

Application No: A.15-09-013
Exhibit No.: SDGE-6-R
Witness: P. Borkovich

In The Matter of the Application of San Diego Gas
& Electric Company (U 902 G) and Southern
California Gas Company (U 904 G) for a Certificate
of Public Convenience and Necessity for the Pipeline
Safety & Reliability Project

Application 15-09-013
(Filed September 30, 2015)

UPDATED

PREPARED DIRECT TESTIMONY OF

PAUL BORKOVICH

ON BEHALF OF

SAN DIEGO GAS & ELECTRIC COMPANY

AND

SOUTHERN CALIFORNIA GAS COMPANY

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

March 21, 2016, updated February 21, 2017

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1 **I. PURPOSE AND OVERVIEW**

2 The purpose of my prepared direct testimony¹ on behalf of San Diego Gas & Electric
3 Company (SDG&E) and Southern California Gas Company (SoCalGas) (collectively, the
4 Utilities) is to explain why, from the perspective of the manager responsible for Backbone
5 Transportation Service (BTS) to all customers on the integrated SoCalGas and SDG&E natural
6 gas transmission system (Gas System), the Pipeline Safety & Reliability Project (PSRP or
7 Proposed Project)² is necessary and should be approved by the California Public Utilities
8 Commission (CPUC or Commission). Specifically, my testimony will discuss:

- 9 • How the Proposed Project improves the resiliency of the Gas System and
10 maintains customer access to competitively-priced supply;
- 11 • Alternatives that rely on using the Otay Mesa receipt point (Otay Mesa) requiring
12 customers to procure and transport gas supply to the SDG&E system do not
13 provide the same resiliency or access to competitively-priced supply as the
14 Proposed Project's³ receipt point at Rainbow Station, which will result in
15 increased costs;
- 16 • How the Proposed Project would avoid additional costs of alternative supplies
17 associated with pressure testing line 1600; and
- 18 • The history of BTS service on the Utilities' integrated Gas System and why the
19 Proposed Project should become part of the integrated Gas System.

¹ I assume the witnessing role and responsibility for the Prepared Direct Testimony of Gwen Marelli, served in this proceeding on March 21, 2016, as Ms. Marelli has taken on different job responsibilities. Aside from reflecting this witness change and the few updates detailed in the change log appended hereto, the contents of this testimony have not changed from the version tendered on March 21, 2016.

² The Utilities use these terms interchangeably throughout the testimony and Application.

³ As described in the Amended Application, the Utilities retained Price Waterhouse Coopers (PwC) to perform a cost-effectiveness analysis of the Proposed Project and the alternatives identified in the Joint Assigned Commissioner and Administrative Law Judge's Ruling Requiring an Amended Application and Seeking Protests, Responses and Replies issued January 22, 2016 (Ruling). *See* Amended Application, Volume III – Cost-Effectiveness Analysis. The Cost-Effectiveness Analysis and underlying methodology were performed by PwC with input and data from the Utilities. I have provided data input to the analysis, specifically with respect to Alternatives E and F, as well as other data inputs for the portions of the analysis that pertain to my testimony below.

1 **II. THE PROPOSED PROJECT IMPROVES THE RESILIENCY OF THE GAS**
2 **SYSTEM AND MAINTAINS CUSTOMER ACCESS TO COMPETITIVELY-**
3 **PRICED SUPPLY**

4 As discussed in the Prepared Direct Testimony of David Bisi, the Gas System in San
5 Diego County (SDG&E system) currently relies upon two high pressure transmission pipelines,
6 Line 1600 and Line 3010, which extend south from the SoCalGas system at Rainbow Station,
7 and the Moreno Compressor Station. As explained by Mr. Bisi, without Line 3010 or the
8 Moreno Compressor Station, SDG&E system capacity would be reduced and reliability would be
9 compromised. My testimony explains that an extended, unplanned outage on Line 3010 or
10 Moreno Compressor Station would either cause customers on the SDG&E system to endure
11 capacity-based curtailments on a regular basis,⁴ or force them to purchase higher-priced supply at
12 the Otay Mesa receipt point. That higher-priced supply at Otay Mesa would also require a
13 pipeline expansion of the pipeline system that moves gas from Ehrenberg, Arizona to Otay Mesa.
14 For that path, systems with sufficient capacity of 400 million cubic feet per day (MMcfd) need to
15 be available for purchase on a firm basis.

16 In addition to the significant safety benefits of the PSRP discussed by other witnesses,
17 replacing Line 1600 with an upgraded pipeline is beneficial from a reliability and resiliency
18 standpoint because the only alternative supply available to SDG&E customers during a Line
19 3010 or Moreno Compressor Station outage are: (1) those transported south on the backbone
20 system from Rainbow Station at the Riverside County/San Diego County line via Line 1600, but
21 at an insufficient system capacity to meet demand (up to only 150 MMcfd), or (2) via the Otay
22 Mesa interconnect transported north from the Mexican border. As Mr. Bisi explains in his

⁴ Upon recognition of a transmission system capacity constraint, curtailment procedures will be implemented according to SDG&E Gas Rule 14. SDG&E Gas Rule 14 curtails interruptible noncore and electric generation customers first, followed by firm electric generation and finally, remaining firm noncore customers.

1 testimony, the backbone system at Otay Mesa interconnects with the Transportadora de Gas
2 Natural de Baja California (TGN) system where customers can access up to 400 MMcfd of firm
3 BTS capacity. As explained later in my testimony, however, BTS customers have rarely, if ever,
4 scheduled receipt points at Otay Mesa, since the receipt point was established in 2008. Even if
5 BTS customers were to schedule the Otay Mesa receipt point, if there is an extended, unplanned
6 outage on Line 3010 or Moreno Compressor Station,⁵ the costs to them may be significant, as
7 discussed further below. Given such anticipated costs, and in light of the significant safety
8 benefits provided by the PSRP discussed by other witnesses, the Proposed Project is the best
9 approach to address multiple needs at this unique time when Line 1600 must be pressure tested
10 or replaced to comply with Public Utilities Code Section 958 and Decision (D.) 11-06-017, as
11 explained in the Prepared Direct Testimony of Douglas Schneider.

12 **III. OTAY MESA RECEIPT POINT ALTERNATIVES DO NOT PROVIDE THE**
13 **RESILIENCY OR COMPETITIVE SUPPLIES FOR CUSTOMERS AS**
14 **COMPARED TO THE PROPOSED PROJECT**

15 **A. Assumptions for Otay Mesa Receipt Point Alternatives**

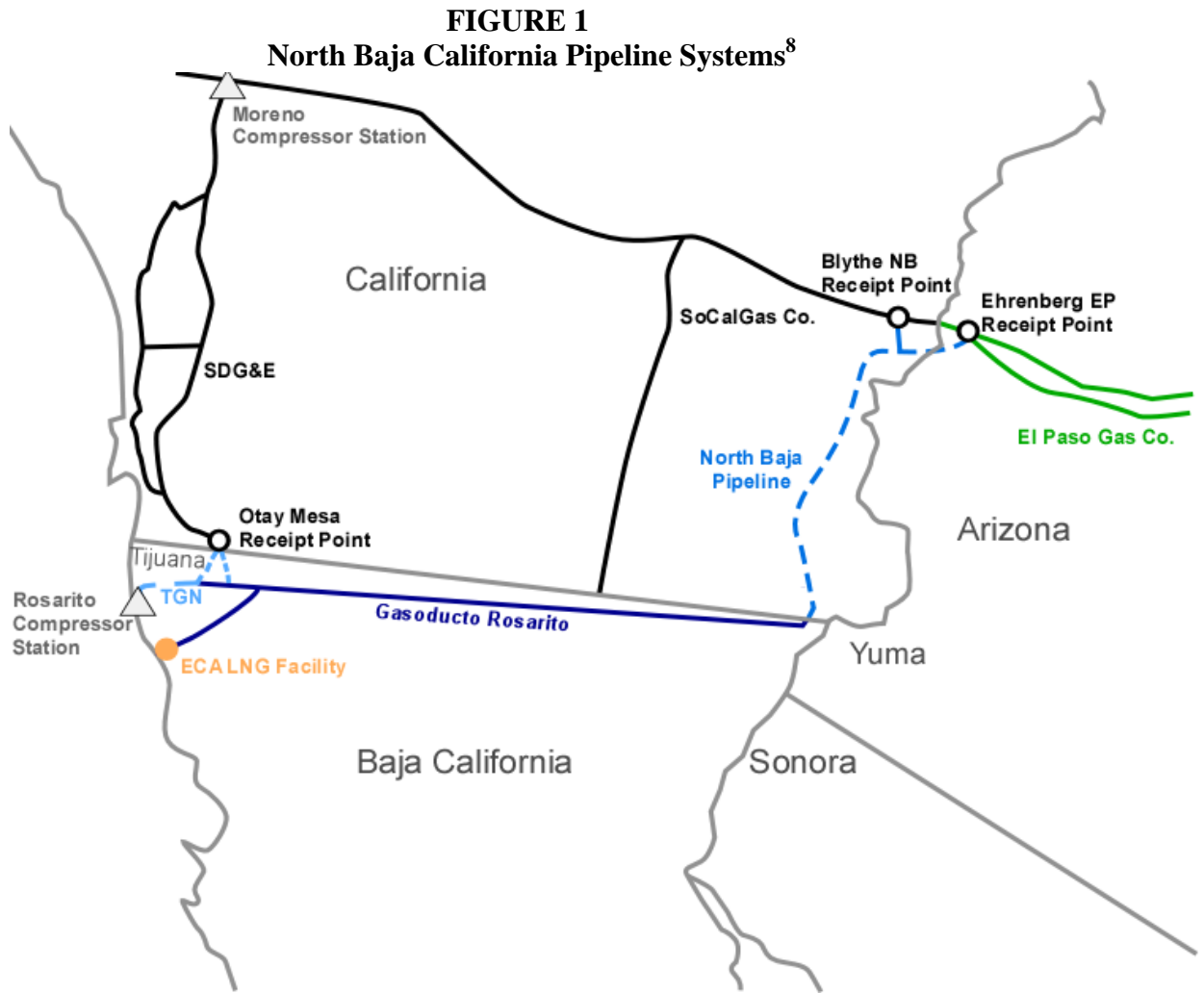
16 The Ruling identifies two alternative projects utilizing the Otay Mesa receipt point –
17 Non-Physical (Contractual) or Minimal Footprint Solutions (Alternative E) and the Northern
18 Baja Alternative (Alternative F),⁶ both of which rely upon the use of Otay Mesa capacity in place
19 of the PSRP. The Northern Baja Alternative (Alternative F) is essentially a subset of the non-
20 physical (contractual) or minimal footprint solution (Alternative E). The Ruling’s identification
21 of Alternative E as a “contractual solution” is a misnomer, as it still requires the physical

⁵ As discussed in greater detail in Mr. Bisi’s testimony, at 6-7.

⁶ Ruling, at 13.

1 construction of new pipeline facilities⁷ via an expansion on the North Baja pipeline systems
2 comprised of three pipelines (North Baja Pipeline to Gasoducto Rosarito to TGN) – collectively,
3 “North Baja Pipeline Systems”(see Figure 1).

4



5

6 Accordingly, the Utilities will refer to the two alternatives as a single project titled “Otay
7 Mesa Alternatives.” To meet the resiliency benefit described in the next Section, the Otay Mesa
8 Alternatives require an expansion on the North Baja Pipeline Systems to deliver 400 MMcf/d on

⁷ The Utilities were ordered in the Ruling to consider other specific variations for Alternative E: 1) use of the Southern System Minimum Flow Requirement; 2) operational flow orders; 3) system balancing; and 4) tariff discounts. These other variations’ cost assumptions are addressed in the Cost-Effectiveness Analysis.

⁸ Not to scale, for illustrative purposes only.

1 a firm basis to the SDG&E system at the Otay Mesa receipt point. Specifically, the Otay Mesa
2 Alternatives require the Utilities to secure a multi-year firm capacity contract for the
3 transportation of gas supplies through Mexico on the North Baja Pipeline Systems whereby
4 capacity follows the Ehrenberg to Otay Mesa path.

5 **B. In Assessing the Resiliency Benefit During an Unplanned Outage on Line 3010,**
6 **it is Not Prudent to Rely on Supplies Through the Otay Mesa Receipt Point**
7 **(Otay Mesa Alternatives) Compared to the Proposed Project**

8 **i. Firm Pipeline Capacity Service Through the North Baja Pipeline Systems**
9 **is Likely not Available**

10 In the Prepared Direct Testimony of Jani Kikuts, he describes an outage scenario to
11 illustrate the potential impact to the SDG&E system and customers in the event of an unplanned
12 disruption of service on Line 3010. That scenario assumes that alternate gas supplies through
13 Otay Mesa are not available in the short term at the time of the Line 3010 outage. My testimony
14 explains that assumption and why service from Otay Mesa cannot be relied upon during such an
15 outage due to the higher costs and other practical considerations that make this option an
16 unlikely source of supply.

17 Gas supply available at Otay Mesa is sourced from either: (1) the El Paso Natural Gas
18 (EPNG) southern system at Ehrenberg, Arizona, or (2) from regasified Liquefied Natural Gas
19 (LNG) from Energia Costa Azul (ECA) near Ensenada, North Baja California, Mexico. As
20 discussed below, these sources of supply are expected to be more costly for customers than other
21 sources.

22 In order to deliver gas from Ehrenberg, SDG&E customers or their suppliers must
23 transport this gas over the North Baja system in southeast California, the Gasoducto Rosarito
24 system across North Baja just south of the Mexican border, and then into the TGN system that
25 delivers it to the Gas System at Otay Mesa. It is unknown at this time whether approximately

1 400 MMcfd of firm capacity on the North Baja path could be secured at all on all three pipelines
2 on a long-term basis (*i.e.*, for a multi-year term) starting at some future, yet-to-be specified date.
3 Currently one of the three pipelines is nearly fully subscribed, with only 20 MMcfd available.
4 The incremental cost for this additional transportation on an interruptible basis is approximately
5 30–40 cents per decatherm (Dth), assuming that interruptible capacity is available. For SDG&E
6 customers to select this path for their gas supply, they would have to compete for capacity with
7 customers currently served by these systems in Mexico and Arizona. Natural gas is the least-cost
8 energy option for customers and electric generators served off these pipelines as the energy
9 alternatives in Baja California would be fuel oil or LNG from ECA, both which are more costly.

10 In order to deliver gas to Otay Mesa from ECA, SDG&E customers or their suppliers
11 would have to enter into purchase agreements with the current holders of this gas supply: Shell
12 Mexico Gas Natural, Gazprom Trading Mexico, or Sempra LNG. These customers and suppliers
13 would compete for supply serving markets in Asia. Most of this supply is sold under long-term
14 contracts indexed to crude oil prices in Japan, which are much higher than the SoCalGas City
15 Gate price on a Btu basis, as explained in the next Section.

16 **ii. Firm Pipeline Capacity Service Would be Costly to Build Out to the Level**
17 **the Proposed Project Provides**

18 In evaluating the resiliency benefit for the Otay Mesa Alternatives against the Proposed
19 Project, or replacing Line 1600 with only a 16-inch diameter line (Alternatives C.3 and D in the
20 Ruling and Cost-Effectiveness Analysis), there would need to be a reliable, cost-effective supply
21 source to make up for the lost capacity during an extended, unplanned outage on Line 3010 or
22 the Moreno Compressor Station. The only potential sources for this capacity would either be: (1)
23 supply purchased at Otay Mesa, or (2) the transportation of gas supply purchased at Ehrenberg
24 and transported to Otay Mesa using capacity on the North Baja Pipeline Systems.

1 The net cost to make these options viable is expected to be significant. As explained in
2 the previous Section, it is unknown at this time whether approximately 400 MMcfd of firm
3 capacity on the North Baja path could be secured at all on all three pipelines on a long-term basis
4 (*i.e.*, for a multi-year term) starting at some future, yet-to-be specified date. Assuming the 400
5 MMcfd of firm capacity could not be secured without pipeline expansions, the Utilities identified
6 both a low end cost and a high end cost for building out capacity to provide service under the
7 Otay Mesa Alternatives. The low end cost is based on existing rates for the pipelines and rates
8 for facilities in service since 2002.⁹ The Utilities estimate that the low end cost would be
9 approximately \$45 million per year based on current rates. The high end cost is based on more
10 recent published pipeline costs for projects proposed or awarded for construction in Arizona and
11 Northern Mexico. The high end cost assumes the North Baja system and Gasoducto Rosarito
12 system would need to be looped from Ehrenberg to TGN. The estimated high end cost is
13 approximately \$977 million (in 2015 dollars).

14 **iii. Firm Pipeline Capacity Service is Subject to Future Competition for**
15 **Capacity**

16 The option of multi-year contracting for firm capacity across several pipelines on the
17 North Baja Pipeline Systems to provide service to the Otay Mesa receipt point becomes even
18 more tenuous in light of forecasts of demand on those pipelines in future years. Multiple sources
19 (*e.g.*, U.S. Energy Information Administration, Government of Mexico, Bentek, and Kinder
20 Morgan) all predict substantial increases in pipeline export of natural gas to Mexico from the
21 United States (U.S.), even after taking into account the potential increase in Mexican domestic

⁹ The annual cost of the low end cost for firm service was calculated by multiplying 400 MMcfd of throughput times the 30 cent per decatherm rate for 365 days per year. The firm rate is assumed to equal the interruptible rate that SoCalGas pays for service through these systems when required at a 100% load factor.

1 gas production as a result of its oil and natural gas industry reforms. Thus, substantial future
2 increases in exports of natural gas from the U.S. to Mexico are likely, and many of those
3 volumes are likely to flow to Mexico via El Paso's South Mainline.¹⁰ These substantial future
4 flows to Mexico over the El Paso South Mainline will likely further reduce flows into Ehrenberg,
5 making it difficult to rely on these supplies as an alternative to the Proposed Project. Under this
6 scenario, pipeline supply would need to be secured and ready to flow every day, even though it
7 may not be scheduled.

8 The Utilities understand that changes in the regulations in Mexico¹¹ allow for available
9 capacity to be assigned to other users through an open-season process. However, a capacity
10 release would only be feasible if it were done on a long-term, permanent basis, for an amount of
11 capacity equivalent to the rated capacity of the Proposed Project. Furthermore, based on recent
12 usage history for the North Baja path, a firm capacity release would require gas suppliers serving
13 much of the existing electric generation customers in the North Baja Region to opt for
14 interruptible service to meet their customers' peak demand. Implementation of this option would
15 represent a major change in operational policy for Sempra International and the Mexico energy
16 agencies (Comisión Federal de Electricidad (CFE) and Comisión Reguladora de Energía (CRE)),
17 since the North Baja Pipeline Systems path was constructed in part to provide reliable service to
18 the North Baja electric generation customers that was not available on the SDG&E system. It is

¹⁰ See November 2013 presentation from Bentek Energy discussing future exports of natural gas from the U.S. to Mexico and stating "El Paso South Mainline Capacity Will Supply Mexico Demand," at 12, available at http://www.platts.com/IM.Platts.Content/ProductsServices/ConferenceandEvents/2013/pc329/presentations/Rick_Notarianni.pdf. See also September 2014 article mentioning "upgrades to enhance deliverability to the South Mainline," available at <http://www.pipelineandgasjournal.com/kinder-morgan-export-natural-gas-mexico-el-paso-signs-contract-delivery>.

¹¹ COMISION REGULADORA DE ENERGIA RESOLUCIÓN Núm. RES/684/2015.

1 doubtful that Sempra International, CFE, and CRE would now agree to accept interruptible
2 service so that SDG&E could increase its reliability.

3 **iv. If Alternatively Relying on LNG Supplies from ECA, This is a Costly**
4 **Option**

5 Alternatively, an even higher net cost for LNG-based supply would be expected if this
6 turns out to be the only option. While LNG and crude oil prices are currently being reported as
7 depressed, they are still significantly higher than the SoCalGas City Gate price on a Dth basis.¹²
8 The reported spot LNG price for Japan in February 2016 was \$8.25 per Dth. In comparison, the
9 reported average SoCalGas City Gate price for the same month was under \$1.99 per Dth.¹³
10 Based on this information, even at these depressed prices, the net cost for this option would be
11 more than double the SoCalGas City Gate price for each decatherm purchased.

12 **v. The Cost Differential Between Otay Mesa and Other Utility Receipt Points**
13 **Makes it Unattractive to Customers**

14 Otay Mesa is one of the Utilities' 15 receipt points to schedule and deliver gas onto the
15 Gas System, as described in Rate Schedule G-BTS. It is extremely rare, however, for deliveries
16 to actually arrive there, due to factors described in the preceding Sections. Historically, this
17 delivery point has been utilized by customers when there are unique maintenance issues
18 preventing gas flow from the northern points in San Diego. For example, during eight scheduled
19 weekend outages for pipeline maintenance work on Line 3010, which took place in October and
20 November of 2011, customers were given the choice to either reduce usage to comply with a
21 curtailment order or schedule deliveries of their supply needs to the Otay Mesa receipt point for
22 the duration of the outage.

¹² See https://ycharts.com/indicators/japan_liquefied_natural_gas_import_price.

¹³ Natural Gas Intelligence (NGI): Actual average daily index price for the SoCal City Gate which was \$1.99 per MMBtu for February 2016.

1 The Q3 2011 planned outages were scheduled to take advantage of weather and demand
2 conditions that lessen the potential impact on service to customers. The planned outages were
3 scheduled weeks in advance to give customers and their suppliers plenty of time to make the
4 decision to either reduce usage during the outages or buy gas for delivery at Otay Mesa. The
5 outages were limited to a two-day duration and during weekends when overall system demand is
6 expected to be lower than a comparable weekday. Finally, the outages were scheduled for a
7 seasonal shoulder month period when both core and noncore demand are not expected to
8 approach peak levels due to weather extremes. Applying this planning strategy to address a
9 potential extended, *unplanned* outage of Line 3010 is inherently difficult, if not impossible, due
10 to the uncertainty of when and for what duration the event would occur.

11 Absent an order to curtail, customers choose not to utilize the Otay Mesa receipt point.
12 Although the Utilities may reasonably require their customers to either curtail or access this
13 higher-priced option for planned outages of short durations, as explained by Mr. Bisi, this
14 approach cannot reasonably be expected to address an extended, unplanned outage on Line 3010
15 or the Moreno Compressor Station.¹⁴ To address the potential for an extended, unplanned outage
16 on Line 3010, the Proposed Project is the superior option. The Proposed Project will not force
17 customers to purchase higher-priced gas supplies for delivery to the Otay Mesa receipt point, but
18 would instead maintain the status quo for customers during an extended, unplanned outage.

19 **IV. THE PROPOSED PROJECT WOULD AVOID ADDITIONAL COSTS OF**
20 **ALTERNATIVE SUPPLIES ASSOCIATED WITH PRESSURE TESTING LINE**
21 **1600 (ALTERNATIVE B)**

22 As explained by Mr. Bisi, Line 1600 contributes approximately 100 MMcfd of capacity
23 to the SDG&E system when Line 3010 and the Moreno Compressor Station are in service. If

¹⁴ See Mr. Bisi's testimony, at 6-8.

1 Line 1600 is removed from service for pressure testing and repair of any leaks, even if the work
2 is scheduled to occur in the most expeditious manner possible, the loss of this capacity could lead
3 to more frequent curtailments of EG demand in San Diego. This is particularly true if repairs
4 must be scheduled during periods of high sendout when gas cannot be scheduled for delivery at
5 Otay Mesa. This situation would most likely occur during the peak summer months when gas
6 demand by EG customers located in North Baja California is highest. For the rest of the year,
7 based on current demand levels, up to 100 MMcfd of interruptible capacity would be expected to
8 be available upstream of Otay Mesa to address the loss of Line 1600 capacity while undergoing
9 pressure testing and repair.

10 In contrast, if the pressure testing work for Line 1600 is scheduled to take place during
11 the shoulder months to minimize the risk of possible outages to customers, then it is likely that
12 customers or their suppliers could procure gas and capacity on the secondary market via the
13 North Baja Pipeline Systems. As previously explained, this supply path via Otay Mesa would
14 cost customers approximately 30–40 cents per Dth more than supply procured at Ehrenberg and
15 moved through Rainbow Station (the supply path for the Proposed Project).

16 **V. PSRP WILL BECOME PART OF THE INTEGRATED BACKBONE** 17 **TRANSMISSION SYSTEM**

18 **A. Background of Utilities' BTS Business Model**

19 The Utilities have been operating under a Commission-ordered market design that
20 evolved from bundled gas service in the 1980s to the one in place today, which requires noncore
21 customers and their suppliers to make their own choices regarding gas procurement and
22 transportation options. Most significantly, in December 2006, the Commission adopted a system
23 of firm access rights (FAR) that enables credit-qualified market participants to hold firm
24 scheduling rights at specific receipt points and zones, and transport their supply on a firm basis

1 to the Utilities' City Gate.¹⁵ This system allows the FAR customer to determine the choice of
2 gas supply that will flow through a receipt point based on the customer's FAR contract rights.
3 Subsequently, in D.11-04-032, the Commission affirmed the superiority of the FAR system and
4 adopted further refinements, including the renaming of FAR to BTS and the adoption of cost-
5 based BTS rates.¹⁶

6 Under the BTS business model for the Utilities' integrated Gas System, pipelines are
7 classified as "backbone" transmission if they receive gas from receipt points and transport it to
8 the storage fields, local transmission system, or distribution system for delivery to end-use
9 customers. Additionally, customers and suppliers are not required to schedule gas deliveries to a
10 specified receipt point. They are instead free to contract for BTS capacity from any of the
11 Utilities' available receipt points to deliver gas to meet end-use customer requirements. This
12 "postage stamp" framework provides customers with the flexibility to select supply sources and
13 corresponding upstream pipeline routes to get their gas to the Gas System according to their
14 individual requirements. As a result, the receipt points delivering competitively-priced supply
15 are the most widely scheduled by customers; conversely, receipt points with less competitively-
16 priced supply are the least scheduled by customers.

17 **B. PSRP Should be Recovered in BTS Rates**

18 The Utilities' Gas System is comprised of a network of transmission lines that span from
19 the San Joaquin Valley in central California to the California/Mexican border. The total length
20 of the Utilities' transmission system is 3,057 miles of pipelines: 2,887 miles on the SoCalGas
21 system and 170 miles on the SDG&E system. 67% of SoCalGas' pipeline mileage is classified
22 as backbone transmission and 100% of SDG&E's pipeline mileage is classified as backbone

¹⁵ See D.06-12-031.

¹⁶ See D.11-04-032.

1 transmission. The backbone transmission system that is connected to SoCalGas' storage fields
2 operates bi-directionally and receives gas from storage for transport to the local transmission
3 system, distribution system, and/or for off-system delivery services. All of the Utilities'
4 compressor stations are classified as backbone transmission facilities.

5 The PSRP should be treated as backbone transmission because 100% of the SDG&E
6 system's pipeline mileage, including Line 1600, has already been deemed by the Commission to
7 be backbone transmission. Consistent with the BTS business model adopted in D.11-04-032 and
8 described above, the PSRP will replace Line 1600's "backbone" transmission function by
9 receiving gas from the same Rainbow Station receipt point and transporting it to SDG&E's local
10 transmission system and distribution system for delivery to end-use customers. In replacing Line
11 1600, PSRP will become part of the transmission backbone system and therefore the costs should
12 be recovered in BTS rates, consistent with the treatment of all other backbone transmission costs.
13 No customer or group of customers should be exempted from paying for these costs.

1 **VI. QUALIFICATIONS**

2 My name is Paul D. Borkovich. I am employed by SoCalGas as the Energy Markets
3 Segment Manager in the Capacity Products Support Department. My business address is 555
4 West Fifth Street, Los Angeles, California, 90013-1011. My responsibilities are to manage
5 transportation services provided to suppliers and marketers who provide gas to SDG&E and
6 SoCalGas customers. I also manage the Backbone Transportation Service program, the
7 California Energy Hub back office, policies and procedures for scheduling and nominations on
8 the SDG&E and SoCalGas systems, daily operation and enhancements to SoCalGas' Electronic
9 Bulletin Board, and all aspects of SoCalGas and SDG&E's interconnect and operational
10 balancing agreements with pipelines delivering natural gas into their integrated transmission
11 system.

12 I have been employed by SoCalGas in numerous positions including: Capacity Projects
13 Support Manager, Senior Accounts Manager, Project Manager, Market Strategy Manager, Senior
14 Market Advisor, Gas Scheduling Manager, Regulatory Affairs Administrative Manager, Account
15 Executive Supervisor, Account Executive, Market Analyst, and Energy Systems Engineer. I
16 have been responsible for various aspects of utility operations, sales and marketing, regulatory
17 matters, and customer relations. I graduated in 1981 from University of California Santa Barbara
18 with a Bachelor of Science Degree in Mechanical Engineering and in 1985 from the University
19 of Southern California with a Master of Science Degree in Petroleum Engineering.

20 I have previously testified before the Commission.

21 This concludes my prepared direct testimony.

A.15-09-013 Pipeline Safety & Reliability Project
SDG&E and SoCalGas Prepared Direct Testimony Change Log – February 2017
(Page and line references are to the original version of the prepared direct testimony served on March 21, 2016)

Witness	Page	Line(s)	Revision Detail
Gwen Marelli	Cover	N/A	Added “SDGE-6-R”
Gwen Marelli	Cover	N/A	Changed “Gwen Marelli” to “Paul Borkovich”
Gwen Marelli	Cover	N/A	Added “Updated”
Gwen Marelli	Cover	N/A	Added “updated February 21, 2017”
Gwen Marelli	1	2	Added new footnote: “I assume the witnessing role and responsibility for the Prepared Direct Testimony of Gwen Marelli, served in this proceeding on March 21, 2016, as Ms. Marelli has taken on different job responsibilities. Aside from reflecting this witness change and the few updates detailed in the change log appended hereto, the contents of this testimony have not changed from the version tendered on March 21, 2016.”
Gwen Marelli	1	4	Replaced “director” with “manager”
Gwen Marelli	1	5-6	Deleted “, and local transmission service to electric generation (EG), and wholesale customers”
Gwen Marelli	4	4	Added “California” to Figure 1 title Updated Figure 1 as follows: Included the Moreno Compressor Station and Rosarito Compressor Station; Corrected the depiction of the TGN pipeline
Gwen Marelli	6	1	Replace “25 MMcfd” with “20 MMcfd”
Gwen Marelli	7	11	Replaced “\$997 million (in 2012 dollars)” with “\$977 million (in 2015 dollars)”
Gwen Marelli	14	1-22	Replaced witness qualifications of Gwen Marelli with that of Paul Borkovich