BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF COLORADO

PROCEEDING NO. 17A − ______G

IN THE MATTER OF THE VERIFIED JOINT APPLICATION OF BLACK HILLS/COLORADO GAS UTILITY COMPANY, LP D/B/A BLACK HILLS ENERGY AND BLACK HILLS GAS DISTRIBUTION, LLC D/B/A BLACK HILLS ENERGY, FOR APPROVAL OF A COMBINED NATURAL GAS DEMAND SIDE MANAGEMENT (DSM) PLAN FOR CALENDAR YEARS 2018, 2019 AND 2020 AND FOR APPROVAL OF REVISIONS TO THEIR GAS DSM COST ADJUSTMENT TARIFFS.

DIRECT TESTIMONY AND ATTACHMENTS OF

FREDRIC C. STOFFEL

ON BEHALF OF

BLACK HILLS/COLORADO GAS UTILITY COMPANY, LP

AND

BLACK HILLS GAS DISTRIBUTION, LLC

May 1, 2017

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Attachments

DIRECT TESTIMONY OF FREDRIC C. STOFEL

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Fredric C. Stoffel. My business address is 1515 Wynkoop Street, Suite 500, Denver, Colorado 80202.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am employed by Black Hills Utility Holdings, Inc. ("BHUH"), a wholly-owned subsidiary of Black Hills Corporation ("BHC"). I am Director, Regulatory.

Q. ON WHOSE BEHALF ARE YOU TESTIFYING?

A. I am testifying on behalf of Black Hills/Colorado Gas Utility Company, LP ("BHCOG") and Black Hills Gas Distribution, LLC ("BHGD"). Both companies do business as Black Hills Energy. In my testimony, BHCOG and BHGD are referred to, collectively, as the "Companies."

Q. ARE YOU SPONSORING ANY ATTACHMENTS?

A. Yes, I am sponsoring proposed changes to the Companies' Demand Side Management Cost Adjustment ("DSMCA") Tariffs, as reflected in the following:

- BHCOG DSMCA Tariff Changes-Redlined;
- BHCOG DSMCA Tariff Changes-Clean;
- BHGD DSMCA Tariff Changes-Redlined; and
- BHGD DSMCA Tariff Changes-Clean.

II. STATEMENT OF QUALIFICATIONS

Q. WHAT ARE YOUR DUTIES AND RESPONSIBILITIES IN YOUR CURRENT POSITION?

A. I am responsible for directing the rate and regulatory proceedings for all Colorado electric and gas utilities of BHC. I also direct the energy efficiency programs for all BHC utilities.

Q. PLEASE OUTLINE YOUR EDUCATIONAL AND PROFESSIONAL BACKGROUND.

A. I have a Bachelor's degree in Economics from the University of Colorado. My employment history and experience is provided in Appendix A.

Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THIS COMMISSION?

A. Yes.

III. PURPOSE OF TESTIMONY

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is to discuss (i) the policy reasons for offering natural gas DSM programs, including the Colorado statutory and Commission rule framework to which such programs are subject and (ii) the Companies' request for Commission approval of the Combined 2018-2020 Natural Gas Energy Efficiency Plan for BHCOG and BHGD ("Combined Plan") filed in this Proceeding. I also support proposed changes to the DSMCA tariffs of the Companies as well as the separate Joint Motion for Partial Waiver of Rule 4753(f)(VI) and Such Other Waivers as may be Necessary to Implement the Combined Plan.

Q. WHO IS THE OTHER WITNESS PROVIDING DIRECT TESTIMONY IN SUPPORT OF THE COMBINED PLAN AND WHAT IS THE NATURE OF HIS TESTIMONY?

A. Mr. James Dillon, Senior Manager, Energy Efficiency and Demand Side Management, is providing Direct Testimony in this proceeding. Mr. Dillon is sponsoring the Combined Plan and provides testimony regarding the Combined Plan's design, budgets, implementation, oversight and cost effectiveness.

IV. BACKGROUND AND REQUESTS FOR APPROVAL

Q. PLEASE EXPLAIN THE RELATIONSHIP BETWEEN BHCOG AND BHGD.

A. On August 10, 2015, SourceGas, Rocky Mountain Natural Gas LLC, SourceGas LLC, and SourceGas Holdings LLC (collectively, the "SourceGas Companies"), and BHUH filed a Joint Application for approval of a transaction where, as a result of BHUH's purchase of SourceGas Holdings LLC, the SourceGas Companies would become subsidiaries of BHUH (Proceeding No. 15A-0667G). Decision No. R16-0058 approved the acquisition of SourceGas Holdings LLC (including SourceGas) by BHUH, and it became the decision of the Commission by operation of law on February 11, 2016. On February 12, 2016, the transaction approved by Decision No. R16-0058 closed (the "Acquisition").

Upon the closing, SourceGas changed its name to Black Hills Gas Distribution, LLC (previously defined herein as BHGD). On that same date, BHGD and BHCOG became affiliates. Both BHGD and BHCOG: (i) provide gas service to customers in Colorado and (ii) are public utilities subject to the jurisdiction of the Commission.

Q. DOES BHCOG CURRENTLY HAVE A DSM PLAN IN PLACE?

A. Yes. On May 15, 2014, pursuant to Commission Rule 4753, BHCOG filed an application for approval of a Natural Gas Demand Side Management Energy Efficiency Plan covering the years 2015, 2016, and 2017. That application, which was uncontested, was approved by the Commission through Decision No. C14-0733 mailed on July 2, 2014 in Proceeding No. 14A-0488G. BHCOG's 2015-2017 DSM Plan is in its final year.

Q. DOES BHGD CURRENTLY HAVE A DSM PLAN IN PLACE?

A. Yes. BHGD (f/k/a SourceGas Distribution LLC) filed its 2014-2016 Gas DSM application in Proceeding No. 13A-0458G on May 1, 2013. No petition to intervene or otherwise participate in the proceeding was filed and the proceeding was uncontested. As a result, on June 26, 2013, through Decision No. C13-0792, the Commission issued an Order approving the application and BHGD's 2014-2016 DSM Plan. That plan was implemented in collaboration with other natural gas utilities, including Colorado Natural Gas and Atmos Energy, together referred to as the Partners in Energy Savings, or the "Collaborative."[1]

On April 8, 2016, in Proceeding No. 16A-0253G, BHGD requested a one-year variance from the requirement in Rule 4752(c) that BHGD file a DSM plan application by May 1, 2016. BHGD applied for an extension of its DSM Plan for one additional year, or until December 31, 2017, using plan year 2016 as the DSM plan for 2017 ("Variance Proceeding"). These requests were granted by the Commission in Decision No. C16-0378

[1] BHGD fulfilled its commitment to the Collaborative effort through 2016. In 2017, BHGD is no longer part of the Collaborative and is separately undertaking the implementation, management and administration of its DSM programs.

("Variance Decision"). As a result, for the 2017 plan year, BHGD adopted the goals, budgets and programs as described in the DSM Plan for 2016.

Q. WHY ARE THE COMPANIES FILING A COMBINED PLAN?

A. In the Variance Proceeding, BHGD committed to file a joint application with BHCOG, seeking approval of 2018-2020 DSM Plans, including similar programs and methods for developing goals that adopt best practices. BHGD indicated that given time after the Acquisition, the personnel developing and administering the BHCOG 2015-2017 DSM Plan would have an opportunity to become familiar with BHDG's service territory and DSM needs and would be better positioned to file BHDG's proposed DSM plan. The Commission approved this proposal in the Variance Decision.

Q. PLEASE PROVIDE A GENERAL OVERVIEW OF THE COMBINED PLAN'S ENERGY EFFICIENCY OFFERINGS.

A. The Combined Plan, which is attached to the Direct Testimony of Mr. James Dillon as Attachment JD-1, offers six programs: Residential Retrofit, Residential New Construction, Nonresidential Retrofit, Nonresidential New Construction, Income Qualified, and School-Based Energy Education. While the Combined Plan contains one set of DSM programs, BHCOG and BHGD each have their own separate budgets and goals, as reflected therein, in compliance with Commission Rules.

Q. WHAT ARE THE SPECIFIC APPROVALS BHCOG AND BHGD ARE SEEKING FROM THE COMMISSION IN THIS PROCEEDING?

A. The Companies are asking the Commission to:

- Approve and grant the Application filed in this proceeding as well as the Joint Motion for Partial Waiver of Rule 4753(f)(VI) and Such Other Waivers as may be Necessary to Implement the Combined Plan;
- Approve the Combined DSM Plan as set forth in Attachment JD-1 including, but not limited to, approval of:
    - Proposed DSM Programs;
    - Energy and Peak Savings Goals;
    - Participation Goals;
    - Budgets;
    - Cost-effectiveness;
    - Technical Assumptions: Net-to-Gross ("NTG") Ratios, Avoided Gas Capacity Costs, Discount and Inflation Rates, Gas Energy Costs, Avoided Variable O&M Costs, and Lost Revenue Calculations;
    - Evaluation, Measurement and Verification ("EM&V") Reporting Schedule; and
    - Flexibility.
- Approve revisions to the DSMCA Tariff for BHCOG, as set forth in Attachments FCS-1 and FCS-2; and
- Approve revisions to the DSMCA Tariff for BHGD, as set forth in Attachments FCS-3 and FCS-4.

V. DEMAND SIDE MANAGEMENT

Q. GENERALLY, WHAT IS THE PURPOSE OF DEMAND SIDE MANAGEMENT?

A. Demand Side Management is generally predicated on the notion that saving a unit of energy is less expensive than producing and consuming a unit of energy. Investing in technologies, products and process improvements that save energy can be more economical than building additional supply side resources or finding, producing, delivering and burning additional energy commodities.

Q. PLEASE DESCRIBE THE OBJECTIVES OF DSM PURSUANT TO COLORADO STATUTES.

A. House Bill (HB) 07-1037, *Concerning Measures to Promote Energy Efficiency, and Making an Appropriation Therefore*, was passed by the Colorado General Assembly and signed into law by Governor Ritter in 2007, and codified in relevant part at § 40-1-102(5), (6) and (7), C.R.S., as well as §§ 40-3.2-101 and 103, C.R.S. The legislative purpose of DSM is found in § 40-3.2-101, C.R.S., which states:

> The general assembly hereby finds, determines, and declares that cost-effective natural gas and electricity demand-side management programs will save money for consumers and utilities and protect Colorado's environment. The general assembly further finds, determines, and declares that providing funding mechanisms to encourage Colorado's public utilities to reduce emissions or air pollutants and to increase energy efficiency are matters of statewide concern and that the public interest is served by providing such funding mechanisms. Such efforts will result in an improvement in the quality of life and health of Colorado citizens and an increase in the attractiveness of Colorado as a place to live and conduct business.

The Colorado Legislature tasked the Commission with, among other things, developing expenditure and natural gas savings targets, funding and cost-recovery mechanisms, and a financial bonus structure.

Q. ACCORDING TO COMMISSION RULES, WHAT IS THE PURPOSE OF GAS DSM?

A. In Rule 4750, the Commission summarized the overview and purpose of gas DSM as well as its Rules, stating in part as follows:

> Consistent with statutory requirements, the purpose of these Demand Side Management (DSM) rules is to reduce end-use natural gas consumption in a cost effective manner, in order to save money for consumers and utilities, and protect the environment by encouraging the reduction of emissions and air pollutants.

Q. ARE COLORADO GAS UTILITIES REQUIRED TO HAVE DSM?

A. Yes. Consistent with the above-referenced Colorado statutes and Commission rules, Colorado gas utilities like BHCOG and BHGD are required to have DSM plans. In particular, pursuant to Rule 4750, a gas utility is required to:

> design DSM programs for its full service customers to achieve cost-effective energy savings, considering factors such as: achievable energy savings, customer benefits, cost effectiveness ratios, adoption potential, market transformation capability and ability to replicate in the utility service territory.

In addition, DSM plans are required to cover a period of three years, unless otherwise ordered by the Commission.

Q. HOW IS DSM TYPICALLY FUNDED?

A. To fund DSM programs, natural gas utilities collect funds from all retail gas customers and use those monies to invest in technologies, products, process improvements and education for the benefit of customers who choose to take advantage of the DSM programs approved by the Commission. Most of the funds collected from a utility's customers are transferred to DSM participants in the form of rebates, promotions and education. DSM participants receive most, if not all, direct energy savings. All of the utility's customers, including program participants and non-participants, receive the socialized benefits of reduced air emissions and air pollution that result from the reduced consumption of fossil fuel.

Q. HOW WILL THE COMBINED PLAN BE FUNDED?

A. Under Commission Rules, Colorado gas utilities are permitted to recover DSM costs under a DSMCA, which is defined by Commission Rule 4751(l) as "a rate adjustment mechanism designed to compensate a utility for its DSM program costs." Consistent with this Rule, the Combined Plan will be funded with money collected from customers of BHCOG and BHGD through their respective DSMCA mechanisms.

VI. DSM EXPENDITURE TARGETS

Q. HAS THE COLORADO LEGISLATURE ESTABLISHED MINIMUM EXPENDITURE AND SAVINGS TARGETS FOR GAS DSM PROGRAMS?

A. Yes. Sections 40-3.2-103(2)(a) and (b), C.R.S. addresses minimum expenditure and savings targets for gas DSM plans, directing the Commission to:

- Adopt DSM program expenditure targets equal to at least one-half of one percent of a natural gas utility's revenues from its full service customers in the year prior to setting such targets; and
- Establish DSM program savings targets that are commensurate with program expenditures and expressed in terms of an amount of gas saved per unity of program expenditures.

Q. DO COMMISSION RULES ADDRESS GAS DSM PROGRAM MINIMUM ANNUAL EXPENDITURE TARGETS?

A. Yes. Rule 4753(h)(I) discusses minimum expenditure target requirements as follows:

> The utility's annual expenditure target for DSM programs shall be, at a minimum, two percent of a natural gas utility's base rate revenues, (exclusive of commodity costs), from its sales customers in the 12-month calendar period prior to setting the targets, or one-half of one percent of total revenues from its sales customers in the 12-month calendar period prior to setting the targets, whichever is greater.

Further, a utility was required to meet this expenditure target "within three years of implementing the initial DSM plan" and is also permitted to "propose an expenditure target in excess of two percent of base rate revenues." *See* Rules 4753(h)(II) and (IV).

Q. WHAT ARE THE MINIMUM ANNUAL EXPENDITURE TARGET REQUIREMENTS FOR BHCOG AND BHGD BASED ON RULE 4753(h)(I)?

A. Based on reported 2016 data, the minimum natural gas DSM annual expenditure target is $412,782 for BHCOG and $853,973 for BHGD. These annual minimums meet the "whichever is greater" requirement of the Rule, as depicted on the following table:

Table FCS-1: DSM Annual Expenditure Target per Rule 4753(h)(I)

	BHCOG	BHGD
2016 Base Rate Rev. from Sales Customers*	$20,639,084	$42,198,634
2016 Total Sales Rev. from Sales Customers**	$57,056,754	$106,361,114
PUC Rule 4753(h)(I) Requirements		
0.5% of Total Rev. from Sales	$285,284	$531,306
2.0% of Total Base Rate Rev.	$412,782	$843,973

* Source FERC pg. 319

** Source FERC pg. 301

Q. WHAT ARE THE COMBINED PLAN'S PROPOSED 2018 DSM BUDGETS?

A. The Companies are proposing the following:

Table FCS-2: Proposed 2018 Combined Plan Budgets

Calendar Year 2018	BHCOG	BHGD
Proposed Budget	$2,241,700	$2,275,200
Minimum Budget Requirement	$412,782	$843,973
Proposed Budget as a Percent of Base Rate Rev.	10.9%	5.4%

Q. WHY ARE THE COMPANIES PROPOSING DSM BUDGETS THAT ARE MORE THAN THE STATUTORY MINIMUMS?

A. Successful utility DSM programs rely on sustained education, marketing, trade allies and financial support, and, based on the Companies' experience, successful gas DSM programs cannot realistically be achieved with the expenditure target set at the statutory minimum. For example, BHCOG has offered DSM since 2009. It was several years before BHCOG's DSM plans started to perform well:

- BHCOG earned its first DSM bonus for plan year 2012, in the amount of $1,734.[2] BHCOG has earned a DSM bonus in each subsequent plan year and, on April 3, 2017, submitted an application requesting a $59,263 bonus for plan year 2016.[3]

[2] *See* Decision No. C13-0688 mailed on June 10, 2013 in Proceeding No. 13A-0343G.

[3] On April 3, 2017, BHCOG filed a Combined Application seeking approval of a revised DSMCA, including approval of a G-DSM bonus, in Proceeding No. 17A-0213G. The DSMCA factor proposed in that filing to become effective on July 1, 2017 is pending approval by the Commission.

- In 2010, BHCOG spent 59% of its budget and only met 44% of its savings goal.[4] In 2016, by contrast, BHCOG spent 110% of its amended budget and achieved 149% of its savings goal.[5]
- The budget for each year of BHCOG's 2015-2017 DSM Plan exceeds the minimum expenditure requirement. The total annual budget for 2015, the first year of that plan, was $1,740,100, representing nearly 8% of non-commodity revenues and about 2% of total revenues. The budget for 2017 is $1,953,400.

BHGD's gas DSM plan budgets, on the other hand, have been much closer, historically, to the minimum expenditure requirement. The BHGD plans have not been as effective. For example:

- BHGD's budget was $778,802 for 2014, $788,525 for 2015, and $783,726 for 2016.
- As stated in Footnote 3 of BHGD's 2014-2016 DSM Plan,[6]

> The DSM budget for 2014 represents 2.00% of base rate revenues (exclusive of commodity costs) and 0.75% of total revenues from calendar year 2012 customer sales. The budget for 2015 represents 2.02% and 0.76% of the base rate revenues and total revenues, respectively. Finally, the 2016 budget represents 2.01% and 0.75% of these revenues. The budget in the final year of the plan, meets the requirements pursuant to[§] 40-3.2-103(2)(a), C.R.S.

- In 2015, BHGD spent 58% of its budget and met 51% of its savings goal.[7] In 2016, BHGD spent 84% of its budget and met 90% of its savings goal.[8]
- BHGD has never earned a DSM bonus.

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[4] *See* BHCOG's 2010 Annual Report filed on April 1, 2011 in Proceeding No. 10A-082G.
[5] *See* BHCOG's 2016 Annual Report filed on April 3, 2017 in Proceeding No. 14A-0488G.
[6] See Appendix 1 to the Verified Application filed in Proceeding No. 13A-0458G.
[7] *See* BHGD's 2015 Annual Report filed on April 1, 2016 in Proceeding No. 13A-0458G.
[8] *See* BHGD's 2016 Annual Report filed on March 31, 2017 in Proceeding No. 13A-0458G.

DSM success has been proven at the higher budget levels, and the Companies believe there are more DSM opportunities for BHCOG and BHGD, and their customers, at the higher budget level as proposed under the Combined Plan for the 2018-2020 planning period.

Q. ARE THERE OTHER REASONS WHY THE COMPANIES ARE PROPOSING BUDGETS HIGHER THAN THE MINIMUM EXPENDITURE TARGETS REQUIRED BY RULE 4753(h)(I)?

A. Yes. The Companies would also like to offer their customers essentially the same types of programs. As a result, similar budget percentages are being proposed for BHCOG and BHGD. The Companies believe customers will benefit from having more than the minimum DSM opportunities available to them.

Q. IS THE PROPOSED COMBINED PLAN IN THE PUBLIC INTEREST?

A. Yes. The Combined Plan continues to fund energy efficiency opportunities for all retail residential and commercial customers. The Combined Plan includes important customer education and special programs for low-income customers and for schools. The Combined Plan maintains funding for BHCOG at about the same level as in previous years. The proposed funding for BHGD has been increased from the minimum level required by the Commission rules to achieve parity with the BHCOG programs.

VII. COST-EFFECTIVENESS OF DSM PLANS AND PROGRAMS

Q. WHAT IS THE PURPOSE OF COST-EFFECTIVENESS TESTS FOR DSM PLANS AND PROGRAMS?

A. Cost-effectiveness tests are used to analyze programs/measures from different perspectives and are used to screen options for program design and aid in selecting the most cost-effective options given a balanced portfolio.

Colorado uses the modified total resource cost ("mTRC") test which accounts for non-energy benefits. The mTRC test uses a widely-accepted methodology that has been adopted specifically in Colorado to assess cost-effectiveness. The mTRC measures the net costs of an energy efficiency program as a resource option based on the total costs of the program, including both the participant and the utility costs. This test represents the combination of the effects of a program on both participating and non-participating customers.

Q. GENERALLY SPEAKING, ARE GAS DSM PROGRAMS ALWAYS COST EFFECTIVE?

A. Not always. As discussed below, the Commission has rules describing the components of measuring cost effectiveness. Generally, the evaluation depends on comparing the cost of enhanced efficiency measures against the cost of natural gas supplies. Because most basic natural gas appliances have become more efficient and because the price of natural gas is now relatively low, it has become more difficult for many gas DSM measures and programs to pass the benefit/cost test. Including various externality benefits such as avoided emission costs, avoided health care costs and water savings in the benefit/cost analysis may improve the cost-effectiveness of DSM programs.

Q. DO COLORADO STATUTES SPECIFY THE METHOD TO BE USED IN ASSESSING THE COST-EFFECTIVENESS OF DSM PROGRAMS?

A. Yes. The cost-effectiveness of DSM programs is discussed in Section § 40-1-102(5) C.R.S., which provides:

> (a) "Cost-effective", with reference to a natural gas or electric demand-side management program or related measure, means having a benefit-cost ratio greater than one.
>
> (b) In calculating the benefit-cost ratio, the benefits shall include, but are not limited to, the following, as applicable:
> (I) The utility's avoided generation, transmission, distribution, capacity, and energy costs;
> (II) The valuation of avoided emissions; and
> (III) Nonenergy benefits as determined by the commission.
>
> (c) In calculating the benefit-cost ratio, the costs shall include, but are not limited to, utility and participant expenditures for the following, as applicable:
> (I) Program design, administration, evaluation, advertising, and promotion;
> (II) Customer education;
> (III) Incentives and discounts;
> (IV) Capital costs; and
> (V) Operation and maintenance expenses.

Q. DO THE COMMISSION'S RULES PROVIDE ADDITIONAL GUIDANCE ON HOW TO ASSESS THE COST-EFFECTIVENESS OF GAS DSM PROGRAMS?

A. Yes. Commission Rule 4751(o) defines the Modified Total Resource Cost test or "modified TRC test." Commission Rules 4753(l) and (m) further prescribe the cost/benefit measures as follows:

> (l) As a part of its DSM plan each utility shall propose a DSM plan with a benefit/cost value of unity (1) or greater, using a modified TRC test.
>
> (m) For the purposes of calculating a modified TRC, the non-energy benefits of avoided emissions and societal impacts shall be incorporated as follows.
>
> (I) The initial TRC ratio, which excludes consideration of avoided emissions and other societal benefits, shall be multiplied by 1.05 to reflect the value of the avoided emissions and other societal benefits.

> The result shall be the modified TRC. A utility may propose a different factor for avoided emissions and societal impacts, but must submit documentation substantiating the proposed value.

Q. HOW ARE THE COMPANIES MEASURING COST-EFFECTIVENESS OF THE GAS DSM PROGRAMS UNDER THE COMBINED PLAN?

A. In general, cost-effectiveness is measured using the mTRC for each of the programs. The Combined Plan includes two changes to the cost-effectiveness calculation as compared to previous BHCOG and BHGD DSM plans. The first change is increasing the measured financial benefits adder from 5% to 25% for the Income Qualified Programs. This change is consistent with Commission Decision No. C14-0731 in Proceeding No. 13A-0686EG ("Public Service Decision") where a 25% non-energy benefits adder for low-income programs was approved through 2020 for Public Service Company of Colorado ("Public Service").[9] This adder gives additional weight to non-energy benefits specific to low-income programs such as reduced arrearages and the improved health and safety of buildings.

There are two aspects to the second change. First, "the participants' avoided operating and maintenance costs" were included in the cost-effectiveness calculation, which is consistent with Commission Rule 4751(o)[10]; specifically the savings participants receive from reduced water consumption. Second, the Companies discounted this non-

[9] Decision No. C14-0731 at paragraph 76 reads, "We direct Public Service to maintain its low-income efficiency programs from 2015 to 2020 at existing levels. We will not order, however, an increase in the low-income non-energy benefits adder. The adder will remain at 25 percent for low-income gas and electric DSM programs."

[10] Commission Rule 4751(o) reads, in part, "…..In performing the modified TRC test, the benefits shall include, but are not limited to, as applicable: the utility's avoided production, distribution, and energy costs; the participant's avoided operating and maintenance costs; the valuation of avoided emissions; and non-energy benefits as set forth in rule 4753…"

energy benefit using a societal discount rate to determine the net present value of the future stream of benefits resulting from gas DSM, which is consistent with Commission Rule 4753(m)(I). This limited use of the societal discount rate for certain gas DSM measures was approved for Public Service by the Public Service Decision.[11] The WACC discount rate is still used to discount energy benefits in the mTRC analysis.

Q. IN YOUR RESPONSE ABOVE, YOU INDICATE THE COMPANIES WOULD USE A SOCIETAL DISCOUNT RATE. WHY WOULD IT BE APPROPRIATE TO APPLY A SOCIETAL DISCOUNT RATE FOR CERTAIN GAS DSM MEASURES?

A. As previously discussed, the funds used for implementing gas DSM measures are collected from all retail gas customers. Most of these funds are then allotted to DSM program participants in the form of rebates, promotions, and education. These customer-funded investments may be considered societal investments instead of shareholder investments, since the funds for these programs are all collected from customers. Gas DSM measures are intended to reduce the consumption of gas. The benefit provided to all gas customers (beyond the direct program participants) is the societal benefit of reduced air emissions or pollutants and water consumption.

Unlike electric DSM, gas DSM measures avoid little, if any, future investments in production, transmission, distribution or capacity. There is no basis to compare gas DSM

[11] Decision No. C14-0731 at paragraph 72 reads, "We also grant Public Service limited authority to apply the SCT to determine the cost-effectiveness of gas DSM measures and programs…The discount rates applied in the SCT shall be as suggested by Public Service: (1) the Company's WACC will be used to discount utility costs and most of the benefits, such as avoided fuel costs; and (2) the United States Department of Treasury 20-Year Constant Maturity Rate will be used to discount customer incurred costs and environmental benefits…."

measures to alternative supply-side utility investments. Considering that customers fund investments in DSM measures in the first instance, and that all customers receive the societal benefit of a cleaner environment, it is appropriate to apply a societal discount rate in determining the net present value ("NPV") of the future stream of benefits resulting from gas DSM.

Q. WHAT ARE THE FORECASTED MODIFIED TRCS FOR THE PROGRAMS OF THE COMBINED PLAN USING THE INPUTS DESCRIBED ABOVE?

A. The Tables below show, for BHCOG and BHGD, respectively, first-year dekatherm savings and the cumulative three-year plan's NPV benefits, costs, and cost-effectiveness results, using the mTRC test consistent with the above discussion.

Table FCS-3: BHCOG Program Modified TRC Test[12]

Program	First-year DTh Savings	Three-year Plan NPV Benefits	Three-year Plan NPV Costs	Benefit/Cost Ratio
Residential Retrofit Program	40,270	$3,647,651	$2,721,977	1.34
Residential New Construction Program	5,765	$1,119,076	$1,398,818	0.80
Nonresidential Retrofit Program	19,109	$2,446,817	$1,954,200	1.25
Nonresidential New Construction Program	676	$114,353	$178,119	0.64
Low-Income Program	1,164	$464,076	$745,639	0.62
School-Based Energy Education Program	8,547	$872,840	$300,530	2.90
Total Portfolio	**75,530**	**$8,664,812**	**$7,299,283**	**1.19**

Table FCS-4: BHGD Program Modified TRC Test[13]

Program	First-year DTh Savings	Three-year Plan NPV Benefits	Three-year Plan NPV Costs	Benefit/Cost Ratio
Residential Retrofit Program	40,268	$2,832,580	$1,602,305	1.77
Residential New Construction Program	981	$176,230	$272,651	0.65
Nonresidential Retrofit Program	22,222	$2,728,324	$2,279,074	1.20
Nonresidential New Construction Program	676	$113,004	$179,702	0.63
Low-Income Program	5,160	$1,974,880	$2,673,456	0.74
School-Based Energy Education Program	6,042	$600,120	$220,283	2.72
Total Portfolio	**75,349**	**$8,425,138**	**$7,227,471**	**1.17**

Q. UNDER COMMISSION RULES, WHAT COST-EFFECTIVENESS REQUIREMENTS APPLY TO THE COMBINED PLAN?

A. Under Commission Rule 4753(l), a "utility shall propose a DSM plan with a benefit/cost value of unity (1) or greater, using a modified TRC test." As shown on the Tables above, the 2018-2020 DSM Plan has a mTRC of 1.19 for BHCOG and a mTRC of 1.17 for BHGD. Thus, the Combined Plan, at the plan level, complies with Commission Rules.

[12] Duplicate of Table ES.4.1 in the Combined Plan.
[13] Duplicate of Table ES.4.2 in the Combined Plan.

Q. **UNDER COMMISSION RULES, WHAT COST-EFFECTIVENESS REQUIREMENTS APPLY AT THE PROGRAM LEVEL OF THE COMBINED PLAN?**

A. Pursuant to Commission Rule 4753(f)(VI), "[e]ach proposed DSM program is to have a projected value greater than or equal to 1.0 using a modified TRC test," excluding certain special programs, such as low income. Under the Combined Plan, and for both BHCOG and BHGD, the Residential New Construction Program and the Nonresidential New Construction Program do not meet Commission Rule mTRC requirements. Mr. James Dillon, in his Direct Testimony, explains why these programs do not meet this cost-effectiveness test. Because it is appropriate, in the view of the Companies, to have a complete DSM portfolio, a Joint Motion for Partial Waiver of Rule 4753(f)(VI) and Such Other Waivers as may be Necessary to Implement the Combined Plan as it applies to these two programs is being requested.

VIII. ESTIMATED CUSTOMER IMPACT OF COMBINED PLAN

Q. WHAT IS THE ESTIMATED CUSTOMER BILL IMPACT OF THE COMBINED PLAN ON BHCOG AND BHGD CUSTOMERS?

A. The residential and non-residential bill impact of the Combined Plan have been calculated for BHCOG and BHGD. This information is included as Appendix E to the Combined Plan (Attachment JD-1). The calculation compares the impact on customers' bills between the July 1, 2017 rates (including the DSMCA)[14] and July 1, 2018, when the Combined Plan, if approved, will be implemented. The bill impact calculations only reflect changes to BHCOG's and BHDG's DSMCAs. The modeled effect on BHCOG's and BHGD's DSMCAs and calculated bill impacts are shown in the following tables:

Table FCS-5: BHCOG 2018 Estimated Rate Impact

Customer Class	Current DSMCA Factor[1]	Estimated 2018 DSMCA Factor	Avg. Monthly Bill Increase/(Decrease)	% Monthly Bill Increase/(Decrease)
Residential	8.77%	10.14%	$0.30	0.51%
Non-residential	27.35%	27.67%	$0.11	0.11%

Note[1]: Current proposed DSMCA Factor in Proceeding No. 17A-0213G
Note[2]: Represents average monthly bill increase for Small Commercial customer

Table FCS-6: BHGD 2018 Estimated Rate Impact for Base Rate Area 1

Customer Class	Current DSMCA Factor[1]	Estimated 2018 DSMCA Factor	Avg. Monthly Bill Increase/(Decrease)	% Monthly Bill Increase/(Decrease)
Residential	2.49%	6.61%	$1.23	1.52%
Non-residential	3.26%	5.60%	$1.05	0.88%

Note[1]: Current proposed DSMCA Factor in Proceeding No. 17AL-0218G
Note[2]: Represents average monthly bill increase for Small Commercial customer

[14] On April 3, 2017, BHCOG filed a Combined Application seeking approval of a revised DSMCA, including approval of a G-DSM bonus, in Proceeding No. 17A-0213G. On that same date, BHGD filed an advice letter seeking approval of revised DSMCA factors in Proceeding No. 17AL-0218G. The DSMCA factors proposed in those filings to become effective on July 1, 2017 are pending approval by the Commission.

Table FCS-7: BHGD 2018 Estimated Rate Impact for Base Rate Area 2

Customer Class	Current DSMCA Factor[1]	Estimated 2018 DSMCA Factor	Avg. Monthly Bill Increase/(Decrease)	% Monthly Bill Increase/(Decrease)
Residential	0.24%	4.39%	$0.98	1.85%
Non-residential	-2.53%	-1.86%	$0.24	0.27%

Note[1]: Current proposed DSMCA Factor in Proceeding No. 17AL-0218G
Note[2]: Represents average monthly bill increase for Small Commercial customer

IX. DSMCA TARIFF REVISIONS

Q. EARLIER IN YOUR TESTIMONY YOU STATED THAT THE COMPANIES ARE REQUESTING CHANGES TO THEIR DSMCA TARIFFS. PLEASE EXPLAIN AND DETAIL THE CHANGES MADE TO THE BHCOG DSMCA TARIFF.

A. The Companies are proposing updates and clarifying changes to the DSMCA Tariffs of both BHCOG and BHDG. The changes to the BHCOG DSMCA Tariff are found, in redline, in Attachment FCS-1. As noted thereon, the most substantive proposed change provides for the utility to recover cumulative lost revenues resulting from energy efficiency programs between rate cases. This is appropriate since the efficiency measures provide year-to-year savings and reductions in natural gas used and, therefore, the utility's margins are reduced every year from these programs. A clean version of the redlined BHCOG DSMCA Tariff (changes accepted), is Attachment FCS-2.

Q. PLEASE EXPLAIN THE CHANGES MADE TO THE BHGD DSMCA TARIFF.

A. The Companies, whenever possible, are seeking to make tariff provisions the same. As previously discussed, the Companies are intending to conform and integrate the management and administration of the energy efficiency programs to the greatest extent possible. Having virtually identical DSMCA tariff sheets should result in easier regulatory administration and review.

As a result, BHGD is proposing to replace its current DSMCA tariff provisions with those proposed by BHCOG. Thus, the redlined tariff found in Attachment FCS-3 shows that the BHCOG proposed tariff from Attachment FCS-2 is copied into BHGD's DSMCA tariff. The only change made from BHCOG's proposed DSMCA tariff is to remove "G-" from the beginning of terms, such as "G-DSMCA." A clean version of the redlined BHGD DSMCA Tariff (changes accepted), is Attachment FCS-4.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.

Appendix A

Statement of Qualifications

Fredric C. Stoffel

Mr. Stoffel graduated from the University of Colorado with a degree in Economics. He began his employment with Public Service Company of Colorado (Public Service) in February 1979. From May 1980 through January 1989, he held various positions in Rates and Regulations.

In February 1989, he was appointed Manager of the Gas Supply and Transportation Division, becoming General Manager in August 1992.

In April 1994, with the merger of Public Service and Southwestern Public Service Company, Mr. Stoffel was appointed Managing Director, Regulatory Administration, for New Century Energies, Inc. (NCE). In that capacity, he had overall responsibility for the company's rate and regulatory affairs including determination of revenue requirements and electric and gas rate design.

With the merger of NCE and Northern States Power Company in August 2000 to form Xcel Energy Inc., he was promoted to the position of Vice President, Policy Development. In this position he was responsible for coordinating the development of the Company's policies related to electric and natural gas restructuring, including environmental and market structure issues. He also had primary responsibility for managing the Company's rate and regulatory affairs before the Colorado Public Utilities Commission.

In October 2006, he was named Vice President, Marketing. In this position, he oversaw Xcel Energy's market research, product development, product management, advertising, customer advocacy and renewable and energy efficiency programs.

Beginning in March 2009, Mr. Stoffel began working as an independent energy consultant. In that capacity he managed the performance of an energy efficiency potential study for Tri-State Generation and Transmission Association, Inc. (Tri-State).

In December 2009, Mr. Stoffel was employed by Tri-State as Energy Resources Strategy Coordinator. In that capacity he was Project Manager for Tri-State's Integrated Resource Plan and oversaw the implementation of its long-term business strategy analysis tools.

In June 2010, Mr. Stoffel was promoted to Senior Manager, Budget and Financial/Business Analytics and was responsible for the development of Tri-State's annual operating and capital budgets as well as the long term financial forecast.

Mr. Stoffel began his employment with Black Hills Corporation ("BHC") in October 2012, as Director of Regulatory Services in Colorado. Currently, he serves as Director of Regulatory for the Colorado electric and gas utilities of Black Hills Corporation. He also directs the energy efficiency programs for all BHC utilities.

Mr. Stoffel has testified before the Federal Energy Regulatory Commission, the Colorado Public Utilities Commission, the Wyoming Public Service Commission, the New Mexico Public Regulation Commission, the Public Utility Commission of Texas and the Colorado legislature on numerous regulatory, rate, certificate, resource planning and tariff issues.