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SOUTHWEST GAS CORPORATION



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March 31, 2016

Docket Control
Arizona Corporation Commission
1200 West Washington Street
Phoenix, AZ 85007-2996

Re: **Docket No. G-00000G-16-0100**

The Gas Utility Energy Efficiency Standards of the Arizona Administrative Code, Section R14-2-2509(A), require affected utilities to file a progress report with the Arizona Corporation Commission by April 1 of each year. Southwest Gas Corporation hereby submits an original and thirteen copies of its Arizona Energy Efficiency and Renewable Energy Resource Technology Portfolio Implementation Plan.

This progress report replaces the Demand Side Management (DSM) report required pursuant to Decision No. 69667.

If you have any questions or require additional information, please contact me at 602-395-4058.

Respectfully submitted,

Matthew D. Derr
Regulatory Manager/Arizona

Cc: Barbara Keene, ACC Utilities Division
Julie McNeely-Kirwan, ACC Utilities Division

Arizona Corporation Commission
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SOUTHWEST GAS CORPORATION

**ARIZONA ENERGY
EFFICIENCY AND
RENEWABLE ENERGY
RESOURCE TECHNOLOGY
PORTFOLIO
IMPLEMENTATION PLAN**

Program Year 4 Annual Progress

Report:

June 1, 2015 – December 31, 2015

April 1, 2016

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ARIZONA ENERGY EFFICIENCY AND RENEWABLE ENERGY RESOURCE TECHNOLOGY PORTFOLIO IMPLEMENTATION PLAN

Overview

Pursuant to Arizona Administrative Code (AAC) Section R14-2-2509(A) (referred to as the Gas Utility Energy Efficiency Standards (Gas EE Standards)), Southwest Gas Corporation (Southwest Gas or Company) submits its annual progress report (Report) for the Company's Energy Efficiency (EE) and Renewable Energy Resource Technology (RET) portfolio (EE & RET Plan). Because Southwest Gas' EE & RET Plans are implemented from June through May, rather than January through December, this Report contains data for the first seven months of Program Year Four (PY4), which covers June 1, 2015 through December 31, 2015. The *Smarter Greener Better*[®] (SGB) Low Income Energy Conservation (LIEC) program year operates on a fiscal year from July through June; therefore, the Report includes expenditures and participation rates for the period covering July 1, 2015 through December 31, 2015 for PY4 of the program.

Southwest Gas previously reported on a full year of data for Program Year Three (PY3), covering the period from June 1, 2014 through May 31, 2015, in the status report filed September 30, 2015 in Docket No. G-00000G-15-0090 (PY3 Report). The PY3 Report additionally includes expenditures and participation rates for the SGB LIEC program for the period covering July 1, 2014 through June 30, 2015 for PY3.

Pursuant to Decision No. 73229 (Docket No. G-01551A-11-0344), the Company included an evaluation of cost-effectiveness for each program and measure in this Report, listing any measures that have ceased to be cost-effective and indicating why they are no longer cost-effective.

Additionally, pursuant to Decision No. 74300 (Docket No. G-01551A-13-0170), Southwest Gas has included tables that list the following information:

- All Arizona Corporation Commission (Commission) approved programs and measures, and budgeted expenditures by program
- Actual annual expenditures by program
- Plan cost-effectiveness ratio per measure (last calculated by the Commission's Utilities Division Staff (Staff))
- Actual cost-effectiveness ratio per measure (using the Staff-approved method with all criteria updated to reflect the most recent data available)
- Program annual therm savings and lifetime therm savings (plan and actual data)
- Program cost-effectiveness test benefits, costs, and net benefits (plan and actual data)

The Company has included data regarding the impact of lowering the cap on incentives (to no more than 60% of the incremental cost of each measure) and data concerning the cost-effectiveness of expanding the SGB Homes program to low-rise multifamily homes, pursuant to Decision No. 74300.

There was no impact to lowering the cap on incentives to no more than 60 percent of the incremental cost of each measure because all of the measure rebates offered during PY3 and PY4 were already less than 60 percent of each measure's incremental cost.

Southwest Gas provided a total of 72 rebates in PY3 and 39 rebates in PY4 to low-rise multifamily homes. Based on reported savings and single-family residential incremental cost data, the cost-effectiveness ratio for low-rise multifamily homes was 3.10 for PY3 (3.75 for 40 tier 1 rebates and 2.67 for 32 tier 2 rebates) and 3.02 for PY4 (4.19 for 15 tier 1 rebates and 2.64 for 24 tier 2 rebates). Southwest Gas would like to continue providing cost-effective rebates for new energy-efficient low-rise multifamily homes under its SGB Homes program in order to collect additional incremental cost and savings data specific to the multifamily market.

Program Summary – PY4

Southwest Gas submitted its EE & RET Plan for PY3 and PY4 on May 31, 2013, requesting approval of its existing seven programs with a total budget of \$7.5 million. On January 29, 2014, the Commission issued Decision No. 74300 approving the five programs listed below with a total budget of \$4.7 million.

Residential Energy Management Programs

1. *Smarter Greener Better* Homes

Non-Residential Energy Management Programs

2. *Smarter Greener Better* Custom Commercial Rebates
3. *Smarter Greener Better* Distributed Generation

Low Income Program

4. *Smarter Greener Better* Low Income Energy Conservation

Renewable Energy Resource Technology Program

5. *Smarter Greener Better* Solar Thermal Rebates

The above programs and associated program budgets constitute Southwest Gas' PY4 EE & RET program portfolio, which began June 1, 2015 and extended through December 31, 2015, the end of this reporting period.

Below is a brief summary of each program implemented during PY4 of the reporting period:

SGB Homes: Tiered rebates were offered to homebuilders for ENERGY STAR certified homes. Homes that received ENERGY STAR certification were eligible for a Tier 1 rebate and homes that received ENERGY STAR

certification and achieved a Home Energy Rating System (HERS) score of 65 or below were eligible for a Tier 2 rebate. The program was available to all builders of new single-family subdivision and custom homes and multi-family homes featuring natural gas water and/or space heating.

SGB Custom Commercial Rebates: Rebates were offered to non-residential customers based on achieved annual energy savings. The program does not specify eligible measures in order to provide participants maximum flexibility in identifying potential projects. Participants may propose any measure that produces a verifiable natural gas usage reduction, is installed in either existing or new construction applications and exceeds code, has a minimum useful life of seven years, and exceeds minimum cost-effectiveness requirements. Qualifying measures include those that target cost-effective natural gas savings, such as retrofits of existing systems, improvements to existing systems, and first time installations where the system's efficiency exceeds applicable codes or standard industry practices.

SGB Distributed Generation: The program provided rebates to non-residential customers to achieve significant fuel savings by promoting high-efficiency electric generation with waste heat recovery, providing financial benefits during peak electrical demand periods, and demonstrating the use of new technologies that are being brought to market. The rebates were based upon the size and efficiency of the system being installed.

SGB LIEC: The LIEC program was available to households with annual incomes less than 150 percent of the federal poverty income guidelines and composed of two components: a weatherization program that provides various energy-efficient home improvements such as insulation, duct repairs, weather-stripping and HVAC replacement, which was administered by Southwest Gas in conjunction with the Arizona Department of Housing (ADOH); and an emergency bill assistance program to help customers pay household natural gas bills, which was administered by Southwest Gas in conjunction with the Arizona Community Action Association (ACAA).

SGB Solar Thermal Rebates: Rebates were offered to residential and non-residential customers on qualified solar thermal systems used for water heating or pool heating with a natural gas back-up, upon proof-of-purchase and installation. The program objective was to increase public awareness of the benefits of solar thermal systems and to reduce customer natural gas usage by providing economically beneficial rebates to install the systems. Long-term customer energy savings are realized throughout the life of the solar thermal systems.

Southwest Gas continually monitors and evaluates each program and measure included in its EE & RET Plan, and implements program and process improvements as needed. The Company may utilize in-house staff for its measurement and evaluation activities, which may result in no direct costs charged to the measurement, verification and evaluation (MV&E) budget category under

each program. For programs that are administered by a third party, MV&E costs are accumulated under the Delivery budget category.

Aside from the cancellation of cost-effective residential and commercial prescriptive rebates in Arizona prior to the launch of PY3, Southwest Gas has not encountered any issues which would result in a request to modify or terminate any programs or measures that are currently approved by the Commission for PY4. In the Company's PY5 application filing currently pending with the Commission (Docket No. G-01551A-15-0168), Southwest Gas has requested to re-introduce its Commercial Rebates program with a selection of cost effective measures. Until a decision is issued by the Commission on the pending PY5 application, the Company contemplates the continuation of existing PY4 programs and measures.

Energy Efficiency Standards

Pursuant to Section R14-2-2504 of the Gas EE Standards, Southwest Gas is required to achieve cumulative annual energy savings, expressed as therms or therm equivalents, equal to at least six percent of the Company's retail gas energy sales for calendar year 2019.

For PY4, the Company is required to achieve cumulative annual energy savings of at least 2.4 percent. Using Southwest Gas' 2013 retail sales of 643,952,120, the Company's total PY4 energy savings goal of 2.4 percent is 15,454,851 therms. With a cumulative total of 12,413,112 therms achieved in PY1 through PY3, Southwest Gas' PY4 annual energy savings goal is 3,041,739 therms. When a full twelve months of data is available, final PY4 expenditures and energy savings will be included in a subsequent report. As reflected in Table 1 below, the Company's cumulative annual energy savings achieved through PY3 exceeds its year three goal set forth in the Gas EE Standards.

Table 1 – Cumulative and Annual Energy Savings

Year	Retail Sales Volumes Used	Cumulative Energy Savings Goal (%)	Cumulative Energy Savings Goal (therms)	Annual Energy Savings Achieved (therms)	Cumulative Energy Savings Achieved (%)	Cumulative Energy Savings Achieved (therms)
1	617,174,760	0.50%	3,085,874	3,146,127	0.51%	3,146,127
2	634,605,252	1.20%	7,615,263	5,230,962	1.32%	8,377,089
3	603,223,751	1.80%	10,858,028	4,036,023	2.06%	12,413,112
4	643,952,120*	2.40%	15,454,851	N/A	N/A	N/A

* In Southwest Gas' AZ EE & RET Plan for PY3 and PY4, which was filed on May 31, 2013, the Company used its most current retail sales volumes from 2012 to calculate its fourth-year cumulative energy savings goal. The Company has re-calculated its fourth-year cumulative energy savings goal using 2013 retail sales volumes as shown above.

Progress Report

Pursuant to Decision No. 73229, Southwest Gas performed its biannual review of the performance of available measures and has included the actual cost-effectiveness ratios for each program and measure with participation during the reporting period. In addition, pursuant to Decision No. 74300, the actual cost-effectiveness ratios for PY4 were calculated using the Staff-approved method (including methodology for calculating electric line losses) and with all criteria updated to reflect the most recent data available.

Although overall participation during PY4 has been less than experienced in PY1 and PY2, Southwest Gas has continued to experience levels of participation and expenditures during PY4 that are consistent with levels experienced in PY3. As mentioned in the Company's PY3 Report,, the decrease in activity relative to PY1 and PY2 is predominantly attributable to the cancellation of the Residential and Commercial Rebate programs. Southwest Gas' program performance for June 1, 2015 through December 31, 2015, the first seven months of PY4, is set forth in **Tables 2 through 10** below. Tables 2 through 5 summarize Southwest Gas' program activity. Tables 6 through 10 present detailed information on each available program.

Table 2 below shows the total PY4 approved annual budget of \$4.7 million and the expenditures between June 1, 2015 and December 31, 2015 identified by program and budget category.

Table 2 – PY4: Budget and Expenditures

Program	Annual Budget	Expenditures (June 1, 2015 – December 31, 2015) ¹					Program Total Cost
		Rebates	Administration	Outreach	Delivery	MV&E	
Residential							
SGB Homes	\$2,880,000	\$1,261,750	\$2,619	\$1,080	\$14,600	\$0	\$1,280,048
<i>Total Residential</i>	<i>\$2,880,000</i>	<i>\$1,261,750</i>	<i>\$2,619</i>	<i>\$1,080</i>	<i>\$14,600</i>	<i>\$0</i>	<i>\$1,280,048</i>
Non-Residential							
SGB Custom Commercial Rebates	\$330,000	\$97,500	\$2,275	\$3,574	\$27,128	\$0	\$130,477
SGB Distributed Generation	\$300,000	\$0	\$2,616	\$3,565	\$16,481	\$0	\$22,661
<i>Total Non-Residential</i>	<i>\$630,000</i>	<i>\$97,500</i>	<i>\$4,890</i>	<i>\$7,138</i>	<i>\$43,609</i>	<i>\$0</i>	<i>\$153,137</i>
Low Income²							
SGB LIEC: Weatherization ³	\$450,000	\$0	\$0	\$0	\$0	\$0	\$0
SGB LIEC: Bill Assistance	\$200,000	\$87,084	\$15,000	\$0	\$0	\$0	\$102,084
<i>Total Low Income</i>	<i>\$650,000</i>	<i>\$87,084</i>	<i>\$15,000</i>	<i>\$0</i>	<i>\$0</i>	<i>\$0</i>	<i>\$102,084</i>
Total Energy Efficiency	\$4,160,000	\$1,446,334	\$22,509	\$8,218	\$58,209	\$0	\$1,535,269
Renewable Energy Resource Technology							
SGB Solar Thermal Rebates	\$540,000	\$7,728	\$2,438	\$8,667	\$27,321	\$0	\$46,154
Total EE & RET Plan	\$4,700,000	\$1,454,062	\$24,946	\$16,885	\$85,530	\$0	\$1,581,423

¹ Totals, which are rounded to the nearest dollar, may not add due to rounding.

² Low income expenditures are included for the first half of the program year, which is July 1, 2015 to December 31, 2015 and typically do not match the costs reported in Southwest Gas' general ledger system in the same period, due to timing differences and overlap between program years. The costs reported in the Company's general ledger system are (\$154,988) for the SGB LIEC: Weatherization program and \$193,239 for the SGB LIEC: Bill Assistance program.

³ Pursuant to Decision No. 72723, total expenditures for the SGB LIEC: Weatherization program including the additional \$200,000 shareholder funds added to the program budget are \$131,929 - with \$98,070 allocated to rebates, \$30,995 to administration, and \$2,863 to outreach. The rebates budget category includes non-energy benefits related to health and safety improvements. Program delivery and evaluation are performed by the ADOH and community agencies and therefore, the associated costs are incorporated into the administration budget category.

Table 3 below shows the PY4 estimated and actual participation numbers for the period June 1, 2015 through December 31, 2015 for each program.

Table 3 – PY4: Participation

Program	Estimated Participation	Actual Participation (June 1, 2015 – December 31, 2015)
Residential		
SGB Homes	7,805	3,385
<i>Total Residential</i>	<i>7,805</i>	<i>3,385</i>
Non-Residential		
SGB Custom Commercial Rebates	3	1
SGB Distributed Generation	2	0
<i>Total Non-Residential</i>	<i>5</i>	<i>1</i>
Low Income¹		
SGB LIEC: Weatherization	300	43
SGB LIEC: Bill Assistance	700	978
<i>Total Low Income</i>	<i>1,000</i>	<i>1,021</i>
Total Energy Efficiency	8,810	4,407
Renewable Energy Resource Technology		
SGB Solar Thermal Rebates	215	5
Total EE & RET Plan	9,025	4,412

¹ Participation for the SGB LIEC: Weatherization and Bill Assistance programs is included for the period covering July 1, 2015 through December 31, 2015.

Pursuant to Decision No. 74300, **Table 4** below is included to capture plan data for PY4.

Table 4 – PY4: Annual and Lifetime Therm Savings; Lifetime Societal Benefits, Costs and Net Benefits; and Cost-Effectiveness (Plan Data)

Program	Annual Therm Savings ¹	Lifetime Therm Savings ¹	Societal Benefits ²	Societal Costs ²	Net Benefits ²	Cost-Effectiveness Ratio
Residential						
SGB Homes	5,220,697	156,620,902	\$118,551,256	\$19,286,726	\$99,264,530	6.15
<i>Total Residential</i>	<i>5,220,697</i>	<i>156,620,902</i>	<i>\$118,551,256</i>	<i>\$19,286,726</i>	<i>\$99,264,530</i>	<i>6.15</i>
Non-Residential						
SGB Custom Commercial Rebates	1,027,503	15,070,037	\$10,123,897	\$547,480	\$9,576,418	18.49
SGB Distributed Generation	79,390	1,587,800	\$1,159,603	\$507,966	\$651,637	2.28
<i>Total Non-Residential</i>	<i>1,106,893</i>	<i>16,657,837</i>	<i>\$11,283,500</i>	<i>\$1,055,446</i>	<i>\$10,228,055</i>	<i>10.69</i>
Low Income						
SGB LIEC: Weatherization ³	92,984	2,092,146	\$1,752,420	\$665,399	\$1,087,020	2.63
SGB LIEC: Bill Assistance ⁴	N/A	N/A	N/A	N/A	N/A	N/A
<i>Total Low Income</i>	<i>92,984</i>	<i>2,092,146</i>	<i>\$1,752,420</i>	<i>\$665,399</i>	<i>\$1,087,020</i>	<i>2.63</i>
Total Energy Efficiency	6,420,573	175,370,884	\$131,587,176	\$21,007,571	\$110,579,605	6.26
Renewable Energy Resource Technology						
SGB Solar Thermal Rebates	32,332	646,640	\$472,254	\$1,060,379	(\$588,125)	N/A ⁵
Total EE & RET Plan	6,452,905	176,017,524	\$132,059,430	\$22,067,950	\$109,991,480	5.98

¹ These values, which are rounded to the nearest whole number, represent a combination of therms and therm equivalents from electric savings. The kWh savings are converted into therm equivalents for the annual and total lifetime energy savings reported. The therm equivalent value is calculated as the source fuel feeding the electric generation power plant. Due to inefficiencies in the generation, transmission and distribution of electricity, at the time Southwest Gas' EE & RET Plan was filed for PY3 and PY4, the kWh saved at the point of consumption was estimated to be 30 percent of the total energy that is required to provide the electric power. Therefore, to calculate the total value of energy saved per kWh of electricity, Southwest Gas multiplied the kWh savings by a factor of 3.340^a for reporting annual and lifetime savings.

² Totals, which are rounded to the nearest dollar, may not add due to rounding.

³ Savings for the SGB LIEC: Weatherization program includes estimated savings for the additional \$200,000 shareholder funds.

⁴ There are no therm savings attributable to the SGB LIEC: Bill Assistance program.

⁵ Pursuant to the Gas EE Standards, cost-effectiveness is not required for RET programs.

^a ENERGY STAR Performance Ratings Methodology for Incorporating Source Energy Use, March 2011

Pursuant to Decision No. 74300, **Table 5** below is included to capture actual data for PY4. Please note data reported in the column titled Societal Benefits is limited (per the current Staff-approved method) to only natural gas savings associated with each EE & RET program.

Table 5 – PY4: Annual and Lifetime Therm Savings; Lifetime Societal Benefits, Costs and Net Benefits; and Cost-Effectiveness (Actual Data)

Program	Annual Therm Savings ¹	Lifetime Therm Savings ¹	Societal Benefits ²	Societal Costs ²	Net Benefits ²	Cost-Effectiveness Ratio
Residential						
SGB Homes	1,812,376	54,371,292	\$44,782,624	\$8,656,598	\$36,126,025	5.17
<i>Total Residential</i>	<i>1,812,376</i>	<i>54,371,292</i>	<i>\$44,782,624</i>	<i>\$8,656,598</i>	<i>\$36,126,025</i>	<i>5.17</i>
Non-Residential						
SGB Custom Commercial Rebates	206,870	4,137,400	\$2,503,029	\$227,977	\$2,275,053	10.98
SGB Distributed Generation	0	0	\$0	\$22,661	(\$22,661)	0.00
<i>Total Non-Residential</i>	<i>206,870</i>	<i>4,137,400</i>	<i>\$2,503,029</i>	<i>\$250,637</i>	<i>\$2,252,392</i>	<i>9.99</i>
Low Income						
SGB LIEC: Weatherization	10,120	227,692	\$190,961	\$118,923	\$72,038	1.61
SGB LIEC: Bill Assistance	N/A	N/A	N/A	N/A	N/A	N/A
<i>Total Low Income</i>	<i>10,120</i>	<i>227,692</i>	<i>\$190,961</i>	<i>\$118,923</i>	<i>\$72,038</i>	<i>1.61</i>
Total Energy Efficiency	2,029,366	58,736,384	\$47,476,615	\$9,026,159	\$38,450,456	5.26
Renewable Energy Resource Technology						
SGB Solar Thermal Rebates	672	13,440	\$8,131	\$57,676	(\$49,545)	N/A ³
Total EE & RET Plan	2,030,038	58,749,824	\$47,484,745	\$9,083,835	\$38,400,911	5.23

¹ These values, which are rounded to the nearest whole number, represent a combination of therms and therm equivalents from electric savings. The kWh savings are converted into therm equivalents for the annual and total lifetime energy savings reported. The therm equivalent value is calculated as the source fuel feeding the electric generation power plant. Due to inefficiencies in the generation, transmission and distribution of electricity, the kWh saved at the point of consumption is estimated to be 38 percent of the total energy that is required to provide the electric power. Therefore, to calculate the total value of energy that is saved per kWh of electricity, Southwest Gas has multiplied the kWh savings by a factor of 2.631 for reporting annual and total lifetime savings.

² Totals, which are rounded to the nearest dollar, may not add due to rounding.

³ Pursuant to the Gas EE Standards, cost-effectiveness is not required for RET programs.

The estimated and actual participation and therm and kWh savings needed to calculate therm equivalent savings for the PY4 period June 1, 2015 through December 31, 2015 for each Commission-approved program and measure are shown below in **Tables 6 through 10**. The plan cost-effectiveness ratio per measure calculated by Southwest Gas, and the actual cost-effectiveness ratio are also included in the tables based on program participation through December 31, 2015.

The plan cost-effectiveness ratio per measure as last calculated by Staff^b is included in Staff's report dated May 30, 2014 in Docket No. G-01551A-13-0170.

Table 6 – PY4: SGB Homes

The SGB Homes program has experienced high participation for the first seven months of the program year and as shown below, has been very cost-effective. There have been 3,385 PY4 rebates paid for the program so far with a greater participation in tier 2; meaning that more homes are building to lower HERs scores and are achieving higher energy savings.

Measure	Estimated Participation	Paid	Savings		Cost-Effectiveness Ratio	
			therms	kWh	Plan	Actual
ENERGY STAR Home Certification – Tier 1	2,849	1,046	124,656	9,610,819	7.23	6.88
ENERGY STAR Home Certification – Tier 2	4,956	2,339	376,890	28,807,425	5.82	4.78
Total Homes	7,805	3,385	501,546	38,418,245	6.15	5.17

Table 7 – PY4: SGB Custom Commercial Rebates

In December, the Company approved one project under the SGB Custom Commercial Rebates program, which is estimated to save over 200,000 therms annually for twenty years. This is the third rebate for high-efficiency regenerative thermal oxidizers (RTO) in Arizona. As with the other two RTO projects (in PY1 and PY2), the rebate amount was capped at 50 percent of the incremental cost, rather than paid out at \$1 per therm. Southwest Gas is working with RTO manufacturers and installers to identify additional candidates for equipment upgrades and replacements. There is currently one project pending approval for a boiler system upgrade at a hospital.

^b Pursuant Decision No. 74300.

Measure	Estimated Participation	Paid	Savings		Cost-Effectiveness Ratio	
			therms	kWh	Plan	Actual
Custom Rebates	3	1	206,870	N/A	18.49	10.98

Table 8 – PY4: SGB Distributed Generation

Similar to the SGB Custom Commercial Rebates program, the SGB Distributed Generation program is directed primarily toward large projects, which require significant financial investment and extended lead times from planning to completion. There are currently two projects in the early stages of review, but for which Southwest Gas has not yet received a completed application.

Measure	Estimated Participation	Paid	Savings		Cost-Effectiveness Ratio	
			therms	kWh	Plan	Actual
Fuel efficiency \geq 60%	0	0	0	0	0.00	0.00
Fuel efficiency \geq 65%	0	0	0	0	0.00	0.00
Fuel efficiency \geq 70%	2	0	0	0	2.28	0.00
Total	2	0	0	0	2.28	0.00

Table 9 – PY4: SGB Low Income Energy Conservation

Southwest Gas has experienced lower participation rates with its SGB LIEC Weatherization program during PY4 for several reasons. First, as inflationary costs have increased, the costs to treat each home have similarly increased, therefore reducing the number of homes that can be treated. Additionally, the currently authorized maximum income of 150 percent of federal poverty income guidelines further impacts Southwest Gas' ability to qualify and treat homes. (In its pending PY5 application, the Company has requested to increase the maximum income level to 200 percent of federal poverty income guidelines.) Finally, participation rates are also impacted by the Federal LIHEAP go-back rule for home participation, which does not permit a home to be revisited if it was weatherized on or after September 30, 1994.

Measure	Estimated Participation	Actual Participaton ¹	Savings ¹		Cost-Effectiveness Ratio	
			therms	kWh	Plan	Actual
Weatherization – Homes Assisted	300	43	1,419	255,002	2.63	1.61
Bill Assistance – Households Served	700	978	N/A	N/A	N/A	N/A
Total	1,000	1,021	1,419	255,002	2.63	1.61

¹ Participation and savings are included for the period covering July 1, 2015 through December 31, 2015.

Table 10 – PY4: SGB Solar Thermal Rebates

For the SGB Solar Thermal Rebates program, there is one reserved commercial project that is expected to be completed prior to the end of PY4. Southwest Gas continued to promote the Solar Thermal Rebates program by sending out bill inserts in September 2015 and February 2016 as well as developing an outreach campaign, which was targeted to charitable organizations, fire stations, facilities with pools and religious/education facilities. The outreach campaign included personalized/segmented messaging through direct mail postcards with follow-up calls.

Measure	Estimated Participation	Paid	Savings	
			therms	kWh
Residential Solar Water Heating System	211	5	672	N/A
Non-Residential Solar Water Heating System	3	0	0	N/A
Non-Residential Solar Pool Heating System	1	0	0	N/A
Total	215	5	672	N/A

Conclusion

Southwest Gas' SGB Homes program continues to experience increased program participation and cost-effective energy savings for customers, but the termination of Southwest Gas' Residential and Commercial Rebate programs has limited the Company's EE & RET program and its effectiveness in promoting the increased use of energy-efficient natural gas end-use appliances in Arizona.

In its pending application for PY5, Southwest Gas has proposed to restore a robust menu of cost-effective commercial rebates. However, as noted previously, there are challenges associated with successfully launching new EE & RET programs. It takes time to establish required relationships with trade allies and contractors. It also takes time to make customers aware of, and for customers to become familiar with newly available EE & RET programs. Consequently, for Southwest Gas' EE

& RET programs to be most successful, there must be continuity in the programs from year to year.

Additionally, to achieve the greatest overall energy and water efficiency, consideration should be given to the effect on the state's energy resources when natural gas is not used in homes and businesses for water heating, cooking, clothes drying and space heating. When electric appliances are substituted for natural gas, the net result is increased demand for electricity, increased carbon and other greenhouse gas emissions, increased long-run electric generation capacity requirements, potential increased demand for water in the generation process and upward pressure on resource costs.

To fully evaluate how natural gas service benefits all of Arizona's energy and water stakeholders, it is necessary to consider source energy efficiency as well as site energy efficiency. When comparing electric (kwh) and natural gas (therm) site energy requirements, the United States Environmental Protection Agency estimates that, on average across the nation, 3.13 times more source energy is required to produce and deliver the kwh site energy; whereas only 1.09 times more source energy is needed to produce and deliver the therm site energy. As a result, twice as much energy overall is required when electric appliances are substituted for natural gas.

As the state's only "gas-only" utility, Southwest Gas believes it is critical that both site and source energy efficiencies be considered if Arizona is to achieve the most energy efficient future possible.

Southwest Gas looks forward to its role in Arizona's energy and water future, and will continue to evaluate EE & RET programs and, if appropriate, bring those programs to the Commission's attention in future filings to ensure its EE & RET efforts address customer interests and help achieve the broader energy goals of the state.