

ENERGY-EFFICIENCY PROGRAMS

Utah Energy-Efficiency Results 2016

The Company's 2016 Commission-approved energy-efficiency programs and measures were similar to those in 2015, but also included new measures, changes to qualifying equipment, and changes to rebate levels. In 2016, the Company introduced new rebate-qualifying efficiency measures for existing and new homes, multi-family properties, low-income customers and commercial customers. In addition to the new measures, the Company continued to refine the comparison characteristics of the ThermWise[®] Energy Comparison Report and delivered it to over 230,000 customers in 2016.

ThermWise[®] results for 2016 were strong with participation rates in the Builder and Business programs surpassing 100% of original projections. The Appliance program, Home Energy Plan, Weatherization, Low Income Efficiency and Business Custom programs finished the year short of expected participation.

Spending for the 2016 program year totaled \$23.2 million or 87% of the \$26.7 million Commission-approved ThermWise[®] budget. Actual expenditures in the Home Energy Plan, Weatherization, Business Custom, Energy Comparison Report, and the Low-Income Efficiency programs were lower than budgeted. The market transformation expenditures were also lower than expected in 2016 (89% of budget) primarily because lower-than-projected marketing expenses and the Company's ongoing efforts to secure event and promotional contracts at low rates. In total, rebate dollars accounted for nearly 76% of total ThermWise[®] spending in 2015 (73% in 2015 budget) and resulted in annual natural gas savings of more than 760,000 Dth. Actual natural gas savings were 84% of the amount projected in the Company's 2015 budget filing.

Utah ThermWise[®] Appliance Rebates

The Company continued this program in 2016 with changes to the rebate-eligible storage water heater and clothes washer measures. In April of 2015, the United States Department of Energy (DOE) implemented new standards for water heating appliances. These changes compelled manufacturers to implement higher minimum Energy Factor (EF) ratings on all residential gas, electric, and oil-fired storage water heaters. For natural gas models, the rated storage volume of the water heater is used to determine the minimum efficiency of a given water heater. As an example, the minimum allowable efficiency for a 50 gallon water heater is determined through the DOE formula $(0.675 - (0.0015 \times \text{rated storage volume}))$ to be .60 EF. Using the same formula, the minimum allowable efficiency for a 40 gallon water heater is determined to be .615 EF. As a result of these changes, the Company proposed to eliminate the tier 1 storage water heater (.62 EF) as a rebate-eligible measure in 2016. The Company also proposed to continue rebating the $> .67$ EF storage water heater in 2016 using a lower deemed savings estimate to reflect the change in the baseline water heating equipment. Additionally, the Company proposed an increase to the standard for rebate-eligible clothes washers from 2.6 Modified Energy Factor (MEF) (an ENERGY STAR[®] metric where increasing values indicate greater efficiency) in 2015 to 2.74 Integrated Modified Energy Factor (IMEF) in 2016.

CLEAResult, Inc. assisted with design, outreach, marketing, and technical assistance for the 2016 program year. Blackhawk Engagement Solutions performed rebate processing work for this program in 2016.

Utah ThermWise® Builder Rebates

In 2016, the Company eliminated the tier 1 storage water heater (.62 EF) as a rebate-eligible measure for the reasons outlined in the Appliance Program discussion. The Company also adjusted the deemed savings for the > .67 EF storage water heater reflect the change in the baseline water heating equipment in 2016.

CLEAResult, Inc. assisted with design, outreach, marketing, and technical assistance for this program. Blackhawk Engagement Solutions performed rebate processing work for this program in 2016.

Utah ThermWise® Business Rebates

The Company continued this program in 2016 with the following changes: 1) introduction of charbroilers, conveyor ovens, gas dryers with moisture sensors and solar-assisted water heaters (for pools) to the rebate measure mix; 2) eliminate retrofit windows (\leq .30 U value) as eligible rebate measures; 3) eliminate the current tier 1 storage water heater (.62 EF) for the reasons outlined in the Appliance Program discussion; and 4) move the on-site measure level facility assessments (commercial energy plan), along with the associated costs, from the Business Custom Program to the prescriptive Business Program. Additional details regarding proposal number four are provided in the Business Custom Program discussion.

The Company also introduced a pilot high-efficiency spray valve installation initiative to the Business Program in 2016. Though the high-efficiency spray valve offers significant natural gas savings, the measure has historically seen low participation. The Company proposed to increase participation in this measure by installing high-efficiency valves in 1,000 businesses during 2016. Nexant implemented the pilot initiative, in close coordination with the Company. Nexant was also responsible to identify and target businesses that would benefit from installation of the high-efficiency spray valves. This measure was installed free of charge and no rebate was paid to the customer, though for the purposes of cost-effectiveness measurement, an incentive of \$32 per valve was included in the ThermWise® Cost Effectiveness Model (Model). Administrative costs related to this pilot program were only incurred upon measure installation.

Nexant assisted with design, outreach, marketing, and technical assistance for this program. Blackhawk Engagement Solutions performed rebate processing work for this program in 2015.

Utah ThermWise® Weatherization Rebates

The Company continued this program in 2016 with no significant changes. This program continued to be available to existing residential customers in the Company's Utah service territory. The Company had contracts in place for, but did not require assistance with, design, outreach marketing or technical assistance for this program in 2016. Blackhawk Engagement Solutions processed rebates for this program in 2016.

Utah ThermWise® Home Energy Plan

The Company continued this program in 2016 with no major changes.

Utah Low-Income Efficiency Program

The Company continued funding the Low-Income Efficiency Program in 2016 at \$500,000 per year from the energy-efficiency budget (\$750,000 total Company funding). The Company disbursed \$250,000 every six months, with the disbursements occurring in January and July.

The Company continued the direct rebate payment process for approved non-profit or governmental agencies in 2016. Additionally, Blackhawk Engagement Solutions performed work related to rebate processing for this program in 2016.

Utah ThermWise® Business Custom Rebates

The Company continued this program in 2016 with the simplification of some Tariff language. The revised Tariff language clarified the overall program description. The Company also moved the onsite measure level facility assessments (also referred to as the commercial energy plan) along with the associated costs to the prescriptive Business Program in 2016.

Since introduction of the Business Custom Program in 2008, the Company has offered a commercial energy plan (referred to as the on-site measure level facility assessments in section 2.16 of the 2015 Tariff) to eligible commercial customers seeking assistance in identifying complicated natural gas savings opportunities. However, over the past eight years, the Company found that the commercial energy plan has predominantly been successful in identifying prescriptive measure savings opportunities. As a result of these findings, the Company moved the commercial energy plan to the prescriptive Business Program in 2016.

Nexant continued to assist with design, outreach, marketing, and technical assistance for this program. Blackhawk Engagement Solutions performed rebate processing work for this program in 2016.

Utah ThermWise® Energy Comparison Report

The Company moved this program from the Market Transformation Initiative and launched it as a stand-alone program in 2015. The ThermWise® Energy Comparison Report allows customers to compare their natural gas usage with neighboring homes which are similarly sized and situated. Additionally, the Comparison Report encourages customers to employ energy efficiency measures and behaviors. The Company developed the Comparison Report and first offered it to customers as part of the Market Transformation Initiative in November 2011. The Company initially sent the report to a small group of customers (Group A – 8,000 customers) as a pilot program. The Company has since launched larger pilot groups in 2012 (Group B – 25,000 customers), 2013 (Group C – 100,000 customers), and 2014 (Group D – 100,000 customers). In 2016 the Company sent the report, via U.S. and electronic mail, to more than 230,000 of its customers. The Company also maintained an additional group of nearly 50,000 customers in order to determine natural gas savings achieved from delivery of the Comparison Report. With the

exception of the control group, all customers were able to generate and view a copy of their Comparison Report through their online account at www.questargas.com.

A summary of the projected and actual benefit/cost (B/C) ratios for each of the 2016 ThermWise® programs is shown below.

Table 9.1 – Utah 2016 Projected & Actual B/C ratios by program and California Standard Practice Test

Program	Total Resource Cost Test		Participant Test		Utility Cost Test		Ratepayer Impact Measure Test	
	2016 Projected B/C	2016 Actual B/C	2016 Projected B/C	2016 Actual B/C	2016 Projected B/C	2016 Actual B/C	2016 Projected B/C	2016 Actual B/C
ThermWise® Appliance Program	1.50	1.50	4.89	4.59	1.45	1.60	0.80	0.83
ThermWise® Builder Program	0.87	0.94	2.43	2.62	1.26	1.27	0.75	0.75
ThermWise® Business Custom Program	1.04	0.59	9.90	8.13	1.17	0.59	0.79	0.47
ThermWise® Business Program	1.05	1.02	3.66	3.40	1.37	1.35	0.86	0.83
ThermWise® Weatherization Program	1.04	0.84	2.81	2.54	1.20	1.11	0.74	0.70
ThermWise® Home Energy Plan	0.95	1.38	36.38	89.97	0.94	1.37	0.62	0.75
Low-Income Efficiency Program	0.99	0.78	4.85	2.45	1.04	0.89	0.66	0.59
Energy Comparison Report	1.14	1.41	4.47	5.80	0.94	1.41	0.57	0.63
Market Transformation	0.00	0.00	N/A	N/A	0.00	0.00	0.00	0.00
TOTALS	1.03	1.02	3.29	3.29	1.19	1.26	0.73	0.74

Actual benefit/cost results for 2016 mirrored corresponding budget projections. The ThermWise® programs as a whole passed the Total Resource, Participant, and Utility Cost tests. The ThermWise® programs as a whole passed both the Participant and Utility Cost tests. Actual cost-effectiveness results were at or near projections lower than projected primarily due to higher than expected participation in lower-savings energy-efficiency measures and lower than forecasted avoided natural gas costs than were used in cost-effectiveness modeling for the 2016 ThermWise budget filing (Docket No. 15-057-16).

Customer participation in the ThermWise® programs remained high in 2016 (74,976 actual rebates paid) finishing the year at 92% of the Company’s original 2016 estimate (81,124). Actual participation surpassed estimated participation in the Appliance (24,870) and Builder (26,108) and programs. Those programs also had the highest total number of participants in 2016.

The DSM Advisory Group continued to meet to discuss the Company’s energy-efficiency initiative. Three meetings were held on the following dates: March 23, 2016, August 4, 2016 and September 29, 2016.

Energy Efficiency Effects on Peak Day

In Docket No. 13-057-04 the Commission ordered the Company to discuss the “...effect of energy efficiency programs on peak demand and the need for new infrastructure and how energy

efficiency programs could reduce or offset the need for future capital projects” in both a DSM Advisory Group and IRP public input meeting. (Report and Order dated October 22, 2013, Docket No. 13-057-04.) The Company addressed this topic at the DSM Advisory Group meeting held March 19, 2015 and again at the IRP meeting held on April 30, 2015. In both meetings the attendees discussed the ThermWise programs, the fact that they are designed to reduce over-all energy consumption, and that they do not, necessarily, impact peak-day usage.

In Docket No. 14-057-15 the Commission ordered the Company to “...continue its discussion on peak-day issues in the DSM Advisory Group and in a public input meeting associated with the 2015 IRP.” (Report and Order dated October 8, 2015, Docket No. 14-057-15.) The Company continued the discussion of the effects of energy-efficiency on peak day at the Advisory Group meeting held March 24, 2015 and again at the IRP meeting held on March 25, 2015.

In Docket No. 15-057-07 the Commission ordered the Company to “...address Heat Pumps and the impacts of EE programs on peak demand” in the 2016 IRP. The Company addressed Heat Pumps and continued the discussion of the effects of energy-efficiency on peak day in Section 3 pages 9 through 16 of the 2016 IRP. Additionally, the Company has continued to study this topic since that time. The Company also agreed in its 2017 Energy Efficiency budget filing (Letter dated December 7, 2016 in Docket No. 16-057-15) to “...begin development of an analytical framework for evaluating efficiency measure benefits and costs unrelated to natural gas savings” in 2017.

Wyoming Energy-Efficiency Results for 2016

The Company filed for approval (Docket No. 30010-149-GT-15) of a seventh year of Wyoming ThermWise[®] programs on October 28, 2015. The seventh-year Wyoming programs were modified to closely align with the proposed 2016 Utah ThermWise[®] programs in an effort to achieve cost savings for both states while also taking current energy-efficiency and equipment standards into account. The Wyoming Public Service Commission approved the sixth-year programs (December 23, 2014 Order) and ordered the changes effective January 1, 2016.

The Wyoming energy-efficiency programs (Appliance, Builder, Business, Home Energy Plan, and Weatherization) have seen good participation and interest from customers since the Company launched the programs on July 1, 2009. In the seventh full program year (January through December 2016) the Wyoming ThermWise[®] programs had 494 participants or 1.8% of the Company’s December 31, 2016 Wyoming residential GS customer base.

Utah Energy-Efficiency Plan for 2017

Based on work with the DSM Advisory Group, Utah-based trade allies, program administrators, and other energy-efficiency stakeholders, the Company proposed and the Utah Public Service Commission approved, the continuation of seven energy-efficiency programs for 2017 as well as the ThermWise[®] Market Transformation initiative. The ThermWise[®] energy-efficiency programs continuing in 2017 are: 1) the ThermWise[®] Appliance Rebates Program; 2) the ThermWise[®] Builder Rebates Program; 3) the ThermWise[®] Business Rebates Program; 4) the

ThermWise® Weatherization Rebates Program; 5) the ThermWise® Home Energy Plan Program; 6) funding of \$500,000 for the Low-Income Efficiency Program administered by the Utah Department of Workforce Services; 7) the ThermWise® Energy Comparison Report. In 2017, the Company proposed and Commission approved the merging of the Business Custom program with the prescriptive business rebates program.

Utah ThermWise® Appliance Rebates

The Company will continue this program in 2017 with the elimination of clothes washers as rebate eligible measures. When the Company introduced the ThermWise® programs in 2007, the minimum MEF for rebate-eligible clothes washers was set at 1.72. Since that time, minimum washer performance standards have continued to increase. In order to keep up with the changing standards, the Company proposed changes to rebate-qualifying clothes washer MEF's in 2010 (Docket No. 09-057-15), 2011 (Docket No. 10-057-15), and 2016 (Docket No. 15-057-16). In the 2016 ThermWise® programs, the lowest rebate-eligible washer was established as having a 2.74 IMEF rating. In reviewing market research and preparing the 2017 budget filing, the Company found that the efficiency baseline for clothes washers had again moved to a higher level. As a result of the baseline changes and shrinking natural gas savings, the Company had a belief that the clothes washer market has been transformed and therefore proposed to eliminate the 2.74 clothes washer as a rebate-eligible measures in 2017.

CLEAResult, Inc., a longtime contractor for the ThermWise Appliance Program, was not re-contracted for design, outreach, marketing, and technical assistance. Instead, the Company will perform outreach and marketing work in-house with Nexant contracted to provide technical assistance in 2017. Blackhawk Engagement Solutions will perform rebate processing work for this program in 2017.

Utah ThermWise® Builder Rebates

In 2016, the Utah State Legislature passed (and the Governor signed into law) House Bill 316. The bill, which amended the Utah State Construction Codes, included a provision to increase the State's energy code to the 2015 version of the International Energy Conservation Code (IECC). As a result of the IECC code change and the increased minimum efficiency requirements, the Company will eliminate the ENERGY STAR® 3.0, High Performance, and 10% above code rebate measures for both single and multifamily customer segments in 2017. To replace those measures, the Company will implement new whole-home incentive tiers based on exceeding the code-required Home Energy Rating Scores (HERS) of 65 for homes in climate zone 3, 69 in climate zone 5, and 68 in climate zone 6. The Company's will establish 2017 whole-home incentive tiers for single family homes at \$100 for a HERS score of 62 or lower, \$200 for a HERS score of 55 or lower, and \$300 for a HERS score of 48 or lower. For multifamily homes, the Company will establish whole-home incentives of \$50 for a HERS score of 62 or lower, \$100 for a HERS score of 55 or lower, and \$150 for a HERS score of 48 or lower.

Also as a result of the IECC code changes, the Company will replace the ENERGY STAR® 3.0 (\$300 single-family / \$200 multifamily) incentives with a smaller bonus incentive (\$50 single-family / \$25 multifamily) for HERS rated homes which receive the additional ENERGY STAR® rating. The Company also will change the 2 x 6 rebate requirement from a minimum of R-20 in 2016 to R-23 in 2017. The Company will additionally reduce the rebate amount in the 2 x

6 measure to \$150 for single-family homes and to eliminate this rebate for multifamily homes in 2017.

CLEAResult, Inc., a longtime contractor for the ThermWise Builder Program, was not re-contracted for design, outreach, marketing, and technical assistance. Instead, the Company will perform outreach and marketing work in-house with Nexant contracted to provide technical assistance in 2017. Blackhawk Engagement Solutions will perform rebate processing work for this program in 2017.

Utah ThermWise® Business Rebates

The Company will continue this program in 2017 with the following changes: 1) introduce demand control ventilation units to the current rebate measure mix; 2) eliminate new construction attic and wall insulation as rebate-eligible measures; 3) eliminate the high efficiency residential clothes washer for business measure for the reasons outlined in the Appliance Program discussion; 4) reduce the incentive for retrofit attic insulation (from \$0.16 to \$0.08 per square foot) and Tiers 2 and 3 boiler tune ups (Tier 2 from up to \$300 to \$150 per unit / Tier 3 from \$0.20 per kBtu to \$250 per unit); 5) change the smart thermostat rebate from a dollar-per-unit structure to a rebate based on the size (square footage) of a facility; 6) remove the maximum sizing limit on condensing water heaters; and 7) merge the Business Custom Program measures into the prescriptive Business Program in 2017.

Since 2008, the Business Custom Program has existed as a stand-alone offering to Utah GS commercial customers seeking to reduce natural gas usage. The Company found over nearly nine years that many projects which begin in the custom program ultimately result in participation and rebates in the prescriptive business program. As a result, natural gas savings and the dollars expended to generate those savings are misattributed. This change will merge these two programs into a single business offering and eliminate the misattribution problem as well as reduce the overall costs required to administer two separate programs.

Nexant will continue to assist with design, outreach, marketing, and technical assistance for this program. Blackhawk Engagement Solutions will perform rebate processing work for this program in 2017.

Utah ThermWise® Weatherization Rebates

From the beginning of the ThermWise® Programs, weatherization measures have been the leader in terms of customer interest and participation. The Company has been pleased with the historical natural gas savings achieved by participating customers. Over the past three years however, the Company has recognized a trend of decreasing weatherization participation. During meetings, weatherization contractors have cited multiple reasons for this decline. Some of those reasons include increased marketing and collection costs associated with reaching the remaining rebate-eligible retrofit customers. As a result of these costs, contractors began to migrate to the more lucrative, less risky market segments.

In an effort to reverse these trends, the Company will introduce a ThermWise® Direct-Install Weatherization Pilot Program in 2017. The pilot program is designed to reach communities and customers with historically low participation in weatherization measures, and run for a period

of three years. The Company's pilot program is also designed to encourage contractors to re-engage in the Weatherization Program, which is a key component to customer participation. As part of the pilot program, the Company will work closely with Rocky Mountain Power (RMP) on developing a combined direct-install weatherization incentives for the targeted communities and customers. The direct-install incentives will not exceed the existing Company and RMP combined rebate levels for natural gas heated and electrically cooled homes. The Company will pay the rebate directly to the contractors, rather than the customer, after the work is performed.

The Company will begin this pilot program by contracting directly with qualified weatherization contractors already in the market. The Company will select contractors through a competitive request for proposal process. Contractors will be selected based on skills, experience, past performance, and pricing. The Company will train contractors and educate contractors on correct marketing practices, program guidelines, and install requirements. Ongoing training will be provided through the pilot period by the Company to ensure compliance with program guidelines.

After the selections of contractors and completion of training, the Company will direct contractors to communities with lower historical participation and higher levels of potential energy savings. The Company will use historical participation data, the Energy Comparison Report, and the Home Energy Plan to identify communities with high savings potential. The Company will provide the zip codes/street data to contractors and guide them to neighborhoods which could most benefit from weatherization measures. Homes previously insulated through the ThermWise® Programs will not be eligible to participate in the direct install pilot.

Once contractors have completed the weatherization work, the Company's inspectors will perform quality control/assurance (QA/QC) on a percentage of jobs and document pilot program compliance. Inspections will be random and QA/QC will be done at a higher rate in the initial year of the program. As the program matures, the Company expects to continue QA.

At the end of the pilot period, the Company will use the data generated by the program to assess the combination of weatherization measures that are most effective in producing energy savings. The Company will keep the Advisory Group informed on the progress of the direct-install pilot program throughout the three year period.

The Company will continue the remaining aspects of the Weatherization Program in 2017 with no significant changes. This program will continue to be available to existing residential customers in the Company's Utah service territory.

The Company will perform outreach and marketing work for this program and continue to contract with Nexant for technical assistance related work in 2017. Blackhawk Engagement Solutions will perform rebate processing work for this program in 2017.

Utah ThermWise® Home Energy Plan

The ThermWise® Home Energy Plan program is offered and administered by the Company with periodic consulting and assistance from Nexant. This program includes two primary components: an in-home energy plan performed by trained and experienced Company auditors

and a “do-it-yourself” mail-in plan with on-line data input availability. This program will continue to be available to customers in the Company’s Utah service territory.

Utah Low-Income Efficiency Program

The Company will continue funding the Low-Income Efficiency Program in 2017 at \$500,000 per year from the energy-efficiency budget (\$750,000 total Company funding). The Company will disburse \$250,000 every six months, with the disbursements occurring in January and July.

The Company will also eliminate the tier 1 storage water heater (.62 EF) in 2017 for the reasons outlined in the Appliance Program discussion. Blackhawk Engagement Solutions will perform rebate processing work for this program in 2017.

Utah ThermWise® Energy Comparison Report

The ThermWise® Energy Comparison Report allows customers to compare their natural gas usage with neighboring homes that are similarly sized and situated. The Comparison Report encourages customers to employ energy efficiency measures and behaviors. The Company developed the Comparison Report and first offered it to customers in November 2011. The Company initially sent the report to a small group of customers (Group A – 8,000 customers) as a pilot program. The Company has since launched larger pilot groups in 2012 (Group B – 25,000), 2013 (Group C – 100,000), and 2014 (Group D – 100,000). Currently the Company sends the report, via U.S. and electronic mail, to more than 230,000 of its customers. The Company maintains an additional group of nearly 50,000 customers in order to determine natural gas savings achieved from delivery of the Comparison Report. With the exception of the control group, all customers are able to generate and view a copy of their Comparison Report through their online account at www.questargas.com. As of the end of December 2016, the Comparison Report had been generated over 250,000 times online by nearly 100,000 unique customers.

The Company proposes to deliver the Comparison Report to 255,000 customers in 2017. The Company realizes this total number by eliminating Group B, which concluded its distribution period at the end of 2016, and adding Group E which will be delivered to 50,000 additional customers in 2017. Data shows that customers not only change behaviors to save natural gas as a result of the Comparison Report, but they are also more likely to participate in other ThermWise® Programs if they have received the report. The Company conducted an analysis in 2014 that showed, when contrasted against a control group of non-recipients, customers who had received their Comparison Report were more likely to participate in a ThermWise® rebates and/or request a Home Energy Plan. The Company proposes to continue to target the Comparison Report to customers with higher usage relative to conditioned square footage in 2017.

While proposed program participants will increase modestly from 2016, natural gas savings are projected to increase by 33%. The Company expects savings to increase because of the projected expansion of the Energy Comparison Report in 2017 and because of savings persistence. The Company conducted a study in 2016 that focused analysis on all current recipients of the report (Groups B, C, and D). The study showed weather-normalized usage reductions per participant of .91 Dth/year. As a result, the Company updated the natural gas savings number from .76 Dth/year in the 2016 Model, to .91 Dth/year in the 2017 Model. Dominion Energy Energy

Efficiency Exhibit 1.8 in Docket No. 16-057-15 describes the methodology used in the realization studies in greater detail.

A summary of the cost-effectiveness used in the energy-efficiency model for each ThermWise® program as provided with the 2016 budget filing is shown in Table 9.2 below.

Table 9.2 – Utah 2017 projected NPV & B/C ratios by program and California Standard Practice Test

2017 Projections	Total Resource Cost		Participant Test		Utility Cost Test		Ratepayer Impact Measure Test	
	NPV*	B/C	NPV*	B/C	NPV*	B/C	NPV*	B/C
ThermWise® Appliance Program	\$2.09	1.26	\$17.98	3.07	\$4.06	1.66	-\$1.64	0.86
ThermWise® Builder Program	\$0.64	1.13	\$10.86	3.09	\$0.17	1.03	-\$2.85	0.66
ThermWise® Business Program	\$2.09	1.26	\$17.98	3.07	\$4.06	1.66	-\$1.64	0.86
ThermWise® Weatherization Program	\$0.17	1.02	\$13.58	2.42	\$1.38	1.19	-\$3.06	0.74
ThermWise® Home Energy Plan Program	\$0.20	1.27	\$2.58	50.29	\$0.19	1.25	-\$0.35	0.73
Low-Income Efficiency Program	\$0.03	1.04	\$1.53	4.38	\$0.06	1.07	-\$0.44	0.68
ThermWise® Energy Comparison Report	\$0.21	1.45	\$1.61	4.92	\$0.21	1.45	-\$0.23	0.76
Market Transformation Initiative	-\$1.35	0.00	\$0.00	N/A	-\$1.35	0.00	-\$1.35	0.00
TOTALS	\$3.54	1.12	\$59.59	3.10	\$7.79	1.31	-\$9.47	0.78

*Shown in millions

Table 9.3 shows the Utah cost-effectiveness results using the projections included in the budget filing updated to include the gas cost forward curve used in the SENDOUT model.

Table 9.3 – Utah 2017 NPV & B/C ratios using gas cost forward curve from SENDOUT model

2016 IRP Forward Curve	Total Resource Cost		Participant Test		Utility Cost Test		Ratepayer Impact Measure Test	
	NPV*	B/C	NPV*	B/C	NPV*	B/C	NPV*	B/C
ThermWise [®] Appliance Program	\$1.3	1.16	\$17.98	3.07	\$3.27	1.53	-\$2.43	0.79
ThermWise [®] Builder Program	\$0.2	1.05	\$10.86	3.09	-\$0.23	0.96	-\$3.24	0.61
ThermWise [®] Business Program	\$1.10	1.25	\$11.45	3.82	\$2.61	1.90	-\$0.004	0.99
ThermWise [®] Weatherization Program	-\$0.23	0.97	\$13.58	2.42	\$0.99	1.14	-\$3.45	0.70
ThermWise [®] Home Energy Plan Program	\$0.13	1.18	\$2.58	50.29	\$0.12	1.16	-\$0.42	0.68
Low-Income Efficiency Program	-\$0.03	0.96	\$1.53	4.38	\$0.00	1.00	-\$0.50	0.63
ThermWise [®] Energy Comparison Report	\$0.20	1.42	\$1.61	4.92	\$0.20	1.42	-\$0.24	0.74
Market Transformation Initiative	-\$1.35	0.00	-\$0.00	N/A	-\$1.35	0.00	-\$1.35	0.00
TOTALS	\$1.36	1.05	\$59.89	3.10	\$5.61	1.22	-\$11.66	0.72

*Shown in millions

Wyoming Energy-Efficiency Plan for 2017

The Company expects eighth-year participation in the portfolio of Wyoming ThermWise[®] programs to reach 726 customers which would be a decrease of 3% from 2016 participation levels.

SENDOUT Model Results for 2017

The Company entered projections from the approved 2017 energy-efficiency budget into the SENDOUT model in response to the Utah Commission’s request. Data entries for the 2017 energy-efficiency programs included participants and associated deemed lifetime Dth savings per program measure. The Company also incorporated incentive (variable) and administration (fixed) costs for each program measure into the SENDOUT model.

The SENDOUT model used the projected 2017 participation and administration costs as the baseline for its analysis of each program. For each program, the model examined what would happen if participation reduced to 25% or increased to 150% of the 2016 projection. The model also examined different scenarios involving the escalation of annual administration costs per program. In these scenarios, administration costs per program were increased to 150% and 200% of the 2017 projection. SENDOUT then made the judgment as to whether a program should be “accepted” (100% on the included graph) or “rejected” (0% on the included graph) based on a given level of participation and administration costs. Please see Exhibit 9.1 for the SENDOUT results in a table format.

The model accepted the 2017 ThermWise[®] Weatherization program at 25% of 2017 projected participation if administration costs were increased to 200% of the 2017 budget

projection. The model accepted the Appliance and Builder programs at 50% of participation and 200% of the 2017 budget projection. The model accepted the Business program at 75% of participation and 150% of the 2017 budget projection. The model accepted the Home Energy Plan program at 100% of participation and 150% of the 2017 of projected administration costs. The model accepted the Energy Comparison Report at 100% of participation and 100% of the 2017 budget projection.

Another way to view the results of the SENDOUT model is to analyze how much administration costs could increase and still be accepted if participation was held at 100% of the 2017 projection. In this scenario, the administration costs for the Weatherization program could increase by eight times the 2017 budget projection and still be accepted. The Appliance and Builder programs could increase projected administration costs by four times and still be accepted. The Business program could increase administration costs by two times and still be accepted by SENDOUT.

In summary, the SENDOUT model results indicate that as a gas supply resource at the approved budget and participation levels, the 2017 energy-efficiency programs are accepted as qualifying and cost-effective resources when compared to other available resources. Furthermore, this holds true when participation rates are held constant and program administrative costs are increased.

The SENDOUT model is a comprehensive resource planning and evaluation tool. In comparison, the Company developed its Energy-Efficiency Model in-house, with the assistance of the Company's DSM Advisory Group and the Utah Commission's review. The Company uses its Energy-Efficiency Model for the sole purpose of modeling the Company's energy-efficiency programs. To this end, the Company relies on the Energy-Efficiency Model for energy-efficiency program planning purposes and more importantly energy-efficiency program cost effectiveness (based on the California Standard Practices Manual).

Using the Energy-Efficiency Model, the Company analyzed the approved 2017 energy-efficiency programs at a "break-even" benefit / cost ratio ($B/C = 1.00$) by holding participation (and incentive payments) constant and increasing all other costs in a linear manner. The analysis is based on projected natural gas savings of 1,043,815 Dth in 2017. This analysis resulted in a projected potential total energy-efficiency spending limit of \$30.7 million per year using the Utility Cost Test. The currently-approved \$25.1 million per year is well below this threshold. This analysis indicates that the maximum potential spending on energy-efficiency is directly related to the cost-effectiveness of realizing each Dth saved. Therefore, as long as the Company's energy-efficiency programs are determined cost-effective in the Energy-Efficiency Model, accepted by the SENDOUT model when compared to other available resources, and do not negatively impact company operations, energy-efficiency programs are an appropriate resource.

Avoided Costs Resulting From Energy Efficiency

The ThermWise[®] Cost-Effectiveness Model calculates the avoided cost of gas purchases as the sole benefit of the energy-efficiency programs. In 2016, the avoided gas cost attributable to energy-efficiency was calculated to be \$31 million. For 2017, the avoided gas cost attributable to energy efficiency is estimated to be \$30.7 million. This gas is valued at the same price that is used for purchased gas in the IRP modeling.