

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**



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Application of Utility Consumers' Action Network
for Modification of Decision 07-04-043 so as to Not
Force Residential Customers to Use Smart Meters

Application 11-03-015
(Filed March 24, 2011)

**PROPOSAL OF SAN DIEGO GAS & ELECTRIC COMPANY (U 902 E) FOR
CUSTOMERS TO OPT-OUT OF WIRELESS SMART METERS**

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TABLE OF CONTENTS

| | | |
|------|---|----|
| I. | INTRODUCTION..... | 1 |
| II. | BACKGROUND..... | 1 |
| III. | WIRELESS SMART METER PROGRAM AND DEPLOYMENT STATUS | 3 |
| IV. | OVERVIEW OF THE PROPOSED OPT-OUT OF WIRELESS SMART METERS | 3 |
| V. | SDG&E RESPONSES TO THE PROPOSED OPT-OUT OF WIRELESS SMART METERS OPTIONS | 5 |
| VI. | REQUESTED RELIEF | 21 |

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I. INTRODUCTION

In accordance with Decision (D.) 11-11-007,¹ issued November 10, 2011, and the California Public Utility Commission's ("Commission" or "CPUC") Rules of Practice and Procedure (Rules), San Diego Gas & Electric Company ("SDG&E") hereby submit this proposal to provide residential SDG&E customers an alternative to the installation of a digital electric or gas smart meter that transmits customer usage data through radio transmission.

II. BACKGROUND

In June 2002, the Commission initiated Rulemaking (R.) 02-06-001, with the goal of increasing the level of demand response ("DR") "as a resource to enhance electric system reliability, reduce power purchase and individual consumer costs, and protect the environment."² The Rulemaking clarified that the "Commission anticipates that full scale implementation of Advanced Metering Infrastructure ("AMI") will provide all customers in all rate classes with the option to choose between dynamic and static rate structures." AMI consists of wireless smart metering (Smart Meter) and communications infrastructure as well as the related computerized

¹ A copy of Decision 11-11-007 may be obtained at :
http://docs.cpuc.ca.gov/PUBLISHED/FINAL_DECISION/153327.htm

² Decision 02-06-001, p. 1.

systems and software. SDG&E filed its AMI Application (A.) 05-03-015, March 15, 2005 in response to the directives of this Rulemaking.

On February 9, 2007, in accordance with Rule 12.1(a), SDG&E, UCAN and the Division of Ratepayer Advocates (DRA) (Settling Parties) filed a Joint Motion for Adoption of Settlement. On February 16, 2007, ALJ Gamson issued a Ruling seeking further information about, and setting an evidentiary hearing on the Settlement Agreement. The Settling Parties provided their response to the ruling on February 23, 2007. The evidentiary hearing was held February 27, 2007, and the case was re-submitted that day. The February 9, 2007 Motion to accept the Settlement Agreement among SDG&E, UCAN, and DRA was granted by this Commission in D.07-04-043, dated April 12, 2007, and the Application for SDG&E's proposed AMI Project was approved. This Commission ruling also proclaimed that the "decision is part of our effort to transform California's investor-owned utility distribution network into an intelligent, integrated network enabled by modern information and control system technologies."³

On March 24, 2011, the Utility Consumers' Action Network (UCAN) filed the instant application seeking modification of D.07-04-043, which approved SDG&E's proposed Advanced Metering Infrastructure (AMI) Project. UCAN's application requests that D.07-04-043 be modified to order SDG&E to develop a proposal or proposals to provide residential SDG&E customers an alternative to the installation of a digital electric or gas smart meter that transmits customer usage data through radio transmission.⁴ The offering of such an alternative has been referred to as an "opt-out" option. SDG&E filed a timely protest to UCAN's application. DRA filed a timely response. Prehearing conferences were held on May 6, 2011

³ Decision 07-04-043, p. 2.

⁴ These meters are also referred to as "wireless Smart Meters."

and July 27, 2011. In addition, a combined workshop to consider opt-out options for all four investor owned utilities was held on September 14, 2011. Finally, on November 10, 2011, the Commission in D. 11-11-007 directed SDG&E to submit a proposal for residential customers to opt-out of installation of a wireless smart meter.

III. WIRELESS SMART METER PROGRAM AND DEPLOYMENT STATUS

SDG&E is installing a Smart Meter (AMI) system throughout its San Diego and Orange County service areas to improve operational efficiencies, enhance customer service, and enable demand response. The program has an approximate capital cost of \$500 million, with a total capital and O&M cost of \$572 million. SDG&E's Smart Meter Program will replace and/or retrofit a projected 1.4 million electric meters and 860,000 gas meters. It will establish a two-way communications infrastructure, provide automated meter reading in place of manual meter reading, integrate customer information and billing systems, measure energy use in fifteen (15) minute or one hour intervals, provide a Home Area Network ("HAN"), provide integrated remote disconnect/reconnect capabilities, and enable electric demand response/load control devices to help reduce peak energy use.

As of November 13th, 2011, SDG&E's current population of installed smart meters is approximately 2,214,000 endpoints in the service territory with approximately 56,000 endpoints remaining. The majority of the remaining endpoints include time of use ("TOU") electric meters and hard to reach meters. Since many of the remaining endpoints are commercial and industrial accounts, SDG&E's current residential population of installed smart meters is approximately 2,059,000, which is around 99% of the total residential population of approximately 2,079,000.

IV. OVERVIEW OF THE PROPOSED OPT-OUT OF WIRELESS SMART METERS

Pursuant to Ordering Paragraph 2 of D.11-11-007, SDG&E's opt-out proposal must

consider and provide analysis on the technological feasibility and related cost to offer each of the following types of alternatives to installation of a wireless smart meter:

1. Analog meter
2. Digital meter with no radio installed
3. Smart meter with radio transmission turned off
4. Wired smart meter

Pursuant to Ordering Paragraph 3 of the D.11-11-007 the analysis shall include the following information:

1. Whether the radio transmission capability of the gas and electric smart meters can be turned off remotely and the associated cost to include that feature.
2. Whether the radio transmission capability of the gas and electric smart meters can be programmed to turn on and transmit data at a specified time each month and the associated cost to include that feature.
3. A comparison of costs to implement each of the alternatives:
 - a. If an analog meter is currently installed;
 - b. If a wireless smart meter is currently installed.
4. A comparison of costs when a meter is read:
 - a. By a utility employee every month;
 - b. By the utility employee on a quarterly basis, with the remaining months being read by the customer;
 - c. By the utility employee on a semi-annual basis, with the remaining months being read by the customer.
5. Identification of all costs that would be incurred regardless of how data for the alternative is collected (i.e., read by utility employee, read by customer or read via “snap read”).
6. The proposed upfront and monthly fees/rates to be paid by customers under each of the opt-out alternatives. The proposed fees/rates shall also specify the discounted fees/rates to be charged to customers enrolled in the California Alternate Rates for Energy Program.

Due to the current unavailability of certain functionality from SDG&E's vendor, Itron Inc. ("Itron"), that is required to implement the smart meter with radio transmission turned off option, SDG&E will provide its projected costs comparisons on a near-term alternative. A long-term smart meter with radio transmission turned off alternative is anticipated to be available at SDG&E around the 4th quarter of 2012; however, realizing the Commission is considering implementing an opt-out program as soon as reasonably possible, SDG&E's response will be based on just the near-term smart meter with radio off alternative. Accordingly, SDG&E's proposal for residential customers to opt-out of installation of a wireless smart meter provides a list of economic and technological feasible possibilities, given the existing state of the technology constraints, which will ensure fair, reasonable and viable alternatives to installation of a wireless smart meter.

V. SDG&E RESPONSES TO THE PROPOSED OPT-OUT OF WIRELESS SMART METERS OPTIONS

As directed, SDG&E has considered the four (4) types of alternatives set out in ordering paragraph 3 of the D.11-11-007 to provide an opt-out solution for SDG&E's residential customers. To formulate the cost, SDG&E first needed to identify the projected number of opt-out customers, and from such number, determine both the start-up and monthly costs. SDG&E considered the following four factors in developing an estimate of the number of residential customers that may potentially desire an alternative to the installation of a digital electric or gas smart meter that transmits customer usage data through radio transmission:

1. The number of residential customers on SDG&E's delay list – 499 as of 11/11/11.
2. The number of residential customers who currently have a smart meter and have requested SDG&E to replace their smart meter with a non-smart meter – 121 as of 11/11/11.

3. The number of residential customers currently on SDG&E's return-to-utility ("RTU's") list which contains residential customers that SDG&E to date has been unable to install a smart meter due to access and other issues – approximately 3,800 remaining endpoints (gas and electric meters) as of 11/06/11.
4. Additional residential customer participation in an opt-out program once a final decision is rendered – unknown.

Based on these factors outlined above, SDG&E estimated that approximately 3,000 residential customers could potentially opt-out of SDG&E's Smart Meter program.

Radio Transmission Remote Turn Off or Programmed to Turn On

Prior to discussing the different activities required to implement an opt-out solution, SDG&E will address the following two (2) questions posed in Decision (D.) 11-11-007.

1. Whether the radio transmission capability of the gas and electric smart meters can be turned off remotely and the associated cost to include that feature.
2. Whether the radio transmission capability of the gas and electric smart meters can be programmed to turn on and transmit data at a specified time each month and the associated cost to include that feature.

SDG&E response to question 1:

Itron has informed SDG&E that the 900 MHz RF local area network ("LAN" or "RFLAN") mesh radio cannot currently be turned off from the head-end system ("head-end"). That capability would require additional, significant development and enhancement to the head-end software/firmware. This work is not currently on Itron's development road map. Itron has not scoped the requirements nor estimated the associated engineering and development costs for adding this capability to the system, as Itron does not consider it to be a current market requirement. Itron's system does provide the ability to turn the ZigBee radio off or disable it from the head-end provided the RFLAN transmitter is enabled.

SDG&E response to question 2:

Itron has informed SDG&E that the system simply does not provide the ability to remotely turn radios on and off to support a predefined, periodic data collection schedule designed to reduce or minimize RF emissions from the meters. This capability to support a “snap read” would require a wholesale re-engineering of the system architecture (both software and hardware) that would not only be cost-prohibitive but may be impossible without “starting from scratch” on an entirely new system design.

Remote turn-off or snap read, is therefore currently not a viable solution both near-term and in the foreseeable future. As such, SDG&E will not be including these options or costs within each of the opt-out alternatives.

SDG&E's responses to the cost questions 3 through 6 from Section IV above are set forth in Attachment A. Accordingly, SDG&E provides the following supplemental information on SDG&E's opt-out cost categories, viability of each of the four opt-out options, SDG&E's preferred option and proposed cost recovery structure.

Opt-out of Wireless Smart Meter Cost Categories

In developing cost and associated business and system process changes, as well as the feasibility of the different options, SDG&E has currently identified the following cost categories which may apply to all or some of the opt-out alternatives.

1. Field visit to remove electric meter, field visit to remove or turn off gas module radio, field visit to install electric meter on program exit and field visit to install gas module or turn on gas module radio (all options)
2. Meter shop cost (radio off option only)
3. Meter equipment (solid state, analog and wired options)
4. Network enhancement (all options)
5. Information Technology (“IT”) system development (all options)
6. Back office support, communications and customer call center support (all options)
7. Meter reading including consumption read, interval read and phone-in read (all options excluding a phone-in interval read)

Due to the uncertainties of participation rates, as well as the uncertainty surrounding the implementation of a smart meter opt-out solution, SDG&E's actual implementation and associated costs will be determined by the specific opt-out direction established once the CPUC issues a final decision in this proceeding.

Cost Category 1 – Remove or Re-install Meters or Modules

SDG&E's preferred option is to install a non-communicating solid state meter for customers who wish to opt-out of SDG&E's Smart Meter program. This would either be through the digital meter with no radio installed option or the smart meter with radio transmission turned off option. SDG&E is currently working with Itron on a short term solution to turn the RFLAN and ZigBee radios off within the current electric smart meter. However, as directed by this Commission, SDG&E has provided costs herein for all options.

Electric meter removal including radio off –

For all options, SDG&E anticipates a field visit to replace the smart meter (with a solid state, analog or wired meter options) or turn the RFLAN and ZigBee radios off (smart meter with radio transmission turned off option). Overall, for the analog meter, digital meter with no radio installed, and smart meter with radio transmission turned off options, SDG&E estimates that it will cost \$132,263.00 through the end of 2014 for an average start-up cost of \$44.09 per opt-out customer. However, for the analog meter alternative, SDG&E has estimated a small savings based on analog meters already installed at a premise. For the wired smart meter option, SDG&E estimates that it will cost \$501,053.00 through the end of 2014 for an average start-up cost of \$167.02 per opt-out customer.

If the analog meter is the opt-out option selected, the overall cost of this category would be slightly reduced because there will be some residential customers with an existing analog

meter who choose to participate in the opt-out program. In quantifying this cost impact, SDG&E considered that it already has installed electric smart meters at approximately 99%’s of its residential customer premises. SDG&E could reasonably forecast, under the analog meter option, that approximately one half (1/2) of the opt-out customers would still have their existing analog meter and not require the purchase of another analog meter. To be fair to all opt-out customers under this option, SDG&E proposes that the reduced cost would be amortized over the total opt-out population. SDG&E would still require a field visit to identify these meters as ‘opt-out’ meters via a sticker or other identifying tag. As a result, there would only be a slight decrease in the overall cost within this category. Not included in the costs of the analog meter alternative are the impacts of any future mandatory tariffs which will require interval data. Analog meters do not provide interval billing capabilities. As a result, this will necessitate a future meter change out at each opt-out premise resulting in additional costs which would offset any cost associated with the analog meter’s currently installed costs reductions. These additional costs would include new meter equipment and field visits to replace existing analog meters.

Electric smart meter installation including turning the radio on at opt-out program exit –

For almost all options (excluding radio-off), SDG&E anticipates a field visit to install a communicating electric smart meter module when the customer exits the opt-out program. SDG&E is proposing that this cost be collected as part of the start-up fee cost and further estimates that it will cost \$132,263.00 through the end of 2014 for an average start-up cost of \$44.09 per opt-out customer. For the smart meter with radio turned off option, SDG&E proposes that this cost be collected as part of the start-up fee cost and further estimates that it will cost \$128,373.00 through the end of 2014 for an average start-up cost of \$42.79 per opt-out customer.

Even though SDG&E proposes that this cost be collected as part of the start-up fee, for clarification within Schedule A, SDG&E has separately identified this cost as exit fees.

Gas module removal or disable radio (per union rules, a different field technician is required to perform gas meter field work at SDG&E) –

For all options, SDG&E anticipates a field visit to remove the gas module or disable the radio within the gas module. The gas module itself would also be identified as ‘opt-out’ module via a sticker or other identifying tag. SDG&E estimates that it will cost \$100,226.00 through the end of 2014 for an average start-up cost of \$33.41 per opt-out customer.

Gas module install or enable radio on opt-out program exit (per union rules, a different field technician is required to perform gas meter field work at SDG&E) –

For all options, SDG&E anticipates a field visit to install a communicating gas module or turn the radio on within the gas module when the customer exits the opt-out program. SDG&E is proposing that this cost be collected as part of the start-up fee cost and further estimates that it will cost \$100,226.00 through the end of 2014 for an average start-up cost of \$33.41 per opt-out customer. Even though SDG&E proposes that this cost be collected as part of the start-up fee, for clarification within Schedule A, SDG&E has separately identified this cost as exit fees.

Cost Category 2 – Meter Shop

Initially for the smart meter with radio transmission turned off option, SDG&E will provide a near-term solution until future firmware functionality is available and installed around the 4th quarter of 2012. The near-term solution requires meter technicians within SDG&E’s meter shop to turn off both the RFLAN and ZigBee radios prior to field installation. Overall, for just the smart meter with radio transmission turned off near-term option, SDG&E estimates that it will cost \$72,083.00 through the end of 2014 for an average start-up cost of \$24.03 per opt-out

customer. When the future firmware upgrade is available and implemented, then this cost category will no longer be required for the radio off alternative.

Cost Category 3 – Meter Equipment

For the analog meter, digital meter with no radio installed, and the wired smart meter options, additional meter and supporting equipment cost exist –

The analog meter and digital meter with no radio installed options will require a new meter. SDG&E estimates that it will cost \$85,538.00 through the end of 2014 for an average cost of \$28.51 per opt-out customer.

The wired smart meter option will also require a new meter. Other additional costs include the phone modem and activation fee. SDG&E estimates that it will cost \$2,291,325.00 through the end of 2014 for an average start-up cost of \$763.78 per opt-out customer.

However, depending upon the final decision approved approach, higher meter costs could occur if functionality, such as interval reads, is required. Also, if the analog meter is the opt-out option selected, and considering residential customers with an existing analog meter that choose to participate in the opt-out program, the overall cost of this category would be slightly reduced.

Cost Category 4 – Network Enhancement

SDG&E's network differs from those of the other California investor owned utilities because the same network is responsible for communicating both the electric meter and gas meter data back to SDG&E's back office systems. SDG&E's smart meter network uses a mesh network which relies on the proximity of neighboring electric meters in order to get meter reads successfully through the network to a cell relay routing point and to our data collection system. SDG&E can only estimate the meter read performance impacts to the mesh network of having communicating meters missing due to opt-out. SDG&E's territory generally has customers in close proximity to one another, with a small percentage of customers located in rural areas. In

fact approximately 99% of the electric meters fall into an area that covers only 31% of our service territory. Based on that, our network impact costs assumed that only 2% of the meters related to opt-out would create a “break in the mesh” that would require a range extender to resolve. Since gas meters require an electric meter to get the gas read in, an assumption was made that 1 out of 8 of these impacted meters would also require a range extender to get the gas read in. There are three options for the range extender: placing a new meter pedestal, locating on a pole or streetlight or locating on a pad mounted transformer. For meters in rural areas, the break in the mesh would require a meter with a cellular modem in it so that meter can communicate directly with the data collection system. SDG&E assumed only 0.1% of the meters related to opt-out would require that resolution. Overall, SDG&E estimates that it will cost \$218,573 through the end of 2014 for an average start-up cost of \$71.97 per opt-out customer.

Cost Category 5 – IT System Development

To support any opt-out alternative, SDG&E will need to implement system enhancements.

A high level description follows -

A new system process will be developed that will allow a customer to opt-out of their existing smart meter electric and gas service. The new process will require a new system change for set up activities to support any one of the approved opt-out options currently under consideration. The new process will add the set up (i.e. start-up fee) charge to the customer account. In addition to the charges, the new program would also generate field service orders for the services selected. The program would determine if the customer has a smart meter and then generate the correct order based on the option.

The second component will involve service order completion. When the order completes, the order will update the program code field in our customer information system so that

the customer is billed for the manual meter reading service. The completion will also have to create a warning condition stating this is an opt-out customer, update a meter reading code and generate a “pending working queue” order to meter reading. The process will also generate orders to return a premise to the smart meter program when the opt-out customer closes the account.

High level IT requirements include -

- New set up conversations for opt-out and exit opt-out
- New lookup table for opt out job codes and charge codes
- Service order completion changes to update opt-out and opt-out exit codes when orders complete
- Changes to the advanced shipping notice

Overall, SDG&E estimates that it will cost \$136,255 through the end of 2014 for an average start-up cost of \$45.42 per opt-out customer.

Cost Category 6 – Back Office Support, Communication and Customer Call Center

Customers will be made aware of the opt-out alternative through a variety of sources, including website advertisement, customer bill message onsert, call center conversation, CPUC proceedings and word-of-mouth. To participate in the opt-out process, SDG&E will require customers to sign a form indicating agreement with the opt-out requirements (which will include start up/exit costs, monthly fees, and acknowledgement of the excluded services, such as on-line presentment). A customer can contact the SDG&E call center or visit and download information from the SDG&E website.

For customers who call SDG&E, the customer service representative (“CSR”) will explain the program, including the cost, timing of the opt-out, make payment arrangements (if necessary), and mail an information packet to the customer that will include the necessary

forms. When SDG&E receives these signed forms from the customer, the back office program manager will process the request appropriately, which includes scheduling field work for the required opt-out metering solution, updating system records, processing and filing of signed documents, communication with customers, and creation and updating stakeholder and employee education and materials. The program manager will also be responsible for following up appropriately as customers move in and out of a premise.

SDG&E proposes to include back office support, communication and customer call center costs within the monthly costs. Overall, SDG&E estimates that it will cost \$616,057 through the end of 2014 for an average monthly cost of \$5.63 per opt-out customer.

Cost Category 7 – Meter Reading

SDG&E considered the following options and associated costs to obtain meter reads:

1. *By a utility employee every month (consumption read)* - For all options excluding wired smart meter, SDG&E estimates that it will cost \$1,588,767.00 through the end of 2014 for an average monthly cost of \$8.65 per opt-out customer. For wired smart meter, the gas meter consumption read would be manual while the electric meter consumption read would be obtained via the wired solution. SDG&E estimates that it will cost \$5,370,727.00 through the end of 2014 for an average monthly cost of \$43.39 per opt-out customer.
2. *By the utility employee on a quarterly basis, with the remaining months being read by the customer* - For all options excluding wired smart meter, SDG&E estimates that it will cost \$1,845,109.00 through the end of 2014 for an average monthly cost of \$10.03 per opt-out customer. SDG&E will need to hire additional support personal to handle a phone-in program which is included within this cost. However, SDG&E

strongly opposes phone-in reads by customers. Reliability of customers providing timely reads associated with billing cycles is clearly unpredictable. This process will only increase bill estimations and possibly create additional unplanned activities such as high-bill complaints when true-ups occur. For wired smart meter, the gas meter consumption read would be manual while the electric meter consumption read would be obtained via the wired solution. SDG&E estimates that it will cost \$5,627,069.00 through the end of 2014 for an average monthly cost of \$45.03 per opt-out customer.

3. *By the utility employee on a semi-annual basis, with the remaining months being read by the customer* – For all options excluding wired smart meter, SDG&E estimates that it will cost \$1,909,991.00 through the end of 2014 for an average monthly cost of \$10.40 per opt-out customer. SDG&E will need to hire additional support to handle a phone-in program which is included within this cost. However, SDG&E strongly opposes having customers provide phone-in reads by customers. Reliability of customers providing timely reads associated with billing cycles is clearly unpredictable. This process will only increase bill estimations and possibly create additional activities such as bill complaints when true-ups occur. In addition, SDG&E's current Electric and Gas Tariff Rules 17, section D only allows SDG&E to estimate a customer's bill for no more than three consecutive months. For wired smart meter, the gas meter consumption read would be manual while the electric meter consumption read would be obtained via the wired solution. SDG&E estimates that it will cost \$5,691,951.00 through the end of 2014 for an average monthly cost of \$45.40 per opt-out customer.

4. *By the utility employee every month (interval reads)* – SDG&E strongly recommends an option to obtain monthly intervals reads via an onsite meter probe. SDG&E foresees the need to have intervals for all customers for upcoming mandatory tariffs. Even though this read process is at a higher cost, SDG&E does not want customers to opt-out in an effort to bypass future mandatory tariffs. For almost all options (excluding wired smart meter and analog meter), SDG&E estimates that it will cost \$2,354,068.00 through the end of 2014 for an average monthly cost of \$12.81 per opt-out customer. For wired smart meter, the gas meter consumption read would be manual while the electric meter interval reads would be obtained via the wired solution. SDG&E estimates that it will cost \$5,370,727.00 through the end of 2014 for an average monthly cost of \$43.39 per opt-out customer. This is not a viable option for analog meters.

Alternative – Analog Meter

Under this alternative, SDG&E would purchase analog meters from resellers such as Vision Metering or retain the current analog meter if still installed at the opt-out customer's residence. SDG&E could reasonably forecast, under the analog meter option, that approximately one half (1/2) of the opt-out customers would still have their existing analog meter and not require the purchase of an analog meter. To be fair to all opt-out customers under this option, SDG&E proposes that the reduced cost would be amortized over the total opt-out population but there would be an offsetting cost to allow for a truck roll to place an identification tag stating that this analog meter is participating in the opt-out program.

SDG&E does not deem this as a viable alternative. Legacy meters, such as analog, are no longer produced by the major meter manufacturers. To purchase additional analog meter

inventory, SDG&E would need to negotiate agreements via the reseller market. Warranty terms and other conditions would be unsatisfactory. Further, all utilities under this alternative may also be required to purchase analog meters via a reseller resulting in significant supply chain issues. Other concerns include the non-supportability of future tariff requirements that will require interval reads. Since analog meters do not record interval data, this alternative could provide the mechanism to opt-out of future mandatory tariffs. As a result, when these future mandatory tariffs are approved, then a future meter change out at opt-out premises will result in additional costs including electric meter equipment and field visits. Due to implementation timing, these potential unknown costs are not included. However, SDG&E can reasonably state that these unknown costs would increase this alternative's overall cost due to an additional field visit and the procurement of an electric meter with interval billing functionality.

The impacted cost categories for this option were discussed in the proceeding sections of this document. The estimated costs for the analog meter alternative are located in Attachment A, pages A12 thru A15.

Alternative – Digital Meter with No Radio Installed

Under this alternative, SDG&E would purchase solid state meters without radios. There are various meter forms that meet this criterion. SDG&E currently based their pricing on Itron's basic C1S solid state meter. The advanced functionality available includes demand (Max kW), time-of-use and load profile (interval data). Unlike the analog meter, SDG&E sees this as a possible viable alternative mainly because it is a proven warranted product with long-term availability. For opt-out customers, SDG&E would replace either the currently installed smart meter or analog meter with the digital (solid state) meter with no radio installed. Meter reading would be performed as directed via the final decision.

The impacted cost categories for this option were discussed in the proceeding sections of this document. The estimated costs for the digital meter with no radio installed alternative are located in Attachment A, pages A4 thru A7.

Alternative – Smart Meter with Radio Transmission Turned Off

The smart meter with radio transmission turned off option would be performed through a two step process –

1. Near-term approach – Due to timing of implementing an opt-out program, SDG&E would be required to implement a near-term approach prior to implementing Itron’s solution via a future roadmap change. The near-term solution requires meter technicians within SDG&E’s meter shop to turn off both the RFLAN and ZigBee radios prior to field installation. Once complete, then a field visit is required to change out the meter. Also, due to union rules, another technician is required to visit the opt-out customer’s premise to disable the gas module’s radio.
2. Long-term approach – Itron’s long-term approach will provide a firmware solution using handhelds in the field at the customer’s premise to locally turn-off as well as turn-on the RFLAN radio. The Zigbee radio in the electric meter can be turned off via a meter configuration change at the head-end. This solution’s current scheduled release date is the 2nd quarter of 2012. Based on SDG&E’s normal implementation cycle, it is anticipated that this release could be placed into production in the 4th quarter of 2012. Also, due to union rules, another technician is required to visit the opt-out customer’s premise to disable or the gas module’s radio. Ultimately this option provides the flexibility to turn the radio back on due to move outs without changing meters.

SDG&E also sees this as a viable alternative for an opt-out program. Like the digital meter with no radio installed alternative, this solution provides the future functionality that would allow us to meet future tariff changes.

The impacted cost categories for this option were discussed in the proceeding sections of this document. The estimated costs for the smart meter with radio transmission turned off alternative are located in Attachment A, pages A8 thru A11.

Alternative – Wired Smart Meter

By far the wired smart meter option is the most expensive option to implement. For this option, SDG&E proposes using an existing known wired process where, on a monthly basis, SDG&E calls the meter via a dedicated communication line to the electric meter. Costs would include the meter itself along with the phone modem, activation fees, as well as all installation cost which may include home wiring charges. Further, this is not a viable option for SDG&E's gas meters. Currently SDG&E is unaware of a gas meter wired solution. As such, SDG&E would still be required to visit the opt-out customer's premise to turn off the gas module radio and perform monthly reads.

The impacted cost categories for this option were discussed in the proceeding sections of this document. The estimated costs for the wired smart meter alternative are located in Attachment A, pages A16 thru A20.

SDG&E's Preferred Solution

SDG&E's preferred opt-out option is to provide a non-communicating solid state meter with interval read capability. From an overall cost perspective, the smart meter with radio transmission turned off is SDG&E preferred approach as opposed to the digital meter with no radio installed. For the smart meter with radio transmission turned off, SDG&E is looking at a

two step approach (near-term and long-term). The long-term and most cost effective approach requires a future firmware upgrade which SDG&E is currently forecasting an implementation timeframe in the 4th quarter of 2012. Knowing that the CPUC is expecting SDG&E to roll out their opt-out solution shortly after a final decision is rendered; SDG&E would first implement their preferred smart meter with radio transmission turned off near-term solution. SDG&E is finalizing the necessary activities of this near-term radio off approach with Itron. Overall this preferred option is consistent with current meter stock, inventory management and testing processes. Further, SDG&E proposes that only one solution is provided for residential customers to opt-out of a digital electric or gas smart meter that transmits customer usage data through radio transmission. If residential customers have the choice of multiple opt-out alternatives, then SDG&E's opt-out program costs will increase.

Cost Recovery

Regardless of the option approved above, SDG&E requests the authority to establish two new two-way interest bearing balancing account mechanisms, one for electric and one for gas, upon approval of this application. The establishment of the balancing accounts is needed to record the up-front charges, on-going fees, and actual O&M and capital costs associated with this opt-out proposal. These new accounts will record actual fees, charges, and costs that have been proposed in this application against the corresponding revenue requirements approved herein. SDG&E proposes to recover its annual revenue requirements through its existing electric and gas rate structures, subject to annual true-up. The revenue requirement established in this proceeding will be collected from electric distribution customers through SDG&E's electric distribution rates and gas customer through SDG&E's gas transportation rates, respectively. The disposition of this account would be addressed at SDG&E's annual Electric and Gas Regulatory Account

Balance Update filings, respectively, or other applicable proceeding as directed by the Commission.

VI. REQUESTED RELIEF

Wherefore, for the above-stated reasons, SDG&E respectfully request that the Commission:

1. Approve SDG&E's proposed modifications to its existing Smart Meter Program as described and proposed herein;
2. Approve as reasonable SDG&E's proposed up-front and monthly customer fees/rates (differentiated for CARE-enrolled customers, and non-CARE customers as specified herein), and "exit" fee for the Smart Meter opt-out option(s) as described herein;
3. Adopt SDG&E's proposed balancing account to track up-front charges and ongoing fees/rates and the capital and expense revenue requirements associated with implementing the proposed "radio-off"-related modifications to the existing Smart Meter Program;
4. Grant such other and further relief as the CPUC finds just and reasonable.

Attachment A
San Diego Gas and Electric
SDG&E Smart Meter Opt-Out Alternatives Cost Data

TABLE OF CONTENTS

| Item | Description | Page |
|------|---|-----------|
| 1 | Summary of Results | A3 |
| 2 | Installation Costs for a Digital Meter with no Radio | A4 |
| 3 | Monthly Costs for Digital Meter with no Radio Meter Reading Options | A5 |
| 4 | Other Costs to Implement Digital Meter with no Radio Solution | A6 |
| 5 | Estimated Total Costs to Implement Digital Meter with no Radio Solution | A7 |
| 6 | Installation Costs for a Smart Meter with Radio-off | A8 |
| 7 | Monthly Costs for Smart Meter with Radio-off Reading Options | A9 |
| 8 | Other Costs to Implement Smart Meter with Radio-off Solution | A10 |
| 9 | Estimated Total Costs to Implement Smart Meter with Radio-Off Solution | A11 |
| 10 | Installation Costs for Analog Meter | A12 |
| 11 | Monthly Costs for Analog Meter Reading Options | A13 |
| 12 | Other Costs to Implement Analog Solution | A14 |
| 13 | Estimated Total Costs to Implement Analog Solution | A15 |
| 14 | Installation Costs for a Wired Meter | A16 |
| 15 | Monthly Costs for Wired Meter Reading Options | A17 – A18 |
| 16 | Other Costs to Implement a Wired Meter Solution | A19 |
| 17 | Estimated Total Costs to Implement Wired Meter Solution | A20 |

SUMMARY OF RESULTS for 2012-2014

| Item | Description | Digital no Radio Option | Smart Meter Radio-Off Option | Analog Option | Wired option |
|-------------|--------------------------------------|------------------------------------|---|--------------------------|-------------------------|
| | Cost of option | | | | |
| 1 | Total Expense | \$2,669,800 | \$2,737,993 | \$2,605,629 | \$6,793,759 |
| 2 | Total Capital Cost | \$440,366 | \$354,828 | \$397,597 | \$2,672,944 |
| 3 | Total Cost of Option | \$3,110,166 | \$3,092,821 | \$3,003,226 | \$9,466,703 |
| 4 | Proposed One-Time Fee [1] | \$223 | \$219 | \$202 | \$1,082 |
| 5 | Proposed Monthly Fee [1], [2] | \$15 | \$15 | \$15 | \$49 |
| 6 | Proposed Exit Fee [1] | \$78 | \$78 | \$78 | \$78 |

2012 SUMMARY OF RESULTS

| Item | Description | Digital no Radio Option | Smart Meter Radio-Off Option | Analog Option | Wired option |
|-------------|----------------------------------|------------------------------------|---|--------------------------|-------------------------|
| | 2012 Cost of option | | | | |
| 1 | Total Expense | \$1,324,602 | \$1,307,257 | \$1,260,432 | \$2,953,392 |
| 2 | Total Capital Cost | \$433,867 | \$348,329 | \$391,098 | \$2,647,393 |
| 3 | 2012 Total Cost of Option | \$1,758,470 | \$1,655,586 | \$1,651,530 | \$5,600,786 |

[1] For this cost, SDG&E proposes a 20% discount for CARE customers

[2] Assumes monthly consumption reads

Estimated Installations Costs for a Digital Meter with no Radio

This is the estimated cost for a single customer site-visit for the installation of a solid-state meter and, disabling the radio in the gas module.

| Item | Description | Cost |
|-----------------|--|-----------|
| Meter | | |
| 1 | Meter Cost | \$ 28.51 |
| Labor | | |
| Gas | | |
| 2 | Travel Time (minutes) | 12 |
| 3 | Job Time (minutes) | 10 |
| 4 | Customer Service Tech Labor | \$ 21.20 |
| 5 | Labor Burden | \$ 12.21 |
| 6 | Gas Labor Subtotal | \$ 33.41 |
| Electric | | |
| 7 | Travel Time (minutes) | 13 |
| 8 | Job Time (minutes) | 20 |
| 9 | Electric Meter Tech Labor | \$ 24.73 |
| 10 | Labor Burden | \$ 19.35 |
| 11 | Electric Labor Subtotal | \$ 44.09 |
| Vehicles | | |
| 12 | Additional vehicle specific costs, not included in labor loading | \$ - |
| 13 | Total Estimated Cost per Customer Site-Visit | \$ 106.01 |

Estimated Monthly Costs for a Meter Read of a Digital Meter with no Radio and Gas Meter

This is an average cost a read per month, to perform meter reads of non-communicating meter for (1) Consumption Reads (2) Phone-in, Quarterly True-up (3) Phone-in, Semi-Annual True-up and (4) Interval data.

| Item | Description | Cost |
|------|-------------|------|
|------|-------------|------|

Meter Read: Consumption Reads (1)

| | | |
|---|---------------------------|---------|
| 1 | Meter Reader Labor Cost: | \$ 4.73 |
| 2 | Meter Reader Labor Burden | \$ 3.92 |
| 3 | Travel Time (minutes) | 11 |
| 4 | Job Time (minutes) | 1 |

Vehicles

| | | |
|---|--|------|
| 5 | Additional vehicle specific costs, not included in labor loading | \$ - |
|---|--|------|

| | | |
|---|---|---------|
| 6 | Total Estimated Cost per Customer Site-Visit | \$ 8.65 |
|---|---|---------|

| Item | Description | Cost |
|------|-------------|------|
|------|-------------|------|

Meter Read: Phone-in Consumption Reads, Quarterly True-up (2)

| | | |
|---|---------------------------|---------|
| 1 | Meter Reader Labor Cost: | \$ 5.74 |
| 2 | Meter Reader Labor Burden | \$ 4.29 |
| 3 | Travel Time (minutes) | 11 |
| 4 | Job Time (minutes) | 1 |

Vehicles

| | | |
|---|--|------|
| 5 | Additional vehicle specific costs, not included in labor loading | \$ - |
|---|--|------|

| | | |
|---|---|----------|
| 6 | Total Estimated Cost per Customer Site-Visit | \$ 10.03 |
|---|---|----------|

| Item | Description | Cost |
|------|-------------|------|
|------|-------------|------|

Meter Read: Phone-in Consumption Reads, Semi-Annual True-up (3)

| | | |
|---|---------------------------|---------|
| 1 | Meter Reader Labor Cost: | \$ 6.01 |
| 2 | Meter Reader Labor Burden | \$ 4.39 |
| 3 | Travel Time (minutes) | 11 |
| 4 | Job Time (minutes) | 1 |

Vehicles

| | | |
|---|--|------|
| 5 | Additional vehicle specific costs, not included in labor loading | \$ - |
|---|--|------|

| | | |
|---|---|----------|
| 6 | Total Estimated Cost per Customer Site-Visit | \$ 10.40 |
|---|---|----------|

| Item | Description | Cost |
|------|-------------|------|
|------|-------------|------|

Meter Read: Interval Reads (4)

| | | |
|---|---------------------------|---------|
| 1 | Meter Reader Labor Cost: | \$ 7.04 |
| 2 | Meter Reader Labor Burden | \$ 5.78 |
| 3 | Travel Time (minutes) | 11 |
| 4 | Job Time (minutes) | 4 |

Vehicles

| | | |
|---|--|------|
| 5 | Additional vehicle specific costs, not included in labor loading | \$ - |
|---|--|------|

| | | |
|---|---|----------|
| 6 | Total Estimated Cost per Customer Site-Visit | \$ 12.81 |
|---|---|----------|

Estimated Other Costs to Implement Digital Meter with no Radio Solution

This is intended to capture all costs not associated with initial site-visit to install a non-communicating meter or the monthly read.

| Item | Description | Cost |
|-------------|--------------------------------------|-------------|
| | Network | |
| 1 | Installation of Network Devices | \$ 218,573 |
| | IT | |
| 2 | Systems Development & Implementation | \$ 136,255 |
| | Call Center | |
| 3 | Call Center Operations | \$ 44,258 |
| | Operations | |
| 4 | Program Management | \$ 542,645 |
| 5 | Communications | \$ 29,154 |
| | Total Operation costs | \$ 571,799 |
| 6 | Total Estimated Other Costs | \$ 970,884 |

Total Estimated Program Costs and Fees for Digital Meter with no Radio Solution

This is intended to capture the total costs needed to implement the Solid-State Solution, including the one-time, monthly and exit costs for 2012-2014.

| Item | Description | Cost |
|-------------|---|--------------------|
| | Installation Cost | |
| 1 | Total Meter Equipment Cost | \$85,538 |
| 2 | Gas Installation Cost | \$100,226 |
| 3 | Electric Installation Cost | \$132,263 |
| 4 | Total Installation Costs | <u>\$318,027</u> |
| | Exit Costs | |
| 5 | Gas Installation Cost | \$100,226 |
| 6 | Electric Installation Cost | \$132,263 |
| 7 | Total Exit Costs per Customer Site-Visit | <u>\$232,488</u> |
| | Meter Read Costs [1] | |
| 8 | Total Consumption Meter Read Costs | \$1,588,767 |
| 9 | Total Monthly Phone-In Reads, Quarterly True-up Costs | \$1,845,109 |
| 10 | Total Monthly Phone-In Reads, Semi-Annual True-up Costs | \$1,909,991 |
| 11 | Total Monthly Interval Reads Cost | \$2,354,068 |
| | Total Other Costs | |
| 12 | Total Other Expense | \$616,057 |
| 13 | Total Other Capital Costs | \$354,828 |
| 14 | Total Other Costs | <u>\$970,884</u> |
| 15 | Total Solid-State Meter Solution Expense | \$2,669,800 |
| 16 | Total Solid-State Meter Solution Capital Cost | \$440,366 |
| 17 | Total Solid-State Meter Solution Cost [2] | <u>\$3,110,166</u> |
| 18 | Proposed One-Time Fee for Solid-State Meter Solution [3] | \$223 |
| 19 | Proposed Monthly Fee for Solid-State Meter Solution [3] | \$15 |
| 20 | Proposed Exit Fee for Solid-State Meter Solution [3] | \$78 |

[1] Total cost assumes some premises have both gas & electric meters

[2] Total cost assumes consumption reads

[3] For this cost, SDG&E proposes a 20% discount for CARE customers

Estimated Installations Costs for a Smart Meter with Radio-Off

This is the estimated cost for a single customer site-visit for the installation of a Smart Meter, Radio-of, and disabling the radio in the gas module.

| Item | Description | Cost |
|-----------------|--|-----------|
| Meter | | |
| 1 | Meter Cost | \$ - |
| Labor | | |
| Gas | | |
| 2 | Travel Time (minutes) | 12 |
| 3 | Job Time (minutes) | 10 |
| 4 | Customer Service Tech Labor | \$ 21.20 |
| 5 | Labor Burden | \$ 12.21 |
| 6 | Gas Labor Subtotal | \$ 33.41 |
| Electric | | |
| 7 | Engineer I, Meter Reconfiguration Labor | \$ 17.54 |
| 8 | Engineer I, Meter Reconfiguration Labor Burden | \$ 6.49 |
| 9 | Engineer I Labor Subtotal | \$ 24.03 |
| 10 | Travel Time (minutes) | 13 |
| 11 | Job Time (minutes) | 20 |
| 12 | Electric Meter Tech Labor | \$ 24.73 |
| 13 | Electric Meter Tech Labor burden | \$ 19.35 |
| 14 | Electric Labor Subtotal | \$ 44.09 |
| Vehicles | | |
| 15 | Additional vehicle specific costs, not included in labor loading | \$ - |
| 16 | Total Estimated Cost per Customer Site-Visit | \$ 101.52 |

Estimated Monthly Costs for a Meter Read of Smart Meter(s) with Radio-Off

This is an average cost a read per month, to perform meter reads of non-communicating meter for (1) Consumption Reads (2) Phone-in, Quarterly True-up (3) Phone-in, Semi-Annual True-up and (4) Interval data.

| Item | Description | Cost |
|--|--|-----------------|
| Meter Read: Consumption Reads (1) | | |
| 1 | Meter Reader Labor Cost: | \$ 4.73 |
| 2 | Meter Reader Labor Burden | \$ 3.92 |
| 3 | Travel Time (minutes) | 11 |
| 4 | Job Time (minutes) | 1 |
| Vehicles | | |
| 5 | Additional vehicle specific costs, not included in labor loading | \$ - |
| 6 | Total Estimated Cost per Customer Site-Visit | \$ 8.65 |
| Item | Description | Cost |
| Meter Read: Phone-in Consumption Reads, Quarterly True-up (2) | | |
| 1 | Meter Reader Labor Cost: | \$ 5.74 |
| 2 | Meter Reader Labor Burden | \$ 4.29 |
| 3 | Travel Time (minutes) | 11 |
| 4 | Job Time (minutes) | 1 |
| Vehicles | | |
| 5 | Additional vehicle specific costs, not included in labor loading | \$ - |
| 6 | Total Estimated Cost per Customer Site-Visit | \$ 10.03 |
| Item | Description | Cost |
| Meter Read: Phone-in Consumption Reads, Semi-Annual True-up (3) | | |
| 1 | Meter Reader Labor Cost: | \$ 6.01 |
| 2 | Meter Reader Labor Burden | \$ 4.39 |
| 3 | Travel Time (minutes) | 11 |
| 4 | Job Time (minutes) | 1 |
| Vehicles | | |
| 5 | Additional vehicle specific costs, not included in labor loading | \$ - |
| 6 | Total Estimated Cost per Customer Site-Visit | \$ 10.40 |
| Item | Description | Cost |
| Meter Read: Interval Reads (4) | | |
| 1 | Meter Reader Labor Cost: | \$ 7.04 |
| 2 | Meter Reader Labor Burden | \$ 5.78 |
| 3 | Travel Time (minutes) | 11 |
| 4 | Job Time (minutes) | 4 |
| Vehicles | | |
| 5 | Additional vehicle specific costs, not included in labor loading | \$ - |
| 6 | Total Estimated Cost per Customer Site-Visit | \$ 12.81 |

Estimated Other Costs to Implement a Smart Meter with Radio-off Solution

This is intended to capture all costs not associated with initial site-visit to install a non-communicating meter or the monthly read.

| Item | Description | Cost |
|-------------|--------------------------------------|-------------------|
| | Network | |
| 1 | Installation of Network Devices | \$ 218,573 |
| | IT | |
| 2 | Systems Development & Implementation | \$ 136,255 |
| | Call Center | |
| 3 | Call Center Operations | \$ 44,258 |
| | Operations | |
| 4 | Program Management | \$ 542,645 |
| 5 | Communications | \$ 29,154 |
| | Total Operation costs | <u>\$ 571,799</u> |
| 6 | Total Estimated Other Costs | <u>\$ 970,884</u> |

Total Estimated Program Costs and Fees for a Smart Meter with Radio-Off Solution

This is intended to capture the total costs needed to implement the Radio-Off Solution, including the one-time, monthly and exit costs for 2012-2014.

| Item | Description | Cost |
|-----------------------------|---|--------------------|
| Installation Cost | | |
| 1 | Total Meter Equipment Cost | \$0.00 |
| 2 | Gas Installation Cost | \$100,226 |
| 3 | Electric Meter Shop (turn radios off) | \$72,083 |
| 4 | Electric Installation Cost | \$132,263 |
| 5 | Total Installation costs | <u>\$304,571</u> |
| Exit Costs | | |
| 6 | Gas Installation Cost | \$100,226 |
| 7 | Electric Installation Cost | \$128,373 |
| 8 | Total Exit Costs per Customer Site-Visit | <u>\$228,598</u> |
| Meter Read Costs [1] | | |
| 9 | Total Consumption Meter Read Costs | \$1,588,767 |
| 10 | Total Monthly Phone-In Reads, Quarterly True-up Costs | \$1,845,109 |
| 11 | Total Monthly Phone-In Reads, Semi-Annual True-up Costs | \$1,909,991 |
| 12 | Total Monthly Interval Reads Cost | \$2,354,068 |
| Total Other Costs | | |
| 13 | Total Other Expense | \$616,057 |
| 14 | Total Other Capital Costs | \$354,828 |
| 15 | Total Other Costs | <u>\$970,884</u> |
| 16 | Total Radio-Off Meter Solution Expense | \$2,737,993 |
| 17 | Total Radio-Off Meter Solution Capital Cost | \$354,828 |
| 18 | Total Radio-Off Meter Solution Cost [2] | <u>\$3,092,821</u> |
| 19 | Proposed One-Time Fee for a Radio-Off Meter Solution [3] | \$219 |
| 20 | Proposed Monthly Fee for a Radio-Off Meter Solution [3] | \$15 |
| 21 | Proposed Exit Fee for a Radio-Off Meter Solution [3] | \$78 |

[1] Total cost assumes some premises have both gas & electric meters

[2] Total cost assumes consumption reads

[3] For this cost, SDG&E proposes a 20% discount for CARE customers

Estimated Installations Costs for an Analog Meter

This is the estimated cost for a single customer site-visit for the installation of an Analog meter and, disabling the radio in the gas module.

| Item | Description | Cost |
|-----------------|--|-----------------|
| Meter | | |
| 1 | Meter Cost | \$ 28.51 |
| 2 | Previously Installed Analog Meter Off-set [1] | \$ (21.39) |
| Labor | | |
| Gas | | |
| 3 | Travel Time (minutes) | 12 |
| 4 | Job Time (minutes) | 10 |
| 5 | Customer Service Tech Labor | \$ 21.20 |
| 6 | Labor Burden | \$ 12.21 |
| 7 | Gas Labor Subtotal | <u>\$ 33.41</u> |
| Electric | | |
| 8 | Travel Time (minutes) | 13 |
| 9 | Job Time (minutes) | 20 |
| 10 | Electric Meter Tech Labor | \$ 24.73 |
| 11 | Labor Burden | \$ 19.35 |
| 12 | Electric labor Subtotal | <u>\$ 44.09</u> |
| Vehicles | | |
| 13 | Additional vehicle specific costs, not included in labor loading | <u>\$ -</u> |
| 14 | Total Estimated Cost per Customer Site-Visit | <u>\$ 84.62</u> |

[1] Average cost off-set as a result of analog meters previously installed. However due to timing, costs does not reflect future mandatory tariffs requiring interval reads resulting in additional costs including, but not limited to, electric meter equipment and field visits.

Estimated Monthly Costs for a Meter Read of an Analog and Gas Meter

This is an average cost, per month, to perform meter reads of non-communicating meter for (1) Consumption Reads (2) Phone-in, Quarterly True-up and (3) Phone-in, Semi-Annual True-up and (4) Interval data – not applicable.

| Item | Description | Cost |
|--|--|---------|
| Meter Reader: Consumption Reads (1) | | |
| 1 | Meter Reader Labor Cost: | \$ 4.73 |
| 2 | Meter Reader Labor Burden | \$ 3.92 |
| 3 | Travel Time (minutes) | 11 |
| 4 | Job Time (minutes) | 1 |
| Vehicles | | |
| 5 | Additional vehicle specific costs, not included in labor loading | \$ - |
| 6 | Total Estimated Cost per Customer Site-Visit | \$ 8.65 |

| Item | Description | Cost |
|--|--|----------|
| Meter Reader: Phone-in Consumption Reads, Quarterly True-up (2) | | |
| 1 | Meter Reader Labor Cost: | \$ 5.74 |
| 2 | Meter Reader Labor Burden | \$ 4.29 |
| 3 | Travel Time (minutes) | 11 |
| 4 | Job Time (minutes) | 1 |
| Vehicles | | |
| 5 | Additional vehicle specific costs, not included in labor loading | \$ - |
| 6 | Total Estimated Cost per Customer Site-Visit | \$ 10.03 |

| Item | Description | Cost |
|--|--|----------|
| Meter Reader: Phone-in Consumption Reads, Semi-Annual True-up (3) | | |
| 1 | Meter Reader Labor Cost: | \$ 6.01 |
| 2 | Meter Reader Labor Burden | \$ 4.39 |
| 3 | Travel Time (minutes) | 11 |
| 4 | Job Time (minutes) | 1 |
| Vehicles | | |
| 5 | Additional vehicle specific costs, not included in labor loading | \$ - |
| 6 | Total Estimated Cost per Customer Site-Visit | \$ 10.40 |

Estimated Other Costs to Implement an Analog Meter Solution

This is intended to capture all costs not associated with initial site-visit to install a non-communicating meter or the monthly read.

| Item | Description | Cost |
|-------------|--------------------------------------|-------------|
| | Network | |
| 1 | Installation of Network Devices | \$ 218,573 |
| | IT | |
| 2 | Systems Development & Implementation | \$ 136,255 |
| | Call Center | |
| 3 | Call Center Operations | \$ 44,258 |
| | Operations | |
| 4 | Program Management | \$ 542,645 |
| 5 | Communications | \$ 29,154 |
| | Total Operation costs | \$ 571,799 |
| 6 | Total Estimated Other Costs | \$ 970,884 |

Total Estimated Program Costs and Fees for an Analog Solution

This is intended to capture the total costs needed to implement the Analog Solution, including the one-time, monthly and exit costs for 2012-2014.

| Item | Description | Cost |
|----------------------------------|--|--------------------|
| Installation Cost | | |
| 1 | Total Meter Equipment Cost | \$85,538 |
| 2 | Gas Installation Cost | \$100,226 |
| 3 | Electric Installation Cost | \$132,263 |
| 4 | Subtotal Installation costs | \$318,027 |
| 5 | Adjustment for previously installed meters | -\$64,171 |
| 6 | Total Installation Costs | \$253,856 |
| Exit Costs | | |
| 7 | Gas Installation Cost | \$100,226 |
| 8 | Electric Installation Cost | \$132,263 |
| 9 | Total Exit Costs per Customer Site-Visit | \$232,488 |
| Meter Read Costs [1], [2] | | |
| 10 | Total Monthly Consumption Read Cost | \$1,588,767 |
| 11 | Total Monthly Phone-In Reads, Quarterly True-up Costs | \$1,845,109 |
| 12 | Total Monthly Phone-In Reads, Semi-Annual True-up Costs | \$1,909,991 |
| Total Other Costs | | |
| 13 | Total Other Expense | \$616,057 |
| 14 | Total Other Capital Costs | \$354,828 |
| 15 | Total Other Costs | \$970,884 |
| 16 | Total Analog Meter Solution Expense | \$2,605,629 |
| 17 | Total Analog Meter Solution Capital Cost | \$397,597 |
| 18 | Total Analog Meter Solution Cost | \$3,003,226 |
| 19 | Proposed One-Time Fee for Analog Meter Solution [3] | \$202 |
| 20 | Proposed Monthly Fee for Analog Meter Solution [3] | \$15 |
| 21 | Proposed Exit Fee for Analog Meter Solution [3] | \$78 |

[1] Total cost assumes some premises have both gas & electric meters

[2] Analog solution does not provide interval capability

[3] For this cost, SDG&E proposes a 20% discount for CARE customers

Estimated Installations Costs for a Wired Meter

This is the estimated cost for a single customer site-visit for the installation of a wired electric meter and, disabling the radio in the gas module.

| Item | Description | Cost |
|-----------------|--|------------------|
| Meter | | |
| 1 | Meter Cost | \$ 499.57 |
| 2 | Phone Line Installation Costs | \$ 264.21 |
| 3 | Meter Subtotal | \$ 763.78 |
| Labor | | |
| Gas | | |
| 4 | Travel Time (minutes) | 12 |
| 5 | Job Time (minutes) | 10 |
| 6 | Customer Service Tech Labor | \$ 21.20 |
| 7 | Labor Burden | \$ 12.21 |
| 8 | Gas Labor Subtotal | \$ 33.41 |
| Electric | | |
| 9 | Travel Time (minutes) | 26 |
| 10 | Job Time (minutes) | 70 |
| 11 | Electric Meter Tech Labor | \$ 101.34 |
| 12 | Labor Burden | \$ 65.68 |
| 13 | Electric Labor Subtotal | \$ 167.02 |
| Vehicles | | |
| 14 | Additional vehicle specific costs, not included in labor loading | \$ - |
| 15 | Total Estimated Cost per Customer Site-Visit | \$ 964.20 |

Estimated Monthly Costs for a Meter Read of a Wired Electric and Gas Meter

This is an average cost a read per month, to perform meter reads of non-communicating meter for (1) Consumption Reads (2) Phone-in, Quarterly True-up (3) Phone-in, Semi-Annual True-up and (4) Interval data.

| Item | Description | Cost |
|--|--|----------|
| Meter Read: Electric Consumption Read (1) | | |
| 1 | Electric Meter Modem Subscription Fees | \$ 35.00 |
| Gas Consumption Read | | |
| 2 | Gas Meter Reader Labor Cost: | \$ 4.53 |
| 3 | Gas Meter Reader Labor Burden | \$ 3.86 |
| 4 | Travel Time (minutes) | 11 |
| 5 | Job Time (minutes) | 1 |
| Vehicles | | |
| 6 | Additional vehicle specific costs, not included in labor loading | \$ - |
| 7 | Total Estimated Cost per Customer Site-Visit | \$ 43.39 |

| Item | Description | Cost |
|--|--|----------|
| Meter Read: Electric Consumption Read (2) | | |
| 1 | Electric Meter Modem Subscription Fees | \$ 35.00 |
| Meter Read: Phone-in Consumption Reads, Quarterly True-up | | |
| 2 | Gas Meter Reader Labor Cost: | \$ 5.74 |
| 3 | Gas Meter Reader Labor Burden | \$ 4.29 |
| 4 | Travel Time (minutes) | 11 |
| 5 | Job Time (minutes) | 1 |
| Vehicles | | |
| 6 | Additional vehicle specific costs, not included in labor loading | \$ - |
| 7 | Total Estimated Cost per Customer Site-Visit | \$ 45.03 |

| Item | Description | Cost |
|--|--|----------|
| Meter Read: Electric Consumption Read (3) | | |
| 1 | Electric Meter Modem Subscription Fees | \$ 35.00 |
| Meter Read: Phone-in Consumption Reads, Semi-Annual True-up | | |
| 2 | Gas Meter Reader Labor Cost: | \$ 6.01 |
| 3 | Gas Meter Reader Labor Burden | \$ 4.39 |
| 4 | Travel Time (minutes) | 11 |
| 5 | Job Time (minutes) | 1 |
| Vehicles | | |
| 6 | Additional vehicle specific costs, not included in labor loading | \$ - |
| 7 | Total Estimated Cost per Customer Site-Visit | \$ 45.40 |

| Item | Description | Cost |
|---|--|----------|
| Meter Read: Interval Reads (Electric Only) | | |
| 1 | Electric Meter Modem Subscription Fees | \$ 35.00 |
| Gas Consumption Read | | |

| | | | |
|-----------------|--|----|--------------|
| 2 | Gas Meter Reader Labor Cost: | \$ | 4.53 |
| 3 | Gas Meter Reader Labor Burden | \$ | 3.86 |
| 4 | Travel Time (minutes) | | 11 |
| 5 | Job Time (minutes) | | 1 |
| Vehicles | | | |
| 6 | Additional vehicle specific costs, not included in labor loading | \$ | - |
| 7 | Total Estimated Cost per Customer Site-Visit | \$ | <u>43.39</u> |

Estimated Other Costs to Implement a Wired Meter Solution

This is intended to capture all costs not associated with initial site-visit to install a wired-communicating meter or the monthly read.

| Item | Description | Cost |
|-------------|--------------------------------------|-------------|
| | Network | |
| 1 | Installation of Network Devices | \$ 218,573 |
| | IT | |
| 2 | Systems Development & Implementation | \$ 136,255 |
| | Call Center | |
| 3 | Call Center Operations | \$ 44,258 |
| | Operations | |
| 4 | Program Management | \$ 542,645 |
| 5 | Communications | \$ 29,154 |
| | Total Operation costs | \$ 571,799 |
| 6 | Total Estimated Other Costs | \$ 970,884 |

Total Estimated Program Costs and Fees for a Wired Solution

This is intended to capture the total costs needed to implement the Wired Solution, including the one-time, monthly and exit costs for 2012-2014.

| Item | Description | Cost |
|------|---|--------------------|
| | Installation Cost | |
| 1 | Total Meter Equipment Cost | \$2,291,325 |
| 2 | Gas Installation Cost | \$100,226 |
| 3 | Electric Installation Cost | \$501,053 |
| 4 | Total Installation costs | <u>\$2,892,603</u> |
| | Exit Costs | |
| 5 | Gas Installation Cost | \$100,226 |
| 6 | Electric Installation Cost | \$132,263 |
| 7 | Total Exit Costs per Customer Site-Visit | <u>\$232,488</u> |
| | Meter Read Costs [1], [2] | |
| 8 | Total Monthly Consumption Read Cost | \$5,370,727 |
| 9 | Total Monthly Phone-In Read, Quarterly True-up Costs | \$5,627,069 |
| 10 | Total Monthly Phone-In Read, Semi-Annual True-up Costs | \$5,691,951 |
| 11 | Total Monthly Interval Reads Cost | \$5,370,727 |
| | Total Other Costs | |
| 12 | Total Other Expense | \$616,057 |
| 13 | Total Other Capital Costs | \$354,828 |
| 14 | Total Other Costs | <u>\$970,884</u> |
| 15 | Total Wired Meter Solution Expense | \$6,793,759 |
| 16 | Total Wired Meter Solution Capital Cost | \$2,672,944 |
| 17 | Total Wired Meter Solution Cost | <u>\$9,466,703</u> |
| 18 | Proposed One-Time Fee for Wired Meter Solution [3] | \$1,082 |
| 19 | Proposed Monthly Fee for Wired Meter Solution [3] | \$49 |
| 20 | Proposed Exit Fee for Wired Meter Solution [3] | \$78 |

[1] Total cost assumes some premises have both gas & electric meters

[2] Wired electric meter provides interval data for all options

[3] For this cost, SDG&E proposes a 20% discount for CARE customers