

Application of San Diego Gas & Electric
Company (U-902-M) for Approval of
Demand Response Programs and Budgets
for the Years 2012 through 2014

Application 11-03-____

CHAPTER II
PREPARED DIRECT TESTIMONY OF
ATHENA M. BESA

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

MARCH 1, 2011

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1 **CHAPTER II**

2 **PREPARED DIRECT TESTIMONY**

3 **OF ATHENA M. BESA**

4 **I. INTRODUCTION AND PURPOSE OF TESTIMONY**

5 The purpose of this testimony is to support the following:

- 6 (1) Integrated Demand-Side Management Programs;
- 7 (2) Information Technology Support; and
- 8 (3) DR Cost Recovery Mechanism

9 **II. INTEGRATED DEMAND-SIDE MANAGEMENT (“IDS” M”) PROGRAMS**

10 **A. Introduction**

11 The California Long Term Energy Efficiency Strategic Plan (“Strategic Plan”)¹

12 encourages programs that integrate the full range of demand-side management (“DSM”) options

13 including energy efficiency (“EE”), low income EE (referred to as Energy Assistance Programs),

14 demand response (“DR”), California Solar Initiative (“CSI”) and distributed generation (“DG”)

15 as fundamental to achieving California’s strategic energy goals. The Strategic Plan provides for

16 three levels of integration for DSM programs:

- 17 1) Comprehensive and Coordinated Marketing—This includes comprehensive
- 18 customer outreach and education through which offerings from various DSM programs can be
- 19 presented in a unified portfolio of services.

¹ California Long Term Energy Efficiency Strategic Plan, September 2008, website:
http://www.cpuc.ca.gov/NR/rdonlyres/A54B59C2-D571-440D-9477-3363726F573A/0/CAEnergyEfficiencyStrategicPlan_Jan2011.pdf

1 2) Program Delivery Coordination—This allows for various audits to be combined
2 with a comprehensive set of DSM recommendations that the customer can consider and
3 implement; and

4 3) Technology and Systems Integration—This includes equipment and information
5 systems that allow the customer to manage their energy usage (e.g., energy management
6 systems, dimmable ballasts, etc.).

7 In addition to SDG&E’s individual IDSM pilots, projects, programs, and activities
8 described below, SDG&E’s DR staff will participate in the Statewide Integration Task Force
9 (Task Force). Responsibilities of the Task Force will encompass activities that promote, in a
10 statewide-coordinated fashion, two specific IDSM strategies identified in the Strategic Plan.
11 These include stakeholder coordination (Strategy 1.3)² and new technologies (Strategy 1.4).³

12 **B. IDSM Program Budget**

13 The 2010-2012 Energy Efficiency program portfolio approved by D.09-09-047 includes
14 various utility IDSM-specific programs that are currently being implemented to promote the
15 Strategic Plan’s IDSM vision and goal. Through this application, SDG&E is requesting a one-
16 year interim DR funding to support the 2010-2012 integrated programs and activities already
17 approved with EE funds. This is consistent with the August 27, 2010 “Administrative Law
18 Judge’s Ruling Providing Guidance for the 2012-2014 Demand Response Applications”
19 (“Ruling”) at page 13, which states,

20 “For the 2012-2014 demand response Applications, the utilities are directed to
21 include a request for authority to continue existing integrated activities for one
22 year (2012); funding for the demand response portion of these integrated activities
23 for 2012 will be considered in the Applications. In effect, 2012 will serve as a

² *Id.*, Strategy 1.3: Develop integrated DSM programs across resources, including energy, water, and transportation.

³ *Id.*, Strategy 1.4: Promote development and support of new technologies that enable or facilitate DSM Coordination and Integration.

1 bridge funding year for integrated activities that were approved in D.09-09-047,
2 with future authority and funding for IDSM activities to be considered in future
3 energy efficiency proceedings, starting with the energy efficiency applications for
4 2013-2015.”

5 SDG&E notes, however, that since the August 27, 2010 Ruling, a November 17, 2010
6 ruling issued in the EE proceeding R.09-11-014, “Assigned Commissioner’s Ruling Soliciting
7 Comments” would potentially extend the 2010-2012 EE program cycle for another year. The
8 Energy Division conducted a workshop on February 16, 2011 that considered the option of a 2-
9 year extension. This would extend the EE program to either 2013 or 2014. In spite of this
10 possible EE program cycle extension, SDG&E is only asking for a one-year bridge period on the
11 DR IDSM. That is, it is only requesting an IDSM budget to cover 2012. When the Commission
12 makes its final decision regarding the extension period for the EE cycle, SDG&E will request the
13 appropriate DR IDSM bridge funds through the EE proceeding to ensure that (1) program
14 funding period is consistent; and more importantly, (2) that if the Commission directs mid-cycle
15 program changes, that the DR IDSM components are consistent with their corresponding EE
16 IDSM programs.

17 The table below presents the one-year (2012) bridge funding request for SDG&E’s IDSM
18 DR components:

19 **Table 2-1: IDSM Interim Program Budget for 2012**

IDSM Program	2012 Budget
Technical Assistance (TA) Program	\$3,321,000
Microgrid Program (MICROGRID)	\$119,000
Education and Outreach - IDSM Program	\$1,269,000
Flex Alert Network (FAN)	\$210,000
Total	\$4,919,000

20 **C. IDSM Programs**

21 The following section provides a brief description of the IDSM DR programs. Individual
22 program implementation plans for these programs are in Appendix B.

1 **1. Technical Assistance (“TA”) Program**

2 The TA program provides qualified commercial customers with a DR audit generally at
3 no charge to the customer contingent upon the customer enrolling in a qualified DR program or
4 rate for one year. As part of the IDSM effort, TA will be incorporated as part of the integrated
5 audit efforts approved by the Commission in D.09-09-047 with the final program
6 implementation plan effective March 12, 2010.⁴

7 **2. Micro Grid Comprehensive Energy Efficiency Delivery Pilot**

8 SDG&E’s Microgrid pilot was approved in D.09-09-047 with its compliance filing for
9 the program effective June 10, 2010.⁵ The 2010-2012 Micro Grid Pilot will recommend and
10 deliver specific single-family and multi-family EE and DR home improvement packages that
11 will drive participants to Zero Net Energy. Auditors will be instrumental in the whole-house EE
12 and DR upgrade process. The program will directly assist residential customers through
13 progressive stages of energy efficiency planning and implementation including:

- 14 1) Education and information gathering;
- 15 2) Comprehensive home audit, which will generate a checklist of action items and a
16 comparative analysis of energy- and cost-savings as well as DR and self-generation
17 opportunities; and
- 18 3) Whole-house focused installation of energy measures, backed by strong financial
19 incentives.

20 To begin, eligible customers will receive a free comprehensive audit that will include
21 low-cost EE and DR recommendations. The on-site audit will provide integrated solutions in
22 EE, DR, and self-generation, and will, in some cases, advise customers on other sustainability

⁴ The Statewide IDSM program implementation plan is available on <http://www.sdge.com/tm2/pdf/2139-E-B.pdf>.

⁵ The EE program implementation plan is available on <http://www.sdge.com/tm2/pdf/2138-E-C.pdf>.

1 practices such as water conservation opportunities. The customer will receive a report that will
2 contain multiple line-item recommendations, many of which will include leading-edge
3 technologies such as LED lighting. The checklist of recommendations will also show potential
4 energy and cost-savings and whether or not an SDG&E rebate is available.

5 At a glance, customers will be able to understand the comparative short- and long-term
6 advantages of implementing the various recommended measures. With the combination of EE,
7 DR, and self-generation options, the report will also serve as a roadmap towards achieving Zero
8 Net Energy. In addition to creating the comprehensive audit report, the auditor's role will be to
9 provide selective information tailored to the customer's unique needs on such topics as SDG&E
10 EE and DR programs, the California Solar Initiative, federal and state tax credits and incentives
11 related to energy. The auditor will also be available to assist customers in planning measure
12 installation and selecting the corresponding programs that best fit their needs.

13 **3. Education and Outreach - IDSM Program**

14 The Education and Outreach-IDSM program provides a comprehensive marketing effort
15 that entails a variety of initiatives aimed at increasing customer knowledge, understanding of
16 customer's energy usage and inciting behavior change/action. This will be achieved by the
17 following:

- 18 1) General DSM concepts, which will cover EE, DR, CSI and DG applications;
- 19 2) Benefits that comprehensive energy management delivers to customers; and
- 20 3) Importance of demand response in a customer's energy portfolio.

21 This program will extend across residential, small/medium commercial, large commercial
22 and industrial customer segments. It will achieve the specific awareness and interest goals

1 through the following efforts: Research on customer attitudes and perceptions, education and
2 awareness umbrella campaign, targeted business and residential outreach, interactive media.

3 This education and outreach effort will be coordinated and transitioned to the Statewide
4 Engage360 program that was introduced in 2010.

5 **4. Flex Alert Network (“FAN”)**

6 As part of the California Energy Efficiency Strategic Plan, a working group is exploring
7 different alternatives for statewide branding for DR awareness. Extensive research showed an
8 inordinate amount of confusion surrounding Flex Alerts, Flex Your Power (“FYP”), Flex Your
9 Power Now!, etc. Therefore, the recommendation of the team is to modify the education
10 component of FAN so that it integrates within the messaging framework of Engage360.

11 In early 2011, FAN will be rebranded as a more generic “emergency alert” message and a
12 new general awareness component of FYP will be integrated into the statewide EE brand,
13 Engage360.

14 **III. DR INFORMATION TECHNOLOGY (“IT”) INFRASTRUCTURE**

15 **A. Objectives of DR IT Infrastructure**

16 In support of the 2012-2014 DR program Cycle for SDG&E, several technology
17 infrastructure enhancements have been identified to successfully implement these programs.

18 While the current DR programs are in SDG&E’s IT production, several enhancements are
19 needed to 1) improve customer engagement and support, 2) automate several internal processes,
20 and 3) enhance internal and external reporting. New technology has also been identified for new
21 programs as well as the full deployment of pilot programs.

22 **1. Improve Customer Engagement**

- 23 • Improved and automated customer enrollment and disenrollment in programs;

- 1 • Better management of customer program account maintenance, which includes billing
- 2 account, meters, contacts, rates, programs, etc.
- 3 • Improved DR program event management – notification of DR events, calculations of
- 4 incentives/credits, customer payment settlement, reporting;
- 5 • Improved marketing and outreach – customer relationship management and program
- 6 campaign management

7 **2. Update Technology Infrastructure**

- 8 • Enhanced system integrations between customer information system of record (“CICS”),
- 9 customer relationship management (“CRM”), contact management, event notification and
- 10 management system;
- 11 • Additional IT infrastructure to accommodate potential new third party applications and
- 12 provide interfaces to solution providers
- 13 • System enhancements to support new program requirements

14 **3. Optimize Business Intelligence**

- 15 • Improve business data warehouse for operational reporting to business and program
- 16 management
- 17 • Develop business Intelligence dashboards for key performance metrics
- 18 • Provide decision-support data mining for identification and analysis of customer data

19 **B. Specific IT Technology Projects**

20 **1. Customer Relationship Management (“CRM”)**

21 SDG&E completed the full deployment of its CRM in mid-2010. SDG&E anticipates

22 maintaining the system for the next DR program cycle and possibly updating to the new version

23 of CRM. In addition to this maintenance, upgrades to CRM functionality are also anticipated in

24 order to support new requirements from some of the new proposed DR programs. Specifically,

25 adding the ability to capture, track and report on installed in-home devices for the Small

1 Customer Technology Deployment and Microgrid Pilot programs, set-up and testing of new
2 customer opportunity transactions in CRM, data model changes and any new operational and
3 CPUC reports. System improvements to enrollment/disenrollment/changes, program
4 qualification rules, and automated CISCO updates to CRM for customer/premise/service
5 point/bill account data, etc.

6 **2. Middleware Infrastructure**

7 A framework for handling of real time and other interfaces between internal and external
8 systems is a key technology need. The infrastructure will provide a common standard
9 methodology for one way and bi-directional data exchanges among disparate applications. The
10 infrastructure will provide complex triggering and routing logic, exception handling
11 mechanisms, and job scheduling. In addition to information technology design, development
12 and deployment, additional hardware and commercial off-the-shelf software will be required.
13 Assuming the Commission approves the 2012-2014 DRP portfolio prior to the start of calendar
14 year 2012, it is anticipated that this effort may be started prior to the 2012 program cycle with
15 design and prototyping in late 2011 to ensure that the systems are in place prior to the start of the
16 2012 DR season.

17 **3. Interfaces between CRM and Other Customer Data Systems**

18 Several interfaces are needed to synchronize customer program and event data across
19 multiple applications. These interfaces will leverage the middleware infrastructure project. The
20 interfaces will communicate between various critical applications that are sources for various
21 customer data. Examples of external customer data applications for which interfaces to CRM are
22 necessary are:

- 23 • CISCO – customer information system of record

- 1 • APX – third party manager of the Capacity Bidding Program
- 2 • MDO/MV90 – IDR meter data collection system
- 3 • SMOODS – Smart Meter Operational Data Store collection system
- 4 • DemandSMART – online energy management and event notification tool for this
- 5 program; and
- 6 • Demand Response System – event notification for PDR program

7 **C. DR IT Updates to Participate in the CAISO’s Market Redesign and Technology**
8 **Update (“MRTU”)--Wholesale Market System Integration**

9 The CAISO market utilizes many automated systems to enable bidding, scheduling,
10 dispatching, and settlement of standard generation resources. These systems also enable these
11 functions for DR resources and were utilized for the 2009 PLP and for the basic bidding,
12 dispatch and settlement of PDR resources. Resource telemetry for Ancillary Services is
13 delivered through an ECN into the CAISO's DPG. PDR resources will be bid into Scheduling
14 Infrastructure Business Rules (“SIBR”), scheduled through CAISO Market Results Interface
15 (“CMRI”) system, dispatched through the ADS system, and settled through the Operational
16 Meter Analysis and Reporting (“OMAR”) system. In addition, CAISO has launched new
17 systems to register PDR locations, calculate PDR baselines, and calculate PDR performance.
18 CAISO is also developing an interface to assist DRPs in identifying the appropriate p-Node for
19 different DR resources. SDG&E’s 2009 PLP identified potential functional interfaces to
20 incorporate PDR-ready DR programs in the normal course of business for wholesale market
21 interaction.

22 CAISO also has an EMS that monitors system load in near real time through telemetry
23 and Supervisory Control and Data Acquisition (“SCADA”) systems. PDR participating in the

1 AS market or PDR energy resources greater than 10MW must provide telemetry to CAISO's
2 EMS.

3 SDG&E's programs have historically been manually identified to its Electric and Fuel
4 Procurement Department. DR program events, including bi-lateral contracts are triggered based
5 on discussions between Customer Programs and the E&F Procurement departments. The
6 dispatch of these programs is done without full integration or connection to the CAISO systems
7 outlined above. In addition, near real time monitoring of DR loads has not previously been
8 required. As progress is made in the MRTU, significant system integration efforts will be
9 needed in order to integrate bidding, telemetry, dispatch, and settlement systems with the
10 systems that support SDG&E's DR Programs. These system integration efforts will be charged
11 to SDG&E's recorded and recovered through its Market Redesign and Technology Upgrade
12 Memorandum Account ("MRTUMA").

1 **D. DR IT Infrastructure Budget**

2 The total proposed budget for SDG&E’s IT Infrastructure is:

3 **Table 3-1: DR IT Infrastructure Budget**

IT Infrastructure Needs	2012	2013	2014	2012-2014
• On-going CRM Maintenance & Support	\$ 300,000	\$ 300,000	\$ 300,000	\$ 900,000
• CRM solution level infrastructure enhancements and extensions	\$ 287,500	\$ 71,875	\$ -	\$ 359,375
• Middleware infrastructure to support multiple system interfaces	\$ 484,875	\$ 138,625	\$ 215,625	\$ 839,125
• Hardware & licensing required for interface infrastructure (capital costs)	\$ 256,000	\$ 32,000	\$ 32,000	\$ 320,000
• Hardware installation and set-up (data center labor costs)	\$ 140,000	\$ -	\$ -	\$ 140,000
• System Interfaces:	\$ 540,500	\$ 540,500	\$ 270,250	\$ 1,351,250
• CAISO MRTU IT Infrastructure	\$ 320,000	\$ 320,000	\$ 160,000	\$ 800,000
• CAISO MRTU System Licences and Maintenance	\$ 500,000	\$ 100,000	\$ 100,000	\$ 700,000
Total DR IT Budget	\$ 2,828,875	\$ 1,503,000	\$ 1,077,875	\$ 5,409,750

4
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6 **IV. COST RECOVERY MECHANISM**

7 Consistent with D.09-08-027, the regulatory accounting and cost recovery treatment,
8 SDG&E currently records all program costs associated with its existing DR programs and its
9 current DRP bilateral contracts⁶ in its Advanced Metering and Demand Response Memorandum
10 Account (“AMDRMA”). SDG&E will continue to the existing disposition of the AMDRMA
11 balances being transferred to SDG&E’s Rewards and Penalties Balancing Account (“RPBA”) on
12 an annual basis for amortization in SDG&E’s electric distribution rates over 12 months, effective
13 on January 1st of each year, consistent with SDG&E’s adopted tariffs.

14 SDG&E is requesting that authorized DR program costs related to DR Operation and

⁶ SDG&E’s existing bilateral contracts are its Summer Saver and Demand Smart programs.

1 Maintenance (“O&M”) expenses, capital related costs (i.e., depreciation, return and taxes),
2 customer capacity incentive payments, and all other costs, not recovered through SDG&E’s
3 General Rate Case (“GRC”), be recorded in AMDRMA.

4 The one exception to the way SDG&E records DR programs costs in AMDRMA is the
5 recording of the energy component of the DRP customer incentive payments in its Energy
6 Resource Recovery Account (“ERRA”).

7 Finally, SDG&E proposes that as SDG&E implements necessary IT infrastructure
8 changes/upgrades to allow its applicable DR programs (for example its proposed Locational
9 Dispatch program) to participate in the CAISO MRTU initiative be recorded and recovered
10 through its Market Redesign and Technology Upgrade Memorandum Account (“MRTUMA”).

11 The purpose of the MRTUMA is to record the incremental O&M and capital-related costs
12 associated with implementing the CAISO’s MRTU initiative.

13

1 **V. QUALIFICATIONS**

2 My name is Athena M. Besa. My business address is 8335 Century Park Court, Suite
3 1200, San Diego, California 92123-1257. I am employed by San Diego Gas & Electric
4 Company as the Customer Programs Policy & Support Manager in the Customer Programs
5 Department for SDG&E and SoCalGas. In my current position, I am responsible for the
6 development of program policies for energy efficiency (“EE”), demand response (“DR”);
7 measurement and evaluation activities for EE, DR and customer assistance programs; regulatory
8 reporting requirements; EE forecasting; technology project management; and the financial
9 management of the Customer Programs department.

10 I attended the University of the Philippines in Quezon City, Philippines. I graduated with
11 a Bachelor of Science degree in Statistics in 1983, and a Master of Science degree in Statistics in
12 1986. I have completed coursework at University of California, Davis towards a Doctorate
13 degree in Statistics.

14 I was hired by SDG&E in 1990 in the Load Research Section of the Marketing
15 Department. Since that time I have held positions of increasing responsibility in the Department.
16 I have been in my present position for five years. I have previously testified before this
17 Commission in several AEAPs and the PY2000/2001 Energy Efficiency Program Application
18 Proceeding.