

SAN DIEGO GAS & ELECTRIC COMPANY

2016 TCAP Phase II

**Workpapers to the Prepared Written Testimony of
Marjorie Schmidt-Pines**

SAN DIEGO GAS & ELECTRIC COMPANY

2016 TCAP Phase II

Table of Contents

Section 1 - Long Run Marginal Customer Cost Model

Output	Results of Customer Cost LRMC Study
Loader Input	Data input from O&M Loaders Model
Cust LRMC	Derivation of Fully Loader Customer Cost LRMC
MSA Cost	MSA cost by Flow Range
MSA RECC	Weighted-average RECC by Flow Range
MSA Rental	SRM Marginal Investment by Flow Range
MSAlloc v1	Historical Meter Count by Flow Range
MSAlloc v2	Relative Meter Percentages by Flow Range
MSA Fcst	Estimated TCAP Period Meter Count by Flow Range
SRM Cost Rental	Total SRM Investment by Class
O&M 870-894	O&M Allocation to Customer Classes
870-894 Fctrs	O&M Allocation Factors
O&M 901-910	Customer Services Allocation to Customer Classes
Svc Alloc	O&M Allocation Factor Weighted by Service Lines
MSA Weighted Cost	O&M Allocation Factor Weighted by MSA
	Demand
Factors	Measures
MSA PVRR	Weighted-average PVRR by Flow Range
MSA NCOp1	SRM Marginal Investment by Flow Range (NCO Method)
MSA_Life	Weighted-average MSA Book Lide by Flow Range
MAS NCOp2	SRM Marginal Investment by Flow Range (NCO with RCA Method)
NCO Hookups	Estimated New Hookups per Year
NCO MSA's	Estimated New Hookups by Meter Type
CC NCO	Total SRM Investment by Class (NCO Method)
CC NCO Rep	Total SRM Investment by Class (NCO with RCA Method)
Testimony Table	

Section 2 - Long Run Marginal Distribution Cost Model

Output	Results of Distribution Cost LRMC Study
Loader Input	Data input from O&M Loaders Model
Dist Inv	Marginal Distribution Investments
Dist HW	Economic Index Weighted by Distribution Plant
Customer Count	HPD and MPD Customer Count and Annual Gain
HPD PD Det	HPD Peak-Day Historical and Forecast Demand
MPD PD Det	Peak-Day Historical and Forecast Demand

Regression
Dist MC
Testimony Table

HPD and MPD Linear Regression Analysis
HPD and MPD Fully-Loaded LRMC

Section 3 - O&M Loaders Model for LRMC Studies

Tabs: Output
LF-O&M Alloc
LF-O&M
Dist O&M MC
LF-M&S

LF-A&G

LF-GPL
O&M WEF
LRMCC-10a
LRMCC-O&M Summary
Testimony Table

Data output for Customer Cost and Distribution LRMC Models
Allocation Factors for Distribution O&M
Allocation of O&M
Calculation of Marginal Portion of Distribution O&M
Allocation of M&S to Functions
A&G Loading
Factor
GPL Loading
Factor
Weighted Escalation Factor for O&M
Derivation of Customer Services O&M Allocation
Customer Services O&M Allocations

Section 4 - SDG&E Cost Allocation Model

Tabs: SDG&E Cost Allocation
Table

Allocation of SDG&E Base Margin
Testimony Tables

Section 5 - Miscellaneous Data

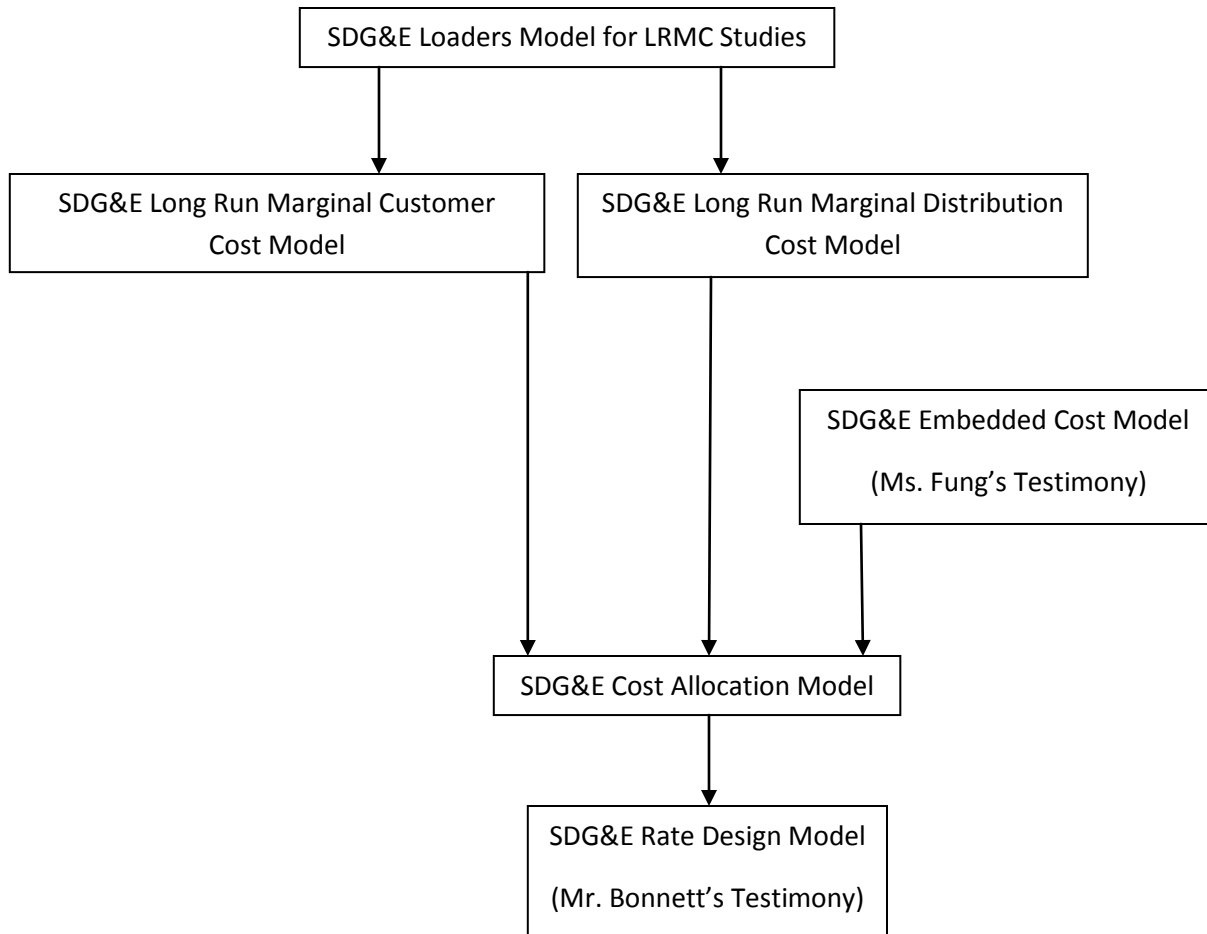
Tabs: SDG&E Gas 2010 RECC
Global Insight Cost Index Names
Global Insight Data

RECC Factors for use in LRMC Study
Nomenclature of Global Insight Data
Raw Global Insight Data

SAN DIEGO GAS & ELECTRIC COMPANY

2016 TCAP Phase II

Cost Allocation Flowchart



**Workpapers to the Prepared Written Testimony of
Marjorie Schmidt-Pines**

SAN DIEGO GAS & ELECTRIC COMPANY

2016 TCAP Phase II

Section 1

Long Run Marginal Customer Cost Model

**Workpapers to the Prepared Written Testimony of
Marjorie Schmidt-Pines**

SDGE Gas 2016 TCAP Phase II

SDG&E Cost Allocation LRMC Customer Costs Costs Results

A	Residential B	NGV D	CCI C	Total Core E	Total NCCI F	EG Tier 1 G	EG Tier 2 H	Total EG I	Total NonCore J	System Total K
Customer Costs Rental Method	\$240.26	\$4,449.92	\$461.91	\$217.40	\$10,168.01	\$6,941.33	\$8,485.05	\$7,323.01	\$8,502.50	\$249.41
Customer Costs NCO Method	\$102.88	\$1,630.15	\$205.00	\$75.96	\$6,365.99	\$4,897.23	\$5,871.18	\$5,119.95	\$5,622.84	\$107.61
Customer Costs NCO RCA	\$488.07	\$3,802.33	\$761.64	\$467.12	\$8,935.41	\$6,617.70	\$7,417.88	\$6,791.94	\$7,674.58	\$499.00

**SDGE Gas 2016 TCAP Phase II
LRMC O&M Loader Model**

	Input	Source (1)
O&M w/o A&G HPD	\$485	LF-O&M Tab
O&M w/o A&G MPD	\$11,134	LF-O&M Tab
Marginal Percent of O&M HPD	80.74%	Dist O&M MC
Marginal Percent of O&M MPD	80.74%	Dist O&M MC
Marginal A&G/Payroll Taxes Loading Factor as a % of O&M expenses	28.43%	LF-A&G Tab
General Plant Loading Factor as a % of O&M expenses	13.22%	LF-GPL Tab
Annualized M&S Customer Related Costs \$000/yr	\$153,170.55	LF-M&S Tab
Annualized M&S HDP Distribution Load Related Costs \$000/yr	\$22,720.41	LF-M&S Tab
Annualized M&S MDP Distribution Load Related Costs \$000/yr	\$186,732.64	LF-M&S Tab
O&M WEF for Escalation	1.08	O&M WEF Tab
Marginal Cust-Rel O&M		
870 - Operation Supervision & Engineering	\$6,615	Dist O&M MC
871 - Distribution Load Dispatching	\$0	Dist O&M MC
874 - Mains & Services Expenses	\$2,007	Dist O&M MC
875 - Measuring & Regulating Station Expenses	\$0	Dist O&M MC
878 - Meter & House Regulator Expenses	\$5,714	Dist O&M MC
879 - Customer Installations Expenses	\$9,629	Dist O&M MC
880 - Other Expenses	\$7,857	Dist O&M MC
881 - Rents	\$0	Dist O&M MC
885 - Maint Supervision & Engineering	\$29	Dist O&M MC
887 - Maintenance of Mains	\$706	Dist O&M MC
888 - Maintenance Of Compressor Station Eq	\$0	Dist O&M MC
889 - Maintenance of Meas. & Reg Station Eq	\$0	Dist O&M MC
892 - Maintenance of Services	\$1,313	Dist O&M MC
893 - Maint of Meters & House Regulators	\$1,115	Dist O&M MC
894 - Maintenance of Other Equipment	\$0	Dist O&M MC

Notes:

(1) from "SDGE OM Loaders" file:

TABLE 11 - LPMC Customer Cost
SDGE Gas 2016 TCAP Phase II

	Res					NGV	GN-3	Total Core
	G-R	G-M	G-S	G-T	Total Res			
A	B	C	D	E	F	G	H	I
Annualized SRM Cost \$/customer/yr 2017\$s	\$187.20	\$222.75	\$431.30	\$1,021.61	\$180.91	\$3,496.33	\$311.34	\$185.37
O&M \$/customer/yr								
FERC 870 - 894: Distribution O&M (M\$)	\$30,522	\$877	\$30	\$80	\$31,509	\$33	\$3,323	\$17,211
FERC 901 - 910: Customer O&M (M\$)	\$945	\$19	\$0	\$0	\$1,004	\$0	\$51	\$1,055
Total Cust-Rel O&M (M\$)	\$31,467	\$896	\$30	\$80	\$32,513	\$33	\$3,374	\$18,267
2013 Number of Customers	790,409	15,985	219	230	839,369	53	34,335	873,757
Cust-Rel O&M per Customer (2013 \$'s)	\$40	\$56	\$138	\$350	\$39	\$622	\$98	\$21
escalator 2013\$s's to 2017\$s's	1.078	1.078	1.078	1.078	1.078	1.078	1.078	1.078
O&M \$/customer/yr 2017\$s	\$42.94	\$60.45	\$148.93	\$377.06	\$41.77	\$671.20	\$105.98	\$22.55
O&M Loaders:								
Materials & Supplies Loader:								
allocator = total Customer Related O&M as % of total	86.6%	2.5%	0.1%	0.2%	89.5%	0.1%	9.3%	50.3%
Allocated Materials & Supplies Loader (\$'s)	\$132,707	\$3,779	\$128	\$339	\$137,116	\$139	\$14,229	\$77,036
2013 Number of Customers	790,409	15,985	219	230	839,369	53	34,335	873,757
M&S Loader per Customer (2013 \$'s)	\$0.17	\$0.24	\$0.58	\$1.47	\$0.16	\$2.62	\$0.41	\$0.09
escalator 2013\$s's to 2017\$s's	1.078	1.078	1.078	1.078	1.078	1.078	1.078	1.078
M&S Loader \$/customer/yr 2017\$s	\$0.18	\$0.25	\$0.63	\$1.59	\$0.18	\$2.83	\$0.45	\$0.10
Administrative & General as % of O&M	28.43%	28.43%	28.43%	28.43%	28.43%	28.43%	28.43%	28.43%
Administrative & General \$/customer/yr 2017\$s	\$12.21	\$17.18	\$42.34	\$107.18	\$11.87	\$190.80	\$30.13	\$6.41
General Plant as % of O&M	13.22%	13.22%	13.22%	13.22%	13.22%	13.22%	13.22%	13.22%
General Plant \$/customer/yr 2017\$s	\$5.68	\$7.99	\$19.69	\$49.86	\$5.52	\$88.75	\$14.01	\$2.98
TOTAL O&M LOADERS \$/customer/yr	\$18.06	\$25.43	\$62.66	\$158.63	\$17.58	\$282.38	\$44.59	\$9.49
LRMC Rental Customer Cost \$/customer/year	\$248.20	\$308.64	\$642.89	\$1,557.30	\$240.26	\$4,449.92	\$461.91	\$217.40
NCO Method:								
LRMC Rental Customer Cost \$/customer/year					\$240.26	\$4,449.92	\$461.91	\$217.40
less annualized SRM rental					(\$180.91)	(\$3,496.33)	(\$311.34)	(\$185.37)
plus annualized SRM NCO					\$43.53	\$676.57	\$54.44	\$43.93
NCO Customer Cost \$/customer/year					\$102.88	\$1,630.15	\$205.00	\$75.96
NCO with Replacement Cost Adder Method:								
LRMC Rental Customer Cost \$/customer/year					\$240.26	\$4,449.92	\$461.91	\$217.40
less annualized SRM rental					(\$180.91)	(\$3,496.33)	(\$311.34)	(\$185.37)
plus annualized SRM					\$428.72	\$2,848.75	\$611.07	\$435.09
NCO w/ Replacement Customer Cost \$/cstmr/yr					\$488.07	\$3,802.33	\$761.64	\$467.12

TABLE 11 - LRM Customer Cost
SDGE Gas 2016 TCAP Phase II

	GTNC			EG			Total Noncore	System Total
	MPD	HPD	Total	< 3 MM	> 3 MM	Total		
A	J	K	L	M	N	O	P	Q
Annualized SRM Cost \$/customer/yr 2017\$s	\$4,836.17	\$4,063.62	\$4,690.40	\$2,516.50	\$3,394.33	\$2,761.41	\$3,577.66	\$185.82
O&M \$/customer/yr								
FERC 870 - 894: Distribution O&M (M\$)	\$53	\$11	\$64	\$33	\$16	\$49	\$112	\$34,984
FERC 901 - 910: Customer O&M (M\$)	\$83	\$32	\$115	\$129	\$37	\$165	\$280	\$1,335
Total Cust-Rel O&M (M\$)	\$136	\$43	\$179	\$162	\$53	\$214	\$392	\$36,320
2013 Number of Customers	36	14	50	56	16	72	122	873,879
Cust-Rel O&M per Customer (2013 \$'s)	\$3,775	\$3,060	\$3,575	\$2,888	\$3,322	\$2,977	\$3,214	\$42
escalator 2013\$'s to 2017\$'s	1.078	1.078	1.078	1.078	1.078	1.078	1.078	1.078
O&M \$/customer/yr 2017\$s	\$4,071.38	\$3,300.52	\$3,855.54	\$3,114.51	\$3,583.22	\$3,210.79	\$3,466.46	\$44.82
O&M Loaders:								
Materials & Supplies Loader:								
allocator = total Customer Related O&M as % of total	0.4%	0.1%	0.5%	0.4%	0.1%	0.6%	1.1%	100.0%
Allocated Materials & Supplies Loader (\$'s)	\$573	\$181	\$754	\$682	\$224	\$904	\$1,654	\$78,690
2013 Number of Customers	36	14	50	56	16	72	122	873,879
M&S Loader per Customer (2013 \$'s)	\$15.92	\$12.91	\$15.08	\$12.18	\$14.01	\$12.56	\$13.56	\$0.09
escalator 2013\$'s to 2017\$'s	1.078	1.078	1.078	1.078	1.078	1.078	1.078	1.078
M&S Loader \$/customer/yr 2017\$s	\$17.17	\$13.92	\$16.26	\$13.13	\$15.11	\$13.54	\$14.62	\$0.10
Administrative & General as % of O&M	28.43%	28.43%	28.43%	28.43%	28.43%	28.43%	28.43%	28.43%
Administrative & General \$/customer/yr 2017\$s	\$1,157.34	\$938.21	\$1,095.98	\$885.34	\$1,018.57	\$912.70	\$985.38	\$12.74
General Plant as % of O&M	13.22%	13.22%	13.22%	13.22%	13.22%	13.22%	13.22%	13.22%
General Plant \$/customer/yr 2017\$s	\$538.37	\$436.43	\$509.82	\$411.84	\$473.82	\$424.57	\$458.38	\$5.93
TOTAL O&M LOADERS \$/customer/yr	\$1,712.87	\$1,388.56	\$1,622.07	\$1,310.31	\$1,507.50	\$1,350.81	\$1,458.38	\$18.77
LRMC Rental Customer Cost \$/customer/year	\$10,620.42	\$8,752.70	\$10,168.01	\$6,941.33	\$8,485.05	\$7,323.01	\$8,502.50	\$249.41
NCO Method:								
LRMC Rental Customer Cost \$/customer/year	\$10,620.42	\$8,752.70	\$10,168.01	\$6,941.33	\$8,485.05	\$7,323.01	\$8,502.50	\$249.41
less annualized SRM rental	(\$4,836.17)	(\$4,063.62)	(\$4,690.40)	(\$2,516.50)	(\$3,394.33)	(\$2,761.41)	(\$3,577.66)	(\$185.82)
plus annualized SRM NCO	\$902.19	\$829.01	\$888.38	\$472.41	\$780.46	\$558.35	\$698.00	\$44.02
NCO Customer Cost \$/customer/year	\$6,686.44	\$5,518.09	\$6,365.99	\$4,897.23	\$5,871.18	\$5,119.95	\$5,622.84	\$107.61
NCO with Replacement Cost Adder Method:								
LRMC Rental Customer Cost \$/customer/year	\$10,620.42	\$8,752.70	\$10,168.01	\$6,941.33	\$8,485.05	\$7,323.01	\$8,502.50	\$249.41
less annualized SRM rental	(\$4,836.17)	(\$4,063.62)	(\$4,690.40)	(\$2,516.50)	(\$3,394.33)	(\$2,761.41)	(\$3,577.66)	(\$185.82)
plus annualized SRM	\$3,627.15	\$2,729.65	\$3,457.81	\$2,192.87	\$2,327.15	\$2,230.34	\$2,749.74	\$435.41
NCO w/ Replacement Customer Cost \$/cstmr/yr	\$9,411.40	\$7,418.74	\$8,935.41	\$6,617.70	\$7,417.88	\$6,791.94	\$7,674.58	\$499.00

**TABLE LRMCC-1
SAN DIEGO GAS AND ELECTRIC - GAS DEPARTMENT**

**METER SET ASSEMBLY (MSA) EXPENSE
2016 TCAP Phase II**

	Max Meter Flow Range	Meter Type	Meter, Regulator & Fitting Costs	Installation Costs	Total MSA Costs	
	A	B	C	E	F	
	Cfh		(Dollars)	(Dollars)	(Dollars)	
1	<i>Medium Pressure</i>					1
2	0-275	250	\$186.36	\$87.34	\$273.70	2
3	276 - 425	425	\$481.33	\$157.37	\$638.70	3
4	426-630	630	\$715.45	\$157.37	\$872.82	4
5	631 - 800	8C	\$1,247.21	\$314.74	\$1,561.95	5
6	801 - 1,100	11C	\$1,511.77	\$314.74	\$1,826.51	6
7	1,101 - 1,500	15C	\$1,946.32	\$1,090.20	\$3,036.51	7
8	1,501 - 2,000	2M	\$2,554.71	\$1,578.71	\$4,133.42	8
9	2,001 - 3,000	3M	\$2,576.76	\$1,578.71	\$4,155.46	9
10	3,001 - 5,000	5M	\$3,328.85	\$1,578.71	\$4,907.55	10
11	5,001 - 7,000	7M	\$3,947.43	\$1,578.71	\$5,526.13	11
12						12
13	<i>High Pressure</i>					13
14	0 - 940	425	\$1,358.47	\$1,090.20	\$2,448.67	14
15	941 - 1,050	8C	\$2,881.11	\$1,578.71	\$4,459.81	15
16	1,051 - 2,000	2M	\$1,659.54	\$1,090.20	\$2,749.73	16
17	2,001 - 2,700	2M	\$2,934.29	\$1,578.71	\$4,513.00	17
18	2,701 - 4,000	3M	\$2,956.34	\$1,578.71	\$4,535.05	18
19	4,001 - 6,600	5M	\$4,293.52	\$1,820.97	\$6,114.49	19
20	6,601 - 9,200	7M	\$5,016.66	\$1,820.97	\$6,837.63	20
21	9,201 - 14,500	11M	\$5,407.30	\$2,177.75	\$7,585.05	21
22	14,501 - 21,400	16M	\$6,886.00	\$2,177.75	\$9,063.75	22
23	21,401 - 24,000	Turbine	\$13,284.64	\$4,233.13	\$17,517.77	23
24	24,001 - 46,000	Turbine	\$20,507.37	\$7,471.87	\$27,979.24	24
25	46,001 - 79,000	Turbine	\$26,930.09	\$7,792.95	\$34,723.04	25
26	79,001 - 377,000	Turbine	\$55,382.90	\$9,215.81	\$64,598.71	26
27	377,001 - 600,000	Turbine			\$0.00	27
28	600,001 - 4,250,000	Turbine			\$0.00	28
29	> 4,250,000	Turbine			\$0.00	29

Notes:

1. Col. (F) = Col. (C) + Col. (D) + Col. (E).
2. MSA costs expressed in Year 2017 \$'s.

**TABLE LRMCC-2
SAN DIEGO GAS AND ELECTRIC - GAS DEPARTMENT**

**WEIGHTED MSA RECC FACTOR
2016TCAP Phase II**

	Max Meter Flow Range	Meter, Regulator, & Fitting Costs	Meter & Regulator RECC Factor	Installation Costs	Installation Costs RECC Factor	Weighted Average RECC Factor	
	A	B	C	D	E	F	
	Cfh	(Dollars)	(Percent)	(Dollars)	(Percent)	(Percent)	
1	<i>Medium Pressure</i>						1
2	0-275	\$186.36	8.69%	\$87.34	8.98%	8.78%	2
3	276 - 425	\$481.33	8.69%	\$157.37	8.98%	8.76%	3
4	426-630	\$715.45	8.69%	\$157.37	8.98%	8.74%	4
5	631 - 800	\$1,247.21	8.69%	\$314.74	8.98%	8.75%	5
6	801 - 1,100	\$1,511.77	8.69%	\$314.74	8.98%	8.74%	6
7	1,101 - 1,500	\$1,946.32	8.69%	\$1,090.20	8.98%	8.80%	7
8	1,501 - 2,000	\$2,554.71	8.69%	\$1,578.71	8.98%	8.80%	8
9	2,001 - 3,000	\$2,576.76	8.69%	\$1,578.71	8.98%	8.80%	9
10	3,001 - 5,000	\$3,328.85	8.69%	\$1,578.71	8.98%	8.78%	10
11	5,001 - 7,000	\$3,947.43	8.69%	\$1,578.71	8.98%	8.77%	11
12							12
13	<i>High Pressure</i>						13
14	0 - 940	\$1,358.47	8.69%	\$1,090.20	8.98%	8.82%	14
15	941 - 1,050	\$2,881.11	8.69%	\$1,578.71	8.98%	8.79%	15
16	1,051 - 2,000	\$1,659.54	8.69%	\$1,090.20	8.98%	8.81%	16
17	2,001 - 2,700	\$2,934.29	8.69%	\$1,578.71	8.98%	8.79%	17
18	2,701 - 4,000	\$2,956.34	8.69%	\$1,578.71	8.98%	8.79%	18
19	4,001 - 6,600	\$4,293.52	8.69%	\$1,820.97	8.98%	8.78%	19
20	6,601 - 9,200	\$5,016.66	8.69%	\$1,820.97	8.98%	8.77%	20
21	9,201 - 14,500	\$5,407.30	8.69%	\$2,177.75	8.98%	8.77%	21
22	14,501 - 21,400	\$6,886.00	8.69%	\$2,177.75	8.98%	8.76%	22
23	21,401 - 24,000	\$13,284.64	8.69%	\$4,233.13	8.98%	8.76%	23
24	24,001 - 46,000	\$20,507.37	8.69%	\$7,471.87	8.98%	8.77%	24
25	46,001 - 79,000	\$26,930.09	8.69%	\$7,792.95	8.98%	8.76%	25
26	79,001 - 377,000	\$55,382.90	8.69%	\$9,215.81	8.98%	8.73%	26
27	377,001 - 600,000					8.73%	27
28	600,001 - 4,250,000					8.73%	28
29	> 4,250,000					8.73%	29

Notes:

1. Col. (F) = [Col (B) x Col. (C)] + [Col. (D) x Col. (E)] ÷ [Col. (B) + Col. (D)]
2. Rows (27) - (29): Weighted Average RECC Factor meter & installation weights from Row (26).

**TABLE LRMCC-3
SAN DIEGO GAS AND ELECTRIC - GAS DEPARTMENT**

**ANNUALIZED SERVICE, REGULATOR & METER (SRM) MARGINAL INVESTMENT
2016 TCAP Phase II**

	Max Meter Flow Range	Meter & Regulator			Annualized Marg. Invstmnt.	Pipe & Installation			Annualized Marg. Invstmnt.	Total SRM Annualized Marg. Invstmnt.	
		Meter Type	M&R Cost	RECC Factor		Service Type	Service Cost	RECC Factor			
	A	B	C	D	E	F	G	H	I	J	
	Cfh		(Dollars)	(Percent)	(Dollars)		(Dollars)	(Percent)	(Dollars)	(Dollars)	
1	<i>Medium Pressure</i>										1
2	0-275	250	\$274	8.78%	\$24	Poly-0.5"	\$1,839	8.50%	\$156	\$180	2
3	276 - 425	425	\$639	8.76%	\$56	Poly-0.5"	\$1,839	8.50%	\$156	\$212	3
4	426-630	630	\$873	8.74%	\$76	Poly-1"	\$1,839	8.50%	\$156	\$233	4
5	631 - 800	8C	\$1,562	8.75%	\$137	Poly-1"	\$1,839	8.50%	\$156	\$293	5
6	801 - 1,100	11C	\$1,827	8.74%	\$160	Poly-1"	\$1,839	8.50%	\$156	\$316	6
7	1,101 - 1,500	15C	\$3,037	8.80%	\$267	Poly-1"	\$1,839	8.50%	\$156	\$423	7
8	1,501 - 2,000	2M	\$4,133	8.80%	\$364	Poly-1"	\$1,839	8.50%	\$156	\$520	8
9	2,001 - 3,000	3M	\$4,155	8.80%	\$366	Poly-1"	\$1,839	8.50%	\$156	\$522	9
10	3,001 - 5,000	5M	\$4,908	8.78%	\$431	Poly-2"	\$2,032	8.50%	\$173	\$604	10
11	5,001 - 7,000	7M	\$5,526	8.77%	\$485	Poly-2"	\$2,032	8.50%	\$173	\$658	11
12											12
13	<i>High Pressure</i>										13
14	0 - 940	425	\$2,449	8.82%	\$216	Poly-1"	\$1,839	8.50%	\$156	\$372	14
15	941 - 1,050	8C	\$4,460	8.79%	\$392	Poly-1"	\$1,839	8.50%	\$156	\$549	15
16	1,051 - 2,000	2M	\$2,750	8.81%	\$242	Poly-1"	\$1,839	8.50%	\$156	\$399	16
17	2,001 - 2,700	2M	\$4,513	8.79%	\$397	Poly-1"	\$1,839	8.50%	\$156	\$553	17
18	2,701 - 4,000	3M	\$4,535	8.79%	\$399	Poly-2"	\$2,032	8.50%	\$173	\$571	18
19	4,001 - 6,600	5M	\$6,114	8.78%	\$537	Poly-2"	\$2,032	8.50%	\$173	\$709	19
20	6,601 - 9,200	7M	\$6,838	8.77%	\$600	Poly-2"	\$2,032	8.50%	\$173	\$772	20
21	9,201 - 14,500	11M	\$7,585	8.77%	\$666	Poly-3"	\$10,860	8.50%	\$923	\$1,589	21
22	14,501 - 21,400	16M	\$9,064	8.76%	\$794	Poly-3"	\$10,860	8.50%	\$923	\$1,718	22
23	21,401 - 24,000	Turbine	\$17,518	8.76%	\$1,535	Poly-4"	\$11,207	8.50%	\$953	\$2,488	23
24	24,001 - 46,000	Turbine	\$27,979	8.77%	\$2,453	Poly-4"	\$11,207	8.50%	\$953	\$3,406	24
25	46,001 - 79,000	Turbine	\$34,723	8.76%	\$3,041	Steel-4"	\$21,643	8.50%	\$1,840	\$4,881	25
26	79,001 - 377,000	Turbine	\$64,599	8.73%	\$5,642	Steel-6"	\$28,763	8.50%	\$2,446	\$8,087	26
27	377,001 - 600,000	Turbine	\$0	8.73%	\$0	Steel-8"	\$41,658	8.50%	\$3,542	\$3,542	27
28	600,001 - 4,250,000	Turbine	\$0	8.73%	\$0	Steel-16"	--	8.50%	\$0	\$0	28
29	> 4,250,000	Turbine	\$0	8.73%	\$0	Steel-24"	--	8.50%	\$0	\$0	29

Notes:

- Col. (E) = Col. (C) x Col. (D). Col. (I) = Col. (G) x Col. (H).
- Col. (J) = Col. (E) + Col. (I).
- Service Line installation cost (column F & G)

Data Sources: MSA Cost, MSA RECC

TABLE LRMCC-4
SAN DIEGO GAS AND ELECTRIC - GAS DEPARTMENT
MSA ASSIGNMENT FACTORS BY CUSTOMER CLASS
2016 TCAP Phase II

	Max Meter Flow Range	Meter Type	Res				Total Core	NGV	GN-3	Total Core	GTNC			EG			Total Noncore	System Total
			G-R	G-M	G-S	G-T					MPD	HPD	Total	< 3 MM	> 3 MM	Total		
	A	B	C				D	E	F	G	H	I	J	K	L	N	O	
	Cfh																	
1	<i>Medium Pressure</i>		94%	2%	0%	0%											1	
2	0-275	250	726,729	12,051	76	5	738,861	1	16,475	755,337	-	-	-	-	-	-	755,337	
3	276 - 425	425	59,008	1,758	24	1	60,791	-	3,179	63,970	-	-	-	-	-	-	63,970	
4	426-630	630	16,998	671	16	4	17,689	-	2,384	20,073	-	-	-	-	-	-	20,073	
5	631 - 800	800	8,999	869	9	8	9,885	-	2,341	12,226	-	-	-	-	-	-	12,226	
6	801 - 1,100	1100	6,983	461	28	7	7,479	2	2,832	10,313	-	-	-	-	-	-	10,313	
7	1,101 - 1,500	1500	2,154	303	17	6	2,480	-	1,531	4,011	-	-	-	-	-	-	4,011	
8	1,501 - 2,000	2000	683	203	6	3	895	-	1,219	2,114	-	-	-	-	-	-	2,114	
9	2,001 - 3,000	3000	172	84	6	4	266	1	1,226	1,493	-	-	-	2	2	2	1,495	
10	3,001 - 5,000	5000	59	251	17	38	365	5	1,699	2,069	-	-	-	6	6	6	2,075	
11	5,001 - 7,000	7000	9	74	7	72	162	1	708	871	1	-	1	8	-	8	880	
12																		
13	<i>High Pressure</i>																	
14	0 - 940	425	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	
15	941 - 1,050	800	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	
16	1,051 - 2,000	2000	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	
17	2,001 - 2,700	2700	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	
18	2,701 - 4,000	4000	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	
19	4,001 - 6,600	6600	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	
20	6,601 - 9,200	9200	1	10	0	2	13	-	61	74	-	-	-	2	2	2	76	
21	9,201 - 14,500	14500	2	14	5	32	53	7	262	322	1	-	1	4	4	5	327	
22	14,501 - 21,400	21400	0	26	9	43	78	1	231	310	7	-	7	4	4	11	321	
23	21,401 - 24,000	24000	0	18	3	14	35	-	99	134	2	-	2	-	-	2	136	
24	24,001 - 46,000	46000	0	8	1	0	9	1	52	62	6	1	7	4	4	11	73	
25	46,001 - 79,000	79000	0	3	0	0	3	6	23	32	6	1	7	3	3	10	42	
26	79,001 - 377,000	377000	0	0	0	0	-	8	12	20	13	4	17	10	5	15	52	
27	377,001 - 600,000	600000	0	0	0	0	-	3	-	3	-	-	-	2	2	4	7	
28	600,001 - 4,250,000	4250000	0	0	0	0	-	-	1	1	-	3	3	10	7	17	21	
29	> 4,250,000	4250000	0	0	0	0	-	-	-	-	-	1	1	1	-	1	2	
30																		
31	Total Customers		821,797	16,804	224	239	839,064	36	34,335	873,435	36	10	46	56	14	70	116	873,551

**TABLE LRMCC-5
SAN DIEGO GAS AND ELECTRIC - GAS DEPARTMENT**

**MSA ASSIGNMENT FACTORS BY CUSTOMER CLASS
2016 TCAP Phase II**

	Max Meter Flow Range	Meter Type	Res					NGV	GN-3	Total Core	GTNC			EG			Total Noncore	System Total
			G-R	G-M	G-S	G-T	Total				MPD	HPD	Total	< 3 MM	> 3 MM	Total		
	A	B	C					D	E	F	G	H	I	J	K	L	N	O
	Cfh																	
1	<i>Medium Pressure</i>																	
2	0-275	250	88.43%	71.72%	33.93%	2.09%	88.06%	2.78%	47.98%	86.48%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	86.47%	
3	276 - 425	425	7.18%	10.46%	10.71%	0.42%	7.25%	0.00%	9.26%	7.32%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	7.32%	
4	426-630	630	2.07%	3.99%	7.14%	1.67%	2.11%	0.00%	6.94%	2.30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.30%	
5	631 - 800	8C	1.10%	5.17%	4.02%	3.35%	1.18%	0.00%	6.82%	1.40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.40%	
6	801 - 1,100	11C	0.85%	2.74%	12.50%	2.93%	0.89%	5.56%	8.25%	1.18%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.18%	
7	1,101 - 1,500	15C	0.26%	1.80%	7.59%	2.51%	0.30%	0.00%	4.46%	0.46%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.46%	
8	1,501 - 2,000	2M	0.08%	1.21%	2.68%	1.26%	0.11%	0.00%	3.55%	0.24%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.24%	
9	2,001 - 3,000	3M	0.02%	0.50%	2.68%	1.67%	0.03%	2.78%	3.57%	0.17%	0.00%	0.00%	0.00%	3.57%	0.00%	2.86%	1.72%	
10	3,001 - 5,000	5M	0.01%	1.49%	7.59%	15.90%	0.04%	13.89%	4.95%	0.24%	0.00%	0.00%	0.00%	10.71%	0.00%	8.57%	5.17%	
11	5,001 - 7,000	7M	0.00%	0.44%	3.13%	30.13%	0.02%	2.78%	2.06%	0.10%	2.78%	0.00%	2.17%	14.29%	0.00%	11.43%	7.76%	
12																		
13	<i>High Pressure</i>																	
14	0 - 940	425	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
15	941 - 1,050	8C	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
16	1,051 - 2,000	2M	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
17	2,001 - 2,700	2M	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
18	2,701 - 4,000	3M	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
19	4,001 - 6,600	5M	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
20	6,601 - 9,200	7M	0.00%	0.06%	0.00%	0.84%	0.00%	0.00%	0.18%	0.01%	0.00%	0.00%	0.00%	3.57%	0.00%	2.86%	1.72%	
21	9,201 - 14,500	11M	0.00%	0.08%	2.23%	13.39%	0.01%	19.44%	0.76%	0.04%	2.78%	0.00%	2.17%	7.14%	0.00%	5.71%	4.31%	
22	14,501 - 21,400	16M	0.00%	0.15%	4.02%	17.99%	0.01%	2.78%	0.67%	0.04%	19.44%	0.00%	15.22%	7.14%	0.00%	5.71%	9.48%	
23	21,401 - 24,000	Turbine	0.00%	0.11%	1.34%	5.86%	0.00%	0.00%	0.29%	0.02%	5.56%	0.00%	4.35%	0.00%	0.00%	0.00%	1.72%	
24	24,001 - 46,000	Turbine	0.00%	0.05%	0.45%	0.00%	0.00%	2.78%	0.15%	0.01%	16.67%	10.00%	15.22%	7.14%	0.00%	5.71%	9.48%	
25	46,001 - 79,000	Turbine	0.00%	0.02%	0.00%	0.00%	0.00%	16.67%	0.07%	0.00%	16.67%	10.00%	15.22%	5.36%	0.00%	4.29%	8.62%	
26	79,001 - 377,000	Turbine	0.00%	0.00%	0.00%	0.00%	0.00%	22.22%	0.03%	0.00%	36.11%	40.00%	36.96%	17.86%	35.71%	21.43%	27.59%	
27	377,001 - 600,000	Turbine	0.00%	0.00%	0.00%	0.00%	0.00%	8.33%	0.00%	0.00%	0.00%	0.00%	0.00%	3.57%	14.29%	5.71%	3.45%	
28	600,001 - 4,250,000	Turbine	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	30.00%	6.52%	17.86%	50.00%	24.29%	17.24%	
29	> 4,250,000	Turbine	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	10.00%	2.17%	1.79%	0.00%	1.43%	1.72%	
30																		
31	Total Customers		100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	

Notes:

- Factors derived from meter capacity analysis results in Table "LRMCC-4" (tab MSAIlocv1)
Data Sources: Tabs: MSA Cost, MSAIloc v1

TABLE LRMCC-6
 SAN DIEGO GAS AND ELECTRIC - GAS DEPARTMENT
 FORECAST CUSTOMERS BY METER TYPE BY CUSTOMER CLASS
 2016 TCAP Phase II

	Max Meter Flow Range	Meter Type	Res				Total Core	GTNC			EG			Power Plant	Total Noncore	System Total				
			G-R	G-M	G-S	G-T		NGV	GN-3	MPD	HPD	Total	< 3 MM					> 3 MM	Total	
	A	B	C				D	E	F	G	H	I	J	K	L	M	N	O		
	Cfh																			
1	<i>Medium Pressure</i>																		1	
2	0-275	250	736,657	12,082	78	5	748,823	1	14,522	763,346	-	-	-	-	-	-	-	763,346	2	
3	276 - 425	425	59,814	1,762	25	1	61,602	-	2,802	64,405	-	-	-	-	-	-	-	64,405	3	
4	426-630	630	17,230	673	17	4	17,923	-	2,101	20,025	-	-	-	-	-	-	-	20,025	4	
5	631 - 800	8C	9,122	871	9	8	10,011	-	2,063	12,074	-	-	-	-	-	-	-	12,074	5	
6	801 - 1,100	11C	7,078	462	29	7	7,577	2	2,496	10,075	-	-	-	-	-	-	-	10,075	6	
7	1,101 - 1,500	15C	2,183	304	18	6	2,511	-	1,350	3,860	-	-	-	-	-	-	-	3,860	7	
8	1,501 - 2,000	2M	692	204	6	3	905	-	1,074	1,980	-	-	-	-	-	-	-	1,980	8	
9	2,001 - 3,000	3M	174	84	6	4	269	1	1,081	1,351	-	-	-	2	-	2	2	1,352	9	
10	3,001 - 5,000	5M	60	252	18	38	367	5	1,498	1,870	-	-	-	5	-	5	5	1,876	10	
11	5,001 - 7,000	7M	9	74	7	73	163	1	624	789	1	-	1	7	-	7	8	797	11	
12																			12	
13	<i>High Pressure</i>																		13	
14	0 - 940	425	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	
15	941 - 1,050	8C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	
16	1,051 - 2,000	2M	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16	
17	2,001 - 2,700	2M	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17	
18	2,701 - 4,000	3M	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18	
19	4,001 - 6,600	5M	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19	
20	6,601 - 9,200	7M	1	10	-	2	13	-	54	67	-	-	-	2	-	2	2	69	20	
21	9,201 - 14,500	11M	2	14	5	32	54	7	231	292	1	-	1	4	-	4	5	297	21	
22	14,501 - 21,400	16M	-	26	9	44	79	1	204	284	8	-	8	4	-	4	12	295	22	
23	21,401 - 24,000	Turbine	-	18	3	14	35	-	87	123	2	-	2	-	-	-	2	125	23	
24	24,001 - 46,000	Turbine	-	8	1	-	9	1	46	56	7	1	8	4	-	4	12	68	24	
25	46,001 - 79,000	Turbine	-	3	-	-	3	6	20	30	7	1	8	3	-	3	11	40	25	
26	79,001 - 377,000	Turbine	-	-	-	-	-	9	11	19	15	4	19	9	7	16	35	54	26	
27	377,001 - 600,000	Turbine	-	-	-	-	-	3	-	3	-	-	-	2	3	5	5	8	27	
28	600,001 - 4,250,000	Turbine	-	-	-	-	-	-	1	1	-	3	3	9	10	19	22	23	28	
29	> 4,250,000	Turbine	-	-	-	-	-	-	-	-	-	1	1	1	-	1	2	2	29	
30																			30	
31	Total Customers		833,024	16,847	231	242	850,344	38	30,265	880,648	42	10	52	51	20	71	-	123	880,770	31

- Notes:
- Row (31) = forecast annual average number of customers during proposed 2017 - 2019 TCAP period
 - Rows (2) - (29) = Row (31) x MSA assignment factors for each market segment for each flow range.

Data Sources: tabs: MSA Cost, MSAlloc v2

**TABLE LRMCC-7
SAN DIEGO GAS AND ELECTRIC - GAS DEPARTMENT**

**ANNUALIZED SRM MARGINAL INVESTMENT BY CUSTOMER CLASS
2016TCAP Phase II**

	Max Meter Flow Range	Meter Type	Res					NGV	GN-3	Total Core	GTNC			EG			Power Plant	Total Noncore	System Total	
			G-R	G-M	G-S	G-T	Total				MPD	HPD	Total	< 3 MM	> 3 MM	Total				
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	
	Cfh										(Dollars)									
1	<i>Medium Pressure</i>																			1
2	0-275	250	\$132,900,098	\$2,179,680	\$14,140	\$913	\$135,094,831	\$192	\$2,619,919	\$137,714,941	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$137,714,941	2
3	276 - 425	425	\$12,700,779	\$374,244	\$5,255	\$215	\$13,080,494	\$0	\$595,004	\$13,675,497	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$13,675,497	3
4	426-630	630	\$4,009,271	\$156,533	\$3,839	\$942	\$4,170,587	\$0	\$488,971	\$4,659,558	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,659,558	4
5	631 - 800	8C	\$2,673,099	\$255,304	\$2,720	\$2,374	\$2,933,496	\$0	\$604,689	\$3,538,185	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,538,185	5
6	801 - 1,100	11C	\$2,237,040	\$146,066	\$9,126	\$2,240	\$2,394,471	\$673	\$788,923	\$3,184,067	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,184,067	6
7	1,101 - 1,500	15C	\$924,532	\$128,628	\$7,423	\$2,572	\$1,063,156	\$0	\$571,427	\$1,634,583	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,634,583	7
8	1,501 - 2,000	2M	\$360,134	\$105,866	\$3,219	\$1,580	\$470,798	\$0	\$558,929	\$1,029,727	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,029,727	8
9	2,001 - 3,000	3M	\$91,027	\$43,968	\$3,230	\$2,115	\$140,340	\$556	\$564,209	\$705,104	\$0	\$0	\$0	\$953	\$0	\$953	\$0	\$953	\$706,057	9
10	3,001 - 5,000	5M	\$36,115	\$151,960	\$10,587	\$23,235	\$221,897	\$3,215	\$904,362	\$1,129,474	\$0	\$0	\$0	\$3,307	\$0	\$3,307	\$0	\$3,307	\$1,132,781	10
11	5,001 - 7,000	7M	\$6,000	\$48,790	\$4,747	\$47,945	\$107,482	\$700	\$410,419	\$518,601	\$771	\$0	\$771	\$4,802	\$0	\$4,802	\$0	\$5,573	\$524,173	11
12																				12
13	<i>High Pressure</i>																			13
14	0 - 940	425	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	14
15	941 - 1,050	8C	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	15
16	1,051 - 2,000	2M	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	16
17	2,001 - 2,700	2M	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	17
18	2,701 - 4,000	3M	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	18
19	4,001 - 6,600	5M	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	19
20	6,601 - 9,200	7M	\$783	\$7,743	\$0	\$1,564	\$10,090	\$0	\$41,528	\$51,618	\$0	\$0	\$0	\$1,410	\$0	\$1,410	\$0	\$1,410	\$53,028	20
21	9,201 - 14,500	11M	\$3,221	\$22,303	\$8,193	\$51,486	\$85,204	\$11,843	\$366,969	\$464,016	\$1,862	\$0	\$1,862	\$5,801	\$366,969	\$5,801	\$0	\$7,663	\$471,680	21
22	14,501 - 21,400	16M	\$0	\$44,770	\$15,941	\$74,781	\$135,493	\$1,829	\$349,722	\$487,043	\$14,090	\$0	\$14,090	\$6,270	\$0	\$6,270	\$0	\$20,360	\$507,403	22
23	21,401 - 24,000	Turbine	\$0	\$44,893	\$7,696	\$35,265	\$87,855	\$0	\$217,088	\$304,943	\$5,831	\$0	\$5,831	\$0	\$0	\$0	\$0	\$5,831	\$310,774	23
24	24,001 - 46,000	Turbine	\$0	\$27,320	\$3,513	\$0	\$30,833	\$3,627	\$156,132	\$190,591	\$23,951	\$3,342	\$27,293	\$12,436	\$0	\$12,436	\$0	\$39,729	\$230,321	24
25	46,001 - 79,000	Turbine	\$0	\$14,680	\$0	\$0	\$14,680	\$31,179	\$98,952	\$144,811	\$34,319	\$4,789	\$39,108	\$13,364	\$0	\$13,364	\$0	\$52,472	\$197,283	25
26	79,001 - 377,000	Turbine	\$0	\$0	\$0	\$0	\$0	\$68,883	\$85,543	\$154,426	\$123,208	\$31,739	\$154,946	\$73,812	\$57,124	\$130,937	\$0	\$285,883	\$440,309	26
27	377,001 - 600,000	Turbine	\$0	\$0	\$0	\$0	\$0	\$11,314	\$0	\$11,314	\$0	\$0	\$0	\$6,466	\$10,008	\$16,474	\$0	\$16,474	\$27,787	27
28	600,001 - 4,250,000	Turbine																		28
29	> 4,250,000	Turbine																		29
30	Total		\$155,942,099	\$3,752,750	\$99,629	\$247,229	\$160,041,706	\$134,010	\$9,422,785	\$169,598,501	\$204,032	\$39,869	\$243,901	\$128,621	\$67,132	\$195,753	\$0	\$439,654	\$170,038,155	30
31	Forecast Customers		833,024	16,847	231	242	884,624	38	30,265	914,927	42	10	52	51	20	71	-	123	915,050	31
32																				32
33	Average SRM Cost		\$187	\$223	\$431	\$1,022	\$181	\$3,496	\$311	\$185	\$4,836	\$4,064	\$4,690	\$2,517	\$3,394	\$2,761	\$0	\$3,578	\$186	33

Notes:

1. Rows (2) - (29) = SRM Annualized Marginal Investment x Number of MSA's per Customer Segment for each particular flow range.

2. Row (33) = Row (30) ÷ Row (31).

Data Sources: tabs: MSA Fcst, MSA Rental, Factors

TABLE LRMCC-8
SAN DIEGO GAS AND ELECTRIC - GAS DEPARTMENT

ALLOCATION OF CUSTOMER-RELATED DISTRIBUTION O&M EXPENSES BY CUSTOMER CLASS
2016 TCAP Phase II

	Distribution O&M Account	Marginal O&M	G-R	G-M	Res G-S	G-T	Total	NGV	GN-3	Total Core	GTNC			EG			Total Noncore	System Total
											MPD	HPD	Total	< 3 MM	> 3 MM	Total		
	A	B					C	D	E	F	G	H	I	J	K	L	N	O
1																		
2	Allocator - Total of other Distribution O&M Operating	44%	87%	3%	0%	0%	90%	0%	10%	44%	0%	0%	0%	0%	0%	0%	0%	100%
3	Allocation (M\$)	\$6,615	\$5,756	\$166	\$6	\$15	\$5,943	\$6	\$644	\$2,923	\$10	\$2	\$12	\$6	\$3	\$9	\$21	\$6,615
4	871 - Distribution Load Dispatching = Non-Marginal Designation																	
5																		
6	Allocator - Customers Wtd by Services costs	100%	94%	2%	0%	0%	96%	0%	4%	100%	0%	0%	0%	0%	0%	0%	0%	100%
7	Allocation (M\$)	\$2,007	\$1,886	\$39	\$1	\$2	\$1,928	\$1	\$76	\$2,005	\$1	\$0	\$1	\$1	\$0	\$1	\$2	\$2,007
8	875 - Meas & Reg Station Exp = 100% Demand-Related																	
9																		
10	Allocator - Customers Wtd by Meters & Regs costs	100%	82%	3%	0%	0%	86%	0%	13%	99%	0%	0%	1%	0%	0%	0%	1%	100%
11	Allocation (M\$)	\$5,714	\$4,666	\$192	\$9	\$25	\$4,892	\$14	\$755	\$5,662	\$25	\$5	\$30	\$15	\$7	\$22	\$52	\$5,714
12																		
13	Allocator - Customer Service Expense	0%	89%	2%	0%	0%	91%	0%	9%	0%	0%	0%	0%	0%	0%	0%	0%	100%
14	Allocation (M\$)	\$9,629	\$8,544	\$205	\$5	\$13	\$8,767	\$1	\$857	\$0	\$0	\$0	\$0	\$1	\$0	\$1	\$0	\$9,629
15																		
16	Allocator - Total of other Distribution O&M Operating	44%	87%	3%	0%	0%	90%	0%	10%	44%	0%	0%	0%	0%	0%	0%	0%	100%
17	Allocation (M\$)	\$7,857	\$6,836	\$197	\$7	\$18	\$7,059	\$7	\$765	\$3,472	\$12	\$2	\$14	\$7	\$4	\$11	\$25	\$7,857
18	881 - Rents = Non-Marginal Designation																	
19																		
20	Allocator - Total Other Distribution O&M Maintenance	100%	90%	2%	0%	0%	92%	0%	7%	100%	0%	0%	0%	0%	0%	0%	0%	100%
21	Allocation (M\$)	\$29	\$26	\$1	\$0	\$0	\$27	\$0	\$2	\$29	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$29
22																		
23	Allocator - Customers Wtd by Services costs	100%	94%	2%	0%	0%	96%	0%	4%	100%	0%	0%	0%	0%	0%	0%	0%	100%
24	Allocation (M\$)	\$706	\$664	\$14	\$0	\$1	\$678	\$0	\$27	\$705	\$0	\$0	\$0	\$0	\$0	\$0	\$1	\$706
25	888 - Maint. Of Compressor Station Eq = 100% Demand-Related																	
26	889 - Maint. of Meas. & Reg Station Eq = 100% Demand-Related																	
27																		
28	Allocator - Customers Wtd by Services costs	100%	94%	2%	0%	0%	96%	0%	4%	100%	0%	0%	0%	0%	0%	0%	0%	100%
29	Allocation (M\$)	\$1,313	\$1,234	\$26	\$0	\$1	\$1,261	\$1	\$50	\$1,311	\$1	\$0	\$1	\$0	\$0	\$1	\$1	\$1,313
30																		
31	Allocator - Customers Wtd by Meters & Regs costs	100%	82%	3%	0%	0%	86%	0%	13%	99%	0%	0%	1%	0%	0%	0%	1%	100%
32	Allocation (M\$)	\$1,115	\$910	\$37	\$2	\$5	\$955	\$3	\$147	\$1,105	\$5	\$1	\$6	\$3	\$1	\$4	\$10	\$1,115
33	894 - Maint. of Other Eq = Non-Marginal Designation																	
34	Total 870 - 894 O&M Allocation (M\$)	\$34,985	\$30,522	\$877	\$30	\$80	\$31,509	\$33	\$3,323	\$17,211	\$53	\$11	\$64	\$33	\$16	\$49	\$112	\$34,984
35	Allocation %	100%	87%	3%	0%	0%	90%	0%	9%	49%	0%	0%	0%	0%	0%	0%	0%	100%

Notes:

- Col. (B) from Customer-Related expense section of Workpapers Table "LF-3". (tab Loader Input)
- Allocation Factors for FERC Accounts 870 - 894 from Workpapers Table "LRMCC-9" (tab 870-894 Fctrs)

Data Sources: tab: Loader Input, 870-894 Fctrs

**TABLE LRMCC-9
SAN DIEGO GAS AND ELECTRIC - GAS DEPARTMENT**

**Allocation Factors for Distribution O&M Expenses
2016 TCAP Phase II**

Allocation Method	G-R	G-M	Res G-S	G-T	Total	NGV	GN-3	Total Core	GTNC			EG			Total Noncore	System Total
									MPD	HPD	Total	< 3 MM	> 3 MM	Total		
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
874, 887, 892 - Services																
Allocator - Customers Wtd by Services costs (M\$)	\$1,531,970	\$31,712	\$598	\$1,285	\$1,565,565	\$642	\$61,929	\$1,628,136	\$800	\$145	\$945	\$551	\$321	\$872	\$1,817	\$1,629,952
Alloc %	94%	2%	0%	0%	96%	0%	4%	100%	0%	0%	0%	0%	0%	0%	0%	100%
878, 893 - Meters & House Regulators O&M Expense																
Allocator - Customers Wtd by Meters & Regs costs (M\$)	\$292,625	\$12,039	\$556	\$1,573	\$306,793	\$909	\$47,373	\$355,074	\$1,556	\$315	\$1,871	\$935	\$456	\$1,391	\$3,262	\$358,336
Alloc %	82%	3%	0%	0%	86%	0%	13%	99%	0%	0%	1%	0%	0%	0%	1%	100%
879 - Customer Installations (M\$)																
Allocator - Customer Service	\$13,514	\$324	\$9	\$21	\$13,868	\$1	\$1,355	\$15,224	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$15,231
Alloc %	89%	2%	0%	0%	91.0%	0.0%	8.9%		0.0%	0.0%		0.0%	0.0%	0.0%	0.0%	100%

Data Sources: tab: M&HR Alloc

TABLE LRMCC-10
 SAN DIEGO GAS AND ELECTRIC - GAS DEPARTMENT
 ALLOCATION OF CUSTOMER O&M EXPENSES BY CUSTOMER CLASS
 2016 TCAP Phase II

	O&M Operational Activity	Total O&M	Res	NGV	GN-3	Total Core	GTNC			EG		IPP	Total Noncore	System Total	
							MPD	HPD	Total	< 3 MM	> 3 MM				Total
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	FIELD SERVICES Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	CUSTOMER CONTACT Total	\$33,607	\$31,155	\$0	\$2,452	\$33,607	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$33,607
3	METER READING Total	\$34,179	\$32,829	\$2	\$1,343	\$34,174	\$1	\$1	\$2	\$2	\$1	\$3	\$0	\$5	\$34,179
4	BILLING SERVICES Total	\$268,560	\$0	\$0	\$0	\$0	\$79,247	\$30,818	\$110,066	\$123,274	\$35,221	\$158,495	\$0	\$268,560	\$268,560
5	CREDIT & COLLECTIONS Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6	BUSINESS ANALYSIS Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	CUSTOMER RESEARCH & COMMUNICATION Total	\$381,641	\$369,095	\$23	\$12,472	\$381,589	\$16	\$6	\$22	\$22	\$7	\$29	\$0	\$52	\$381,641
8	CUSTOMER SERVICE TECHNOLOGY & SUPPORT Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	C&I CUSTOMER SERVICE Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
10	CONSUMER PROGRAMS & SERVICES Total	\$200,058	\$186,874	\$12	\$7,556	\$194,442	\$1,657	\$644	\$2,302	\$2,578	\$737	\$3,314	\$0	\$5,616	\$200,058
11	FEDERAL ACCOUNTS MANAGEMENT Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
12	CUSTOMER SERVICES SUPPORT STAFF Total	\$224,609	\$204,505	\$16	\$19,984	\$224,505	\$85	\$0	\$85	\$12	\$7	\$19	\$0	\$104	\$224,609
13	COMMUNITY OUTREACH & INFO SERVICES Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
14	OTHER Total	\$2,597	\$2,420	\$0	\$99	\$2,519	\$23	\$9	\$32	\$36	\$10	\$46	\$0	\$78	\$2,597
15	SVP COST CENTERS Total	\$190,104	\$177,144	\$11	\$7,246	\$184,401	\$1,683	\$654	\$2,337	\$2,618	\$748	\$3,366	\$0	\$5,703	\$190,104
16															
17	Total	\$1,335,354	\$1,004,021	\$64	\$51,152	\$1,055,237	\$82,713	\$32,133	\$114,846	\$128,542	\$36,730	\$165,272	\$0	\$280,117	\$1,335,354
18	Allocation %	100%	75%	0%	4%	79%	6%	2%	9%	10%	3%	12%	0%	21%	100%

Note:
 1. O&M Operational Activities cost assigned using allocation methods identified for each SDG&E department in the Customer Operations division.
 Source: From file: SDGE 2017TCAP OM Loaders Tab: LRMCC-O&M Summary

TABLE LRMCC-backup.1
 SAN DIEGO GAS AND ELECTRIC - GAS DEPARTMENT

O&M ALLOCATION FACTOR: Number of Customers Weighted by Service Line Cost
 2016 TCAP Phase II

	Max Meter Flow Range	Meter Type	Services Plant Investment	Res					NGV	GN-3	Total Core	GTNC			EG		Total Noncore	System Total		
				G-R	G-M	G-S	G-T	Total				MPD	HPD	Total	< 3 MM	> 3 MM				Total
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	
	Ch			(Thousand Dollars)																
1	<i>Medium Pressure</i>																			1
2	0-275	250	\$2	\$1,354,719	\$22,219	\$144	\$9	\$1,377,091	\$2	\$26,706	\$1,403,799	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,403,799	2
3	276 - 425	425	\$2	\$109,999	\$3,241	\$46	\$2	\$113,287	\$0	\$5,153	\$118,441	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$118,441	3
4	426-630	630	\$2	\$31,687	\$1,237	\$30	\$7	\$32,961	\$0	\$3,864	\$36,826	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$36,826	4
5	631 - 800	8C	\$2	\$16,775	\$1,602	\$17	\$15	\$18,409	\$0	\$3,795	\$22,204	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$22,204	5
6	801 - 1,100	11C	\$2	\$13,017	\$850	\$53	\$13	\$13,933	\$4	\$4,591	\$18,528	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$18,528	6
7	1,101 - 1,500	15C	\$2	\$4,015	\$559	\$32	\$11	\$4,617	\$0	\$2,482	\$7,099	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$7,099	7
8	1,501 - 2,000	2M	\$2	\$1,273	\$374	\$11	\$6	\$1,664	\$0	\$1,976	\$3,640	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,640	8
9	2,001 - 3,000	3M	\$2	\$321	\$155	\$11	\$7	\$494	\$2	\$1,987	\$2,484	\$0	\$0	\$0	\$3	\$0	\$3	\$3	\$2,487	9
10	3,001 - 5,000	5M	\$2	\$122	\$511	\$36	\$78	\$747	\$11	\$3,043	\$3,801	\$0	\$0	\$0	\$11	\$0	\$11	\$11	\$3,812	10
11	5,001 - 7,000	7M	\$2	\$19	\$151	\$15	\$148	\$332	\$2	\$1,268	\$1,602	\$2	\$0	\$2	\$15	\$0	\$15	\$17	\$1,620	11
12	<i>High Pressure</i>																			12
13																				13
14	0 - 940	425	\$2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	14
15	941 - 1,050	8C	\$2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	15
16	1,051 - 2,000	2M	\$2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	16
17	2,001 - 2,700	2M	\$2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	17
18	2,701 - 4,000	3M	\$2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	18
19	4,001 - 6,600	5M	\$2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	19
20	6,601 - 9,200	7M	\$2	\$2	\$20	\$0	\$4	\$27	\$0	\$109	\$136	\$0	\$0	\$0	\$4	\$0	\$4	\$4	\$140	20
21	9,201 - 14,500	11M	\$11	\$22	\$152	\$56	\$352	\$582	\$81	\$2,508	\$3,171	\$13	\$0	\$13	\$40	\$0	\$40	\$52	\$3,224	21
22	14,501 - 21,400	16M	\$11	\$0	\$283	\$101	\$473	\$857	\$12	\$2,211	\$3,080	\$89	\$0	\$89	\$40	\$0	\$40	\$129	\$3,208	22
23	21,401 - 24,000	Turbine	\$11	\$0	\$202	\$35	\$159	\$396	\$0	\$978	\$1,374	\$26	\$0	\$26	\$0	\$0	\$0	\$26	\$1,400	23
24	24,001 - 46,000	Turbine	\$11	\$0	\$90	\$12	\$0	\$101	\$12	\$514	\$627	\$79	\$11	\$90	\$41	\$0	\$41	\$131	\$758	24
25	46,001 - 79,000	Turbine	\$22	\$0	\$65	\$0	\$0	\$65	\$138	\$439	\$642	\$152	\$21	\$173	\$59	\$0	\$59	\$233	\$875	25
26	79,001 - 377,000	Turbine	\$29	\$0	\$0	\$0	\$0	\$0	\$245	\$304	\$549	\$438	\$113	\$551	\$263	\$203	\$466	\$1,017	\$1,566	26
27	377,001 - 600,000	Turbine	\$42	\$0	\$0	\$0	\$0	\$0	\$133	\$0	\$133	\$0	\$0	\$0	\$76	\$118	\$194	\$194	\$327	27
28	600,001 - 4,250,000	Turbine																		28
29	> 4,250,000	Turbine																		29
30	Total			\$1,531,970	\$31,712	\$598	\$1,285	\$1,565,565	\$642	\$61,929	\$1,628,136	\$800	\$145	\$945	\$551	\$321	\$872	\$1,817	\$1,629,952	31

Note:
 1. Rows (2) - (31) = Gross Service Line Capital Investment Cost (Table LRMCC-3) x Number of Services per Customer Segment for each particular flow range (Table LRMCC-6).

Data Sources: tabs: MSA Cost, MSA Fcst MSA Rental

TABLE LRMCC-backup.2
SAN DIEGO GAS AND ELECTRIC - GAS DEPARTMENT

O&M ALLOCATION FACTOR: Number of Customers Weighted by MSA Cost
2016 TCAP Phase II

	Max Meter Flow Range	Meter Type	MSA Capital Investment	Res					NGV	GN-3	Total Core	GTNC			EG		Total Noncore	System Total			
				G-R	G-M	G-S	G-T	Total				MPD	HPD	Total	< 3 MM	> 3 MM				Total	
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S		
	Cih			(Thousand Dollars)																	
1	<i>Medium Pressure</i>																			1	
2	0-275	250	\$0	\$201,623	\$3,307	\$21	\$1	\$204,953	\$0	\$3,975	\$208,928	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$208,928	2	
3	276 - 425	425	\$1	\$38,203	\$1,126	\$16	\$1	\$39,345	\$0	\$1,790	\$41,135	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$41,135	3	
4	426-630	630	\$1	\$15,039	\$587	\$14	\$4	\$15,644	\$0	\$1,834	\$17,478	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$17,478	4	
5	631 - 800	8C	\$2	\$14,248	\$1,361	\$14	\$13	\$15,636	\$0	\$3,223	\$18,859	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$18,859	5	
6	801 - 1,100	11C	\$2	\$12,929	\$844	\$53	\$13	\$13,839	\$4	\$4,560	\$18,402	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$18,402	6	
7	1,101 - 1,500	15C	\$3	\$6,630	\$922	\$53	\$18	\$7,624	\$0	\$4,098	\$11,722	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$11,722	7	
8	1,501 - 2,000	2M	\$4	\$2,862	\$841	\$26	\$13	\$3,741	\$0	\$4,441	\$8,182	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$8,182	8	
9	2,001 - 3,000	3M	\$4	\$725	\$350	\$26	\$17	\$1,117	\$4	\$4,491	\$5,612	\$0	\$0	\$0	\$8	\$0	\$8	\$8	\$5,620	9	
10	3,001 - 5,000	5M	\$5	\$294	\$1,235	\$86	\$189	\$1,803	\$26	\$7,350	\$9,179	\$0	\$0	\$0	\$27	\$0	\$27	\$27	\$9,206	10	
11	5,001 - 7,000	7M	\$6	\$50	\$410	\$40	\$403	\$903	\$6	\$3,449	\$4,358	\$6	\$0	\$6	\$40	\$0	\$40	\$47	\$4,405	11	
12	<i>High Pressure</i>																			12	
13																				13	
14	0 - 940	425	\$2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	14	
15	941 - 1,050	8C	\$4	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	15	
16	1,051 - 2,000	2M	\$3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	16	
17	2,001 - 2,700	2M	\$5	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	17	
18	2,701 - 4,000	3M	\$5	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	18	
19	4,001 - 6,600	5M	\$6	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	19	
20	6,601 - 9,200	7M	\$7	\$7	\$69	\$0	\$14	\$89	\$0	\$368	\$457	\$14	\$0	\$0	\$12	\$0	\$12	\$12	\$469	20	
21	9,201 - 14,500	11M	\$8	\$15	\$106	\$39	\$246	\$407	\$57	\$1,752	\$2,215	\$9	\$0	\$9	\$28	\$0	\$28	\$37	\$2,252	21	
22	14,501 - 21,400	16M	\$9	\$0	\$236	\$84	\$395	\$715	\$10	\$1,846	\$2,570	\$74	\$0	\$74	\$33	\$0	\$33	\$107	\$2,678	22	
23	21,401 - 24,000	Turbine	\$18	\$0	\$316	\$54	\$248	\$619	\$0	\$1,529	\$2,147	\$41	\$0	\$41	\$0	\$0	\$0	\$41	\$2,188	23	
24	24,001 - 46,000	Turbine	\$28	\$0	\$224	\$29	\$0	\$253	\$30	\$1,282	\$1,566	\$197	\$27	\$224	\$102	\$0	\$102	\$326	\$1,892	24	
25	46,001 - 79,000	Turbine	\$35	\$0	\$104	\$0	\$0	\$104	\$222	\$704	\$1,030	\$244	\$34	\$278	\$95	\$0	\$95	\$373	\$1,404	25	
26	79,001 - 377,000	Turbine	\$65	\$0	\$0	\$0	\$0	\$0	\$550	\$683	\$1,234	\$984	\$254	\$1,238	\$590	\$456	\$1,046	\$2,284	\$3,517	26	
27	377,001 - 600,000	Turbine	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	27	
28	600,001 - 4,250,000	Turbine	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	28	
29	> 4,250,000	Turbine	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	29	
30	Total			N/A	\$292,625	\$12,039	\$556	\$1,573	\$306,793	\$909	\$47,373	\$355,074	\$1,556	\$315	\$1,871	\$935	\$456	\$1,391	\$3,262	\$358,336	30
31																				31	

Note:
1. Rows (2) - (31) = Gross MSA Capital Investment Cost (Table LRMCC-1) x Number of MSA's per Customer Segment for each particular flow range (Table LRMCC-6).

Data Sources: tabs: MSA Cost, MSA Fcst

**TABLE MISC-1
SAN DIEGO GAS AND ELECTRIC - GAS DEPARTMENT**

**DEMAND DETERMINANT SUMMARY
2016 TCAP Phase II**

Billing Determinants	Res					NGV	GN-3	Core	GTNC			EG			Power Plants	Noncore	System
	G-R	G-M	G-S	G-T	Total				MPD	HPD	Total	< 3 MM	> 3 MM	Total			
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
TCAP Customers	833,024	16,847	231	242	884,624	38	30,265	914,927	42	10	52	51	20	71	-	123	915,050
2013 Customers	790,409	15,985	219	230	839,369	53	34,335	873,757	36	14	50	56	16	72	-	122	873,879

Note:

1. Information provided by Demand Forecast witness. Updated 6-16-2015

Demand Forecast per 2017 TCAP in Mtherms	Res	NGV	Core C&I	Total Core	Non Core C&I	EG Tier 1	EG Tier 2	Total EG	Total Non Core	Total System
1 DIRECT Demand										
2 Transmission										
3 Average Year Throughput (MTh)	0	0	0	0	17,168	2,071	572,004	574,075	591,243	591,243
4 Cold Year Throughput (1-in-35) (MTh)	0	0	0	0	17,168	2,071	572,004	574,075	591,243	591,243
5 Cold Year Peak Month (December) (MTh)	0	0	0	0	1,516	166	53,795	53,961	55,477	55,477
6 Peak Day (1-in-35 Core; 1-in-10 Noncore) (MTh)	0	0	0	0	49	19	1,968	1,987	2,036	2,036
7 Number of Customers	0	0	0	0	10	5	13	18	27	27
8 High Pressure										
9 Average Year Throughput (MTh)	93	11,340	3,429	14,862	7,630	4,914	68,276	73,190	80,820	95,681
10 Cold Year Throughput (1-in-35) (MTh)	102	11,340	3,561	15,003	7,630	4,914	68,276	73,190	80,820	95,823
11 Cold Year Peak Month (December) (MTh)	15	984	383	1,382	674	388	5,744	6,133	6,806	8,188
12 Peak Day (1-in-35 Core; 1-in-10 Noncore) (MTh)	1	32	17	49	22	22	185	207	229	278
13 Number of Customers	1	8	6	15	9	6	5	11	20	35
14 Medium Pressure										
15 Average Year Throughput (MTh)	319,890	7,162	179,231	506,282	20,177	14,297	8,320	22,617	42,794	549,076
16 Cold Year Throughput (1-in-35) (MTh)	354,096	7,162	186,126	547,383	20,177	14,297	8,320	22,617	42,794	590,177
17 Cold Year Peak Month (December) (MTh)	51,518	622	19,998	72,138	1,781	1,203	700	1,903	3,684	75,822
18 Peak Day (1-in-35 Core; 1-in-10 Noncore) (MTh)	2,911	20	879	3,810	57	39	23	61	119	3,928
19 Number of Customers	884,623	30	30,259	914,912	33	40	2	42	75	914,987
20 CUMULATIVE Demand										
21 Transmission										
22 Average Year Throughput (MTh)	319,982	18,501	182,660	521,144	44,975	21,281	648,600	669,882	714,857	1,236,000
23 Cold Year Throughput (1-in-35) (MTh)	354,198	18,501	189,687	562,386	44,975	21,281	648,600	669,882	714,857	1,277,243
24 Cold Year Peak Month (December) (MTh)	51,533	1,606	20,381	73,520	3,970	1,757	60,239	61,997	65,967	139,487
25 Peak Day (1-in-35 Core; 1-in-10 Noncore) (MTh)	2,912	52	896	3,859	128	79	2,176	2,255	2,383	6,242
26 Number of Customers	884,624	38	30,265	914,927	52	51	20	71	123	915,050
27 High Pressure										
28 Average Year Throughput (MTh)	319,982	18,501	182,660	521,144	27,807	19,210	76,596	95,807	123,614	644,757
29 Cold Year Throughput (1-in-35) (MTh)	354,198	18,501	189,687	562,386	27,807	19,210	76,596	95,807	123,614	686,000
30 Cold Year Peak Month (December) (MTh)	51,533	1,606	20,381	73,520	2,455	1,591	6,444	8,036	10,490	84,010
31 Peak Day (1-in-35 Core; 1-in-10 Noncore) (MTh)	2,912	52	896	3,859	79	61	208	268	348	4,207
32 Number of Customers	884,624	38	30,265	914,927	42	46	7	53	95	915,022
33 Medium Pressure										
34 Average Year Throughput (MTh)	319,890	7,162	179,231	506,282	20,177	14,297	8,320	22,617	42,794	549,076
35 Cold Year Throughput (1-in-35) (MTh)	354,096	7,162	186,126	547,383	20,177	14,297	8,320	22,617	42,794	590,177
36 Cold Year Peak Month (December) (MTh)	51,518	622	19,998	72,138	1,781	1,203	700	1,903	3,684	75,822
37 Peak Day (1-in-35 Core; 1-in-10 Noncore) (MTh)	2,911	20	879	3,810	57	39	23	61	119	3,928
38 Number of Customers	884,623	30	30,259	914,912	33	40	2	42	75	914,987

TABLE LRMCC-nc0.1
SAN DIEGO GAS AND ELECTRIC - GAS DEPARTMENT

WEIGHTED MSA PVRR FACTOR
2016 TCAP Phase II

	Max Meter Flow Range	Meter, Regulator, & Fitting Costs	Meter & Regulator PVRR Factor	Installation Costs	Installation Costs PVRR Factor	Weighted Average PVRR Factor	
	A	B	C	D	E	F	
	Cfh	(Dollars)	(Percent)	(Dollars)	(Percent)	(Percent)	
1	<i>Medium Pressure</i>						1
2	0-275	\$186.36	131.64%	\$87.34	131.20%	131.50%	2
3	276 - 425	\$481.33	131.64%	\$157.37	131.20%	131.53%	3
4	426-630	\$715.45	131.64%	\$157.37	131.20%	131.56%	4
5	631 - 800	\$1,247.21	131.64%	\$314.74	131.20%	131.55%	5
6	801 - 1,100	\$1,511.77	131.64%	\$314.74	131.20%	131.56%	6
7	1,101 - 1,500	\$1,946.32	131.64%	\$1,090.20	131.20%	131.48%	7
8	1,501 - 2,000	\$2,554.71	131.64%	\$1,578.71	131.20%	131.47%	8
9	2,001 - 3,000	\$2,576.76	131.64%	\$1,578.71	131.20%	131.47%	9
10	3,001 - 5,000	\$3,328.85	131.64%	\$1,578.71	131.20%	131.50%	10
11	5,001 - 7,000	\$3,947.43	131.64%	\$1,578.71	131.20%	131.51%	11
12							12
13	<i>High Pressure</i>						13
14	0 - 940	\$1,358.47	131.64%	\$1,090.20	131.20%	131.44%	14
15	941 - 1,050	\$2,881.11	131.64%	\$1,578.71	131.20%	131.48%	15
16	1,051 - 2,000	\$1,659.54	131.64%	\$1,090.20	131.20%	131.46%	16
17	2,001 - 2,700	\$2,934.29	131.64%	\$1,578.71	131.20%	131.49%	17
18	2,701 - 4,000	\$2,956.34	131.64%	\$1,578.71	131.20%	131.49%	18
19	4,001 - 6,600	\$4,293.52	131.64%	\$1,820.97	131.20%	131.51%	19
20	6,601 - 9,200	\$5,016.66	131.64%	\$1,820.97	131.20%	131.52%	20
21	9,201 - 14,500	\$5,407.30	131.64%	\$2,177.75	131.20%	131.51%	21
22	14,501 - 21,400	\$6,886.00	131.64%	\$2,177.75	131.20%	131.53%	22
23	21,401 - 24,000	\$13,284.64	131.64%	\$4,233.13	131.20%	131.53%	23
24	24,001 - 46,000	\$20,507.37	131.64%	\$7,471.87	131.20%	131.52%	24
25	46,001 - 79,000	\$26,930.09	131.64%	\$7,792.95	131.20%	131.54%	25
26	79,001 - 377,000	\$55,382.90	131.64%	\$9,215.81	131.20%	131.57%	26
27	377,001 - 600,000					131.57%	27
28	600,001 - 4,250,000					131.57%	28
29	> 4,250,000					131.57%	29

Notes:

1. Col. (F) = [Col. (B) x Col. (C)] + [Col. (D) x Col. (E)] ÷ [Col. (B) + Col. (D)]
2. Rows (27) - (29): Weighted Average PVRR Factor meter & installation weights from Row (26).

TABLE LRMCC-nco.2
SAN DIEGO GAS AND ELECTRIC - GAS DEPARTMENT

NCO ANNUAL SERVICE, REGULATOR & METER (SRM) NEW HOOKUP INVESTMENT
2016 TCAP Phase II

	Max Meter Flow Range	Meter & Regulator				Pipe & Installation				Forecast New Hookups	Total SRM NCO Annual Investment	
		Meter Type	M&R Cost	PVRR Factor	NCO Hookup Investment	Service Type	Service Cost	PVRR Factor	NCO Hookup Investment			
	A	B	C	D	E	F	G	H	I	J	K	
	Cfh		(Dollars)	(Percent)	(Dollars)		(Dollars)	(Percent)	(Dollars)		(Dollars)	
1	<i>Medium Pressure</i>											1
2	0-275	250	\$274	131.50%	\$360	Poly-0.5"	\$1,839	131.00%	\$2,409	11,672	\$32,321,023	2
3	276 - 425	425	\$639	131.53%	\$840	Poly-0.5"	\$1,839	131.00%	\$2,409	966	\$3,139,599	3
4	426-630	630	\$873	131.56%	\$1,148	Poly-1"	\$1,839	131.00%	\$2,409	286	\$1,017,042	4
5	631 - 800	8C	\$1,562	131.55%	\$2,055	Poly-1"	\$1,839	131.00%	\$2,409	163	\$727,765	5
6	801 - 1,100	11C	\$1,827	131.56%	\$2,403	Poly-1"	\$1,839	131.00%	\$2,409	127	\$610,317	6
7	1,101 - 1,500	15C	\$3,037	131.48%	\$3,992	Poly-1"	\$1,839	131.00%	\$2,409	44	\$281,431	3
8	1,501 - 2,000	2M	\$4,133	131.47%	\$5,434	Poly-1"	\$1,839	131.00%	\$2,409	18	\$141,390	4
9	2,001 - 3,000	3M	\$4,155	131.47%	\$5,463	Poly-1"	\$1,839	131.00%	\$2,409	8	\$65,121	5
10	3,001 - 5,000	5M	\$4,908	131.50%	\$6,453	Poly-2"	\$2,032	131.00%	\$2,662	12	\$105,984	6
11	5,001 - 7,000	7M	\$5,526	131.51%	\$7,268	Poly-2"	\$2,032	131.00%	\$2,662	5	\$52,149	7
12												8
13	<i>High Pressure</i>											9
14	0 - 940	425	\$2,449	131.44%	\$3,219	Poly-1"	\$1,839	131.00%	\$2,409	-	\$0	10
15	941 - 1,050	8C	\$4,460	131.48%	\$5,864	Poly-1"	\$1,839	131.00%	\$2,409	-	\$0	11
16	1,051 - 2,000	2M	\$2,750	131.46%	\$3,615	Poly-1"	\$1,839	131.00%	\$2,409	-	\$0	12
17	2,001 - 2,700	2M	\$4,513	131.49%	\$5,934	Poly-1"	\$1,839	131.00%	\$2,409	-	\$0	13
18	2,701 - 4,000	3M	\$4,535	131.49%	\$5,963	Poly-2"	\$2,032	131.00%	\$2,662	-	\$0	14
19	4,001 - 6,600	5M	\$6,114	131.51%	\$8,041	Poly-2"	\$2,032	131.00%	\$2,662	-	\$0	15
20	6,601 - 9,200	7M	\$6,838	131.52%	\$8,993	Poly-2"	\$2,032	131.00%	\$2,662	0	\$5,798	16
21	9,201 - 14,500	11M	\$7,585	131.51%	\$9,975	Poly-3"	\$10,860	131.00%	\$14,228	2	\$48,705	17
22	14,501 - 21,400	16M	\$9,064	131.53%	\$11,922	Poly-3"	\$10,860	131.00%	\$14,228	2	\$58,821	18
23	21,401 - 24,000	Turbine	\$17,518	131.53%	\$23,041	Poly-4"	\$11,207	131.00%	\$14,681	1	\$33,570	19
24	24,001 - 46,000	Turbine	\$27,979	131.52%	\$36,799	Poly-4"	\$11,207	131.00%	\$14,681	1	\$29,585	20
25	46,001 - 79,000	Turbine	\$34,723	131.54%	\$45,674	Steel-4"	\$21,643	131.00%	\$28,353	0	\$31,926	21
26	79,001 - 377,000	Turbine	\$64,599	131.57%	\$84,996	Steel-6"	\$28,763	131.00%	\$37,681	1	\$96,132	22
27	377,001 - 600,000	Turbine	\$0	131.57%	\$0	Steel-8"	\$41,658	131.00%	\$54,574	0	\$8,229	23
28	600,001 - 4,250,000	Turbine	\$0	131.57%	\$0	Steel-16"	--	131.00%		0	\$0	24
29	> 4,250,000	Turbine	\$0	131.57%	\$0	Steel-24"	--	131.00%		0	\$0	25

Notes:

1. Col. (E) = Col. (C) x Col. (D).
2. Col. (I) = Col. (G) x Col. (H).
3. Col. (K) = [Col. (E) + Col. (I)] x Col. (J).

**TABLE LRMCC-nco.3
SAN DIEGO GAS AND ELECTRIC - GAS DEPARTMENT**

**WEIGHTED MSA BOOK LIFE
2016 TCAP Phase II**

	Max Meter Flow Range	Meter, Regulator, & Fitting Costs	Meter & Regulator Book Life	Installation Costs	Installation Costs Book Life	Weighted Average PVR Factor	
	A	B	C	D	E	F	
	Cfh	(Dollars)	(Years)	(Dollars)	(Years)	(Percent)	
1	<i>Medium Pressure</i>						1
2	0-275	\$186.36	44.0	\$87.34	38.0	42.1	2
3	276 - 425	\$481.33	44.0	\$157.37	38.0	42.5	3
4	426-630	\$715.45	44.0	\$157.37	38.0	42.9	4
5	631 - 800	\$1,247.21	44.0	\$314.74	38.0	42.8	5
6	801 - 1,100	\$1,511.77	44.0	\$314.74	38.0	43.0	6
7	1,101 - 1,500	\$1,946.32	44.0	\$1,090.20	38.0	41.8	7
8	1,501 - 2,000	\$2,554.71	44.0	\$1,578.71	38.0	41.7	8
9	2,001 - 3,000	\$2,576.76	44.0	\$1,578.71	38.0	41.7	9
10	3,001 - 5,000	\$3,328.85	44.0	\$1,578.71	38.0	42.1	10
11	5,001 - 7,000	\$3,947.43	44.0	\$1,578.71	38.0	42.3	11
12							12
13	<i>High Pressure</i>						13
14	0 - 940	\$1,358.47	44.0	\$1,090.20	38.0	41.3	14
15	941 - 1,050	\$2,881.11	44.0	\$1,578.71	38.0	41.9	15
16	1,051 - 2,000	\$1,659.54	44.0	\$1,090.20	38.0	41.6	16
17	2,001 - 2,700	\$2,934.29	44.0	\$1,578.71	38.0	41.9	17
18	2,701 - 4,000	\$2,956.34	44.0	\$1,578.71	38.0	41.9	18
19	4,001 - 6,600	\$4,293.52	44.0	\$1,820.97	38.0	42.2	19
20	6,601 - 9,200	\$5,016.66	44.0	\$1,820.97	38.0	42.4	20
21	9,201 - 14,500	\$5,407.30	44.0	\$2,177.75	38.0	42.3	21
22	14,501 - 21,400	\$6,886.00	44.0	\$2,177.75	38.0	42.6	22
23	21,401 - 24,000	\$13,284.64	44.0	\$4,233.13	38.0	42.6	23
24	24,001 - 46,000	\$20,507.37	44.0	\$7,471.87	38.0	42.4	24
25	46,001 - 79,000	\$26,930.09	44.0	\$7,792.95	38.0	42.7	25
26	79,001 - 377,000	\$55,382.90	44.0	\$9,215.81	38.0	43.1	26
27	377,001 - 600,000					43.1	27
28	600,001 - 4,250,000					43.1	28
29	> 4,250,000					43.1	29

Notes:

1. Col. (F) = [Col. (B) x Col. (C)] + [Col. (D) x Col. (E)] ÷ [Col. (B) + Col. (D)]
2. Rows (27) - (29): Weighted Average Book Life meter & installation weights from Row (26).

**TABLE LRMCC-nc0.4
SAN DIEGO GAS AND ELECTRIC - GAS DEPARTMENT**

**NCO ANNUAL SERVICE, REGULATOR & METER (SRM) REPLACEMENT COST
2016 TCAP Phase II**

	Max Meter Flow Range	Meter & Regulator Replacement				Replacement Pipe & Installation					Number of Existing Customers	Total SRM Annual Cost Replacement	
		Meter Type	M&R Cost	PVRR Factor	Replacement Investment	Replacement Rate	Service Type	Service Cost	PVRR Factor	Replacement Investment			Replacement Rate
	A	B	C	D	E	F	G	H	I	J	K	L	M
	Cfh		(Dollars)	(Percent)	(Dollars)	(Percent)		(Dollars)	(Percent)	(Dollars)	(Percent)		(Dollars)
1	<i>Medium Pressure</i>												1
2	0-275	250	\$274	131.50%	\$360	2.4%	Poly-0.5"	\$13,550	131.00%	\$17,751	2.1%	755,621	\$285,872,546
3	276 - 425	425	\$639	131.53%	\$840	2.4%	Poly-0.5"	\$13,550	131.00%	\$17,751	2.1%	63,994	\$24,925,042
4	426-630	630	\$873	131.56%	\$1,148	2.3%	Poly-1"	\$18,786	131.00%	\$24,610	2.1%	20,081	\$10,830,604
5	631 - 800	8C	\$1,562	131.55%	\$2,055	2.3%	Poly-1"	\$18,786	131.00%	\$24,610	2.1%	12,231	\$6,841,107
6	801 - 1,100	11C	\$1,827	131.56%	\$2,403	2.3%	Poly-1"	\$18,786	131.00%	\$24,610	2.1%	10,317	\$5,849,940
7	1,101 - 1,500	15C	\$3,037	131.48%	\$3,992	2.4%	Poly-1"	\$18,786	131.00%	\$24,610	2.1%	4,013	\$2,429,063
8	1,501 - 2,000	2M	\$4,133	131.47%	\$5,434	2.4%	Poly-1"	\$18,786	131.00%	\$24,610	2.1%	2,115	\$1,351,892
9	2,001 - 3,000	3M	\$4,155	131.47%	\$5,463	2.4%	Poly-1"	\$18,786	131.00%	\$24,610	2.1%	1,496	\$956,999
10	3,001 - 5,000	5M	\$4,908	131.50%	\$6,453	2.4%	Poly-2"	\$38,929	131.00%	\$50,998	2.1%	2,076	\$2,514,699
11	5,001 - 7,000	7M	\$5,526	131.51%	\$7,268	2.4%	Poly-2"	\$38,929	131.00%	\$50,998	2.1%	880	\$1,082,270
12													12
13	<i>High Pressure</i>												13
14	0 - 940	425	\$2,449	131.44%	\$3,219	2.4%	Poly-1"	\$18,786	131.00%	\$24,610	2.1%	-	\$0
15	941 - 1,050	8C	\$4,460	131.48%	\$5,864	2.4%	Poly-1"	\$18,786	131.00%	\$24,610	2.1%	-	\$0
16	1,051 - 2,000	2M	\$2,750	131.46%	\$3,615	2.4%	Poly-1"	\$18,786	131.00%	\$24,610	2.1%	-	\$0
17	2,001 - 2,700	2M	\$4,513	131.49%	\$5,934	2.4%	Poly-1"	\$18,786	131.00%	\$24,610	2.1%	-	\$0
18	2,701 - 4,000	3M	\$4,535	131.49%	\$5,963	2.4%	Poly-2"	\$38,929	131.00%	\$50,998	2.1%	-	\$0
19	4,001 - 6,600	5M	\$6,114	131.51%	\$8,041	2.4%	Poly-2"	\$38,929	131.00%	\$50,998	2.1%	-	\$0
20	6,601 - 9,200	7M	\$6,838	131.52%	\$8,993	2.4%	Poly-2"	\$38,929	131.00%	\$50,998	2.1%	76	\$96,439
21	9,201 - 14,500	11M	\$7,585	131.51%	\$9,975	2.4%	Poly-3"	\$58,653	131.00%	\$76,838	2.1%	327	\$598,623
22	14,501 - 21,400	16M	\$9,064	131.53%	\$11,922	2.3%	Poly-3"	\$58,653	131.00%	\$76,838	2.1%	321	\$601,419
23	21,401 - 24,000	Turbine	\$17,518	131.53%	\$23,041	2.4%	Poly-4"	\$58,567	131.00%	\$76,725	2.1%	136	\$289,027
24	24,001 - 46,000	Turbine	\$27,979	131.52%	\$36,799	2.4%	Poly-4"	\$58,567	131.00%	\$76,725	2.1%	73	\$178,293
25	46,001 - 79,000	Turbine	\$34,723	131.54%	\$45,674	2.3%	Steel-4"	\$49,358	131.00%	\$64,661	2.1%	42	\$100,299
26	79,001 - 377,000	Turbine	\$64,599	131.57%	\$84,996	2.3%	Steel-6"	\$63,038	131.00%	\$82,582	2.1%	52	\$189,035
27	377,001 - 600,000	Turbine	\$0	131.57%	\$0	2.3%	Steel-8"	\$88,118	131.00%	\$115,439	2.1%	7	\$16,841
28	600,001 - 4,250,000	Turbine	\$0	131.57%	\$0	2.3%	Steel-16"	--	131.00%		2.1%	21	\$0
29	> 4,250,000	Turbine	\$0	131.57%	\$0	2.3%	Steel-24"		131.00%	\$0	2.1%	2	\$0

Notes:

- Col. (E) = Col. (C) x Col. (D).
- Col. (J) = Col. (H) x Col. (I).
- For Rows (2) - (3): Col. (M) = [Col. (E) x Col. (L) x Col. (F) x [1 - Note 6]] + [Col. (J) x Col. (L) x Col. (K)]
- For Rows (4) - (28): Col. (M) = [Col. (E) x Col. (L) x Col. (F) x [1 - Note 7]] + [Col. (J) x Col. (L) x Col. (K)]
- Col. (L) Number of Existing Customers = 2013 Recorded Customers (Total at Inception of TCAP Period) x Proportion of Total @ Meter Flow.
- 0.38% = Percent of small MSA's (Flow = 0 - 375 Cfh) replaced with refurbished meter
- 2.87% = Percent of other MSA's (Flow > 375 Cfh) replaced with refurbished meter

Data Sources: tabs: MSA Cost, MSA PVRR, MSA NCOp1, MSA Life, Factors.

**TABLE LRMCC-nco.5
SAN DIEGO GAS AND ELECTRIC - GAS DEPARTMENT**

**FORECAST NEW HOOKUPS FOR 2017, 2018, 2019
2016 TCAP Phase II**

	Customer Class	Year-End		2017 Hookups	Year-End		2018 Hookups	Year-End		2019 Hookups	Average Annual New Hookups
		2016	2017		2017	2018		2018	2019		
	A	B	C	D	E	F	G	E	F	G	H
1	Residential	858,365	871,364	12,999	871,364	884,559	13,195	884,559	897,948	13,389	13,194
2	NGV	25	26	1	26	26	-	26	27	1	1
3	Core C&I - GN3	30,048	30,150	102	30,150	30,263	113	30,263	30,382	119	111
4	Noncore C&I - GTNC	51	51	-	51	51	-	51	52	1	0
5	EG - Cogen	70	73	3	73	75	2	75	78	3	3
6	Power Plants	-	-	-	-	-	-	-	-	-	-
7											
8	Total Customers	888,559	901,664	13,105	901,664	914,974	13,310	914,974	928,487	13,513	13,309

Notes:

1. Col. (D) = Col. (C) - Col (B).
2. Col. (G) = Col. (F) - Col (E).
3. Col. (J) = Col. (I) - Col (H).
4. Col. (K) = Average Col. (D) & Col (G) & Col (J).

**TABLE LRMCC-nco.6
SAN DIEGO GAS AND ELECTRIC - GAS DEPARTMENT**

**FORECAST NEW HOOKUPS BY METER TYPE BY CUSTOMER CLASS
2016 TCAP Phase II**

	Max Meter Flow Range	Meter Type	Res	NGV	GN-3	Total Core	GTNC			EG			Total Noncore	System Total	
							MPD	HPD	Total	< 3 MM	> 3 MM	Total			
	A	B	C	D	E	F	G	H	I	J	K	L	N	O	
	Cfh														
1	<i>Medium Pressure</i>														1
2	0-275	250	11,619	0	53	11,672	-	-	-	-	-	-	-	11,672	
3	276 - 425	425	956	-	10	966	-	-	-	-	-	-	-	966	
4	426-630	630	278	-	8	286	-	-	-	-	-	-	-	286	
5	631 - 800	8C	155	-	8	163	-	-	-	-	-	-	-	163	
6	801 - 1,100	11C	118	0	9	127	-	-	-	-	-	-	-	127	
7	1,101 - 1,500	15C	39	-	5	44	-	-	-	-	-	-	-	44	
8	1,501 - 2,000	2M	14	-	4	18	-	-	-	-	-	-	-	18	
9	2,001 - 3,000	3M	4	0	4	8	-	-	-	0	-	0	0	8	
10	3,001 - 5,000	5M	6	0	6	11	-	-	-	0	-	0	0	12	
11	5,001 - 7,000	7M	3	0	2	5	0	-	0	0	-	0	0	5	
12															
13	<i>High Pressure</i>														
14	0 - 940	425	-	-	-	-	-	-	-	-	-	-	-	-	
15	941 - 1,050	8C	-	-	-	-	-	-	-	-	-	-	-	-	
16	1,051 - 2,000	2M	-	-	-	-	-	-	-	-	-	-	-	-	
17	2,001 - 2,700	2M	-	-	-	-	-	-	-	-	-	-	-	-	
18	2,701 - 4,000	3M	-	-	-	-	-	-	-	-	-	-	-	-	
19	4,001 - 6,600	5M	-	-	-	-	-	-	-	-	-	-	-	-	
20	6,601 - 9,200	7M	0	-	0	0	-	-	-	0	-	0	0	0	
21	9,201 - 14,500	11M	1	0	1	2	0	-	0	0	-	0	0	2	
22	14,501 - 21,400	16M	1	0	1	2	0	-	0	0	-	0	0	2	
23	21,401 - 24,000	Turbine	1	-	0	1	0	-	0	-	-	0	0	1	
24	24,001 - 46,000	Turbine	0	0	0	0	0	-	0	-	-	0	0	1	
25	46,001 - 79,000	Turbine	0	0	0	0	0	-	0	-	-	0	0	0	
26	79,001 - 377,000	Turbine	-	0	0	0	0	-	0	-	-	0	1	1	
27	377,001 - 600,000	Turbine	-	0	-	0	-	-	-	0	-	0	0	0	
28	600,001 - 4,250,000	Turbine	-	-	0	0	-	-	-	0	-	0	0	0	
29	> 4,250,000	Turbine	-	-	-	-	-	-	-	0	-	0	0	0	
30															
31	Total Customers		13,194	1	111	13,306	0	-	0	3	-	3	3	13,309	

Note:

1. New Hookups Forecast on Basis on Average Annual Net Customer Gain for 2017 - 2019 TCAP Period.

verify 13,194 1 111 13,306 0 - 0 3 - 3 3 13,309
Data Sources: Tabs: MSA Cost, MSAAlloc v2

TABLE LRMCC-nco.7
SAN DIEGO GAS AND ELECTRIC - GAS DEPARTMENT

NCO ANNUALIZED SRM NEW HOOKUP & NO REPLACEMENT INVESTMENT BY CUSTOMER CLASS
2016 TCAP Phase II

	Max Meter Flow Range	Meter Type	Per Customer SRM Invstmt	Res	NGV	GN-3	Total Core	GTNC			EG			Total Noncore	System Total	
								MPD	HPD	Total	< 3 MM	> 3 MM	Total			
	A	B	C	D	E	F	G	H	I	J	K	L	M	O	P	
	Cfh															
	(Dollars)															
1	<i>Medium Pressure</i>															1
2	0-275	250	\$42	\$31,706,096	\$45	\$614,882	\$32,321,023	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$32,321,023	2
3	276 - 425	425	\$49	\$3,002,999	\$0	\$136,600	\$3,139,599	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,139,599	3
	426-630	630	\$51	\$910,314	\$0	\$106,728	\$1,017,042	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,017,042	
4	631 - 800	8C	\$60	\$603,388	\$0	\$124,378	\$727,765	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$727,765	4
5	801 - 1,100	11C	\$61	\$458,968	\$129	\$151,219	\$610,317	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$610,317	5
6	1,101 - 1,500	15C	\$73	\$183,047	\$0	\$98,384	\$281,431	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$281,431	6
7	1,501 - 2,000	2M	\$71	\$64,645	\$0	\$76,746	\$141,390	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$141,390	7
8	2,001 - 3,000	3M	\$48	\$12,944	\$51	\$52,038	\$65,033	\$0	\$0	\$0	\$88	\$0	\$88	\$88	\$65,121	8
9	3,001 - 5,000	5M	\$56	\$20,761	\$301	\$84,613	\$105,674	\$0	\$0	\$301	\$309	\$0	\$309	\$309	\$105,984	9
10	5,001 - 7,000	7M	\$65	\$10,693	\$70	\$40,832	\$51,595	\$77	\$0	\$77	\$478	\$0	\$478	\$554	\$52,149	10
11																11
12	<i>High Pressure</i>															12
13	0 - 940	425	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	13
14	941 - 1,050	8C	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	14
15	1,051 - 2,000	2M	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	15
16	2,001 - 2,700	2M	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	16
17	2,701 - 4,000	3M	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	17
18	4,001 - 6,600	5M	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	18
19	6,601 - 9,200	7M	\$84	\$1,103	\$0	\$4,540	\$5,644	\$0	\$0	\$0	\$154	\$0	\$154	\$154	\$5,798	19
20	9,201 - 14,500	11M	\$164	\$8,798	\$1,223	\$37,893	\$47,913	\$192	\$0	\$192	\$599	\$0	\$599	\$791	\$48,705	20
21	14,501 - 21,400	16M	\$199	\$15,707	\$212	\$40,541	\$56,460	\$1,633	\$0	\$1,633	\$727	\$0	\$727	\$2,360	\$58,821	21
22	21,401 - 24,000	Turbine	\$269	\$9,490	\$0	\$23,450	\$32,940	\$630	\$0	\$630	\$0	\$0	\$0	\$630	\$33,570	22
23	24,001 - 46,000	Turbine	\$438	\$3,961	\$466	\$20,055	\$24,482	\$3,077	\$429	\$3,506	\$1,597	\$0	\$1,597	\$5,103	\$29,585	23
24	46,001 - 79,000	Turbine	\$790	\$2,376	\$5,046	\$16,013	\$23,435	\$5,554	\$775	\$6,329	\$2,163	\$0	\$2,163	\$8,492	\$31,926	24
25	79,001 - 377,000	Turbine	\$1,766	\$0	\$15,039	\$18,676	\$33,715	\$26,900	\$6,929	\$33,829	\$16,115	\$12,472	\$28,587	\$62,416	\$96,132	25
26	377,001 - 600,000	Turbine	\$1,049	\$0	\$3,351	\$0	\$3,351	\$0	\$0	\$0	\$1,915	\$2,964	\$4,879	\$4,879	\$8,229	26
27	600,001 - 4,250,000	Turbine														27
28	> 4,250,000	Turbine														28
29	Total			\$37,015,288	\$25,932	\$1,647,589	\$38,688,809	\$38,062	\$8,134	\$46,196	\$24,145	\$15,436	\$39,581	\$85,777	\$38,774,586	29
30	Forecast Customers			850,344	38	30,265	880,648	42	10	52	51	20	71	123	880,770	30
31																31
32	Average SRM Cost			\$44	\$677	\$54	\$44	\$902	\$829	\$888	\$472	\$780	\$558	\$698	\$44	32

- Notes:
 1. Row (29) = Total of NCO Annualized SRM New Hookup & Replacement Investment x Number of MSA's per Customer Segment.
 2. Row (32) = Row (29) ÷ Row (30).

Data Sources: tabs: MSA Cost, MSA Fcst, MSA NCOp1

TABLE LRMCC-nco.7
SAN DIEGO GAS AND ELECTRIC - GAS DEPARTMENT

NCO ANNUALIZED SRM NEW HOOKUP & REPLACEMENT INVESTMENT BY CUSTOMER CLASS
2016 TCAP Phase II

	Max Meter Flow Range	Meter Type	Per Customer SRM Invstmnt	Res	NGV	GN-3	Total Core	GTNC			EG			Total Noncore	System Total	
								MPD	HPD	Total	< 3 MM	> 3 MM	Total			
	A	B	C	D	E	F	G	H	I	J	K	L	M	O	P	
	Cfh							(Dollars)								
1	<i>Medium Pressure</i>															1
2	0-275	250	\$417	\$312,139,742	\$444	\$6,053,383	\$318,193,569	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$318,193,569	
3	276 - 425	425	\$436	\$26,843,584	\$0	\$1,221,057	\$28,064,641	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$28,064,641	
	426-630	630	\$592	\$10,604,361	\$0	\$1,243,285	\$11,847,646	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$11,847,646	
4	631 - 800	8C	\$627	\$6,275,325	\$0	\$1,293,548	\$7,568,872	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$7,568,872	
5	801 - 1,100	11C	\$641	\$4,858,220	\$1,365	\$1,600,671	\$6,460,256	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$6,460,256	
6	1,101 - 1,500	15C	\$702	\$1,762,943	\$0	\$947,551	\$2,710,494	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,710,494	
7	1,501 - 2,000	2M	\$754	\$682,739	\$0	\$810,543	\$1,493,282	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,493,282	
8	2,001 - 3,000	3M	\$756	\$203,162	\$805	\$816,774	\$1,020,741	\$0	\$0	\$0	\$1,380	\$0	\$1,380	\$1,380	\$1,022,120	
9	3,001 - 5,000	5M	\$1,397	\$513,358	\$7,437	\$2,092,237	\$2,613,032	\$0	\$0	\$0	\$7,651	\$0	\$7,651	\$7,651	\$2,620,683	
10	5,001 - 7,000	7M	\$1,423	\$232,613	\$1,515	\$888,230	\$1,122,359	\$1,668	\$0	\$1,668	\$10,392	\$0	\$10,392	\$12,060	\$1,134,419	
11	<i>High Pressure</i>															
12	0 - 940	425	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
13	941 - 1,050	8C	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
14	1,051 - 2,000	2M	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
15	2,001 - 2,700	2M	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
16	2,701 - 4,000	3M	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
17	4,001 - 6,600	5M	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
18	6,601 - 9,200	7M	\$1,489	\$19,454	\$0	\$80,065	\$99,519	\$0	\$0	\$0	\$2,718	\$0	\$2,718	\$2,718	\$102,237	
19	9,201 - 14,500	11M	\$2,181	\$116,933	\$16,253	\$503,625	\$636,811	\$2,556	\$0	\$2,556	\$7,961	\$0	\$7,961	\$10,517	\$647,328	
20	14,501 - 21,400	16M	\$2,235	\$176,305	\$2,379	\$455,062	\$633,747	\$18,334	\$0	\$18,334	\$8,159	\$0	\$8,159	\$26,493	\$660,240	
21	21,401 - 24,000	Turbine	\$2,582	\$91,197	\$0	\$225,347	\$316,544	\$6,053	\$0	\$6,053	\$0	\$0	\$0	\$6,053	\$322,597	
22	24,001 - 46,000	Turbine	\$3,074	\$27,829	\$3,273	\$140,918	\$172,020	\$21,617	\$3,016	\$24,634	\$11,224	\$0	\$11,224	\$35,858	\$207,877	
23	46,001 - 79,000	Turbine	\$3,271	\$9,839	\$20,897	\$66,321	\$97,057	\$23,002	\$3,210	\$26,211	\$8,957	\$0	\$8,957	\$35,168	\$132,225	
24	79,001 - 377,000	Turbine	\$5,238	\$0	\$44,612	\$55,402	\$100,014	\$79,796	\$20,556	\$100,351	\$47,805	\$36,997	\$84,801	\$185,152	\$285,167	
25	377,001 - 600,000	Turbine	\$3,196	\$0	\$10,208	\$0	\$10,208	\$0	\$0	\$0	\$5,834	\$9,029	\$14,863	\$14,863	\$25,070	
26	600,001 - 4,250,000	Turbine														
27	> 4,250,000	Turbine														
28																
29	Total			\$364,557,603	\$109,189	\$18,494,019	\$383,160,811	\$153,025	\$26,782	\$179,806	\$112,080	\$46,026	\$158,106	\$337,912	\$383,498,723	
30	Forecast Customers			850,344	38	30,265	880,648	42	10	52	51	20	71	123	880,770	
31																
32	Average SRM Cost			\$429	\$2,849	\$611	\$435	\$3,627	\$2,730	\$3,458	\$2,193	\$2,327	\$2,230	\$2,750	\$435	

- Notes:
1. Row (29) = Total of NCO Annualized SRM New Hookup & Replacement Investment x Number of MSA's per Customer Segment.
2. Row (32) = Row (29) ÷ Row (30).

Data Sources: tabs: MSA Cost, MSA Fcst, MSA NCOp1, MSA NCOp2

SDG&E Customer Costs
 Testimony Tables

TABLE 1 CUSTOMER-RELATED LRMC - CAPITAL COSTS	
Customer Class	Rental-Method Customer Cost (2017 \$/customer)
Residential	\$181
Core Commercial/Industrial	\$311
Natural Gas Vehicle	\$3,496
Noncore Commercial/Industrial	\$4,690
Small Electric Generation	\$2,517
Large Electric Generation	\$3,394

TABLE 2 CUSTOMER-RELATED LONG RUN MARGINAL COSTS (2017 \$/customer)						
Customer Class	Annualized Capital Cost	Expense-Related O&M				Total \$/Customer
		Direct	M&S	A&G	General Plant	
Residential	\$181	\$42	\$0.2	\$12	\$6	\$240
Core Commercial/Industrial	\$311	\$106	\$0.4	\$30	\$14	\$462
Natural Gas Vehicle	\$3,496	\$671	\$3	\$191	\$89	\$4,450
Noncore Commercial/Industrial	\$4,690	\$3,856	\$16	\$1,096	\$510	\$10,168
Small Electric Generation	\$2,517	\$3,115	\$13	\$885	\$412	\$6,941
Large Electric Generation	\$3,394	\$3,583	\$15	\$1,019	\$474	\$8,485

TABLE 5 REAL ECONOMIC CARRYING CHARGE FACTORS	
Cost Type	RECC %
Meters and Regulators	8.69%
Meter/Regulator Installation	8.98%
Service Line Pipe	8.50%
Weighted-Average Distribution	8.32%
Materials and Supplies	12.95%
Weighted-Average General/Common Plant	11.50%

TABLE 6 CUSTOMER-RELATED DIRECT MARGINAL O&M EXPENSES (2017 \$)				
Customer Class	870-894 \$000	901-910 \$000	Customers per Class	Direct O&M \$/Customer
Residential	\$33,982	\$1,083	839,369	\$42
Core Commercial/Industrial	\$3,584	\$55	34,335	\$106
Natural Gas Vehicle	\$36	\$0.1	53	\$671
Noncore Commercial/Industrial	\$69	\$124	50	\$3,856
Small Electric Generation	\$36	\$139	56	\$3,115
Large Electric Generation	\$18	\$40	16	\$3,583
Distribution Function	870-894 \$000	901-910 \$000	Peak-day Load (mcf/d)	Direct O&M \$/mcf/d
Medium-Pressure	\$9,695	\$0	370,694	\$26.15
High-Pressure	\$422	\$0	397,907	\$1.06

TABLE 9 M&S LOADING FACTORS (2017 \$)			
Customer Class	Allocated M&S	Customers per Class	M&S Loader \$/Customer
Residential	\$147,877	839,369	\$0.18
Core Commercial/Industrial	\$15,346	34,335	\$0.45
Natural Gas Vehicle	\$150	53	\$2.83
Noncore Commercial/Industrial	\$813	50	\$16.26
Small Electric Generation	\$736	56	\$13.13
Large Electric Generation	\$242	16	\$15.11
Distribution Function	Allocated M&S	Peak-day Load (mcf/d)	M&S Loader \$/mcf/d
Medium-Pressure	\$201,388	370,694	\$0.54
High-Pressure	\$24,504	397,907	\$0.06

SAN DIEGO GAS & ELECTRIC COMPANY

2016 TCAP Phase II

Section 2

Long Run Marginal Distribution Cost Model

**Workpapers to the Prepared Written Testimony of
Marjorie Schmidt-Pines**

SDGE gas 2016 TCAP Phase II
SDG&E Cost Allocation LRMC Distribution Cost Results

MARGINAL COST COMPONENTS \$000's		Source
Medium Pressure Distribution Costs \$/mmcf	\$243.90	Dist MC
High Pressure Distribution Costs \$/mmcf	\$24.46	Dist MC

TABLE LRMD-1
SAN DIEGO GAS AND ELECTRIC - GAS DEPARTMENT
LRMC O&M Loaders
SDGE gas 2016 TCAP Phase II

	Input	Source (1)
O&M w/o A&G HPD	\$485	LF-O&M Tab
O&M w/o A&G MPD	\$11,134	LF-O&M Tab
Marginal Percent of O&M HPD	81%	Dist O&M MC
Marginal Percent of O&M MPD	81%	Dist O&M MC
Marginal A&G/Payroll Taxes Loading Factor as a % of O&M expenses	28.43%	LF-A&G Tab
General Plant Loading Factor as a % of O&M expenses	13.22%	LF-GPL Tab
Annualized M&S Customer Related Costs \$/yr	\$153,171	LF-M&S Tab
Annualized M&S HDP Distribution Load Related Costs \$/yr	\$22,720	LF-M&S Tab
Annualized M&S MDP Distribution Load Related Costs \$/yr	\$186,733	LF-M&S Tab
O&M WEF for Escalation	1.078	O&M WEF Tab

Notes:

(1) from "SDGE OM Loaders" file:

**TABLE LRMD-4
SAN DIEGO GAS AND ELECTRIC - GAS DEPARTMENT**

**DISTRIBUTION REGRESSION INVESTMENTS
SDGE gas 2016 TCAP Phase II**

	Year	Demand-Rel Portion	HPD Inv as % total Dist Inv	MPD Portion	HPD Portion	Handy- Whitman Index	MPD Adjusted to 2017\$'s	HPD Adjusted to 2017\$'s	MPD Cumulative	HPD Cumulative
	A	B	C	D=B*C	E=B-D	F	G	H	I	J
1	2004	\$6,085	10.85%	\$5,425	\$660	0.6735	\$8,618	\$1,049	\$8,618	\$1,049
2	2005	\$4,877	10.85%	\$4,348	\$529	0.7438	\$6,254	\$761	\$14,872	\$1,809
3	2006	\$6,638	10.85%	\$5,918	\$720	0.7799	\$8,118	\$988	\$22,990	\$2,797
4	2007	\$7,772	10.85%	\$6,929	\$843	0.7973	\$9,297	\$1,131	\$32,287	\$3,928
5	2008	\$4,595	10.85%	\$4,097	\$498	0.8593	\$5,100	\$621	\$37,388	\$4,549
6	2009	\$6,659	10.85%	\$5,937	\$722	0.8772	\$7,241	\$881	\$44,628	\$5,430
7	2010	\$5,569	10.85%	\$4,965	\$604	0.8827	\$6,018	\$732	\$50,646	\$6,162
8	2011	\$8,370	10.85%	\$7,462	\$908	0.9343	\$8,544	\$1,040	\$59,190	\$7,202
9	2012	\$7,269	10.85%	\$6,480	\$789	0.9874	\$7,022	\$854	\$66,212	\$8,056
10	2013	\$5,571	10.85%	\$4,967	\$604	0.9889	\$5,373	\$654	\$71,586	\$8,710
11	2014	\$8,034	10.85%	\$7,163	\$871	1.0000	\$7,663	\$932	\$79,249	\$9,642
12	2015	\$9,322	10.85%	\$8,311	\$1,011	1.0206	\$8,712	\$1,060	\$87,961	\$10,702
13	2016	\$9,913	10.85%	\$8,838	\$1,075	1.0431	\$9,064	\$1,103	\$97,025	\$11,805
14	2017	\$10,927	10.85%	\$9,742	\$1,185	1.0699	\$9,742	\$1,185	\$106,767	\$12,991
15	2018	\$11,739	10.85%	\$10,466	\$1,273	1.0967	\$10,209	\$1,242	\$116,976	\$14,233
16	2019	\$12,255	10.85%	\$10,926	\$1,329	1.1269	\$10,373	\$1,262	\$127,349	\$15,495

Notes:

1. Cols. (B) - (E) expressed in nominal \$'s. Col. B recorded through 2013, 2014 - 2019 forecast
2. Cols. (G) - (J) expressed in Year 2014 \$'s.
3. Cols. (B) and (C) 2014 costs
4. Col. (B), Rows (11) - (15) from Workpapers to Testimony Table "LRMDC-2" (tab Dst Fcst)
5. Col F = Historical HPD Plant Investment Allocation Factor = HPD Mains Mileage Weighted by Net Plant Investment.

**TABLE LRMD-3
SAN DIEGO GAS AND ELECTRIC - GAS DEPARTMENT**

**DISTRIBUTION PLANT WEIGHTED AVERAGE ECONOMIC INDEX
SDGE gas 2016 TCAP Phase II**

		FERC Account							
		375 Structures and Improvements JUGPDS&I@PCF	376 - Mains CI JUGPDMCI@PCF	376 - Mains S JUGPDMS@PCF	376 - Main P JUGPDMP@PCF	378 Measuring and Regulating Station Equip JUGPDSTM&R@PCF	Weighted Average		
	Year	A	B	C	D	E	F	G	
1	2004	0.7384	0.4492	0.5833	0.7215	0.6146	0.6735	1	
2	2005	0.7746	0.4884	0.7026	0.7669	0.6934	0.7438	2	
3	2006	0.8053	0.5318	0.7319	0.8067	0.7222	0.7799	3	
4	2007	0.8516	0.5782	0.7081	0.8455	0.7262	0.7973	4	
5	2008	0.8958	0.6542	0.8097	0.8866	0.8081	0.8593	5	
6	2009	0.8878	0.7280	0.7934	0.9228	0.8008	0.8772	6	
7	2010	0.9239	0.7550	0.8300	0.9121	0.8198	0.8827	7	
8	2011	0.9499	0.7605	0.9210	0.9413	0.9279	0.9343	8	
9	2012	0.9642	0.8580	1.0031	0.9796	0.9824	0.9874	9	
10	2013	0.9790	0.9163	0.9915	0.9884	0.9691	0.9889	10	
11	2014	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	11	
12	2015	1.0158	1.0138	1.0205	1.0209	1.0143	1.0206	12	
13	2016	1.0390	1.0157	1.0432	1.0434	1.0375	1.0431	13	
14	2017	1.0629	1.0364	1.0724	1.0688	1.0646	1.0699	14	
15	2018	1.0880	1.0755	1.0962	1.0974	1.0878	1.0967	15	
16	2019	1.1145	1.1214	1.1238	1.1290	1.1146	1.1269	16	
13	2020	1.1413	1.1563	1.1528	1.1601	1.1419	1.1572	17	
14	2013 Plant (M\$)	\$43	\$0	\$195,185	\$386,610	\$17,004	\$598,842	19	
15	2013 Plant (%)	0.01%	0%	33%	65%	3%	100%	20	

Notes:

1. Economic Factors for distribution plant from Handy-Whitman Gas Utility Construction Cost Indexes
2. Plant Investment totals from SDG&E gas FERC Form 2 for year ending December 31, 2013 pp. 208 - 209.
2013 Plant Investment from FERC Form 2 for Year Ended December 31, 2013, Page 209. Proportion Mains between Steel & Plastic

**TABLE LRMD-5
SAN DIEGO GAS AND ELECTRIC - GAS DEPARTMENT**

**HP DISTRIBUTION ANNUAL CUSTOMER GAIN
SDGE gas 2016 TCAP Phase II**

Year	Core Customers on HPD	Noncore Customers on HPD	System Total Customers on HPD	% of CORE customers on MPD	Core Customers on MPD	% of NONCORE customers on MPD	NONCore Customers on MPD	System Total Customers on MPD
A	B	C	D=B+C	E	F=B*E	G	H=C*G	I=F+H
1	2003	794,746	123	99.998%	794,733	78.983%	97	794,830
2	2004	805,645	120	99.998%	805,632	78.983%	95	805,727
3	2005	817,987	120	99.998%	817,973	78.983%	95	818,068
4	2006	827,955	117	99.998%	827,941	78.983%	92	828,034
5	2007	834,901	116	99.998%	834,887	78.983%	92	834,979
6	2008	838,732	118	99.998%	838,718	78.983%	93	838,811
7	2009	842,323	117	99.998%	842,309	78.983%	92	842,402
8	2010	847,181	120	99.998%	847,167	78.983%	95	847,262
9	2011	852,016	115	99.998%	852,002	78.983%	91	852,093
10	2012	856,693	106	99.998%	856,679	78.983%	84	856,763
11	2013	861,873	91	99.998%	861,859	78.983%	72	861,931
12	2014	865,790	98	99.998%	865,776	78.983%	77	865,853
13	2015	876,074	96	99.998%	876,060	78.983%	76	876,136
14	2016	888,448	96	99.998%	888,434	78.983%	76	888,510
15	2017	901,551	96	99.998%	901,536	78.983%	76	901,612
16	2018	914,860	95	99.998%	914,845	78.983%	75	914,920
17	2019	928,370	95	99.998%	928,355	78.983%	75	928,430
18	2020	941,863	95	99.998%	941,848	78.983%	75	941,923

Notes:

- Updated TCAP Forecast
- Data from SDGE R2 reports. Assume that core is 100% HPD and noncore is GTNC+EG exclude PP's, TLS (on transmission) through 2014
Average No. Customers - 12 months to Date, for Core = Total CORE + Res Aggreg Trans + Com Aggreg Trans
Noncore = Cogen Trans + NonCogen Trans (exclude TLS and Power Plant EG since these are served by transmission).

MP Cust. Factor:	Core	NonCore
# Customers on MPD	914,912	75
Cumulative # on HPD	914,927	95
% of HPD customers on MPD	99.998%	78.983%

**TABLE LRMD-6
SAN DIEGO GAS AND ELECTRIC - GAS DEPARTMENT**

**HPD PEAK-DAY REGRESSION DETERMINANTS
SDGE gas 2016 TCAP Phase II**

**1-35 PEAK-DAY (1-35 YEAR PEAK-DAY OCCURRENCE)
MMcfd**

Year	Res	NGV	GN-3	Core mmcf on HPD	GTNC MPD	GTNC HPD	EG < 3 MMth	EG > 3 MMth	Power Plant Load	Noncore mmcf on HPD	System Total mmcf on HPD	System Total Customers on HPD	Annual Change in Customers on HPD N=M-M	HPD Incremental Demand mmcf O=L/M* N	HPD Cumulative demand mmcf P=O+O
A	B	C	D	E	F	G	H	I	J	K	L	M	N=M-M	O=L/M* N	P=O+O
2004												805,765			
1 2005	271	3	83	357	12	5	7	36	43.9	104	461	818,107	12,341	7	7
2 2006	277	3	86	365	13	7	7	31	49.5	106	471	828,072	9,965	6	13
3 2007	275	3	88	366	10	5	5	40	76.2	137	502	835,017	6,945	4	17
4 2008	275	3	85	363	11	6	4	38	39.5	99	462	838,850	3,833	2	19
5 2009	267	1	84	351	11	5	5	48	0.7	70	421	842,440	3,590	2	21
6 2010	275	1	84	360	8	2	3	20	1.4	35	395	847,301	4,861	2	23
7 2011	269	1	85	355	9	2	3	21	1.5	36	391	852,131	4,830	2	25
8 2012	279	1	88	368	8	2	4	20	2.0	36	405	856,799	4,668	2	27
9 2013	277	1	85	363	7	2	5	19	1.7	34	398	861,964	5,165	2	30
10 2014	276	4	88	368	4	2	5	20		30	398	865,888	3,924	2	32
11 2015	274	4	88	366	5	2	5	20		32	398	876,170	10,283	5	36
12 2016	277	4	88	370	6	2	5	20		32	403	888,544	12,374	6	42
13 2017	280	5	87	372	6	2	5	20		33	404	901,647	13,103	6	48
14 2018	281	5	87	373	6	2	4	20		33	406	914,955	13,308	6	54
15 2019	283	5	85	374	6	2	4	20		33	406	928,465	13,510	6	60
16 2020	283	6	84	373	6	2	4	20		33	405	941,958	13,493	6	65

**TABLE LRMD-8
SAN DIEGO GAS AND ELECTRIC - GAS DEPARTMENT**

**MPD PEAK-DAY REGRESSION DETERMINANTS
SDGE gas 2016 TCAP Phase II**

**1-35 PEAK-DAY (1-35 YEAR PEAK-DAY OCCURRENCE)
MMCFD**

	Year	Res	NGV	GN-3	Core mmcf on MPD	GTNC MPD	GTNC HPD	EG < 3 MMth	EG > 3 MMth	Noncore mmcf on MPD	System Total mmcf on MPD	System Total Customers on MPD	Annual Change in Customers on MPD	MPD Incremental Demand mmcf	MPD Cumulative demand mmcf
	A	B	C	D	E	F	G	H	I	J	K	L	M=L-L	N=K/L* M	P=N+N
1	2003														
2	2004														
3	2005	271	0.74	81	352	6	0	3	0	10	362	818,068	12,341	5	5
4	2006	277	0.72	83	361	6	0	4	0	10	371	828,034	9,966	4	10
5	2007	275	0.74	86	361	5	0	3	0	8	369	834,979	6,945	3	13
6	2008	275	0.74	83	359	5	0	3	0	8	367	838,811	3,833	2	15
7	2009	267	0.17	81	348	5	0	3	0	8	356	842,402	3,590	2	16
8	2010	275	0.18	82	357	6	0	1	2	9	366	847,262	4,860	2	18
9	2011	269	0.35	82	351	7	0	2	2	11	362	852,093	4,831	2	20
10	2012	279	0.38	86	365	6	0	2	2	11	376	856,763	4,670	2	22
11	2013	277	0.36	83	360	6	0	3	2	11	371	861,931	5,168	2	25
12	2014	276	2	87	364	4	0	3	2	10	374	865,853	3,922	2	26
13	2015	274	2	86	362	5	0	3	2	11	373	876,136	10,283	4	31
14	2016	277	2	87	366	6	0	3	2	11	377	888,510	12,374	5	36
15	2017	280	2	86	367	6	0	3	2	11	378	901,612	13,102	5	41
16	2018	281	2	85	368	6	0	3	2	11	379	914,920	13,308	6	47
17	2019	283	2	84	369	6	0	3	2	11	380	928,430	13,510	6	52
18	2020	283	2	82	368	6	0	3	2	11	379	941,923	13,493	5	58

TABLE LRMD-9
SAN DIEGO GAS AND ELECTRIC - GAS DEPARTMENT
Distribution Data for Regression Analysis
Capital Investment and Marginal Demand Measures

	Cumulative Distribution Investment \$000's	Cumulative HPD Investment \$000's	Cumulative MPD Investment \$000's	Cumulative HPD Demand mmcf	Cumulative MPD Demand mmcf
2005	\$16,681	\$1,809	\$14,872	7	5
2006	\$25,787	\$2,797	\$22,990	13	10
2007	\$36,216	\$3,928	\$32,287	17	13
2008	\$41,937	\$4,549	\$37,388	19	15
2009	\$50,058	\$5,430	\$44,628	21	16
2010	\$56,808	\$6,162	\$50,646	23	18
2011	\$66,392	\$7,202	\$59,190	25	20
2012	\$74,268	\$8,056	\$66,212	27	22
2013	\$80,296	\$8,710	\$71,586	30	25
2014	\$88,891	\$9,642	\$79,249	32	26
2015	\$98,663	\$10,702	\$87,961	36	31
2016	\$108,830	\$11,805	\$97,025	42	36
2017	\$119,757	\$12,991	\$106,767	48	41
2018	\$131,209	\$14,233	\$116,976	54	47
2019	\$142,844	\$15,495	\$127,349	60	52
Marginal Investment		\$275.05	\$2,478.15		

TABLE LRMD-9 (Cont)
SAN DIEGO GAS AND ELECTRIC - GAS DEPARTMENT
Distribution Data for Regression Analysis
Capital Investment and Marginal Demand Measures

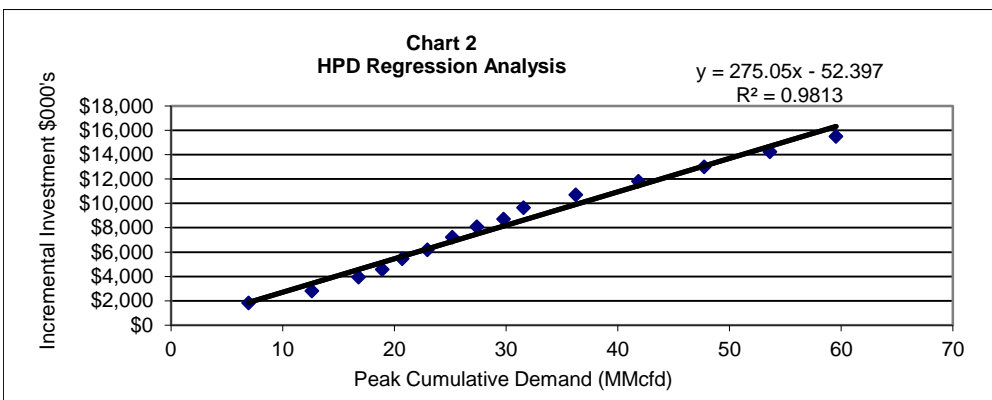
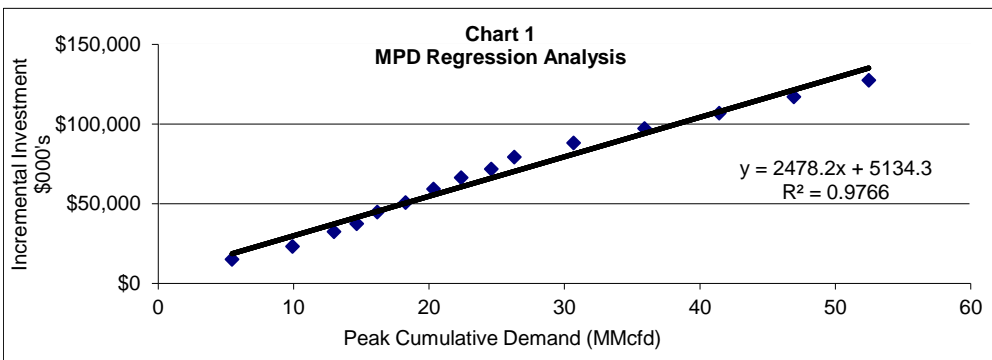


TABLE LRMD-10
SAN DIEGO GAS AND ELECTRIC - GAS DEPARTMENT
FULLY LOADED DISTRIBUTION LRMCs
SDGE gas 2016 TCAP Phase II

	HPD Marginal Cost \$/mcf	MPD Marginal Cost \$/mcf	Source
<u>Marginal Cost of High Pressure Distribution</u>			
Marginal Investment Cost \$/mcf	\$275.05	\$2,478.15	Regression
RECC Factor	8.32%	8.32%	2013RECC for 2017TCAP file "SDGE WEIGHTED AVG RECCS.xls"
Annualized Investment Cost \$/mcf	\$22.90	\$206.31	
<u>O&M Expenses:</u>			
O&M w/o A&G HPD \$000's	\$485	\$11,134	Loader Input
Marginal Percent of O&M HPD	81%	81%	Loader Input
HPD O&M Expense \$000's	\$391	\$8,989	
2013 1-35 Peak-Day Demand mmcf	398	371	HPD PD Det/ MPD PD Det
HPD O&M \$/mcf	\$0.98	\$24.25	
O&M WEF for Escalation	1.08	1.08	Loader Input
O&M Cost \$/mcf (2013 \$'s)	\$1.06	\$26.15	
<u>O&M Loaders:</u>			
A&G Loader:			
A&G Loader as % of direct O&M	28.43%	28.43%	Loader Input
% of A&G to be Functionalized	0%	0%	
A&G Loader \$/mcf (as % of direct O&M)	\$0.30	\$7.43	
General Plant Loader as % of direct O&M			
General Plant Loader \$/mcf	\$0.14	\$3.46	Loader Input
<u>M&S Loaders:</u>			
Annualized M&S HDP Distribution Load Related Costs \$	\$22,720	\$186,733	Loader Input
2013 1-35 Peak-Day Demand mcf	397,907	370,694	HPD PD Det/ MPD PD Det
O&M WEF for Escalation	1.08	1.08	Loader Input
M&S Cost \$/mcf	\$0.06	\$0.54	
Marginal Unit Cost of Distribution	\$24.46	\$243.90	

Notes:

Weighted average distribution RECC Factor from SDG&E Market Analysis & Planning Department. File "SDGE WEIGHTED AVG RECCS.xls"
 Rows (9) - (12) & (24) - (27) from Workpapers
 Tables "LF-1" and "LF-4", "LF-5", and "LF-6".
 Escalation of O&M using weighted average escalation factor at Workpapers
 Table "MISC-3".

TABLE LRMD-11
 SAN DIEGO GAS AND ELECTRIC - GAS DEPARTMENT
 SDGE gas 2016 TCAP Phase II

TABLE 3 MEDIUM-PRESSURE DISTRIBUTION LRM (2017 \$/MCF MPD peak day)	
Marginal Investment Cost	\$2,478.15
x <u>RECC Factor</u>	<u>8.32%</u>
= Annualized Investment Cost	\$206.31
<u>Expense-Related</u>	
+ O&M Cost	\$26.15
+ A&G Cost	\$7.43
+ General / Common Plant Cost	\$3.46
+ <u>M&S Cost</u>	<u>\$0.54</u>
= Total Marginal Cost	\$243.90

TABLE 4 HIGH-PRESSURE DISTRIBUTION LRM (2017 \$/MCF HPD peak day)	
Marginal Investment Cost	\$275.05
x <u>RECC Factor</u>	<u>8.32%</u>
= Annualized Investment Cost	\$22.90
<u>Expense-Related</u>	
+ O&M Cost	\$1.06
+ A&G Cost	\$0.30
+ General / Common Plant Cost	\$0.14
+ <u>M&S Cost</u>	<u>\$0.06</u>
= Total Marginal Cost	\$24.46

SAN DIEGO GAS & ELECTRIC COMPANY

2016 TCAP Phase II

Section 3

O&M Loaders Model for LRMC Studies

**Workpapers to the Prepared Written Testimony of
Marjorie Schmidt-Pines**

**SDGE 2016 TCAP Phase II
LRMC O&M Loader Model**

	Output	Source Tab
O&M w/o A&G HPD	\$485	LF-O&M Tab
O&M w/o A&G MPD	\$11,134	LF-O&M Tab
Marginal Percent of O&M HPD	80.74%	Dist O&M MC
Marginal Percent of O&M MPD	80.74%	Dist O&M MC
Marginal A&G/Payroll Taxes Loading Factor as a % of O&M expenses	28.43%	LF-A&G Tab
General Plant Loading Factor as a % of O&M expenses	13.22%	LF-GPL Tab
Annualized M&S Customer Related Costs \$/yr	\$153,171	LF-M&S Tab
Annualized M&S HDP Distribution Load Related Costs \$/yr	\$22,720	LF-M&S Tab
Annualized M&S MDP Distribution Load Related Costs \$/yr	\$186,733	LF-M&S Tab
O&M WEF for Escalation	1.08	O&M WEF Tab
Marginal Cust-Rel O&M		
870 - Operation Supervision & Engineering	\$6,615	Dist O&M MC
871 - Distribution Load Dispatching	\$0	Dist O&M MC
874 - Mains & Services Expenses	\$2,007	Dist O&M MC
875 - Measuring & Regulating Station Expenses	\$0	Dist O&M MC
878 - Meter & House Regulator Expenses	\$5,714	Dist O&M MC
879 - Customer Installations Expenses	\$9,629	Dist O&M MC
880 - Other Expenses	\$7,857	Dist O&M MC
881 - Rents	\$0	Dist O&M MC
885 - Maint Supervision & Engineering	\$29	Dist O&M MC
887 - Maintenance of Mains	\$706	Dist O&M MC
888 - Maintenance Of Compressor Station Eq	\$0	Dist O&M MC
889 - Maintenance of Meas. & Reg Station Eq	\$0	Dist O&M MC
892 - Maintenance of Services	\$1,313	Dist O&M MC
893 - Maint of Meters & House Regulators	\$1,115	Dist O&M MC
894 - Maintenance of Other Equipment	\$0	Dist O&M MC

TABLE LF-1
SAN DIEGO GAS AND ELECTRIC - GAS DEPARTMENT

FUNCTIONALIZATION OF YEAR 2013 O&M EXPENSES
2016 TCAP Phase II

		\$ thousands								
Functional Factor	Base Margin	MPD	HPD	Customer Costs	Total	Total	MPD	HPD	Customer Costs	
Gas Distribution:										
870- Operation Supervision & Engineering	Other Distr Operating Exp	\$10,129	\$1,370	\$60	\$8,699	\$10,129	100.0%	13.5%	0.6%	85.9%
871- Distr Load Dispatching	Other Distr Operating Exp	\$0	\$0	\$0	\$0	\$0	100.0%	13.5%	0.6%	85.9%
874- Mains & Services Exp	Demand Customer Factor DCF	\$4,526	\$2,414	\$105	\$2,007	\$4,526	100.0%	53.3%	2.3%	44.3%
875- Meas & Reg Station Exp	Demand Only Factor DOF	\$632	\$606	\$26	\$0	\$632	100.0%	95.8%	4.2%	0.0%
877- Meas & Reg Station Exp-City Gas Ck Station	Demand Only Factor DOF	\$0	\$0	\$0	\$0	\$0	100.0%	95.8%	4.2%	0.0%
878- Meter & House Regulator Exp	100% Customer Cost	\$5,714	\$0	\$0	\$5,714	\$5,714	100.0%	0.0%	0.0%	100.0%
879- Customer Installations Exp	100% Customer Cost	\$11,447	\$0	\$0	\$11,447	\$11,447	100.0%	0.0%	0.0%	100.0%
880- Other Expenses	Other Distr Operating Exp	\$15,231	\$2,061	\$90	\$13,081	\$15,231	100.0%	13.5%	0.6%	85.9%
881- Rents	Demand Only Factor DOF	\$49	\$47	\$2	\$0	\$49	100.0%	95.8%	4.2%	0.0%
885- Maint Supervision & Engineering	Other Distr Maintenance Exp	\$71	\$40	\$2	\$29	\$71	100.0%	56.5%	2.5%	41.0%
887- Maint.of Mains	Maint.of Mains Factor	\$5,127	\$4,019	\$175	\$933	\$5,127	100.0%	78.4%	3.4%	18.2%
888- Maint. Of Compressor Station Equipment	Demand Only Factor DOF	\$0	\$0	\$0	\$0	\$0	100.0%	95.8%	4.2%	0.0%
889- Maint.of Meas. & Reg Station Eq	Demand Only Factor DOF	\$634	\$608	\$26	\$0	\$634	100.0%	95.8%	4.2%	0.0%
892- Maint.of Services	100% Customer Cost	\$1,313	\$0	\$0	\$1,313	\$1,313	100.0%	0.0%	0.0%	100.0%
893- Maint.of Meters & Regulators	100% Customer Cost	\$1,115	\$0	\$0	\$1,115	\$1,115	100.0%	0.0%	0.0%	100.0%
894- Maint.of Other Eq	DIR/Other Distr Maintenance Exp	\$250	(\$31)	(\$1)	\$282	\$250	100.0%	-12.6%	-0.5%	113.1%
		\$56,239	\$11,134	\$485	\$44,621	\$56,239				
Calculation of Allocators:										
DCF Demand-Cust Factor										
		Total	Med. Prss	Hi Press	Customer					
Miles in 2013		15,204	8,109	353	6,742					
		100.0%	53.3%	2.3%	44.3%					
Demand Only Factor										
		Total	Med. Prss	Hi Press	Customer					
Miles in 2013 (excludes service lines)		8,462	8,109	353	0					
		100.0%	95.8%	4.2%	0.0%					
Other Distr Operating Exp factor										
		Total	MPD	HPD	Customer					
874- Mains & Services Exp		\$4,526	\$2,414	\$105	\$2,007					
875- Meas & Reg Station Exp		\$632	\$606	\$26	\$0					
877- Meas & Reg Station Exp-City Gas Ck Station		\$0	\$0	\$0	\$0					
878- Meter & House Regulator Exp		\$5,714	\$0	\$0	\$5,714					
879- Customer Installations Exp		\$11,447	\$0	\$0	\$11,447					
Total		\$22,319	\$3,020	\$131	\$19,168					
		100.0%	13.5%	0.6%	85.9%					
Other Distr Maintenance Exp										
		Total	MPD	HPD	Customer					
887- Maint.of Mains		\$5,127	\$4,019	\$175	\$933					
888- Maint. Of Compressor Station Equipment		\$0	\$0	\$0	\$0					
889- Maint.of Meas. & Reg Station Eq		\$634	\$608	\$26	\$0					
892- Maint.of Services		\$1,313	\$0	\$0	\$1,313					
893- Maint.of Meters & Regulators		\$1,115	\$0	\$0	\$1,115					
Total		\$8,189	\$4,627	\$201	\$3,361					
		100.0%	56.5%	2.5%	41.0%					
Maint.of Mains Factor DOF/DIR										
		Total	MPD	HPD	Customer					
DIR portion		18.2%			18.2%	Portion of sub acct 887.3 identified as service line & allocated to Dist Cust.				
Remainder to be allocated by DOF factor		81.8%								
DOF factor		100.0%	95.8%	4.2%	0.0%					
		81.8%	78.4%	3.4%	0.0%					
		100.0%	78.4%	3.4%	18.2%					
DIR/Other Distr Maintenance Exp Factor										
		Total	MPD	HPD	Customer					
Total acct 894 Main Other Equip		\$250								
Public access NGV station O&M		\$305								
% of total		122.2%								
DIR portion		122.2%			122.2%					
Remainder to be allocated by DOF factor		-22.2%								
Other Distr Maintenance Exp Factor		100.0%	56.5%	2.5%	41.0%					
		-22.2%	-12.6%	-0.5%	-9.1%					
		100.0%	-12.6%	-0.5%	113.1%					

TABLE LF-2, Page 1
SAN DIEGO GAS AND ELECTRIC - GAS DEPARTMENT

FUNCTIONALIZATION OF YEAR 2013 O&M EXPENSES
2016 TCAP Phase II

		FERC Form 2 12/31/2013		Distribution Demand					
FERC Account		Total	Medium Pressure	High Pressure	Transmission	Storage	Distribution Customer	Supply	
A	B	C	D	E	F	G	H		
		\$thousands							
1	Purchased Gas Expenses:								1
2	807.4- Purchased Gas Calculations Expenses	\$0						\$0	2
3	807.5- Other Purchased Gas Expenses	\$1						\$1	3
4	+ Purchased Gas Expense Total	\$1						\$1	4
5									5
6	Other Storage:								6
7	840- Oper Supervision & Engineering	\$0				\$0			7
8	841- Oper Labor & Expenses	\$82				\$82			8
9	843-Maintenance	\$0				\$0			9
10	+ Other Storage Total	\$81.7				\$81.7			10
11									11
12	Gas Transmission								12
13	850- Oper Supervision & Eng	\$2,790			\$2,790				13
14	851- Sys Control & Load Dispatching	\$715			\$715				14
15	852- Communication Sys Exp	\$0			\$0				15
16	853- Compr Station Labor & Exp	\$2,320			\$2,320				16
17	855- Other Fuel & Power for Compr Stations	\$277			\$277				17
18	856- Mains Expenses	\$947			\$947				18
19	857- Meas & Reg Station Exp	\$7			\$7				19
20	858- Trans & Compression of Gas by Others	\$0			\$0				20
21	859- Other Expenses	\$476			\$476				21
22	860- Rents	\$3			\$3				22
23	861- Maint Supervision & Eng	\$215			\$215				23
24	862-Maint Structures and Improvements	\$0			\$0				24
24	863- Maint of Mains	\$3,917			\$3,917				24
25	864- Maint of Compr Station Eq	\$775			\$775				25
26	865- Maint of Meas & Reg Station Eq	\$252			\$252				26
26	866 - Maint of Communication Eq	\$7			\$7				26
27	867- Maint of Other Eq	\$681			\$681				27
28	+ Net Gas Transmission	\$13,381			\$13,381				28

TABLE LF-2, Page 2
SAN DIEGO GAS AND ELECTRIC - GAS DEPARTMENT
FUNCTIONALIZATION OF YEAR 2013 O&M EXPENSES
2017 TCAP

Description	Total	Distribution Demand		Transmission	Storage	Distribution Customer	Supply	
		Medium Pressure	High Pressure					
A	C	D	E	F	G	H	I	
	\$thousands							
Gas Distribution:								
870- Operation Supervision & Engineering	\$10,129	\$1,370	\$60			\$8,699		
871- Distr Load Dispatching	\$0	\$0	\$0			\$0		
874- Mains & Services Exp	\$4,526	\$2,414	\$105			\$2,007		
875- Meas & Reg Station Exp	\$632	\$606	\$26			\$0		
877- Meas & Reg Station Exp-City Gas Check Station	\$0	\$0	\$0			\$0		
878- Meter & House Regulator Exp	\$5,714	\$0	\$0			\$5,714		
879- Customer Installations Exp	\$11,447	\$0	\$0			\$11,447		
880- Other Expenses	\$15,231	\$2,061	\$90			\$13,081		
881- Rents	\$49	\$47	\$2			\$0		
885- Maint Supervision & Engineering	\$71	\$40	\$2			\$29		
887- Maint. of Mains	\$5,127	\$4,019	\$175			\$933		
888 - Maint. Of Compressor Station Equipment	\$0	\$0	\$0			\$0		
889- Maint. of Meas. & Reg Station Eq	\$634	\$608	\$26			\$0		
892- Maint. of Services	\$1,313	\$0	\$0			\$1,313		
893- Maint. of Meters & Regulators	\$1,115	\$0	\$0			\$1,115		
894- Maint. of Other Eq	\$250	-\$31	-\$1			\$282		
+ Distribution Total	\$56,239	\$11,134	\$485			\$44,621		
Customer Accounts								
901- Supervision	\$1					\$1		
902- Meter Reading Expenses	\$1,643					\$1,643		
903- Cust Records & Collection Exp	\$24,141					\$24,141		
904- Uncollectible Accounts	\$1,618					\$1,618		
905- Misc Cust Accounts Exp	\$0					\$0		
Total Customer Accounts	\$27,403					\$27,403		
less 903 & 904 - Adjustments	\$2,267					\$2,267		
+ Net Customer Accounts	\$25,135					\$25,135		
Customer Service & Informational Expense								
907- Supervision	\$5					\$5		
908- Cust Assistance Exp	\$25,934					\$25,934		
909- Informational & Instructional Exp	\$53					\$53		
910- Misc Cust Service & Informational Exp	\$183					\$183		
Total Cust Svc & Info	\$26,174					\$26,174		
less CARE/DSM/DAP/Energy Efficiency Exp	\$18,150					\$18,150		
+ Net Cust Svc & Info	\$8,025					\$8,025		
= Subtotal O&M w/o A&G	\$102,863	\$11,134	\$485	\$13,381	\$82	\$77,780	\$1	
Percent of Total	100.0%	10.8%	0.5%	13.0%	0.1%	75.8%	0.0%	

Notes:

- O&M expenses from SDG&E Gas FERC Form 2 for year ending December 31, 2013, pp. 319 - 325.
- O&M expenses assigned to service categories using functional basis
- CARE Program expenses of approximately \$649,439 are excluded from FERC Acct # 903 because such costs recovered through G-PPPS Surcharge.
- "less CARE/DSM/DAP/Energy Efficiency Exp" = these are refundable program costs excluded from FERC Accounts 907 - 910.
- Hazardous Materials expenses of approximately \$576,031 booked to FERC Account 859 excluded because such costs are excluded from base margin.

Backed out cost for 2013:	FERC # 908	FERC # 903	Totals
CARE	\$0	\$649,439	\$649,439
Low Income Energy Efficiency	\$9,318,311		\$9,318,311
Energy Efficiency	\$8,537,800		\$8,537,800
Self Generation Program	\$293,496		\$293,496
Total Adjustment for FERC	\$18,149,607	\$649,439	\$18,799,046

TABLE LF-3
 SAN DIEGO GAS AND ELECTRIC - GAS DEPARTMENT
 MARGINAL COST ASSESSMENT - DISTRIBUTION O&M EXPENSES
 2016 TCAP Phase II

Distribution O&M Account	Total O&M	Demand-Related Distribution						Customer-Related			
		Medium Pressure	Marginal Portion	Marginal MPD O&M	High Pressure	Marginal Portion	Marginal HPD O&M	Distribution Customer	Marginal Portion	Marginal Cust-Rel O&M	
A	B	C	D	E	F	G	H	I	J	K	
1 Gas Distribution:											1
2 870 - Operation Supervision & Engineering	\$10,129	\$1,370	76%	\$1,042	\$60	76%	\$45	\$8,699	76%	\$6,615	2
3 871 - Distribution Load Dispatching	\$0	\$0	0%	\$0	\$0	0%	\$0	\$0	0%	\$0	3
4 874 - Mains & Services Expenses	\$4,526	\$2,414	100%	\$2,414	\$105	100%	\$105	\$2,007	100%	\$2,007	4
5 875 - Measuring & Regulating Station Expenses	\$632	\$606	100%	\$606	\$26	100%	\$26	\$0	100%	\$0	5
6 878 - Meter & House Regulator Expenses	\$5,714	\$0	100%	\$0	\$0	100%	\$0	\$5,714	100%	\$5,714	6
7 879 - Customer Installations Expenses	\$11,447	\$0	84%	\$0	\$0	84%	\$0	\$11,447	84%	\$9,629	7
8 880 - Other Expenses	\$15,231	\$2,061	60%	\$1,238	\$90	60%	\$54	\$13,081	60%	\$7,857	8
9 881 - Rents	\$49	\$47	0%	\$0	\$2	0%	\$0	\$0	0%	\$0	9
10 885 - Maint Supervision & Engineering	\$71	\$40	100%	\$40	\$2	100%	\$2	\$29	100%	\$29	10
11 887 - Maintenance of Mains	\$5,127	\$4,019	76%	\$3,041	\$175	76%	\$132	\$933	76%	\$706	11
12 888 - Maintenance Of Compressor Station Eq	\$0	\$0	0%	\$0	\$0	0%	\$0	\$0	0%	\$0	12
13 889 - Maintenance of Meas. & Reg Station Eq	\$634	\$608	100%	\$608	\$26	100%	\$26	\$0	100%	\$0	13
14 892 - Maintenance of Services	\$1,313	\$0	100%	\$0	\$0	100%	\$0	\$1,313	100%	\$1,313	14
15 893 - Maint of Meters & House Regulators	\$1,115	\$0	100%	\$0	\$0	100%	\$0	\$1,115	100%	\$1,115	15
16 894 - Maintenance of Other Equipment	\$250	(\$31)	0%	\$0	(\$1)	0%	\$0	\$282	0%	\$0	16
17 Distribution Total	\$56,239	\$11,134	80.7%	\$8,989	\$485	80.7%	\$391	\$44,621	78%	\$34,985	17

- Notes:
- O&M expenses assigned to customer- and demand-related functional service categories at Workpapers to Testimony, Table "LF-2", Page 2 of 2 (tab LF-O&M)
 - Col. (E) = Col. (C) x Col. (D).
 - Col. (H) = Col. (F) x Col. (G).
 - Col. (K) = Col. (I) x Col. (J).

**TABLE LF-4
SAN DIEGO GAS AND ELECTRIC - GAS DEPARTMENT**

**MATERIALS & SUPPLIES LOADING FACTOR
2016 TCAP Phase II**

Description	2013	Portion of Total Plant	M&S	Annualized	
	Year End Plant Balances		Allocation	M&S @ 12.95%	
A	B	C	D	E	
	(Dollars)	(Percent)	(Dollars)	(Dollars)	
1 Materials & Supplies			\$3,536,065		1
2					2
3 Storage	\$2,096,606	0.1%	\$5,110	\$662	3
4 Transmission	\$290,132,287	20.0%	\$707,165	\$91,605	4
5 Distribution					5
6 Demand - HPD	\$71,960,280	5.0%	\$175,395	\$22,720	6
7 Demand - MPD	\$591,421,315	40.8%	\$1,441,523	\$186,733	7
8 Customer	\$485,123,160	33.4%	\$1,182,433	\$153,171	8
9 General Plant	\$10,026,487	0.7%	\$24,438	\$3,166	9
10					10
11 Total	\$1,450,760,135	100.0%	\$3,536,065	\$458,056	11

Notes:

Row (6) Plant Balance = [Total Dist Plant - Cust-Rel Dist Plant] x Historical HPD Plant Factor.

Row (7) Plant Balance = [Total Dist Plant - Cust-Rel Dist Plant] x [1 - Historical HPD Plant Factor].

For Rows (6) - (7) : 10.8% = Historical HPD Plant Investment Allocation Factor =

. Total Plant Investment substituted in place of NBV because LRMV not dependant on age of investment.

Row (8) Plant Balance = Dist Plant Accounts 380 (Services) + 381 (Meters) + 382 (Meter Installations) + 387 (NGV Stations + Other Equipn

Calculation Distribution Plant:

		Sources
Total Plant Distribution	\$1,149,498,478	Per FERC Form 2, page 209, line 109
Less 388 (ARO's)	\$0	
Less 387	(\$5,223,272)	
Plus NGV in 387	\$4,229,549	
Total Plant Distribution	\$1,148,504,755	

Plant

G-387.11	\$993,723	Per FERC Form 2
G-387.12	\$3,571,353	Per FERC Form 2
G-387.13	\$658,196	Per FERC Form 2
Total FERC 387	\$5,223,272	

Calculation Customer Plant:

		Sources
380 - Services	\$246,401,741	Per FERC Form 2
381 - Meters	\$146,137,861	Per FERC Form 2
382 - Meter Installation	\$88,354,009	Per FERC Form 2
387 - NGV/ Other equipment	\$4,229,549	Per FERC Form 2
Total Customer Plant	\$485,123,160	

**TABLE LF-5
SAN DIEGO GAS AND ELECTRIC - GAS DEPARTMENT**

**ADMINISTRATIVE & GENERAL LOADING FACTOR
2016 TCAP Phase II**

	FERC Account	Account Description	FERC 2013 Recorded	Marginal Portion	Marginal A&G	Comments
	A	B	C	D	E	
			(M\$)	(Percent)	(M\$)	
1	920	Administrative & General Salaries	\$9,064	0.00%	\$0	1
2	921	Office Supplies & Expenses	\$4,695	2.09%	\$98	2
3	922	Administrative Expenses Transferred	-\$2,881	0.00%	\$0	3
4	923	Outside Services Employed	\$27,260	0.00%	\$0	4
5	924	Property Insurance	-\$25	0.00%	\$0	5
6	925	Injuries & Damages	\$4,350	100.00%	\$4,350	6
7	926	Employee Pensions & Benefits	\$18,897	99.37%	\$18,778	7
8	927	Franchise Requirements	\$9,150	0.00%	\$0	8
9	928	Regulatory Commission Expense	\$3,669	25.89%	\$950	9
	930.1	General Advertising Expense	\$0	0.00%	\$0	
10	930.2	Miscellaneous General Expense	\$581	21.89%	\$127	10
11	931	Rents	\$3,075	0.00%	\$0	11
12	932	Maintenance of General Plant	\$2,530	11.17%	\$283	12
13		Total A&G Expenses	\$80,364		\$24,586	13
14						14
15		Payroll Taxes	\$4,654		\$4,654	15
16		Total A&G and Payroll Taxes	\$85,018		\$29,240	16
17						17
18		Total O&M w/o Recorded A&G Expenses	\$102,863		\$102,863	18 LF-O&M tab
19						19
20		Total O&M	\$187,881			20
21		(Net of Compressor Fuel & Gas Purchases)				21
22						22
23		A&G/O&M Loading Factor			28.43%	23

Notes:

- A&G expenses from SDG&E Gas FERC Form 2 for year ending December 31, 2013, pp. 325.
- Row (23) = Marginal A&G Expenses @ Row 16 ÷ Total O&M Less A&G @ Row 18
- CPUC expenses of \$520,721 removed from FERC Account 928 because such costs are excluded from base margin. Amount from FERC Form 1 page 351 Line 2 - Reimbursement Fees.
- Payroll Taxes from FERC Form 2 for the year ended 12-31-2013 - front of the report in summary version right before the cover page for FERC Form 2. The amount for 2013 is \$4,654.434 "Taxes Other than Income & Property Taxes".
Selected Financial Data = Class A, B, C and D Gas Utilities, page 2
- Marginal Portion per LRM study

**TABLE LF-6
SAN DIEGO GAS AND ELECTRIC - GAS DEPARTMENT**

**GENERAL PLANT LOADING FACTOR
2016 TCAP Phase II**

Description		2013 Recorded	Comments
A	B		
	(Dollars)		
1	Total General, Common Plant (12/31/2013)	\$215,972,774	1 FERC 2013
2			2
3	Weighted Average General, Common Plant RECC	11.50%	3 2013 RECC
4			4
5	Annualized Plant	\$24,843,804	5
6			6
7	O&M Expenses (2013 recorded)	\$187,880,971	7 LF- A&G tab.
8			8
9	General Plant Loading Factor	13.22%	9

Notes:

1. Common and General Gas Plant from SDG&E Gas FERC Form 1 pp. 356.1 and FERC Form 2 pp. 209, for year ending December 31, 2013, respectively.

Calculation Total General, Common Plant :

Calculation Total General, Common Plant :		Sources
Total General Plant	\$10,659,410	FERC Form 2 pp. 209
Common Utility Plant - Gas	\$205,313,364	SDG&E Gas FERC For
Total	\$215,972,774	

**TABLE LF-7
SAN DIEGO GAS AND ELECTRIC - GAS DEPARTMENT**

**O&M WEIGHTED ESCALATION FACTOR
2016 TCAP Phase II**

	Description	Dollars	Percent	
	A	B	C	
1	2010 Total Gas O&M Expenses	\$187,880,971	100%	1
2	2010 Total Salaries & Wages	\$65,091,441	35%	2
3	2010 Non-Labor O&M Expenses	\$122,789,530	65%	3
4				4
5	2013 O&M Labor Multiplier	1.000		5
6	2017 O&M Labor Multiplier	1.100	110%	6
7				7
8	2013 O&M Non-Labor Multiplier	1.000		8
9	2017 O&M Non-Labor Multiplier	1.067	107%	9
10				10
11	Weighted O&M Escalation to 2017	1.0785	1.0785	11

Notes:

1. Row (3) = Row (1) - Row (2).
2. Row (11) = [Row (9) x Row (3) percent] + [Row (6) x Row (2) percent].
3. Row (1) from Table "LF-5".
4. Rows (5) - (9) from O&M Cost Indexes

TABLE LRMCC-10a
SAN DIEGO GAS AND ELECTRIC - GAS DEPARTMENT
ALLOCATION FACTORS FOR CUSTOMER O&M EXPENSES
2016 TCAP Phase II

Description	Res	NGV	GN-3	Total Core	GTNC			Cogen			Total Noncore	System Total
					MPD	HPD	Total	< 3 MM	> 3 MM	Total		
A	B	C	D	E	F	G	H	I	J	K	M	N
<i>Page 1 of 2</i>												
Total Field Orders												
Allocator - 2013 Count	128,576	10	12,565	141,150	53	0	53	8	4	12	65	141,216
Alloc %	91%	0%	9%	100%	0%	0%	0%	0%	0%	0%	0%	100%
Construction Field Orders												
Allocator - 2010 Count	-	-	-	-	-	-	-	-	-	-	-	-
Alloc %												
Customer Services Field Orders												
Allocator - 2013 Count	128,576	10	12,565	141,150	53	0	53	8	4	12	65	141,216
Alloc %	91%	0%	9%	100%	0%	0%	0%	0%	0%	0%	0%	100%
Field Collection Orders - All Customers												
Allocator - 2006 Count												
Alloc %												
Field Collection Orders - Core												
Allocator - 2006 Count												
Alloc %												
Customer Contact Center CSR Call Information												
Allocator - Call Volume Weighted by Handle Time - Year 2013 data	2,503,977	0	197,034	2,701,011	-	-	-	-	-	-	-	2,701,011
Alloc %	93%	0%	7%	100%	0%	0%	0%	0%	0%	0%	0%	100%
Customer Contact Center IVR Call Information												
Alloc % - Year 2013 data	100%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	100%
Residential												
Alloc %	100%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	100%
Active Meters - All Customers												
Allocator - 2013 Count	839,369	53	34,335	873,757	36	14	50	56	16	72	122	873,879
Alloc %	96%	0%	4%	100%	0%	0%	0%	0%	0%	0%	0%	100%

TABLE LRMCC-10a
SAN DIEGO GAS AND ELECTRIC - GAS DEPARTMENT

ALLOCATION FACTORS FOR CUSTOMER O&M EXPENSES
2016 TCAP Phase II

Description	Res	NGV	GN-3	Total Core	GTNC			Cogen			Total Noncore	System Total
					MPD	HPD	Total	< 3 MM	> 3 MM	Total		
A	B	C	D	E	F	G	H	I	J	K	M	N
Page 2 of 2												
Active Meters - Noncore Commercial, EG												
Allocator - 2010 Count				-	36	14	50	56	16	72	122	122
Alloc %	0%	0%	0%	0%	30%	11%	41%	46%	13%	59%	100%	100%
Effort Study - Federal Accounts												
Allocator - 2013 Count	10	221	1	232	9	1	10	2	1	3	13	245
Alloc %	4%	90%	0%	95%	4%	0%	4%	1%	0%	1%	5%	100%
Active Billing Accounts - All Customers												
Allocator - 2013 Count	830,688	51	28,070	858,809	36	14	50	50	16	66	116	858,925
Alloc %	97%	0%	3%	100%	0%	0%	0%	0%	0%	0%	0%	100%
Active Billing Accounts - Mass Markets Customers												
Allocator - 2010 Count	830,688	51	28,070	858,809	-	-	-	-	-	-	-	858,809
Alloc %	97%	0%	3%	100%	0%	0%	0%	0%	0%	0%	0%	100%
Active Billing Accounts - Major Markets Customers												
Allocator - 2010 Count				-	36	14	50	50	16	66	116	116
Alloc %	0%	0%	0%	0%	31%	12%	43%	43%	14%	57%	100%	100%
C&I Markets												
Noncore Allocator - Active Accounts				0	36	14	50	50	16	66	116	116
Alloc %	0.00%	0.00%	99.59%	100%	0.13%	0.05%	0.18%	0.18%	0.06%	0.23%	0.41%	100%
Demand Response Program - Commercial Customers												
Noncore Allocator - Active Accounts					36	14	50					
Alloc %	0.00%	0.00%	90.00%	90%	7%	3%	10%	0%	0%	0%	10%	100%
Meter Reading Function Net Allocation												
Allocator - M\$'s	\$32,829	\$2	\$1,343	\$34,174	\$1	\$1	\$2	\$2	\$1	\$3	\$5	\$34,179
Alloc %	96%	0%	4%	100%	0%	0%	0%	0%	0%	0%	0%	100%
FERC 901 - 903 Net Allocation												
Allocator - M\$'s	839,369	53	34,335	873,757	36	14	50	56	16	72	122	873,879
Alloc %	93%	0%	4%	97%	1%	0%	1%	1%	0%	2%	3%	100%

TABLE LRMCC-10b
SAN DIEGO GAS AND ELECTRIC - GAS DEPARTMENT
SUMMARY OF LRMCC ALLOCATION OF CUSTOMER O&M EXPENSES
2016 TCAP Phase II

	O&M Operational Activity	Total O&M	Res	NGV	GN-3	Total Core	GTNC			Cogen			IPP	Total Noncore	System Total
							MPD	HPD	Total	< 3 MM	> 3 MM	Total			
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	FIELD SERVICES Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	CUSTOMER CONTACT Total	\$33,607	\$31,155	\$0	\$2,452	\$33,607	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$33,607
3	METER READING Total	\$34,179	\$32,829	\$2	\$1,343	\$34,174	\$1	\$1	\$2	\$2	\$1	\$3	\$0	\$5	\$34,179
4	BILLING SERVICES Total	\$268,560	\$0	\$0	\$0	\$0	\$79,247	\$30,818	\$110,066	\$123,274	\$35,221	\$158,495	\$0	\$268,560	\$268,560
5	CREDIT & COLLECTIONS Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6	BUSINESS ANALYSIS Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	CUSTOMER RESEARCH & COMMUNICATION Total	\$381,641	\$369,095	\$23	\$12,472	\$381,589	\$16	\$6	\$22	\$22	\$7	\$29	\$0	\$52	\$381,641
8	CUSTOMER SERVICE TECHNOLOGY & SUPPORT Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	C&I CUSTOMER SERVICE Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
10	CONSUMER PROGRAMS & SERVICES Total	\$200,058	\$186,874	\$12	\$7,556	\$194,442	\$1,657	\$644	\$2,302	\$2,578	\$737	\$3,314	\$0	\$5,616	\$200,058
11	FEDERAL ACCOUNTS MANAGEMENT Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
12	CUSTOMER SERVICES SUPPORT STAFF Total	\$224,609	\$204,505	\$16	\$19,984	\$224,505	\$85	\$0	\$85	\$12	\$7	\$19	\$0	\$104	\$224,609
13	COMMUNITY OUTREACH & INFO SERVICES Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
14	OTHER Total	\$2,597	\$2,420	\$0	\$99	\$2,519	\$23	\$9	\$32	\$36	\$10	\$46	\$0	\$78	\$2,597
15	SVP COST CENTERS Total	\$190,104	\$177,144	\$11	\$7,246	\$184,401	\$1,683	\$654	\$2,337	\$2,618	\$748	\$3,366	\$0	\$5,703	\$190,104
16															
17	Total	\$1,335,354	\$1,004,021	\$64	\$51,152	\$1,055,237	\$82,713	\$32,133	\$114,846	\$128,542	\$36,730	\$165,272	\$0	\$280,117	\$1,335,354
18	Allocation %	100%	75%	0%	4%	79%	6%	2%	9%	10%	3%	12%	0%	21%	100%

Note:
1. O&M Operational Activities cost assigned using allocation methods identified for each SDG&E department in the Customer Operations division.
Data from below

ALLOCATION OF FIELD SERVICES CUSTOMER O&M EXPENSES BY CUSTOMER CLASS

Cost Center(s)	Total O&M	Res	NGV	GN-3	Total Core	GTNC			Cogen			IPP	Total Noncore	System Total	Source
						MPD	HPD	Total	< 3 MM	> 3 MM	Total				
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	
1 CUSTOMER SERVICE - FIELD Total															1
2 Allocator - Total Field Orders		91%	0%	9%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%	2 LRMCC-10a Line 3
3 Allocation (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	3
4 GAS OPERATIONS Total															4
5 Allocator - Total Field Orders		91%	0%	9%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%	5 LRMCC-10a Line 3
6 Allocation (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	6
7 Total Field Services O&M Allocation (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	7
8 Allocation %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	8

ALLOCATION OF CUSTOMER CONTACT CENTER O&M EXPENSES BY CUSTOMER CLASS

Cost Center(s)	Total O&M	Res	NGV	GN-3	Total Core	GTNC			Cogen			IPP	Total Noncore	System Total	LRMCC-10a Printed Line Ref
						MPD	HPD	Total	< 3 MM	> 3 MM	Total				
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	
1 CUSTOMER CONTACT CENTER															1
2 Allocator - CSR Call Volume Weighted by Handle Time		93%	0%	7%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%	2 LRMCC-10a Line 23
3 Allocation (\$)	\$33,607	\$31,155	\$0	\$2,452	\$33,607	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$33,607	3
4 CCC TECH SDGE - 1															4
5 Allocator - CSR Call Volume Weighted by Handle Time		93%	0%	7%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%	5 LRMCC-10a Line 23
6 Allocation (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	6
7 CCC TECH SDGE - 2															7
8 Allocator - IVR Call Volume by Customer Segment		100%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%	8 LRMCC-10a Line 26
9 Allocation (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	9
10 Total Customer Contact Center O&M Allocation (\$)	\$33,607	\$31,155	\$0	\$2,452	\$33,607	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$33,607	10
11 Allocation %	100%	93%	0%	7%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%	11

Source SDGE Details Acct 901-910 Costs.xls

ALLOCATION OF METER READING O&M EXPENSES BY CUSTOMER CLASS

Cost Center(s)	Total O&M	Res	NGV	GN-3	Total Core	GTNC			Cogen			IPP	Total Noncore	System Total	Source
						MPD	HPD	Total	< 3 MM	> 3 MM	Total				
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	
1 METER READING															1
2 Allocator - Active Meters: All Customers		96%	0%	4%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%	2 LRMCC-10a Line 34
3 Allocation (\$)	\$34,179	\$32,829	\$2	\$1,343	\$34,174	\$1	\$1	\$2	\$2	\$1	\$3	\$0	\$5	\$34,179	3
4 Total Meter Reading O&M Allocation (\$)	\$34,179	\$32,829	\$2	\$1,343	\$34,174	\$1	\$1	\$2	\$2	\$1	\$3	\$0	\$5	\$34,179	4
5 Allocation %	100%	96%	0%	4%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%	5

Source SDGE Details Acct 901-910 Costs.xls

ALLOCATION OF BILLING SERVICES CUSTOMER O&M EXPENSES BY CUSTOMER CLASS

Cost Center(s)	Total O&M	Res	NGV	GN-3	Total Core	GTNC			Cogen			IPP	Total Noncore	System Total	LRMCC-10a Printed Line Ref
						MPD	HPD	Total	< 3 MM	> 3 MM	Total				
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	

1	MAJOR MARKET BILLING Total															1
2	Allocator - Active Meters N/C C&I		0%	0%	0%	0%	30%	11%	41%	46%	13%	59%	0%	100%	100%	2 LRMCC-10a Line 38
3	Allocation (\$)	\$268,560	\$0	\$0	\$0	\$0	\$79,247	\$30,818	\$110,066	\$123,274	\$35,221	\$158,495	\$0	\$268,560	\$268,560	3
4	MASS MRKET BILLING Total															4
5	Allocator - Active Accounts: All Customers		97%	0%	3%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%	5 LRMCC-10a Line 46
6	Allocation (\$)	-	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	6
7	Total Billing Services O&M Allocation (\$)	\$268,560	\$0	\$0	\$0	\$0	\$79,247	\$30,818	\$110,066	\$123,274	\$35,221	\$158,495	\$0	\$268,560	\$268,560	7
8	Allocation %	100%	0%	0%	0%	0%	30%	11%	41%	46%	13%	59%	0%	100%	100%	8

Source [SDGE Details Acct 901-910 Costs.xls](#)

ALLOCATION OF CREDIT & COLLECTIONS O&M EXPENSES BY CUSTOMER CLASS

Cost Center(s)	Total O&M	Res	NGV	GN-3	Total Core	GTNC			Cogen			IPP	Total Noncore	System Total	Source
						MPD	HPD	Total	< 3 MM	> 3 MM	Total				
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	
1 CREDIT & COLLECTIONS - Subtotal															1
2 Allocator - Residential Class		100%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%	2 LRMCC-10a Line 30
3 Allocation (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	3
4 CREDIT & COLLECTIONS - Subtotal															4
5 Allocator - Active Accounts: All Customers		97%	0%	3%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%	5 LRMCC-10a Line 46
6 Allocation (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	6
7 Total Credit & Collections O&M Allocation (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	7
8 Allocation %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	8

ALLOCATION OF BUSINESS ANALYSIS CUSTOMER O&M EXPENSES BY CUSTOMER CLASS

Cost Center(s)	Total O&M	Res	NGV	GN-3	Total Core	GTNC			Cogen			IPP	Total Noncore	System Total	Source
						MPD	HPD	Total	< 3 MM	> 3 MM	Total				
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	
1 BUSINESS PLANNING & BUDGETS Total															1
2 Allocator - Active Meters: All Customers		96%	0%	4%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%	2 LRMCC-10a Line 34
3 Allocation (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	3
4 Total Business Analysis O&M Allocation (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	4
5 Allocation %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5

Source SDGE Details Acct 901-910 Costs.xls

ALLOCATION OF CUSTOMER RESEARCH & COMMUNICATION O&M EXPENSES BY CUSTOMER CLASS

Cost Center(s)	Total O&M	Res	NGV	GN-3	Total Core	GTNC			Cogen			IPP	Total Noncore	System Total	Source
						MPD	HPD	Total	< 3 MM	> 3 MM	Total				
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	
1 COMMUNICATIONS Total															1
2 Allocator - Active Accounts: All Customers		97%	0%	3%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%	2 LRMCC-10a Line 46
3 Allocation (\$)	\$287,919	\$278,454	\$17	\$9,409	\$287,880	\$12	\$5	\$17	\$17	\$5	\$22	\$0	\$39	\$287,919	3
4 Total Business Analysis O&M Allocation (\$)	\$287,919	\$278,454	\$17	\$9,409	\$287,880	\$12	\$5	\$17	\$17	\$5	\$22	\$0	\$39	\$287,919	4
5 Allocation %	100%	97%	0%	3%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%	5

Source SDGE Details Acct 901-910 Costs.xls

ALLOCATION OF CUSTOMER SERVICE TECHNOLOGY & SUPPORT O&M EXPENSES BY CUSTOMER CLASS

	Cost Center(s)	Total O&M	Res	NGV	GN-3	Total Core	GTNC			Cogen			IPP	Total Noncore	System Total	Source
							MPD	HPD	Total	< 3 MM	> 3 MM	Total				
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	
1	INFO TECH															1
2	Allocator - FERC 901 - 905 Net Allocation		93%	0%	4%	97%	1%	0%	1%	1%	0%	2%	0%	3%	100%	2 LRMCC-10a Line 82
3	Allocation (\$)	\$42,612	\$39,707	\$3	\$1,624	\$41,334	\$377	\$147	\$524	\$587	\$168	\$754	\$0	\$1,278	\$42,612	3
4	DIR IT BUS PARTNER &															4
5	Allocator - FERC 901 - 905 Net Allocation		93%	0%	4%	97%	1%	0%	1%	1%	0%	2%	0%	3%	100%	5 LRMCC-10a Line 82
6	Allocation (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	6
7	DIR INFRASTRUCTURE E															7
8	Allocator - FERC 901 - 905 Net Allocation		93%	0%	4%	97%	1%	0%	1%	1%	0%	2%	0%	3%	100%	8 LRMCC-10a Line 82
9	Allocation (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	9
10	DIR NETWORK & TELECO															10
11	Allocator - FERC 901 - 905 Net Allocation		93%	0%	4%	97%	1%	0%	1%	1%	0%	2%	0%	3%	100%	11 LRMCC-10a Line 82
12	Allocation (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	12
13	DIR UTILITY OPS SYST															13
14	Allocator - FERC 901 - 905 Net Allocation		93%	0%	4%	97%	1%	0%	1%	1%	0%	2%	0%	3%	100%	14 LRMCC-10a Line 82
15	Allocation (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	15
16	DIR CUST CARE SYSTEM															16
17	Allocator - FERC 901 - 905 Net Allocation		93%	0%	4%	97%	1%	0%	1%	1%	0%	2%	0%	3%	100%	17 LRMCC-10a Line 82
18	Allocation (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	18
19	IT BUS PLNG & BUDDS															19
20	Allocator - FERC 901 - 905 Net Allocation		93%	0%	4%	97%	1%	0%	1%	1%	0%	2%	0%	3%	100%	20 LRMCC-10a Line 82
21	Allocation (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	21
22	DIR SHARED SOFTWARE															22
23	Allocator - FERC 901 - 905 Net Allocation		93%	0%	4%	97%	1%	0%	1%	1%	0%	2%	0%	3%	100%	23 LRMCC-10a Line 82
24	Allocation (\$)	\$147,492	\$137,437	\$9	\$5,622	\$143,067	\$1,306	\$508	\$1,813	\$2,031	\$580	\$2,611	\$0	\$4,425	\$147,492	24
25	Total Cust Service Tech & Support O&M Allocation (\$)	\$190,104	\$177,144	\$11	\$7,246	\$184,401	\$1,683	\$654	\$2,337	\$2,618	\$748	\$3,366	\$0	\$5,703	\$190,104	25
26	Allocation %	100%	93%	0%	4%	97%	1%	0%	1%	1%	0%	2%	0%	3%	100%	26

Source SDGE Details Acct 901-910 Costs.xls

ALLOCATION OF C&I CUSTOMER SERVICE O&M EXPENSES BY CUSTOMER CLASS

	Cost Center(s)	Total O&M	Res	NGV	GN-3	Total Core	GTNC			Cogen			IPP	Total Noncore	System Total	Source
							MPD	HPD	Total	< 3 MM	> 3 MM	Total				
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	
1	COMMERCIAL/INDUSTRIAL MARKETS - Subtotal															1
2	Allocator - CUST SOLUTIONS: Active Accounts		0%	0%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%	2 LRMCC-10a Line 58
3	Allocation (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	3
4	COMMERCIAL/INDUSTRIAL MARKETS - Subtotal															4
5	Allocator - C&I TECH SPPT: Active Accounts		0%	0%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%	5 LRMCC-10a Line 58
6	Allocation (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	6
7	COMMERCIAL/INDUSTRIAL MARKETS - Subtotal															7
8	Allocator - COMMERC/INDUST MKTS: Active Accounts		0%	0%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%	8 LRMCC-10a Line 58
9	Allocation (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	9
10	COMMERCIAL/INDUSTRIAL MARKETS - Subtotal															10
11	Allocator - C&I PROJ COORD: Active Accounts		0%	0%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%	11 LRMCC-10a Line 58
12	Allocation (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	12
13	Total C&I Customer Service O&M Allocation (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	13
14	Allocation %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	14

ALLOCATION OF CONSUMER PROGRAMS & SERVICES O&M EXPENSES BY CUSTOMER CLASS

Cost Center(s)	Total O&M	Res	NGV	GN-3	Total Core	GTNC			Cogen			IPP	Total Noncore	System Total	Source
						MPD	HPD	Total	< 3 MM	> 3 MM	Total				
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	
1 CUSTOMER ASSISTANCE - Subtotal															1
2 Allocator - Residential Class		100%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%	2 LRMCC-10a Line 30
3 Allocation (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	3
4 Total Consumer Programs & Services O&M Allocation (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	4
5 Allocation %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5

Source SDGE Details Acct 901-910 Costs.xls

ALLOCATION OF FEDERAL ACCOUNTS MANAGEMENT O&M EXPENSES BY CUSTOMER CLASS

Cost Center(s)	Total O&M	Res	NGV	GN-3	Total Core	GTNC			Cogen			IPP	Total Noncore	System Total	Source
						MPD	HPD	Total	< 3 MM	> 3 MM	Total				
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	
1 FEDERAL ACCOUNTS Total															1
2 Allocator - 15% Res / Active Meters: Federal Accounts		4%	90%	0%	95%	4%	0%	4%	1%	0%	1%	0%	5%	100%	2 LRMCC-10a Line 42
3 Allocation (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	3
4 Total Federal Accounts Management O&M Allocation (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	4
5 Allocation %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5

Source SDGE Details Acct 901-910 Costs.xls

ALLOCATION OF CUSTOMER SERVICES SUPPORT STAFF O&M EXPENSES BY CUSTOMER CLASS

Cost Center(s)	Total O&M	Res	NGV	GN-3	Total Core	GTNC			Cogen			IPP	Total Noncore	System Total	LRMCC-10a Printed Line Ref
						MPD	HPD	Total	< 3 MM	> 3 MM	Total				
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	
1 CUSTOMER SERVICE STAFF - FIELD Total															1
2 Allocator - Total Field Orders		91%	0%	9%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%	2 LRMCC-10a Line 3
3 Allocation (\$)	\$224,609	\$204,505	\$16	\$19,984	\$224,505	\$85	\$0	\$85	\$12	\$7	\$19	\$0	\$104	\$224,609	3
4 HUMAN RESOURCES Total															4
5 Allocator - FERC 901 - 905 Net Allocation		93%	0%	4%	97%	1%	0%	1%	1%	0%	2%	0%	3%	100%	5 LRMCC-10a Line 70
6 Allocation (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	6
7 Total Customer Services Support Staff O&M Allocation	\$224,609	\$204,505	\$16	\$19,984	\$224,505	\$85	\$0	\$85	\$12	\$7	\$19	\$0	\$104	\$224,609	7
8 Allocation %	100%	91%	0%	9%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%	8

Source SDGE Details Acct 901-910 Costs.xls

ALLOCATION OF COMMUNITY OUTREACH & INFO SERVICES O&M EXPENSES BY CUSTOMER CLASS

Cost Center(s)	Total O&M	Res	NGV	GN-3	Total Core	GTNC			Cogen			IPP	Total Noncore	System Total	Source
						MPD	HPD	Total	< 3 MM	> 3 MM	Total				
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	
1 PUBLIC AFFAIRS															1
2 Allocator - Active Accounts: All Customers		97%	0%	3%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%	2 LRMCC-10a Line 46

3	Allocation (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	3
4	MASS MARKETS - Subtotal														4
5	Allocator - Residential Class		100%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	100%	5 LRMCC-10a Line 30
6	Allocation (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	6
7	MASS MARKETS - Subtotal														7
8	Allocator - Active Accounts: Mass Markets		97%	0%	3%	100%	0%	0%	0%	0%	0%	0%	0%	100%	8 LRMCC-10a Line 50
9	Allocation (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	9
10	MASS MARKETS - Subtotal														10
11	Allocator - ENGY EFFIC ANALY & S: Active Accounts - All Customer		97%	0%	3%	100%	0%	0%	0%	0%	0%	0%	0%	100%	11 LRMCC-10a Line 46
12	Allocation (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	12
13	Total Comm Outreach & Info Services O&M Allocation (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	13
14	Allocation %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	14

Source SDGE Details Acct 901-910 Costs.xls

ALLOCATION OF OTHER O&M EXPENSES BY CUSTOMER CLASS

Cost Center(s)	Total O&M	Res	NGV	GN-3	Total Core	GTNC			Cogen			IPP	Total Noncore	System Total	Source
						MPD	HPD	Total	< 3 MM	> 3 MM	Total				
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	
ACCOUNTING ADJUSTMENTS - Subtotal															
Allocator - FERC 901 - 905 Net Allocation		93%	0%	4%	97%	1%	0%	1%	1%	0%	2%	0%	3%	100%	1
Allocation (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	2
FACILITIES															
Allocator - FERC 901 - 905 Net Allocation		93%	0%	4%	97%	1%	0%	1%	1%	0%	2%	0%	3%	100%	4
Allocation (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	5
REGULATORY AFFAIRS															
Allocator - FERC 901 - 905 Net Allocation		93%	0%	4%	97%	1%	0%	1%	1%	0%	2%	0%	3%	100%	7
Allocation (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	8
SUPPLY & TRANSPORTATION															
Allocator - Active Accounts: All Customers		97%	0%	3%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%	11
Allocation (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	12
NOT ASSIGNED COST CENTER															
Allocator - FERC 901 - 905 Net Allocation		93%	0%	4%	97%	1%	0%	1%	1%	0%	2%	0%	3%	100%	14
Allocation (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	15
Total Other O&M Allocation (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	16
Allocation %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	17

Source SDGE Details Acct 901-910 Costs.xls

ALLOCATION OF SVP COST CENTERS O&M EXPENSES BY CUSTOMER CLASS

Cost Center(s)	Total O&M	Res	NGV	GN-3	Total Core	GTNC			Cogen			IPP	Total Noncore	System Total	Source
						MPD	HPD	Total	< 3 MM	> 3 MM	Total				
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	
CONTROLLER TOTAL															
Allocator - FERC 901 - 905 Net Allocation		93%	0%	4%	97%	1%	0%	1%	1%	0%	2%	0%	3%	100%	1
Allocation (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	2
CUSTOMER OPERATIONS TOTAL															
Allocator - FERC 901 - 905 Net Allocation		93%	0%	4%	97%	1%	0%	1%	1%	0%	2%	0%	3%	100%	4
Allocation (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	5
Total SVP Cost Centers O&M Allocation (\$)	\$0	\$0	\$0.000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	7
Allocation %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	8

Source SDGE Details Acct 901-910 Costs.xls

ALLOCATION OF NON-REFUNDABLE FERC ACCOUNT 907 O&M EXPENSES BY CUSTOMER CLASS

Cost Center(s)	Total O&M	Res	NGV	GN-3	Total Core	GTNC			Cogen			IPP	Total Noncore	System Total	Source
						MPD	HPD	Total	< 3 MM	> 3 MM	Total				
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	
FERC 907															
Allocator - FERC 901 - 905 Net Allocation		93%	0%	4%	97%	1%	0%	1%	1%	0%	2%	0%	3%	100%	1
Allocation (\$)	\$2,597	\$2,420	\$0	\$99	\$2,519	\$23	\$9	\$32	\$36	\$10	\$46	\$0	\$78	\$2,597	2
FEDERAL ACCOUNTS Total															
Allocator - 15% Res / Active Meters: Federal Accounts		4%	90%	0%	95%	4%	0%	4%	1%	0%	1%	0%	5%	100%	4
															5

6	Allocation (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	6
7	Total FERC 907 Allocation (\$)	\$2,597	\$2,420	\$0	\$99	\$2,519	\$23	\$9	\$32	\$36	\$10	\$46	\$0	\$78	\$2,597	7
8	Allocation %	100%	93%	0%	4%	97%	1%	0%	1%	1%	0%	2%	0%	3%	100%	8

Source SDGE Details Acct 901-910 Costs.xls

ALLOCATION OF NON-REFUNDABLE FERC ACCOUNT 908 O&M EXPENSES BY CUSTOMER CLASS

	Cost Center(s)	Total O&M	Res	NGV	GN-3	Total Core	GTNC			Cogen			IPP	Total Noncore	System Total	LRMCC-10a Printed Line Ref
							MPD	HPD	Total	< 3 MM	> 3 MM	Total				
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	
1	DIR SUPPLY MANAGEMEN															1
2	Allocator - FERC 901 - 905 Net Allocation		93%	0%	4%	97%	1%	0%	1%	1%	0%	2%	0%	3%	100%	2 LRMCC-10a Line 70
3	Allocation (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	3
4	GAS TRANS & DISTR															4
5	Allocator - FERC 901 - 905 Net Allocation		93%	0%	4%	97%	1%	0%	1%	1%	0%	2%	0%	3%	100%	5 LRMCC-10a Line 70
6	Allocation (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	6
7	CUST SVCS SVP & STAF															7
8	Allocator - FERC 901 - 905 Net Allocation		93%	0%	4%	97%	1%	0%	1%	1%	0%	2%	0%	3%	100%	8 LRMCC-10a Line 70
9	Allocation (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	9
10	DIR CUSTOMER PROGRAM															10
11	Allocator - FERC 901 - 905 Net Allocation		93%	0%	4%	97%	1%	0%	1%	1%	0%	2%	0%	3%	100%	11 LRMCC-10a Line 70
12	Allocation (\$)	\$187,195	\$174,433	\$11	\$7,135	\$181,579	\$1,657	\$644	\$2,302	\$2,578	\$737	\$3,314	\$0	\$5,616	\$187,195	12
13	CUSTOMER SERVICE MAS															13
14	Active Billing Accounts - Mass Markets Customers		97%	0%	3%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%	14 LRMCC-10a Line 50
15	Allocation (\$)	\$12,862	\$12,441	\$1	\$420	\$12,862	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$12,862	15
16	CUSTOMER SERVICE MAJ															16
17	Business Analysis - Major Markets Customers		0%	0%	0%	0%	30%	11%	41%	46%	13%	59%	0%	100%	100%	17 LRMCC-10a Line 38
18	Allocation (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	18
19	VACANT															19
20	Allocator - FERC 901 - 905 Net Allocation		93%	0%	7%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%	20 LRMCC-10a Line 23
21	Allocation (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	21
22	DIR CUSTOMER OPS															22
23	Business Analysis - Major Markets Customers		0%	0%	0%	0%	30%	11%	41%	46%	13%	59%	0%	100%	100%	23 LRMCC-10a Line 38
24	Allocation (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	24
25	CUSTOMER OPERATIONS															25
26	Allocator - FERC 901 - 905 Net Allocation		93%	0%	4%	97%	1%	0%	1%	1%	0%	2%	0%	3%	100%	26 LRMCC-10a Line 70
27	Allocation (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	27
28	REGULATORY & STRATEG															28
29	Allocator - FERC 901 - 905 Net Allocation		93%	0%	4%	97%	1%	0%	1%	1%	0%	2%	0%	3%	100%	29 LRMCC-10a Line 70
30	Allocation (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	30
31	REGIONAL PUBLIC AFFA															31
32	Allocator - FERC 901 - 905 Net Allocation		93%	0%	4%	97%	1%	0%	1%	1%	0%	2%	0%	3%	100%	32 LRMCC-10a Line 70
33	Allocation (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	33
34	ELECTRIC GAS PROCUREMENT															34
35	Allocator - FERC 901 - 905 Net Allocation		93%	0%	4%	97%	1%	0%	1%	1%	0%	2%	0%	3%	100%	35 LRMCC-10a Line 70
36	Allocation (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	36
37	VACANT															37
38	Allocator - FERC 901 - 905 Net Allocation		93%	0%	4%	97%	1%	0%	1%	1%	0%	2%	0%	3%	100%	38 LRMCC-10a Line 70
39	Allocation (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	39
40	FEDERAL ACCOUNTS															40
41	Allocator - 15% Res / Active Meters: Federal Accounts		4%	90%	0%	95%	4%	0%	4%	1%	0%	1%	0%	5%	100%	41 LRMCC-10a Line 42
42	Allocation (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	42
43	HUMAN RESOURCES															43
44	Allocator - FERC 901 - 905 Net Allocation		93%	0%	4%	97%	1%	0%	1%	1%	0%	2%	0%	3%	100%	44 LRMCC-10a Line 70
45	Allocation (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	45
46	Not Assigned															46
47	Allocator - FERC 901 - 905 Net Allocation		93%	0%	4%	97%	1%	0%	1%	1%	0%	2%	0%	3%	100%	47 LRMCC-10a Line 70
48	Allocation (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	48
49	Total FERC 908 Allocation (\$)	\$200,058	\$186,874	\$12	\$7,556	\$194,442	\$1,657	\$644	\$2,302	\$2,578	\$737	\$3,314	\$0	\$5,616	\$200,058	49
50	Allocation %	100%	93%	0%	4%	97%	1%	0%	1%	1%	0%	2%	0%	3%	100%	50

Source SDGE Details Acct 901-910 Costs.xls

ALLOCATION OF NON-REFUNDABLE FERC ACCOUNT 909-910 O&M EXPENSES BY CUSTOMER CLASS

Cost Center(s)	Total O&M	Res	NGV	GN-3	Total Core	GTNC			Cogen			IPP	Total Noncore	System Total	Source
						MPD	HPD	Total	< 3 MM	> 3 MM	Total				
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	
1 SVP															1
2 Allocator - Active Accounts: All Customers		97%	0%	3%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%	2 LRMCC-10a Line 46
3 Allocation (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	3
4 PUBLIC AFFAIRS															4
5 Allocator - Active Accounts: All Customers		97%	0%	3%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%	5 LRMCC-10a Line 46
6 Allocation (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	6
7 CUSTOMER COMMUNICATIONS & RESEARCH - Subtotal															7
8 Allocator - Active Accounts: All Customers		97%	0%	3%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%	8 LRMCC-10a Line 46
9 Allocation (\$)	\$93,722	\$90,641	\$6	\$3,063	\$93,709	\$4	\$2	\$5	\$5	\$2	\$7	\$0	\$13	\$93,722	9
10 REG STRATEGY															10
11 Allocator - Active Accounts: All Customers		96%	0%	4%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%	11 LRMCC-10a Line 34
12 Allocation (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	12
13 Total FERC 909-910 Allocation (\$)	\$93,722	\$90,641	\$6	\$3,063	\$93,709	\$4	\$2	\$5	\$5	\$2	\$7	\$0	\$13	\$93,722	13
14 Allocation %	100%	97%	0%	3%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%	14

Source SDGE Details Acct 901-910 Costs.xls

TABLE LRMCC-10c
 SAN DIEGO GAS AND ELECTRIC - GAS DEPARTMENT
 2016 TCAP Phase II

TABLE 7 A&G LOADING FACTOR	
Account Description	Marginal Costs \$ 000s
A&G Expenses	\$24,586
+ <u>Payroll Taxes</u>	<u>\$4,654</u>
= Total A&G with Payroll Taxes	\$29,240
/ <u>Total O&M Expenses excluding A&G</u>	<u>\$102,863</u>
= A&G Loading Factor	28.43%

TABLE 8 GENERAL PLANT LOADING FACTOR	
Account Description	2013 Recorded Costs \$ 000s
Total General Plant	\$215,973
+ <u>Average General Plant RECC</u>	<u>11.50%</u>
= Annualized General Plant	\$24,844
/ <u>Total O&M Expenses</u>	<u>\$187,881</u>
= General Plant Loading Factor	13.22%

SAN DIEGO GAS & ELECTRIC COMPANY

2016 TCAP Phase II

Section 4

SDG&E Cost Allocation Model

**Workpapers to the Prepared Written Testimony of
Marjorie Schmidt-Pines**

2016TCAP Phase II SDGEGas COST ALLOCATION

	Residential	NGV	CCI	Total Core	Total NCCI	EG Tier 1	EG Tier 2	Total EG	Total NonCore	System Total	
1 <u>Customer Costs</u>											
2 Per Unit LRM, \$/Cust/Year	\$240.26	\$4,449.92	\$461.91	\$247.77	\$10,168.01	\$6,941.33	\$8,485.05	\$7,372.02	\$8,555.13	\$248.89	
3 Number of Customers	884,624	38	30,265	914,927	52	51	20	71	123	915,050	
4 Customer Costs Rental Method \$000	\$227,746	\$212,544	\$171	\$13,980	\$226,694	\$529	\$355	\$168	\$523	\$1,051	\$227,746
5											
6 <u>Medium Pressure Distribution costs</u>											
7 Medium Pressure Distribution costs (MPD)											
8 Per Unit LRM, \$/mcf	\$243.90	\$243.90	\$243.90	\$243.90	\$243.90	\$243.90	\$243.90	\$243.90	\$243.90	\$243.90	
9 MPD Peak Day Demand (mmcf)	281	2	85	368	6	4	2	6	11	380	
10 Medium Pressure Distribution Costs \$000	\$92,565	\$68,588	\$472	\$20,705	\$89,765	\$1,354	\$914	\$532	\$1,446	\$2,800	\$92,565
11											
12 <u>High Pressure Distribution costs</u>											
13 High Pressure Distribution costs (HPD)											
14 Per Unit LRM, \$/mdth	\$24.46	\$24.46	\$24.46	\$24.46	\$24.46	\$24.46	\$24.46	\$24.46	\$24.46	\$24.46	
15 HPD Peak Day Demand (mmcf)	281	5	87	373	8	6	20	26	34	406	
16 High Pressure Distribution Costs \$000	\$9,941	\$6,881	\$122	\$2,116	\$9,120	\$187	\$143	\$491	\$634	\$822	\$9,941
17											
18 Unscaled LRM Based Costs \$000	\$330,252	\$288,013	\$765	\$36,801	\$325,579	\$2,070	\$1,412	\$1,191	\$2,603	\$4,673	\$330,252
19											
20 <u>Calculation of Scalar:</u>											
21 Target Base Margin \$000	\$305,893										
22 Less items not allocated per LRM method:											
23 Transmission Cost per EC \$000	\$38,229										
24 NGV Compression Adder Costs per EC \$000	\$494										
25 Target Scaled Costs \$000	\$267,169										
26 Unscaled LRM Based Costs \$000	\$330,252										
27 amount to scale \$000	(\$63,083)										
28 Scalar (as a % of unscaled)	81%	81%	81%	81%	81%	81%	81%	81%	81%	81%	
29											
30 Scaled Customer Costs \$000 LRM/Rental Method	\$171,945	\$138	\$11,309	\$183,392	\$428	\$287	\$136	\$423	\$851	\$184,243	
31 Scaled Medium Pressure Distribution Costs \$000 LRM	\$55,487	\$382	\$16,750	\$72,618	\$1,095	\$740	\$430	\$1,170	\$2,265	\$74,884	
32 Scaled High Pressure Distribution Costs \$000 LRM	\$5,567	\$99	\$1,712	\$7,378	\$151	\$116	\$397	\$513	\$665	\$8,042	
33 Scaled LRM Based Costs \$000	\$267,169	\$232,998	\$619	\$29,771	\$263,389	\$1,674	\$1,142	\$964	\$2,106	\$3,781	\$267,169
34											
35 <u>NGV Compression Costs:</u>											
36 Compression Adder Costs \$000	\$494	\$494		\$494				\$0	\$0	\$494	

2016TCAP Phase II SDGEGas COST ALLOCATION

37												
38	<u>Transmission Costs per Embedded Cost Method:</u>											
39	Embedded Transmission Costs \$000											\$38,229
40	Calculate BBT/Local-T Transmission Split:											
41	BBT %											100.0%
42	LT %											0.0%
43												\$38,229
44												\$0
44	<u>Allocation of BBT Costs:</u>											
45	CYTP Mth/yr	1,277,243	354,198	18,501	189,687	562,386	44,975	21,281	648,600	669,882	714,857	1,277,243
46	% CYTP		27.7%	1.4%	14.9%	44.0%	3.5%	1.7%	50.8%	52.4%	56.0%	100.0%
47	BBT Costs per EC method	\$38,229	\$10,601	\$554	\$5,677	\$16,833	\$1,346	\$637	\$19,413	\$20,050	\$21,396	\$38,229
48												
49	CYPM Mth	139,487	51,533	1,606	20,381	73,520	3,970	1,757	60,239	61,997	65,967	139,487
50	% CYPM		36.9%	1.2%	14.6%	52.7%	2.8%	1.3%	43.2%	44.4%	47.3%	100.0%
51	LT Costs per EC method	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
52	Transmission Costs per EC method	\$38,229	\$10,601	\$554	\$5,677	\$16,833	\$1,346	\$637	\$19,413	\$20,050	\$21,396	\$38,229
53												
54												
55	ALLOCATED BASE MARGIN (net of misc revenue & br	\$305,893	\$243,600	\$1,667	\$35,449	\$280,716	\$3,021	\$1,779	\$20,377	\$22,156	\$25,177	\$305,893
56	Percentage		19.7%	0.1%	2.9%	22.7%	0.2%	0.1%	1.6%	1.8%	2.0%	24.7%
57	Average Year Throughput Mth	1,236,000	319,982	18,501	182,660	521,144	44,975	21,281	648,600	669,882	714,857	1,236,000
58	average rate \$/therm	\$0.247	\$0.761	\$0.090	\$0.194	\$0.539	\$0.067	\$0.084	\$0.031	\$0.033	\$0.035	\$0.247
59												
60												
61												
62	<u>Model Results RD Format for RD Models</u>											
63	Customer Related Costs		\$171,945	\$138	\$11,309	\$183,392	\$428	\$287	\$136	\$423	\$851	\$184,243
64	Medium Pressure Distribution Costs		\$55,487	\$382	\$16,750	\$72,618	\$1,095	\$740	\$430	\$1,170	\$2,265	\$74,884
65	High Pressure Distribution Costs		\$5,567	\$99	\$1,712	\$7,378	\$151	\$116	\$397	\$513	\$665	\$8,042
66	Backbone Transmission Costs		\$10,601	\$554	\$5,677	\$16,833	\$1,346	\$637	\$19,413	\$20,050	\$21,396	\$38,229
67	Local Transmission Costs		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
68	Storage - Borrego											
69	Core Seasonal Storage											
70	Storage - Load Balancing											
71	NGV Compression Costs:		\$0	\$494	\$0	\$494	\$0	\$0	\$0	\$0	\$0	\$494
72	Total Margin Allocation pre-SI & Unbundle FAR		\$243,600	\$1,667	\$35,449	\$280,716	\$3,021	\$1,779	\$20,377	\$22,156	\$25,177	\$305,893
73	% Allocation		79.6%	0.5%	11.6%	91.8%	1.0%	0.6%	6.7%	7.2%	8.2%	100.0%
74												

2016TCAP Phase II SDGEGas COST ALLOCATION

	NCCI-D	NCCI-T	Total NCCI	EG Tier 1 Dist	EG Tier 2 Dist	EG Tier 1 Trans	EG Tier 2 Trans	EG Trans	Total EG
1 <u>Customer Costs</u>									
2 Per Unit LRM, \$/Cust/Year									
3 Number of Customers	42	10	52	46	7	5	13	18	71
4 Customer Costs Rental Method \$000	\$429	\$100	\$529	\$341	\$52	\$36	\$94	\$130	\$523
5									
6 <u>Medium Pressure Distribution costs</u>									
7 Medium Pressure Distribution costs (MPD)									
8 Per Unit LRM, \$/mcf									
9 MPD Peak Day Demand (mmcf)									
10 Medium Pressure Distribution Costs \$000	\$1,354	\$0	\$1,354	\$914	\$532	\$0	\$0	\$0	\$1,446
11									
12 <u>High Pressure Distribution costs</u>									
13 High Pressure Distribution costs (HPD)									
14 Per Unit LRM, \$/mdth									
15 HPD Peak Day Demand (mmcf)									
16 High Pressure Distribution Costs \$000	\$187	\$0	\$187	\$143	\$491	\$0	\$0	\$0	\$634
17									
18 Unscaled LRM Based Costs \$000	\$1,970	\$100	\$2,070	\$1,398	\$1,075	\$36	\$94	\$130	\$2,603
19									
20 <u>Calculation of Scalar:</u>									
21 Target Base Margin \$000									
22 Less items not allocated per LRM method:									
23 Transmission Cost per EC \$000									
24 NGV Compression Adder Costs per EC \$000									
25 Target Scaled Costs \$000									
26 Unscaled LRM Based Costs \$000									
27 amount to scale \$000									
28 Scalar (as a % of unscaled)	81%	81%	81%	81%	81%	81%	81%	81%	81%
29									
30 Scaled Customer Costs \$000 LRM/Rental Method	\$347	\$81	\$428	\$276	\$42	\$29	\$76	\$105	\$423
31 Scaled Medium Pressure Distribution Costs \$000 LRM	\$1,095	\$0	\$1,095	\$740	\$430	\$0	\$0	\$0	\$1,170
32 Scaled High Pressure Distribution Costs \$000 LRM	\$151	\$0	\$151	\$116	\$397	\$0	\$0	\$0	\$513
33 Scaled LRM Based Costs \$000	\$1,594	\$81	\$1,674	\$1,131	\$870	\$29	\$76	\$105	\$2,106
34									
35 <u>NGV Compression Costs:</u>									
36 Compression Adder Costs \$000			0					\$0	\$0

2016TCAP Phase II SDGEGas COST ALLOCATION

37										
38	<u>Transmission Costs per Embedded Cost Method:</u>									
39	Embedded Transmission Costs \$000									
40	Calculate BBT/Local-T Transmission Split:									
41	BBT %	100.0%								
42	LT %	0.0%								
43										
44	<u>Allocation of BBT Costs:</u>									
45	CYTP Mth/yr	27,807	17,168	44,975	19,210	76,596	2,071	572,004	574,075	669,882
46	% CYTP	2.2%	1.3%	3.5%	1.5%	6.0%	0.2%	44.8%	44.9%	52.4%
47	BBT Costs per EC method	\$832	\$514	\$1,346	\$575	\$2,293	\$62	\$17,121	\$17,183	\$20,050
48										
49	CYPM Mth	2,455	1,516	3,970	1,591	6,444	166	53,795	53,961	61,997
50	% CYPM	1.8%	1.1%	2.8%	1.1%	4.6%	0.1%	38.6%	38.7%	44.4%
51	LT Costs per EC method	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
52	Transmission Costs per EC method	\$832	\$514	\$1,346	\$575	\$2,293	\$62	\$17,121	\$17,183	\$20,050
53										
54										
55	ALLOCATED BASE MARGIN (net of misc revenue & br	\$2,426	\$595	\$3,021	\$1,706	\$3,162	\$91	\$17,197	\$17,288	\$22,156
56	Percentage									
57	Average Year Throughput Mth									
58	average rate \$/therm									
59										
60										
61										
62	<u>Model Results RD Format for RD Models</u>									
63	Customer Related Costs	\$347	\$81	\$428	\$276	\$42	\$29	\$76	\$105	\$423
64	Medium Pressure Distribution Costs	\$1,095	\$0	\$1,095	\$740	\$430	\$0	\$0	\$0	\$1,170
65	High Pressure Distribution Costs	\$151	\$0	\$151	\$116	\$397	\$0	\$0	\$0	\$513
66	Backbone Transmission Costs	\$832	\$514	\$1,346	\$575	\$2,293	\$62	\$17,121	\$17,183	\$20,050
67	Local Transmission Costs	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
68	Storage - Borrego									
69	Core Seasonal Storage									
70	Storage - Load Balancing									
71	NGV Compression Costs:	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
72	Total Margin Allocation pre-SI & Unbundle FAR	\$2,426	\$595	\$3,021	\$1,706	\$3,162	\$91	\$17,197	\$17,288	\$22,156
73	% Allocation	0.8%	0.2%	1.0%	0.6%	1.0%	0.0%	5.6%	5.7%	7.2%
74										

2016TCAP Phase II SDGEGas COST ALLOCATION

75											
76											
77											
78											
79	<u>DIRECT (%s Load or Cust/Mtrs Sum to 100%)</u>										
80	Transmission										
81	Average Year Throughput (MTh)	0	0	0	0	17,168	2,071	572,004	574,075	591,243	591,243
82	Cold Year Throughput (1-in-35) (MTh)	0	0	0	0	17,168	2,071	572,004	574,075	591,243	591,243
83	Cold Year Peak Month (December) (MTh)	0	0	0	0	1,516	166	53,795	53,961	55,477	55,477
84	Peak Day (1-in-35 Core; 1-in-10 Noncore) (MTh)	0	0	0	0	49	19	1,968	1,987	2,036	2,036
85	Number of Customers	0	0	0	0	10	5	13	18	27	27
86	High Pressure										
87	Average Year Throughput (MTh)	93	11,340	3,429	14,862	7,630	4,914	68,276	73,190	80,820	95,681
88	Cold Year Throughput (1-in-35) (MTh)	102	11,340	3,561	15,003	7,630	4,914	68,276	73,190	80,820	95,823
89	Cold Year Peak Month (December) (MTh)	15	984	383	1,382	674	388	5,744	6,133	6,806	8,188
90	Peak Day (1-in-35 Core; 1-in-10 Noncore) (MTh)	1	32	17	49	22	22	185	207	229	278
91	Number of Customers	1	8	6	15	9	6	5	11	20	35
92	Medium Pressure										
93	Average Year Throughput (MTh)	319,890	7,162	179,231	506,282	20,177	14,297	8,320	22,617	42,794	549,076
94	Cold Year Throughput (1-in-35) (MTh)	354,096	7,162	186,126	547,383	20,177	14,297	8,320	22,617	42,794	590,177
95	Cold Year Peak Month (December) (MTh)	51,518	622	19,998	72,138	1,781	1,203	700	1,903	3,684	75,822
96	Peak Day (1-in-35 Core; 1-in-10 Noncore) (MTh)	2,911	20	879	3,810	57	39	23	61	119	3,928
97	Number of Customers	884,623	30	30,259	914,912	33	40	2	42	75	914,987
98	<u>CUMULATIVE (Calc'd from DIRECT %s)</u>										
99	Transmission										
100	Average Year Throughput (MTh)	319,982	18,501	182,660	521,144	44,975	21,281	648,600	669,882	714,857	1,236,000
101	Cold Year Throughput (1-in-35) (MTh)	354,198	18,501	189,687	562,386	44,975	21,281	648,600	669,882	714,857	1,277,243
102	Cold Year Peak Month (December) (MTh)	51,533	1,606	20,381	73,520	3,970	1,757	60,239	61,997	65,967	139,487
103	Peak Day (1-in-35 Core; 1-in-10 Noncore) (MTh)	2,912	52	896	3,859	128	79	2,176	2,255	2,383	6,242
104	Number of Customers	884,624	38	30,265	914,927	52	51	20	71	123	915,050
105	High Pressure										
106	Average Year Throughput (MTh)	319,982	18,501	182,660	521,144	27,807	19,210	76,596	95,807	123,614	644,757
107	Cold Year Throughput (1-in-35) (MTh)	354,198	18,501	189,687	562,386	27,807	19,210	76,596	95,807	123,614	686,000
108	Cold Year Peak Month (December) (MTh)	51,533	1,606	20,381	73,520	2,455	1,591	6,444	8,036	10,490	84,010
109	Peak Day (1-in-35 Core; 1-in-10 Noncore) (MTh)	2,912	52	896	3,859	79	61	208	268	348	4,207
110	Number of Customers	884,624	38	30,265	914,927	42	46	7	53	95	915,022
111	Medium Pressure										
112	Average Year Throughput (MTh)	319,890	7,162	179,231	506,282	20,177	14,297	8,320	22,617	42,794	549,076
113	Cold Year Throughput (1-in-35) (MTh)	354,096	7,162	186,126	547,383	20,177	14,297	8,320	22,617	42,794	590,177
114	Cold Year Peak Month (December) (MTh)	51,518	622	19,998	72,138	1,781	1,203	700	1,903	3,684	75,822
115	Peak Day (1-in-35 Core; 1-in-10 Noncore) (MTh)	2,911	20	879	3,810	57	39	23	61	119	3,928
116	Number of Customers	884,623	30	30,259	914,912	33	40	2	42	75	914,987
117											
118											

2016TCAP Phase II SDGEGas COST ALLOCATION

119

120 **Convert EG Tier 1 & Tier 2 into class average EG Customer Unit Cost:**

121	EG Tier 1	EG Tier 2	Total EG
122			
123	\$6,941.33	\$8,485.05	\$7,372.02
124	51	20	71
125	\$355	\$168	\$523

126

127

128

129 **Core Storage Allocator**

130

131	Injection	\$36.18
132	Inventory	\$0.20
133	Withdrawal	\$8.78

134

135

136	Core Storage Capacities:	Allocation Method				
137	Number of Injection Days		214	214	214	214
138	Injection MMcf	Inv per Inj Day	46	37.7	8.1	0.5
139						
140	% Excess Winter Demand		81.5%	1.1%	17.4%	100%
141	Inventory MMCF	% Excess Winter	9,907	8,073	110	1,724
142						9,907
143	MPD Peak Day (1-in-35 Core) Core Only	MTh				
144	% Core MPD Peak Day		75.5%	1.3%	23.2%	100%
145	Withdrawal MMcf	% Core Peak Day	249	188	3	58
146						249
147	Injection \$000		\$1,675	\$1,365	\$19	\$292
148	Inventory \$000		\$2,028	\$1,653	\$22	\$353
149	Withdrawal \$000		\$2,185	\$1,649	\$29	\$507
150			\$5,888	\$4,666	\$70	\$1,152
151						\$5,888
152	Core Storage Allocation		79.2%	1.2%	19.6%	

Core Storage Capacities: Allocation Method

Present

	% Excess Winter Demand		81.0%	0.0%	19.0%	100%
	Inventory MMCF		9,907	8,028	1	1,878
						9,907
	MPD Peak Day (1-in-35 Core) Core Only	MTh				
	% Core MPD Peak Day		65.6%	0.8%	33.7%	100%
	Withdrawal MMcf	% Core Peak Day	249	163	2	84
						249

Proposed

	% Excess Winter Demand		81.5%	1.1%	17.4%	100%
	Inventory MMCF	% Excess Winter	9,824	8,012	108	1,703
						9,907
	MPD Peak Day (1-in-35 Core) Core Only	MTh				
	% Core MPD Peak Day		75.5%	1.3%	23.2%	100%
	Withdrawal MMcf	% Core MPD Pea	248	187	3	57
						249

TABLE 10a			
UNSCALED LONG RUN MARGINAL COST			
CUSTOMER COST			
Customer Class	Customer LRM Cost \$/customer	Customer Count	Customer Cost \$000
Residential	\$240	884,624	\$212,544
Core C/I	\$462	30,265	\$13,980
NGV	\$4,450	38	\$171
Total Core			\$226,694
Noncore C/I	\$10,168	52	\$529
Small EG	\$6,941	51	\$355
Large EG	\$8,485	20	\$168
Total Noncore			\$1,051
Total SDG&E			\$227,746

TABLE 11											
LONG RUN MARGINAL COST SCALED CUSTOMER AND DISTRIBUTION COSTS											
\$ 000											
Customer Class	Customer Cost	+	MPD	+	HPD	=	Unscaled LRM Cost	x	Scalar	=	Scaled LRM Cost
Residential	\$212,544		\$68,588		\$6,881		\$288,013		81%		\$232,998
Core C/I	\$13,980		\$20,705		\$2,116		\$36,801		81%		\$29,771
NGV	\$171		\$472		\$122		\$765		81%		\$619
Total Core	\$226,694		\$89,765		\$9,120		\$325,579		81%		\$263,389
Noncore C/I	\$529		\$1,354		\$187		\$2,070		81%		\$1,674
Small EG	\$355		\$914		\$143		\$1,412		81%		\$1,142
Large EG	\$168		\$532		\$491		\$1,191		81%		\$964
Total Noncore	\$1,051		\$2,800		\$822		\$4,673		81%		\$3,781
Total SDG&E	\$227,746		\$92,565		\$9,941		\$330,252		81%		\$267,169

TABLE 10b						
UNSCALED LONG RUN MARGINAL COST						
DISTRIBUTION COSTS						
Customer Class	MPD LRM Cost \$/mcf	MPD Peak-Day (Mcf)	MPD Costs \$000	HPD LRM Cost \$/mcf	HPD Peak-Day (Mcf)	HPD Costs \$000
Residential	\$244	281,218	\$68,588	\$24	281,300	\$6,881
Core C/I	\$244	84,891	\$20,705	\$24	86,516	\$2,116
NGV	\$244	1,937	\$472	\$24	5,004	\$122
Total Core			\$89,765			\$9,120
Noncore C/I	\$244	5,551	\$1,354	\$24	7,651	\$187
Small EG	\$244	3,749	\$914	\$24	5,852	\$143
Large EG	\$244	2,182	\$532	\$24	20,084	\$491
Total Noncore			\$2,800			\$822
Total SDG&E			\$92,565			\$9,941

TABLE 12 ALLOCATION OF BASE MARGIN \$ 000				
Customer Class	Scaled LRMC	+ Backbone Transmission	+ NGV Public Access	= Unadjusted Allocated Base Margin
Residential	\$232,998	\$0	\$0	\$232,998
Core C/I	\$29,771	\$0	\$0	\$29,771
NGV	\$619	\$0	\$494	\$1,114
Total Core	\$263,389	\$0	\$494	\$263,883
Noncore C/I	\$1,674	\$0	\$0	\$1,674
Small EG	\$1,142	\$0	\$0	\$1,142
Large EG	\$964	\$0	\$0	\$964
Total Noncore	\$3,781	\$0	\$0	\$3,781
Backbone Transm	\$0	\$38,229	\$0	\$38,229
Total SDG&E	\$267,169	\$38,229	\$494	\$305,893

TABLE 13 COST ALLOCATION COMPARISON \$ 000				
Customer Class	Adjusted Allocation of Base Margin	% Total	Current Allocation of Base Margin	% Total
Residential	\$232,998	76.2%	\$233,081	76.2%
Core C/I	\$29,771	9.7%	\$35,290	11.5%
NGV	\$1,114	0.4%	\$1,220	0.4%
Total Core	\$263,883	86.3%	\$269,591	88.1%
Noncore C/I - D	\$1,674	0.5%	\$2,174	0.7%
EG - D	\$1,142	0.4%	\$1,061	0.3%
TLS	\$964	0.3%	\$1,593	0.5%
Total Noncore	\$3,781	1.2%	\$4,828	1.6%
Backbone Transmission	\$38,229	12.5%	\$31,473	10.3%
Total SDG&E	\$305,893		\$305,893	

SAN DIEGO GAS & ELECTRIC COMPANY

2016 TCAP Phase II

Section 5

Miscellaneous Data

**Workpapers to the Prepared Written Testimony of
Marjorie Schmidt-Pines**

SAN DIEGO GAS & ELECTRIC

2013 Economic Assumptions Update LEVELIZED ANNUAL CAPITAL COST AND RECC FACTORS

utility **sdge gas** Auth ROR ==> **7.79%** Fed Tax Rate ==> **35.00%** State Tax Rate ==> **8.84%** id Valorum Rate ==> **1.328%**

FERC Account	Account Name
--------------	--------------

Book Life	Fed Tax Life	State Tax Life	Percent Salvage	Normlzd Federal Taxes ?	Normlzd State Taxes ?	Depreciation Method		LACC Components (in percent)					RECC factors	PVCC factors	Sum of Rev Req				
						Federal Tax	State Tax	Book Depr	Return on Capital	Income Taxes	Property Taxes	Total LACC							
9	10	11	12	13	14	15	16	19	20	21	22	23	25	26	27				
G-365.1	Land	0	0	0	0%	FALSE	FALSE	none	0%	none	0%	0.00	8.34	4.23	1.33	13.89	n/a	166.69	1427.44
G-365.2	Land Rights	40	40	40	0%	FALSE	FALSE	sl	0%	sl	0%	2.50	6.08	3.09	0.95	12.63	10.48	145.32	376.40
G-366	Structures & Improvements	30	39	45	0%	TRUE	FALSE	sl	0%	sl	0%	3.33	5.90	3.08	0.89	13.20	11.25	144.06	321.81
G-367	Mains	45	15	22	-5%	TRUE	FALSE	db/sl	150%	db/sl	200%	2.33	5.22	2.43	0.96	10.95	9.00	127.76	335.75
G-368	Compressor Station Equipment	27	15	22	-25%	TRUE	FALSE	db/sl	150%	db/sl	200%	4.63	4.50	2.09	0.75	11.96	10.30	127.01	236.45
G-369	Measuring & Regulating Equipment	23	15	22	-5%	TRUE	FALSE	db/sl	150%	db/sl	200%	4.57	4.81	2.33	0.80	12.51	10.94	126.33	236.79
G-371	Other Equipment	27	15	22	0%	TRUE	FALSE	db/sl	150%	db/sl	200%	3.70	4.96	2.40	0.86	11.92	10.27	126.59	259.37

GAS DISTRIBUTION PLANT

M&S Annualization Factor

G-374.1	Land	0	0	0	0%	FALSE	FALSE	none	0%	none	0%	0.00	7.79	3.84	1.33	12.95	n/a	166.28	1331.10
G-374.2	Land Rights	31	40	40	0%	FALSE	FALSE	sl	0%	sl	0%	3.23	5.28	2.97	0.88	12.36	10.44	143.17	299.57
G-375	Structures & Improvements	44	39	45	0%	TRUE	FALSE	sl	0%	db/sl	150%	2.27	5.64	2.76	0.96	11.63	9.49	143.77	373.40
G-376	Mains	60	20	35	-45%	TRUE	FALSE	db/sl	150%	db/sl	200%	2.42	4.80	2.25	0.91	10.37	8.27	131.63	301.20
G-378	Measuring & Regulating Equipment	42	20	35	-15%	TRUE	FALSE	db/sl	150%	db/sl	200%	2.74	4.80	2.26	0.89	10.70	8.77	131.43	302.21
G-380	Services	48	20	35	-75%	TRUE	FALSE	db/sl	150%	db/sl	200%	3.65	4.15	1.97	0.72	10.49	8.50	131.00	219.10
G-381	Meters & Regulators	44	20	35	0%	TRUE	FALSE	db/sl	150%	db/sl	200%	2.27	5.04	2.37	0.96	10.65	8.69	131.64	333.52
G-382	Meter & Regulator Installations	38	20	35	-45%	TRUE	FALSE	db/sl	150%	db/sl	200%	3.82	4.28	2.01	0.75	10.85	8.98	131.20	247.59
G-385	Industrial Measuring & Regulating Equip	24	20	35	0%	TRUE	FALSE	db/sl	150%	db/sl	200%	4.17	4.77	2.36	0.83	12.13	10.53	130.00	244.90
G-387	Other Equipment	11	20	35	0%	TRUE	FALSE	db/sl	150%	db/sl	200%	9.09	4.84	2.54	0.69	17.17	15.96	123.83	178.24

2013 TCAP RECC

Gross Plant Additions from FERC Form 2

Account Weight

2013

GAS GENERAL PLANT

G-392.2	Trailers	21	5	6	0%	TRUE	FALSE	db/sl	200%	db/sl	200%	4.76	3.69	1.51	0.80	10.77	9.47	109.63	201.71
G-394.1	Portable Tools	23	20	35	0%	TRUE	FALSE	db/sl	150%	db/sl	200%	4.35	4.77	2.37	0.82	12.31	10.73	129.85	240.47
G-394.2	Shop Equipment	23	20	35	0%	TRUE	FALSE	db/sl	150%	db/sl	200%	4.35	4.77	2.37	0.82	12.31	10.73	129.85	240.47
G-395	Laboratory Equipment	14	20	35	0%	TRUE	FALSE	db/sl	150%	db/sl	200%	7.14	4.81	2.49	0.73	15.18	13.85	126.65	196.15
G-397	Communications Equipment	15	7	10	0%	TRUE	FALSE	db/sl	150%	db/sl	200%	6.67	3.91	1.77	0.74	13.09	11.88	113.53	180.51
G-398	Miscellaneous Equipment	19	20	35	0%	TRUE	FALSE	db/sl	150%	db/sl	200%	5.26	4.78	2.41	0.78	13.24	11.76	129.08	222.38

8.32% =====>

11.50% =====>

Short Names	FERC	Long Names
O&M Costs		
CEU4422000008		Average Hourly Earnings - Utility Service Workers
JAHE49NS	814-894 & 901-935	Labor O&M Cost Index (Based on CEU4422000008)
JGTOTALMS	814-894 & 901-935	Total Gas O&M Cost Index (MS) (Non-Labor O&M Cost Index)
Utility Construction Costs		
JUG@PCF	362-384	Total Gas Plant, Pacific Region
JUGPT@PCF	366-369	Total Transmission Plant, Pacific Region
JUGPDS&I@PCF	375	Gas Distribution Plant Structures & Improvements, Pacific Region
JUGPDMCI@PCF	376	Gas Distribution Plant Cast Iron Mains, Pacific Region
JUGPDMS@PCF	376	Gas Distribution Plant Steel Mains, Pacific Region
JUGPDMP@PCF	376	Gas Distribution Plant Plastic Mains, Pacific Region
JUGPDSTCM@PCF	377	Gas Distribution Plant Compressor Station Equipment, Pacific Region
JUGPDSTM&R@PCF	378	Gas Distribution Plant Meas. & Reg. Sta. Equipment, Pacific Region
JUGPDSTM&RL@PCF	379	Gas Distribution Plant Meas. & Reg. Sta. Equipment - City Gt., Pacific Region
JUGPDSVS@PCF	380	Gas Distribution Plant Steel Services, Pacific Region
JUGPDSVP@PCF	380	Gas Distribution Plant Plastic Services, Pacific Region
JUGPDMT@PCF	381	Gas Distribution Plant Meters, Pacific Region
JUGPDMTI@PCF	382	Gas Distribution Plant Meter Installations, Pacific Region
JUGPDRH@PCF	383	Gas Distribution Plant House Regulators, Pacific Region
JUGPDRHI@PCF	384	Gas Distribution Plant House Regulators Installations, Pacific Region

Global Insight and Handy-Whitman Data

from Global Insight 4th Quarter 2014 Power Planner utility cost forecast (released February 2015)

YEAR	CEU4422000008	JGTOTALMS	JUG@PCF	JUGPT@PCF	JUGPDS&I@PCF	JUGPDMCI@PCF	JUGPDMS@PCF	JUGPDMP@PCF
1997	20.594	0.64783	359.000	321.000	326.000	315.500	368.000	340.500
1998	21.480	0.65930	363.500	325.250	331.500	318.000	372.250	345.750
1999	22.028	0.67378	372.000	328.000	337.500	322.500	381.500	351.500
2000	22.753	0.69780	385.500	331.000	345.250	327.500	395.750	356.250
2001	23.582	0.71726	390.750	333.750	354.750	334.500	399.750	363.000
2002	23.958	0.73135	398.750	339.500	365.250	353.750	407.250	371.250
2003	24.768	0.75414	412.000	344.000	376.000	361.500	423.500	377.500
2004	25.611	0.78239	474.500	398.250	398.250	369.750	502.750	390.000
2005	26.697	0.81761	556.750	440.750	417.750	402.000	605.500	414.500
2006	27.402	0.84886	579.500	459.000	434.300	437.800	630.800	436.000
2007	27.867	0.87841	568.500	480.300	459.300	476.000	610.300	457.000
2008	28.837	0.92330	640.300	525.900	483.100	538.500	697.800	479.200
2009	29.480	0.91989	633.300	512.800	478.800	599.300	683.800	498.800
2010	30.038	0.94375	660.500	515.800	498.300	621.500	715.300	493.000
2011	30.822	0.97841	723.000	543.800	512.300	626.000	793.800	508.800
2012	31.606	1.00000	780.300	574.300	520.000	706.300	864.500	529.500
2013	32.276	1.01548	775.750	570.250	528.000	754.250	854.500	534.250
2014	32.878	1.03128	786.502	605.839	539.322	823.176	861.847	540.505
2015	33.484	1.03641	802.660	613.661	547.824	834.522	879.502	551.785
2016	34.471	1.05743	820.869	627.938	560.346	836.118	899.067	563.937
2017	35.512	1.08345	843.683	645.445	573.224	853.110	924.203	577.712
2018	36.500	1.11120	863.444	661.556	586.800	885.337	944.734	593.144
2019	37.495	1.13589	885.808	678.864	601.050	923.074	968.516	610.227
2020	38.494	1.16080	909.163	696.490	615.528	951.855	993.499	627.020
2021	39.481	1.18562	929.786	713.667	630.046	980.380	1014.868	643.449
2022	40.480	1.20950	951.447	732.180	645.175	1003.765	1037.476	660.256
2023	41.505	1.23460	974.107	751.004	660.696	1027.356	1061.239	677.170
2024	42.541	1.26020	994.772	766.696	676.265	1055.195	1082.252	694.503

Miscellaneous LRMC Data
Global Insight Cost Escalators

YEAR	JUGPDSTCM@PCF	JUGPDSTM&R@PCF	JUGPDSTM&RL@PCF	JUGPDSVS@PCF	JUGPDSVP@PCF	JUGPDMT@PCF
1997	397.000	368.500	365.500	356.000	351.000	195.500
1998	403.250	372.750	369.750	361.750	357.000	196.000
1999	405.250	377.000	374.000	370.750	364.500	190.750
2000	410.250	385.500	383.250	380.000	370.000	201.750
2001	415.250	388.500	385.500	385.750	378.500	209.250
2002	424.500	397.000	393.500	395.750	391.500	201.500
2003	428.750	398.500	396.250	406.750	400.000	192.750
2004	448.750	454.750	454.250	443.500	413.000	182.750
2005	491.250	513.000	516.750	494.000	434.000	185.250
2006	500.000	534.300	537.300	513.500	453.000	196.800
2007	524.000	537.300	537.800	516.000	471.800	227.000
2008	564.300	597.900	600.600	558.600	496.500	250.500
2009	579.000	592.500	592.800	567.000	519.800	255.500
2010	594.300	606.500	607.300	586.800	532.800	253.300
2011	619.800	686.500	687.500	625.500	550.800	256.300
2012	641.000	726.800	730.300	662.300	569.500	268.500
2013	651.500	717.000	719.500	665.250	579.750	289.000
2014	667.287	739.857	740.387	677.315	594.771	338.100
2015	680.987	750.457	750.715	692.246	609.647	326.595
2016	694.810	767.619	767.450	708.160	624.882	329.972
2017	716.026	787.636	787.282	727.168	641.142	334.870
2018	736.094	804.807	804.214	745.941	658.572	342.499
2019	755.373	824.620	823.681	766.491	678.072	349.991
2020	773.784	844.818	843.663	787.686	697.535	358.979
2021	792.215	863.318	861.709	807.490	716.916	365.707
2022	810.778	882.824	880.774	827.860	736.617	372.898
2023	829.487	903.024	900.548	849.038	756.826	380.272
2024	848.339	921.540	918.547	869.398	777.423	387.596

Miscellaneous LRMC Data
Global Insight Cost Escalators

YEAR	JUGPDMTI@PCF	JUGPDRH@PCF	JUGPDRHI@PCF
1997	378.500	302.750	378.000
1998	381.000	306.750	380.500
1999	390.000	305.500	389.500
2000	407.250	305.250	405.500
2001	410.000	311.750	409.250
2002	417.500	318.500	417.500
2003	437.000	317.750	436.000
2004	542.750	322.750	534.250
2005	677.000	339.500	659.250
2006	705.300	358.300	686.800
2007	672.000	379.500	657.800
2008	789.100	395.800	768.300
2009	762.300	404.500	746.000
2010	803.300	414.800	786.800
2011	907.500	429.300	884.800
2012	999.500	437.800	970.800
2013	983.750	445.750	958.000
2014	989.111	454.463	964.644
2015	1009.375	461.824	985.570
2016	1032.350	467.137	1009.155
2017	1062.160	473.297	1039.049
2018	1084.141	479.526	1061.907
2019	1110.879	486.107	1089.197
2020	1139.070	494.761	1117.906
2021	1162.343	505.881	1142.224
2022	1187.323	515.561	1168.197
2023	1213.689	525.563	1195.539
2024	1236.006	533.812	1218.475