THE STATE CORPORATION COMMISSION OF THE STATE OF KANSAS

In the Matter of the Application of Black Hills/Kansas Gas Utility Company, LLC, d/b/a Black Hills Energy for Approval to Implement Black Hills Energy's Five-Year Energy Efficiency Plan Consisting of Natural Gas Energy Efficiency Programs to Improve Building and Equipment Efficiency and to Educate About Efficient Energy Usage, To Provide for Program Cost Recovery through a Rider Mechanism, Permit the Implementation of a Revenue Normalization Mechanism to Replace the Weather Normalization Adjustment, A Performance Incentive Mechanism, and Appropriate Accounting Authority to Defer Expenses and Revenues Associated with the Filing	)	Docket No. 10-BHCG-639-TAR

DIRECT TESTIMONY

OF

STACEY HARDEN

ON BEHALF OF

THE CITIZENS' UTILITY RATEPAYER BOARD

JULY 23, 2010

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I. STATEMENT OF QUALIFICATIONS

Q. Please state your name and business address.

A. My name is Stacey Harden and my business address is 1500 SW Arrowhead Road, Topeka, KS 66604-4027.

Q. By whom and in what capacity are you employed?

A. I am employed by the Citizens' Utility Ratepayer Board ("CURB") as a Regulatory Analyst.

Q. Please describe your educational background?

A. I received a Bachelors Degree in Business Administration from Baker University in 2001. I received a Masters Degree in Business Administration from Baker University in 2004.

Q. Please summarize your professional experience.

A. I joined the Citizens' Utility Ratepayer Board as a Regulatory Analyst in February of 2008. Prior to joining CURB, I was the manager of a rural water district in Shawnee County, Kansas for five years. I am currently an adjunct faculty member at Friends University, where I am an undergraduate instructor in business courses such as Data Development and Analysis, Financial Decision Making, Financial Reporting of Debt & Equity, and Managerial Statistics.

Q. Have you previously testified before the Commission?

A. Yes. I previously offered testimony in KCC Docket Nos. 08-WSEE-1041-RTS, 10-KGSG-421-TAR, and 10-EPDE-497-TAR.

II. PURPOSE OF TESTIMONY

Q. What is the purpose of your testimony?

A. On March 31, 2010, Black Hills/Kansas Gas Utility Company, LLC, d/b/a Black Hills Energy ("Black Hills" or "company") filed an application with the Kansas Corporation Commission ("KCC" or "Commission") seeking:

- approval of a five-year energy-efficiency plan containing a portfolio of residential, non-residential, and special energy efficiency programs,
- cost recovery for the portfolio of energy-efficiency programs,
- the establishment of a revenue decoupling mechanism within the Energy Efficiency Cost Recovery Rider ("EECR") to recognize changes in the number of customers, as well as customer consumption,
- a performance incentive mechanism to allow for the sharing of savings generated by the energy-efficiency programs between its customers and its shareholders, and
- specific Commission authority to defer all program costs and accrued revenue pursuant to the proposed decoupling mechanism.

In my testimony I will evaluate Black Hills' planned energy-efficiency portfolio. In addition, my testimony will evaluate the company's proposed decoupling

mechanism and performance incentive mechanism, and will provide recommendations for consideration by the Commission. In my evaluation of the company's energy-efficiency portfolio, cost recovery mechanism, and performance incentive mechanism, I will assess whether these programs conform to the recommendations of the Commission's June 2, 2008, *Order Setting Energy Efficiency Policy Goals* in Docket No. 08-GIMX-442-GIV ("442 Docket"), as well as the Commission's November 14, 2008, *Final Order Regarding Cost Recovery and Incentives for Energy Efficiency Programs* In Docket No. 08-GIMX-441-GIV ("441 Docket").

III. SUMMARY OF CONCLUSIONS

Q. Please summarize your conclusions and recommendations.

A. Based on my analysis of the Company's filing and other documentation in this case, my conclusions are as follows:

- The Commission should deny the company's application for a free residential audit program because the program cannot pass the Commission-required Total Resource Cost ("TRC") and Ratepayer Impact Method ("RIM") tests. The Commission should remove the budget estimates for program cost recovery, lost margins and performance incentives from the budget assumptions for the company's EECR. In the alternative, I recommend the Commission classify this program as

educational, and reduce the budget of the program so that it conforms to the guidelines in the 442 Docket.

- The Commission should deny the company's application for a Home Performance with ENERGY STAR ® ("HPwES") program, because the program cannot pass the Commission-required TRC and RIM tests, and it does not address energy efficiency in a comprehensive, "whole-house" way, as was directed by the Commission's Order in the 442 Docket. The Commission should remove the budget estimates for program cost recovery, lost margins and performance incentives from the budget assumptions for the company's EECR.
- The Commission should deny the company's application for a Small Commercial Audit program because the program cannot pass the Commission-required TRC and RIM tests, and does not address energy efficiency in a comprehensive, "whole-house" way. The Commission should remove the budget estimates for program cost recovery, lost margins and performance incentives from the budget assumptions for the company's EECR.
- The Commission should deny the company's application for a Residential New Construction program and remove the budget estimates for program cost recovery, lost margins and performance incentives from the budget assumptions for the company's EECR.
- The Commission should deny the company's application for a Residential Space and Water Heating Program because the program cannot pass the

Commission required TRC and RIM tests and promotes fuel-switching. In the alternative, I recommend the Commission approve this program only as a three-year pilot, with a full independent evaluation, measurement and verification ("EM&V") to take place at the end of year two.

- If the Commission decides to approve the residential envelope measures retrofit program, nonresidential prescriptive and custom rebates programs, and the low-income and special purpose programs, it should be on a three-year pilot basis, with a full independent EM&V to take place at the end of year two. In addition, the Commission should cap the budgets for all pilot programs as approved in this proceeding.
- The Commission should deny the company's forward looking cost recovery mechanism because it does not conform with the Commission's ruling in the 441 Docket, which states that a rider will take affect only *after* the company can show it has incurred significant program costs.
- The Commission should deny the company's revenue normalization mechanism because it is based on revenue per customer, revenue losses cannot meet the significance test, it does not include annual rate caps, it does not reflect a reduction in risk by lowering the company's return on equity, the company did not accurately quantify the impacts of the decoupling mechanism, and because a tariff docket is not the appropriate place to evaluate decoupling. In the alternative, if the Commission chooses to approve a decoupling mechanism for Black Hills, it should be granted only during a full rate case review, after a full evaluation,

measurement and verification of its energy-efficiency programs, and should be based on total allowable revenue.

- The Commission should deny the company's performance incentive mechanism because it will cause an increase in rates without evidence of reliable energy savings. Further, according to its proposal, Black Hills will not be required to meet a target savings goal and can begin receiving an incentive based upon estimates, before any actual savings have been achieved or verified through an EM&V.

IV. DISCUSSION OF THE ISSUES

A. Five-Year Energy-Efficiency Plan

Q. Please describe the company's Five-Year Energy-Efficiency Plan.

A. Black Hills has requested Commission approval for a suite of four residential energy-efficiency programs, four nonresidential energy-efficiency programs, as well as special energy-efficiency and low-income programs, and an educational program.

The suite of residential energy-efficiency programs includes:

- Residential Audit Program
- Residential Space and Water Heating Program, which has the following components:
    - Furnace and Boiler Replacement and Maintenance Services

- Water Heater Replacement
- Innovative Space and Water Heating Technologies

- Residential Envelope Measures Retrofit Program
- Residential New Construction Program

The suite of nonresidential energy-efficiency programs includes:

- Small Commercial Audits
- Nonresidential Prescriptive Rebates
- Nonresidential Custom Rebates
- Industrial Sector Outreach

The special energy-efficiency programs include:

- Low-Income Programs, including
  - Weatherization
  - Affordable Housing
  - Weatherization Teams
- School-based Energy Education Program

Q. Do you have concerns about Black Hill's Five-Year Energy-Efficiency Plan?

A. Yes, I do. I have specific concerns regarding the residential and small commercial audit programs, the residential new construction program, and the residential space and water heating program. I also have general concerns regarding the

overall cost-effectiveness of Black Hills' five-year energy-efficiency plan and the inclusion of avoided electrical costs in the benefit-cost analyses.

A-1. RESIDENTIAL AUDIT PROGRAM

Q. Please describe the proposed Residential Audit Program.

A. The Black Hills Residential Audit Program is composed of two options: a free home energy audit and a Home Performance with ENERGY STAR ® ("HPwES") audit. For the purpose of my testimony, I will first discuss Black Hills' budget and savings estimates for the complete Residential Audit Program and will later discuss the two audit options separately.

Q. What is the budget for the Residential Audit Program?

A. According to Black Hills' Five-Year Energy-Efficiency plan, the year one budget for the residential audit program is $121,000. However, this budget is only for the free audit program, as the HPwES program will not be offered until the second year of the plan. In the year two budget, when the HPwES program is offered along with the free audit program, the budget balloons to $275,890. Black Hills estimates the five-year budget for the free residential audit and HPwES programs combined will be $1,517,888.[1]

[1] Black Hills' response to CURB Data Request 9.

Q. What does Black Hills estimate the savings will be from the Residential Audit Program?

A. Black Hills estimates program savings of 1,245 decatherms ("DTh") in year one, and up to 4,549 DTh in year five, for a total of 18,244 DTh saved over the five years. First year savings will be obtained though the free measures provided to the audit participants and anticipated behavioral changes made in response to audit recommendations.

Q. Is the Residential Audit Program cost-effective?

A. No. The Residential Audit Program proposed by Black Hills fails four of the five Commission recommended benefit-cost tests – the only benefit-cost test scoring above 1.0 is the Participant Test. According to Black Hills' Five-Year Energy-Efficiency Plan, the Residential Audit Program has a Participant test score of 5.38, a RIM score of 0.39, and a TRC test score of 0.70.[2] This means that for every $1 spent for Black Hills to offer its Residential Audit Program, there is only $0.70 worth of benefits and these benefits only go to the customer who participated in the program. Residential customers of Black Hills who do not participate in the Residential Audit Program will see their natural gas bills increase in order to make up the losses to Black Hills from operating the program.

[2] Black Hills' Application: Five-year Energy-Efficiency Plan p. 19, Table 4.

Q. What benefit-cost tests were emphasized by the Commission in its order in the 442 Docket?

A. In the Commission's June 3, 2008, order in the 442 Docket, the Commission indicated that it would place emphasis on the TRC Test, because the TRC test reflects the benefit of implementing an energy-efficiency program throughout the utility's territory. Further, the Commission has also stated that "mitigation of customer bill increases as a primary goal. Thus, the Commission will also place an emphasis on the review of the Ratepayer Impact Method (RIM) Test."[3]

Q. Based upon the benefit-cost test results performed by Black Hills, should the Commission approve the Residential Audit program?

A. No. In its April 13, 2009, *Order Following Collaborative on Benefit-Cost Testing and Evaluation, Measurement, and Verification* in the 442 Docket, the Commission stated that "it is unlikely a program that fails the TRC test will be approved by the Commission."[4] The Commission should deny Black Hills' Residential Audit Program because it can only achieve a 0.70 TRC score.

Q. Please discuss the Free Audit component of the Residential Audit Program.

A. All of Black Hills' residential customers whose homes are more than ten years old are eligible to participate in this program once every five years. Customers selecting the Free Audit program will be provided a home residential energy audit by a contractor selected by Black Hills, at no cost. The auditor will asses the

[3] June 2, 2008 *Order Setting Energy Efficiency Policy Goals* in Docket No. 08-GIMX-442-GIV, at ¶ 39-40.
[4] April 13, 2009 KCC Docket 08-GIMX-442-GIV *Order Following Collaborative on Benefit-Cost Testing and Evaluation, Measurement, and Verification* @ 25

home's insulation and air infiltration levels, the home's heating and cooling equipment efficiency and operating condition, and will recommend ways the customer can reduce energy consumption in the home. In addition, auditors will provide a number of low-cost energy-savings measures including outlet gaskets, faucet aerators, pipe insulation, low-flow showerheads and various low-cost infiltration measures. These low-cost energy-saving measures can either be installed by the contractor or simply provided to the customer with installation instructions.

Q. What is Black Hills' estimate for participation in the Free Audit program?

A. According to Black Hills' Five-Year Energy-Efficiency plan, participation in the Free Audit program is expected to be 479 customers in the first year, and up to 1,330 in year five, for a total of 5,140 customers.

Q. What specific concerns do you have about Black Hills' proposed free residential audit program?

A. I am concerned that Black Hills is overestimating potential savings. Black Hills' estimates of savings assume 100% success with every participant, a level of performance no program can achieve. In addition, because customers are not required to carry out any of the auditor's energy-saving recommendations, the savings estimates are unreliable. A customer will receive a free home energy audit along with an average of thirty dollars worth of free measures, but there are no requirements that the customer install the low-cost measures provided to them

or that the customer carry out any of the recommendations of the contractor performing the audit. In addition, if an energy audit of a customer's home requires no further customer action or if the customer is unable to make the recommended improvements, no actual energy savings would be gained as a result of the audit, but the customer would still receive the free audit and low-cost measures.

Q. What is your recommendation regarding the Free Audit program as proposed by Black Hills?

A. I recommend that the Commission deny the company's application as presented. As written, this program fails to provide firm, dependable energy savings because a participant is not required to implement recommended improvements in a comprehensive and logical way. The budget estimates for program cost recovery, lost margins and performance incentives associated with the residential audit program should be excluded from the budget assumptions for the company's EECR.

Q. Do you have an alternate recommendation in the event that the Commission approves the company's proposed free residential audit program?

A. Yes. It is my opinion that residential energy audit programs, like the free residential audit program proposed by Black Hills, can provide a benefit to consumers. The benefit is provided by educating consumers how to make their homes more energy efficient. In its five-year energy-efficiency plan, Black Hills indicates that a portion of savings realized through its free residential audit

program will be achieved through the "adoption of behavioral changes made in response to audit recommendations."[5] If the Commission is inclined to allow Black Hills to offer a free residential audit program, I recommend the Commission classify this program as educational, and reduce the budget of the program so that it conforms to the guidelines in the 442 Docket.

Q. What is the Commission's position regarding energy-efficiency programs that are classified as educational programs?

A. In the Commission's April 13, 2009, *Order Following Collaborative on Benefit-Cost Testing and Evaluation, Measurement, and Verification* in Docket No. 08-GIMX-442-GIV, the Commission stated that educational programs should not be subjected to the five benefit-cost tests as defined in the California Standard Practice Manual.[6] The Commission further stated that it "believes a 5% level is useful as a guideline for total energy efficiency portfolio funding devoted to educational programs."[7] If the Commission were to classify Black Hills' Free Residential Audit program as educational, its budget should be added to any other educational programs offered by Black Hills, which should remain at a 5% level of the total portfolio's budget.

7 Black Hills' Application: Five-year Energy-Efficiency Plan, p. 19.
[6] April 13, 2009 *Order Following Collaborative on Benefit-Cost Testing and Evaluation, Measurement, and Verification* in Docket No. 08-GIMX-442-GIV at ¶ 29.
[7] *Id at* ¶ 32.

Q. Please discuss the Home Performance with ENERGY STAR ® component of the Residential Audit program.

A. The Home Performance with ENERGY STAR ® ("HPwES") component of Black Hills' residential audit program will go beyond the free residential audit by performing diagnostic testing, such as a blower door test and if requested, an infrared scan, to quantify and more accurately identify air leakage sites. Specially trained contractors, HPwES auditors will conduct two visits per home, an initial "test-in" visit before any envelope measures have been installed and a follow-up "test-out" visit after the measures have been installed. For customers who choose an HPwES audit, Black Hills will cover the cost of the audits, less $100. Black Hills also will offer a $200 bonus rebate for customers successfully completing both test-in and test-out audits.

Q. What is Black Hills' estimate for participation in the HPwES audit program?

A. HPwES will not be offered until year two of Black Hills' five-year energy-efficiency plan. Fifty participants are expected in years two through five, for a total of 200 customers.

Q. What specific concerns do you have about Black Hills' HPwES audit program?

A. I have two specific concerns. My first concern is that the HPwES is a very costly program. In its application, Black Hills' provides a single budget that combines both the free residential audit and the HPwES budgets. Attached to my testimony

is Exhibit SMH-1, where I break down the budget for the combined residential audit programs into the two separate components. Because the HPwES audit is not offered in Year One, I utilized the Year One budget to determine the estimated cost per participant in the free residential audit program as $252.08. I then extracted the free residential audit program costs of $252.08 per participant to determine the remaining budget, which I assumed is for the HPwES program. Based upon Black Hills' budget estimates and estimated participation of 50 customers per year, it will cost an average of $1,111 for each of the 200 customers who will participate in the HPwES program during the four years the program is offered.

My second concern regarding the HPwES program is similar to my concerns expressed about the free residential audit program. This program simply fails to provide firm, dependable energy savings because a participant is not required to implement recommended improvements in a comprehensive and logical way. A customer will receive a discounted HPwES audit but there are no requirements that the customer carry out any of the recommendations of the contractor performing the audit. In addition, if HPwES audit of a customer's home requires no further customer action, no actual energy savings would be gained as a result of the audit, but the customer would still receive the deeply-discounted HPwES audit.

Q. What is your recommendation regarding the HPwES program as proposed by Black Hills?

A. Similar to my recommendations concerning the free residential audit program, I recommend that the Commission deny the company's application for an HPwES program. This is an expensive program that fails to provide firm, dependable energy savings because a participant is not required to implement recommended improvements in a comprehensive and logical way. The budget estimates for program cost recovery, lost margins and performance incentives associated with the residential audit program should be excluded from the budget assumptions for the company's EECR.

Q. Has the Commission made a previous ruling regarding audit programs such as Black Hills HPwES audit program?

A. Yes, it has. In Docket No. 08-KCPE-581-TAR ("581 Docket"), the Commission denied the application of KCP&L to implement a Home Performance with ENERGY STAR® Program. The Commission rejected the program – which, as part of a comprehensive portfolio of programs, would have provided a rebate to customers to help offset the cost of a home energy audit – because it did not require the participant to implement recommended improvements in a manner that is logical and cost-effective from a whole-house concept point of view, nor did it require the customer to implement the most effective energy-efficiency improvement identified by the audit. The Commission specifically expressed its concern that "because a participant is not required to implement recommended

improvements in a comprehensive and logical way, energy efficiency savings from the program are not likely to be as dependable as possible, in the sense of a resource."[8] This Commission decision clearly disapproved of energy-efficiency programs that offer an incentive payment to customers, yet do not require the customers to actually install energy-efficiency measures.

A-2. SMALL COMMERCIAL AUDIT PROGRAM

Q. Please describe the proposed Small Commercial Audit Program.

A. The Black Hills Small Commercial Audit Program will promote efficiency for small business customers, and includes on-site analysis to identify energy-efficiency opportunities. Customers with facilities smaller than 25,000 square feet will be eligible to participate in this program. The small commercial audit will be provided to eligible businesses for free, but the customer will pay a $50 fee for scheduling the audit. The commercial audit program will be delivered through local auditors, who will utilize computer software to assess and develop recommendations for energy-use categories such as heating system, hot water use, thermal envelope factors, and commercial cooking. The auditors may provide to the business owner low-cost measures such as low-flow spray heads, hot water pipe insulation, a water heater thermostat setback, and a programmable thermostat.

[8] Docket No. 08-KCPE-581-TAR, *Order on Staff's Report and on Petition for Reconsideration,* at ¶ 30-31.

Q. What is the budget for this program?

A. According to Black Hills' Five-Year Energy-Efficiency plan, the year one budget for the Small Commercial Audit program is $30,300. Black Hills estimates the five-year budget for the complete Small Commercial Audit program will be $237,100.[9]

Q. How many customers does Black Hills estimate will participate in the small commercial audit program?

A. According to Black Hills' Fiver-Year Energy-Efficiency plan, participation for the small commercial audit program is expected to be 20 customers in the first year, and up to 76 in year five, for a total of 287.

Q. What is Black Hills' estimate of savings from the Small Commercial Audit Program?

A. Black Hills estimates program savings of 42 DTh in year one, and up to 159 DTh in year five, for a total savings of 598 DTh. Savings are expected to be obtained though the free, low-cost measures provided to the audit participants and behavioral changes made in response to audit recommendations.

Q. What specific concerns do you have about Black Hills' proposed Small Commercial Audit Program?

A. Similar to my concerns about the Residential Audit program, I have two primary concerns regarding the small commercial audit program. First, I am concerned

[9] Black Hills' response to CURB Data Request 9.

that Black Hills is overestimating the level of energy savings because the customer is not required to make any of the auditor's energy saving recommendations. The business owner will receive a comprehensive energy audit along with an average of $40 in low-cost measures, but there are no requirements that the customer carry out any of the recommendations of the auditor or to install the low-cost measures provided during the audit. In addition, if an energy audit of a business's facility requires no further customer action or if the customer is unable to make the recommended improvements, no energy savings will be gained as a result of the audit. Further, Black Hills' estimates of savings assume 100% success with every participant, a level of performance no program can achieve.

My second concern is that the small commercial audit program proposed by Black Hills fails four of the five Commission-recommended benefit-cost tests. The only benefit-cost test receiving a score above 1.0 is the Participant Test. According to Black Hills' Five-Year Energy-Efficiency Plan, the small commercial audit program has a Participant test score of 3.99, a RIM score of 0.12, and a TRC test score of 0.13.[10]

Q. What is your recommendation regarding the small commercial audit program as proposed by Black Hills?

A. I recommend that the Commission deny the company's application for this program because the program cannot pass the Commission-required TRC and RIM tests. Further, because a customer is not required to implement

[10] Black Hills' Application: Five-year Energy-Efficiency Plan, p. 38, Table 29.

recommended improvements in a comprehensive and logical way, the actual energy-efficiency savings from the program are questionable. The budget estimates for program cost recovery and lost margins associated with the residential audit program should be removed from the budget assumptions for the company's Five-Year Energy-Efficiency Plan if the Commission denies this program.

Q. Do you have an alternate recommendation in the event that the Commission approves the company's proposed small commercial audit program?

A. Yes. My recommendation for this program is similar to the residential audit program. The benefit may be provided by educating small commercial consumers on how they can make their businesses more energy-efficient. In its five-year energy-efficiency plan, Black Hills indicates that a portion of savings realized through its residential audit program will be achieved through the "behavioral changes made in response to audit recommendations."[11] If the Commission is inclined to allow Black Hills to offer a small commercial audit program, I recommend the Commission classify this program as educational, and reduce the budget of the program so that it conforms to the guidelines in the 442 Docket.

[11] Black Hills' Application: Five-year Energy-Efficiency Plan, p. 37.

A-3: RESIDENTIAL NEW CONSTRUCTION PROGRAM

Q. Please describe the proposed Residential New Construction Program.

A. The Residential New Construction Program is designed to promote the construction of energy-efficient single- and multi-family homes by providing new home builders with incentives to install high-efficiency, natural gas-fired space and water heating equipment and more robust thermal envelope measures. The program will be marketed through phone, mail, e-mail and appearances at industry meetings and events. Through this program, builders that construct homes that achieve a specified Home Energy Rating System ("HERS") rating will be eligible to receive an incentive payment of up to $5,000 – depending on the total efficiency of equipment that the builder installs. The incentive is designed to cover more than three-quarters of the incremental cost of meeting the requirements. In addition to providing an incentive payment to builders, Black Hills will also cover a portion of the HERS inspection costs.

Q. What is the budget for this program?

A. According to Black Hills' Five-Year Energy-Efficiency Plan, the Year One budget for the Residential New Construction Program is $399,900. The budget increases in year five to $433,100, for a total five-year budget of $2,109,700.[12] Of the $2.1 million budgeted for this program, over 80% of the dollars – $1.7 million – are budgeted for incentive payments.

[12] Black Hills' response to CURB Data Request 9.

Q. How many builders does Black Hills estimate will participate in the Residential New Construction Program?

A. Black Hills estimates that 198 new homes will be eligible to receive incentive payments in Year One, increasing to 201 in year five, for a combined five-year total of 1,001. Black Hills also estimates that 69 builders will receive a $300 payment to help offset the cost of the HERS rating test in year one, increasing to 91 in year five, for a combined five-year total of 422.

Q. What concerns do you have regarding Black Hills' application for a Residential New Construction Program?

A. My primary concern is that the Residential New Construction program will benefit only a small portion of homebuilders in a few select counties in Black Hills' service territory. Attached to my testimony as Exhibit SMH-2 is a map of Black Hills' service territory in Kansas, which consists of 35 counties throughout the state. From 2000 to 2009, only two of the 35 counties in which Black Hills operates, Douglas and Sedgwick, experienced population growth greater than 5.0%. Of the 35 counties in Kansas where Black Hills provides natural gas service, only seven counties have experienced a positive percentage change in population, while the other 28 experienced a negative percent change in population.[13] It is clear from this demographic data that only a few select cities and counties will actually benefit from Black Hills' Residential New Construction program, while ratepayers from all 35 counties will pay the $2.1 million price tag for the program. It is my opinion that a program that takes ratepayer dollars from

[13] US Census Bureau Quick Facts for Kansas: http://quickfacts.census.gov/qfd/states/20000.html.

residents in Sherman County, Kansas – which has experienced a 13.3% **decrease** in population since 2000 – and gives it to homebuilders in Douglas County, Kansas – which has experienced a 16.4% **increase** in population since 2000 – is not in the best interest of ratepayers as a whole.

Q. What is your recommendation regarding the Residential New Construction Program as proposed by Black Hills?

A. I recommend that the Commission deny the company's application for the Residential New Construction Program. I urge the Commission to examine the population growth trend in Black Hills' Kansas service territory. While some communities are experiencing rapid growth, others are experiencing rapid declines in population. Because this program offers large financial incentives to homebuilders for installing specific measures in newly-constructed homes, it will benefit only areas that are experiencing growth in population. This program simply does not make a good use of ratepayer funds. If the Commission denies this program as recommended, the budget estimates for program cost recovery and lost margins associated with the Residential New Construction Program should be removed from the company's EECR.

A-4. SPACE AND WATER HEATING PROGRAM

Q. Please describe the proposed Residential Space and Water Heating Program.

A. The residential space and water heating program includes three primary components. The program includes:

- a furnace and boiler replacement and maintenance services program which provides incentives ranging from $150 - $400 to customers who upgrade their existing furnaces and boilers to higher-efficiency units; provides incentives ranging from $150 - $200 for customers who also repair and seal ducts when they replace their existing furnaces or boilers; and provides a $30 incentive for customers who complete a furnace/boiler maintenance check-up with a certified technician;
- a water heater replacement program that provides incentives ranging from $75 - $300 to customers who upgrade to higher-efficiency models when replacing water-heating equipment; and
- a water heating technologies program that provides incentives ranging from $300 - $500 for customers who take advantage of newer energy-efficient technologies such as drain water heat recovery, integrated space and water heat, and multi-zone thermostats.

Q. What is the budget for this program?

A. According to Black Hills' Five-Year Energy-Efficiency plan, the first-year budget for the residential space and water heating program is $345,000. Black Hills

estimates the five-year budget for the complete residential audit program will be $2,588,004.[14]

Q. Do you have a general concern about rebate programs like the proposed Residential Space and Water Heating Program?

A. Yes, I do. My general concern is that ratepayers are funding programs that may lead to fuel-switching. In this case, Black Hills' customers will be paying for the rebates offered to other customers who choose to install high-efficiency natural gas space and water heating equipment. If utilities are allowed to expend ratepayer dollars to encourage the sale of natural gas or electric appliances, a never-ending bidding war may occur between electric and natural gas utilities. It is likely that this competition for customers will encourage an electric utility to attempt to "outbid" a natural gas utility by offering a greater rebate to customers who purchase and install high-efficiency electric appliances. Without safeguards in place to control the amount of financial incentives that encourage fuel-switching, the game being played by utilities to outbid each other will be played with customer's dollars and will likely become excessively costly to ratepayers.

Q. What specific concerns do you have regarding the Residential Space and Water Heating Program proposed by Black Hills?

A. I have two specific concerns regarding the residential space and water heating program. It is my opinion that the program will not pass the benefit-cost tests as

[14] Black Hills' response to CURB Data Request 9.

adopted by the Commission in the 442 Docket and that the program encourages fuel-switching behavior.

Q. Does Black Hills provide a summary of benefit-cost tests for the residential space and water heating program?

A. Yes. According to Black Hills' Five-Year Energy-Efficiency Plan, the residential space and water heating program has a RIM score of 0.58, while only achieving a Total Resource Cost TRC test score of 1.0.[15]

Q. Based upon the benefit-cost test results performed by Black Hills, should the Commission approve the residential space and water heating program?

A. No. In its April 13, 2009, *Order Following Collaborative on Benefit-Cost Testing and Evaluation, Measurement, and Verification* in the 442 Docket, the Commission emphasized that the use of the "RIM and TRC tests is appropriate in light of Kansas realities and Commission goals."[16] The Commission stated that an energy-efficiency program that scores less than one on the RIM test "may still be considered by the Commission for approval, depending on the degree of RIM test failure, (and) its performance on the other tests …"[17] Black Hills' analysis shows that the Residential Space and Water Heating Program has a high degree of RIM failure and cannot achieve a significant TRC score.

[15] Black Hills' Application: Five-year Energy-Efficiency Plan, p. 28, Table 13.
[16] April 13, 2009, KCC Docket 08-GIMX-442-GIV, *Order Following Collaborative on Benefit-Cost Testing and Evaluation, Measurement, and Verification* at ¶21.
[17] *Id.* ¶23.

Q. Under what circumstances should the Commission approve a program with a RIM score of less than 1.0?

A. Based upon the Commission's guidelines in the 442 Docket, I would expect the Commission to consider approval of a program that has a slight RIM failure but can achieve a high TRC score. The RIM test is an indicator of how much rates will go up with the program. CURB assumes the Commission would seek to minimize any rate increase caused by offering these programs. A slight RIM failure with a significant TRC means rates may go up slightly, but there is a large overall benefit. However, a poor RIM score coupled with a low TRC means rates will increase significantly with very little overall benefit to the system. Black Hills' Residential Space and Water Heating Program barely achieves a passing TRC ratio and has a high degree of RIM failure, which indicates that the program is not cost-effective and will cause an increase on rates for all Black Hills customers.

Q. Based on the benefit-cost test results, should the Commission approve the Residential Space and Water Heating Program?

A. No. Black Hills' analysis should that the Residential Space and Water Heating Program has a high degree of RIM failure and cannot achieve a significant TRC score.

Q. Please explain how Black Hills' residential space and water heating program encourages fuel-switching behavior.

A. Black Hills residential space and water heating program encourages fuel-switching by providing financial incentives to dealers and contractors who promote natural gas high-efficiency equipment to their customers. While Black Hills may not directly be encouraging fuel switching behaviors in its customers, providing financial rewards to contractors when they install high-efficiency natural gas equipment will prejudice contractors towards recommending only natural gas equipment. Simply put, a contractor will receive a financial reward from Black Hills only if they install a natural gas-fired space or water heating appliance. If a contractor installs a high-efficiency electric appliance, they will not be eligible for the financial award.

Black Hill's five-year energy-efficiency plan carefully avoids any references of directly encouraging customers to switch from electric appliances to natural gas appliances. However, it does indicate that "a trade ally/dealer "spiff" or rebate will be offered for some measures, with the trade ally receiving a financial reward for promoting high-efficiency equipment ..."[18] In fact, within the five-year energy-efficiency plan, Black Hills has included $349,133 for dealer incentives; $325,214 of these incentives are included in the residential space and water heating program.

[18] Black Hills' Application: Five-year Energy-Efficiency Plan, p. 12.

Q. Please elaborate on the fuel-switching policy of the KCC.

The issue of whether it is appropriate to offer incentives to encourage consumers to switch from one fuel source to another (*i.e.* from electricity to natural gas or vice versa) was raised by Kansas Gas Service, a division of ONEOK, Inc. ("Kansas Gas Service") in the 442 Docket.[19] The Commission opened Docket No. 09-GIMX-160-GIV ("160 Docket") in August 2008 in order to develop a policy regarding incentives paid to customers for fuel-switching for end-use applications.

Q. Has the Commission issued a final order in the 160 Docket, thereby setting policy regarding fuel-switching applications?

A. No, it has not. The Commission last issued an oder on May 13, 2009 – the Order Accepting Staff's Report and Recommendation, Motion for Leave and Directing Parties to Submit Responsive Comments by May 29, 2009 and any Reply Comments by June 12, 2009. No final order has been issued by the Commission.

Q. What were the recommendations of the Commission's Staff ("Staff") in the 160 Docket?

A. Staff suggested the Commission find that "energy efficiency programs should be designed in a manner that does not bias an end-user toward a particular fuel but allows the end-user to make an efficiency improvement at the end-user location."[20]

[19] April 16, 2008, Kansas Gas Service, *Reply Comments for the Workshop*, Docket No. 08-GIMX-442-GIV.
[20] April 13, 2009, *Notice of Filing of Staff Report and Recommendation,* Docket No. 09-GIMX-160-GIV at 26.

Q. Does Black Hills' proposed Residential Space and Water Heating program conform with Staff's recommendation in the 160 Docket?

A. In my opinion, no. The financial awards provided to contractors in Black Hills' five-year energy-efficiency plan are intended to encourage the recommendation and installation of high-efficiency natural gas equipment in preference to electric equipment, which contradicts Staff's recommendation to the Commission in the 160 Docket. Since the Commission has not yet issued a final ruling in the 160 Docket, it is my opinion that it would be premature for the Commission to approve a program with fuel-switching implications like Black Hills's Residential Space and Water Heating program.

Q. What is your recommendation regarding the Residential Space and Water Heating program as proposed by Black Hills?

A. I recommend that the Commission deny the company's application for this program. Further, the budget estimates for program cost recovery and lost margins associated with the residential space and water heating program should be removed from the company's EECR.

Q. Do you have an alternate recommendation in the event that the Commission approves the company's proposed residential space and water heating program?

A. Yes. If the Commission is inclined to approve this program, it should do so only as a three-year pilot, with a full independent evaluation, measurement and

verification ("EM&V") to take place at the end of year two. I also would recommend that the Commission remove the amounts included in the program's budget for dealer spiffs and incentives to alleviate some fuel-switching concerns.

A-5. GENERAL CONCERNS

Q. Do you have general comments regarding the other programs in the company's five-year energy-efficiency plan?

A. Yes, I have three general concerns. First, I believe that the benefit-cost test results provided by Black Hills in its application are overstated because of the inclusion of reduced electric costs as a benefit in the benefit-cost tests. In its analyses, Black Hills inappropriately assumes a $526,856 benefit from avoided kWhs.[21] Because Black Hills is a natural gas utility, the only cost avoided by Black Hills as a result of its five-year energy-efficiency plan is the avoided cost of gas for participating customers. It is inappropriate to consider avoided electricity costs as a benefit for Black Hills customers as a whole, because customers who do not participate in Black Hills' energy-efficiency programs will not avoid electricity costs as a result of another customer's participation in the programs.

Q. Should avoided electrical costs be excluded from <u>all</u> benefit-cost analyses?

A. No. It is my opinion that it is inappropriate to include avoided electrical commodity and capacity costs in the TRC and the RIM tests, but it is appropriate to include these benefits in the Participant Test. The Participant Test is designed

[21] Black Hills' response to CURB Data Request 8.

to measure the cost-effectiveness of a program from the perspective of the customers who participate in the program. A Black Hills customer who participates in an energy-efficiency program is expected to receive a direct benefit in the form of reduced gas and electrical bills. Because the Participant Test is used to determine the cost-effectiveness from the perspective of the participant, it is appropriate only in the Participant test to include a benefit from the reduction of the participant's electric bill.

Q. What is your second concern regarding Black Hills Five-Year Energy-Efficiency Plan?

A. In light of the funds given to Kansas as part of the American Recovery and Reinvestment Act of 2009 ("ARRA"), most of Black Hills' energy-efficiency programs are redundant. The Commission's Efficiency Kansas loan program is designed to provide low-cost financing for cost-effective energy-efficiency improvements in homes and small businesses. The Efficiency Kansas loan program provides rebates and incentives to Kansans who undergo a comprehensive energy audit and provides low-interest financing to complete the recommended envelope measures and improvements. The program also offers scholarships and other funding for contractors that undergo training to become certified energy auditors. Asking Black Hills' ratepayers to fund utility programs – like a discounted energy audit program – that already exist on a state-wide basis, in my opinion is not the most effective use of energy-efficiency dollars.

Q. What is your third concern regarding Black Hills Five-Year Energy-Efficiency Plan?

A. I am concerned about the financial burden placed on Black Hills customers who do not participate in the proposed energy-efficiency programs. While I have not offered a specific opinion regarding the company's proposed residential envelope measures retrofit program, nonresidential prescriptive and custom rebates programs, low-income and special purpose programs, I would encourage the Commission to recognize the inherent inequities of these programs for participants and non-participants. The Efficiency Kansas loan program requires consumers to make individual economic decisions based upon their own energy needs, finances and ability to pay for the measures installed. Black Hills' programs, on the other hand, are financed with other people's money, meaning everyone in Black Hills' territory will pay for someone else to get the benefit of these energy-efficiency programs.

These inequities are obvious in the benefit-cost tests results provided by Black Hills. Specifically Black Hills' residential portfolio of programs has a RIM score of 0.54 while achieving a marginal TRC score of 1.17. While electric utilities may offer energy-efficiency programs as an alternative to building new generation facilities – thereby benefiting all customers – natural gas utilities like Black Hills that offer energy-efficiency programs can only help customers avoid the cost of natural gas. While each of the programs proposed by Black Hills may have direct benefits for the customer who takes advantage of the program, the

programs offer no direct benefit to the customer who does not participate, but who still has to pay for the cost of the program.

B. COST RECOVERY

Q. Please describe Black Hills's proposed cost recovery mechanism.

A. Black Hills has requested Commission approval for an Energy Efficiency Cost Recovery Rider ("EECR"). The EECR will allow Black Hills to collect estimated program costs, which include program development costs. The EECR will also collect revenues from its proposed decoupling mechanism, which is intended to account for changes in the number of customers and revenues lost due to the implementation of its energy-efficiency programs. In addition, the EECR will collect a performance incentive, based on Black Hills' estimated net benefits.

Q. What is your recommendation to the Commission regarding Black Hills's proposed cost recovery mechanism?

A. I recommend the Commission deny the company's proposed cost-recovery mechanism. Specifically, the Commission should deny the mechanism because:

- it does not conform with the Commission's ruling in the 441 Docket, which states that a rider will take affect only *after* the company can show it has incurred significant program costs;
- it includes a decoupling mechanism based on revenue per customer, which the Commission specifically discouraged in the 441 Docket, stating that it

"prefers the calculation based on total allowable revenue because this method does not contain a tie between fixed costs and changes in the number of customers,"[22]

- it includes a performance incentive mechanism, even though the Commission indicated it is "reluctant to provide additional incentives, resulting in increased costs to customers, for energy efficiency programs."[23]

Q. Discuss the Commission's requirement that a rider take effect after the company can show it is incurring significant program expenses.

A. In the 441 Docket, the Commission encouraged utilities to seek pre-approval from the Commission for energy-efficiency programs, but indicated that a rider would take effect only after the programs are implemented and the company has begun incurring significant expenses. This requirement was adopted from the Commission's Staff ("Staff") recommendation that an annual rider mechanism to recover costs associated with Commission-approved energy-efficiency programs should not be established until the "company is incurring program costs that are significant."[24]

[22] November 14, 2008 *Final Order,* KCC Docket No. 08-GIMX-441-GIV, at ¶ 63.
[23] *Id.,* at ¶ 94.
[24] October 10, 2008, *Notice of Filing Staff's Report to the Commission,* KCC Docket No. 08-GIMX-441-GIV at p.26.

Q. Is Black Hills incurring significant program costs from its energy-efficiency programs?

A. No, it is not. Black Hills does not currently offer any energy-efficiency programs in Kansas, nor is it suggesting that its energy-efficiency programs will be implemented prior to cost recovery. Instead, Black Hills is requesting Commission approval to immediately begin recovering its forward looking estimated year-one energy-efficiency budget of $1,473,000 – including an estimate of decoupling charges and performance incentive charges – before the programs are offered in Kansas.

Q. Should Black Hills be allowed to collect forward looking estimated program expenses before implementing its energy-efficiency programs?

A. No. The Commission's order in the 441 Docket clearly identifies its preference that utilities must first show that it is incurring significant program expenses, which allows these expenses to be reviewed for accuracy and prudence, and then the utility may receive Commission approval for recovery of the expenses. Black Hills is requesting approval for just the opposite - using an estimated budget to calculate the amount of the surcharge. This estimate is highly dependent on the company's estimates of the numbers of customers who will participate in each program.

Q. Why is it preferable to recover actual energy-efficiency expenses after these costs have been incurred, as opposed to collecting budgeted expenses prior to the expenditure?

A. For two reasons – first, because recovery of actual energy-efficiency expenses through a rider mechanism will allow the Commission the opportunity to review the expenses for prudence and accuracy, *before* the amount is collected from ratepayers. In its order in the 441 Docket, the Commission stated that a rider to recover energy-efficiency program expenses should be implemented in a manner that maintains the Commission's responsibility to review costs for prudence. Because a rider mechanism, as suggested by the Commission in the 441 Docket, allows a utility to receive "nearly contemporaneous" recovery of energy-efficiency costs, the utility's need for pre-payment of such expenses is lessened.

Second, the historical recovery of actual, expended costs will ensure that ratepayers are not funding flawed or inefficient programs. As an example, I will refer to Black Hills' Natural Gas Energy Efficiency Programs that are currently offered in Colorado. In Colorado, Black Hills uses a Gas Demand Side Management Cost Adjustment Clause ("G-DSMCA") to recover estimated expenses for its energy-efficiency programs, which is then trued-up to the actual expenses annually. In 2009, Black Hills estimated that its Colorado energy-efficiency programs (for all rate classes) would cost $795,800 and would save 19,651 DTh. However, at the end of the reporting period, Black Hills had pre-collected $990,785.64 through its G-DSMCA from its Colorado ratepayers while

only expending $508,857.[25] Further, Black Hills estimated its programs would save 19,651 DTh, but actually only saved 4,765 DTh.[26] The Commission can avoid the Colorado problem of over-collecting from customers (if the programs don't meet expectations) by denying Black Hills' request for pre-collection of estimated energy-efficiency expenses.

Q. What caused the over-collection of funds from Colorado ratepayers?

A. The amount approved to be recovered through Black Hills' G-DSMCA was based upon an estimated level of participation. According to Black Hills Natural Gas Energy Efficiency Programs 2009 Annual Report, which was prepared for the Public Utilities Commission of Colorado, participation was lower than estimated in nearly all programs. In 2009, Black Hills estimated that participation in its Colorado residential energy-efficiency programs – excluding an appliance rebate program which is not being proposed in Kansas – would be 1,625 participants. However, only 499 customers participated in Black Hills' residential energy-efficiency programs.[27]

[25] March 31, 2010, Before the Public Utilities Commission of the State of Colorado, Proceeding No. 10A-131-G, as provided in Black Hills response to CURB Data Request 17.
[26] April 1, 2010, Black Hills Energy Natural Gas Energy Efficiency Programs Annual Report 2009 Prepared for the Public Utilities Commission of Colorado, provided in Black Hills response to CURB data request 17.
[27] *Id.*

Q. What is your concern regarding the results of Black Hills energy-efficiency programs offered in Colorado?

A. My primary concern is that the participation level and savings level was greatly over-estimated in Colorado. Given that the portfolio of programs offered in Colorado is very similar to the portfolio proposed in Kansas, the participation level and costs in Kansas are likely also over-estimated. In addition, Black Hills estimated that it would cost an average of $243.10 expended per residential participant. At the end of 2009, Black Hills had actually expended an average of $390.30 per participant – a 61% increase over the budgeted amount for 64% fewer participants.[28] If Black Hills is allowed to collect program expenses upfront, as it does in Colorado, Kansas ratepayers may be over-funding expensive programs that may not meet performance expectations.

Q. Is there another reason to review actual expenses before allowing cost recovery?

A. Yes. While Black Hills would be required to return any excess collection of funds to ratepayers, it is my opinion that it is better to keep money in the hands of consumers until the actual expenses have been incurred, reviewed, and verified. In addition, using Black Hills' estimates of program costs and annual therm savings in the state of Kansas, it will cost Black Hills' Kansas customers $4.32 for each

[28] April 1, 2010, Black Hills Energy Natural Gas Energy Efficiency Programs Annual Report 2009 Prepared for the Public Utilities Commission of Colorado, provided in Black Hills response to CURB data request 17. Estimated residential budget was $408,400 for an estimated 1,680 customers = $243.10 per customer. Actual residential expenditures were $238,082 provided to 610 customers = $390.30 per customer.

therm of gas that is saved through these energy-efficiency programs.[29] I would expect that the Commission would naturally require a full review given this extraordinary level of per-therm cost.

C. Revenue Normalization Mechanism

Q. Please describe the company's revenue normalization adjustment.

A. Black Hills has proposed a revenue normalization mechanism ("RNM") to be implemented in conjunction with its five-year energy-efficiency plan. The RNM mechanism proposed by Black Hills will be incorporated into the EECR, and will account for changes in usage per customer and changes in the number of customers. Actual revenues collected will be compared to revenues approved in Aquila's (Black Hills' predecessor) last base rate case, Docket No. 07-AQLG-431-RTS ("431 Docket"), and will then be adjusted for changes in the number of customers to determine the amount of over-or-under collection. This amount will then be converted to a rate per therm, and added to or subtracted from the next period's billings. In short, the RNM mechanism will guarantee Black Hills receives an approved revenue requirement on a per customer basis, regardless of the level of sales to those customers.

[29] Response to CURB Data Request 9: estimated total direct utility costs of $12,460,460 divided by cumulative gross savings and capacity savings (therms) of 2,855,227 and 28,836 = $4.32 per therm saved.

Q. Why is Black Hills requesting approval of a decoupling mechanism before it begins implementing energy-efficiency programs?

A. Black Hills contends its current rate structure provides a disincentive to help its customers reduce consumption, due to the fact that it recovers a portion of its total fixed costs through volumetric rates. The company theorizes that if it offers the proposed energy-efficiency programs, consumers will decrease consumption as a result of their participation in these programs, thereby making it difficult for Black Hills to recover a portion of its fixed costs.

Q. Please discuss revenue decoupling in general.

A. Decoupling is a regulatory mechanism that separates, or "decouples," a utility's revenues from its sales of energy – in this case natural gas. Decoupling is a departure from traditional cost-of-service principles, which historically provide utilities with only the opportunity to earn a fair return. With a decoupling mechanism in place, a utility is guaranteed recovery of its authorized revenues and is therefore insulated from the impact on sales of changing economic conditions, weather, or new technologies.

In traditional ratemaking, rates are based on an evaluation of the utility's costs incurred during a single period, the test year. Once the utility's revenue requirement is determined, rates are designed with the goal of providing the utility a reasonable opportunity to recover its authorized revenue requirement under normal circumstances. However, there is no guarantee of recovery. Traditionally, utilities are motivated to promote gas sales and find economic efficiency in

operations between rate cases in order to increase revenues and profit. By contrast, with a decoupling mechanism, utilities are allowed to adjust rates between rate cases to ensure that its authorized revenue requirement is recovered. Thus, utilities may be less motivated to promote sales between rate cases and are indifferent to changes in customer usage because the stream of revenue required to meet its revenue requirement will be guaranteed.

Q. Please describe total allowable revenue decoupling.

A. The total allowable revenue method would guarantee a natural gas utility will earn its approved revenue requirement during a reporting period. Under this method, the Commission determines the amount of revenue to be collected over a given period and sets the rates that will achieve this level of revenue, usually through a rate case. The revenue actually collected during the agreed upon decoupling period (month, year) will be "trued-up" to the approved revenue requirement for the period. The difference will be flowed to customers through a rider that adjusts the ultimate price paid by the consumer.

Q. Why would a natural gas utility request a total allowable revenue decoupling mechanism?

A. Natural gas utilities that are experiencing a decrease in the number of customers could request a total allowable revenue decoupling mechanism in order to make up the revenues lost due to the decrease in customers. The total-allowable revenue method could also be requested by a natural gas utility that is selling significantly

fewer volumes of natural gas due to energy-efficiency programs, customer price-responsiveness or any other reason.

Q. Please describe revenue-per-customer decoupling.

A. A revenue-per-customer decoupling mechanism adjusts the revenues a utility receives, relative to increases or decreases in customers. The revenue per customer decoupling begins with a rate case calculation of the required revenues. The revenue-per-customer value is then calculated for each customer class. The allowed billing for a reporting period is calculated by taking the revenue-per-customer calculations and multiplying it by the number of customers in each class. The "true-up" amount will be flowed to customers through a rider that adjusts the ultimate price paid by the consumer.

Q. Why would a natural gas utility request a revenue-per-customer decoupling mechanism?

A. A natural gas utility that is experiencing a significant growth in customers could request a revenue-per-customer decoupling mechanism. A revenue-per-customer mechanism allows the utility to collect a Commission determined amount of revenue for each customer in its system. Simply put, with a revenue-per-customer decoupling mechanism in place, the more customers that are in a utility's territory, the more revenue the utility is allowed to collect.

Q. What decoupling method is Black Hills' requesting for its RNM?

A. Black Hills' RNM is a revenue-per-customer decoupling mechanism.

Q. Should the Commission approve Black Hills' proposed RNM?

A. No it should not. I will detail why the Commission should deny Black Hills' RNM in the following sections:

C – 1: Compliance with the Commission's guidelines in the 441 Docket
- **C – 1(a):** Revenue-per-customer method
- **C – 1(b):** Significant financial impact
- **C – 1(c):** Annual rate caps
- **C – 1(d):** Reduction in risk
- **C – 1(e):** General economic concerns
- **C – 1 (f):** Decoupling in other states

C-2: RNM Calculations

C-3: Decoupling in a tariff docket

C-1: COMPLIANCE WITH 441 DOCKET

Q. Is Black Hills' RNM proposal consistent with the Commission's order in the 441 Docket?

A. No. There are four specific features of the company's decoupling proposal that fail to meet guidelines relating to decoupling in the Commission's order in the 441 Docket. Black Hills:

- proposes a decoupling mechanism that is based on revenue per customer,
- fails to demonstrate that the company's finances would experience a significant negative impact as a result of implementing its portfolio of programs,

- fails to include rate caps to prevent rate volatility, and
- fails to recognize the reduction in risk by appropriately reducing the company's return on equity ("ROE").

I discuss below how each of these features of the company's proposal fail to meet the Commission's guidelines for approval of decoupling mechanisms.

C – 1 (a). REVENUE PER CUSTOMER

Q. What type of decoupling mechanism has Black Hills' requested?

A. Black Hills has requested a revenue-per-customer decoupling mechanism.

Q. Did the Commission discourage a revenue-per-customer decoupling method in the 441 Docket?

A. Yes. The Commission specifically discouraged a revenue-per-customer decoupling mechanism in the 441 Docket, stating that it "prefers the calculation based on total allowable revenue because this method does not contain a tie between fixed costs and changes in the number of customers."[30]

Q. Why didn't Black Hills request a total-allowable-revenue decoupling mechanism method?

A. Black Hills did not request a total-allowable-revenue decoupling mechanism because in 2008 and 2009 Black Hills collected more non-gas revenues from its residential customers than its total allowable non-gas revenue as established in the

[30] November 14, 2008, *Final Order*, KCC Docket No. 08-GIMX-441-GIV, at ¶ 63.

431 Docket. In its response to CURB Data Request 2, Black Hills indicates that in 2008 it collected $28,414,961.79 in non-gas revenue from its residential customers - $377,656 more than its approved non-gas revenues. In 2009, Black Hills collected $28,333,563.05 in non-gas revenue from its residential customers - $296,257 more than its approved non-gas revenues.[31] If Black Hills had a total allowable revenue decoupling mechanism currently in place, it would have had to return the over collections of $377,656 and $296,257 from 2008 and 2009, respectively, to its residential customers.

Q. Is Black Hills requesting a revenue-per-customer decoupling mechanism because of losses due to its proposed energy-efficiency programs?

A. No. In it response to CURB Data Request 21, Black Hills indicated that it is requesting a revenue-per-customer decoupling mechanism because its system is growing and "adding customers increases [its] costs (i.e., meters, service drops, billing, etc.)"[32] Since Aquila's last general rate case in 2006, Black Hills has experienced a 3.7% total growth in the number of residential customers in its service territory.[33]

[31] Black Hills Response to CURB Data Request 2.
[32] Black Hills' response to CURB Data Request 21.
[33] 431 Docket, Final Rate Design based on 94,010 residential customers. Black Hills' response to CURB Data Request 5 shows the total number of residential customers at the end of 2009 was 97,446.

Q. Do you agree with Black Hills that the cost of adding customers justifies decoupling?

A. No, I do not. A decoupling mechanism like the revenue-per-customer mechanism proposed by Black Hills should not be a substitute for a general rate case review of the company's complete financial condition. If the increased costs of adding customers to its system have caused profitability or earnings shortfalls, the company can file a general rate case and request an increase to its revenue requirement.

Additionally, in Black Hills' territory, each new customer added to its system is charged a fixed unavoidable $16.00 per month customer charge. This $16.00 per month fixed customer charge accounts for nearly 65% of Black Hills' overall residential non-gas revenue requirement and should provide adequate revenue to cover expansion costs.[34]

Q. Is it your opinion that the decoupling proposal submitted by Black Hills is related to revenue stability, as opposed to energy-efficiency measures?

A. Yes. Despite experiencing a growth in its customer base, Black Hills is selling a lower amount of therms per customer than was anticipated in its last rate case. In 2009, Black Hills' residential and small commercial customers used 3.48% and 10.41% less gas per customer, respectively, than was in the 431 Docket.[35] The

[34] 431 Docket Final Rate Design for residential customers includes a $16.00 customer charge, which accounts for $18,049,920 of its non-gas revenue requirement of $28,037,306.

[35] 431 Final Rate Design sets normalized volumes sold to residential and small commercial customers at 731.46 and 1,419.87 therms per customer annually, respectively. Black Hills' response to CURB Data Request 5 shows in 2009, the volumes sold to residential and small commercial customers were 706 and 1,272 therms per customer, respectively; a difference of -3.48% and -10.41% respectively.

net result is that total revenues have increased but per-customer revenues have decreased. This decreased sale of natural gas to an increased number of customers, without any energy-efficiency programs in place, points to a trend in customers taking the initiative to reduce their energy consumption. It is my opinion that Black Hills' request for revenue-per-customer decoupling mechanism does not have any connection to energy-efficiency programs, but is instead intended to provide revenue stability to the company.

C – 1 (b). SIGNIFICANT FINANCIAL IMPACTS

Q. Did the Commission require that a utility must demonstrate a significant impact on its finances before a decoupling mechanism would be approved?

A. Yes. In the 441 Docket, the Commission accepted Staff's position, indicating that it would "consider decoupling as a method if a utility can show that a program will have significant detrimental impact on company finances."[36]

Q. Did the Commission quantify what "significant" is, when considering decoupling proposals?

A. No. In the 441 Docket, the Commission used the term "significant" in two different contexts: for the recovery of programs costs and when referring to the impact on company finances when considering decoupling mechanisms. When discussing the requirement for program cost recovery, the Commission defined "significant" as "... a level of expense necessary to justify putting a rider

[36] November 14, 2008, *Final Order*, KCC Docket No. 08-GIMX-441-GIV, at ¶ 47.

on customers' bills." The Commission further explained that it may consider "significant" program costs ½% of base revenue, a guideline that has been established by the legislature in K.S.A. 66-2203, as a minimum level of expense for approval of a Gas System Reliability Surcharge.[37] However, the Commission did not define "significant" in terms of the impact on company finances for consideration of a decoupling mechanism.

Q. Does Black Hills identify the financial effects of its proposed energy-efficiency programs?

A. Yes. In its proposed Five-Year Energy-Efficiency Plan, Black Hills calculates the impact of the company's energy-efficiency programs. According to the exhibit, Black Hills estimates that during the first year it will experience lost revenue of $25,218 and $13,703 because of its residential and non-residential energy-efficiency programs, respectively.[38]

Q. Do the lost revenues of $25,218 and $13,703 demonstrate a significant detrimental impact on the finances of the company, as required by the Commission?

A. No. Black Hills has authorized non-gas revenue requirements of $28,037,306 and $3,941,597 for the residential and small commercial customers, respectively. Based upon the estimate of lost revenues, Black Hills will experience a 0.12% revenue shortfall from the implementation of its residential and non-residential

[37] November 14, 2008, *Final Order*, KCC Docket No. 08-GIMX-441-GIV, at ¶ 36.
[38] Black Hills' Application: Five-year Energy-Efficiency Plan, p. 55, Table 52.

energy-efficiency programs. A loss of 0.12% should not be considered as significant by the Commission.

C – 1 (c). ANNUAL RATE CAPS

Q. Discuss the Commission's requirement that decoupling applications must include annual caps in order to prevent rate volatility.

A. In the 441 Docket, the Commission stated that "(o)ne of the dangers of decoupling is that rates for utility customers can be more volatile between rate cases since it is the utility that has the 'price guarantee' and not the customer." The Commission concluded that annual caps would mitigate this problem, and determined that "(t)he Commission will require any decoupling proposal to include such a safety mechanism."[39]

Q. Why are annual rate caps necessary in order to prevent rate volatility?

A. Annual rate caps protect consumers from sizeable bill increases from one year to the next. A decoupling mechanism without a cap as proposed by Black Hills, leaves the customer vulnerable to large swings in bill amounts, due to fluctuating customer usage. Annual caps protect the customers by limiting the increase in rates a customer may face in a given year, which will, in turn, limit the amount the company can recover through its RNM mechanism.

[39] November 14, 2008, *Final Order*, KCC Docket No. 08-GIMX-441-GIV, at ¶ 65.

Q. Does the company's decoupling mechanism include annual caps in order to address rate volatility for consumers?

A. No it does not.

C – 1 (d). REDUCTION IN RISK

Q. Does the Commission believe that decoupling lowers the level of revenue risk for a utility?

A. Yes. The Commission stated in its final order in the 441 Docket that "decoupling lowers risk for a utility, because utility revenues are stabilized and protected from sales fluctuations." As a result, "(t)he utility's likelihood of receiving its rate case established revenue requirement is significantly increased. The Commission will accordingly factor this lowered risk in setting rates of return in rate cases." [40]

Q. Is the Commission correct to consider the reduced revenue risk that decoupling provides the company?

A. Yes. The Commission is correct to recognize the reduction of risk for Black Hills shareholders. If the Commission were to grant Black Hills full decoupling, Black Hills shareholders will be insulated from all sales declines regardless of cause, including declines due to business cycles, economic downturns, price-responsive behavior of consumers, competing utility energy-efficiency programs, and more-efficient appliances. Consequently, if Black Hills is to be insulated from such risks, then its authorized ROE should be reduced.

[40] November 14, 2008, *Final Order*, KCC Docket No. 08-GIMX-441-GIV, at ¶ 64.

The Commission's decision to factor in the utility's reduction of risk when a decoupling mechanism is approved is supported by statements from Moody's Investors Service. In a June 2005 Special Comment on the Impact of Conservation on Gas Margins and Financial Stability in the Gas LDC Sector, Moody's determined that "having utility rate designs that compensate the gas LDCs for margin losses caused by variations in gas consumption due to conservation as with variations due to weather, would serve to stabilize the utility's credit metrics and credit ratings. Utilities having these ratemaking mechanisms also tend to carry "A" credit ratings."[41]

This reduction of risk is also voiced in a June 30, 2008, Report to the Minnesota Public Utilities Commission by The Regulatory Assistance Project ("RAP") where it is stated that "(d)ecoupling can significantly reduce earnings volatility due to weather and other factors and can eliminate earnings attrition when sales decline, regardless of the cause (*e.g.*, appliance standards, energy codes, customer or utility-financed conservation, self-curtailment due to price elasticity, etc.). This in turn, lowers the financial risk for the utility, which in turn is reflected in the company's cost of capital."[42]

Q. Does Black Hills propose lowering its ROE, as a reflection of its reduced risk?

A. No.

[41] Moody's Investors Service: Special Comment on the Impact of Conservation on Gas Margins and Financial Stability in the Gas LDC Sector, June 2005.
[42] Shirley, Wayne, et al, Regulatory Assistance Project, *Revenue Decoupling Standards and Criteria,* June 30, 2008, page 8. *(Decoupling Standards).*

Q. If the Commission lowered Black Hills' ROE to reflect the lowered revenue risk, who would benefit from this reduction?

A. All ratepayers would benefit from a reduction of Black Hills' ROE. As I previously discussed, not all ratepayers experience a direct benefit from the portfolio of energy-efficiency programs proposed by Black Hills. Only a small number of customers who are able to participate in the programs receive a direct financial benefit. However, a reduction in ROE would allow **all** of Black Hills' customers, whether or not they participate in the company's energy-efficiency programs, to experience a direct benefit through lower rates.

Q. Please explain the company's position on the reduction of risk?

A. Black Hills' application and testimonies supporting its application offered no position on a reduction. Rather, in its response to CURB Data Request 10, Black Hills stated that:

> "any reduction in risk resulting from decoupling has been considered and included in the DCF analysis conducted by the witnesses in Black Hills' last rate case, reflected in their recommendations relating to the return on equity that should be allowed for Black Hills, and ultimately considered by the parties and the Commission in the approval of the settlement in Black Hills' last rate case."[43]

Q. Should the Commission accept Black Hills' position that the reduced risk associated with decoupling was already accounted for in its last base rate case?

A. No. The Commission has never ruled on a rate application for Black Hills. In addition, the Staff and CURB have never conducted a complete DCF analysis for

[43] Black Hills response to CURB Data Request 10.

Black Hills, as it has never filed a general rate case in Kansas. The 431 Docket was the last rate case filed by Aquila, Inc., prior to being acquired by Black Hills. Further, the Commission clearly expressed in the 441 Docket that it believes that decoupling lowers the financial risk for a utility and that it would accordingly factor this lowered risk in setting rates of return in rate cases. If anything, the Commission should consider Black Hills' response as evidence to support considering issues related to decoupling and risk only in a full rate case rather than in a tariff filing like this, so that all parties can adequately evaluate the company's true level of risk.

C – 1 (e). GENERAL ECONOMIC CONCERNS

Q. Did the Commission express any general economic concerns in the 441 Docket?

A. Yes. When the Commission issued its order in the 441 Docket, the nation was just entering what appeared to be a recession. In its final order, the Commission expressed concern whether "raising short term costs" was appropriate "at this time."[44] The Commission also expressed concern that "this potential economic downturn may have a negative effect on energy usage independent of any energy efficiency program." As the Commission noted, "declines in energy usage per customer will result in increases in customer rates" under decoupling. The Commission's concern in 2008 that "(t)his is a time when a Kansas experiment with a throughput incentive approach must be carefully considered" is an even

[44] November 14, 2008, *Final Order*, KCC Docket No. 08-GIMX-441-GIV, at ¶ 9.

more valid concern today.[45] Experiments with decoupling mechanisms should not be conducted on customers who are already struggling to meet their utility needs, especially when decoupling has the potential of increasing customer rates and making them more volatile. Simply stated, economic conditions in Kansas are not amenable at this time to exposing utility customers to the significant risk of increased rates and rate volatility without offsetting that significant risk with a requisite reduction on the overall return.

In addition, a fully-decoupled form of cost recovery shifts all revenue risks to the ratepayers, by providing the company with a revenue guarantee. Guaranteed revenues will certainly dampen the consumers' incentive to conserve if, regardless of how much they reduce consumption, they will continue to owe the utility the same amount of revenue. Where consumers benefit from decoupling is when the Commission balances the ratepayers' assumption of virtually all of the utilities' revenue risks by substantially reducing the return on equity to the utilities.

C – 1 (f). DECOUPLING IN OTHER STATES

Q. In what states does Black Hills provide natural gas service?

A. Black Hills provides natural gas service in Nebraska, Iowa, Colorado and Kansas.

[45] *Id.,* at ¶ 61.

Q. Does Black Hills have a decoupling mechanism in Iowa, Nebraska or Colorado?

A. No, it does not.

Q. Has Black Hills been offering energy-efficiency programs in Iowa, Nebraska and Colorado without a decoupling mechanism?

A. Black Hills does not offer energy-efficiency programs in Nebraska at this time. Black Hills has been offering a similar suite of energy-efficiency programs in Iowa for over five years and in Colorado for one year, without a decoupling mechanism in either state.

Q. Did Black Hills request approval of a decoupling mechanism from the Iowa Board of Public Utilities?

A. Yes, however the proceeding was resolved by settlement, and decoupling was not included in the terms of the agreement approved by the Iowa Board of Public Utilities.

C-2: DECOUPLING CALCULATIONS

Q. Does Black Hills' revenue-per-customer decoupling mechanism allow it to increase revenues above those approved in the 431 Docket?

A. Yes. In its first year, Black Hills' proposed revenue-per-customer decoupling mechanism would allow the company to collect $1,228,179 **more** than the base

revenue requirement established in the 431 Docket. By 2015, Black Hills would be allowed to collect $2,056,257 more than the approved revenue requirement in the 431 Docket. In Exhibit SMH-3, I show how Black Hills' proposed RNM would increase its approved revenue target **above** the revenue requirement that was approved in Aquila's last rate case, due to an increase in customers. The revenue-per-customer decoupling mechanism requested by Black Hills is simply a way for the company to increase its approved revenue requirement, without allowing the Commission the opportunity to determine an appropriate revenue requirement.

Q. What does Black Hills estimate the average base rate impact from its RNM would be for year one of its five-year energy-efficiency plan?

A. Black Hills estimates that the average base rate impact from its RNM in year one would be $0.000368 per therm for residential customers and $0.000468 for non-residential customers, or $25,218 and $13,703, respectively.[46]

Q. How does Black Hills calculate the Year One RNM charge?

A. Black Hills calculates its RNM as simply the estimated reduction in therms sold by class, multiplied by the approved commodity rates of $0.14524 and $0.12406 per therm for residential and non-residential customers, respectively. This total revenue loss is then divided by the estimated therm sales, after energy-efficiency programs are in place.

[46] Black Hills' Application Five-Year Energy-Efficiency Plan, page 55, table 52.

Q. Are Black Hills calculations consistent with its requested revenue-per-customer decoupling mechanism?

A. No. The estimate of the RNM charge provided by Black Hills is calculated like a lost revenue adjustment mechanism. However, Black Hills is requesting approval of a revenue-per-customer decoupling mechanism, not a lost revenue adjustment mechanism.

Q. What is the actual per customer calculation that Black Hills is proposing to use for its RNM charge?

A. According to the proposed EECR Rider, the following formula will be used to calculate the RNM:

$$RNM = A - (B \times C)$$

Where:

- **A** is the actual class revenue received in the current year
- **B** is the customer class non-commodity revenue per customer at the time of Black Hills' last rate case
- **C** is the actual number of customers for the customer class in the current year

In its five-year-energy-efficiency plan, Black Hills provides a step-by-step explanation of the steps taken to calculate its RNM. The steps are (particular attention should be given to steps two and three):

1. Data will be extracted from Black Hills Energy's customer billing system. These include the number of customers, total therms, therms per customer,

non-gas commodity revenues, and non-gas commodity revenue per customer.

2. The approved test-year, non-gas revenue per customer will be applied to the number of actual customers to yield the approved revenue over the historical period.

3. The difference between approved revenue and actual revenue will be amount collected or refunded through the RNM.

4. The amount to be collected or refunded through the RNM will be converted to a per therm charge based on the forecast of base revenues for the next period.

5. A difference between the calculated RNM adjustment and RNM actually collected will likely occur due to differences between forecasted therm sales used to develop the $/therm adjustment and actual therm sales. This difference will be booked to a balancing account. A true-up will occur semi-annually, at the same time as the EECR balancing account true-up, to convert the balance remaining in the RNM balancing account to a $/therm credit or surcharge, which will be collected as part of the RNM for the next period.[47]

Q. What would the financial impacts have been on residential customers if Black Hills had a revenue-per-customer decoupling mechanism during 2008 and 2009,?

A. A revenue-per-customer decoupling mechanism would have allowed Black Hills to collect an additional $1,121,179 from ratepayers in 2008 and 2009 combined. Attached to my testimony is Exhibit SMH–4, which details the impacts of Black Hills proposed revenue-per-customer decoupling mechanism on an historical basis. I followed each of the steps provided in Black Hills' explanation of how the RNM will be calculated. I performed the calculations based upon test year data from Aquila's last base rate case (where Black Hills' current rates were

[47] Black Hills' Application: Five-Year Energy-Efficiency Plan at page 55

approved), as well as data provided in response to CURB Data Requests 2 and 5. If Black Hills had its proposed revenue-per-customer decoupling mechanism in place during 2008 and 2009, it would have been allowed to collect an additional $392,692 for 2008 and an additional $728,487 for 2009 from residential ratepayers.

Q. Can you provide an estimate of what the RNM charge will be during Black Hills Five-Year Energy-Efficiency Plan is in place?

A. Yes. Attached to my testimony is Exhibit SMH–5, which shows that the revenue-per-customer decoupling mechanism will result in an annual bill increase of $10.10 for an average residential customer in 2015 – **nearly four times higher than Black Hills' estimate of $2.27**. Again, I followed each of the steps provided in Black Hills' explanation of how the RNM will be calculated. I performed the calculations based upon test-year data from Aquila's last base rate case (431 Docket), as well as data provided in response to CURB Data Requests 5 and 13.

First, I estimated how many residential customers Black Hills would have during 2011-2015. I relied upon the data supplied in Black Hills' response to CURB Data Request 5, which shows that the number of residential customers in Black Hills system has increased from 89,763 in 2000 to 97,446 in 2009. This represents a total increase of 8.56% over the ten year period, or an average increase of 0.86% per year. However, for purposes of estimating the number of residential customers in Black Hills' territory for 2011-2015, I assumed an

average increase in population 0.7% for each year, as this may be more indicative of actual residential growth during a recessionary time. After estimating the total number of Black Hills' residential customers, I multiplied it by the test-year approved revenue-per-customer amount of $298.24, which becomes the new approved revenue target.

Next, I calculated an estimate of actual revenues received by Black Hills from its residential customers. I was able to develop an estimate of actual revenues received by Black Hills using data it supplied in its response to CURB Data Request 13, which estimated net consumption after its energy-efficiency programs are in place. By multiplying the estimated consumption in therms by Black Hills' current approved commodity charge and adding a $16.00 per customer monthly fixed charge, I calculated an estimate for actual revenue received by Black Hills from 2011-2015.

To determine the amount of over-or-under recovery, I subtracted my calculation of actual revenues received from the approved test-year revenue-per-customer amount – this is the target revenue discussed previously. For each year from 2011-2015, there is an under-recovery, ranging from $462,717 in 2011 to $945,419 in 2015. I then divided the under recoveries by a forecasted number of therms to determine the impact on a per-therm basis.

My calculations show that in 2011, the RNM charge to collect the under-recovery from 2010 will be $0.00677 per therm, which would result in an annual bill increase of $4.94 for a customer who uses 729.61 therms per year. Based upon my calculations, the RNM charge to collect under-recoveries will balloon to

$0.014111 in 2015, which would result in an annual bill increase of $10.10 for a customer that uses 715.87 therms per year.

Q. How do your calculations compare to the estimates provided by Black Hills in its application?

A. My calculations indicate that the financial impact of Black Hill's proposed revenue-per-customer decoupling mechanism is much larger than what is estimated in the application. In its response to CURB Data Request 13, Black Hills estimates that the RNM rate adjustment per therm in 2011 will be $0.000367661, increasing to $0.00316417. My calculations for the RNM rate impact for during Black Hills' five-year-energy-efficiency plan are, on average, 767.84% higher than the estimates provided by the company.

Q. Why is there such a large discrepancy between your RNM calculations and the company's calculations?

A. Because when calculating the financial impact of its decoupling mechanism, Black Hills does not account for the change in customer account. Black Hills simply accounted for the change in therms sold and then provided an estimate of the lost margins associated with those decreased sales. These calculations are in direct conflict with its application and EECR tariff, which details how the revenue-per-customer RNM will be determined.

C-3: DECOUPLING IN A TARIFF DOCKET

Q. Is this tariff filing the appropriate place for the Commission to approve a decoupling mechanism?

A. No. As I previously stated, it is my opinion that Black Hills has requested a decoupling mechanism because of revenue stability concerns. The appropriate forum for determining whether revenue volatility is having a significant negative impact on the company's finances is a base rate case. Only in a rate case can we assess how various influences have impacted sales so that we have a true picture of a utility's financial condition.

Q. Can the Commission adequately evaluate a company's financial position in this kind of tariff filing?

A. No. Before approving the implementation of a revenue recovery mechanism that provides recovery for deviations from the norm, the Commission must establish a base line for the norm. Such a base line norm cannot be established on the limited evidence presented in this filing, but can only be established in a base rate case. Further, the Black Hills has never filed a general rate case in Kansas. It is presently charging rates established in Aquila's last rate case and earning Aquila's approved ROE, which was determined using test year data from July 1, 2005 to June 30, 2006. The figures used to determine the authorized revenue requirement, as well as the company's ROE, are now over four years old.

Q. Has the Commission Staff previously provided testimony regarding the approval of decoupling in a tariff docket?

A. Yes. In KCC Docket 10-KGSG-421-TAR, Staff's Chief of Economics and Rates, Dr. Robert Glass, provided testimony before the Commission regarding Kansas Gas Service's request for approval of a full decoupling mechanism. Dr. Glass recommended that "the details of a decoupling mechanism should only be approved and implemented in rate cases for the following three reasons:

1. The 2006 rate case (Docket No. 06-KGSG-1209-RTS) used 2005 as the test year to develop the revenue requirement, including the ROE. This data is too old to be used for setting a reasonable decoupling mechanism.

2. From 2005 to 2009 Residential Sales have declined 2.6% and General Sales have declined 9.7%. The sharp differences in the rate of decline for each customer group suggest potentially a new allocation of cost of service is needed.

3. Although KGS argues that the addition of decoupling should not change its ROE, the Commission in the Final Order for Docket No. 08-GIMX-441-GIV ("Order 441") says that decoupling reduces revenue risk for the utility, and thus, decoupling should be accompanied with a reduced ROE."[48]

Q. Have other states recognized the need for a full rate-case review in order to approve a decoupling mechanism?

A. Yes. In 2007, the Nebraska Commission recognized the possibilities of increased rates and risk-shifting from decoupling, and stated that without a full review of the company's financial operations:

> "Automatic rate mechanisms raise concerns of piecemeal rate making by adjusting for only one element of cost without accounting for other increases and decreases in costs incurred by the utility. Such automatic mechanisms can lead to excessive rates, an inappropriate shifting of risks

[48] April 23, 2010, Direct Testimony of Robert H. Glass, KCC Docket No. 10-KGSG-421-TAR, at p. 11.

from stockholders to ratepayers, and decreased incentives to operate efficiently. Therefore their use should be limited."[49]

The Indiana Public Service Commission also recognized that timing the implementation of new rate design mechanisms is best served in a full rate case:

> "The Commission recently recognized in its October 21, 2009 Order in Cause No. 43180, *In re Commission's Investigation into Rate Design Alternatives and Energy Efficiency Measures for Natural Gas Utilities,* that addressing rate design is most reasonable in a base rate case. (p.10.) 'In the context of a rate case, parties, and ultimately this Commission, can address and thoroughly review issues regarding revenues, expenses, and cost of service. Further, we agree with the OUCC's comments that decoupling mechanisms clearly shift risk from the utility to ratepayers, and that reduction of risk should be considered in determining the appropriate return on equity ....' "[50].

Q. What is your recommendation in regards to the company's RNM mechanism?

A. The Commission should deny the company's revenue normalization mechanism because it is based on revenue per customer, revenue losses cannot meet the significance test, it does not include annual rate caps, it does not reflect a reduction in risk by lowering the company's return on equity, the company did not accurately quantify the impacts of the decoupling mechanism, and because a tariff docket is not the appropriate place to evaluate decoupling.

[49] *In the matter of Aquila, Inc. d/b/a Aquila Networks (Aquila) Omaha, seeking individual rate increases for Aquila's Rate Area One, Rate Area Two, and Rate Area Three.* Before the Nebraska Public Service Commission. Application No. NG-0041,. July 24, 2007.

[50] State of Indiana, Indiana Utility Regulatory Commission, Cause No. 43427. Order By the Commission, December 16, 2009.

Q. Do you have a recommendation, in the event that the Commission approves the company's proposed RNM mechanism?

A. Yes. While I contend that this filing is not the appropriate forum to implement new rate design concepts, if the Commission were to grant Black Hills' petition and approve a full decoupling mechanism, the Commission should require the following:

- use a full decoupling mechanism based on total-allowable-revenues rather than on revenues-per-customer, and the decoupling mechanism should not be considered until Black Hills's next full rate case, so that the Commission has a chance to examine the company's complete finances;
- only after the company's successful implementation of a suite of energy-efficiency programs and a full EM&V review of the program should the Commission consider a full decoupling mechanism; and
- the Commission should recognize a reduction in risk for the company by reducing the approved ROE, thereby providing a benefit to all customers – not just those that participate in energy-efficiency programs..

D. PERFORMANCE INCENTIVE MECHANISM

Q. Please describe Black Hills' proposal for a performance-incentive mechanism.

A. Black Hills is requesting approval of a shared-savings performance-incentive mechanism. Black Hills is proposing to award shareholders with 10% of the net

TRC benefits of the company's residential portfolio of programs. The performance-incentive mechanism would be capped at 20% of the total residential portfolio program expenditures.

Q. Why is Black Hills requesting a performance-incentive mechanism?

A. In his direct testimony, Black Hills' witness Dr. John Chamberlin contends that "(d)ecoupling mechanisms such as the RNM that BHE is proposing remove a significant barrier to DSM program implementation but DSM resources are still not on a level field with other utility investments that generate earnings for the utility shareholders. A shared savings performance incentive mechanism helps create a balance by allowing shareholders to benefit from the investment in DSM programs."[51]

Q. Are Black Hills' shareholders investing in DSM programs in Kansas?

A. No. Black Hill's Five-Year-Energy-Efficiency plan is 100% funded by ratepayers. Black Hills' shareholders are not contributing a single dollar toward the implementation of energy-efficiency programs in Kansas.

Q. Does Black Hills quantify the amount to be received through the shared savings performance incentive mechanism?

A. Yes. In his direct testimony, Dr. John Chamberlin indicates that from 2011-2015, the TRC net benefit for Black Hills' residential and low-income programs will be $419,000. Dr. Chamberlin suggests that $42,000 is the amount that should be

[51] Black Hills' Application, Direct Testimony of Dr John Chamberlin, at p. 26.

awarded to Black Hills' shared holders.[52] However, in the company's response to CURB Data Request 13, Black Hills indicates that the benefit/cost analyses show that from 2011-2015 there is a net TRC benefit of $760,100.75 which would result in a shareholder incentive of $76,010.07. Black Hills' has suggested collecting this bonus during a five-year span from 2012-2016, resulting in annual collections of more than $15,000.[53]

Q. Should the Commission approve Black Hills' performance incentive mechanism?

A. No. Black Hills' shared savings plan will cause an increase in rates without evidence of reliable energy savings. Further, according to its proposal, Black Hills will not be required to meet a target savings goal and can begin receiving an incentive based upon estimates, before any actual savings have been achieved or verified through an EM&V.

Q. If the Commission allows a shared savings performance incentive mechanism, is the 10% of the net TRC benefits, as calculated by Black Hills, a reasonable amount?

A. No. Black Hills' calculation of the net TRC benefits of its residential, low-income, and public purpose programs include secondary fuel benefits – avoided electricity. In his direct testimony, Dr. Chamberlin states that the "deemed savings per unit would be applied to a verified number of units installed," to

[52] *Id.*, p. 33.
[53] Black Hills' response to CURB Data Request 13.

determine the TRC savings.[54] Previously in my testimony, I discussed why it is inappropriate to include avoided electric benefits in the TRC benefit-cost test. Black Hills' request to receive 10% of the net TRC benefit means that Black Hills shareholders would receive a bonus incentive for customers who reduce their electricity consumption. According to the company's response to CURB Data Request 8, the company is factoring into its TRC test a NPV benefit of $1,273,821 and $68,031 from its residential and special purpose programs, respectively.[55] Including these estimated avoided electrical benefits helps to bolster the overall net TRC, which would also increase the amount of performance incentives paid to Black Hills' shareholders, while further raising rates for residential ratepayers.

Q. Does Black Hills' request for a performance incentive mechanism meet the guidelines established by the Commission in the 441 Docket?

A. No it does not. There are three specific guidelines ordered by the Commission in the 441 Docket that Black Hills' proposal fails to meet. Black Hills:

- fails to show that a financial incentive is necessary to achieve energy-efficiency goals,
- fails to achieve a significant TRC test score for its residential, low-income and public purpose programs, and
- fails to include the use of a third-party evaluator in its evaluation, measurement and verification ("EM&V") plan.

[54] Black Hills' Application, Direct Testimony of Dr John Chamberlin, at p. 36.
[55] Black Hills' response to CURB Data Request 8.

Q. Please discuss these requirements in more detail.

A. First, to receive an incentive "utilities should show an additional incentive is necessary and desirable to achieve energy efficiency goals."[56] While Black Hills indicated that it desires a shared savings performance mechanism, it failed to identify why such a mechanism is necessary. Dr. John Chamberlin simply indicates that in the context of energy-efficiency programs, a performance incentive mechanism, such as the one proposed by Black Hills, would provide an "incentive for the Company to aggressively pursue these savings."[57]

Second, when discussing a shared-savings performance incentive mechanism, the Commission indicated that "this approach can only provide a viable incentive if the net benefit of an energy efficiency program is significant. If the Total Resource Cost Test is just slightly above one, then the shared benefit approach may not provide a significant incentive to the utilities because the net benefit may be small."[58] The benefit-cost analyses provided by Black Hills show that the net TRC test score is only 1.17 for its residential portfolio and 0.57 for its public purpose programs. Combining the residential and public purpose programs will result in NPV benefits of $10,341,117 and NPV costs of $9,581,016. This results in a net TRC for the residential and public purpose portfolios of only 1.08.[59] With a net TRC score just slightly above one, it must be determined that granting the Black Hills shared savings incentive mechanism would not be

[56] November 14, 2008, *Final Order*, KCC Docket No. 08-GIMX-441-GIV, at ¶ 87.
[57] Black Hills' Application, Direct Testimony of Dr John Chamberlin, at p. 32.
[58] November 14, 2008, *Final Order*, KCC Docket No. 08-GIMX-441-GIV, at ¶ 101.
[59] Black Hills' response to CURB Data Request 8.

significant, and would therefore not provide a viable incentive for the company to pursue energy-efficiency savings.

Finally, in its order following the collaborative in the 442 Docket, the Commission stated that "use of the approved third party evaluator would only be required if the utility intended to request incentive payments."[60] In its EM&V plan, Black Hills indicates that an "(i)mpact evaluation will be conducted for all programs to ensure the portfolio does not fall short of its goals ... Black Hills Energy will use its Energy Efficiency Information System (EEIS) to track all program participation, expenditures, and savings."[61] The Commission specifically indicated that in order to receive performance incentives, the use of a Commission approved third-party evaluator must be used. Because Black Hills' EM&V plan indicates that it will perform its own EM&V, performance incentives should not be awarded.

Q. Can Black Hills request a performance incentive for energy-efficiency programs in other states?

A. Yes. Black Hills does have the opportunity to earn a performance incentive in Colorado, but does not have a decoupling mechanism in Colorado. However, Black Hills has offered energy-efficiency programs in Iowa for over five years, yet does not have any performance incentive mechanisms in place in Iowa.

[60] April 13, 2009, KCC Docket 08-GIMX-442-GIV, *Order Following Collaborative on Benefit-Cost Testing and Evaluation, Measurement, and Verification,* at ¶ 138

[61] Black Hills' Application, Five-year Energy-Efficiency Plan, page 15.

Q. Please elaborate on the performance incentive mechanism in Colorado.

A. Colorado currently has legislative rules in place that require utility companies to:

- file a DSM plan and application for cost recovery. Within the application, the utility must propose an expenditure target, savings target, funding mechanism, and cost-recovery mechanism.
- file an annual DSM report and an application for bonus.
- file a measurement and verification report that evaluates the actual implementation and performance associated with its DSM program.[62]

The bonus (performance incentive) is based upon the utility's ability to meet a certain target of energy savings and will be determined by Colorado statute as the product of two factors:

- The Energy Factor is determined by the percentage of the energy target achieved by the utility. The energy factor is zero plus 50 percent for each one percent above 80 percent of the energy target achieved by the utility.
- The Savings Factor is the actual savings achieved divided by the approved savings target. Each of these quantities is expressed in decatherms saved per dollar expended.

Q. Can you provide an example of how Colorado's incentive mechanism is calculated?

A. Yes. The following is provided as an example of the bonus calculation, using illustrative numbers: utility achieves 106 percent of its energy target; the utility's

[62] 4 CCR 723-4, *Rules Regulating Gas Utilities and Pipeline Operators* at 4750, provided in response to CURB Data Request 24.

savings target is 15,000 DTh per $1 million expended, and the utility's actual savings is 18,000 DTh per $1 million.

- The energy factor would be: 50% x (106 – 80), or 13 percent
- The savings factor would be: 18,000/15,000 or 1.2
- The bonus percentage would be: 13% x 1.2, or 15.6 percent. Thus, 15.6 percent of net economic benefits would be the bonus amount.

Q. What was the amount of bonus that Black Hills received from Colorado ratepayers in 2009?

A. Because Black Hills was only able to achieve 24% of its projected energy savings in 2009, it was not eligible to receive a performance incentive from ratepayers in Colorado.[63]

Q. How is Colorado's performance incentive mechanism different from Black Hills' proposal for a shared savings incentive in Kansas?

A. Colorado requires that the utility meet or exceed a target goal and requires that a performance incentive will only be granted after the actual savings have been verified. Black Hills' proposal for a shared savings incentive mechanism in Kansas does not require performance for it to receive its performance incentive. Under its proposal, Black Hills will not be required to meet a target savings goal and can begin receiving an incentive based upon forward looking estimates, before any actual savings have been achieved or verified through an EM&V.

[63] Colorado Report as provided in Black Hills' response to CURB Data Request 17 @ page ES-2

Q. Should the Commission approve Black Hills' request for a shared savings incentive mechanism?

A. No. While the Commission did express its inclination to prefer sharing benefits as a means of promoting energy-efficiency as a matter of policy, the Commission also stated that it "is aware that as a practical matter the time may not yet be right for this method."[64] In addition, the Commission clearly identified its hesitance to award utilities with performance incentives in its final order in the 441 Docket, stating that it is "reluctant to provide additional incentives, resulting in increased costs to customers, for energy efficiency programs."[65] It was further stated that the Commission's responsibility "is not to optimize utility profits, but seek an appropriate balance between utility customer and shareholder interests in the context of moving toward the Commission's objective of meeting public power needs through balanced resource means while mitigating rate increases."[66]

Q. Does this conclude your testimony?

A. Yes.

[64] November 14, 2008, *Final Order*, KCC Docket No. 08-GIMX-441-GIV, at ¶ 101.
[65] *Id.,,* at ¶ 94.
[66] *Id.,* at ¶ 91.

VERIFICATION

STATE OF KANSAS)

COUNTY OF SHAWNEE) ss:

I, Stacey Harden, of lawful age, being first duly sworn upon her oath states:

That she is a regulatory analyst for the Citizens' Utility Ratepayer Board, that she has read the above and foregoing document, and, upon information and belief, states that the matters therein appearing are true and correct.

Stacey Harden

SUBSCRIBED AND SWORN to before me this 23rd day of July 2010.

DELLA J. SMITH
Notary Public - State of Kansas
My Appt. Expires January 26, 2013

Notary Public

My Commission expires: 01-26-2013.

PRESENTATION

OF

EXHIBITS

	Year 1	Year 2	Year 3	Year 4	Year 5
Direct Utility Costs	$120,748	$275,890	$377,750	$373,750	$369,750
Incentives	$0	$58,750	$58,750	$58,750	$58,750
Program Administration	$5,000	$9,000	$14,000	$14,000	$15,000
Program Evaluation	$6,000	$10,000	$15,000	$15,000	$15,000
Audit Site Visit and Delivery	$95,748	$184,140	$276,000	$276,000	$276,000
Dealer Incentives	$0	$0	$0	$0	$0
Marketing and Training	$14,000	$14,000	$14,000	$10,000	$5,000
Software	$0	$0	$0	$0	$0
No. of Participants in Free Residential Audit Program	**479**	**821**	**1280**	**1280**	**1280**
No. of Participants in HPwES Program	**0**	**50**	**50**	**50**	**50**
Residential Audit Program Costs per participant	**$252.08**	**$252.08**	**$252.08**	**$252.08**	**$252.08**
HPwES Audit Program Costs per participant	**$0.00**	**$1,378.65**	**$1,101.75**	**$1,021.75**	**$941.75**
Free Residential Audit Program total budgeted costs, based on participation	**$120,748.00**	**$206,957.68**	**$322,662.40**	**$322,662.40**	**$322,662.40**
HPwES Audit Program total budgeted costs, based on participation	**$0.00**	**$68,932.32**	**$55,087.60**	**$51,087.60**	**$47,087.60**

SMH-1

SmH-2

Counties served by the former Aquila Networks - KGO, now Black Hills Energy	Population, percent change, April 1, 2000 to July 1, 2009*
Barber	-13.50%
Barton	-2.60%
Cheyenne	-14.70%
Clark	-12.90%
Clay	-1.30%
Douglas	16.40%
Edwards	-11.00%
Ellsworth	-5.30%
Finney	3.80%
Ford	3.80%
Grant	-7.00%
Gray	1.70%
Harper	-13.30%
Harvey	4.20%
Haskell	-7.00%
Hodgeman	-8.50%
Kearney	-8.00%
Kingman	-12.70%
Kiowa	-29.20%
Lincoln	-12.70%
McPherson	-2.30%
Meade	-4.80%
Morton	-13.30%
Ottawa	-3.10%
Pawnee	-14.20%
Reno	-2.20%
Rice	-6.30%
Rush	-11.50%
Sedgwick	8.40%
Seward	2.20%
Sherman	-13.30%
Stafford	-9.30%
Stevens	-6.10%
Wallace	-19.50%
Washington	-12.30%

* US Census Bureau State and County Quick Facts
http://quickfacts.census.gov/qfd/states/20000.html

Difference in new target revenue requirement as determined by Black Hills' RNM and last approved revenue requirement EXHIBIT SMH-3

Residential	Test Year Data	2011	2012	2013	2014	2015
# of customers	94,010	98,128	98,815	99,507	100,203	100,905
Estimated Therms sold (per BHE's response to CURB-13)	68,764,710	68,591,079	68,334,442	67,991,130	67,644,845	67,298,558
Average usage per customer (in therms)	731.46	699.00	691.54	683.28	675.08	666.95
Calculation of non-gas revenue received from average customer						
Customer Charge ($16.00 per month)	192	192	192	192	192	192
Commodity Charge ($0.14524/therm)	106.24	101.52	100.44	99.24	98.05	96.87
Average Annual Customer Bill	298.24	293.52	292.44	291.24	290.05	288.87
New target revenue requirement based on approved test-year non-gas revenue per customer, applied to the actual number of customers		29,265,485	29,470,343	29,676,636	29,884,372	30,093,563
Non-gas residential revenue requirement approved in 431 rate case		28,037,306	28,037,306	28,037,306	28,037,306	28,037,306
Difference between new target revenue requirement and approved revenue requirement in 431 rate case		**$1,228,179**	**$1,433,037**	**$1,639,330**	**$1,847,066**	**$2,056,257**

SMH-3

Residential	Test Year Data	2008	2009
# of customers	94,010	96,593	97,446
Therms sold	68,764,710	70,432,547	68,490,406
Average usage per customer (in therms)	731.46	729.17	702.85
Calculation of non-gas revenue received from average residential customer			
Customer Charge ($16.00 per month)	192	192	192
Commodity Charge ($0.14524/therm)	106.24	105.90	102.08
Average Annual Customer Bill	298.24	297.90	294.08
Approved revenue over historical period (approved test-year non-gas revenue per customer, applied to the actual number of customers)	28,037,306	28,807,654	29,062,050
Actual Revenues Collected per CURB 5		28,414,962	28,333,563
Actual Amount of over/under recovery realized through a revenue-per-customer decoupling mechanism as proposed by Black Hills		(392,692)	(728,487)
Per Therm impact of under recovery (based on average sales of 68,111,740 therms)		0.005765407	0.010695476
Annual Bill Impact for a residential customer using 730 therms/year		4.21	7.81

SMH-4

Residential	**Test Year Data**	**2011**	**2012**	**2013**	**2014**	**2015**
# of customers (estimated based on growth trend)	94,010	98,128	98,815	99,507	100,203	100,905
Estimated Therms sold (per BHE's response to CURB-13)	68,764,710	68,591,079	68,334,442	67,991,130	67,644,845	67,298,558
Average usage per customer (in therms)	731.46	699.00	691.54	683.28	675.08	666.95
Calculation of non-gas revenue received from average customer						
Customer Charge ($16.00 per month)	192	192	192	192	192	192
Commodity Charge ($0.14524/therm)	106.24	101.52	100.44	99.24	98.05	96.87
Average Annual Customer Bill	298.24	293.52	292.44	291.24	290.05	288.87
Approved revenue over historical period (approved test-year non-gas revenue per customer, applied to the actual number of customers)	28,037,306	29,265,485	29,470,343	29,676,636	29,884,372	30,093,563
Estimated actual revenues received based on the estimated number of therms sold after EE programs and the total number of residential customers	x	28,802,768	28,897,378	28,980,323	29,063,765	29,148,144
Actual Amount of over/under recovery realized through a revenue-per-customer decoupling mechanism as proposed by Black Hills	x	(462,717)	(572,965)	(696,313)	(820,607)	(945,419)
Per Therm impact of under recovery (based on following years estimated therm sales)	x	0.00677136	0.008427059	0.010293658	0.012193527	0.01411073
Annual Bill Impact for a residential customer	x	4.94	6.13	7.44	8.77	10.10
Black Hills estimated RNM rate adjustment		0.000367661	0.00091455	0.001652493	0.00240446	0.00316417

SMH-5

SmH-6

DATA REQUESTS TO BLACK HILLS ENERGY
FROM THE CITIZENS' UTILITY RATEPAYER BOARD
DOCKET NO. 10-BHCG-639-TAR

CURB-1. **Please provide the distribution revenue requirement approved in Black Hills last base rate case in Kansas.**

Response:
See attached file from the Settlement Agreement in Docket No. 07-AQLG-431-RTS. [Attachment: "CURB-1 431-RTS Schedule 1.pdf"]

CURB-2. **Please provide the Company's Kansas revenues for each year since the Company's last base rate case. Please provide separately a) total revenues, b) distribution revenues, c) cost of gas rider (COGR) revenues, d) economic development rider (EDGR) revenues, e) electronic flow measurement (EFMR) revenues, f) weather normalization adjustment (WNA) revenues, g) gas system reliability surcharge (GSRS) revenues, h) gas transportation for schools rider (GTSR) revenues, i) ad valorem tax surcharge rider (ATSR) revenues, and j) any other revenues.**

Response:
See attached file. [Attachment: "CURB-2 & KCC-5.xls"]

CURB-3. **Please provide the Company's actual a) overall rate of return and b) return on equity for each year since the last base rate case. Please provide all supporting assumptions and calculations with your response.**

Response:
Black Hills does not make these calculations, however, using information in the Company's annual report to the commission the overall rate of return (without normalizing) for each year was:

2006: 4.19%
2007: 7.21%
2008: 7.16%
2009: 8.85%

See attached file "CURB-3.xls".

CURB-4. **For each year since the Company's last base rate case, please provide an analysis of how much of the company's actual revenues were received from fixed customer charge vs. volumetric charges on consumers' bills.**

Response:
See file provided in response to CURB-2. The fixed charges are the Customer Charge and GSRS.

CURB-5. **Please provide, by customer class, the actual overall sales (volume) for each year since the Company's last base rate case. Appendix B in the company's filing does not fully display the information.**

Response:
See attached file. Note that the attached shows actual volumes, rather than normal volumes as are exhibited in Appendix B. [Attachment: "CURB-5 & KCC-6.xls"]

CURB-6. **Please provide, by customer class, the actual consumption (average usage by customer) for each year since the Company's last base rate case.**

Response:
See file provided in response to CURB-5.

CURB-7. **Please provide, by customer class, the number of customers for each year since the Company's last base rate case.**

Response:
See file provided in response to CURB-5.

CURB-8. **Please provide all workpapers and supporting calculations that were used to derive the benefit-cost calculations contained in Five-Year Energy-Efficiency Plan.**

Response:
The attached workbooks entitled "BHE KS Mini Model" and "Common Assumptions" are an Excel version of the web-based Portfolio Pro model used to calculate the savings, overall costs, and overall benefit and costs for the programs. Note that because of how the files are linked, both files need to be saved in the same folder and the Common Assumption file needs to be open for the Mini Model values to appear.

The Common Assumption file gives the assumed avoided cost, retail rates, and load shapes used. The Mini Model file includes the calculated benefits and costs for each program and for the portfolios. For each program, there are three sheets: inputs, measure calcs (meascalcs) and results. The measure input assumptions (number of participants, costs, savings) are given on the "inputs" sheet, "meascalcs" is where the calculations are done and the "results" sheet shows the benefit and cost results for the various tests (TRC, RIM, etc). For the purposes of these calculations, 2010 is assumed as Year 1, 2011 as Year 2, and so on. Also included in this workbook is a tab called "revisions". An updated Version of Appendix D is also provided in response to data request No. CURB-9(file CURB-9 - App D revised.xls).

CURB-9. **Please provide an updated copy of Appendix D, including all five years of the estimated portfolio performance. Black Hills's original filing does not display the Year 5 information for all programs.**

Response:
An updated version of Appendix D is attached (file CURB-9 - App D revised.xls).

CURB-10. **Please quantify the impact of the proposed decoupling mechanism on the Company's cost of equity and state how the Company proposes to reflect this impact in base rates prior to its next base rate case.**

Response:
Black Hills' return on equity is determined by this Commission in rate cases by considering, in part, discount cash flow analysis conducted by Company, and by Staff economist and CURB expert. This methodology is the most frequently used method to determine an appropriate return on equity for a regulated utility. This methodology equates a utility's return on equity to the expected dividend yield plus expected future growth rate for comparable natural gas utilities in the case of Black Hills.

In order to determine whether the return on equity determined for Black Hills is representative of returns from comparable natural gas utilities (comparable investments of similar risk), the DCF methodology examines returns for similar natural gas companies through the use of a "comparable" or "proxy" group. To the extent that the comparable or proxy group of natural gas utilities include utilities that have implemented decoupling, any reduction in risk resulting from decoupling has been considered and included in the DCF analysis conducted by the witnesses in Black Hills' last rate case, reflected in their recommendations relating to the return on equity that should be allowed for Black Hills, and ultimately considered by the parties and the Commission in the approval of the settlement in Black Hills' last rate case.

Any reduction in risk due to the implementation of decoupling will be picked up and considered within the DCF analysis in future rate cases as well. To the extent that CURB is suggesting that a separate reduction in the return in equity should be imposed with the implementation of decoupling is inappropriate in that it would amount to double counting the reduction in risk, once in terms of including that reduction in risk in the calculation of the return on equity using the DCF methodology and a second time by the separate adjustment.

See also the Direct Testimony of Donald Murry in Docket No. 07-AQLG-431-RTS.

CURB-11. **Does the Company agree that the proposed decoupling mechanism will result in a reduction to shareholder risk? If the Company does not agree, please state why the Company does not agree.**

Response:
See response to CURB-10.

CURB-12. **Does the Company agree that its proposed decoupling mechanism will allow it to recover revenues that would otherwise decline due to factors that have nothing to do with its energy efficiency measures, such as**

declines due to business cycles, economic downturns, competing utility energy efficiency programs, more efficient appliances, etc?

Response:
Yes. However, this fact was recognized by the Commission in its order issued in the 441 docket when it was considering what type of decoupling (full decoupling vs. limited decoupling or loss revenues due to implementation of energy efficiency programs) and the Commission landed on the side of full decoupling. It did so because of the Commission's concern about the complexity involved with limited decoupling proposals.

CURB-13. **Please quantify the amount of the proposed performance incentive mechanism for each of the five years of Black Hills's energy-efficiency plan.**

Response:
Based on the revised benefit/cost analyses (see CURB-2), the expected total resource cost net benefit for the residential portfolio is $1,379,000. The expected total resource cost net benefit for the low income and public purpose programs is -$619,000 for a combined total resource cost net benefit of $760,000. A 10% shareholder incentive would be $76,000 on a total investment in these programs of $9.6 million.

Based on the after-program impacts across residential and non-residential customers, and a one-year recovery lag, the average per therm impact of the shared savings incentive mechanism is $0.000158 per therm. The total recovery per year over all affected customers is slightly over $15,000 per year in years 2 through 6. Please see the file (EECR Impact on residential and low income customers_02JUNE2010.xls) for more information.

CURB-14. **Please provide the actual weather normalization adjustments for each year since Black Hills's last base rate case. Appendix B in the company's filing does not fully display the information.**

Response:
See response to CURB-2.

CURB-15. **Please provide a copy of Black Hills's filings for approval of energy-efficiency programs, decoupling mechanisms, and performance incentives in Iowa and Nebraska.**

Response:
Attached is the most recent energy efficiency filing in Iowa. Black Hills does not currently have an energy efficiency plan in Nebraska. [Attachment: "CURB-15 IA.pdf"]

CURB-16. **Please provide a copy of Commission orders or any other document by commissions or other agencies reviewing Black Hills performance in Iowa, Colorado, and Nebraska approving or denying Black Hills's**

request for approval of energy-efficiency programs, decoupling mechanisms, and performance incentives.

Response:
See attached documents for Iowa and Colorado. Black Hills does not have an energy efficiency plan in Nebraska. [Attachments: "CURB-16 CO Gas Decision No. C10-0295.pdf"; "CURB-16 IA 08-11-14 Order Approving Plan Implementation.pdf"; "CURB-16 IA 09-3-3 Order Approving EEP Settlement EEP-08-3.pdf"; "CURB-16 CO Electric-Approval of Settlement Agreement]

CURB-17. **Please provide the program budgets, actual energy-efficiency expenditures and program performance results for each of Black Hills's energy-efficiency plans in Iowa, Colorado, and Nebraska, for the past five years.**

Response:
See attached documents for Iowa and Colorado. Black Hills does not have an energy efficiency plan in Nebraska. Black Hills implemented its energy efficiency programs in Colorado in 2009.
[Attachments: CURB-17 CO Gas YR1.pdf;
BHE_CO_2009 StatusReport_Final.pdf;
BHE_IA_2005 StatusReport_Final.pdf;
BHE_IA_2006 StatusReport_Final.pdf;
BHE_IA_2007 StatusReport_Final.pdf;
BHE_IA_2008 StatusReport_Final.pdf;
BHE_IA_2009 StatusReport_Final.pdf]

CURB-18. **Please provide a forecast or projection of future consumption of natural gas for Black Hills's customers in Kansas.**

Response:
The only forecast Black Hills has is in its gas purchase plan. The projected growth for 2010-2011 GPP period is 1.6%, which is used to estimate normal sales and storage requirments for the period. Under normal weather, the estimated gas purchases for the GPP period for sales customers is approximately 11 Bcf.

CURB-19. **Please provide an analysis of the annual caps or other safety mechanism that is proposed in Black Hills's filing.**

Response:
It is Black Hills Energy's understanding that Commission Staff always has the ability to review the prudency and legitimacy of expenditures.

CURB-20. **Please describe the financial effects of the company's proposed Energy-Efficiency Cost Recovery (EECR) mechanism on low-income and fixed-income customers. Please quantify separately the effects of the (1) five-**

year energy-efficiency portfolio of programs, (2) the revenue decoupling mechanism, and (3) the performance incentive mechanism.

Response:
The impacts of the EECR on all residential customers, are provided in the following file:

(EECR Impact on residential and low income customers_02JUNE2010.xls).

The data are not available to break out the effects on low-income or fixed-income customers. The first tab "Rate and bill impact summary" shows that the average residential/low income customer will see a net increase ranging from $8 to $15 annually. Customers participating in the low income programs will see a net decrease ranging from ($96) to ($116) annually. Non-participants will see an increase ranging from $13 to $26 annually. Details showing the breakouts for the five-year energy-efficiency portfolio of programs, the revenue decoupling mechanism, and the performance incentive mechanism are provided in the worksheet.

CURB-21. **Please explain why Black Hills is proposing a revenue-per-customer decoupling mechanism as opposed to a total-allowable-revenue decoupling mechanism.**

Response:
The Company is proposing a revenue per customer decoupling mechanism because adding customers increases our costs (i.e., meters, service drops, billing, etc.) This is a typical feature of gas utility decoupling mechanisms because in the absence of some form of attrition mechanism, there is no opportunity for Black Hills Energy to earn the allowed rate of return as the number of customers grow.

CURB-22. **Does Black Hills Energy currently have an approved decoupling mechanism or receive performance incentives in Iowa? If yes, please explain how the decoupling mechanism and performance incentive is calculated. If no, please explain why not?**

Response:
No, a similar mechanism was proposed, but it was eliminated as part of the overall settlement agreement.

CURB-23. **Does Black Hills Energy currently have an approved decoupling mechanism or receive performance incentives in Nebraska? If yes, please explain how the decoupling mechanism and performance incentive is calculated. If no, please explain why not?**

Response:
No, Black Hills does not have energy efficiency programs in Nebraska.

CURB-24. **Does Black Hills Energy currently have an approved decoupling mechanism or receive performance incentives in Colorado? If yes, please explain how the decoupling mechanism and performance incentive is calculated. If no, please explain why not?**

Response:
Yes. Attached are Colorado Commission DSM rules. Please refer to Rule 4754. [Attachment: "CURB-24 CO DSM rules.pdf"]

CURB-25. **Please provide an analysis of how avoided electrical costs, were calculated and included in each benefit-cost test. Please include supporting assumptions, workpapers, and calculations.**

Response:
As included in the response to CURB-8, we have provided the model used to calculate the benefits and costs, which include the electric savings. As stated in the Energy-Efficiency Plan, the avoided electric costs that were developed for Black Hills Energy's electric territory in Colorado were used as a proxy for BHE's Kansas jurisdictional avoided costs.

CURB-26. **Please explain how Dr. Chamberlin calculated the average residential bill savings of $17 per year. Please include supporting assumptions, workpapers and calculations.**

Response:
On pages 5-6 Dr. Chamberlin states that "the programs are anticipated to reduce BHE's sales volume by nearly 2% at the end of the 5 year plan, resulting in an average residential bill savings of over $17 per year."
For additional information please see the response to CURB-20 and the following file:

(EECR Impact on residential and low income customers_02JUNE2010.xls).

Cell G16 of the first tab, "Rate and bill impact summary", shows that the dollar savings after five years for the average residential customer exceeds $17.

CURB-27. **Please quantify what the net savings for a participant in each residential program will be, after the participant pays for program cost recovery, a decoupling mechanism, and the performance incentive. Please provide all calculations and assumptions used to determine net savings for a participant in a residential program.**

Response:
The impacts of the EECR, proposed RNM, and proposed incentive mechanism (assuming RNM and incentive mechanism are approved as filed and Black Hills Energy obtained 100% of planned goals) on residential participants and non-participants are provided in the following file:

(EECR Impact on residential and low income customers_02JUNE2010.xls).

The first tab "Rate and bill impact summary" shows that the results for each of four residential programs: Residential Audit, Residential Envelope, Residential Space & Water Heat, and Residential New Construction. All of these customers will see annual bill reductions, both before and after the EECR charges. Details, assumptions, calculations and line items showing the effects of the various EECR elements including program cost recovery, the revenue decoupling mechanism, and the performance incentive mechanism, are also provided in the worksheet.

CURB-28. **Please quantify what the net savings are for an average residential customer who does not participate in an energy-efficiency program. Please provide all calculations and assumptions used to determine net savings for an average residential non-participant.**

Response:
Please refer to the file referenced in CURB-27, in which the impacts are given for participants and non-participants.

Submitted By: David Springe
Submitted To: Mr. Flaherty

If for some reason, the above information cannot be provided by the date requested, please provide a written explanation of those reasons.

Verification of Response

I have read the foregoing Data Request and Answer(s) thereto and find the answer(s) to be true, accurate, full and complete and contain no material misrepresentations or omissions to the best of my knowledge and belief; and I will disclose to the Citizens' Utility Ratepayer Board any matter subsequently discovered which affects the accuracy or completeness of the answer(s) to this Data Request.

Signed: Mg McGill
Name: Mg McGill
Position: Regulatory Manager
Dated: 6/19/10

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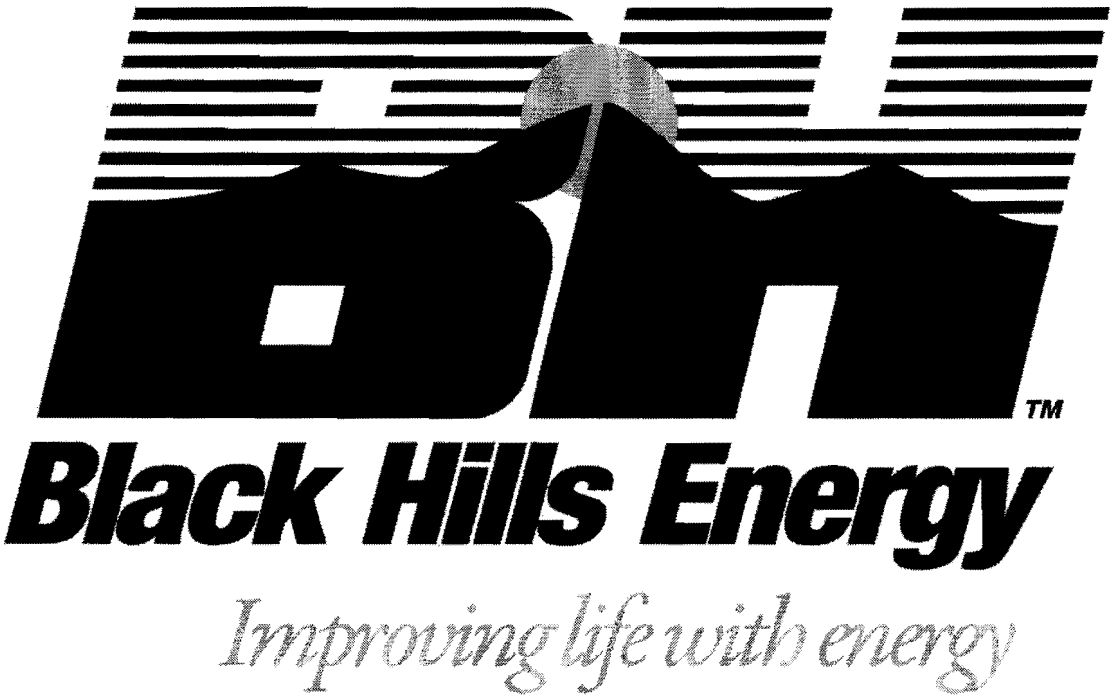

Black Hills Energy

Natural Gas Energy Efficiency Programs

Annual Report 2009

Prepared for:
Public Utilities Commission of Colorado

April 1, 2010

SMH-7

Executive Summary

Black Hills Energy is pleased to present this 2009 annual report of its gas energy-efficiency plan, pursuant to Docket No. 07R-371G of the Public Utilities Commission of the State of Colorado.

Program Portfolio Overview

Black Hills Energy's energy-efficiency portfolio is composed of three broad categories: residential programs, nonresidential programs, and special programs, with each designed to address the needs of various customer types. The residential programs are composed of: the space and water heating programs; envelope measures retrofits; and audit programs. The nonresidential programs are: the prescriptive and custom rebate programs; new construction; and the small commercial audit program. The special programs category consists of the low-income programs and school-based energy education.

Program Budgets, Savings, and Cost-Effectiveness

Table ES.1 presents projected and actual 2009 budgets for the sectors, including a budget of $126,260 for general across-program training, marketing, and administration.

Table ES.1. 2009 Utility Budget by Sector

Sector	2009 Budget	2009 Actual	% of Budget
Residential	$408,400	$238,082	58%
Nonresidential	$117,000	$42,780	37%
Special	$153,700	$22,747	15%
Training, Marketing and Admin	$116,700	$126,260	108%
Total	**$795,800**	**$429,869**	**54%**

The 2009 projected and actual budgets by program are provided in Table ES.2.

Table ES.2. Program 2009 Budget Summaries

Program Category	2009 Projected Budget	2009 Actual Expenditures	% of Budget
Residential Programs			
R-1 – Residential Space and Water Heating	$275,800	$111,206	40%
R-2 – Residential Envelope Measures Retrofit	$92,600	$62,921	68%
R-3 – Residential Audits	$39,900	$63,955	160%
Nonresidential Programs			
NR-1 – Small Commercial Audits	$9,400	$6,374	68%
NR-2 – Nonresidential Prescriptive Rebates	$45,900	$21,410	47%
NR-3 – Nonresidential Custom Rebates	$22,100	$8,303	38%
NR-4 – Nonresidential New Construction	$39,700	$6,693	17%

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Program Category	2009 Projected Budget	2009 Actual Expenditures	% of Budget
Special Programs			
S-1 – Low-Income Programs	$127,700	$1,623	1%
S-2 – School-Based Energy Education	$26,000	$21,124	81%
Across Program Training, Marketing, and Administration			
	$116,700	$126,260	108%
Total Budget			
	$795,800	$429,869	54%

Table ES.3 presents the projected and actual savings for each sector.

Table ES.3. 2009 Savings (DTh) by Sector

Sector	2009 Projected	2009 Actual	% of Goal
Residential	13,633	4,030	30%
Nonresidential	4,810	98	2%
Special	1,208	637	44%
Total	**19,651**	**4,765**	**24%**

The 2009 projected and actual savings by program are provided in Table ES.4.

Table ES.4. Projected and Actual Savings (DTh) by Program

Program Category	2009 Projected Savings	2009 Actual Savings	% of Goal
Residential Programs			
R-1 – Residential Space and Water Heating	10,865	2,145	20%
R-2 – Residential Envelope Measures Retrofit	1,971	386	20%
R-3 – Residential Audits	796	1,499	188%
Nonresidential Programs			
NR-1 – Small Commercial Audits	--	--	NA
NR-2 – Nonresidential Prescriptive Rebates	2,477	98	4%
NR-3 – Nonresidential Custom Rebates	1,458	0	0%
NR-4 – Nonresidential New Construction	875	0	0%
Special Programs			
S-1 – Low-Income Programs	853	0	0%
S-2-School-Based Energy Education	608	637	105%
Total Savings			
	19,904	4,765	24%

The 2009 overall portfolio cost-effectiveness data are provided in Table ES.5.

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Table ES.5. Portfolio Cost-Effectiveness

Perspective	Total Discounted Costs ($)	Total Discounted Benefits ($)	Net Present Value ($)	Benefit/Cost Ratio
Modified Total Resource Cost (TRC)	$628,639	$445,647	-$182,992	0.71
Utility (UCT)	$429,868	$422,142	-$7,726	0.98
Ratepayer (RIM)	$923,882	$422,142	-$501,740	0.46
Participant (PART)	$309,101	$544,961	$235,860	1.76

The residential audit program had great success. Since it is the entry program for the other residential programs, Black Hills Energy is optimistic that goals will be met for the other residential programs in 2010. Given the low participation in the nonresidential program, Black Hills Energy will focus more of its marketing campaign on that sector. The low participation for 2009 reflects the start-up time required with launching these programs midyear. For gas energy-efficiency programs, most participation occurs during the winter months (Nov–March); thus, the midyear start excluded the late winter/early spring participation. For 2009, Black Hills Energy did not realize an Energy Factor greater than zero, and thus is not requesting a bonus.

Report Contents

In addition to the Executive Summary, this document consists of the following chapters and appendices:

- Chapters 1, 2, and 3 describe in detail the residential, nonresidential, and special programs, respectively, that form the overall energy-efficiency portfolio. These chapters contain general discussions of topics relevant to the programs as well as detailed descriptions of individual programs, including budgets, participation, measures, impacts and, where required, cost-effectiveness results.
- The following appendices complete the document, providing the necessary data to complete the filing:

  A. Avoided Costs

  B. Detailed Cost-Effectiveness Workbooks (Excel workbooks)

  C. Cross-Reference to Colorado Public Utility Commission Rules

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1. Residential Programs

Introduction

This chapter describes Black Hills Energy's portfolio of residential energy-efficiency programs. The chapter begins with a general discussion of key program components, and then provides detailed descriptions of each program. Black Hills Energy's portfolio of residential programs is displayed in Table 1.

Table 1. Black Hills Energy Residential Programs

Category	Sub-Category (If Applicable)
R-1 – Residential Space and Water Heating Program	R-1.1 – Furnace/Boiler Replacement
	R-1.2 – Water Heater Replacement
	R-1.3 – Innovative Space and Water Heating Technologies
	R-1.4 – Setback Thermostat and Furnace/Boiler Maintenance Services
	R-1.5 – Appliance Rebate
R-2 – Envelope Measures Retrofit	
R-3 – Residential Audits	

R-1 – Residential Space and Water Heating Program

The Residential Space and Water Heating Program includes several program components:

- R-1.1 – Furnace and Boiler Replacement
- R-1.2 – Water Heater Replacement
- R-1.3 – Innovative Space and Water Heating Technologies
- R-1.4 – Setback Thermostat and Furnace/Boiler Maintenance Services
- R-1.5 – Appliance Rebate

While each program component under the Residential Space and Water Heating Program umbrella is somewhat independent of the others, they have several common elements, in many cases requiring coordination with the same set of trade allies, and are supported by a similar programmatic infrastructure. Savings and cost-effectiveness for the subprograms are not reported; cost-effectiveness for the overall Residential Space and Water Heating Program follows a discussion of individual program components.

R-1.1 – Furnace and Boiler Replacement

Program Description

The Residential Furnace and Boiler Replacement program provides incentives to customers who upgrade their existing furnaces and boilers to higher-efficiency units. All residential customers living in structures with one to four units, including manufactured homes, are eligible to participate in the program.

Program Summary

Table 2 provides a comparison of program budget and goals to actual program performance for 2009.

Table 2. Furnace and Boiler Replacement Program Summary

	Budget or Goal	Actual	% Budget or Goal Achieved
Participation	510	81	16%
Expenditures	$204,167	$70,347	34%

Measures and Incentives

Qualifying measures for the Furnace and Boiler Replacement program are all residential furnaces with an Annual Fuel Utilization Efficiency (AFUE) of 92% or higher, and all residential boilers with an AFUE of 85% or higher. These minimum efficiency levels are significantly higher than current federal minimum efficiency standards of a 78% AFUE for gas furnaces and an 80% AFUE standard for boilers.

As shown in Table 3, the higher the furnace or boiler efficiency, the higher the customer incentive. Incentives were intentionally structured in this was to encourage customers to request and install the most efficient equipment available.

In addition to offering customer incentives, Black Hills Energy also offers dealer/contractor spiffs. The spiffs are available to trade allies who attend Black Hills Energy-approved training sessions, and whose furnace and boiler installations comply with specifications prescribed by Black Hills Energy (e.g., Manual J). As with customer incentives, trade ally spiffs increase with higher-efficiency equipment. The spiffs are calculated as the sum of one labor hour (estimated as $75) and a percentage of the customer incentive.

Table 3. Furnace and Boiler Rebates

Measure	Efficiency	Customer Incentive
Furnace	92% ≤ AFUE < 94%	$200
	94% ≤ AFUE < 96%	$300
	AFUE ≥ 96%	$400
Boiler	85% ≤ AFUE < 89%	$200
	AFUE ≥ 90%	$400

Participation

Expected program participation, set to equal the number of installations, was 510. Actual participation was 81.

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Table 4. Furnace and Boiler Replacement Program Participation

Measure	Efficiency	2009 Projected Participation	2009 Actual Participation	% of Goal
Furnace	92% ≤ AFUE < 94%	245	18	7%
	94% ≤ AFUE < 96%	219	59	27%
	AFUE ≥ 96%	23	0	0%
Boiler	85% ≤ AFUE < 89%	3	4	133%
	AFUE ≥ 90%	20	0	0%

Program Budget

The program's proposed 2009 budget was $204,200; actual expenditures were $70,347.

R-1.2 – Water Heater Replacement

Program Description

The Water Heater Replacement program offers customers incentives to upgrade to a higher efficiency level when replacing their water-heating equipment. As with the Furnace and Boiler Replacement program, incentives are structured to encourage customers to install the highest efficiency level available.

Program Summary

Table 5 compares the program budget and goals to actual 2009 program performance.

Table 5. Water Heater Replacement Program Summary

	Budget or Goal	Actual	% Budget or Goal Achieved
Participation	82	27	33%
Expenditures	$20,708	$14,688	71%

Measures and Incentives

Measures eligible for this program are any domestic water heaters with a 0.62 EF or higher. Table 6 shows rebates for each efficiency level.

Table 6. Rebate Levels for Natural Gas Water Heaters

Efficiency Level	Customer Incentive
0.62 ≤ EF> 0.80	$75
Condensing (EF ≥ 0.80)	$350
Tankless water heater	$350

Participation

Projected participation, set to equal the number of installations, was 82 residential customers; actual participation was 27.

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Table 7. Participation for Natural Gas Water Heaters

Efficiency Level	2009 Projected Participation	2009 Actual Participation	% of Goal
0.62 ≤ EF> 0.80	64	10	16%
Condensing (EF ≥ 0.80)	6	6	100%
Tankless water heater	12	11	92%

Budget

In 2009, the program's proposed annual budget was $20,700; actual expenditures were $14,688.

R-1.3 – Innovative Space and Water Heating Technologies

Program Description

The Residential Innovative Space and Water Heating Technologies program has a twofold purpose of encouraging adoption of more recent-to-market, energy-efficient technologies, and ensuring Black Hills Energy's energy-efficiency portfolio does not miss opportunities for achieving savings in less common space and water heating applications. Program measures address both space and water heating end uses.

Program Summary

Table 8 provides a comparison of the program budget and goals to actual program performance for 2009.

Table 8. Innovative Space and Water Heating Technologies Program Summary

	Budget or Goal	Actual	% Budget or Goal Achieved
Participation	4	3	73%
Expenditures	$2,275	$2,468	108%

Measures and Incentives

Table 9 shows the list of measures qualifying for incentives through the Innovative Space and Water Heating Technologies initiative. Similar to the furnace and boiler replacement program, the dealer spiff for the integrated space and water heating unit will be available only to contractors demonstrating proof of proper equipment sizing (e.g., Manual J) to Black Hills Energy.

Table 9. Innovative Space and Water Heating Technologies Measures

Measure Description	Customer Rebate Level
Drain Water Heat Recovery	$300
Integrated Space and Water Heat	$500
Multi-Zone Thermostats	$300

Participation

Projected participation, set to equal the number of installations, was four residential customers; actual participation was 3.

Table 10. Innovative Space and Water Heating Technologies Participation

Measure Description	2009 Projected Participation	2009 Actual Participation	% of Goal
Drain Water Heat Recovery	0	0	--
Integrated Space and Water Heat	3	2	67%
Multi-Zone Thermostats	1	1	100%

Budget

The program proposed 2009 budget was $2,300; actual expenditures were $2,468.

R-1.4 – Setback Thermostat and Furnace/Boiler Maintenance

Program Description

The residential Setback Thermostat and Furnace/Boiler Maintenance program offers incentives for the purchase and installation of setback thermostats and/or the performance of prescribed maintenance on gas furnaces and boilers. Although the program offers incentives for either measure individually, the incentives are structured to encourage participants to do both.

Program Summary

Table 11 compares the program budget and goals to actual program performance for 2009.

Table 11. Setback Thermostat and Furnace/Boiler Maintenance Program Summary

	Budget or Goal	Actual	% Budget or Goal Achieved
Participation	723	105	15%
Expenditures	$38,733	$8,966	23%

Measures and Incentives

Measures qualifying for this program are any, seven-day, programmable, ENERGY STAR-rated setback thermostats and/or the performance of prescribed maintenance by a qualified provider. Increased incentives will be offered to customers having their thermostats professionally installed. Black Hills Energy will develop specific maintenance protocols, which will include procedures to improve furnace and boiler performance, such as burner cleaning, flue gas analysis, and filter replacement. Rebate levels for qualifying actions and technologies are shown in Table 12.

Table 12. Setback Thermostat and Furnace/Boiler Maintenance Qualifying Measures

Measure Description	Customer Incentive
Setback Thermostat (Self-Installed)	$25
Setback Thermostat (Professionally Installed)	$50
Furnace/Boiler Maintenance	$30
Combined Service (Furnace/Boiler Maintenance and Professionally Installed Setback Thermostat)	$100

Participation

Projected program participation, set to equal the number of installations, was 724 in 2009, as shown in the table below. Actual participation was 105.

Table 13. Setback Thermostat and Furnace/Boiler Maintenance Participation

Measure Description	2009 Projected Participation	2009 Actual Participation	% of Goal
Setback Thermostat (Self-Installed)	29	3	10%
Setback Thermostat (Professionally Installed)	385	81	21%
Furnace/Boiler Maintenance	263	21	8%
Combined Service (Furnace/Boiler Maintenance and Professionally Installed Setback Thermostat)	47	0	0%

Budget

The program's proposed 2009 annual budget was $38,700; actual expenditures were $8,966.

R-1.5 – Appliance Rebate Program

Program Description

The Appliance Rebate program provides customers with incentives to encourage them to purchase high-efficiency gas appliances. For customers with gas water heating, the program offers incentives for clothes washers and dishwashers. The program also offers incentives for gas clothes dryers equipped with moisture sensors.

Program Summary

Table 14 compares the program budget and goals to actual program performance for 2009.

Table 14. Appliance Program Summary

	Budget or Goal	Actual	% Budget or Goal Achieved
Participation	55	111	200%
Expenditures	$8,750	$14,737	168%

Measures and Incentives

Table 15 shows efficiency level requirements and proposed rebate levels by appliance. When possible, ENERGY STAR standards have been used as the minimum efficiency level for program-

qualified equipment. The rebates presented below are structured to cover approximately one-half of the measures' incremental costs.

Table 15. Appliance Incentives

Measure Description	Min Efficiency Level	Rebate Level
Clothes Washer	ENERGY STAR (MEF ≥1.72)	$100
Clothes Dryer	Moisture Sensor	$30
Dishwasher	ENERGY STAR (EF ≥0.65)	$20

Participation

Projected measure participation, set to equal the number of installations, for this initiative was approximately 55 for 2009. Actual participation was 111.

Table 16. Appliance Participation

Measure Description	Min Efficiency Level	2009 Projected Participants	2009 Actual Participants	% of Goal
Clothes Washer	ENERGY STAR (MEF ≥1.72)	29	71	245%
Clothes Dryer	Moisture Sensor	6	17	283%
Dishwasher	ENERGY STAR (EF ≥0.65)	20	23	115%

Budget

The proposed 2009 budget was $8,800; actual expenditures were $14,737.

Overall Residential Space and Water Heating Program Results

Program Summary

Table 17 compares the program budget and goals to actual program performance for 2009.

Table 17. Residential Space and Water Heating Program Summary

	Budget or Goal	Actual	% Budget or Goal Achieved
Participation	1,375	327	24%
Expenditures	$275,817	$111,206	40%
Energy Target (DTh)	10,865	2,145	20%
Dollar-per-therm	$2.54	$5.18	NA

Savings

Projected program savings were 10,865 DTh in 2009; actual savings were 2,145 DTh.

Cost-Effectiveness Results

Table 18 presents the cost-effectiveness analysis results of the Space and Water Heating program, based 2009 program activity.

Table 18. Residential Space and Water Heating Program Cost-Effectiveness Results

Perspective	Total Discounted Costs ($)	Total Discounted Benefits ($)	Net Present Value ($)	Benefit/Cost Ratio
Modified Total Resource Cost (TRC)	$269,305	$214,171	-$55,134	0.80
Utility (UCT)	$111,205	$204,745	$93,540	1.84
Ratepayer (RIM)	$350,699	$204,745	-$145,954	0.58
Participant (PART)	$201,909	$252,854	$50,945	1.25

R-2 – Residential Envelope Measures Retrofit Program

Program Description

The Residential Envelope Measures Retrofit program provides incentives to customers who improve the efficiency of their homes through installation of insulation and other thermal envelope measures. The program covers a wide variety of measures, including: roof, wall, and foundation insulation; infiltration measures (e.g., caulking, window film, etc); and skirting for manufactured housing. Incentive levels are set as a percentage of the total cost, capped at a specified value that varies by measure.

Program Summary

Table 19 compares the program budget and goals to actual program performance for 2009.

Table 19. Thermal Envelope Program Summary

	Budget or Goal	Actual	% Budget or Goal Achieved
Participation	127	62	49%
Expenditures	$92,646	$62,921	68%
Energy Target (MCF)	1,971	386	20%
Dollar-per-therm	$4.70	$16.30	NA

Measures and Incentives

Table 20 lists each of the eligible measures, efficiency levels, and proposed rebate levels. Rebates for the insulation measures have been structured to cover roughly one-half of the incremental costs of the measures and to encourage customers to adopt the highest-efficiency levels technically feasible.

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Table 20. Thermal Envelope Retrofit Incentives

Measure Description	Min Efficiency Level	Rebate Level
Insulation (ceiling)	R-38	50% up to $500
Insulation (ceiling)	R-49	50% up to $1,000
Insulation (wall)	R-11	50% up to $500
Insulation (wall)	R-19	50% up to $750
Insulation (wall)	R-25 or spray-on foam	50% up to $1,000
Insulation (floor)	R-25	50% up to $500
Insulation (rim and band joist)	R-10	50% up to $50
Insulation (foundation)	R-13	50% up to $500
Insulation (foundation)	R-19	50% up to $600
Insulation (foundation)	R-30	50% up to $900
Insulation (basement wall)	R-13	50% up to $500
Insulation (duct)	R-4	50% up to $150
Infiltration control (weatherstripping, caulking, etc)		50% up to $200
Canned lighting air tight sealing		50% up to $200
Duct repair and sealing		50% up to $300
Door	R-11 (steel w/ foam core)	50% up to $100 (per door)
Door	R-5	50% up to $150
Door weatherstripping and sweeps		50% up to $200
Vinyl siding with foam backing	R-3	50% up to $450
Skirting for manufactured housing	Install Skirting Insulation (R-19)	$150

Participation

Participation was projected at 127 customers in 2009. Actual participation was 62, where the installations were as given in Table 21

Table 21. Thermal Envelope Installations

Measure Description	Min Efficiency Level	2009 Projected Installations	2009 Actual Installations	% of Goal
Insulation (ceiling)	R-38	4	3	75%
Insulation (ceiling)	R-49	34	47	138%
insulation (wall)	R-11	5	0	0%
Insulation (wall)	R-19	2	1	50%
Insulation (wall)	R-25 or spray-on foam	1	0	0%
Insulation (floor)	R-25	2	0	0%
Insulation (rim and band joist)	R-10	2	0	0%
Insulation (foundation)	R-13	2	0	0%
Insulation (foundation)	R-19	5	3	60%
Insulation (foundation)	R-30	2	0	0%
Insulation (basement wall)	R-13	2	2	100%
Insulation (duct)	R-4	9	1	11%
Infiltration control (weatherstripping, caulking, etc)		28	18	64%
Canned lighting air tight sealing		3	0	0%
Duct repair and sealing		10	0	0%
Door	R-11 (steel w/ foam core)	2	0	0%
Door	R-5	2	4	200%

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Measure Description	Min Efficiency Level	2009 Projected Installations	2009 Actual Installations	% of Goal
Door weatherstripping and sweeps		9	0	0%
Vinyl siding with foam backing	R-3	1	0	0%
Skirting for manufactured housing	Install Skirting Insulation (R-19)	1	0	0%

Budget

The 2009 proposed budget for the program was $92,600; actual expenditures were $62,921.

Savings

Projected savings from this program were 1,971 DTh in 2009. Actual savings were 386 DTh.

Cost-Effectiveness Results

Table 22 presents the cost-effectiveness analysis results of the Envelope Measures program, based on 2009 program activity.

Table 22. Thermal Envelope Retrofit Program Cost-Effectiveness Results

Perspective	Total Discounted Costs ($)	Total Discounted Benefits ($)	Net Present Value ($)	Benefit/Cost Ratio
Modified Total Resource Cost (TRC)	$93,154	$47,348	-$45,806	0.51
Utility (UCT)	$62,921	$44,552	-$18,369	0.71
Ratepayer (RIM)	$114,799	$44,552	-$70,247	0.39
Participant (PART)	$72,840	$86,387	$13,547	1.19

R-3 – Residential Audit Program

Program Description

The Residential Audit Program is composed of two components: a free audit and a Home Performance with ENERGY STAR (HPwES) audit. The aim of both audits is to provide recommendations to customers about ways they can reduce energy consumption in their homes. Audit recommendations may include: suggested behavioral changes; suggestions about implementing low-cost and easy-to-install energy-saving equipment; and suggestions about repairing, upgrading, or replacing larger, relatively expensive equipment or systems. The HPwES program was not expected to have participants in 2009 due to the required program ramp-up time.

Program Summary

Table 23 compares the program budget and goals to actual program performance for 2009.

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Table 23. Residential Audit Program Summary

	Budget or Goal	Actual	% Budget or Goal Achieved
Participation	179	221	123%
Expenditures	$39,917	$63,955	160%
Energy Target (MCF)	796	1,499	188%
Dollar-per-therm	$5.01	$4.27	NA

Measures and Incentives

Free audit participants were offered the following energy-efficiency measures at no cost:

- Outlet gaskets
- Faucet aerators
- Pipe insulation
- Low-flow showerheads
- Low-cost infiltration measures

On average, a participating customer will receive about $30 worth of measures during the audit.

Participation

Participation for the free audit was projected at 179 participants in 2009, with zero HPwES participants. Actual participation for the free audit was 221.

Budget

Black Hills Energy will cover the entire cost of the free audit as well as the cost of the low-cost measures distributed at the time of the free audit (a total value equivalent to approximately $180 per home). For those opting for an HPwES audit, Black Hills Energy will provide a $200 reimbursement per participant. The average (pre-rebate) participant cost of an HPwES audit is estimated at $500.

The proposed annual budget for the 2009 program was $39,900; the actual expenditures were $63,955.

Savings

Projected program savings were 796 DTh in 2009; actual savings were 1,499 DTh

Cost-Effectiveness Results

Table 24 presents the cost-effectiveness analysis results based on 2009 program activity.

Table 24. Residential Audits Cost-Effectiveness Results

Perspective	Total Discounted Costs ($)	Total Discounted Benefits ($)	Net Present Value ($)	Benefit/Cost Ratio
Modified Total Resource Cost (TRC)	$63,955	$141,440	$77,485	2.21
Utility (UCT)	$63,955	$135,790	$71,835	2.12
Ratepayer (RIM)	$223,048	$135,790	-$87,258	0.61
Participant (PART)	$0	$141,208	$141,208	---

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Combined Residential Program Portfolio Cost-Effectiveness

Table 25 shows the cost-effectiveness of the four residential programs, combined into a single portfolio.

Table 25. Residential Programs Cost-Effectiveness Results

Perspective	Total Discounted Costs ($)	Total Discounted Benefits ($)	Net Present Value ($)	Benefit/Cost Ratio
Modified Total Resource Cost (TRC)	$426,414	$402,959	-$23,455	0.94
Utility (UCT)	$238,081	$385,087	$147,006	1.62
Ratepayer (RIM)	$688,546	$385,087	-$303,459	0.56
Participant (PART)	$274,749	$480,449	$205,700	1.75

COLORADO G-DSMCA RECOVERIES
June 2009 THRU December 2009

Schedule 5

	Residential	Non-Residential						TOTAL
	RS	SC	SVF	SVI	LVF	LVI	Total Non-Residential	
Jan-09	-	-	-	-	-	-	-	-
Feb-09	-	-	-	-	-	-	-	-
Mar-09	-	-	-	-	-	-	-	-
Apr-09	-	-	-	-	-	-	-	-
May-09	-	-	-	-	-	-	-	-
Jun-09	8,964.35	888.55	1,421.13	10.61	253.71	30.31	2,604.31	11,568.66
Jul-09	79,721.15	8,531.86	10,760.01	119.91	2,555.97	666.78	22,634.53	102,355.68
Aug-09	91,071.58	9,742.87	12,348.38	128.46	3,115.51	616.23	25,951.45	117,023.03
Sep-09	91,101.64	9,673.39	12,218.06	140.86	3,201.64	164.44	25,398.39	116,500.03
Oct-09	127,056.56	12,932.76	15,728.28	176.62	4,295.93	317.96	33,451.55	160,508.11
Nov-09	162,445.07	18,033.03	20,855.48	225.20	5,829.05	303.61	45,246.37	207,691.44
Dec-09	215,507.76	24,920.89	26,875.24	391.44	7,304.57	138.79	59,630.93	275,138.69
TOTAL	775,868.11	84,723.35	100,206.58	1,193.10	26,556.38	2,238.12	214,917.53	990,785.64

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CERTIFICATE OF SERVICE

10-BHCG-639-TAR

I, the undersigned, hereby certify that a true and correct copy of the above and foregoing document was placed in the United States mail, postage prepaid, electronic service, or hand-delivered this 23rd day of July, 2010, to the following:

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