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Witness:	Michael W. Foster

SOUTHERN CALIFORNIA GAS COMPANY

ADVANCED METERING INFRASTRUCTURE

CHAPTER VII

SOCALGAS AMI BUSINESS CASE MODELING METHODOLOGY AND REVENUE REQUIREMENT

Errata to

Prepared Direct Testimony

of

Michael W. Foster

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

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I. PURPOSE AND SUMMARY

The purpose of my testimony is to describe the revenue requirement calculations based on the estimated Advanced Metering Infrastructure ("AMI") incremental costs and benefits presented in Southern California Gas Company's ("SoCalGas") AMI proposal. Specifically, this testimony describes the development of the following cost-benefit analyses of SoCalGas' AMI project over the 26-year analysis period, 2009-2034: ~~(a) net present value ("NPV") of AMI cash flows and (b)~~ NPV of AMI revenue requirements. The NPV results are identified for both the Hybrid and Stand Alone AMI scenarios, as described in the testimony of SoCalGas witness Mr. Edward Fong (Chapter II). My testimony also identifies the forecasted monthly and annual AMI revenue requirements proposed for recovery over the deployment period, 2009-2015, based on adoption of the Stand Alone AMI scenario, as proposed by SoCalGas (See testimony of SoCalGas witness Mr. Fong, Chapter II). Table VII-1 shows a summary of the present value of revenue requirement analysis indicating an incremental benefit to ratepayers of $13.2 million. Table VII-1 below provides a summary of the net benefits resulting from implementation of AMI compared to the status quo. The economic comparison results in a ratio of approximately 84.5% of operational benefits to costs. This percentage of benefits is higher than any other AMI business case approved by the California Public Utilities Commission ("Commission" or "CPUC"). Once other non-operational benefits are considered, investing in AMI provides overall benefits to SoCalGas' ratepayers.

Table VII-1
Present Value of 26 Year Annual Revenue Requirements and Other Ratepayer Benefits
SoCalGas Stand Alone Scenario
($ millions) 2008$ - Costs (Benefits)

Costs	$	1,051.0
Operational Benefits	$	(888.6)
Operational Benefits as Percent of Costs		84.5%
Other Rate Payer Benefits	$	(175.5)
Net Rate Payer Benefits	**$**	**(13.2)**

Section II of my testimony describes the costs and benefits included in the analyses, with the aggregate level of costs and benefits, presented in ~~Table II-6~~ Table II-7 (testimony of Mr. Fong, Chapter II). Section III describes the revenue requirement analyses, which evaluates the merits of the business case from the ratepayers' perspective. The first revenue requirement analysis provides the NPV of the AMI revenue requirements over the 26-year analysis period, 2009-2034, with the results presented in Attachment MF-3. The second revenue requirement analysis provides the forecasted monthly and annual revenue requirements over the deployment period, 2009-2015, and is proposed as the basis for recovery until SoCalGas' next general rate case ("GRC") after AMI deployment has been completed. The forecasted monthly and annual revenue requirements are presented in Attachment MF-4.

II. DESCRIPTION OF INCREMENTAL AMI COSTS AND BENEFITS

A. Summary

The forecasted AMI revenue requirements identified in Attachments MF-3 and MF-4 include the incremental costs and benefits presented in the testimony of SoCalGas witnesses Mr. Mark Serrano (Chapter III), Mr. Christopher Olmsted (Chapter IV), and Mr. J.C. Martin (Chapter VI). The incremental capital and operating & maintenance ("O&M") costs and benefits were adjusted to include applicable overhead rates, escalation rates and sales taxes. In addition, the ~~NPV of the cash flows and~~ revenue requirements include "other benefits" that are not part of the revenue requirements for rate making purposes but are included when evaluating the economic value of the SoCalGas AMI investment. Table VII-2 shows that benefits exceed costs on a nominal basis by $1.727 billion.

Table VII-2
Undiscounted Cash Flow
Fully loaded and Escalated, Including Sales Tax
SoCalGas Stand Alone Scenario
($ millions) - Costs (Benefits)

		IT Development		Gas Module and Meter Installation Years					Post Deployment
	Total	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2015-2034**
Costs - Capital	**1,150.7**	21.6	56.7	141.5	171.2	177.1	178.7	155.7	248.2
Costs - O&M	**793.4**	3.1	3.7	25.1	31.3	37.3	42.7	43.8	606.4
Total Costs	**1,944.1**	24.7	60.4	166.7	202.4	214.4	221.4	199.6	854.5
Benefits - O&M	**(2,731.7)**	(2.2)	(2.3)	(6.6)	(19.2)	(34.9)	(51.6)	(67.9)	(2,546.9)
Benefits - Capital	**(359.9)**	-	-	(6.8)	(8.9)	(14.4)	(9.7)	(7.4)	(312.7)
Total Benefits	**(3,091.7)**	(2.2)	(2.3)	(13.5)	(28.1)	(49.3)	(61.3)	(75.3)	(2,859.6)
Other Ratepayer Benefits	**(579.3)**	-	-	(1.7)	(5.3)	(9.1)	(12.5)	(16.5)	(534.1)
Net Costs (Benefits)	**(1,726.8)**	**22.5**	**58.1**	**151.4**	**169.0**	**156.1**	**147.6**	**107.7**	**(2,539.2)**

B. Direct Capital Costs and Benefits

This section describes the incremental capital costs and benefits included in the discounted cash flows and revenue requirements. The incremental capital costs and benefits, including the SoCalGas witnesses that filed testimony sponsoring the particular cost or benefit element are identified in ~~Table II-6~~ Table II-7 (Testimony of Mr. Fong, Chapter II). The major capital costs including the witnesses that address the costs are as follows: (a) Information Technology (IT) systems development and implementation costs (SoCalGas witness Mr. Olmsted); (b) AMI network costs (SoCalGas witness Mr. Olmsted); and (c) AMI gas meter and module costs, including installation costs (SoCalGas witness Mr. Serrano).

The major capital benefits including the witnesses that address the benefits are as follows: (a) avoided replacement costs and inventory of existing gas meters (SoCalGas witness Mr. Serrano); (b) customer billing services savings (SoCalGas witness Mr. Serrano); (c) avoided meter reading IT expense (SoCalGas witness Mr. Serrano); and (d) avoided meter reading equipment and equipment maintenance costs (SoCalGas witness Mr. Serrano).

C. Direct Operating and Maintenance (O&M) Costs and Benefits

This section describes the incremental O&M costs and benefits included in the discounted cash flows and revenue requirements. The incremental O&M costs and benefits are identified in Table VII-3 below. These O&M costs and benefits comprise numerous elements primarily associated with the following areas and addressed by the following witnesses: (a) meter reading, billing, and customer service field costs and benefits (SoCalGas witness Mr. Serrano); (b) IT and application development and integration and AMI network costs (SoCalGas witness Mr. Olmsted); and (c) customer research, education and information costs (SoCalGas witness Mr. Martin).

Table VII-3
Undiscounted Cash Flow
Direct, Unloaded and Unescalated Costs and Benefits
SoCalGas Stand Alone Scenario
($ millions) 2008$ - Costs (Benefits)

		IT Development		Gas Module and Meter Installation Years					Post Deployment
Unloaded, unescalated	**Total**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2015-2034**
Costs - Capital	**940.7**	17.8	45.8	119.0	142.9	146.5	146.7	126.6	195.5
Costs - O&M	**432.4**	2.7	3.1	18.8	22.9	26.7	29.8	29.7	298.7
Total Costs	**1,373.1**	20.5	48.8	137.8	165.7	173.2	176.5	156.3	494.2
Benefits - O&M	**(1,164.7)**	(1.4)	(1.4)	(4.3)	(12.7)	(22.7)	(33.1)	(42.5)	(1,046.6)
Benefits - Capital	**(266.8)**	-	-	(6.3)	(8.0)	(12.6)	(8.3)	(6.2)	(225.4)
Total Benefits	**(1,431.5)**	(1.4)	(1.4)	(10.6)	(20.7)	(35.3)	(41.4)	(48.8)	(1,272.0)

D. Adjustments to Direct Costs

Direct costs and benefits provided by each witness do not reflect the entirety of the cost or benefit to the company. Direct costs reflect 2008 prices and do not include allocated overhead or sales tax. AMI direct costs and benefits are adjusted to include appropriate overhead rates, escalation factors, and sales tax, where applicable. The methodology used to adjust direct costs is consistent with the San Diego Gas & Electric Company ("SDG&E") AMI business case evaluation, and is described below. Table VII-4 below shows the results of each adjustment. The revenue requirements and rate impacts are based on the fully adjusted costs and benefits, including overheads, escalation and sales tax.

Table VII-4
Undiscounted Cash Flow
Adjustments to Direct Costs and Benefits - Loaders, Escalation, Sales Tax
SoCalGas Stand Alone Scenario
($ millions) 2008$ - Costs (Benefits)

		IT Development		Gas Module and Meter Installation Years					Post Deployment
Unloaded, Unescalated	**Total**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2015-2034**
Costs - Capital	**940.7**	17.8	45.8	119.0	142.9	146.5	146.7	126.6	195.5
Costs - O&M	**432.4**	2.7	3.1	18.8	22.9	26.7	29.8	29.7	298.7
Total Costs	**1,373.1**	20.5	48.8	137.8	165.7	173.2	176.5	156.3	494.2
Benefits - O&M	**(1,164.7)**	(1.4)	(1.4)	(4.3)	(12.7)	(22.7)	(33.1)	(42.5)	(1,046.6)
Benefits - Capital	**(266.8)**	-	-	(6.3)	(8.0)	(12.6)	(8.3)	(6.2)	(225.4)
Total Benefits	**(1,431.5)**	(1.4)	(1.4)	(10.6)	(20.7)	(35.3)	(41.4)	(48.8)	(1,272.0)

		IT Development		Gas Module and Meter Installation Years					Post Deployment
Loaded, Unescalated	**Total**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2015-2034**
Costs - Capital	**1,026.0**	20.9	53.2	129.3	155.2	159.2	159.4	137.3	211.5
Costs - O&M	**554.5**	3.0	3.5	23.4	28.5	33.2	37.2	37.3	388.5
Total Costs	**1,580.5**	23.9	56.7	152.7	183.7	192.4	196.6	174.6	599.9
		-	-	-	-	-	-	-	-
Benefits - O&M	**(1,677.1)**	(2.2)	(2.2)	(6.2)	(17.4)	(30.8)	(44.5)	(57.1)	(1,516.8)
Benefits - Capital	**(285.0)**	-	-	(6.3)	(8.0)	(12.9)	(8.3)	(6.3)	(243.2)
Total Benefits	**(1,962.1)**	(2.2)	(2.2)	(12.4)	(25.4)	(43.7)	(52.8)	(63.4)	(1,760.1)

		IT Development		Gas Module and Meter Installation Years					Post Deployment
Loaded, Escalated	**Total**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2015-2034**
Costs - Capital	**1,092.6**	21.4	55.4	134.5	163.0	168.6	170.2	147.9	231.6
Costs - O&M	**780.6**	3.1	3.6	25.0	31.0	37.0	42.4	43.4	595.0
Total Costs	**1,873.2**	24.5	59.1	159.5	194.0	205.6	212.6	191.3	826.6
		-	-	-	-	-	-	-	-
Benefits - O&M	**(2,476.5)**	(2.2)	(2.3)	(6.6)	(19.2)	(34.9)	(51.6)	(67.9)	(2,291.8)
Benefits - Capital	**(343.7)**	-	-	(6.8)	(8.9)	(14.0)	(9.7)	(7.4)	(296.8)
Total Benefits	**(2,820.2)**	(2.2)	(2.3)	(13.5)	(28.1)	(48.9)	(61.3)	(75.3)	(2,588.6)

		IT Development		Gas Module and Meter Installation Years					Post Deployment
Loaded, Escalated, Sales Tax*	**Total**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2015-2034**
Costs - Capital	**1,150.7**	21.6	56.7	141.5	171.2	177.1	178.7	155.7	248.2
Costs - O&M	**793.4**	3.1	3.7	25.1	31.3	37.3	42.7	43.8	606.4
Total Costs	**1,944.1**	24.7	60.4	166.7	202.4	214.4	221.4	199.6	854.5
Benefits - O&M	**(2,480.1)**	(2.2)	(2.3)	(6.6)	(19.2)	(34.9)	(51.6)	(67.9)	(2,295.3)
Benefits - Capital	**(359.9)**	-	-	(6.8)	(8.9)	(14.4)	(9.7)	(7.4)	(312.7)
Total Benefits	**(2,840.1)**	(2.2)	(2.3)	(13.5)	(28.1)	(49.3)	(61.3)	(75.3)	(2,608.0)

* The revenue requirement evaluation is based on the figures including loading, escalation and sales tax.

1. Overhead Rates

Applicable overhead rates are applied to both AMI capital and O&M costs and benefits. Overhead rates are applied to each direct cost and benefit input, according to its classification as union or non-union labor, contract labor, meter reading part time labor, purchased services, warehoused materials, non-warehoused materials, and capital.

Overhead rates were estimated using 2007 actuals. Only overheads that are considered incremental to AMI are included, for example, overheads associated with incremental labor, additional warehousing requirements and incremental contract administration costs. Table VII-5 below shows overhead rates that were applied in this case. Attachment MF-1 provides detailed calculations of the overhead rate values.

Table VII-5
SoCalGas AMI Overhead Loaders

Overhead Category	Percentage	Loading Base
Payroll Taxes	7.79%	Direct Labor
Vacation and Sick Time	17.98%	Direct Labor
Pension and Benefits (non-balanced only)	17.15%	Direct Labor
Pension and Benefits - Part Time	3.28%	Direct Labor
Workers' Compensation	4.47%	Direct Labor
Public Liability / Property Damage	3.16%	Direct Labor
Non-Union Incentive Compensation Plan	18.29%	Non-Union Direct Labor
Purchased Services and Materials	1.85%	Contract Labor, Services and Purchased Materials
Administrative and General	5.24%	Capital Company Labor and Contract Costs
Warehousing	7.16%	Warehousing

2. Escalation Factors

Loaded constant-dollar values of AMI incremental costs and benefits are escalated for inflation using the following escalation factors for years 2009-2034. Table VII-6 shows the range of escalation rates applied to each cost or benefit type. Attachment MF-2 provides annual escalation rates and escalation factors for each cost or benefit type.

Table VII-6

SoCalGas AMI Escalation Factors

Cost/Benefit Category	Escalation Factor	Range of Annual % Change
Capital – Gas Utility Construction, Distribution	Gas Distribution Plant Construction	1.8 – 3.9%
O&M – Labor	Gas Utility Labor O&M	2.4 – 2.6%
O&M – Non-labor	Gas Utility O&M non-labor	2.3 – 3.6%

Certain costs such as AMI modules are not escalated. This is because the nominal costs of silicon based AMI technologies are expected to decline enough over time to maintain their current real price level. Historically, similar technology prices have decreased over time in real dollars, and SoCalGas expects efficiency improvements in producing the AMI modules to result in a similar trend.

Factors shown above are from escalation indices published in Global Insight's 1st Quarter 2008 Utility Cost Forecast.

3. Sales Taxes

Sales taxes of 7.75 percent are applied to purchased materials and services. SoCalGas witnesses Mr. Serrano and Mr. Olmsted identify the costs which require the application of sales taxes.

E. Other Benefits

~~a. Other Benefits~~

SoCalGas' AMI provides "other benefits" that, while ancillary to revenue, need to be considered when determining the economic value of the AMI project. These "other benefits" include reductions in gas theft, gas conservation impacts, reductions in carbon dioxide gas emissions, and the terminal value of gas meter modules that have useful lives beyond the 26-year analysis period (i.e., 2034). The testimony of SoCalGas witness Mr. Serrano addresses the benefits from reduced gas theft due to AMI. The testimony of SoCalGas witness Mr. Martin addresses benefits from gas conservation and reduced carbon dioxide gas emissions due to AMI.

The benefits from reduced gas theft, conservation and reduced carbon dioxide gas emissions are not part of the revenue requirements that need to be recovered from ratepayers. However, these benefits are included as "other benefits" in the NPV calculations for determining the economic value of the SoCalGas AMI project since these are benefits to ratepayers and/or society in general. Gas theft reductions and increased conservation both have beneficial impacts on customer bills. Reduced carbon dioxide gas emissions do not directly impact customer bills, but they are considered a benefit to society as a whole.

Table VII-7
Undiscounted Cash Flow
Other Benefits
SoCalGas Stand Alone Scenario
($ millions) - Costs (Benefits)

		IT Development		Gas Module and Meter Installation Years					Post Deployment
	Total	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2015-2034**
Reduced Gas Theft	**(3.6)**	-	-	(0.0)	(0.0)	(0.1)	(0.1)	(0.1)	(3.2)
Gas Conservation Benefits	**(575.7)**	-	-	(1.7)	(5.3)	(9.0)	(12.4)	(16.4)	(530.9)
Terminal Value	**(251.6)**	-	-	-	-	-	-	-	(251.6)
Total Other Ratepayer Benefits	**(830.8)**	**-**	**-**	**(1.7)**	**(5.3)**	**(9.1)**	**(12.5)**	**(16.5)**	**(534.1)**
CO2 Reduction Benefits	**(29.2)**	-	-	(0.1)	(0.4)	(0.6)	(0.9)	(1.2)	(26.0)
Total Other Societal Benefits	**(860.1)**	**-**	**-**	**(1.8)**	**(5.7)**	**(9.7)**	**(13.4)**	**(17.7)**	**(560.2)**

In addition, the terminal value of AMI gas meter modules installed after 2015 is also included as "other benefits" in the NPV calculations. Although the last AMI gas meter module installed during the AMI deployment period is in 2015, additional gas modules will need to be deployed after 2015 to meet customer growth and meter module failures during the analysis period, as addressed in the testimony of SoCalGas witness Mr. Serrano. Since AMI meter modules deployed for growth and meter failure in years 2016-2034 will have remaining value beyond the 26-year analysis period (beyond 2034) based on the 20-year useful life of gas modules, the NPV calculations should include the remaining value or terminal value of the modules installed after year 2015. Meter deployments for customer growth and meter failure are assumed to cease in 2034. Meter populations are assumed to decline beginning in 2030, as the first meters deployed in 2009 are assumed to come to the end of their useful life. Meter populations decline to zero in 2054.

The terminal value is the stream of annual benefits per gas meter module, based on the declining meter population, discounted back to 2034 dollars. The benefits beyond 2034 are calculated by multiplying the estimated remaining meter population in each year by the estimated net benefit per meter. The average net benefit per meter module is a conservative estimate of these benefits based on the 5-year historical average of net benefits per meter from 2026-2030, with 2030 used as the end point of the average since it reflects the peak in AMI meter modules installed under the 26-year analysis period.

The "other benefits" identified above are included in the revenue requirements presented in Attachment MF-3.

III. REVENUE REQUIREMENTS

Forecasted AMI revenue requirements represent the incremental monthly and annual revenue required to recover the incremental AMI costs and benefits. The revenue requirement evaluation assumes all capital is recovered through depreciation over its book life, and assumes that O&M is recovered in the period it is spent. In addition to the actual expenditure amounts, the revenue requirement includes all other expenses required to support the capital investment, including authorized return on investment, income and property taxes, allowance for funds used during construction ("AFUDC") and working cash associated with O&M.

For rate impact analysis over the pre-deployment and deployment period (2009-2015) monthly revenue requirement methodology is used. For business case evaluation from the ratepayers' perspective over the entire 26 year analysis period, the annual revenue requirement methodology is used. A summary of the results of the annual revenue requirement evaluation is presented in Table VII-8 and VII-9. Table VII-8 shows the undiscounted revenue requirement over the 26 year analysis period, and Table VII-9 shows the discounted or present value of revenue requirements. The summary shows that with a total present value of ratepayer benefit of $13.2 million, and a societal benefit of $21.5 million, the SoCalGas proposed AMI project is ~~balanced and~~ expected to create value for ratepayers. The societal benefit includes all ratepayer benefits, plus estimated benefits associated with reduced carbon dioxide gas emissions.

Table VII-8
Undiscounted Annual Revenue Requirements
SoCalGas Stand Alone Scenario
($ millions) 2008$ - Costs (Benefits)

		IT Development		Gas Module and Meter Installation Years					Post Deployment
	Total	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016-2034**
Undiscounted Revenue Requirement									
Costs	3,091.4	(7.7)	(11.6)	80.5	111.8	145.2	179.2	201.8	2,392.0
Operating Benefits (114% of Costs)	(3,510.7)	(2.3)	(2.3)	(7.7)	(21.6)	(40.4)	(58.6)	(76.0)	(3,301.8)
Terminal Value	(251.6)	-	-	-	-	-	-	-	(251.6)
Conservation Benefits	(575.7)	-	-	(1.7)	(5.3)	(9.0)	(12.4)	(16.4)	(530.9)
Reduced Losses (theft)	(3.6)	-	-	(0.0)	(0.0)	(0.1)	(0.1)	(0.1)	(3.2)
Revenue Requirement & Other Rate Payer Costs (Benefits)	**(1,250.2)**	**(10.0)**	**(13.9)**	**71.1**	**84.9**	**95.7**	**108.2**	**109.3**	**(1,695.5)**
Societal Benefits									
Reduced Emissions	(29.2)	-	-	(0.1)	(0.4)	(0.6)	(0.9)	(1.2)	(26.0)
Societal Costs (Benefits)	**(1,279.4)**	**(10.0)**	**(13.9)**	**71.0**	**84.5**	**95.1**	**107.2**	**108.2**	**(1,721.5)**

Table VII-9
Present Value of Annual Revenue Requirements
SoCalGas Stand Alone Scenario
($ millions) 2008$ - Costs (Benefits)

		IT Development		Gas Module and Meter Installation Years					Post Deployment
	Total	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016-2034**
Present Value Revenue Requirement									
Costs	1,051.0	(6.5)	(9.0)	57.7	73.8	88.1	100.1	103.7	643.1
Operating Benefits (85% of Costs)	(888.6)	(1.9)	(1.8)	(5.5)	(14.3)	(24.5)	(32.7)	(39.0)	(768.8)
Terminal Value	(26.6)	-	-	-	-	-	-	-	(26.6)
Conservation Benefits	(148.0)	-	-	(1.2)	(3.5)	(5.5)	(6.9)	(8.4)	(122.4)
Reduced Losses (theft)	(1.0)	-	-	(0.0)	(0.0)	(0.0)	(0.1)	(0.1)	(0.8)
NPV Revenue Requirement & Other Rate Payer Benefits	**(13.2)**	**(8.4)**	**(10.8)**	**51.0**	**56.0**	**58.1**	**60.4**	**56.2**	**(275.5)**
PV Societal Benefits									
Reduced Emissions	(8.3)	-	-	(0.1)	(0.2)	(0.4)	(0.5)	(0.6)	(6.5)
NPV Societal Costs (Benefits)	**(21.5)**	**(8.4)**	**(10.8)**	**50.9**	**55.8**	**57.7**	**59.9**	**55.6**	**(282.0)**

In the following two sections, I provide a detailed description of the components of the AMI revenue requirements and appropriate period of the analysis for both the economic comparison, which is based on a 26-year period 2009-2034, and the revenue requirement recovery period during the 6-year deployment from 2009-2015. As per the testimony of Ms. Allison Smith (Chapter VIII), gas transportation rates will be adjusted annually until SoCalGas' next general rate case after SoCalGas' AMI deployment has been completed.

A. Revenue Requirement Components

The various components of the SoCalGas AMI revenue requirements are derived using methodologies consistent with the methodologies employed in SDG&E's AMI business case. They are discussed in more detail below:

1. Net O&M Costs

Net O&M costs reflect the sum of AMI O&M costs minus benefits. The net O&M costs used in the calculation of the AMI revenue requirements were described in Section II and presented in Attachments MF-3 and MF-4.

2. Return on Rate Base

Return on Rate Base reflects the cost of capital SoCalGas incurs to finance the AMI investment. Net rate base used in the calculation reflects the sum of all AMI capital costs minus AMI capital benefits, and is used in the calculation of the return on rate base. The average net rate base used in the calculation of the AMI revenue requirements is presented in Attachment MF-3. The return on rate base is calculated by multiplying SoCalGas' authorized weighted average cost of capital of 8.68 percent by the AMI average net rate base for each year.

Table VII-10

SoCalGas Authorized Capital Structure and Cost of Capital

	Capital Ratio (%)	Cost	Authorized Weighted Cost
Long Term Debt	45.61%	6.96%	3.17%
Preferred Equity	6.39%	4.83%	0.31%
Common equity	48.00%	10.82%	5.19%
			8.68%

3. Depreciation

Depreciation expense reflects the charge that SoCalGas takes each year to allow for recovery of the AMI investment over its book life. Depreciation expense is calculated by multiplying the weighted average plant in service for each asset type by the depreciation rate for that asset type.

The proposed depreciation uses the straight-line remaining life depreciation method consistent with Standard Practice U-4, Determination of Straight-Line Remaining Life Depreciation Accruals. The CPUC issued this standard practice in 1961 as a guide for determining proper depreciation accruals.

SoCalGas proposes depreciable lives of 5 years for IT assets, 15 years for communication equipment, 20 years for AMI gas modules, and 31 years for gas meters. As stated in the testimony of SoCalGas witness Mr. Serrano (Chapter III), gas modules are estimated to have a useful life of 20 years, based on vendor provided estimates. The resulting depreciation rates equal 20 percent for IT assets, 6.67 percent for communication equipment, 5 percent for gas modules, and 3.23 percent for gas meters.

4. Taxes

Tax expenses include property taxes and income taxes.

(a) Property Taxes

The forecasted property tax expenses for AMI assets are calculated by multiplying the projected assessed annual value of the assets as of the given year by the estimated tax rate of 1.198 percent.

The assessed value is based on a Historical Cost Less Depreciation (HCLD) indicator of value, which is the primary value indicator for rate base regulated utility property. HCLD is the estimated cost of property that is subject to assessment by the State Board of Equalization (SBE) less depreciation on this property. The deferred federal income tax reserve related to taxable property further reduces the HCLD indicator.

(b) Income Taxes

This section provides SoCalGas' estimate of income taxes that will be incurred due to AMI investments, and discusses the assumptions and methodology used to make the income tax estimates.

California Corporation Franchise Tax (CCFT) and federal income tax expense are estimated based on net operating income before income taxes. The estimated federal and state income tax expenses are identified in the forecasted AMI revenue requirements provided in Attachments MF-3 (annual) and MF-4 (monthly).

Current tax law has been utilized to compute income taxes for AMI investments. Federal income tax expense, including deferred income tax, is calculated by multiplying the currently effective corporate federal income tax rate of 35 percent by applicable federal taxable income. Similarly, state income tax expense is calculated by multiplying the statutory rate of 8.84 percent of state taxable income.

Following established Commission policy, federal income taxes are computed on a normalized basis. Deferred federal income taxes are calculated as the difference between book depreciation and federal tax depreciation times the federal tax rate. The Accumulated Deferred Federal Income Tax Reserve is included as a credit in rate base. State income taxes are calculated on a flow through basis.

For AMI federal tax depreciation is calculated in accordance with the Tax Reform Act of 1986, as amended. State tax depreciation is based on the Asset Depreciation Range system specified by California Law.

5. Working Cash

The revenue requirements include a Working Cash requirement. The Working Cash requirement is computed by multiplying total estimated annual O&M expenses (excluding depreciation and fuel costs) by one-eighth. The resulting amount represents 45 days of O&M expenses. This method, which is accepted by the Federal Energy Regulatory Commission ("FERC"), is used for this filing because a traditional working cash study based on historical data related to AMI operations is not available.

6. Allowance for Funds Used During Construction (AFUDC)

The revenue requirements include projected AFUDC which is the financing costs of AMI related IT capital projects that are in Construction Work in Progress ("CWIP"). AFUDC has been applied using SoCalGas' currently authorized CPUC ROR of 8.68 percent based. AFUDC is applied until such time as the project is completed and transferred into service at which time

AFUDC is no longer applied since the capital project then earns SoCalGas' authorized return on rate base.

7. Franchise Fees and Uncollectable (FF&U)

Franchise Fees and Uncollectible ("FF&U") is the revenue requirement needed to pay required franchise fees on gas sales and to recover estimated uncollectible expenses. The FF&U factor used in calculating the proposed revenue requirement for rate impact analysis and recovery during the deployment period is 1.7258%. This rate was adopted in D.08-07-046, SoCalGas' general rate case.

B. AMI Revenue Requirements over Analysis Period, 2009-2034

The value of SoCalGas' AMI project from the ratepayer perspective is evaluated by calculating the NPV of the annual AMI revenue requirements over the 26-year analysis period, 2009-2034, expressed in 2008 dollars. As described in Section III the 26-year analysis period is used for the NPV calculation since 26 years covers the AMI deployment period (2009-2015) and the full 20-year useful life of the gas meter modules installed in the last year of deployment (2015). Also, the NPV of the revenue requirements was calculated with and without the gas theft, gas conservation impacts, and reductions in carbon dioxide gas emissions since these "other benefits" are not part of the revenue requirement but are benefits of the AMI investment.

Attachment MF-3 presents the NPV calculation of the AMI revenue requirements from the ratepayers' over the analysis period (2009-2034), expressed in 2008 dollars, under implementation of both the Hybrid and Stand Alone AMI systems.

C. Monthly AMI Revenue Requirements over Deployment Period, 2009-2015

The forecasted monthly AMI revenue requirements proposed for recovery during the AMI deployment period of (2009-2015), expressed in nominal dollars, based on adoption of the proposed Stand Alone AMI scenario, are presented in Attachment MF-4. An annual summary of those results are presented below in Table VII-11.

The resulting average benefits of $1.0118 per AMI gas meter installed is presented in Attachment MF-5. This is based on the monthly meter/module deployment schedule discussed by SoCalGas Witness Mr. Serrano (chapter III). This was derived by dividing the estimated revenue requirement associated with deployment period benefits by the total number of months new meters/modules are in service on an aggregate basis.

For rate impact analysis, the monthly revenue requirement is used to determine rate impacts for the pre-deployment and deployment period (2009-2015), and the annual revenue requirements are used to determine rate impacts for the post deployment period.

Table VII-11
Annual Summary of Monthly Revenue Requirement - 2009-2015
All Deployment Costs & Operational Benefits
SoCalGas Stand Alone Scenario
($ millions) - Costs (Benefits)

	Deployment	Deployment Period						
	Period Total	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Costs	**647.5**	(5.8)	(9.4)	62.5	101.6	135.2	168.1	195.3
Operating Benefits	**(195.3)**	(2.3)	(2.4)	(6.8)	(19.8)	(37.3)	(54.9)	(71.7)
Net Revenue Requirement	**452.2**	**(8.1)**	**(11.8)**	**55.7**	**81.8**	**97.9**	**113.1**	**123.5**

IV. WITNESS QUALIFICATIONS

My name is Michael W. Foster. My business address is 8326 Century Park Court, San Diego, California 92123-1530. I am employed as a principal analyst in the Regulatory Case Financial area of the Finance department of SDG&E. I have worked for SDG&E since December 2001. In my current capacity, I am responsible for providing financial analysis of various utility projects and initiatives. In addition, I provide regulatory financial support and have been extensively involved in regulatory proceedings such as SDG&E's phase I and phase II cost of capital proceedings, the Sunrise Powerlink Phase II proceeding, and the SDG&E AMI proceeding. I am also responsible for updating the utilities' project evaluation guide and toolkit, which provides the standard financial analysis required for each new utility project.

I received a Bachelor of ~~Science~~ Arts degree in Economics from the University of California, Santa Barbara in 1995. I received a Master of Business Administration degree from the Darden School of Business at the University of Virginia, Charlottesville in 2000.

I have not previously testified before this Commission.

This concludes my testimony.