

Application No: A.11-11-002
Exhibit No.: _____
Witness: Sim-Cheng Fung

)
In the Matter of the Application of San Diego Gas &)
Electric Company (U 902 G) and Southern California)
Gas Company (U 904 G) for Authority to Revise)
Their Rates Effective January 1, 2013, in Their)
Triennial Cost Allocation Proceeding.)
_____)

A.11-11-002
(Filed November 1, 2011)

REVISED UPDATED PREPARED DIRECT TESTIMONY
OF SIM-CHENG FUNG
SAN DIEGO GAS & ELECTRIC COMPANY
AND
SOUTHERN CALIFORNIA GAS COMPANY

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

March 15, 2013

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1 2. D.09-11-006: “Adopt embedded cost allocation for transmission and storage
2 facilities and long-run marginal cost (“LRMC”) allocation for distribution facilities for both
3 SDG&E and SoCalGas, and adopt the “compromise” cost allocation adjustments to base margin
4 that are implied by the rates set forth in Attachment 3. SDG&E and SoCalGas shall not be
5 required to propose LRMC cost allocation for transmission or storage costs in their next cost
6 allocation proceeding.” Section II.B.2.A. of Appendix A, Settlement Agreement in Phase 2 of
7 the Biennial Cost Allocation Proceeding (BCAP).

8 After briefly describing my data sources, my testimony will discuss:

- 9 1. the 2010 embedded costs of SoCalGas’ transmission and storage functions;
- 10 2. the 2010 embedded costs of SDG&E’s transmission system;
- 11 3. the allocation of SoCalGas and SDG&E transmission costs between the backbone
12 and local transmission functions; and
- 13 4. the allocation of SoCalGas’ storage costs between the core, balancing, and
14 unbundled storage functions.

15 **III. DATA SOURCE FOR EMBEDDED COST STUDY**

16 The starting point for these embedded cost studies is the total recorded costs for calendar
17 year 2010. These costs are presented in SoCalGas’ and SDG&E’s *2010 Annual Report to the*
18 *Commission* (FERC Form 2). These accounts provide sufficient detail to determine plant-in-
19 service (capital-related), O&M and A&G expenses that comprise base margin costs.

20 **IV. SOCALGAS TRANSMISSION AND STORAGE EMBEDDED COST STUDY**

21 Table 1 in Appendix A shows the 2010 SoCalGas Utility Gas Plant in Service by FERC
22 Account prepared by the Plant Accounting group.

1 **A. Capital-Related Cost of Service**

2 The annual capital-related costs are comprised of:

- 3 1. Depreciation expense
- 4 2. Return on rate base
- 5 3. Federal and state income taxes, property taxes

6 **1. Depreciation expense**

7 The cost of utility plant is recovered in rates through an annual depreciation expense over

8 the book life of the investment. The annual depreciation expense of a utility plant is specific to

9 the type of facility or equipment in service. SoCalGas' Plant Accounting Department provided

10 the annual depreciation expense and total accumulated depreciation by FERC account category

11 for 2010 in Table 1. Total transmission depreciation expense of \$28.5 million includes \$25.9

12 million from transmission plant plus \$2.6 million¹ from general plant allocated based on a labor

13 factor. Total underground storage depreciation of \$21 million includes approximately \$20

14 million from storage plant plus \$1 million² from general plant allocated based on a labor factor.

15 **2. Return on Rate Base**

16 The second capital-related expense is the annual authorized rate of return on rate base.

17 These charges are designed to cover the utility's cost of capital, the cost of debt and equity, paid

18 to bondholders and shareholders to finance the investments made in utility plant and equipment.

19 SoCalGas' Weighted Average Rate Base of \$2,860 million in 2010 is provided by Plant

20 Accounting as shown in Table 1.

21 The 2010 average recorded rate base of \$2,860 million is multiplied by the authorized

22 8.68 percent return on investment specified in D.08-07-046, Appendix 2, Settlement Agreement

¹See Appendix B.

²See Appendix B.

1 regarding SoCalGas' Test Year 2008 Revenue Requirement, Section III.T and Section III.V.
 2 This rate of return is used to calculate the return on rate base for each investment category. The
 3 total return on equity and cost of debt are \$248 million based on SoCalGas' recorded rate base of
 4 \$2,860 million in 2010 ($\$2,860 \text{ million} \times 8.68\% = \248 million).

5 Table 1 shows the components of SoCalGas' rate base based on the percentage of each
 6 category's net book value to total SoCalGas net book value: underground storage plant which is
 7 recorded in FERC Accounts 117.1 through 358 is \$180 million; transmission plant which is
 8 recorded in FERC Accounts 365 through 372 is \$415 million. Transmission's return on rate base
 9 is \$36.0 million based on transmission's 2010 rate base of \$415.2 million shown in Table 1
 10 ($\$415.2 \text{ million} \times 8.68\% = \36 million). \$0.6 million³ from general plant return is allocated to
 11 transmission based on labor factor, resulting in total transmission return of \$36.6 million.
 12 Storage's return on rate base is \$15.6 million based on storage's 2010 rate base of \$180 million
 13 shown in Table 1 ($\$180 \text{ million} \times 8.68\% = \15.6 million). \$0.3 million⁴ from general plant
 14 return is allocated to storage based on labor factor, resulting in total storage return of \$16
 15 million. Table 2 summarizes return on rate base.

Table 2					
2010 SoCalGas Return on Rate Base					
	(A)	(B)	(C)= (A)x(B)	(D)	(E)= (C)+(D)
	Rate Base	Rate of Return	Return on Rate Base	Allocated General Plant Return	Total Return
	(\$MM)	(%)	(\$MM)	(\$MM)	(\$MM)
Total SoCalGas	2,860	8.68%	248.2	N/A	248.2
Transmission	415	8.68%	36.0	0.6	36.6
Storage	180	8.68%	15.6	0.3	16.0

³See Appendix B.

⁴See Appendix B.

3. Federal and State Income Taxes, Property Taxes

In 2010, SoCalGas’ federal and state income taxes totaled \$64 million.⁵ In addition, SoCalGas’ ad valorem (property) taxes totaled \$41 million⁶ in 2010, resulting in capital-related taxes of \$105 million. These taxes are allocated to transmission as follows: \$105 million x 14.5%⁷ = \$15.3 million. Capital-related taxes are allocated to storage as follows: \$105 million x 6.3%⁸ = \$6.6 million. \$0.2 million of general plant taxes are allocated to both transmission and storage. Table 3 summarizes capital-related taxes.

Table 3	
2010 Federal, State Income and Property Taxes	
	(\$MM)
Transmission	15.5
Storage	6.8

Therefore, 2010 total capital-related costs for transmission and storage are \$80.6 million and \$43.8 million, respectively, as shown in Table 4 below.

Table 4		
2010 Capital-Related Costs		
	Transmission (\$MM)	Storage (\$MM)
Depreciation ⁹	28.5	21.1
Return ¹⁰	36.6	16.0
FIT, SIT & Advalorem Taxes ¹¹	15.5	6.8
Total	80.6	43.8

⁵ 2010 SoCalGas FERC Form 2, p. 263a, Federal Income Tax \$37,674,210, Line 2 + Calif Corp Franchise Tax \$26,000,000, Line 9, CNG Fuel tax \$71,217, Line 5.

⁶ 2010 SoCalGas FERC Form 2, p. 263a, Line 16, col. (e).

⁷ Transmission’s percent of total SoCalGas net book value (NBV) from Table 1.

⁸ Storage’s percent of total SoCalGas NBV from Table 1.

⁹ Source: Appendix A, Table 1; Appendix B, footnotes 1 and 2.

¹⁰ Source: Table 2.

¹¹ Source: Table 3.

1 **B. Gas Operations and Maintenance (O&M) Expenses**

2 **1. Transmission O&M Expenses**

3 In 2010, SoCalGas' transmission O&M expenses (recorded in FERC Accounts 850 -
4 867) totaled \$73.7 million, including payroll taxes. This total excludes \$6.1 million in
5 transmission compressor station fuel in FERC Accounts 854 and 855, since these costs are
6 excluded from base margin. Details of transmission O&M costs by FERC Account are shown in
7 Table 5 in Appendix A.

8 **2. Storage O&M Expenses**

9 In 2010, storage O&M expenses (recorded in FERC Accounts 814 - 837) were \$37.5
10 million, including payroll taxes. This total excludes \$11.8 million in storage compressor station
11 fuel in FERC Account 819, since these costs are recovered in a storage in-kind fuel charge.
12 Details of storage O&M costs by FERC Account are shown in Table 6 in Appendix A.

13 **3. Miscellaneous Revenues**

14 Miscellaneous revenues clearly associated with the storage function were \$8.6 million in
15 2010 (\$7.3 million in crude oil sales and Goleta storage emission credit of \$1.3 million) and were
16 credited directly to Storage expenses. The other \$35.5 million of miscellaneous revenues are not
17 directly related to any single functional activity. These revenues are credited in the same manner
18 that Administrative and General expenses are allocated.

19 **4. Administrative and General (A&G) Expenses**

20 A&G expenses are recorded in FERC Accounts 920 through 932. 2010 recorded A&G
21 expenses plus A&G-related payroll taxes totaled \$380 million, which exclude \$49 million of
22 franchise fees recorded in FERC Account 927 because these costs are accounted for in the
23 franchise and uncollectible factor in the rate design process. Another \$328,802 of regulatory

1 commission expenses in FERC Account 928 are excluded because these expenses are accounted
2 for outside of base margin. A&G details are shown in Table 7 in Appendix A.

3 A&G costs are allocated based on the approach similar to that adopted in Section
4 II.B.2.A.of Appendix A, Settlement Agreement in Phase 2 of BCAP D.09-11-006 which states
5 ‘adopt the “compromise” cost allocation adjustments to base margin that are implied by the
6 rates set forth in Attachment 3.’ In Attachment 3, 50% of A&G expenses are allocated to end
7 users. Since labor is the best single factor that explains A&G costs, the remaining \$190 million
8 of A&G is allocated to transmission and storage functions based on labor factors shown in Table
9 8. Table 8 shows that transmission has 7.1% of labor costs and storage has 4.4%; therefore
10 \$13.4 million of A&G (.071x 190 million) are allocated to transmission and \$8.4 million of
11 A&G (.044x 190 million) are allocated to storage.
12

Table 8			
2010 SoCalGas Labor Factors to Allocate A&G			
	Labor Costs ¹²	Labor %	Allocated A&G Costs
	(\$MM)		(\$MM)
Storage	14.0	4.4%	8.4
Transmission	22.6	7.1%	13.4
Distribution, Customer Accounts/Service & Information	282.4	88.5%	168.2
Total	319.0	100.0%	190.0

13 Table 9 summarizes the O&M, A&G expenses and miscellaneous revenues for SoCalGas’
14 transmission and storage functions.
15

¹² 2010 SoCalGas FERC Form 2, p. 355, lines 53-57, col. (b).

Table 9		
2010 SoCalGas O&M, A&G, Miscellaneous Rev.		
	Transmission	Storage
	(\$MM)	(\$MM)
O&M Expenses ¹³	73.7	37.5
A&G Expenses ¹⁴	13.4	8.4
Miscellaneous Rev.	(1.3)	(9.4)
Total	85.8	36.5

1 Table 10 summarizes SoCalGas' Embedded Transmission and Storage Costs.

Table 10		
SoCalGas Embedded Transmission and Storage Costs		
	Transmission	Storage
	(\$MM)	(\$MM)
Capital-related Costs ¹⁵	80.6	43.8
O&M, A&G Expenses ¹⁶	85.8	36.5
Total	166.5	80.3

2 **V. SDG&E TRANSMISSION EMBEDDED COST STUDY**

3 Table 11 in Appendix C shows 2010 SDG&E Utility Gas Plant in Service by FERC
 4 Account prepared by the Plant Accounting group.

5 **A. Capital-Related Cost of Service**

6 As with SoCalGas' assets, SDG&E's annual transmission capital-related costs are
 7 comprised of:

- 8 1. Depreciation expense
- 9 2. Return on rate base
- 10 3. Federal and state income taxes, property taxes

¹³ Source: Tables 5 and 6.

¹⁴ Source: Table 8.

¹⁵ Source: Table 4.

¹⁶ Source: Table 9.

1 **1. Depreciation**

2 SDG&E’s gas transmission depreciation expense shown in Table 11 is \$8.4
3 million. \$0.7 million¹⁷ from general/common plant is allocated to this for a total of \$9.1 million.

4 **2. Return on Rate Base**

5 The components of SDG&E’s Weighted Average Rate Base provided by Plant
6 Accounting as shown in Table 11 are based on the percentage of each category’s net book value
7 to SDG&E’s net book value for gas operations.

8 The 2010 average recorded rate base of \$421.7 million is multiplied by the authorized 8.4
9 percent return on investment specified in D.07-12-049, Ordering Paragraph 2. This rate of return
10 is used to calculate the return on rate base. The total return on equity and cost of debt are \$35.4
11 million based on SDG&E’s recorded rate base of \$421.7 million in 2010 (\$421.7 million x 8.4%
12 = \$35.4 million). Transmission’s return on rate base is \$4.9 million based on transmission’s
13 2010 rate base of \$58.3 million shown in Table 12 (\$58.3 million x 8.4% = \$4.9 million). \$0.2
14 million¹⁸ from general/common plant return is allocated to transmission based on labor factor,
15 resulting in total transmission return of \$5.1 million. Table 12 summarizes return on rate base.

Table 12					
2010 SDG&E Return on Rate Base					
	(A)	(B)	(C)=(A)x(B)	(D)	(E)= (C) +(D)
	Rate Base	Rate of Return	Return on Rate Base	Allocated General Plant Return	Total Return
	(\$MM)	(%)	(\$MM)	(\$MM)	(\$MM)
Total SDG&E	421.7	8.40%	35.4	N/A	35.4
Transmission	58.3	8.40%	4.9	0.2	5.1

¹⁷See Appendix B.

¹⁸See Appendix B.

3. Federal, State Income and Property Taxes

In 2010, SDG&E’s federal and state income taxes for gas operations totaled \$28.4 million.¹⁹ In addition, SDG&E’s ad valorem (property) taxes totaled \$10.6 million²⁰ in 2010, resulting in capital-related taxes of \$39 million. These taxes are allocated to transmission as follows: \$39 million x 13.8%²¹ = \$5.4 million. \$0.2 million of general/common plant taxes are allocated to transmission resulting in total transmission taxes of \$5.6 million as shown in Table 13.

Table 13			
2010 SDG&E Federal, State Income & Property Taxes			
	(A)	(B)	C=(A) x (B)
	SDG&E	Transmission NBV	Transmission Taxes
	(\$MM)	(%)	(\$MM)
Federal, State, Prop. Taxes	39.0	13.8%	5.4
Allocated taxes from General Plant	N/A		0.2
Total	39.0		5.6

Table 14 shows that SDG&E gas transmission capital-related costs are \$19.8 million.

Table 14	
2010 SDG&E Capital-Related Costs	
	(\$MM)
Depreciation ²²	9.1
Return ²³	5.1
FIT, SIT & Advalorem Taxes ²⁴	5.6
Total	19.8

¹⁹ 2010 SDG&E FERC Form 1, Pages 114-115, Lines 15-19, under “Current Year to Date” which total to \$28,448,559 for year ending 12-31-2010.

²⁰ 2010 Balance for SAP# 6610002.

²¹ Source: Table 11, Transmission net book value=13.8% of total SDG&E NBV.

²² Source: Appendix B, footnote 17; Appendix C, Table 11.

²³ Source: Table 12.

²⁴ Source: Table 13.

1 **B. SDG&E Gas O&M Expenses**

2 **1. Transmission O&M Expenses**

3 Transmission O&M expenses are included in FERC Accounts 850 to 867. Recorded
4 O&M expenses were \$8.4 million in 2010 as shown in Table 15 in Appendix C. This total
5 excludes \$1.4 million in transmission compressor station fuel in FERC Accounts 854 and 855
6 since these costs are excluded from base margin.

7 **2. A&G Expenses and Payroll Taxes**

8 A&G expenses are included in FERC Accounts 920 to 932 and came to a total of \$55.3
9 million in 2010 as shown in Table 16 in Appendix C. A&G expenses include general
10 management salaries and expenses; pensions and benefits; insurance expenses; and outside
11 service expenses, as well as shared service costs.

12 Similar to SoCalGas, SDG&E's A&G expenses are allocated in a manner consistent with
13 D.09-11-006. Since transmission labor costs represent 12.6% of SDG&E's labor costs, this
14 percentage is applied to half of \$59.7 million (\$55.3 million A&G + \$4.3 million payroll taxes
15 shown in Table 16) x 50% x 12.6% = \$3.7 million.

16 Table 17 summarizes 2010 O&M, A&G and miscellaneous revenues for SDG&E's gas
17 transmission.

Table 17	
2010 SDG&E Transmission O&M, A&G, Miscellaneous Revenues	
	(\$MM)
O&M Expenses ²⁵	8.4
A&G Expenses ²⁶	3.7
Miscellaneous Rev.	(0.5)
Total	11.6

²⁵ Source: Table 15.

²⁶ Source: Table 16.

1 Table 18 summarizes 2010 SDG&E embedded cost for gas transmission.

Table 18	
2010 SDG&E Embedded Transmission Cost	
	(\$MM)
Capital-related Costs ²⁷	19.8
O&M, A&G Expenses ²⁸	11.6
Total	31.5

2 **VI. BACKBONE AND LOCAL TRANSMISSION COSTS**

3 Table 19 shows that SoCalGas' embedded transmission cost is \$166.5 million,²⁹
4 comprised of \$80.6 million capital-related costs and \$85.8 million O&M/A&G expenses. The
5 embedded cost of SDG&E's gas transmission system is \$31.5 million,³⁰ comprised of \$19.8
6 million capital-related costs and \$11.6 million O&M/A&G expenses. The 2010 embedded cost
7 of the integrated transmission system is \$198 million as shown in Table 19. SoCalGas and
8 SDG&E recommend that the total transmission cost be maintained at the level shown in Table 19
9 until another embedded cost study is performed for the next TCAP. This 2010 actual cost of
10 \$198 million is below the 2010 allocated cost of \$210 million,³¹ which indicates that the
11 escalation based on Phase 2 BCAP D.09-11-006 overstated actual embedded transmission costs.

²⁷ Source: Table 14.

²⁸ Source: Table 17.

²⁹ Source: Table 10.

³⁰ Source: Table 18.

³¹ Based on escalation of recorded cost adopted in D.09-11-006, Section II.B.2.C. of Appendix A, Settlement Agreement in Phase 2 of BCAP using annual growth rate of base margin.

Table 19			
2010 SoCalGas & SDG&E Transmission Costs			
	(A)	(B)	(C) = (A) + (B)
	SoCalGas	SDG&E	Total
	(\$MM)	(\$MM)	(\$MM)
Capital-related Costs	80.6	19.8	100.5
O&M, A&G Expenses	85.8	11.6	97.5
Total	166.5	31.5	198.0

1 The settlement which resulted in D.11-04-032 established the cost of the backbone
2 transmission system for SoCalGas and SDG&E at \$135 million. However, this cost was the
3 result of a negotiated settlement, and D.11-04-032 also ordered a new backbone functionalization
4 study be completed for this TCAP. In compliance, SoCalGas' engineering staff examined each
5 transmission pipeline individually and categorized it based on functional definitions. Pipelines
6 are classified as backbone transmission if they receive gas from receipt points and transport it to
7 SoCalGas' storage fields and local transmission system. Local transmission pipelines transport
8 gas from backbone pipelines and storage fields to the distribution system. All of SoCalGas and
9 SDG&E's compressor stations are classified as backbone transmission facilities. All of
10 SDG&E's gas transmission pipelines are classified as backbone pipelines, but a significant
11 number of SoCalGas' transmission pipelines perform a local transmission function. Appendix D
12 identifies SoCalGas' backbone and local transmission pipelines.

13 Table 4 shows SoCalGas' transmission capital-related cost of \$80.6 million. The
14 backbone portion of capital-related cost is calculated from the transmission net book value and
15 transmission depreciation expense of SoCalGas' backbone facilities. The net book values of
16 these backbone transmission lines and compressor stations represent 67% of SoCalGas'
17 transmission net book value. The depreciation expenses of these backbone lines and compressor

stations represent 71% of SoCalGas’ transmission depreciation expense. These percentages result in a weighted average of backbone capital-related cost of 68% relative to SoCalGas’ total transmission capital-related cost, or \$55.1 million.

SoCalGas’ transmission A&G and O&M expenses are \$85.8 million.³² Pipeline mileage is used to allocate A&G and O&M costs between the backbone (71%) and local (29%) transmission pipelines. The resulting backbone transmission portion of A&G and O&M expenses is \$60.9 million. The total embedded cost of backbone transmission for SoCalGas is therefore \$116.1 million, and \$147.5 million for the two utilities combined, as shown in Table 20.

Table 20					
Total Backbone Transmission Costs					
	(A)	(B)	(C) = (A) x (B)	(D)	(E) = (C) + (D)
	SoCalGas Transmission	Backbone Transmission	SoCalGas Backbone	SDG&E Transmission ³³	Total Backbone Transmission
	(\$MM)	(\$MM)	(\$MM)	(\$MM)	(\$MM)
Capital-related Costs	80.6	68.4%	55.1	19.8	74.9
O&M, A&G Expenses	85.8	71.0%	60.9	11.6	72.5
Total	166.5		116.1	31.5	147.5

Previously in A.10-03-028, SoCalGas and SDG&E had proposed to reallocate some of the costs associated with backbone facilities to the local transmission function. SoCalGas and SDG&E no longer believe that this is appropriate for the following two reasons. First, SoCalGas and SDG&E are persuaded by the direct testimony submitted by TURN in this regard, namely that “It is not readily apparent why a facility would lose its character as a backbone line simply because some of the gas flowing out of it goes into distribution lines or directly to customer

³² Source: Table 9.

³³ Source: Table 18.

1 facilities, rather than flowing solely into local transmission lines.”³⁴ Second, as was addressed
2 during the FAR Update Hearings,³⁵ PG&E in its Gas Accord does not reallocate backbone
3 facility cost to the local transmission function even though it also has end users and distribution
4 lines directly connected to their backbone facilities.

5 **A. Straight Fixed-Variable (SFV) and Interruptible (IT) Rates**

6 SoCalGas and SDG&E propose continuing a straight fixed-variable (SFV) rate by
7 dividing total backbone costs by a proposed denominator of 2,978 thousand decatherms per day
8 (MDth/d) resulting in a Backbone Transportation Service (BTS) rate of \$0.136/decatherm (Dth)
9 as shown in Table 21. 2,978 MDth/d represent the average BTS utilization from October 1, 2011
10 through September 30, 2012. In the FAR Update Settlement, parties agreed that the denominator
11 for calendar year 2013 and beyond should be based on average BTS utilization for the 12 months
12 of the prior October through September,³⁶ Although the proposed BTS rate of \$0.136/Dth
13 would be adjusted to account for prior period under/over-collection, SoCalGas and SDG&E
14 recommend that the \$147.5 million remain fixed over the TCAP period. Actual experience
15 shows that transmission costs are not escalating.³⁷

16 Consistent with current practice, SoCalGas and SDG&E propose that interruptible rates
17 be equivalent to 100% load factor for SFV rates.³⁸ This approach is more consistent with
18 interstate pipeline practices than PG&E’s Gas Accord approach, which sets the maximum
19 interruptible rate above the 100% load factor for SFV rates.

20 SoCalGas and SDG&E also propose the elimination of the Modified Fixed-Variable
21 (MFV) rate option. The SFV rate design is consistent with FERC’s interstate pipeline rate

³⁴ Prepared Testimony of Florio for TURN in A.10-03-028, at page 4, lines 17-21.

³⁵ A.10-03-028.

³⁶ Joint Rate Recommendation, Section 3 adopted in D.11-04-032.

³⁷ See earlier discussion in Section VI.

³⁸ D.11-04-032, Attachment 2, Exhibit JRR-1, Section 2.c.

1 design methodology. An SFV rate design eliminates the subsidization of low load factor
 2 customers by high load factor customers that results under MFV rate design approaches. Under
 3 the MFV rate design, high load factor customers bear a disproportionate share of the pipeline's
 4 fixed costs for the benefit of low load-factor customers. The SFV rate design is more
 5 appropriate than the MFV rate design because customers would bear the cost of backbone
 6 transmission facilities that are built and maintained on their behalf. Customers would be
 7 exposed to accurate price signals so that investment and operating decisions are not distorted.
 8 An SFV rate design methodology properly allocates costs based on cost causation. Unbundling
 9 backbone transmission capacity under a cost-based, SFV rate design methodology provides clear
 10 and unbiased price signals to market participants, eliminates subsidization of low load factor
 11 customers by high load factor customers, and maintains consistency with FERC rate design
 12 policy, aligning the utilities' backbone rate design with that of the upstream interstate pipelines.
 13 The MFV rate design, on the other hand, is an outdated method that seeks to place utility
 14 shareholders' return at risk, which is contrary to the non-at-risk environment that has been
 15 established by the Commission for SoCalGas and SDG&E's transmission system.

Table 21			
Proposed Firm BTS Rate			
Total Backbone Costs	Proposed Throughput Assumption	Proposed Annual Throughput Assumption	Proposed BTS Rate
(\$MM)	MDth/d	MDth	\$/Dth
147.5	2,978	1,086,970	0.136

1 **VII. EMBEDDED STORAGE COST**

2 The embedded storage cost is summarized in Table 22 which is comprised of \$43.8
3 million capital-related cost³⁹ and \$36.5 million of O&M, A&G expenses.⁴⁰ In addition,
4 incremental annual revenue requirement (\$9.3 million) associated with inventory expansion at
5 Honor Rancho will also be recovered per Ordering Paragraphs 6 and 8 in D.10-04-034.
6 SoCalGas and SDG&E propose to include a three-year revenue requirement for Honor Rancho
7 by assuming a total capital cost of \$53.6 million in this TCAP as shown in the direct testimony
8 of Mr. Mumford and Mr. Van de Putte. The annual \$9.3 million associated with Honor Rancho
9 expansion includes a revenue requirement of \$360,848 related to cushion gas, which is assumed
10 to cost \$4.33/mcf. Any over/under-collection of cushion gas revenue requirement resulting from
11 differences between actual and forecast natural gas prices will be tracked in the Honor Rancho
12 Storage Memorandum Account (HRSMA) which also includes the subaccount established to
13 track incremental O&M costs and oil revenues, as described in Mr. Ahmed’s direct testimony.
14 In SoCalGas’ 2016 GRC application, the Honor Rancho expansion project would be rolled-into
15 the overall rate base of the utility.

Table 22	
2013-2015 SoCalGas Embedded Storage Cost⁴¹	
	(\$MM)
Capital-related Costs	43.8
O&M, A&G Expenses	36.5
Total Existing Storage	80.3
Honor Rancho Expansion	9.3 ⁴²
2013 Storage Cost	89.6

³⁹ Source: Table 10.

⁴⁰ Source: Table 10.

⁴¹ Excludes A.09-09-020, Aliso Canyon Modernization project, if approved.

⁴² D.10-04-034, Ordering ¶ 6 and 8.

1 **A. Underground Storage Cost Allocation**

2 With the exception of Honor Rancho expansion costs, which are allocated entirely to the
3 inventory function,⁴³ SoCalGas and SDG&E assume that inventory, injection and withdrawal
4 costs each contribute to one third of the total cost of embedded storage cost. Assigning these
5 costs to inventory, injection or withdrawal is problematic since most investments (e.g. wells,
6 land, pipes) help to expand or maintain all three products. In addition, this simplifying
7 assumption is not very different from the percentages derived from a more detailed, but
8 somewhat subjective 2008 storage functionalization study.⁴⁴

9 Table 23 shows that in 2013, 83 billion cubic feet (Bcf) of underground storage inventory
10 will be allocated to the core. In addition, 388 million cubic feet per day (MMcfd) of injection
11 and 2,225 MMcfd of withdrawal capacity will also be allocated to core customers, at a total cost
12 of \$52.8 million. Load balancing costs of \$10.3 million, with 10% daily balancing on OFO days
13 and 10% monthly balancing, are based on 4.2 BCF of inventory, 200 MMcfd of injection and
14 340 MMcfd of withdrawal capacities. The remaining storage capacities, 48.9 Bcf of inventory,
15 262 MMcfd of injection and 630 MMcfd of withdrawal totaling \$26.5 million are allocated to the
16 unbundled storage program.

⁴³ D.08-12-020, Section II. 6 of Appendix A, Settlement Agreement in Phase 1 of BCAP.

⁴⁴ 35.3% inventory; 28.9% injection; and 35.8% withdrawal per Table 27, Emmrich in A.08-02-001.

Table 23							
Allocation of Storage Embedded Costs							
	Allocation % ⁴⁵	Allocation Volume	Total	Units	Costs (\$MM)	Unit Price ⁴⁶	
Core Reservation							
Inventory	40.2%	83.0	136	Bcf	\$22.0	\$0.259	\$/Dth
Injection	29.9%	388	850	MMcfd	\$12.2	\$30.77	\$/Dth
Withdrawal	29.9%	2225	3195	MMcfd	\$18.6	\$8.19	\$/Dth
Total Core					\$52.8		
Load Balancing							
Inventory	40.2%	4.2	136	Bcf	\$1.1	\$0.259	\$/Dth
Injection	29.9%	200	850	MMcfd	\$6.3	\$30.77	\$/Dth
Withdrawal	29.9%	340	3195	MMcfd	\$2.8	\$8.19	\$/Dth
Total Load Balancing					\$10.3		
Unbundled Storage							
Inventory	40.2%	48.9	136	Bcf	\$12.9	\$0.259	\$/Dth
Injection	29.9%	262	850	MMcfd	\$8.3	\$30.77	\$/Dth
Withdrawal	29.9%	630	3195	MMcfd	\$5.3	\$8.19	\$/Dth
Total Unbundled Storage					\$26.5		
Total Storage Cost					\$89.6		

1 SoCalGas and SDG&E recommend that the total storage cost be maintained at the level
2 shown in Table 22 until another embedded cost study is performed for the next TCAP. The
3 \$80.3 million (represents recorded 2010 storage embedded cost shown in Table 22, which
4 excludes \$9.3 million of incremental three-year average of Honor Rancho inventory expansion
5 costs) is below the 2011 allocation of existing storage cost of \$90 million (that also exclude
6 Honor Rancho expansion costs), which indicates that the escalation based on Phase 2 BCAP
7 D.09-11-006 significantly overstated actual embedded storage costs.

⁴⁵ Percentages reflect 100% allocation of Honor Rancho expansion costs to inventory. Costs of existing assets are allocated 1/3 each to inventory, injection and withdrawal, resulting in inventory percent above 33% and injection/withdrawal percent below 33%.

⁴⁶ BTU Factor = 1.0235. Source: Mr. Wetzel's workpapers to support SoCalGas Consolidated Gas Demand Forecast.

1 The costs described above exclude the potential costs of the Aliso Canyon injection
2 modernization and expansion project, which is not expected to be in-service before 2015. The
3 Aliso Canyon CPCN, if approved, will establish the costs of that project. The allocation of those
4 costs on a rolled-in basis to all injection rights holders is already prescribed by the Phase 1
5 BCAP settlement.

6 This concludes my revised updated prepared direct testimony.

VIII. APPENDIX A

Selected SoCalGas Tables

Table 1



SOUTHERN CALIFORNIA GAS COMPANY
2010 Utility Gas Plant in Service
By FERC Account for FERC Form 2
(Thousands of Dollars)

Sempra Energy utility

ACCOUNT	ACCT NO.	As of December 31, 2010			Book Value Allocator	12/31/2010 Weighted Average Rate Base	For the Year Ended 2010		
		INVESTMENT	ACCUM DEP	NET BOOK VALUE			DEPRECIATION EXPENSE	AMORTIZATION EXPENSE	REASSIGNMENTS
Intangible									
	301	76	-	76			-		
	302	551	-	551			-		
Total Intangible		627	-	627	0.0%	327	-	-	-
Gas Production									
	325	15	-	15			-		
	330	5,461	-	5,461			-		
	331	455	(0)	455			-		
	332	1,731	-	1,731			-		
	334	520	-	520			-		
	336	477	-	477			-		
Total Gas Prod		8,660	(0)	8,660	0.2%	4,512	-	-	-
Underground Storage									
	117.1	55,520	-	55,520					
	350	4,565	-	4,565					216
	351	36,234	(18,933)	17,301			589		
	352	231,014	(146,037)	84,976			11,048		
	353	86,322	(92,376)	(6,054)			1,483		
	354	114,403	(65,882)	48,521			1,806		
	355	5,808	(1,459)	4,349			213		
	356	107,896	(60,021)	47,876			2,148		
	357	22,960	(4,440)	18,520			1,142		
	358	36,753	33,164	69,917					
	Montebello *			-			1,825		
Total Underground Storage		701,475	(355,985)	345,491	6.3%	180,007	20,254	216	-
Transmission									
	365	23,400	(13,752)	9,648			431		
	366	33,381	(20,538)	12,844			478		
	367	1,084,727	(515,817)	568,910			20,166		
	368	176,818	(99,588)	77,229			3,558		
	369	47,406	(25,018)	22,388			1,088		
	371	4,049	(2,303)	1,746			187		
	372	15,313	88,867	104,180			-		
Total Transmission		1,385,093	(588,149)	796,944	14.5%	415,223	25,909	-	-
Distribution									
	374	30,901	(12)	30,889			-		
	375	217,642	(56,625)	161,017			6,376		
	376	2,987,550	(1,739,311)	1,248,239			87,576		
	378	67,293	(48,255)	19,038			4,448		
	380	2,041,428	(1,657,674)	383,753			63,879		
	381	422,895	(117,789)	305,105			15,404		
	382	267,750	(149,566)	118,184			6,272		
	383	116,818	(48,605)	68,213			3,103		
	387	25,249	(19,643)	5,606			920		
	388	295,720	1,363,753	1,659,473					
Total Distribution		6,473,245	(2,473,728)	3,999,518	72.9%	2,083,826	187,979	-	-
General Plant									
	389	1,417	-	1,417			-		
	390	125,206	(117,193)	8,013			13,213		
	391	504,889	(259,471)	245,418			49,302		
	392	719	(30)	688			99		
	393	94	(15)	78			3		
	394	51,229	(23,631)	27,598			2,220		
	395	6,259	(3,816)	2,444			303		
	396	36	(3)	33			-		
	397	69,526	(21,157)	48,369			9,035		
	398	3,717	858	4,575			486		
	399.1	478	(1,023)	(545)					
Total General Plant		763,570	(425,482)	338,089	6.2%	176,151	74,661	-	-
Other Storage Plant		-	-	-			-	-	-
Total Utility Gas Plant in Service		9,332,671	(3,843,343)	5,489,329	100.0%	2,860,046	308,802	216	-

APPENDIX A (cont'd)

Table 5	
2010 SoCalGas Transmission O&M Expenses	
Transmission	(\$MM)
850 Tran Op-Supervision & Engineering (Including Payroll Taxes)	20.037
851 Tran Op-System Control & Load Dispatching	2.558
852 Tran Op-Communication System Expenses	3.565
853 Tran Op-Compressor Station Labor & Expenses	1.810
854&855 Tran Op-Gas From Comp Sta Fuel (Excluded from base margin)	0.000
856 Tran Op-Mains Expenses	6.558
857 Tran Op-Measuring & Regulating Station Expenses	1.846
858 Tran Op-Transmission & Compression Of Gas By Other	0.000
859 Tran Op-Other Expenses (Excl Haz Waste from base margin)	8.151
860 Tran Op-Rents	4.617
861 Maintenance Supervision & Engineering	0.000
862 Tran Mnt-Structures & Improvements	0.027
863 Tran Mnt-Mains	17.659
864 Tran Mnt-Compressor Station Equipment	5.938
865 Tran Mnt-Measuring & Regulating Station Equipment	0.697
867 Tran Mnt-Other Equipment	0.193
Total	73.656

Source: FERC Form 2

Table 6	
2010 SoCalGas Storage O& M Expenses	
Storage	(\$MM)
814 UndStr Op-Supervision & Engineering (Incl. Payroll Taxes)	5.596
815 UndStr Op-Maps & Records	0.016
816 UndStr Op-Wells Expenses	3.863
817 UndStr Op-Lines Expense	0.429
818 UndStr Op-Compressor Station Expense	1.726
819 UndStr Op-Compress Station Fuel & Power (Excluded from base margin)	0.000
820 UndStr Op-Meas & Reg Station Expenses	0.003
821 UndStr Op-Purification Expenses	0.690
823 UndStr Op-Gas Losses (Excluded from base margin)	0.000
824 UndStr Op-Other Expenses	5.501
825 UndStr Op-Storage Well Royalties	1.134
826 UndStr Op-Rents	0.172
830 Maintenance Supervision & Engineering	0.004
831 UndStr Mnt-Structures & Improvements	1.157
832 UndStr Mnt-Reservoirs & Wells	4.963
833 UndStr Mnt-Lines	3.999
834 UndStr Mnt-Compressor Station Equipment	5.149
835 UndStr Mnt-Meas & Reg Station Equipment	0.529
836 UndStr Mnt-Purification Equipment	1.243
837 UndStr Mnt-Other Equipment	1.360
	37.535

Source: FERC Form 2

APPENDIX A (cont'd)

Table 7	
2010 SoCalGas A&G Expenses	
A&G FERC Account	(\$MM)
920 AdmGen Op-Salaries Plus Payroll Taxes \$2.966 million	24.707
921 AdmGen Op-Office Supplies & Expenses	8.208
922 AdmGen Op-(Less) Administrative Exp Transferred	(4.882)
923 AdmGen Op-Outside Services Employed – General	90.941
924 AdmGen Op-Property Insurance	2.984
925 AdmGen Op-Injuries & Damages	39.726
926 AdmGen Op-Employee Pensions & Benefits	149.635
927 AdmGen Op-Franchise Requirements	0.000
928 AdmGen Op-Regulatory Commission Expenses	5.595
930.2 A&G Op-MiscGen Exp(Exclude Public Purpose RDD)	12.246
931 AdmGen Op-Rents	23.872
932 AdmGen Mnt-General Plant	26.881
	379.915

Source: FERC Form 2

IX. APPENDIX B

Selected SoCalGas/SDG&E Footnotes

Footnotes:

General/Common Plant are primarily comprised of office furniture & equipment, structures & improvement, tools and communication equipment, all of which are directly linked to labor. As such, allocation of general/common plant costs is consistent with that of administrative and general (A&G) expenses described in Section IV.B.4.

Footnote		50% General Plant Depreciation (\$MM)	% of Labor	Allocated General Plant Depreciation (\$MM)
1	SCG Transmission	\$37.4	7	\$2.6
2	SCG Storage	\$37.4	4	\$1
17	SDG&E Transmission	\$5.8	12.6	\$0.7

Footnote		50% General Plant Return	% Labor	Allocated General Plant Return
3	SCG Transmission	\$7.9	7	\$0.6
4	SCG Storage	\$7.9	4	\$0.3
18	SDG&E Transmission	\$1.7	12.6	\$0.2

X. APPENDIX C

Selected SDG&E Tables

Table 11 SAN DIEGO GAS & ELECTRIC COMPANY 2010 Utility Gas Plant in Service By FERC Account for FERC Form 2 (\$000)						
As of December 31, 2010						For the Year 12/31/2010 Ended 2010
ACCOUNT	INVESTMENT	ACCUM DEP	NET BOOK VALUE	Book Value Allocator	Weighted Average Rate Base	DEPRECIATION EXPENSE
Transmission						
365.1- Land	4,649	-	4,649			
365.2- Rights-of-way	2,217	(1,144)	1,074			
366- Structures & Improvements	11,523	(8,764)	2,759			
367- Mains	125,717	(56,025)	69,692			
368- Compressor Station Eq	72,933	(49,691)	23,242			
369- Meas & Reg Station Eq	17,649	(13,173)	4,476			
372- Asset Retirement Costs for Transmission Plant	662	2,418	3,080			
Total Transmission	235,350	(126,379)	108,971	13.8%	58,253	8,393
Distribution						
374.2- Land and Land Rights	8,058	(5,657)	2,401			
374.1- Land and Land Rights	102	-	102			
375- Structures & Improvements	43	(61)	(18)			
376- Mains	532,268	(301,501)	230,766			
378- Meas & Reg Stations	12,422	(6,246)	6,176			
380- Services	237,092	(270,641)	(33,549)			
381- Meters & Regulators	120,861	(30,773)	90,088			
382- Meter Installations	79,540	(22,750)	56,789			
385- Industrial Meas & Reg Station Eq	1,517	(929)	588			
387.11- Other Equipment	994	(416)	578			
387- CNG Sta on SDGE Property	4,281	(4,212)	69			
388- Asset Retirement Costs for Distribution Plant	35,492	213,241	248,732			
Distribution Net Plant Total	\$1,032,669	(\$429,946)	\$602,724	76.4%	322,201	26,947
General Plant						
392- Transportation Eq	75	(100)	(26)			
394- Tools, Shop, & Garage Eq	7,015	(2,770)	4,246			
395- Laboratory Eq	283	(169)	114			
396- Power Operated Eq	162	(57)	105			
397- Communication Eq	1,752	(1,071)	681			
398- Misc Equipment	270	(105)	164			
General Plant Total	9,557	(4,272)	5,285			
Common plant			\$71,889	9.8%	41,255	\$11,665
Total Utility Gas Plant In Service	1,277,576	(560,596)	788,869	100.0%	421,710	47,005

X. APPENDIX C (cont'd)

Table 15	
2010 SDG&E Gas Transmission Expenses	
	(\$000)
850- Oper Supervision & Eng	2,292
851- Sys Control & Load Dispatching	699
852- Communication Sys Exp	1,587
853- Compr Station Labor & Exp	1,549
854- Gas Comp Sta Fuel-excl	0
855- Other Fuel & Power for Compr Stations	0
856- Mains Expenses	801
857- Meas & Reg Station Exp	4
858- Trans & Compression of Gas by Others	0
859- Other Expenses less Haz Mat	236
860- Rents	3
861- Maint Supervision & Eng	80
862- Maint Structure & Improvements	0
863- Maint of Mains	126
864- Maint of Compr Station Eq	477
865- Maint of Meas & Reg Station Eq	300
866- Maint Comm Equip	0
867- Maint of Other Eq	230
Total	8,384

Source: FERC Form 2

Table 16	
2010 SDG&E A&G and Payroll Expenses	
	(\$000)
920- A&G Salaries	5,097
921- Office Sply & Exp less Hazardous Waste	2,313
922- Transferred Admin Exp less Haz Waste	(1,723)
923- Outside Services Employed	17,940
924- Property Insurance	1,397
925- Injuries & Damages less Haz Waste	5,226
926- Employee Pensions less Haz Waste	17,562
928- Reg Commission Exp	2,471
930.1- Gen Advr Exp	\$0
930.2- Misc General Exp	236
931- Rents	2,556
932- Maint.of General Plant	2,230
Total A&G	55,306
Payroll Tax	4,344

Source: FERC Form 2

XI. APPENDIX D

SoCalGas' Backbone Pipelines	
53	1221
85	1229
90	2000
103	2001
119	2005
127	2051
169	3000
174	3003
203	3006
225	3008
235	3009
245	4000
247	4002
293	5000
294	5002
300	5010
303	5012
309	5015
324	5034
335	5036
404	5041
406	5043
963	6900
1004	6901
1005	6904
1027	6905
1028	6906
1030	6907
1031	6916
1134	7039
1180	7053
1181	7200
1185	8100
1186	8105
1187	8106
1192	8107
1201	8108
1215	8109
1216	8110
1220	

SoCalGas' Local Pipelines		
12	1029	3004
104	1129	3005
115	1132	3007
133	1167	6000
145	1170	6001
160	1171	6902
173	1172	6903
202	1173	6911
214	1174	6912
222	1175	6913
317	1176	6914
321	1200	6915
324	1202	7000
325	1203	7025
404	1205	7038
406	1207	7042
407	1209	7043
408	1211	7044
512	1218	7049
765	1219	7051
767	1230	7052
775	1232	7054
800	1233	7055
1003	1234	7056
1010	1236	7058
1011	1240	7059
1013	1241	7067
1014	1242	8032
1015	1243	8038
1016	1244	8045
1017	2000	8112
1018	2001	
1019	2002	
1020	2003	
1021	2006	
1022	2007	
1023	3000	
1024	3001	
1025	3002	
1026	3003	