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June 13, 2011

Arizona Corporation Commission
DOCKETED

JUN 15 2011

Steven Olea
Director, Utilities Division
Arizona Corporation Commission
1200 West Washington Street
Phoenix, Arizona 85007

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Re: Docket Nos. G-04204A-06-0463, G-04204A-06-0013 and G-04204A-05-0831
Decision No. 70011 (November 27, 2007)

Mr. Olea,

Pursuant to Decision No. 70011 UNS Gas, Inc. ("UNS Gas") submitted its semi-annual Demand-Side Management ("DSM") program progress report on March 1, 2011, wherein UNS Gas stated that the measurement, evaluation, and research ("MER") report was in the process of being finalized and would be submitted to Commission Staff upon completion.

On May 2, 2011, UNS Gas has received final MER results for its 2010 Energy Efficiency Portfolio. Enclosed is a copy of the MER Report for 2010.

If you have any questions, please contact me at (520) 884-3680.

Sincerely,

Jessica Bryne
Regulatory Services

Enclosures: MER Report

cc: Docket Control, ACC
Julie McNeely-Kirwan, ACC

UNS Gas, Inc.

Measurement, Evaluation, and Research (“MER”) Report

FINAL

**UNS Gas Demand Side Management
2010 Portfolio Savings Verification
Report**

January 1, 2010-December 31, 2010

**Presented to:
UNS Gas
Randy Altergott and Denise Smith**

May 6, 2011

Presented by:

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Section 1. Summary

This report presents proposed changes and adjustments to the 2010 energy and demand savings calculations for the UNS Gas (UNSG) residential and commercial DSM programs after completing a savings verification review of reported savings.

Navigant Consulting reviewed the following file as provided by Randy Altergott which summarized preliminary 2010 savings for UNSG:

- 2010_EOY_UNSG_Residential_&_Commercial_Savings-Cost-Benefits-lookup.xlsx

Table 1-1, Table 1-2, and Table 1-3 present summary findings and adjustments for demand and energy savings. Overall, Navigant identified realization rates of 78% for demand savings, 110% for annual and lifetime electric energy savings, and 100% for annual and lifetime therm savings (adjustments averaged to 100%).

Electric savings (only relevant to residential new construction and low-income weatherization programs) provided by UNS Gas were "at meter" demand and energy savings; Navigant verified "at meter" savings and also calculated "at generator" savings, where

$$\text{At generator savings} = \text{At meter savings} * (1 + \text{Line Loss Factor})$$

UNS Electric's line loss factor of 10.69% was used since UNS Gas does not sell electricity.

Verified demand savings was calculated as non-coincident demand savings multiplied by coincidence factor. Demand savings only applied to residential new construction.

Realization rates are calculated as follows:

$$\text{Realization Rate} = \text{NCI-verified savings values} \div \text{UNSG-reported savings values}$$

Benefit-cost calculations were outside the scope of this task and were not updated.

Table 1-1. UNSG 2010 Therm Savings Summary

Program	Annual Therm Savings				Lifetime Therm Savings			
	Reported	NCI Verified*	Realization Rate	Percent of Portfolio (%)	Reported	NCI Verified*	Realization Rate	Percent of Portfolio (%)
Residential Programs								
Low-Income Weatherization	3,008	3,008	100%	2%	52,640	52,640	100%	2%
Energy Smart Homes	2,838	2,048	72%	1%	85,144	61,445	72%	2%
Residential HVAC / Efficient Home Heating	78,882	78,882	100%	47%	1,183,227	1,183,227	100%	47%
Commercial Programs								
C&I Facilities Gas Efficiency	81,910	82,695	101%	50%	1,228,648	1,240,429	101%	49%
UNSG Total	166,638	166,633	100%	100%	2,549,659	2,537,741	100%	100%

Table 1-2. UNSG 2010 Demand & Energy Savings Summary at Generator

Program	Demand Savings (MW)				Annual Energy Savings (MWh)				Lifetime Energy Savings (MWh)			
	Reported Non-Coin @ Meter	NCI Coin Verified @ Generator	Realization Rate	Percent of Portfolio (%)	Reported @ Meter	NCI Verified @ Generator	Realization Rate	Percent of Portfolio (%)	Reported @ Meter	NCI Verified @ Generator	Realization Rate	Percent of Portfolio (%)
Residential Programs												
Low-Income Weatherization	N/A	N/A	N/A	N/A	179	198	111%	98%	3,127	3,461	111%	97%
Energy Smart Homes	0.004	0.003	78%	100%	4.0	3.5	87%	2%	120	104	87%	3%
Residential HVAC / Efficient Home Heating	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Commercial Programs												
C&I Facilities Gas Efficiency	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
UNSG Total	0.004	0.003	78%	100%	183	201	110%	100%	3,247	3,565	110%	100%

Table 1-3. UNSG 2010 Demand & Energy Savings Summary at Meter

Program	Demand Savings (MW)				Annual Energy Savings (MWh)				Lifetime Energy Savings (MWh)			
	Reported Non-Coin @ Meter	NCI Coin Verified @ Meter	Realization Rate	Percent of Portfolio (%)	Reported @ Meter	NCI Verified @ Meter	Realization Rate	Percent of Portfolio (%)	Reported @ Meter	NCI Verified @ Meter	Realization Rate	Percent of Portfolio (%)
Residential Programs												
Low-Income Weatherization	N/A	N/A	N/A	N/A	179	179	100%	98%	3,127	3,127	100%	97%
Energy Smart Homes	0.004	0.003	71%	100%	4.0	3.1	78%	2%	120	94	78%	3%
Residential HVAC / Efficient Home Heating	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Commercial Programs												
C&I Facilities Gas Efficiency	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
UNSG Total	0.004	0.003	71%	100%	183	182	100%	100%	3,247	3,221	99%	100%

The following sections present a summary of major findings of proposed changes and/or confirmation that no changes are required to reported savings.

Section 2. Residential Programs

2.1 *Low Income Weatherization*

UNS Gas offers rebates to low income customers to weatherize their homes. Savings are derived per ACC directive. There are no demand savings values for this measure. Review of electric annual and lifetime energy savings resulted in a realization rate of 111%. Review of annual and lifetime therms savings resulted in a realization rate of 100%.

A line-loss factor of 10.69% was applied to the electric demand and energy savings to account for transmission and distribution losses from generator to meter. Realization rates were higher than 100% due to the application of this line loss factor.

2.2 *Energy Smart Homes*

UNS Gas offers rebates to residential customers who construct high efficiency homes. Review of demand savings resulted in higher demand savings and a realization rate of 78%. Review of electric energy savings resulted in lower annual and lifetime energy savings and a realization rate of 87%. Review of therms savings resulted in lower energy savings and a realization rate of 72%.

Review of deemed savings estimates was conducted by assessing baseline and efficient home assumptions provided by the IC. The IC over-estimated the savings of one home – as a result, verified savings resulted in overall lower demand and energy savings at the meter.

A line-loss factor of 10.69% was applied to the electric demand and energy savings to account for transmission and distribution losses from generator to meter. A coincidence factor of 77% was also applied to demand savings in addition to the line-loss factor, thus resulting in lower realization rates.

2.3 *Efficient Home Heating*

UNS Gas offers rebates for installing gas furnaces in residences. Review of IC-provided deemed savings estimates using values provided in previous year's Measure, Evaluation, and Research (MER) Report resulted in a realization rate of 100%. Thus, all verified savings values and calculations are consistent with 2010 deemed savings values.

2.4 *Residential Summary*

All together, these changes resulted in realization rates of 78% for demand savings, 110% for annual and lifetime energy savings, 99% for annual therm savings, and 98% for lifetime therm savings.

Table 2-1 **Error! Reference source not found.** below presents Reported (as provided by UNS Gas to Navigant for review, at meter) and Verified Savings (adjusted savings post Navigant review), as well as the Realization Rate (Verified Savings / Reported Savings).

Table 2-1: Residential Program Summary

	Demand Savings (MW)	Annual Energy Savings (MWh)	Annual Therm Savings	Lifetime Energy Savings (MWh)	Lifetime Therm Savings
Reported	.004	183	84,728	3,247	1,321,011
Verified	.003	201	83,938	3,565	1,297,312
Realization Rate	78%	110%	99%	110%	98%

Section 3. Commercial & Industrial (CI) Facilities Gas Efficiency Program

3.1 Boilers

UNS Gas provides rebates for the installation of high efficiency space heating hot water boilers. Review of IC-provided energy savings estimates using the previous year's Measurement, Evaluation, and Research (MER) Report resulted in verified savings estimates that were consistent with deemed savings estimates.

3.2 Furnaces

UNS Gas provides rebates for the installation of high efficiency gas furnaces. Navigant savings review of high efficiency furnace installations in the UNS Gas territory using the previous year's Measurement, Evaluation, and Research (MER) Report identified areas in need of adjustment, which resulted in an overall increase in energy savings and a total realization rate of 106% .

Reported annual therm savings of furnaces installed in the 2nd Quarter were inconsistently calculated as compared with those installed during 3rd and 4th quarters. Thus, Navigant adjusted savings values by applying to the 2nd Quarter inputs the same formula as was used for the 3rd and 4th Quarter inputs. This increased energy savings and resulted in a higher realization rate.

3.3 Storage Water Heaters

UNS Gas provides rebates for the installation of high efficiency storage water heaters. Review of IC-provided energy savings estimates using the previous year's Measurement, Evaluation, and Research (MER) Report resulted in verified savings estimates that were consistent with deemed savings estimates.

3.4 Commercial Summary

All together, these changes resulted in realization rates of 101% for annual and lifetime therm savings.

Table 3-1 **Error! Reference source not found.** below presents Reported (as provided by UNS Gas to Navigant for review, at meter) and Verified Savings (adjusted savings post Navigant review), as well as the Realization Rate (Verified Savings / Reported Savings).

Table 3-1: Commercial Program Summary

	Demand Savings (MW)	Annual Energy Savings (MWh)	Annual Therm Savings	Lifetime Energy Savings (MWh)	Lifetime Therm Savings
Reported	-	-	81,910	-	1,228,648
Verified	-	-	82,695	-	1,240,429
Realization Rate	-	-	101%	-	101%