

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

Application of San Diego Gas & Electric Company
(U 902-E) for Approval of Electric Program Investment
Charge Triennial Plan for Years 2012-2014

A.12-11-002
(filed November 1, 2012)

**REPLY OF SAN DIEGO GAS & ELECTRIC COMPANY (U 902-E)
TO THE JOINT PROTEST OF THE ALLIANCE FOR RETAIL ENERGY MARKETS
AND THE MARIN ENERGY AUTHORITY AND TO THE PROTEST OF THE
DIVISION OF RATEPAYER ADVOCATES**

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I. INTRODUCTION

In compliance with Rule 2.6(e) of the California Public Utilities Commission's ("Commission") Rules of Practice and Procedure, San Diego Gas & Electric Company ("SDG&E") hereby submits this Reply to the protests filed on December 7, 2012 against SDG&E's November 1, 2012 *Application for Approval of its Electric Program Investment Charge Triennial Plan for Years 2012-2014* ("SDG&E's EPIC Application"). The first protest, filed jointly by the Alliance for Retail Energy Markets ("AREM") and the Marin Energy Authority ("MEA"), is limited to the issue of whether one of SDG&E's proposed EPIC programs is a prohibited "generation-only" program. The second protest, filed by the Division of Ratepayer Advocates ("DRA"), generally protests all four EPIC Applications filed on November 1, 2012, including SDG&E's EPIC Application, as lacking particular information. DRA suggests that the Commission convene workshops to address its concerns.

SDG&E addresses both protests and the request for workshops in this Reply. The concerns underlying both protests are unfounded as they pertain to SDG&E's EPIC Application. In addition, while SDG&E believes workshops are unnecessary as they pertain to SDG&E's

EPIC Application, it requests that any workshops held be limited in scope and conducted as soon as possible so as to not unnecessarily prolong the application approval process.

II. OVERVIEW OF SDG&E'S EPIC APPLICATION AND PROPOSED EPIC PLAN

Attachment A to SDG&E's EPIC Application, SDG&E's proposed EPIC Plan ("SDG&E's EPIC Plan"), describes a portfolio of five distinct, yet related, Technology Demonstration and Deployment ("TD&D") programs designed to demonstrate function and utility beyond existing smart grid deployments, specifically:

- (1) Smart Grid Architecture Demonstrations: will consist of pilot demonstrations of key candidate prototype components of the SDG&E smart grid architecture to determine their suitability for adoption in the architecture. The demonstration results will be used by the SDG&E interdepartmental smart grid architecture team to aid in selection of architecture components for adoption in the architecture and to support the implementation phase for adopted components.
- (2) Visualization and Situational Awareness Demonstrations: will demonstrate options for the SDG&E smart grid's visualization and situational awareness system, which system operators need to efficiently process the high volume of data coming from sensors and smart devices in the grid and strategically use the data to improve operations and reliability. The findings and resulting system may help mitigate possible risks associated with overwhelming system operators with too much data.
- (3) Distributed Control for Smart Grids Demonstrations: will demonstrate a prototype distributed system controller that may manage and dispatch higher penetrations of smart devices in the grid by using local control of circuits as part of a hierarchical control strategy under the distribution management system. This program will help SDG&E make strategic choices concerning distributed control systems.
- (4) Demonstration of Grid Support Functions of Distributed Energy Resources ("DER"): will demonstrate non-generation grid support functions of DER (sometimes called ancillary services), which can improve distribution system operations. The demonstrations will quantify the value of specific grid support functions in specific application situations and provide a basis to determine which functions should be pursued commercially in the development of the smart grid.

- (5) Smart Distribution Circuit Demonstrations: will demonstrate smart distribution circuit designs to establish the best design practices for integration of many types of emerging smart, controllable devices, existing equipment, and advanced protection systems. It will provide a basis for SDG&E to strategically and efficiently integrate new devices in a consistent manner throughout SDG&E's distribution circuits.¹

All five programs are smart grid integration system demonstration programs. The programs are designed to fill industry gaps by helping advance the smart grid from a mass of autonomous smart devices to an integrated networked system of devices and subsystems. In essence, the programs will help modernize SDG&E's smart grid to make it even "smarter" through smart device integration in a networked communication and control infrastructure.² All five programs align with and are designed to help achieve the State of California's and the Commission's various smart grid objectives and benefit electric utility ratepayers.³ In addition, SDG&E's EPIC Application aligns with the complementary principles outlined in D.12-05-037, such as the efficient use of ratepayer monies and support for GHG emission reduction policies.⁴

SDG&E's five proposed EPIC programs will deliver societal and economic benefits that exceed program costs.⁵ SDG&E conducted a cost-benefit analysis of the proposed program portfolio, and determined that the five programs would provide reasonable benefits to ratepayers

¹ SDG&E EPIC Application, A.12-11-002 at 3-4 ("SDG&E EPIC Application"); Attachment A, SDG&E Plan, at Section 6 ("SDG&E Plan").

² SDG&E EPIC Application at 5; SDG&E Plan at Sections 5.2 & 8.1.

³ SDG&E EPIC Application at 5; SDG&E Plan at Sections 3.3.2 & 8. SB17, codified at Cal. Pub Util. Code sec. 8360 et seq., requires the Commission to create a smart grid deployment plan by July 1, 2010 and electrical utilities to submit a smart grid deployment plan to the Commission by June 1, 2011. The statute required that standards be adopted for California that complied with standards from the National Institute of Standards and Technology ("NIST"), the Gridwise Architecture Council, the International Electrical and Electronics Engineers, the North America Electric Reliability Cooperation, and FERC. Cal. Pub. Util. Code §8362(a).

⁴ SDG&E EPIC Application at 5; SDG&E Plan at Section 8.2.

⁵ SDG&E EPIC Application at 5; SDG&E Plan at Section 8.6.

in a cost-efficient manner. Even with the conservative cost-benefit case methodology, the proposed SDG&E EPIC program benefits were found to be 1.5 times the costs.⁶

As described in its EPIC Application, SDG&E has gone to considerable lengths to ensure that its five proposed programs are not duplicative of any other existing known TD&D program.⁷ In addition, as SDG&E's EPIC Application notes, SDG&E and the other EPIC Administrators have coordinated their EPIC Plan development processes to ensure that duplicative programs were not proposed.⁸ Furthermore, SDG&E and the other EPIC Administrators have agreed to meet at least once a year to discuss the EPIC programs, share findings and investigate any opportunities for fund leveraging and collaboration, to the extent legally permissible.⁹

III. CONCERNS VOICED BY AR&M AND MEA ARE UNFOUNDED BECAUSE SDG&E HAS NOT PROPOSED ANY "GENERATION-ONLY" EPIC PROGRAMS

Decision ("D.") 12-05-037 outlined the various requirements and prohibitions for programs funded by EPIC. One prohibition is that the EPIC IOU Administrators may not use EPIC monies "to fund electricity generation-only demonstration or deployment projects."¹⁰ This prohibition is based in the Commission's desire to prevent giving "the IOUs an advantage over other competitive retail providers, such as CCAs and electric service providers" through the use of EPIC funds.¹¹

⁶ SDG&E EPIC Application at 5; SDG&E EPIC Plan at Section 8.6.

⁷ SDG&E EPIC Application at 4, 9-10; SDG&E EPIC Plan at Sections 3.1, 3.2, 3.4, 3.5 & 4.2.

⁸ SDG&E EPIC Application at 6-7; SDG&E EPIC Plan at Sections 3.3, 4.2 & 6.4.2.

⁹ SDG&E EPIC Plan at Section 10.2.

¹⁰ D.12-05-037 at 41.

¹¹ D.12-05-037 at 41-42. The competitive advantage concerns pertain to two specific situations – one where IOUs use EPIC funds to invest in utility-owned generation and the other where IOUs use EPIC funds to develop generation options. *Id.* Neither situation applies to SDG&E's proposed EPIC program that concerns DER's non-generation grid support functions.

While AReM and MEA admit that they have done only a “cursory review” of the EPIC Applications, they assert that “SDG&E’s Application [] seems to push the envelope” when it proposes that EPIC monies fund the *Demonstration of Grid Support Functions of Distributed Energy Resources Program* because the program “appear[s] to be generation related.”¹² As explained below, their concern is unfounded because **the proposed program is specifically designed to focus on Distributed Energy Resources’ non-generation functions.**

Due to the intermittency of renewable energy, the use of both distributed generation (e.g., solar) and distributed energy storage (e.g., customer-owned fuel cells) will likely have to increase to help the State of California meet its various renewable goals. Collectively, the various forms of distributed generation and storage are referred to as distributed energy resources, or DER.

SDG&E’s proposed program focuses solely on the non-generation function of DER.¹³ There is a long-term view in the industry that the value of DER could be increased by using it for non-generation grid support functions, which are sometimes called “ancillary services”. As non-generation DER, ancillary services are not generation services. Rather, they concern the grid support functions of DER, which if successfully developed and employed, could provide direct benefits to customers and other DER owners by maximizing the uses for and usage of DER.

Before DER’s grid support functions can be used, several long-standing issues must be resolved, including the lack of relevant interoperability standards, rules, regulations, and suitably advanced grid (power distribution system) monitoring, communication, and control

¹² AReM and MEA Joint Protest at 3-4.

¹³ See SDG&E EPIC Plan at 6.4 for a complete program description. The traditional function of DER is to provide a source of energy (kWh) to meet demand. This function is the “generation” function of DER. SDG&E’s proposed DER program does not concern this function.

infrastructure.¹⁴ In addition, the value of specific DER grid support functions in various application situations needs to be quantified to determine which functions have sufficient merit to warrant commercial pursuit. Furthermore, DER (when used for grid support) must be dispatchable so it can be successfully coordinated with other dispatchable smart devices in the grid.

SDG&E's proposed program seeks to resolve these issues, none of which concern utility-owned generation or DER's traditional generation functions. SDG&E's proposed program focuses broadly on the potential non-generation functions of DER owned by all relevant stakeholders (suppliers, installers, aggregators, owners, and utility customers). Therefore, any research findings from this program will help all DER owners, as well as electric utility ratepayers, realize the non-generation potential of DER and thus, it will not provide SDG&E with a competitive advantage over other electric providers. Therefore, the concerns of AREM and MEA are unfounded as they pertain to SDG&E's EPIC Application.

IV. DRA'S PROTEST IS UNJUSTIFIED BECAUSE SDG&E'S EPIC APPLICATION ALREADY CONTAINS DRA'S REQUESTED INFORMATION

In its protest, DRA states its concerns with the four EPIC Applications generally:

- “The applications do not sufficiently describe policy justifications for each proposed project.
- The applications do not sufficiently address metrics and quantifiable ratepayer benefits.
- The applications do not provide any cost-effectiveness evaluation.
- The applications lack detail about how the administrators will avoid duplicative projects.”¹⁵

¹⁴ SDG&E EPIC Plan at Sections 6.4.1.

¹⁵ DRA Protest at 2.

As it pertains to SDG&E’s EPIC Application, DRA’s concerns are unjustified and uninformed. SDG&E’s EPIC Application already contains the information requested by DRA in sufficient detail for the Commission to make an informed approval of the proposed plan.

a. SDG&E’s EPIC Application Provides Sufficient Policy Justifications for the Five Proposed Projects

DRA states generally that the EPIC Applications only provide broad policy justifications for the program proposals and all EPIC Administrators should be required to provide additional information, such as how the proposed programs are “consistent with the Commission’s policies in any ongoing proceeding”, the purpose and objectives of the programs, and the ways in which the programs leverage existing research.¹⁶

As it pertains to SDG&E’s Application, DRA’s generalized complaints are baseless. SDG&E’s EPIC Application sufficiently provides the information that DRA seeks. For example, it contains detailed discussions of how the five proposed programs align with State objectives and Commission policies.¹⁷ All five individual program descriptions include sections describing detailed program objectives and scope.¹⁸ SDG&E’s EPIC Application also explains how the proposed portfolio of EPIC programs will build on and integrate existing smart grid technology and develop new smart grid technologies and systems.¹⁹ Finally, pursuant to the requirements of D.12-05-037, the SDG&E EPIC Application demonstrates how the five programs reflect EPIC’s guiding principles (e.g., provide direct benefits to electric utility ratepayers), fulfill the requirements of Pub. Util. Code sec. 740.1, follow the guidance of Pub. Util. Code sec. 8360,

¹⁶ DRA Protest at 6.

¹⁷ SDG&E EPIC Application at 5; SDG&E EPIC Plan at Sections 3.3.2 & 8.

¹⁸ SDG&E EPIC Plan at Sections 6.1.2, 6.1.3, 6.2.2., 6.2.3, 6.3.2, 6.3.3, 6.4.3, 6.4.4, 6.5.2 & 6.5.3.

¹⁹ SDG&E EPIC Plan at Section 5.

and map to the electric utility value chain.²⁰ Therefore, SDG&E’s EPIC Application repeatedly and thoroughly provides sufficient policy justifications for the Commission to approve its EPIC Plan.

b. SDG&E’s EPIC Application Provides Tailored Metrics for Each Program and Sufficiently Describes Expected Ratepayer Benefits

Contrary to DRA’s assertion that SDG&E only provided generalized benefit metrics through a “check mark,”²¹ all five SDG&E program descriptions contain individualized program metrics against which they will be measured at particular program milestones and upon program completion.²² In addition, SDG&E’s EPIC Application includes a detailed narrative of the ratepayer benefits expected from the five programs.²³

c. SDG&E’s EPIC Application Contains a Cost-Benefit Analysis of the Proposed Portfolio and Describes the Cost-Benefit Methodology in Detail

DRA incorrectly asserts that SDG&E’s EPIC Application lacks a cost-effective test of the proposed programs.²⁴ In fact, SDG&E’s EPIC Application contains an entire cost-benefit section that describes, in detail, the cost-benefit methodology that SDG&E specifically

²⁰ SDG&E Plan at Section 8.

²¹ DRA Protest at 7-8. SDG&E also provides a summary chart of the expected benefits for each proposed EPIC program for the reader’s convenience. SDG&E Plan at Section 8.

²² SDG&E EPIC Plan at Sections 6.1.4, 6.1.7, 6.2.4, 6.2.7, 6.3.4, 6.3.7, 6.4.5., 6.4.8, 6.5.4 and 6.5.7. DRA’s inaccurate criticism brings to light the important issue of how “specific” metrics and expected ratepayer benefits should be stated for EPIC programs. DRA seeks “quantifiable” metrics and ratepayer benefits. However, the research, development and demonstration objectives of EPIC do not lend themselves to programs with “quantifiable” metrics and benefits. As it specifically relates to the IOUs, the goal of EPIC is to essentially provide funding for pre-commercialization field prototype demonstrations. The success or failure of this particular type of research and development is described in terms of lessons learned, or as the successful development of new standards and systems. For these types of TD&D programs, it is not possible to provide quantifiable benefits, such as the specific amount of energy savings the demonstrated technology is expected to generate once it becomes a commercial product.

²³ SDG&E EPIC Plan at Section 8.1.

²⁴ DRA Protest at 8-9.

developed to evaluate the five proposed programs.²⁵ Even using the most conservative and pessimistic assumptions, **the benefit/cost ratio was found to be 1.5.**

In addition, in direct contradiction to DRA's claim,²⁶ SDG&E's EPIC Application also details how the proposed programs address the principles articulated in Pub. Util. Code secs. 740.1 and 8360.²⁷

d. SDG&E's EPIC Application Sufficiently Describes How it Will Avoid Duplicating Projects Funded with EPIC Monies

DRA unjustifiably asserts that all of the EPIC Applications lack information about how the EPIC Administrators will avoid duplication of EPIC programs in the future. This assertion is without merit as it pertains to SDG&E's EPIC Application. As stated in its EPIC Application, to avoid duplicating any other known ongoing or completed TD&D projects, SDG&E will consult with interested stakeholders no less than twice a year, meet with EPRI whenever possible, and convene (at minimum) annually with the other EPIC Administrators to exchange information and discuss ways in which EPIC funds can be leveraged and project duplication can be avoided.

V. WHILE WORKSHOPS ARE UNNECESSARY, ANY WORKSHOPS SCHEDULED SHOULD BE LIMITED IN SCOPE TO SUPPORT THE COMMISSION'S PROPOSED MAY 2013 DECISION DEADLINE

DRA suggests that the Commission convene workshops "to further review and contemplate the Applicants' EPIC investment plans."²⁸ As demonstrated above in Section IV, however, no workshops are necessary to further review SDG&E's EPIC Application because it

²⁵ SDG&E EPIC Plan at Section 8.6. The ratio result applies to the entire set of five proposed EPIC demonstration programs as a whole. The whole for these five demonstration programs is greater than the sum of their parts. They comprise a portfolio of interrelated smart grid integration system demonstrations that collectively will benefit SDG&E's eighteen smart grid projects.

²⁶ DRA Protest at 8.

²⁷ SDG&E EPIC Plan at Sections 8.3 & 8.4.

²⁸ DRA Protest at 2.

already contains all of the information sought by DRA and all information reasonably necessary for the Commission to approve the Application.

In the event that the Commission decides to hold workshops, SDG&E suggests that the workshops be limited in scope and that they are held soon (January or February 2013) so as to not delay the Commission's proposed May 2013 decision deadline.²⁹

VI. CONCLUSION

SDG&E thanks the Commission for its consideration of SDG&E's Reply to the Joint Protest of AReM and MEA and to the Protest of the DRA.

Respectfully submitted this 17th day of December 2012.

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²⁹ D.12-05-037 at 31.