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MEMORANDUM  
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Arizona Corporation Commission  
DOCKETED

MAY 30 2014

TO: THE COMMISSION

FROM: Utilities Division

ARIZ CORP COMMISSION  
DOCKET CONTROL

DOCKETED BY

DATE: May 30, 2014

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	Staff’s Benefit-Cost Ratio	Status
<b>Commercial Sector</b>		
<b>SGB Custom Business Program</b>		
Custom Business Projects	11.73	Currently Active
<b>SGB Distributed Generation Program</b>		
Distributed Generation Projects	1.25	Currently Active
<b>Residential Sector</b>		
<b>SGB Homes</b>		
Tier 1	1.39	Currently Active

Tier 2	1.12	Currently Active
<b>Low Income Program</b>		
SGB Low-Income Energy Conservation Program	1.22	Currently Active
<b>SGB Solar Thermal Program (Commercial and Residential)</b>		
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.

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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 <sup>1</sup> Weatherization	\$363,750	\$77,250	\$9,000	N/A	N/A	\$450,000
SGB LIEC <sup>2</sup> 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.

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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

<b>SGB Business Rebates Program</b>		
Water Heaters --Tier 1	1.66	2 <sup>nd</sup> Tier proposed in Plan. Budget expenditures for program ceased. Decision Nos. 74300 and 74305.
Water Heaters -- Tier 2	1.76	2nd 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
<b>SGB Residential Rebates</b>		
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