

NEW APPLICATION



SOUTHWEST GAS CORPORATION

May 28, 2015

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

**Re: Energy Efficiency and Renewable Energy Resource Technology Portfolio
Implementation Plan; Docket No. G-01551A-15-0168**

Southwest Gas Corporation (Southwest Gas) hereby submits for filing an original and thirteen (13) copies of its Application for approval of an Energy Efficiency and Renewable Energy Resource Technology Portfolio Implementation Plan.

If you have any questions, please contact me at 602-395-4058.

Respectfully,

Matthew Derr
Regulatory Manager/Arizona

Arizona Corporation Commission
DOCKETED

MAY 28 2015

DOCKETED BY

RECEIVED
2015 MAY 28 A 11:47
AZ CORP COMMISSION
DOCKET CONTROL

ORIGINAL

1 **BEFORE THE ARIZONA CORPORATION COMMISSION**

2 **COMMISSIONERS**

3 SUSAN BITTER SMITH – Chairman
4 BOB STUMP
4 BOB BURNS
5 DOUG LITTLE
5 TOM FORESE

7 In the Matter of the Application of Southwest
8 Gas Corporation for Approval of an Energy
8 Efficiency and Renewable Energy Resource
9 Technology Portfolio Implementation Plan.

Docket No.: G-01551A-15-0168

10 **APPLICATION FOR APPROVAL OF AN ENERGY EFFICIENCY AND RENEWABLE
11 ENERGY RESOURCE TECHNOLOGY PORTFOLIO IMPLEMENTATION PLAN**

12 **Introduction**

13 1. Southwest Gas Corporation hereby submits its application to the Arizona Corporation
14 Commission ("Commission") requesting approval of its Arizona Energy Efficiency ("EE") and
15 Renewable Energy Resource Technology ("RET") Portfolio Implementation Plan ("Year Five
16 EE & RET Plan"), which was designed in accordance with the Gas Utility Energy Efficiency
17 Standards ("Standards") set forth in Sections R14-2-2501 through R14-2-2520 of the Arizona
18 Administrative Code ("A.A.C.").

19 2. Southwest Gas is a corporation in good standing under the laws of the state of
20 Arizona, is a corporation duly organized, validly existing, and is qualified to transact intrastate
21 business.

22 3. Southwest Gas' corporate offices are located at 5241 Spring Mountain Road, P.O. Box
23 98510 Las Vegas, Nevada 89193-8510. Communications regarding this filing should be
24 addressed to:

25 / / /

26 / / /

27 / / /

28 / / /

Catherine M. Mazzeo, Esq.
Assistant General Counsel
Carla C. Kolebuck, Esq.
Counsel
Southwest Gas Corporation
P.O. Box 98510
Las Vegas, Nevada 89193-8510
Telephone No. (702) 876-7250
Email: catherine.mazzeo@swgas.com
Email: carla.kolebuck@swgas.com

Matthew Derr
Regulatory Manager/Arizona
Southwest Gas Corporation
P.O. Box 98510
Las Vegas, Nevada 89193-8510
Telephone No. (602) 395-4614
Email: matt.derr@swgas.com

4. Southwest Gas is a public utility subject to the jurisdiction of the Commission pursuant to Article XV of the Arizona Constitution and the applicable chapters of Title 40 of the Arizona Revised Statutes ("A.R.S."). Southwest Gas currently serves approximately 1.0 million customers in the state of Arizona, including portions of Cochise, Gila, Graham, Greenlee, La Paz, Maricopa, Mohave, Pima, Pinal, and Yuma counties. For operational purposes, Southwest Gas' Central Arizona division is headquartered in Phoenix and its Southern Arizona division is headquartered in Tucson.

Background

5. On or about September 13, 2011, Southwest Gas filed its initial EE & RET implementation plan (Docket No. G-01551A-11-0344). The Company's initial EE & RET Plan was approved by the Commission on May 22, 2012 (Decision No. 73229), and Plan Year One commenced June 1, 2012.

6. On or about June 1, 2012, Southwest Gas filed its Plan Year Two EE & RET implementation plan (Docket No. G-01551A-12-0218). As no action was taken by the Commission on the Company's proposed Plan Year Two EE & RET implementation plan, the Company continued its initial EE & RET implementation plan, and the programs authorized thereunder, during Plan Year Two pursuant to A.A.C. R14-2-2505(E).¹

7. On or about May 31, 2013, Southwest Gas filed its Plan Year Three and Four EE & RET implementation plan (Docket No. G-01551A-13-0170). In Decision (D.) 74300 issued on

¹ See Company's May 30, 2013 letter filed in Docket No. G-01551A-12-02218.

January 29, 2014, the Commission approved five programs and a \$4.7 million budget for Plan Years Three and Four but did not approve Southwest Gas' *Smarter Greener Better* Residential and Commercial Rebates programs. The Decision further ordered the Commission's Utilities Division Staff ("Staff") to conduct a cost-effectiveness analysis of the measures proposed in the Company's underlying application.² Staff provided the results of its cost-effective analysis in a report filed with the Commission on May 30, 2014.³

Year Five EE & RET Plan

8. Pursuant to A.A.C. R14-2-2501 *et seq.*, Southwest Gas hereby requests approval of its Plan Year Five EE & RET Plan, a copy of which is attached hereto as Exhibit A. The Company's Plan Year Five EE & RET Plan consists of six programs with annual budgets totaling \$4.7 million. The programs are designed to achieve approximately 3,668,244 therms or therm equivalents in energy savings, exceeding the fifth year goal of achieving three percent (3%) energy savings, with a minimum of seventy-five percent (75%) attributable to energy efficiency programs.

9. As detailed in pages 4 through 6 of the Year Five EE & RET Plan, the Company seeks to continue its existing EE & RET programs with several modifications and to re-introduce its Commercial Rebates program, with a selection of commercial measures found to be cost-effective by Staff.⁴ Southwest Gas additionally proposes to transition to a calendar year EE & RET program cycle beginning with Program Year Six.

10. In developing its Year Five EE & RET Plan, Southwest Gas reviewed various EE & RET programs offered by other utilities, along with its existing portfolio of energy efficiency programs. Southwest Gas submits that the proposed budget affords the Company a level of funding adequate to sustain the programs and allow the Company to achieve the goals set forth in the Standards.

11. Southwest Gas' Year Five EE & RET Plan is designed to provide benefits to all classes of customers in the Company's Arizona rate jurisdiction that participate in the

² D.74300 at pg. 16.

³ See Year Five EE & RET Plan, Appendix A.

⁴ *Id.*

Company's DSM rate adjuster. The Year Five EE & RET Plan is comprised of programs that afford Southwest Gas' customers, including its low-income customers, cost-effective opportunities and resources, education, and training tools, all of which are designed to promote energy efficiency and conservation, and will result in lower energy bills for customers. A list of the proposed programs and measures, including budget levels, is included in the Year Five EE & RET Plan. The Company seeks to implement the Year Five Plan on June 1, 2016, or within 60 days of approval by the Commission if approval is received after the proposed implementation date.

12. As further detailed in the Year Five EE & RET Plan, Southwest Gas requests approval to transition from a June 1 through May 31 EE & RET program year to a calendar program year, commencing with Program Year Six. To facilitate the proposed transition, the Company submits an abbreviated Plan Year Five defined as June 1, 2016 through December 31, 2016. Approval of a 7-month Plan Year Five would allow future EE & RET implementation plans to operate on a calendar-year rather than mid-year cycle and better align with the reporting requirements set forth in the Standards. Southwest Gas contemplates filing a new EE & RET implementation plan for Plan Year Six on or before June 1, 2016, which will become effective January 1, 2017.

13. Program participation rates and budgets for Year Five EE & RET Plan are based on data from the first seven months of Plan Year Three, as well as other historic and forecasted estimates. In addition, though encompassing a shorter term, the Plan Year Five energy savings achieved by each measure are calculated based on the annual savings realized for a full 12-month period after installation of the measure.

14. The Company's Year Five EE & RET Plan also provides sufficient information to estimate the total cost and cost per therm reduction of each program and its respective measures. Each of the proposed programs is cost-effective, as the incremental benefits exceed the incremental costs to society.

15. The Company's current DSM rate adjuster was originally approved by the Commission as part of a settlement in Decision 60352. Under the current DSM rate adjuster, Southwest

Gas files program costs and other data related to the calculation of its DSM adjuster rate in January of each year, and rates become effective in the first billing cycle the following April. Southwest Gas hereby requests approval to continue using the DSM rate adjuster and the existing DSM rate adjuster process.

WAIVER AND MODIFICATION OF STANDARDS

16. Pursuant to A.A.C. R14-2-2520, Southwest Gas hereby requests a waiver and modification of the Standards set forth in A.A.C. R14-2-2505, if and to the extent required to implement a 7-month Plan Year Five as described above. A.A.C. R14-2-2505(A) requires the filing of an implementation plan describing "how the affected utility intends to meet the energy efficiency standard for the next one or two calendar years, as applicable..." A.A.C. R14-2-2505(B) details the information required in the implementation plan, which includes "a description of how the affected utility intends to comply with this Article for the next two calendar years..." and "a description of each DSM and RET program to be newly implemented or continued in the next two calendar years..." Since the Company is proposing a shortened Plan Year Five to accommodate the transition to a calendar-year EE & RET Plan cycle, Southwest Gas seeks a waiver and modification of the Standards, if and to the extent required, to permit the filing and approval of the Year Five EE & RET Plan for the period of June 1, 2016 through December 31, 2016. Southwest Gas submits that the Year Five EE & RET Plan is consistent with the Standards, subject to the approval of any required waiver and modification of the Standards.

Conclusion

17. Based upon the foregoing, Southwest Gas respectfully requests that the Commission approve the Company's proposed Year Five EE & RET Plan, as well as any other relief the Commission deems just and reasonable.

///

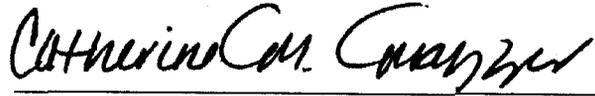
///

///

///

Respectfully submitted this 28th day of May 2015.

SOUTHWEST GAS CORPORATION

A handwritten signature in black ink, appearing to read "Catherine M. Mazzeo".

Catherine M. Mazzeo, Arizona Bar No. 028939
5241 Spring Mountain Road
Las Vegas, NV 89150-0002
(702) 876-7250
(702) 252-7283 *facsimile*
Catherine.mazzeo@swgas.com
Attorney for Southwest Gas Corporation

EXHIBIT A



SOUTHWEST GAS CORPORATION

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

June 1, 2015

Table of Contents

Implementation Plan

<i>SGB HOMES</i>	19
<i>SGB CUSTOM COMMERCIAL REBATES</i>	31
<i>SGB CHP</i>	37
<i>SGB LIEC</i>	42
<i>SGB SOLAR THERMAL REBATES</i>	51

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

Introduction

Southwest Gas Corporation's (Southwest Gas or Company) Energy Efficiency (EE) and Renewable Energy Resource Technology (RET) portfolio (EE & RET Plan) for the fifth (PY5) implementation plan year consists of six programs designed to achieve cost-effective natural gas savings and to increase customer awareness and the use of energy-efficient and renewable energy practices and new technologies. Consistent with the Gas Utility Energy Efficiency Standards set forth in R14-2-2501 et seq., the EE & RET Plan will serve to benefit Southwest Gas' residential, non-residential and low-income customers in Arizona.

Southwest Gas' EE & RET Plan will advance market transformation and achieve sustainable savings by increasing overall energy and water resource efficiency, reducing the need for future market interventions. The EE & RET Plan is comprised of the following programs and targets the residential, non-residential and low-income market sectors:

Residential Energy Management Program

1. *Smarter Greener Better (SGB) Homes*

Non-Residential Energy Management Programs

2. *SGB Commercial Rebates*
3. *SGB Custom Commercial Rebates*
4. *SGB Combined Heat and Power (CHP) Rebates*

Low-Income Program

5. *SGB Low-Income Energy Conservation (LIEC)*

Renewable Energy Resource Technology Program

6. *SGB Solar Thermal Rebates*

The EE & RET Plan includes detailed program descriptions of the six individual programs including: program rationale and objectives, targeted market sector, level of customer participation, customer eligibility, measure specifications, proposed rebate levels, program budgets, energy savings, societal benefits and savings, societal costs, net societal benefits, cost-effectiveness ratios and environmental benefits.

The Company's EE & RET programs are designed to influence energy decisions by residential, non-residential and low-income customers through a combination of education, training, and financial incentives. The EE & RET Plan is expected to produce long-term energy savings, monetary savings for customers, and positive environmental impacts.

The Company's EE & RET Plan also results in energy savings and emissions reductions through the use of energy-efficient products, services and/or practices. Overall energy savings include savings attributable to the reduction of natural gas, electricity and water usage. Southwest Gas has participated in, and plans to continue discussions with Arizona electric utilities focusing on the potential for additional future collaborative efforts regarding EE & RET programs.

To ensure consideration of applicable new technologies in future EE & RET Plans, Southwest Gas researched various sources including, but not limited to: other utilities' energy efficiency pilot studies and ongoing efficiency programs; new manufacturer technologies; ENERGY STAR® Products in Development and Key Product Criteria updates; Consortium for Energy Efficiency studies and program summaries; American Gas Association studies; and various independent third-party laboratory research results such as Lawrence Berkley National Laboratory and the National Renewable Energy Laboratory.

At this time the Company is not requesting the addition of any new technologies, but rather is proposing to continue its existing programs, and re-introduce a selection of commercial measures that were previously found to be cost-effective by Staff. New technologies and innovative programs will be proposed once the EE & RET Plan is shifted to a calendar year format beginning with PY6. More discussion on this and other EE & RET Plan changes are provided below.

EE & RET Changes

Southwest Gas proposes to transition to a calendar program year facilitated by an abbreviated Program Year 5 (PY5), which is defined as June 1, 2016 through December 31, 2016. The 7-month duration of PY5 will place future program years on a January through December calendar schedule, which will align the Company's program years with the reporting requirements set forth in the Gas Energy Efficiency Standards.

The Company has evaluated the first 7 months of PY3 to shape program participation, budgets, and savings for PY5. The existing programs and the re-introduced commercial measures were evaluated and the participation and budgets were established using both historic and forecasted estimates. Proposed program modifications for PY5 include:

- **Changes to the SGB Homes Program:** As many communities in the Company's Arizona service territories have adopted the 2012 International Energy Conservation Codes (IECC), to ensure the program continues to encourage builders to construct "above code" homes for Arizona residents, Southwest Gas proposes to update its SGB Homes Program requirements to offer incentives to builders of new homes with a Home Energy Rating System (HERS) score of 65 or less, and to offer increased incentives to builders who meet or exceed the expected ENERGY STAR® Version 3.1 (V.3.1) HERS score of 60. Considering the more stringent building requirements and associated increased cost to home builders,

Southwest Gas proposes rebate amounts of \$450 for Tier 1 and \$1,500 for Tier 2. The proposed changes align the SGB Homes Program more closely with new homes programs offered by Arizona's electric utilities. Participation for PY5 was estimated to be 3,800 homes, which is commensurate with the first 7 months of PY3 participation. Due to the increased rebate amounts for PY5, Southwest Gas does not propose to pro-rate its PY5 budget. Savings, benefits and costs for PY5 were calculated utilizing the increased rebate amounts, the anticipated participation of 3,800 homes in 7 months, and a budget of \$2,705,000.

- **Re-introduction of the SGB Commercial Rebates Program:** The Company proposes to reinstate the program to include a selection of measures previously found to be cost-effective by Staff.¹ A copy of Staff's report dated May 30, 2014 in Docket No. G-01551A-13-0170 is included in **Appendix A**. Participation for PY5 was estimated to be 310 measures. The proposed budget of \$400,000 is the amount required to achieve the participation estimate. With the 2014 termination of the commercial program, customer awareness may be a challenge in the initial re-launch of the program. The intent would be to continue the Commercial Rebates program into PY6, with the hope of expanding the number and type of measures available to commercial customers in PY6. Savings, benefits and costs for PY5 were calculated utilizing the anticipated participation of 310 measures in 7 months, and a budget of \$400,000.
- **Changes to the SGB Distributed Generation Program:** The SGB Distributed Generation Program has been renamed to SGB CHP Program, which is a more precise representation of the type of Distributed Generation offered under the program. Southwest Gas also proposes to modify the program to include cost-effective micro-turbines as an eligible prime mover. This modification is proposed in order to expand CHP program eligibility and promote the cost-effective application of CHP technology. Participation for PY5 is estimated to be the same as previous program years. Similar to the SGB Custom Rebates program, CHP projects often require a significant investment and planning period. Southwest Gas is aware of several promising CHP projects and does not propose to pro-rate its PY5 budget to reflect a shorter 7-month program year in the event they are completed during PY5. Savings, benefits and costs for PY5 were calculated utilizing estimated participation of 4 projects in 7 months, and a budget of \$300,000.
- **Changes to the Southwest Gas program year definition:** As noted above, PY5 has been abbreviated to 7 months (June 1, 2016 through December 31, 2016) to facilitate the transition to a calendar year cycle for future implementation plans and reports, beginning with PY6 (January 1, 2017 through December 31, 2017). The implementation plan for PY6 will be filed by June 1, 2016. The LIEC Program will continue on its current state fiscal year schedule of July 1, 2016 through June 30, 2017. Program date alignment with the Governor's Office of Energy Policy and Arizona

¹ Pursuant Decision No. 74300.

Community Action Association's program years continues to be advantageous for participating agencies.

- **Changes to the SGB LIEC Program:** Southwest Gas proposes changing the income requirements for the SGB LIEC Program from at or below 150 percent of the federal poverty income guidelines to match the U.S. Department of Energy (DOE) Low-Income Weatherization Assistance Program (WAP) poverty income guidelines, which is currently at or below 200 percent.

Energy savings throughout the EE & RET Plan for PY5 are based on the annual savings achieved by each installed measure. Even though PY5 will be abbreviated to a 7-month duration, the energy savings achieved by each measure is still based on the energy savings from the first full 12 months that the measure is installed. The participation rates and budgets have been established for a 7-month duration as noted above.

The Company plans to implement its new EE & RET Plan for PY5 on June 1, 2016, or within 60 days of approval by the Commission if approval is received after the proposed implementation date. Congruent with R14-2-2505(E) which provides that a Commission approved implementation plan and the programs authorized thereunder may continue in effect until the Commission takes action on a new implementation plan, Southwest Gas will continue to offer the existing programs and will reset the program budgets as of June 1, 2016.

EE & RET Plan Societal Benefits, Savings and Costs

Southwest Gas utilizes a cost-effectiveness model to determine the present value of the total lifetime gas cost savings and the lifetime cost for each program. Table 1 details the energy savings in therms, lifetime monetary gas cost savings, lifetime cost, net benefits and cost-effectiveness ratios for each program in Southwest Gas' EE & RET Plan for PY5.

Total lifetime gas cost savings include applicable electric savings data by kilowatt hour (kWh) for measures and programs administered by the Company as detailed in the individual program sections. The kWh savings are converted into natural gas therm savings as therm equivalents for the total lifetime and annual energy savings reported. The therm equivalent value is calculated as the primary energy or raw natural gas fuel feeding an electric power plant, i.e. the source fuel. Due to inefficiencies in power plant generation and transmission and distribution line losses, a secondary kWh of energy at the point of consumption is estimated to have only 30 percent of the total primary energy required to provide the electric power. Therefore, to calculate the total value of natural gas energy that is saved per kWh of electricity, the kWh savings are multiplied by a factor of 3.340² for the purposes of the cost-effectiveness tests.

²ENERGY STAR Performance Ratings Methodology for Incorporating Source Energy Use, March 2011.

Furthermore, because less gas is burned, there are associated reductions in carbon emissions as well as potential water and power savings associated with cooling power plants. Increasing natural gas end-use and reducing the demand for electricity also delays the need for, and potentially the amount of, incremental electric generation and transmission assets, thus producing long-term savings for Arizona customers.

Table 1 – PY5: EE & RET Plan Annual and Lifetime Therm Savings; Societal Benefits and Savings; Societal Costs; Societal Net Benefits; and Cost-Effectiveness Ratios

Program	Annual Therm Savings ¹	Lifetime Therm Savings ¹	Societal Benefits and Savings ²	Societal Costs	Societal Net Benefits ²	Cost-Effectiveness Ratio
Residential						
SGB Homes	610,666	18,319,978	\$21,338,904	\$7,089,922	\$14,248,981	3.01
<i>Total Residential</i>	<i>610,666</i>	<i>18,319,978</i>	<i>\$21,338,904</i>	<i>\$7,089,922</i>	<i>\$14,248,981</i>	<i>3.01</i>
Non-Residential						
SGB Commercial Rebates	210,037	3,363,782	\$3,038,621	\$714,863	\$2,323,758	4.25
SGB Custom Business Rebates	2,278,708	16,047,310	\$10,944,800	\$483,449	\$10,461,352	22.64
SGB CHP	473,314	9,466,275	\$9,589,072	\$919,300	\$8,669,771	10.43
<i>Total Non-Residential</i>	<i>2,962,059</i>	<i>28,877,367</i>	<i>\$23,572,493</i>	<i>\$2,117,612</i>	<i>\$21,454,881</i>	<i>11.13</i>
Low-Income						
SGB LIEC: Weatherization ³	75,477	1,698,232	\$1,868,797	\$629,190	\$1,239,606	2.97
SGB LIEC: Bill Assistance ⁴	N/A	N/A	N/A	N/A	N/A	N/A
<i>Total Low-Income</i>	<i>75,477</i>	<i>1,698,232</i>	<i>\$1,868,797</i>	<i>\$635,153</i>	<i>\$1,233,643</i>	<i>2.94</i>
Total Energy Efficiency	3,648,202	45,895,577	\$46,780,194	\$9,836,724	\$36,943,469	4.76
Renewable Energy Resource Technology						
SGB Solar Thermal Rebates	20,042	400,840	\$385,917	\$1,495,726	(\$1,109,810)	N/A ⁵
Total EE & RET Plan	3,668,244	46,296,417	\$37,315,791	\$11,332,450	\$35,833,659	4.16

¹ These values represent a combination of therms and therm equivalents from electric savings.

² Societal benefits are reflective of reduced natural gas and electricity tied to the cost-effective measure, and do not include all societal benefits such as water savings, energy savings associated with water treatment and pumping, and carbon savings.

³ The Annual and Lifetime Therm Savings; Lifetime Societal Benefits, Costs and Net Benefits; and Cost-Effectiveness for the SGB LIEC: Weatherization Program includes estimated savings for the additional \$200,000 shareholder funds added to the program budget per Decision No. 72723.

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

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

The EE & RET Plan for PY5 is targeted to result in a total annual energy savings of 3,668,244 therms (including therm equivalents). The total PY5 annual energy savings attributed to EE programs consists of 3,648,202 therms, and the remaining 20,042 therms are attributable to the Company's RET program. These savings exceed the fifth-year goal of achieving three percent energy savings, with a minimum of 75 percent attributable to energy efficiency programs. Tables 2 and 3 below provide the Gas Utility Energy Efficiency Standards goals and savings for program years 1 through 5.

Table 2 – Gas Utility Energy Efficiency Standards – Total Goal and Savings

Program Year	Prior Year Sales (Therms)	Total Goal (%)	Total Goal (Therms)	Total Annual Savings (Therms)	Cumulative Savings (Therms)
PY1 ¹	617,174,760	0.500%	3,085,874	3,146,127	3,146,127
PY2 ¹	634,605,252	1.200%	7,615,263	5,230,962	8,377,089
PY3 ²	603,223,751	1.800%	10,858,028	6,452,905	14,829,994
PY4 ²	603,223,751	2.400%	14,477,370	6,452,905	21,282,899
PY5 ²	595,037,248	3.000%	17,851,117	3,668,244	24,951,143

¹ Actual annual savings (Actual)

² Estimated annual savings (Plan)

Table 3 – Gas Utility Energy Efficiency Standards – DSM Energy Efficiency Goal and Savings

Program Year	Prior Year Sales (Therms)	DSM EE Goal (%) ³	DSM EE Goal (Therms)	DSM EE Annual Savings (Therms)	DSM EE Cumulative Savings (Therms)
PY1 ¹	617,174,760	0.375%	2,314,405	3,099,590	3,099,590
PY2 ¹	634,605,252	0.900%	5,711,447	5,208,528	8,308,118
PY3 ²	603,223,751	1.350%	8,143,521	6,420,573	14,728,691
PY4 ²	603,223,751	1.800%	10,858,028	6,420,573	21,149,264
PY5 ²	595,037,248	2.250%	13,388,338	3,648,202	24,797,466

¹ Actual annual savings (Actual)

² Estimated annual savings (Plan)

³ A minimum of 75 percent of the Gas Utility Energy Efficiency Standard must come from DSM EE programs.

Program Baseline

Southwest Gas' EE & RET Plan encourages energy efficiency improvements. The baseline system is the currently applicable code or federal minimum efficiency standards, if such standards apply. In cases where standards do not exist, the baseline is based upon standard industry practice.

Southwest Gas may adjust baseline natural gas consumption and costs to reflect any of the following: energy codes, standard practice, changes in capacity,

equipment operation, changes in production or facility use, and equipment at the end of its useful life.

EE & RET Plan Annual Budget

Southwest Gas proposes a total annual budget of \$4.7 million for PY5. The proposed individual program budgets maximize the amount of program funds going directly to customers through education, training, and financial incentives. The budgets also take into account the realities of program start-up costs and the administrative oversight needed to plan, develop, deliver and evaluate the programs. Once the EE & RET Plan is implemented, and rebate levels and other program elements have been reviewed, Southwest Gas requests the authority to make modifications if needed to maximize program participation and energy savings to customers.

The budgets for the EE & RET Plan apply to the six aforementioned programs. Within each program description, Southwest Gas provides a budget apportioning the dollars between five categories: rebates, administration, outreach, delivery, and measurement, verification, and evaluation (MV&E). Southwest Gas intends to utilize program funding where demand is highest and provides the apportioned program budgets only as an approximation.

Table 4 – PY5: EE & RET Plan Annual Budget

Program	Rebates	Administration	Outreach	Delivery	MV&E	Program Total Cost
Residential						
SGB Homes	\$ 2,615,000	\$ 28,000	\$ 12,000	\$ 46,000	\$ 4,000	\$ 2,705,000
<i>Total Residential</i>	<i>\$ 2,615,000</i>	<i>\$ 28,000</i>	<i>\$ 12,000</i>	<i>\$ 46,000</i>	<i>\$ 4,000</i>	<i>\$ 2,705,000</i>
Non-Residential						
SGB Commercial Rebates	\$ 248,000	\$ 12,000	\$ 32,000	\$ 100,000	\$ 8,000	\$ 400,000
SGB Custom Business Rebates	\$ 219,500	\$ 6,000	\$ 13,500	\$ 85,000	\$ 6,000	\$ 330,000
SGB CHP	\$ 215,000	\$ 12,000	\$ 15,000	\$ 52,000	\$ 6,000	\$ 300,000
<i>Total Non-Residential</i>	<i>\$ 682,500</i>	<i>\$ 30,000</i>	<i>\$ 60,500</i>	<i>\$ 237,000</i>	<i>\$ 20,000</i>	<i>\$ 1,030,000</i>
Low-Income						
SGB LIEC: Weatherization ¹	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 450,000
SGB LIEC: Bill Assistance ²	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 200,000
<i>Total Low-Income</i>	<i>\$ -</i>	<i>\$ -</i>	<i>\$ -</i>	<i>\$ -</i>	<i>\$ -</i>	<i>\$ 650,000</i>
Total Energy Efficiency	\$ 3,297,500	\$ 58,000	\$ 72,500	\$ 283,000	\$ 24,000	\$ 4,385,000
Renewable Energy Resource Technology						
SGB Solar Thermal Rebates	\$ 220,000	\$ 2,000	\$ 11,000	\$ 79,000	\$ 3,000	\$ 315,000
Total EE & RET Plan	\$ 3,517,500	\$ 60,000	\$ 83,500	\$ 362,000	\$ 27,000	\$ 4,700,000

¹ SGB LIEC: Weatherization does not adhere to the above budget categories since it is not a rebate program. Per Decision No. 72723, Southwest Gas has augmented the \$450,000 annual budget shown above with an additional \$200,000 funded by shareholders. The \$200,000 shareholder funds were added during PY1 through PY4 and will be added during PY5, totaling \$1,000,000. Program budget specifics may be found in the program description on pages 48-49.

² SGB LIEC: Bill Assistance Program does not adhere to the above budget categories since it is not a rebate program.

The budget categories are explained in detail below:

Incentives: Includes all customer rebates provided.

Administration: Includes internal administrative costs such as the compilation of regulatory filings and reports, program-related training, travel expenses, program-related registration fees, membership dues, and shipping and postage.

Outreach: Includes all outreach and advertising costs related to: event sponsorships, program collateral (design, printing, and translations), trade ally membership dues, retail store signage, and trade ally recruitment.

Delivery: Includes third-party rebate processing, forms design and creation, due-diligence program limitation reviews, pre-rebate payment field or phone inspections, and database software.

Measurement, Verification and Evaluation: Includes post-installation evaluations including but not limited to: cost-effectiveness reviews, on-site inspections, and installation documentation reviews. Such evaluations are not associated with normal due-diligence and program delivery, and instead serve as impact evaluations.

Southwest Gas also anticipates there may be varying levels of participation for individual program measures. Consistent with the Gas Utility Energy Efficiency Standards, cost-effectiveness was considered at the portfolio and program levels. Southwest Gas requests flexibility to utilize program funding for measures in which customers express the most interest. This flexibility enables Southwest Gas to maximize energy efficiency benefits for customers by permitting Southwest Gas to reallocate funding to those measures where customers are most responsive. Actual measure costs and cost-effectiveness results will be tracked and provided with each program report.

Cost Recovery of EE & RET Plan

Pursuant to Sections R14-2-2505(B)(5) and R14-2-2506(C) of the Gas Utility Energy Efficiency Standards, Southwest Gas requests that the Commission allow the Company to continue to utilize its current Demand-Side Management (DSM) rate adjuster to recover the costs associated with its EE and RET programs detailed in this implementation plan. Under its current DSM rate adjuster, Southwest Gas files an application in January of each year with its program costs and other data supporting the calculation of its adjustment rate per therm, to become effective with the first billing cycle the following April. Southwest Gas intends to continue the current filing and adjustment process.

Table 5 – Illustrative Cost Recovery of EE & RET Plan Costs

PY5	
Program Costs	\$4,700,000
Applicable Volumes	595,037,248
Adjustment Rate	\$0.00790

¹ For illustrative purposes only. Excludes the effect of over- or under-recoveries in Southwest Gas' existing DSM rate adjuster balancing account and does not reflect applicable volumes that will be used at the time the adjustment rate is calculated. Per Commission Decision No. 72723, the DSM surcharge rate applicable to Southwest's low-income customer rate schedules will not be increased above \$0.00200 per therm.

Summary of Programs

In developing its EE & RET Plan, Southwest Gas considered programs for which energy savings could be demonstrated using industry standards, and assessed each program based on technical feasibility and estimated costs.

The EE & RET Plan will be implemented through both internal and external resources. In all cases, Southwest Gas will retain responsibility for program administration and reporting activities. Below is a brief overview of each proposed program.

SGB Homes: The SGB Homes Program is designed to increase residential energy efficiency through improved thermal shell construction, upgraded mechanical systems, and field verification. Incentives will be offered to builders of new homes that achieve a HERS score of 65 or less, with increased incentives for homes that meet more stringent efficiency criteria and achieve a HERS score of 60 or less. The program involves the recruitment of builders and HERS raters into the program. HERS raters work closely with the builders and contractors to review their home plans. The HERS raters consult with the builders on effective construction techniques required to meet the guidelines, then inspect and test the homes for compliance with the program.

SGB Commercial Rebates: Incentives will be offered via mail-in and online applications to participating non-residential customers upon proof-of-purchase and installation. The high-efficiency measures to be included are: commercial condensing storage and tankless water heaters; condensing boilers; steam traps; commercial food service equipment, including steamers, fryers, infrared charbroilers, pre-rinse spray valves and dishwashers; and air curtains.

SGB Custom Commercial Rebates: Rebates will be 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, has a minimum useful life of 7 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 practice.

SGB CHP Rebates: Incentives will be offered to non-residential customers who install qualifying CHP systems. CHP is an efficient on-site power system designed to create electric power, and thermal energy that can be used for space heating, water heating, industrial steam loads, air conditioning, humidity control, water cooling, product drying, or any other thermal need. CHP is the simultaneous production of two different forms of useful energy (heat and power), derived from a single primary fuel source, in this case natural gas. Incentives are based upon the size and efficiency of the system being installed.

SGB LIEC: The LIEC Program is comprised of two components: one provides energy-efficient home improvements such as increased insulation, duct repairs, weatherstripping, caulking, etc., otherwise referred to as weatherization; and the other provides emergency assistance to help pay household natural gas bills. The program will be available to customers whose annual income meets the U.S. Department of Energy (DOE) Low-Income Weatherization Assistance Program (WAP) poverty income guidelines, which is currently at or below 200 percent of the federal poverty income guidelines. The program will be administered by Southwest Gas in conjunction with the Arizona Governor's Office of Energy Policy (OEP) and the Arizona Community Action Agency (ACAA), for the weatherization component and the bill assistance component, respectively.

SGB Solar Thermal Rebates: Rebates will be offered to residential customers on qualified solar thermal systems used for domestic water heating and non-residential customers on qualified solar thermal systems used for domestic water heating or pool heating, upon proof-of-purchase and installation. The program objective is 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 will be realized throughout the life of the solar thermal systems.

To be eligible for participation in any of Southwest Gas' EE & RET programs, all new and existing residential, non-residential and low-income customers must have active Southwest Gas accounts, and residences and facilities must be located within Southwest Gas' Arizona service territory. In addition, customers must also contribute towards the funding of these programs through the DSM rate adjuster.

Marketing Strategies (Outreach)

To maximize program participation, Southwest Gas' outreach campaign will focus on increasing awareness among consumers and businesses of the benefits of energy efficient products. Key messages have been designed to motivate customers to participate in the Company's energy efficiency programs.

Southwest Gas will integrate information about its programs into more narrowly focused and selective communication channels that will provide the best value while keeping costs down. The Company will leverage existing resources and communication channels while incorporating new promotional strategies that enable the Company to reach specific target market segments in Arizona. Southwest Gas will promote the benefits of energy-efficient equipment and the advantages of using rebates to offset the initial investment. The Company's multi-channel outreach strategy may include:

- On-line program information placed on Southwest Gas' website (www.swgasliving.com).
- Notification of program information and availability in Company newsletters and bill inserts (when applicable).
- Cross-marketing with other Southwest Gas energy efficiency programs and activities (i.e. consumer trade shows, special promotions, direct sales and rebate check inserts).
- Targeted direct mail outreach based on the age of the home and specific market segments.
- Placement of point-of-purchase brochures and advertising with applicable appliance and equipment dealers and contractors.
- Education and awareness meetings with participating trade allies on program aspects.
- Referrals and customer awareness assistance from the Southwest Gas Key Account Management and Energy Solutions staff (when applicable).
- Targeted outreach to trade organizations, engineers, contractors, energy service companies, and government agencies.
- Online advertising including pay-per-click and remarketing ads.
- Social media postings.

Outreach will include key messages effective for the appropriate target audience, dependent on the specific program. Such messages may include:

- Financial Savings: ENERGY STAR or high efficiency homes and products are a great investment, lowering monthly utility bills and potentially adding value to a customer's residence or business.
- Good for the Environment: Purchasing products that use less energy decreases the overall demand for energy and water resources and leads to reductions in greenhouse gas emissions.
- Enhanced Performance: Products designed to be energy-efficient frequently have more features, are of higher quality, and perform to overall higher standards by incorporating innovative technologies and designs.
- Enhanced comfort: Enjoy a home with even temperatures throughout – warmer in winter and cooler in summer.
- Peace of Mind: Relax knowing your home has been inspected, performance tested and certified by an independent professional home energy analyst.

- Enhanced Reputation (as a quality builder or property owner): ENERGY STAR offers market differentiation with a nationally recognized and trusted label for energy efficiency and quality.
- Increased Customer Satisfaction: ENERGY STAR and other high performance homes offer a high quality of living and ownership experience for homebuyers, leading to repeat customers, reduced callbacks and increased referrals.
- Technical Assistance and Best Practices: Partnering with professional home energy raters and utility field staff helps builders stay abreast of best practices based on sound building science.
- Trade Ally Partnership Benefits: By partnering with this program, retailers or installation contractors can benefit from outreach efforts, training opportunities, and technical assistance.
- Environmentally Friendly Business: By selling products and services that emphasize energy efficiency, trade allies can become associated with the image of an environmentally friendly business within their industry.
- Increased High Efficiency Equipment/Appliance Sales: Today's consumers are more knowledgeable of energy efficiency and are more likely to replace an old model product with a new energy-efficient product to benefit from the immediate and long-term savings. Consumers also place a higher value on energy efficiency as a feature in new appliances.

One successful method Southwest Gas currently utilizes to reach commercial and industrial customers is the monthly electronic newsletter, *EnergyLine*, which is an e-mail newsletter containing technical information including: advice on using energy efficiently, reducing energy usage and lowering utility bills, answering questions about energy-efficient technologies, and increasing awareness of general environmental and energy issues. The newsletter also provides general natural gas information of interest to large customers, but focuses primarily on specific energy savings or technology information that will help customers optimize natural gas resources. The information may be generic or may apply specifically to customers in Southwest Gas' Arizona service territory. *EnergyLine* also contains a link to the Company's "Ask an Expert" hotline, an electronic research library that allows customers to request a contact for a commercial audit. Southwest Gas will continue to use *EnergyLine* to promote all of the Company's non-residential energy management programs. The Company believes that participating customers will be interested in ways to increase the energy efficiency of their facilities to further reduce their energy usage, resulting in increased participation in the Company's energy efficiency programs.

Each individual program budget includes a category for outreach that will cover specific program collateral used to promote the program. Market transformation education and awareness outreach will incorporate all programs into the overall energy efficiency outreach strategies.

Delivery Strategies

All pertinent program rebate information will be tracked in a program specific database. The database will provide a near real-time listing of current customer applications, customer information, equipment information, customer costs, savings, and rebates by measure. Program related information will be tracked and available for reporting, including the number of program participants and measure participation.

Due-diligence application review activities will include verification of the following items as applicable, depending on the program:

- Customer Data: name, site address, account number.
- Sales Data: price, quantity, purchase location and date.
- Equipment Data: product name, installation date, capacity, efficiency rating, manufacturer, model number, serial number and installation paperwork.
- Rebate Data: rebate amount, denial rates.
- Deemed energy savings per installed measure.
- HERS score for *SGB Homes*.
- Trade ally information.
- Savings and cost estimates.

In order to maintain quality control, Southwest Gas will augment the application process with random telephone or field inspections to ensure program integrity. These verification activities will serve to confirm the following information depending on the program:

- Installation address.
- Equipment make and manufacturer.
- Equipment model number.
- Program limitations are met.

The verification process takes into consideration the need for random selection, the need to maintain a robust sample size, and the need to verify the compliance of multiple equipment installers. Southwest Gas will evaluate the success of each measure annually and propose changes to the program as necessary.

Conclusion

Southwest Gas believes its EE & RET Plan will benefit its customers, the general public, and the environment in the state of Arizona. Southwest Gas' EE & RET Plan includes programs that serve all major customer classes – residential, non-residential, and low-income customers, including some hard-to-reach and underserved segments within those classes.

With increased program availability and customer outreach, Southwest Gas hopes to affect greater customer awareness and behavioral change with regard to energy efficiency and renewable energy resource technology. The estimated program results indicate cost-effectiveness and positive benefits for Southwest Gas' customers. The EE & RET Plan is designed to achieve the fifth-year energy savings target of the Gas Utility Energy Efficiency Standards and make a positive contribution in terms of saving energy resources, lowering customer utility bills, and improving air quality and water conservation.

Southwest Gas' EE & RET Plan can play a critical role as Arizona looks toward its energy and water future. When "site versus source" energy efficiency is considered, more than three times the amount of natural gas is required to generate electricity to operate electric end-use appliances than is required when natural gas is used as the end-use fuel. To the extent Southwest Gas' Programs result in increased applications of natural gas as an end-use fuel in customers' homes and businesses, there will be a corresponding reduction in the amount of electricity generated, and as a result, a reduction in the total amount of natural gas consumed. Furthermore, because less gas is burned in the generation process, there are associated reductions in carbon emissions as well as potential water and power savings associated with a reduced demand for cooling power plants. These energy efficiency savings are in addition to the incremental energy savings associated with Southwest Gas' EE & RET Programs. It is therefore important in the long term that Southwest Gas offer a robust portfolio of cost-effective EE & RET programs in order for Arizona customers to realize the maximum benefit of natural gas service.

Southwest Gas believes it is important to take a broad view of how natural gas service to end-use customers benefits all of Arizona's energy and water stakeholders and consider additional societal costs, as well as the societal and environmental benefits of each program in determining cost-effectiveness. At this time, the Company has not attributed monetary values to: 1) savings attributable to reduced water and carbon emissions; 2) savings associated with using natural gas as an end-use fuel (e.g. use of natural gas end-use appliances as compared to electric end-use appliances); or 3) any non-energy benefits within the TRC cost-effectiveness model. With the current model, only reduced natural gas and electric benefits (expressed as therm equivalents) are assessed to demonstrate overall cost-effectiveness for each program measure. To ensure all appropriate savings are captured, Southwest Gas will explore incorporating the non-gas fiscal benefits into the cost-effectiveness model in future filings, and anticipates increased cost-effectiveness when all benefits are included.

RESIDENTIAL ENERGY MANAGEMENT PROGRAM: SGB HOMES

Program Description

Southwest Gas proposes to continue to offer the SGB Homes Program to provide incentives to new home builders to construct homes that meet rigorous energy efficiency standards and to maximize total energy and water resource efficiency by using natural gas as an end-use fuel in new homes. Southwest Gas recruits builders, contractors and HERS raters into the program by offering incentives to either exceed current building code requirements or achieve the maximum HERS score expected to satisfy ENERGY STAR V.3.1 guidelines. According to the U.S. Environmental Protection Agency (EPA), ENERGY STAR V.3.1 certified new homes are designed and built to standards well above most other homes on the market today, delivering energy efficiency savings of up to 30 percent when compared to typical new homes. A new home that has earned the ENERGY STAR label has undergone a process of inspections, testing, and verification to meet strict requirements set by the EPA, delivering better quality, better comfort, and better durability.

To participate in the program, builders submit their building design plans to Residential Energy Services Network (RESNET) certified HERS raters for consultation on effective construction techniques to meet the program's HERS score requirements. Once the HERS raters analyze and approve the design, builders must then complete construction of the homes. The HERS raters are involved during the entire construction process, inspecting and testing for compliance with the design and construction guidelines. Upon successful verification, the HERS raters submit the HERS Scores to Southwest Gas. The lower the HERS score, the higher the energy efficiency of the home.

Program Objective

The overall objective of this program is to increase the available energy-efficient housing inventory in Arizona by influencing builders to reduce the HERS scores in new construction, and to ensure that energy and water resource efficiency is maximized by utilizing natural gas as an end-use fuel in new home construction.

The SGB Homes Program will seek to increase customer awareness of energy and water resource efficiency and promote the use of energy-efficient practices and technologies in new residential homes to achieve cost-effective natural gas savings.

Qualifying Customers

All new homebuilders building single-family homes and low-rise multi-family homes located within the Company's Arizona service territory that meet HERS score specifications and feature natural gas space heating and/or water heating are eligible to participate in the program.

In an effort to expand builder participation, Southwest Gas proposes to extend eligibility to builders that are not ENERGY STAR partners. All other SGB Homes Program criteria must be met, including the use of third party HERS raters to validate the HERS score of the homes. The Company will require that applicable HERS scores are achieved; however, the builder will not be required to utilize ENERGY STAR certified contractors, nor obtain the ENERGY STAR certification for each home. Since launching the SGB Homes Program, the Company has learned that some builders are resistant to the contractual requirements tied to the ENERGY STAR certifications, and that some builders in rural areas have a difficult time finding local ENERGY STAR certified contractors. Southwest Gas would like to expand program eligibility to overcome these participation barriers and identify additional opportunities to promote the construction of energy-efficient homes in Arizona.

Southwest Gas continues to research and evaluate options to encourage participation by multi-family builders, and will continue to monitor Multi-Family new construction program development in effort to propose a new construction Multi-Family Homes program in a future filing with the Commission.

Qualifying Measures

Only homes achieving the HERS Scores shown in Table 6 will be eligible for an incentive.

Table 6 – Qualifying Measure Specifications

Measure	Specification
Tier 1	HERS Score 65 through 61
Tier 2	HERS Score \leq 60

To ensure the SGB Homes Program continues to encourage builders to construct above code homes and to align more closely with the State's electric utilities' programs, Southwest Gas has lowered the proposed HERS scores from those required under the current SGB Homes Program. The HERS score calculates heating, cooling, hot water, lighting and appliance energy loads, consumption and costs for new and existing single and multi-family homes. Specific factors include:

- Window area, U-factor, solar heat gain coefficient (SHGC), orientation, and shading.
- Door R-value and size.
- Wall cavity insulation R-value, cavity insulation quality, continuous insulation R-value and framing factors.
- Ceiling insulation R-value and quality, and radiant barrier.
- Floor insulation, cantilevers, over-garage area, etc.
- Water heater efficiency.
- Lighting and appliance efficiency.
- HVAC equipment efficiency, programmable thermostat
- Duct location and leakage.
- Whole-house infiltration.
- Site factors for heating and cooling degree days, wind.
- Wall and roof color.

Fully integrated design and construction combined with best building practices result in homes that have reduced leaks and drafts, more consistent temperatures and better durability. Comprehensive air sealing, quality-installed insulation and high performance windows and doors minimize warm and cold spots. A high-efficiency heating and cooling system, designed and installed for optimal performance, ensures better comfort in every room, year round, likely leading to fewer temperature manual overrides. A comprehensive water management system, including flashing, moisture barriers and heavy-duty membranes protects roofs, walls, and foundations from moisture damage. A fresh air system provides a controlled amount of outdoor air. Combined with a high-performance filter, this improves indoor air quality and reduces dust, pollen and other allergens. Trained and certified professionals perform independent inspections and testing, to verify all activities were completed correctly.

For its SGB Homes Program proposal, Southwest Gas utilized the ENERGY STAR base case home which is aligned with the 2012 International Energy Conservation Code (IECC) prescriptive path. A typical home built to the 2012 IECC in Arizona will have a HERS score of 73. As homes become more energy-efficient, the HERS score decreases.

Rebate Amounts, Incremental Costs and Annual Savings

To receive the incentive, builders must meet the program qualification criteria; and complete an application with their HERS Rater who must submit the application to Southwest Gas to obtain reimbursement for SGB Homes Program participation.

Table 7– Rebate Amounts, Incremental Costs and Annual Savings

Measure	Rebate	Incremental Cost	Unit Gross Annual Savings	
			therms	kWh
Tier 1	\$450	\$1,664	9	996
Tier 2	\$1,500	\$2,502	49	2,126

Table 8 – Estimated Participation and Cost-Effectiveness Ratios

Measure	Estimated Participation	Cost-Effectiveness Ratio
Tier 1	2,940	2.54
Tier 2	860	4.08
Total / Program Cost-Effectiveness Ratio	3,800	3.01

Program Limitations

The following requirements apply:

- All homes must meet the SGB Homes Program requirements and be within the Southwest Gas Arizona service territory.
- The HERS scoring must be performed by an independent third-party HERS Rater.

Target Audiences

Southwest Gas' primary target audience is homebuilders of both single-family and low-rise multi-family properties featuring natural gas space heating and/or water heating within Southwest Gas' Arizona service territory.

The secondary target audience for the SGB Homes Program is the consumer.

Budget

Southwest Gas proposes a total annual budget of \$2,705,000 for PY5. Due to the increased HERS score requirements and rebate amounts for PY5, Southwest Gas does not propose to pro-rate the PY5 budget. Savings, benefits and costs for PY5 were calculated utilizing the increased rebate amounts, the anticipated participation of 3,800 homes in 7 months, and a budget of \$2,705,000.

Table 9– Total Budget

Description	Budget
Rebates	\$ 2,615,000
Administration	\$ 28,000
Outreach	\$ 12,000
Delivery	\$ 46,000
MV&E	\$ 4,000
Total	\$ 2,705,000

Cost-Effectiveness Test Results

The cost-effectiveness test ratio for the SGB Homes Program, along with the cost-benefit overview and projected lifetime savings, are shown below in Tables 10 and 11.

Table 10 – Cost-Benefit Overview

Cost-Benefit Overview: Lifetime Savings	
Societal Benefits and Savings	\$ 21,338,904
Societal Costs	\$ 7,089,922
Net Societal Benefit ¹	\$ 14,248,982
Cost-Effectiveness Ratio	3.01

¹ Societal benefits are reflective of reduced natural gas and electricity tied to the cost-effective measure, and do not include all societal benefits such as water savings, energy savings associated with water treatment and pumping, and carbon savings.

Table 11 – Projected Lifetime Savings

Energy and Environmental Benefit Overview: Lifetime Savings	
Natural Gas (therms)	2,058,000
Electricity (MWh)	476,611
CO ₂ (tons)	374,544

NON-RESIDENTIAL ENERGY MANAGEMENT PROGRAMS: SGB COMMERCIAL REBATES

Program Description

Southwest Gas proposes to re-introduce the SGB Commercial Rebates Program, and include only measures previously found to be cost-effective by Staff, for both new and existing non-residential customers in its Arizona service territory. Because commercial equipment uses large amounts of energy, Southwest Gas' Commercial Rebates Program has the potential to produce significant savings. Incentives will be offered to participating customers for qualified program measures upon proof-of-purchase and installation. The measures to be included in the SGB Commercial Rebates Program are: high efficiency condensing natural gas storage and tankless water heaters; high efficiency condensing natural gas boilers; new steam traps for new or existing natural gas-fueled steam systems; natural gas steamers, fryers, and infrared charbroilers; pre-rinse spray valves and high efficiency dishwashers for new or existing facilities with natural gas water heating; and air curtains for customers with natural gas fueled space heating systems.

The increased initial cost of high efficiency products is a barrier that can often be overcome with appropriate financial incentives, coupled with education on the benefits of greater energy efficiency. Southwest Gas' SGB Commercial Rebates Program combined with the overall Non-Residential Energy Management programs will help achieve market transformation and encourage greater energy savings.

Program Objective

The overall objective of this program is to increase the use of energy-efficient practices and technologies to achieve cost-effective savings in new and existing businesses by offering incentives to Southwest Gas' commercial customers.

Qualifying Customers

This program will be available to both new and existing commercial customers, with an active Southwest Gas commercial account, located within the Company's Arizona service territory.

Qualified Measures

Only equipment meeting the program energy efficiency guidelines shown in Table 12 will be eligible for an incentive. Qualifying equipment specifications will be reviewed annually and adjusted, as necessary, to reflect changing national efficiency standards.

Table 12 – Qualifying Measure Specifications

Measure	Specification
Natural Gas Condensing Storage Water Heater - Tier 1	≥125,000 MBtuh through 199,000 MBtuh; ≥ 94% TE
Natural Gas Condensing Storage Water Heater - Tier 2	≥ 200,000 MBtuh; ≥ 94% TE
Natural Gas Condensing Tankless Water Heater	ENERGY STAR Commercial
Natural Gas Condensing Boiler	≥ 750,000 MBtuh; ≥ 92% TE and must be installed with modulating burner control; boilers ≥ 10 MMBtuh must also be installed with an O2 trim control pad
Steam Trap High Pressure ¹	Steam trap must be installed new or replaced (no repairs)
Steam Trap Low Pressure ¹	Steam trap must be installed new or replaced (no repairs)
Air Curtain ²	Must have usage ≥ 20 hours/week and must be certified by the Air Movement and Control Association (AMCA)
Steamer	ENERGY STAR or Fisher Nickel
Fryer	ENERGY STAR or Fisher Nickel
Infrared Charbroiler	Must utilize infrared burners, excludes upright models
Dishwasher (High Temp): Single Tank Conveyor ³	ENERGY STAR
Pre-rinse Spray Valves ³	Water Sense

¹Requires natural gas steam system.

²Requires natural gas space heating.

³Requires natural gas water heating.

High efficiency space and water heating units achieve greater thermal efficiencies due to features such as: electronic ignition, which eliminates the need to have the pilot burning all the time; new combustion technologies that extract more heat from the same amount of fuel; and sealed combustion that uses outside air to fuel the burners, reducing drafts and improving safety.

For its commercial food service measures, Southwest Gas will approve either ENERGY STAR qualified products or those that have been evaluated by the Food Service Technology Center (FSTC) managed by Fisher-Nickel, Inc. (FNI). The FSTC is the industry leader in commercial kitchen energy efficiency and appliance performance testing. The FSTC has developed over 40 Standard Test Methods for evaluating commercial kitchen appliance and system performance.

Choosing high efficiency commercial food service equipment can help restaurant owners and operators improve the performance of their facilities and equipment while reducing energy costs.³

Pre-rinse spray valves, which are often used in commercial and institutional kitchens, are designed to remove food waste from dishes prior to dishwashing. According to the EPA, by switching to a WaterSense labeled pre-rinse spray valve, a commercial or institutional kitchen can save more than \$115 annually in energy and water costs. The federal standard for commercial pre-rinse spray valves is 1.6 gallons per minute (gpm), but manufacturers have now developed models that use significantly less water. Replacing standard pre-rinse spray valves with WaterSense labeled models offers a significant opportunity for water and energy cost savings.

The Company continues to monitor the adoption of the 2012 IECC codes and the inclusion of air curtains as a compliant alternative to vestibules in its service territories. Consistent with the overall EE & RET Plan objective to encourage above-code energy-efficient technology, the air curtain measure will remain available to customers in municipalities that have not yet adopted the 2012 IECC codes. Customers in municipalities that have adopted the new codes may still qualify for the rebate measure provided that they install the equipment on an existing building absent any other major renovations requiring a building permit. However, projects undergoing major renovations must meet the newly adopted code, and therefore, are ineligible.

Rebate Amounts, Incremental Costs and Annual Savings

To receive an incentive, customers must complete and submit an application for rebate payment after they purchase and install a qualifying program measure. Applications will be available online at the Southwest Gas website (www.swgas.com), as well as through the Southwest Gas Energy Services customer hotline (1-800-654-2765). Applications may be requested by phone, e-mail, or an after-hours voicemail message.

Southwest Gas determined the rebate amounts by reviewing the best available information on incremental cost of the equipment, the incentive level needed to positively affect customer behavior, and maintaining overall program cost-effectiveness. Due to the significant initial cost of commercial high efficiency equipment, rebates equating to at least 60 percent of the incremental cost cap on incentives established by the Commission in Decision No. 74300 are vital to the success of this program and to the desired market transformation.

³ According to the ENERGY STAR website, restaurants that invest strategically can cut utility costs 10 to 30 percent annually without sacrificing service, quality, style or comfort – while making significant contributions to a cleaner environment.

Table 13 – Rebate Amounts, Incremental Customer Costs and Annual Savings

Measure	Rebate	Incremental Cost	Unit Gross Annual Savings	
			therms	kWh
Natural Gas Condensing Storage Water Heater - Tier 1	\$550	\$927	315	N/A
Natural Gas Condensing Storage Water Heater - Tier 2	\$650	\$1,143	430	N/A
Natural Gas Condensing Tankless Water Heater	\$375	\$627	570	N/A
Natural Gas Condensing Boiler	\$3.00/mbtuh	\$5.13/mbtuh	1,586	N/A
Steam Trap High Pressure	\$120	\$200	172	N/A
Steam Trap Low Pressure	\$120	\$200	77	N/A
Air Curtain	\$2,100	\$3,900	2,450	N/A
Steamer	\$500	\$870	1,054	N/A
Fryer	\$650	\$1,120	415	N/A
Infrared Charbroiler	\$500	\$2,200	661	N/A
Dishwasher (High Temp): Single Tank Conveyor	\$200	\$2,050	280	2,511
Pre-rinse Spray Valves	\$50	\$100	368	N/A

Table 14 – Estimated Participation and Cost-Effectiveness Ratios

Measure	Estimated Participation	Cost-Effectiveness Ratio
Natural Gas Condensing Storage Water Heater - Tier 1	35	3.44
Natural Gas Condensing Storage Water Heater - Tier 2	35	3.73
Natural Gas Condensing Tankless Water Heater	35	10.54
Natural Gas Condensing Boiler	40	3.47
Steam Trap High Pressure	20	2.52
Steam Trap Low Pressure	20	1.44
Air Curtain	15	6.50
Steamer	15	5.98
Fryer	15	2.72
Infrared Charbroiler	15	2.30
Dishwasher (High Temp): Single Tank Conveyor	15	3.21
Pre-rinse Spray Valves	50	3.22
Total / Program Cost-Effectiveness Ratio	310	4.16

Program Limitations

The following requirements apply:

- Measures must be installed in commercial businesses with an active Southwest Gas account within the Southwest Gas Arizona service territory.
- Measures must be new and not used.
- Incentives are capped at 50 percent of the purchase price.

Target Audiences

Southwest Gas' primary target audience is commercial customers located within its Arizona service territory.

Southwest Gas' secondary target audience is trade allies including retailers, distributors, and manufacturers.

Budget

Southwest Gas proposes a total annual budget for this program of \$400,000 for PY5.

Table 15 - Total Budget

Description	Budget
Rebates	\$ 248,000
Administration	\$ 12,000
Outreach	\$ 32,000
Delivery	\$ 100,000
MV&E	\$ 8,000
Total	\$ 400,000

Cost-Effectiveness Test Results

The cost-effectiveness test ratio for the Commercial Rebates program is 4.16.

Table 16 – Cost-Benefit Overview

Cost-Benefit Overview: Lifetime Savings	
Societal Benefits and Savings	\$ 2,975,339
Societal Costs	\$ 714,863
Net Societal Benefit ¹	\$ 2,260,476
Cost-Effectiveness Ratio	4.16

¹ Societal benefits are reflective of reduced natural gas and electricity tied to the cost-effective measure, and do not include all societal benefits such as water savings, energy savings associated with water treatment and pumping, and carbon savings.

Table 17– Projected Lifetime Savings

Energy and Environmental Benefit Overview: Lifetime Savings	
Natural Gas (therms)	3,277,935
Electricity (MWh)	753
CO ₂ (tons)	19,749

NON-RESIDENTIAL ENERGY MANAGEMENT PROGRAMS: SGB CUSTOM COMMERCIAL REBATES

Program Description

Southwest Gas proposes to continue to offer the SGB Custom Commercial Rebates Program to both new and existing non-residential customers located in the Company's Arizona service territory. The program is designed to obtain verifiable, cost-effective, and on-going natural gas savings. Program participants will provide submittals showing a specific quantity of natural gas reduction through the installation of program measures in return for a fixed price per therm rebate up to a cap equal to a percentage of the eligible incurred project cost.

The program requires customers to submit specific information for each project and to conduct energy engineering and commissioning at their own cost. For purposes of this program, commissioning includes verification of the project savings and confirmation that the measures are operating as intended. All commissioning activities, including verification and confirmation, will be the customer's responsibility and will all be reviewed by Southwest Gas. This project information will be provided in two reports: the Pre-Installation Report (PIR) and Post-Installation Report (POR). Rebates will be paid directly to participating customers who meet the program requirements.

The program is designed to leverage the outreach and existing delivery channels of local businesses, wholesalers and retailers, as well as Southwest Gas' Key Account Management and Energy Solutions personnel.

Participation for PY5 is estimated to be the same as previous program years, as participation is not relative to program year or calendar year. These projects often require significant lead times and financial investment, and may often span 12 to 18 months depending on the complexity of the upgrade. Southwest Gas therefore does not propose to pro-rate the budget. Savings, benefits and costs for PY5 were calculated utilizing the anticipated participation of 4 projects in 7 months, and a budget of \$300,000, which is consistent with the PY3 and PY4 budgets.

Program Objective

The objectives of the program include: encouraging private sector delivery of energy efficiency products and services; achieving customer gas and cost savings; and significantly reducing barriers to participation by streamlining program procedures and measurement and verification (M&V) requirements.

Qualifying Customers

All active, Southwest Gas non-residential customers located in the Company's Arizona service territory are eligible to participate in the program.

Qualifying Measures

Qualifying measures include those that target cost-effective natural gas savings, including retrofits of existing systems, improvements to existing systems, and first time installations where the system's efficiency exceeds applicable codes or standard industry practice. The program does not specify eligible measures in order to provide program 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, has a minimum useful life of 7 years, and exceeds minimum cost-effectiveness.

Rebate Amounts

Subsequent to approval of a PIR, a customer will be required to enter into a Program Agreement with Southwest Gas in order to be eligible for rebates.

The program's rebate levels for the installation of measures pursuant to the Program Agreement shall be the lesser of (a) \$1.00/therm per first year annual therm savings as determined solely by Southwest Gas; or (b) 50 percent of the eligible project cost as determined solely by Southwest Gas.

Program Limitations

Measures that are excluded from this program include those that:

- Are offered through the SGB Commercial Rebates Program.
- Rely solely on changes in customer behavior.
- Merely terminate existing processes, facilities, or operations.
- Are not fuel neutral.
- Are required by state or federal law, building or other codes, or are standard industry practice.
- Qualify for rebates through any other EE or RET program offered by Southwest Gas.

Project Identification Report (PIR)

The first report required prior to project installation is titled the PIR. To assess projects for eligibility and program approval, the customer must submit the following information:

- Identification of the project site and account information.
- An energy analysis report submitted by the customer, adhering to industry standard practices for energy engineering and containing the following:

- Descriptions of the proposed set of energy efficiency measures;
 - Summary of the energy savings and eligible project costs;
 - Baseline operational conditions and energy consumption data supported by spot or short-term measurements, trended data, or accepted engineering practices for each proposed measure;
 - A description of the calculations and methodologies that support the baseline, proposed operation, natural gas savings, and eligible costs;
 - Supporting documentation for the estimated eligible measure costs;
 - Any additional information necessary for the review of the project such as calculation spreadsheets, simulation models, vendor quotes, and equipment specifications; and
 - Commissioning plan for verifying the proposed measure operation and energy savings.
- Brief summary of the anticipated project timeline.

Following the submission of a PIR, but prior to project installation, the Company will conduct any site inspection activities necessary to confirm the baseline conditions and anticipated project scope. Once the PIR is reviewed and approved, the Company will send an approval letter to the customer containing project review results and the anticipated rebate amount.

If the project does not meet the eligibility requirements, or if the PIR is incomplete or of insufficient quality, the PIR will be rejected. The customer may address deficiencies in the PIR and resubmit for program consideration.

The customer is responsible for submitting the PIR and allowing time for the appropriate review prior to purchasing equipment. Projects that have been purchased or installed prior to approval of the PIR will be reviewed for program eligibility and will be subject to all program requirements before becoming eligible for rebates under the program.

Project Commissioning

This step ensures that the predicted energy savings are being achieved and that the system's operation and performance are optimized. Commissioning is the responsibility of the building owner and can be completed by the customer's internal staff or installing contractor. Commissioning is required to receive a full rebate.

Project-specific commissioning procedures may be classified according to three distinct approaches, representing increasing levels of detail and rigor:

- Deemed savings: Savings values are stipulated based on engineering calculations using typical equipment characteristics and operating schedules developed for particular applications, without on-site testing or metering.
- Simple M&V: Savings values are based on engineering calculations using typical equipment characteristics and operating schedules developed for particular applications, with some short-term testing or simple long-term metering.
- Full M&V: Savings values are estimated using a higher level of scrutiny than the deemed savings or simple M&V approaches, through the application of metering, billing analysis, and/or computer simulation.

Customers must submit a commissioning plan for each project, with the PIR. Commissioning procedures will vary in detail and thoroughness depending on the measures installed. The level of detail and rigor of the commissioning plan is determined by the project size and savings. Southwest Gas will specify the approach required in the commissioning plan.

If the customer and program administrator agree to pursue the "Full M&V" or "Simple M&V" options, the commissioning must follow the International Performance Measurement and Verification Protocol.

Commissioning must be completed when the building is fully occupied and when the system's operation can be verified. Some measures may require operation during the cooling or heating seasons and the time required to complete commissioning activities will range from a few days up to a few months.

Post Installation Report (POR)

After the Company approves the PIR, the customer will install the identified measures. Upon completion of each approved project, the customer will begin the commissioning phase in accordance with the commissioning plan previously approved by the Company. Thereafter, the customer must submit a POR to the Company that includes the following:

- A report summarizing the results of the commissioning activities and as-installed operation of the measures;
- Additional information necessary for the review of the project such as final calculation spreadsheets, simulation models, invoices, and equipment specifications;
- Verified natural gas reduction;
- Verified eligible project costs; and
- Estimated rebate amount.

Once the POR is reviewed and approved, the Company will send an approval letter to the customer containing project review results and the rebate amount.

If the project does not meet the eligibility requirements, if the project is not of sufficient quality, or if the POR is incomplete, the POR will be rejected. The customer may address deficiencies in the POR and resubmit for program consideration.

Target Audiences

Southwest Gas' primary target audience is all non-residential customers located in the Company's Arizona service territory.

Southwest Gas' secondary target audience is trade allies including retailers, distributors and manufacturers.

Budget

Southwest Gas proposes a total annual budget for this program of \$330,000 for PY5.

Table 18- Total Estimated Budget

Description	Estimated Budget
Rebates	\$ 219,500
Administration	\$ 6,000
Outreach	\$ 13,500
Delivery	\$ 85,000
MV&E	\$ 6,000
Total	\$ 330,000

Cost-Effectiveness Test Results

The cost-effectiveness test ratio for the SGB Custom Commercial Rebates Program is 22.64.

Table 19 – Cost-Benefit Overview

Cost-Benefit Overview: Lifetime Savings	
Societal Benefits and Savings	\$ 10,944,800
Societal Costs	\$ 483,449
Net Societal Benefit ¹	\$ 10,461,352
Cost-Effectiveness Ratio	22.64

¹ Societal benefits are reflective of reduced natural gas tied to the cost-effective measure, and do not include all societal benefits such as water savings, energy savings associated with water treatment and pumping, and carbon savings.

Table 20 – Projected Lifetime Savings

Energy and Environmental Benefit Overview: Lifetime Savings	
Natural Gas (therms)	16,047,310
CO ₂ (tons)	93,877

NON-RESIDENTIAL ENERGY MANAGEMENT PROGRAMS: SGB CHP

Program Description

Southwest Gas proposes to continue to offer the SGB CHP Program to non-residential customers in the Company's Arizona service territory. The SGB CHP Program will encourage the installation of high efficiency CHP technologies.

CHP is an efficient on-site power system designed to create electric power, and thermal energy that can be used for space heating, water heating, industrial steam loads, air conditioning, humidity control, water cooling, product drying, or any other thermal need. CHP is the simultaneous production of two different forms of useful energy (heat and power), derived from a single primary fuel source, in this case natural gas.

A CHP system is usually defined by the prime mover, or the component that converts fuel to generate electricity. Energy that would typically be lost in the prime mover's hot exhaust or cooling systems is recovered to provide heat for process loads. The waste heat recovery process increases the efficiency of the CHP system, and decreases the fuel and energy consumption needed for other applications at the facility. Other benefits can include the reduction in equipment sizes, because in most cases, as fuel consumption is reduced due to the recovered heat, the size of the equipment normally used for that application may be downsized. Finally, the amount of greenhouse gas emissions are generally much lower with a CHP system that utilizes the waste heat compared to purchasing power from the grid and producing heat on site with conventional systems.

Program Objective

The overall objective of the CHP Program is to provide a rebate for energy users to achieve significant fuel savings by promoting high efficiency electric generation, providing financial benefits during peak electrical demand periods, and demonstrating the use of new natural gas technologies which are being brought to market.

The market potential for CHP in Arizona is promising. CHP can contribute significantly to energy conservation while accruing significant societal benefits and customer benefits. CHP is an affordable, clean, and reliable piece of the puzzle for meeting Arizona's energy needs and should be considered a key component in economic strategies.

The program has various benefits for commercial and industrial customers, including:

- Awareness of how the customer uses energy;
- Awareness of largest energy consuming processes;
- Information to justify energy-saving initiatives for company management;
- Awareness of new technologies;
- Reduced overall energy consumption;
- Reduced vulnerability to outages or transmission and distribution congestion and restraints;
- Lower energy costs to customer; and
- Lower environmental emissions.

Qualifying Customers

All active, Southwest Gas non-residential customers located in the Company's Arizona service territory are eligible to participate in the program, provided they contribute to the Company's DSM rate adjuster. The program will focus on commercial and industrial customers with the potential to utilize CHP applications. Municipalities, schools, restaurants, hospitals, and hotels are all viable candidates for CHP.

To qualify for rebates, customers must complete a preliminary feasibility study. The preliminary feasibility study is necessary to identify those customers that are good candidates for a CHP system. Southwest Gas will be working with the DOE Intermountain Clean Energy Application Center, which offers the studies at no cost. Alternatively, a customer may opt to perform a feasibility study via a third-party contractor and submit the results to Southwest Gas.

Qualifying Measures

Southwest Gas proposes to add microturbines to the available types of high-efficiency prime movers in the CHP program for PY5. Under its current program, reciprocating engines, combustion turbines, and steam turbines are all eligible prime movers; however, each must demonstrate system efficiency equal to or greater than 60 percent to qualify for incentives under the program. Below is a brief description of the prime movers proposed for inclusion.

- **Approved - Reciprocating engines** are the most common and most technically mature of all CHP technologies. They are available from small sizes (e.g., 1 kW for residential generation) to large generators (e.g., 7 MW).
- **Approved - Combustion turbine** generators are a very mature technology. They typically range in size from about 500 kW to over 300 MW for central power generation. Gas turbines produce high-quality exhaust heat that can be used in CHP configurations to reach overall

system efficiencies of 70 to 80%. The efficiency and reliability of smaller gas turbines (1 to 40 MW) are an attractive choice for industrial and large commercial users for CHP applications.

- **Approved - Steam turbines** are widely used for CHP applications in the U.S. and Europe. The capacity of steam turbines can range from 50 kW to 1,500 MW for large utility power plants. Unlike gas turbine and reciprocating engine CHP systems where heat is a byproduct of power generation, steam turbines normally generate electricity from heat (steam). A steam turbine is captive to a separate heat source and does not directly convert fuel to electric energy. The energy is transferred from the boiler to the turbine through high pressure steam that in turn powers the turbine and generator. This separation of functions enables steam turbines to operate with a wide variety of fuels. In CHP applications, steam at lower pressure is extracted from the steam turbine and used directly in a process or for district heating, or it can be converted to other forms of thermal energy including hot or chilled water.
- **Newly Proposed - Recuperated microturbines** are small combustion turbines that produce between 30 kW and 200 kW of power. While most early product introductions featured un-recuperated designs, today's products are focused on recuperated systems. The recuperator recovers heat from the exhaust gas and boosts the temperature of the air stream supplied to the combustor. Microturbines can produce waste heat (or exhaust) at temperatures in the range of 400-600 degrees Fahrenheit and are suitable for supplying a variety of thermal needs.

Rebate Amounts, Incremental Costs and Annual Savings

Southwest Gas determined the rebate amounts, incremental costs and annual therm savings by reviewing previous program participants, data from the American Gas Association, Energy Solutions Center, other utility energy efficiency portfolios, and manufacturer published case studies. The annual energy savings of a CHP system will vary dramatically depending upon the size and efficiency of the installed system.

- \$500 per kW (or equivalent for mechanical power) for CHP systems with a fuel efficiency of at least 70 percent, up to a maximum of 50 percent of the installed cost of the project;
- \$450 per kW (or equivalent for mechanical power) for CHP systems with a fuel efficiency of at least 65 percent, up to a maximum of 50 percent of the installed cost of the project;
- \$400 per kW (or equivalent for mechanical power) for CHP systems with a fuel efficiency of at least 60 percent, up to a maximum of 50 percent of the installed cost of the project.

Table 21– Rebate Amounts, Incremental Customer Costs and Annual Savings

CHP System	Rebate ¹	Incremental Cost	Unit Gross Annual Savings	
			therms	kWh
Fuel efficiency ≥ 60%	\$400/kW	\$2,100/kW	51,891	1,947,170
Fuel efficiency ≥ 65%	\$450/kW			
Fuel efficiency ≥ 70%	\$500/kW			

¹ Rebate amounts are per kW or equivalent kW for mechanical power and are up to a maximum of 50 percent of the installed cost of any project.

Table 22 – Estimated Participation and Cost-Effectiveness Ratios

Measure	Estimated Participation	Cost-Effectiveness Ratio
CHP System	4	10.43

Program Limitations

The following requirements apply:

- Minimum program efficiencies must be met regardless of the prime mover technology.
- Total rebates from Southwest Gas funds shall not exceed 50 percent of the total installation costs.

Target Audiences

Southwest Gas' primary target audience is commercial and industrial customers.

Budget

Southwest Gas proposes a total annual budget for this program of \$300,000 for PY5.

Table 23– Total Budget

Description	Budget
Rebates	\$ 215,000
Administration	\$ 12,000
Outreach	\$ 15,000
Delivery	\$ 52,000
MV&E	\$ 6,000
Total	\$ 300,000

Cost-Effectiveness Test Results

The cost-effectiveness test ratio for the SGB CHP Program is 10.43.

Table 24– Cost-Benefit Overview

Cost-Benefit Overview: Lifetime Savings	
Societal Benefits and Savings	\$ 9,589,072
Societal Costs	\$ 919,300
Net Societal Benefit ¹	\$ 8,669,771
Cost-Effectiveness Ratio	10.43

¹ Societal benefits are reflective of reduced natural gas and electricity tied to the cost-effective measure, and do not include all societal benefits such as water savings, energy savings associated with water treatment and pumping, and carbon savings.

Table 25 – Projected Lifetime Savings

Energy and Environmental Benefit Overview: Lifetime Savings	
Natural Gas (therms)	4,151,280
Electricity (MWh)	155,774
CO ₂ (tons)	142,764

LOW-INCOME PROGRAM: SGB LIEC

Program Description

Southwest Gas proposes to continue to offer the LIEC Program to income-qualified residential customers in the Company's Arizona service territory. The DOE reports that, on average, low-income households typically spend 14 percent of their total annual income on energy, compared to 3.5 percent for other households. Since weatherization reduces home energy consumption on a continuing basis, it provides a long-lasting boost to the household's budget.

The program is comprised of two components: one provides energy efficient home improvements such as increased insulation, weatherstripping, caulking, etc., otherwise categorized as weatherization; and the other provides emergency assistance to help pay household natural gas bills.

Weatherization Component:

The weatherization component of the program includes: a home energy audit to identify energy efficiency improvements and potential health and safety concerns existing in the home; home weatherization, which may also include appliance repairs or replacements resulting from health and safety concerns; and consumer energy conservation tips, commonly referred to as energy education. The combination of these measures result in cost-effective reductions in energy usage in income-qualified residences. Weatherization provides a lasting solution by addressing the causes of high energy bills. Energy improvements, such as adding insulation to the walls and roofs, can last for the lifetime of the dwelling. This program uses the most advanced technologies and testing protocols available in the housing industry and targets households that lack the resources to invest in energy efficiency.

Bill Assistance Component:

The bill assistance component to the LIEC program is available to income-qualifying customers in emergency situations and provides up to \$400 per year to pay all or a portion of their natural gas bills. The program assists households that have experienced a sudden loss of income, utility disconnection, unexpected expenses resulting in an inability to pay, or health risks associated with the non-use of gas appliances.

Both LIEC program components operate on a program year from July 1st through June 30th, as do the other federally-funded programs administered by the OEP and ACAA.

Program Objective

The overall objective of this program is to reduce customer natural gas usage, and overall energy usage, by offering cost-effective weatherization measures to income-qualified residential customers. Southwest Gas will also provide customer education in order to reduce energy usage and improve the health and safety of participating households.

Southwest Gas projects that approximately 260 homes will be weatherized and approximately 700 households will participate in the bill assistance component of the program.

Qualifying Customers

All active Southwest Gas residential customers located in Southwest Gas' Arizona service territory whose homes are heated by natural gas and whose annual income meets the DOE WAP poverty income guidelines, which is currently at or below 200 percent of the federal poverty income guidelines, are eligible to participate in the program. If the DOE WAP poverty income guidelines change, Southwest Gas will implement the changes accordingly and report on these changes in a future report.

Weatherization Component:

Owner-occupied units, rental units with the consent of the owner, and residential units at a Southwest Gas master-metered property with sub-metering can be weatherized. Qualifying residences must be located within Southwest Gas' Arizona service territory.

Bill Assistance Component:

A household must be gas heated and income-qualified according to the standards set forth above. The household must not have received Southwest Gas bill assistance during the previous 12 months. In addition, the household must be facing a hardship, such as a sudden loss of income, utility disconnection, unexpected expenses resulting in an inability to pay, or health risks associated with the non-use of gas appliances.

Qualifying Measures

Weatherization Component:

Program measures fall into four major categories: 1) duct repair; 2) infiltration control; 3) insulation (including attic, duct and floor); and 4) repair or replacement of appliances that are not operational or pose a health hazard. Typical weatherization services include installing insulation, sealing, tuning and repairing cooling and heating systems, and mitigating heat gain through windows, doors, and other infiltration points. Non-energy benefits that increase the comfort or health and safety of the home are installed under the Health and Safety budget category.

Bill Assistance Component:

There are no measures as part of the bill assistance component of the LIEC program.

Program Limitations

Weatherization Component:

Weatherization component costs required to complete the necessary measures (excluding all administrative costs) shall not exceed \$3,000 per household, unless prior approval is granted by Southwest Gas. Approval will only be granted if the total investment meets program cost-effectiveness requirements.

Bill Assistance Component:

Bill assistance funding shall not exceed \$400 per household per program year.

Program Administration

Weatherization Component:

The weatherization component will be administered by Southwest Gas, in conjunction with the OEP, community action agencies (agencies), and other Arizona utilities. The OEP manages the DOE's WAP for Arizona and leverages funding from federal, state and utility programs. For the LIEC program, the OEP will expand its current contracts with community agencies to include funding from Southwest Gas.

To participate in the program, customers must request assistance through the agencies, which screen applicants based upon program criteria. Once qualifying customers are identified, the agencies conduct energy audits to gather, record, and analyze data on the residences. While in the home, agency personnel explain the measures that will be installed and offer a variety of no-cost/low-cost energy conservation tips.

The current statewide weatherization program administered by the OEP uses very detailed guidelines to optimize investment in energy efficiency through a systems approach. The state of Arizona is divided into six climate zones. Each of these zones has a corresponding priority list of known cost-effective weatherization materials/measures that can be installed. In cases where potentially cost-effective energy upgrades are either not listed or are not approved safety measures, a computerized audit must be completed to develop a ranking of the energy upgrades, based on their savings-to-investment ratio. Diagnostic tools, such as a blower door and manometer, are used to detect and mitigate air infiltration and pressure imbalances. Crews also test heating and cooling units for carbon monoxide.

The DOE requires inspections on ten percent of qualified homes. The improper installation of weatherization measures can significantly reduce potential energy savings. The OEP strongly focuses on the proper installation techniques for

weatherization measures. This reduces the number of “call backs” and failed inspections.

The OEP will invoice Southwest Gas monthly for the weatherization projects completed during the prior month. The OEP will also provide monthly statistics, including the number of customers served, the type of activities completed, and detailed activity costs by measure.

Bill Assistance Component:

The bill assistance component of the LIEC program is administered by Southwest Gas in conjunction with the ACAA. The ACAA partners with the following ten community-based agencies to distribute bill assistance funds throughout the Company’s Arizona service territory:

- The City of Phoenix Human Services Department
- Maricopa County Human Services Department
- Southeastern Arizona Community Action Program
- Western Arizona Council of Governments
- Community Action Human Resources Agency
- Gila County Division of Health and Human Services
- Tucson Urban League
- Pima County Community Action Agency
- City of Glendale Community Action Partnership
- A New Leaf/Mesa Can

These agencies provide easy access to families in need. Many of these agencies subcontract with multiple community agencies in their service territories to assist the greatest number of clients. The agencies are adept at managing a variety of assistance programs and most offer an array of services, including food, shelter, rent and mortgage assistance, clothing, job training, healthcare and other vital programs for those in need.

The ACAA will submit monthly reports to Southwest Gas for the bill assistance portion of the LIEC program. The reports will detail each agency’s funding disbursements by customer and account number. Each of the ten approved agencies will receive base funding budgets of \$5,000 each, with the remaining funding distributed according to a formula based on unemployment, customer population and state poverty levels.

Program Outreach

Southwest Gas combines the promotion and outreach activities for both the weatherization and bill assistance components of the LIEC program with its Low-Income Residential Assistance (LIRA) program. The LIRA program provides discounted rates for natural gas service to income-qualified customers from November through April, and year-round on the basic service charge. Southwest Gas provides bill inserts in English and Spanish, provides program information

on its website, meets annually with community action agencies, and attends a variety of community events. Additional ongoing outreach activities include:

- Promotion of the LIEC program (weatherization and bill assistance) on the LIRA application and swgas.com.
- Monthly mailing of *Disconnect Letter* to customers who demonstrate difficulty paying their bills. The letter includes bill assistance resources, energy conservation tips, and a LIRA application.
- Providing support to agencies via local Southwest Gas Community Affairs personnel.
- Providing LIRA/LIEC collateral at outreach events.
- Mailing LIRA/LIEC collateral to over 150 agencies throughout the Company's service territories.
- Communicating regularly with the OEP to explore targeted, agency requested outreach opportunities, and place ads.
- Attending the biennial Energy Out West Conference to collaborate with agencies, utilities and program managers on LIEC best practices in the Southwest.
- Partnering with schools in service territory in which natural gas efficiency, energy saving tips and LIRA/LIEC collateral is provided (Annual Career Concepts for Youth partnership with Alhambra Elementary School, support of Imago Dei Middle School).
- Supporting annual workshops at Arizona State University West for education of students in which natural gas efficiency and energy saving tips are provided for development of activities in the classroom.
- Supplying energy saving tips and posters for teacher workshops hosted by the National Energy Foundation.
- Attend community events, e.g.: Resource Round-up in Casa Grande, Tucson Indian Center's Annual Diversity Career Fair, Maricopa County Mass Application Intake, and The Money Fair.

As part of the settlement agreement approved by the Commission in the Company's most recent general rate case (D. 72723), Southwest Gas developed a Plan to Enhance Customer Education and Outreach for the weatherization component under the LIEC program. The efforts listed below augment the Company's existing outreach efforts:

- Requested agency input on events Southwest Gas can add to its existing efforts to promote LIEC and LIRA.
- Inquired with AARP on best practices to reach senior fixed-income demographic.

- Developed *Energy Saving Tip Sheet* (English/Spanish front/back) for agencies to provide to customers on their waiting list.
- Mailed *Annual Assistance Letter* each September to LIEC Bill Assistance recipients and customers who have demonstrated difficulty paying their bills. The letter includes bill assistance resources, energy conservation tips, and a LIRA application.
- Developed new LIEC Weatherization postcard for use at events and targeted mail efforts.
- Hosted annual Low-Income Energy Assistance agency and utility collaborative workshop.
- Coordinated with Boys and Girls Clubs, YMCA's, and Arizona Head Start Agency to distribute youth oriented *Energy Saving Tip Sheets* and to make LIRA applications available on site.
- Provided slide promoting LIEC/LIRA for TV monitors in local career centers or agency waiting rooms.

In addition, Southwest Gas communicates regularly with the administrative agencies, OEP and ACAA, to identify and evaluate additional promotion of the two program components. Southwest Gas will continue to monitor the need for promotion and will place ads consistent with local agency agreement.

Budget

Weatherization Component:

Southwest Gas proposes a total annual budget of \$650,000. This budget is comprised of \$450,000 DSM dollars, and \$200,000 of Southwest Gas shareholder dollars.

Table 26 – Budget – Weatherization Component

Description	DSM Funding ¹	Shareholder Funding ²	Total
Weatherization	\$426,409	\$0	\$426,409
Health & Safety	\$23,591	\$83,011	\$106,602
<i>Subtotal Weatherization</i>	<i>\$450,000</i>	<i>\$83,011</i>	<i>\$533,011</i>
Training and Monitoring Costs	\$0	\$20,000	\$20,000
Administration – Governor's Office on Energy Policy	\$0	\$31,350	\$31,350
Administration – Agencies	\$0	\$42,639	\$42,639
Administration & Outreach – Southwest Gas	\$0	\$23,000	\$23,000
<i>Subtotal Program Support</i>	<i>\$0</i>	<i>\$116,989</i>	<i>\$116,989</i>
Total	\$450,000	\$200,000	\$650,000

¹ Southwest Gas recovers costs for DSM funding via an adjuster mechanism filed annually.

² Per Decision No. 72723, Southwest Gas will supplement the LIEC Weatherization component with an additional \$200,000.

In addition to the energy conservation measures, community service referrals are made to appropriate agencies to address other health and safety needs observed in the participants' homes.

The OEP requires agency personnel to conduct a thorough safety check of each home and its appliances. Agency personnel follow strict health and safety procedures while performing all weatherization activities for the protection of the occupants and themselves.

Funds not utilized under the Special Project or Health and Safety budget are transferred back into the overall weatherization budget and distributed to the agencies to weatherize more dwelling units. The Health and Safety budget may not exceed 25 percent of each agency's annual weatherization budget.

Bill Assistance Component:

Southwest Gas proposes a total estimated annual budget of \$200,000, with \$185,000 allocated to bill assistance funds and \$15,000 allocated to administration funds for the ACAA.

Table 27 –Budget – Bill Assistance Component

Description	
Emergency Bill Assistance	\$ 185,000
Administration	\$ 15,000
Total	\$ 200,000

Cost-Effectiveness Test Results

Weatherization Component:

The cost-effectiveness test ratio for the weatherization component of the LIEC program, along with the cost-benefit overview and projected lifetime savings, is shown below in Tables 28 and 29. However, according to the DOE when the energy and non-energy related benefits are added together, the cost-benefit ratio of energy reduction provided by LIEC weatherization projects is \$3.71 for every \$1.00 invested in the program.

Table 28 – Cost-Benefit Overview

Cost-Benefit Overview: Lifetime Savings¹	
Societal Benefits and Savings	\$ 1,868,797
Societal Costs	\$ 629,190
Net Societal Benefit ²	\$ 1,239,606
Cost-Effectiveness Ratio	2.97

¹ The Cost-Benefit Overview: Lifetime Savings for the SGB LIEC: Weatherization Program includes estimated savings for the additional \$200,000 shareholder funds added to the program budget per Decision No. 72723.

² Societal benefits are reflective of reduced natural gas and electricity tied to the cost-effective measure, and do not include all societal benefits such as water savings, energy savings associated with water treatment and pumping, and carbon savings.

Table 29– Projected Lifetime Savings

Due to the differences in housing stock and the varying quantity of measures installed in each household, Southwest Gas calculates the cost-effectiveness for the program based on actual energy savings achieved per household. An annual analysis is conducted on a sampling of homes weatherized utilizing APS, TEP, Unisource Gas and Electric, and Southwest Gas utility data. Southwest Gas evaluates this data, along with all approved measures, to ensure overall household energy savings are achieved.

Energy and Environmental Benefit Overview: Lifetime Savings	
Natural Gas (therms)	195,583
Electricity (MWh)	44,040
CO ₂ (tons)	34,641

¹ The Energy and Environment Benefit Overview: Lifetime Savings for the SGB LIEC: Weatherization program includes estimated savings for the additional \$200,000 shareholder funds added to the program budget per Decision No. 72723.

Bill Assistance Component:

There are no energy savings associated and therefore, cost-effectiveness is not evaluated for the bill assistance component.

RENEWABLE ENERGY RESOURCE TECHNOLOGY PROGRAM: SGB SOLAR THERMAL REBATES

Program Description

Southwest Gas proposes to continue to offer the Solar Thermal Rebates Program to residential and non-residential customers in Southwest Gas' Arizona service territory. Rebates will be offered to participating customers on qualified solar thermal systems upon proof-of-purchase and installation. Proposed participation and budgets for PY5 of the Solar Thermal Rebates Program is based on a 7-month program year from June 1, 2016 through December 31, 2016.

Program Objective

The overall objective of this energy-efficient program is to increase public awareness of the benefits of using renewable energy and installing solar thermal systems and to reduce customer natural gas usage by providing economically beneficial rebates to install the systems. Long-term customer energy savings will be realized throughout the life of the solar thermal systems.

Qualifying Customers

All active Southwest Gas residential and non-residential customers located in Southwest Gas' Arizona service territory are eligible to participate in the program.

Qualifying Measures

Qualifying measure specifications will be reviewed annually and adjusted, as necessary, to reflect changing national efficiency standards. All measures must be installed in conjunction with a natural gas water heating unit.

According to the DOE, solar water and pool heating systems last much longer than standard gas water or pool heaters and can significantly reduce heating costs.

Table 30 – Qualifying Measure Specifications

Measure	Specification
Residential Solar Water Heating Systems	Collectors must be OG-100 certified ¹
Non-Residential Solar Water Heating Systems	Collectors must be OG-100 certified ¹
Non-Residential Solar Pool Heating Systems	Collectors must be OG-100 certified ¹

¹ OG-100 certifications issued by the Solar Rating and Certification Corporation, a Southwest Gas approved Nationally Recognized Testing Laboratory, or an American National Standards Institute accredited certifying organization.

Rebate Amounts, Incremental Costs and Annual Savings

Southwest Gas determined the rebate amounts, incremental costs and therm savings based on actual program data during PY1 through PY3. Rebate amounts were maintained at the minimum rebate levels needed to constitute a feasible marketing message to positively affect customer behavior.

Table 31 – Rebate Amounts, Incremental Customer Costs and Annual Savings

Measure	Rebate ¹	Incremental Cost	Unit Gross Annual Savings	
			therms	kWh
Residential Solar Water Heating Systems	\$11.50/therm up to \$2,000	\$10,000	114	N/A
Non-Residential Solar Water Heating Systems	\$11.50/therm up to \$20,000	\$60,000	1,836	N/A
Non-Residential Solar Pool Heating Systems	\$11.50/therm up to \$20,000	\$60,000	2,348	N/A

¹ Rebate amounts are per first year annual therm savings and are up to a maximum of 40 percent of the installed cost of the system.

Table 32 – Estimated Participation

Measure	Estimated Participation
Residential Solar Water Heating Systems	123
Non-Residential Solar Water Heating Systems	2
Non-Residential Solar Pool Heating Systems	1
Total	126

Program Limitations

The following requirement applies for all measures:

- Measures must be new not be used.

Target Audiences

Southwest Gas' primary target audience is residential and non-residential customers.

Southwest Gas' secondary target audience is trade allies including contractors, distributors, and manufacturers of solar thermal systems.

Budget

Southwest Gas proposes a total annual budget for this program of \$315,000 for PY5.

Table 33 – Total Budget

Description	Budget
Rebates	\$ 220,000
Administration	\$ 2,000
Outreach	\$ 11,000
Delivery	\$ 79,000
MV&E	\$ 3,000
Total	\$ 315,000

Cost-Effectiveness Test Results

Southwest Gas is not required to demonstrate the cost-effectiveness test results as the Solar Thermal Rebates Program is an RET program.

APPENDIX A



0000153637

ORIGINAL

MEMORANDUM
RECEIVED

2014 MAY 30 P 12: 29

Arizona Corporation Commission
DOCKETED

MAY 30 2014

TO: THE COMMISSION

FROM: Utilities Division

ARIZONA CORPORATION COMMISSION
DOCKET CONTROL

DATE: May 30, 2014

DOCKETED BY

RE: COST-EFFECTIVENESS REVIEW OF MEASURES PROPOSED IN
SOUTHWEST GAS CORPORATION'S ENERGY EFFICIENCY AND
RENEWABLE ENERGY TECHNOLOGY IMPLEMENTATION PLAN
(DOCKET NO. G-01551A-13-0170)

Southwest Gas Corporation ("Southwest" or "Company") has an Energy Efficiency and Renewable Energy Resource Technology Portfolio Implementation Plan ("EE and RET Plan") consisting of four energy efficiency programs and one renewable program.

Decision No. 74300: Staff Re-Calculation of Cost-effectiveness

Pursuant to Decision No. 74300, Staff was required to re-calculate the cost-effectiveness of all the measures proposed by Southwest for its EE & RET Plan. The ordering paragraph states the following:

"IT IS FURTHER ORDERED that Staff shall re-calculate the cost-effectiveness of all of Southwest Gas' EE & RET Plan's measures, review and calculate the cost-effectiveness of the new EE & RET measures Southwest Gas proposed for its EE & RET Plan, and file a report and recommendations by May 30, 2014. Interested parties and stakeholders shall file any comments on the Staff report and recommendations within 20 days of Staff filing its report and recommendations."

Accordingly, Staff has re-calculated the cost-effectiveness for measures associated with the energy efficiency programs contained in Southwest's EE & RET Plan.

Program Descriptions

Below are brief descriptions of the programs that are currently part of the Southwest EE & RET Plan:

- **Smart Greener Better Homes (Residential):** Rebates are offered to homebuilders building ENERGY STAR-certified homes featuring natural gas water and space heating. Decision No. 74300 (January 29, 2014) approved tiered rebates, if cost-effective, and the expansion of the program to low-rise multifamily homes on a pilot basis.

- **Smarter Greener Better Custom Commercial (Business) Rebates:** Rebates are offered to non-residential customers based on achieved annual savings. The program does not specify or prescribe the measures to be installed. Instead, participating commercial customers may propose any measure that produces verifiable natural gas savings, exceeds code, and has a lifespan of seven years or greater. Measures may be retrofits, improvements to existing systems or first time installations.

- **Smarter Greener Better Distributed Generation (Non-residential):** Rebates are offered to non-residential customers to promote distributed generation, which utilizes waste heat on-site in place of gas, and which also provides benefits such as avoiding line losses and reducing generation-site use of natural gas to generate electricity.

- **Smarter Greener Better Low-Income Energy Conservation (Low-Income):** The Low-Income Energy Conservation (“LIEC”) program (i) assists in weatherizing low-income homes, and (ii) provides emergency bill assistance to low-income homes.

- **Smarter Greener Better Solar Thermal Rebates (Residential and Non-residential):** Rebates are offered to Residential and Non-residential customers for installing qualified solar thermal systems for water heaters, and to Non-residential customers for pool heating.

Cost-effectiveness Table

Below is a table showing Staff’s calculation of cost-effectiveness for the active measures included in Southwest’s EE & RET Plan. Actual cost-effectiveness can be lower or higher than projected, depending on factors such as participation (which impacts the per-unit allocation of program and outreach costs).

Southwest Gas Cost-Effectiveness

Southwest Cost-Effectiveness; Active Measures		
Commercial Sector	Staff's Benefit-Cost Ratio	Status
SGB Custom Business Program		
Custom Business Projects	11.73	Currently Active
SGB Distributed Generation Program		
Distributed Generation Projects	1.25	Currently Active
Residential Sector		
SGB Homes		
Tier 1	1.39	Currently Active

Tier 2	1.12	Currently Active
Low Income Program		
SGB Low-Income Energy Conservation Program	1.22	Currently Active
SGB Solar Thermal Program (Commercial and Residential)		
Residential Solar Water Heating System	N/A	Currently Active
Non-residential Solar Water Heating System	N/A	Currently Active
Non-residential Solar Pool Heating System	N/A	Currently Active

SGB Business and SGB Residential Rebates Programs

Decision No. 74305 discontinued budget expenditures for the SGB Residential Rebates program and the SGB Commercial Rebates program. Since the measures associated with those programs were a part of Southwest's proposed EE & RET Plan, Staff reviewed their cost-effectiveness, as per Decision No. 74300. The results of this review are included in Exhibit A (attached). The non-active measures reviewed include those from the discontinued Business and Residential Rebates programs and measures proposed in the EE & RET Plan, but not approved in Decision No. 74300.

SGB Custom Business Program

Southwest is reporting significant therm savings from its Custom Business Program. Most of these savings are from projects that include regenerative thermal oxidizers. Thermal oxidizers treat exhaust air from a variety of industries. Regenerative thermal oxidizers perform this process more efficiently by capturing waste heat and using it in the treatment process.

As an example, regenerative thermal oxidizers installed as part of two separate Southwest Custom Business Program projects save over 500,000 therms annually.

SGB Homes Program

With respect to the New Homes program, Southwest has informed Staff that it has not tracked the number of its participating builders who are also receiving rebates from other utility home programs. Because this could result in double-counting (in that energy savings from some homes would be reported by more than one utility program), Staff has reduced the savings used for calculating the cost-effectiveness of Southwest's SGB Homes Program.

In order to prevent future double-counting, Staff recommends that Southwest begin to track the percentage of SGB Homes that are being constructed by builders who are also participating in other utility energy efficiency programs.

SGB Low-Income Energy Conservation ("LIEC") Program

The LIEC program consists of a weatherization component, which improves the energy efficiency of low-income homes, and a bill assistance component. The program is available to households with incomes at less than 150% of the federal poverty income guidelines and is administered by Southwest in conjunction with the Arizona Governor's Office on Energy Policy and the Arizona Community Action Agency.

SGB Solar Thermal Program

Staff did not review or re-calculate cost-effectiveness for the Solar Thermal Rebates program. Solar Thermal Rebates is a renewable program and is not required to be cost-effective.

Source-Site Ratio Multiplier

Southwest used a 3.340 Source-Site Ratio multiplier on the electric savings from its weatherization and New Homes programs, and for measures that were part of the Business Rebates program. A Site-Source Ratio is intended to compensate for losses incurred in generating and transmitting electricity. Staff does not concur with the use of the Source-Site Ratio multiplier, as it is not used in conjunction with electric utility savings calculations, which are already considered source savings because of the inclusion of line losses. Staff also believes that more data would be required in order to justify the general use of the Source-Site Ratio multiplier in calculating cost-effectiveness for energy efficiency measures and programs. Staff has, therefore, re-calculated any electric savings reported for Southwest's programs and measures to exclude this multiplier.

Staff recommends that the Source-Site Ratio multiplier not be used to calculate electric savings in cost-benefit analyses at this time.

Measure Approval

Staff recommends that any current measures with a benefit-cost ratio of 1.0 or above continue as an approved part of the Southwest EE & RET portfolio.

Current Budget

Decision No. 74300 (January 29, 2014) set an overall budget of \$4.7million for Years 3 and 4, along with individual program budgets. The table below reflects both the \$4.7 million budget and the individual program budgets.

Staff recommends that the budget for Southwest's energy efficiency portfolio remain at \$4.7 million at this time.

Program	Rebates	Administration	Outreach	Delivery	M,V&E	Program Total Cost
SGB Homes	\$2,800,000	\$30,000	\$15,000	\$30,000	\$5,000	\$2,880,000
SGB Customer Commercial Rebates	\$219,500	\$6,000	\$13,500	\$85,000	\$6,000	\$330,000
SGB Distributed Generation	\$210,000	\$9,000	\$24,000	\$51,000	\$6,000	\$300,000
SGB LIEC ¹ Weatherization	\$363,750	\$77,250	\$9,000	N/A	N/A	\$450,000
SGB LIEC ² Bill Assistance	\$185,000	\$15,000	N/A	N/A	N/A	\$200,000
SGB Solar Thermal Rebates	\$376,600	\$4,000	\$19,000	\$135,000	\$5,400	\$540,000
Total EE & RET Plan	\$4,154,850	\$141,250	\$80,500	\$301,000	\$22,400	\$4,700,000

Surcharge

Decision No. 74409 (March 19, 2014) reset the Demand-Side Management (“DSM”) adjustor from \$0.007791 per therm to \$0.01 per therm, or a penny per therm. (Southwest had requested \$0.01003 per therm.) This per-therm rate was designed to recover the \$4.7 million energy efficiency budget and, over the course of a year, to eliminate or largely resolve the under-collection. The Company informed Staff that, based on the recent reset ordered in Decision No. 74409, it does not feel that a change to the adjustor rate is necessary at this time.

Staff recommends that the per-therm rate not be reset at this time, and that it remain at \$0.01 per therm.

1 Low-Income Energy Conservation spending includes \$200,000 in shareholder funds, as per Decision No. 72723, in addition to what is reported in the budget table. The LIEC program year is from July 1 through June 30. Program delivery and evaluation are done by the Governor’s Office of Energy Policy and community action agencies.

2 The Bill Assistance component of the LIEC program provides bill assistance rather than rebates and its expenditures do not match the expenditure categories for other programs. Total expenditures for Bill Assistance are listed under the “Program Total Cost” category.

	Monthly Impact of Current Rate	\$0.01 per therm
Period	Average therms used	Impact
Summer	11	\$0.11
Winter	41	\$0.41
Annual	26	\$0.26

Summary of Recommendations

Staff recommends that any current measures with a benefit-cost ratio of 1.0 or above continue as an approved part of the Southwest EE & RET portfolio.

Staff recommends that the Southwest energy efficiency portfolio budget remain at \$4.7 million.

Staff recommends that the DSM adjustor rate not be reset, and remain at \$0.01 per therm.

Staff recommends that Southwest begin to track the percentage of SGB Homes being constructed by builders who are also participating in other utility energy efficiency programs.

Staff recommends that the Source-Site Ratio multiplier not be used to calculate electric savings in cost-benefit analyses at this time.



Steven M. Olea
Director
Utilities Division

SMO:JMK:sms\RRM

ORIGINATOR: Julie McNeely-Kirwan

EXHIBIT A

SGB Business Rebates Program		
Water Heaters --Tier 1	1.66	2 nd Tier proposed in Plan. Budget expenditures for program ceased. Decision Nos. 74300 and 74305.
Water Heaters -- Tier 2	1.76	2 nd Tier proposed in Plan. Budget expenditures for program ceased. Decision Nos. 74300 and 74305.
Tankless Water Heaters	4.88	Budget expenditures for program ceased. Decision Nos. 74300 and 74305.
Noncondensing Boiler	0.87	Budget expenditures for program ceased. Decision Nos. 74300 and 74305.
Condensing Boiler	1.26	Budget expenditures for program ceased. Decision Nos. 74300 and 74305.
Boiler Modulating Burner Control	0.56	Budget expenditures for program ceased. Decision Nos. 74300 and 74305.
Boiler Steam Trap (high)	1.77	Budget expenditures for program ceased. Decision Nos. 74300 and 74305.
Boiler Steam Trap (low)	3.26	Budget expenditures for program ceased. Decision Nos. 74300 and 74305.
Boiler Reset Controls	3.26	Not approved. Decision No. 74300
Air Curtains	2.80	Budget expenditures for program ceased. Decision Nos. 74300 and 74305.
Steamer	4.16	Proposed for Business Rebates program. Budget expenditures for program ceased. Decision Nos. 74300 and 74305.
Fryer	1.12	Budget expenditures for program ceased. Decision Nos. 74300 and 74305.
Commercial Ovens (category change)	1.05	Budget expenditures for program ceased. Decision Nos. 74300 and 74305.
Infrared Ovens	1.27	Not approved. Decision No. 74300
Dishwasher (low temp) Door	3.45	Budget expenditures for program ceased. Decision Nos. 74300 and 74305.
Dishwasher (low temp) Single Tank	6.70	Budget expenditures for program ceased. Decision Nos. 74300 and 74305.
Dishwasher (high temp/gas booster) Under Counter	1.12	Budget expenditures ceased. Decision Nos. 74300 and 74305.
Dishwasher (high temp/gas booster) Door Type	3.73	Budget expenditures for program ceased. Decision Nos. 74300 and 74305.
Dishwasher (high temp/gas booster) Single Tank	6.54	Budget expenditures for program

		ceased. Decision Nos. 74300 and 74305.
Pre-Rinse Spray	2.39	Not approved. Decision No. 74300
SGB Residential Rebates		
Tankless Water Heater	0.63	Budget expenditures for program ceased. Decision Nos. 74300 and 74305.
Clothes Dryer	0.72	Budget expenditures for program ceased. Decision Nos. 74300 and 74305.
Attic Insulation (Energy Audit Required)	0.42	Budget expenditures for program ceased. Decision Nos. 74300 and 74305.
Floor Insulation (Energy Audit Required)	0.99	Budget expenditures for program ceased. Decision Nos. 74300 and 74305.
Windows	1.22	Budget expenditures for program ceased. Decision Nos. 74300 and 74305.
Kitchen Aerators (Direct Install)	1.50	Budget expenditures for program ceased. Decision Nos. 74300 and 74305.
Lavatory Aerators (Direct Install)	1.85	Budget expenditures for program ceased. Decision Nos. 74300 and 74305.
Low-Flow Showers (Direct Install)	1.35	Budget expenditures for program ceased. Decision No. 74305