet the target we set here to ensure meter data can be made available to authorized third parties as meters are installed.

9.5.3. Workshop and Reporting on Conservation Impacts

In testimony, SoCalGas witness Sarah Darby asserted that the conservation outcomes for the SoCalGas AMI project will depend on how energy use feedback is presented and supported. We agree, and therefore direct SoCalGas to host a public workshop within 180 days of the issuance of this decision to present a draft plan for AMI outreach and conservation support. In order to support the development of this plan, as well as ongoing AMI planning and implementation, SoCalGas shall convene a Technical Advisory Panel, similar to the one founded by SDG&E.

The plan should include marketing and education elements to prepare customers for the roll-out of advanced meters, beta versions of web-based Energy Management feedback pages, hard copy conservation materials for non web-based customers, as well as strategies to channel customers towards energy efficiency offerings. In addition, we direct SoCalGas to work with the Commission's Business and Community Outreach (BCO) group to coordinate the scheduling of targeted outreach events, which should include consumer-

oriented demonstrations of the meter and its benefits. A final written plan shall be submitted to the director of the Commission's Energy Division and served on the most recent service list for this proceeding within 60 days of the public workshop.

It is critical to acknowledge that initiating and sustaining the behavioral change necessary to maximize conservation response cannot be accomplished through a one-size-fits-all approach to marketing, education, outreach, and customer support. Thus, consistent with our objectives in other demand side programs, we direct SoCalGas to specify in its plan outreach strategies for all market segments, including ethnic, minority, and hard-to-reach communities and small businesses. It will be incumbent upon SoCalGas to discuss specific proposals for utilizing a competitive solicitation process for the selection of Community Based Organizations (CBOs) with a demonstrated record of success in reaching these market segments.

In order to ensure project objectives remain on track, we direct SoCalGas to establish a system to track and attribute the conservation impacts of its AMI roll-out. Every six months, SoCalGas shall file a report of measured savings. In addition, the semi-annual reports should describe marketing, education, outreach, and customer support activities undertaken during the six month period.

These reports shall serve as a forum to adjust, as necessary the elements laid out in the final outreach plan described above. We expect that customer outreach, education and communications will continue to evolve and improve as SoCalGas conducts customer research, monitors customer reaction to new AMI technology and various customer usage presentation tools, and incorporates feedback from these activities into its AMI outreach and education activities.

If the project is falling short of SoCalGas' projections presented in this docket, the company must submit revisions to its outreach plan to increase awareness, participation, and durability of conservation actions among customers. Additional costs incurred in order to improve conservation response will be funded out of contingency funds or otherwise subject to the risk sharing mechanism outlined above.

10. Categorization and Assignment of Proceeding

This proceeding is categorized as Ratesetting. The assigned Commissioner is Dian M. Grueneich and the assigned ALJ is Jessica T. Hecht.

11. Comments on Proposed Decision

The proposed decision of the ALJ in this matter was mailed to the parties in accordance with Section 311 of the Public Utilities Code and comments were allowed under Rule 14.3 of the Commission's Rules of Practice and Procedure. Comments were filed on March 1, 2010 and reply comments were filed on March 8, 2010 by SoCalGas, DRA, TURN, and UWUA.

The following revisions were made based on comments:

- A technical error (misapplication of discounted total project life costs as the deployment costs sought for approval) was corrected. Authorized deployment cost recovery was adjusted from $1.0112 billion to $1.0507 billion.
- SoCalGas is directed to convene a Technical Advisory Panel, similar to the one formed by SDG&E, to assist in AMI planning and implementation.
- SoCalGas is required provide access to near-real time gas usage data directly to consumers, provide retail and wholesale prices to customers on a real-time or near real-time basis in a machine readable form, and provide access to authorized third parties, concurrent with meter installation.

- More time is allowed to develop a plan for outreach and conservation support, to ensure that the draft plan and public workshop are informed by vendor selections. The public workshop must be held within 180 days from the effective date of this decision, with a final outreach plan due to the Commission's Energy Division 60 days thereafter.
- SoCalGas is required to file an advice letter to Energy Division for purposes of review and approval of AMI contracts finalized by SoCalGas. The advice letters should describe how their choice of vendors enables compliance with criteria set forth in Section 7, in particular compatibility with widely adopted standards for communications with consumer-owned devices, and assurance that changes in customer preference of access frequency do not result in additional AMI system hardware costs.

In addition, a number of clarifications were made to the Proposed Decision, as well as fixes to typographical errors and minor corrections.

Findings of Fact

1. In order to approve this application, we must find that the proposed AMI system affirmatively answers the following questions:

a) Should the Commission approve SoCalGas's proposed AMI deployment activities and funding, either as proposed in this application or with modifications?

i) Are the various elements of the proposed SoCalGas AMI business case and deployment plan reasonable?

a. Are the technology choices proposed by SoCalGas appropriate and technically feasible? Specific elements of the technology plan that should be evaluated include (but are not limited to):

i. Is the proposed SoCalGas-only communication system reasonable? What if any additional communication options, such as shared communications infrastructure between SoCalGas and other utilities with overlapping jurisdictions, should be considered?

ii. Is the battery proposed to power the AMI system reasonable? What if any additional options for powering the meters and communications systems should be considered?

b. Is the SoCalGas AMI proposal for a gas-only AMI system consistent with state energy policy objectives or desirable for other policy reasons?

c. Is the SoCalGas AMI proposal cost-effective, and will it provide lasting value for SoCalGas's customers?

2. The technology choices proposed by SoCalGas, including the stand-alone communications equipment, the choice of battery technology, and the information technology solutions are reasonable, appropriate, and technically feasible.

3. The SoCalGas AMI proposal meets those functionality criteria defined by the Commission for previous (electric or dual fuel) AMI proposals that are relevant to a gas AMI system, to the extent that we understand the applicability of those requirements to a gas-only AMI system.

4. Development and implementation of a cost-effective gas-only AMI system is consistent with state energy policy objectives.

5. Commission precedence dictates in concept the inclusion of terminal value in AMI cost effectiveness showings.

6. The proposed $26.3 million benefit for terminal value of AMI equipment included in the SoCalGas business case is appropriately calculated, and therefore shall be included in the business case analysis.

7. The proposed $757.5 million benefit for elimination of the meter reading workforce after the implementation of an AMI system is reasonably forecast in the SoCalGas AMI business case, and therefore shall be included in the business case analysis.

8. The proposed $148 million gas conservation benefit included in the SoCalGas business case is reasonably forecast in the SoCalGas AMI business case, and therefore shall be included in the business case analysis.

9. SoCalGas' proposed 10% contingency fund is not consistent with AMI deemed reasonable in past AMI cases.

10. Moving forward with the AMI rollout will affect, in some way, a workforce of approximately 970 meter readers, both part-time and full-time.

11. The SoCalGas AMI proposal is cost effective.

12. The cost-effectiveness of SoCalGas' AMI proposal relies upon the materialization of forecast conservation benefits.

13. If the forecast conservation benefits of this project do not materialize, ratepayers may face undue burden.

14. The degree of conservation response depends in part on supporting efforts and outreach on the part of SoCalGas to ensure customers are aware of and engaged in conservation opportunities.

Conclusions of Law

1. The SoCalGas AMI proposal should be approved, with modifications.

2. It is reasonable to reduce SoCalGas' contingency fund to a level consistent with past AMI cases approved by this Commission.

3. It is reasonable to require additional funds to assist SoCalGas' displaced meter reading workforce in transitioning and retraining.

4. It is reasonable to modify SoCalGas' proposed sharing mechanism to reduce the potential risk faced by ratepayers if conservation benefits are lower than forecast.

5. SoCalGas should develop a dedicated plan for consumer outreach to ensure customer awareness of smart meters and engagement in conservation opportunities.

6. It is reasonable to require SoCalGas to offer customers direct access to near-real time gas usage data, provide retail and wholesale prices to customers on a real-time or near real-time basis in a machine readable form, and provide access to such AMI data to customer authorized third parties, on a timeline concurrent with meter installation.

7. It is reasonable to require SoCalGas to provide periodic reports to the Commission on the conservation benefits attributable to AMI deployment.

8. The cost recovery mechanism proposed by SoCalGas is reasonable and consistent with law.

O R D E R

IT IS ORDERED that:

1. Application 08-09-023 is approved with the following modifications:

- Southern California Gas Company shall reduce its contingency fund from 10% to 7%, resulting in a $68.7 million total allowance for contingencies.
- Southern California Gas Company shall supplement by $1 million its funding for workforce retention and retraining. This fund is established to better protect the employment interests of Southern California Gas Company's meter reading workforce and should be used to extend severance, vocational training, and other transitional opportunities to employees affected by the decision to pursue advanced metering infrastructure.

2. Southern California Gas Company's sharing mechanism shall allocate cost overruns of less than $100 million 50/50 to shareholders and ratepayers; cost under runs of up to $100 million shall be allocated 90% to ratepayers and 10% to shareholders, as proposed by Southern California Gas Company.

3. SoCalGas shall offer customers direct access to near-real time gas usage data, provide retail and wholesale prices to customers on a real-time or near real-time basis in a machine readable form, and provide access to such AMI data to customer authorized third parties, on a timeline concurrent with meter installation.

4. Southern California Gas Company shall host a public workshop within 180 days of the issuance of this decision to present a draft plan for advanced metering infrastructure outreach and conservation support. The plan shall include marketing and education elements to prepare customers for advanced metering infrastructure roll-out, sample versions of web-based energy management feedback to encourage conservation, as well as planned marketing to channel customers towards energy efficiency offerings. In order to support the development of its plan, SoCalGas shall convene a Technical Advisory Panel to assist in planning and implementation of AMI. A final written plan shall be

submitted to the director of the Commission's Energy Division and served on the most recent service list for this proceeding within 60 days after the workshop.

5. Southern California Gas Company shall establish a system to track and attribute program costs and projected savings from conservation. Based on this tracking system, Southern California Gas Company shall submit a report to the Director of the Commission's Energy Division semi-annually, tracking the gas conservation impacts of the advanced metering infrastructure project to date. These reports shall serve as a forum to adjust, as necessary the elements laid out in the final outreach plan described above. We expect that customer outreach, education and communications will continue to evolve and improve as SoCalGas conducts customer research, monitors customer reaction to new AMI technology and various customer usage presentation tools, and incorporates feedback from these activities into its AMI outreach and education activities. If the report shows that the company is falling short of its projections, it shall submit revisions to its conservation plan to increase awareness, participation, and durability of conservation actions among its customers. The semi-annual reports and any revisions to the advanced metering infrastructure outreach and conservation plan shall be submitted to the director of the Commission's Energy Division and served on the most recent service list for this proceeding. Additional costs incurred in order to improve conservation response will be funded out of contingency funds, or otherwise subject to the risk sharing mechanism authorized in Ordering Paragraph 2.

6. SoCalGas shall file one or more Advice Letter with the executed contract with vendors for AMI technology, installation and/or systems integration for its AMI project, as adopted herein. These contracts are contingent upon Commission approval that they meet the functionality criteria set forth in

Section 7 of this decision. The advice letters should describe how their choice of vendors enables compliance with criteria set forth in Section 7, in particular compatibility with widely adopted standards for communications with consumer-owned devices, and assurance that changes in customer preference of access frequency do not result in additional AMI system hardware costs.

7. Southern California Gas Company shall file an advice letter no later than 30 days from the effective date of this decision, establishing a balancing account and detailing the cost recovery mechanism in conformance with this decision. Southern California Gas Company is authorized to recover deployment costs of up to $1.0507 billion in this account, plus additional amounts, if any, consistent with the terms and conditions of the Risk Sharing Mechanism approved in Ordering Paragraph 2.

8. Application 08-09-023 is closed.

This order is effective today.

Dated _____, at San Francisco, California.