

**OFFICE OF CONSUMER ADVOCATE**

**DIRECT TESTIMONY**

**OF**

**REBECCA A. FOSTER**

**IN RE: BLACK HILLS/IOWA GAS UTILITY COMPANY, LLC  
d/b/a BLACK HILLS ENERGY**

**DOCKET NO. EEP-2013-0001**

**June 27, 2013**

1 **Q: Please state your name and business address.**

2 A: Rebecca Foster, 48 West 32<sup>nd</sup> Street, Bayonne NJ 07002.

3 **Q: By whom and in what capacity are you employed?**

4 A: I am employed by the Vermont Energy Investment Corporation (VEIC) as a  
5 Managing Consultant.

6 **Q: Please describe your education and work experience.**

7 A: I have a B.A. in psychology from Boston University and an M.B.A. from  
8 Simmons College. I joined VEIC in 2011 and am currently a Managing  
9 Consultant in VEIC's Consulting Division. I manage projects primarily in the  
10 residential and multifamily building markets with a focus on energy efficient  
11 equipment, systems, building practices, and behaviors. I currently provide  
12 consulting services for energy efficiency programs in twelve states and one  
13 Canadian province, and conduct work under contract with the Department of  
14 Energy. I have extensive experience in energy efficiency program design and  
15 market transformation based on my 12+ years of work in the field, during which  
16 time I have been involved with many aspects of program and portfolio design  
17 and implementation support.

18 In my role as Managing Consultant at VEIC, I support energy efficiency  
19 programs and clients in Oregon, Washington, Idaho, Montana, California,  
20 Connecticut, Iowa, Massachusetts, Rhode Island, New Jersey, New York, and  
21 Vermont along with the Canadian Province of British Columbia. I have also  
22 been engaged in projects for the Department of Energy, including authoring a

1 white paper explaining how state and local governments can pursue partnerships  
2 with ratepayer funded efficiency programs, and have worked in close  
3 collaboration with the Environmental Protection Agency on a market  
4 transformation initiative for residential clothes dryers. In addition, I have  
5 worked in close partnership with several trade associations on energy efficiency  
6 research and initiatives, including the Heating, Air-conditioning, and  
7 Refrigeration Distributors International and the National Association of  
8 Electrical Distributors. This collaboration with trade allies has been instructive  
9 in shaping my view that efficiency programs are most effective when they are  
10 designed with full input and buy-in from the industries that serve the markets  
11 that they seek to influence. Throughout my work on the design, development,  
12 implementation, and evaluation of energy efficiency programs, I have gained a  
13 deep understanding of successful models and approaches for transforming the  
14 market. This extensive exposure has provided invaluable insights into energy  
15 efficiency programs and the aspects and elements that make a difference.

16 Prior to my work with VEIC, I led the residential sector initiatives at the  
17 Consortium for Energy Efficiency (CEE). CEE is a membership organization  
18 for energy efficiency program administrators with over 100 members across the  
19 United States and Canada, including utilities in Iowa. (During my tenure with  
20 the organization, IPL and Black Hills Energy were members of CEE and  
21 MidAmerican served on the Board of Directors). In my position at CEE, I led  
22 numerous committees of CEE members in the areas of residential lighting,

1 appliances, new homes, existing homes, consumer electronics, and  
2 heating/ventilation/and cooling. I regularly conducted research on program best  
3 practices, technology and market trends, and new savings opportunities. I was  
4 responsible for leading committees of energy efficiency program administrators  
5 to develop high efficiency equipment specifications, identify the best approaches  
6 for programs to take to influence markets, comment on national specifications  
7 established by ENERGY STAR, and liaise with trade associations to ensure that  
8 efficiency program plans were well understood and embraced by the industries  
9 that supply products and services to the residential marketplace. One area of  
10 expertise included launching market transformation initiatives in partnership  
11 with these industries, including a design competition to encourage lighting  
12 fixture manufacturers to incorporate energy efficient light sources and controls  
13 into their products (implemented in conjunction with the American Lighting  
14 Association) and development of a database of high efficiency HVAC  
15 equipment (in partnership with the Air-Conditioning, Heating, and Refrigeration  
16 Institute). I also authored numerous white papers during this time, including the  
17 CEE Consumer Electronics Initiative and the CEE Existing Homes Program  
18 Guide.

19 **Q: Please describe VEIC's experience with energy efficiency programs in Iowa.**

20 A: VEIC has been supporting the Iowa OCA with utility plan reviews, advice,  
21 training, and testimony since 1993. VEIC reviewed utility Demand Side  
22 Management (DSM) plans and savings claims for multiple utilities between

1 1993 and 1995. During that time, OCA staff also travelled to Vermont for DSM  
2 training. In the late 1990s, VEIC again assisted the OCA with utility plan  
3 reviews. In 2002 -2003, VEIC provided IPL and MidAmerican plan reviews  
4 and assisted Joe Murphy and Christine Collister of the OCA with development  
5 of testimony. In 2008, VEIC developed testimony on behalf of the OCA before  
6 the Iowa Utilities Board (IUB) in the review of the Energy Efficiency Plans for  
7 Interstate Power and Light Company (IPL), MidAmerican Energy Company,  
8 and Black Hills/Iowa Gas Utility Company, LLC d/b/a Black Hills Energy.  
9 VEIC has assisted the OCA with technical support in the review of the 2012  
10 Assessment of Energy and Capacity Savings Potential in Iowa (prepared for the  
11 Iowa Utility Association and the Iowa investor-owned utilities by the Cadmus  
12 Group). VEIC has also provided reviews of the independent evaluator's reports  
13 on the utilities' energy efficiency programs, and technical reviews of the 2014-  
14 2018 Energy Efficiency Plans for Interstate Power and Light Company, Black  
15 Hills/Iowa Gas Utility Company, LLC d/b/a Black Hills Energy, and  
16 MidAmerican Energy Company.

17 **Q: Please state any previous testimonies in which you have been involved.**

18 A: As part of my role at VEIC, I have been involved in the development of  
19 testimony on the effectiveness of the EmPOWER Maryland energy efficiency  
20 programs, which are administered by Potomac Edison (PE), Baltimore Gas and  
21 Electric(BG&E), Delmarva Power and Light Company (Delmarva), Potomac  
22 Electric Power Company (PEPCO), and the Southern Maryland Electric

1 Cooperative (SMECO). Specifically, I contributed to comments submitted by  
2 the Office of People’s Counsel on the performance of the utility programs in  
3 Maryland in 2010 (Case Numbers 9153, 9154, 9155, 9156, and 9157). These  
4 comments were submitted on March 22, 2011.

5 **Q: Have you testified previously before the Iowa Utilities Board?**

6 A: I have filed testimony on behalf of the Iowa Office of Consumer Advocate  
7 before the Iowa Utilities Board (IUB) in Docket No. EEP-2012-0001 (2014-  
8 2018 Energy Efficiency Plan–Interstate Power and Light Company) and Docket  
9 No. EEP-2012-0002 (2014-2018 Energy Efficiency Plan–MidAmerican Energy  
10 Company).

11 **Q: On whose behalf are you testifying?**

12 A: My testimony is sponsored by the Iowa Office of Consumer Advocate (OCA).

13 **Q: What is the purpose of your testimony?**

14 A: I will address Black Hills/Iowa Gas Utility Company, LLC d/b/a Black Hills  
15 Energy’s (Black Hills or Company) proposed energy efficiency programs.  
16 Specifically, I will address issues concerning energy efficiency portfolio  
17 performance as well as evaluation, monitoring, and verification.

18 **Q: Have you prepared an exhibit for presentation in this proceeding?**

19 A: Yes. OCA Exhibit\_\_\_(RAF-1), Schedules A through F was prepared by me.  
20 Schedule A includes my qualifications (*see* above). Schedule B is the document  
21 “A National Review of Natural Gas Energy Efficiency Programs” (ACEEE  
22 2012). Schedule C is the document “Frontiers of Energy Efficiency: Next

1 Generation Programs Reach for High Energy Savings” (ACEEE 2013).  
2 Schedule D is the document “Can We Get There from Here? Identifying Key  
3 Factors in Meeting Aggressive New State Energy Efficiency Savings Goals”  
4 (IEPEC 2009). Schedule E is the document “Review of Evaluation,  
5 Measurement and Verification Approaches Used to Estimate the Load Impacts  
6 and Effectiveness of Energy Efficiency Programs” (Lawrence Berkeley National  
7 Laboratory, April 2010). Schedule F is a list of the Massachusetts Energy  
8 Efficiency Advisory Council’s 2011-2012 Evaluation, Measurement &  
9 Verification Studies.

#### 10 **ENERGY EFFICIENCY PORTFOLIO PERFORMANCE**

11 **Q: What is your general overview of Black Hills’ proposed energy efficiency**  
12 **plan?**

13 **A:** Black Hills’ 2014-2018 Energy Efficiency Plan proposes total five-year budgets  
14 for its gas Energy Efficiency (EE) portfolio of just under \$28.5 million. These  
15 expenditures are forecast to result in cumulative first-year natural gas savings of  
16 approximately 5.45 million therms by 2018. Natural gas savings goals start at  
17 0.61% of total expected Iowa eligible retail sales in 2014 and increase each year  
18 to 0.68% of total eligible forecasted sales by 2018 (Additional Information  
19 Response to Docket No. EEP-2013-0001, Table 1). The proposed Energy  
20 Efficiency Portfolio is cost-effective, with an overall EE portfolio societal cost-  
21 benefit ratio of 1.02.

1 **Q: How do the proposed budgets and savings goals compare to Black Hills’**  
2 **historical experience?**

3 A: Budgets for the overall EE portfolio are slightly higher than the budget of \$27  
4 million for the overall EE programs that was initially proposed in the 2009-2013  
5 plan. However, the challenge Black Hills faces, along with many other program  
6 administrators, is achieving the level of savings it has achieved in the past as  
7 efficiency technologies and markets change and natural gas prices fall. For the  
8 EE portfolio, Black Hills’ 2014-2018 Plan proposes much lower overall savings  
9 than the previous plan’s five-year targets of approximately over 7.4 million  
10 therms of gas savings.

11 Black Hills’ recent actual performance has varied relative to the levels  
12 targeted in the earlier plan (higher in 2010 and 2012; lower in 2011), so it seems  
13 appropriate to compare the new proposal with the levels of spending and saving  
14 the programs have actually experienced. That comparison indicates that the new  
15 plan proposes budgets that are less than actual recent expenditures – as the plan  
16 indicates, “*the overall budget for Black Hills Energy’s energy-efficiency*  
17 *portfolio represents a reduction from historical funding levels*” (Black Hills  
18 2014-2018 EE Plan, pg. ES-xii). In addition, proposed savings are to be  
19 achieved at costs that are higher than what was attained in recent years. For  
20 comparison with what has been achieved, the following table shows the first and  
21 last 2014-2018 plan years with the most-recent actual EE portfolio performance  
22 and costs per unit of energy saved (actual performance data from Black Hills

1 Annual Plans). This analysis shows that it will be more costly to acquire savings  
 2 under the new plan than in recent years.

	Actual Performance			EE Plan	
	2010	2011	2012	2014	2018
\$\$	\$7,594,900	\$6,854,605	\$6,233,116	\$5,294,906	\$6,113,312
Therms	1,584,680	1,438,470	1,593,210	1,032,180	1,147,590
\$/therm	\$4.79	\$4.77	\$3.91	\$5.13	\$5.33

3 Energy-Efficiency Portfolio including School-based Education Program; omits Trees and Other Public Purpose

4 Natural gas savings goals for this plan start at 0.61% of total expected  
 5 Iowa eligible retail sales in 2014 and rise each year to 0.68% of total forecasted  
 6 eligible sales by 2018 (Additional Information Response to Docket No. EEP-  
 7 2013-0001, Table 1). These achievements represent lower savings than in  
 8 recent years; annual EE savings in 2011 of 1.44 million therms represents ~  
 9 0.84% of 2011 annual retail sales, and 2012 annual EE savings of 1.59 million  
 10 therms represents 1.1% of retail sales (savings data from Black Hills Annual  
 11 Reports; sales data from Black Hills' Annual Report of Rate Regulated Electric  
 12 Utility, Form IE-1, p. 301).

13 **Q: How do these savings goals and budgets compare to estimates of energy**  
 14 **efficiency potential?**

15 A: These savings targets are expected to achieve from 33.3% (in 2014) to 39.7%  
 16 (in 2018) of the total gas market potential for Black Hills (calculations using  
 17 Additional Information Response to Docket No. EEP-2013-0001, Table 2) as  
 18 determined by Cadmus in its 2012 in its report: 2014–2023 Assessment of  
 19 Energy and Capacity Savings in Iowa (the Assessment). Market potential

1 represents the efficiency that is achievable when market barriers are removed  
2 for technologies and activities that are technically feasible and cost-effective.  
3 Limits to achieving full market potential are thus defined by budgets and  
4 planning constraints. The levels proposed in the Black Hills plan indicate that  
5 projected savings fall significantly short of the potential in their territory, and  
6 that to achieve all economical energy savings by 2018 would require significant  
7 ramp-up of efforts.

8 **Q: Do you have concerns regarding Black Hills' Plan savings goals?**

9 A: While Black Hills characterizes this plan as an aggressive one (Dillon  
10 Testimony, page 10), I am concerned that the proposals in the Plan rather  
11 continue a trajectory of energy efficiency programs and approaches that will not  
12 sufficiently address the current challenges of stricter standards, maturing  
13 markets, and low natural gas prices. Black Hills indicates that it has recognized  
14 these challenges but has responded by reducing its support for energy  
15 efficiency:

16 These changes, along with the maturity of energy-  
17 efficiency programs such as those offered by Black Hills  
18 Energy, have made it a challenge for this Plan to remain  
19 cost-effective while maintaining a well-rounded portfolio  
20 of programs for Iowans. To achieve this balance, the  
21 overall Plan budget is substantially reduced from  
22 historical funding levels. (Black Hills EE Plan, page ES-  
23 ii).

24 In my opinion, this is the time for focused and innovative pursuit of as  
25 much cost-effective energy efficiency as possible as a means of meeting the best  
26 interest of ratepayers, especially considering that proposed portfolio savings are

1 significantly below the Assessment-estimated potential. Continued investment  
2 reflects Black Hills’ on-going commitment to energy efficiency, but the  
3 proposed performance may not be sufficient to allow the Company to maintain a  
4 trajectory of continued strong support that is needed for long-term energy  
5 efficiency adoption.

6 **Q: Is there evidence from other jurisdictions that more-ambitious energy**  
7 **efficiency targets are being set?**

8 A: Gas programs throughout the country are facing the same constraints on savings  
9 growth as Black Hills. However, as found in a recent national survey of natural  
10 gas efficiency programs, “*trends indicate expansion of overall funding for*  
11 *natural gas energy efficiency programs, driven by specific, high savings goals*  
12 *as established by energy efficiency resource standards (EERS).*”<sup>1</sup> That levels of  
13 performance more ambitious than those set by Black Hills (0.61% - 0.68%) are  
14 considered to be achievable by program administrators and policy makers –  
15 even in light of more-stringent standards, reduced savings from historically  
16 important measures, and low gas prices – is illustrated by the number of  
17 jurisdictions that are setting targets above the Black Hills proposals. The table  
18 below highlights long-term goals reaching significantly higher savings levels.

State or Utility	Natural Gas EE Plan Annual Targets as % of Retail Sales
Iowa - IPL	0.88% (2014-2018)
Iowa - MidAmerican	0.8% (2014-2018)

<sup>1</sup> A National Review of Natural Gas Energy Efficiency Programs, York, et al. ACEEE 2012.

State or Utility	Natural Gas EE Plan Annual Targets as % of Retail Sales
Maine	1.0% (2011; 1.4% (2013)
Massachusetts	1.15% (2012)
Michigan	0.75% (2012 and beyond)
Minnesota	0.75% (2010-2012)
New York	1.3% (2008 and beyond)
Wisconsin	1.0% (2013)

Information developed from regulatory filings and York et al., ACEEE 2012

I recommend that Black Hills join these leading program administrators in striving to accelerate and expand its program support to sustain the strong foundations it has in place and build on past program experience, rather than contract and limit its program scope in the face of current challenges. Black Hills should adopt a vision of providing continuity and enhanced support to its customers – households, businesses, institutions, and industry – through providing opportunities for larger numbers of customers to participate and for more-comprehensive energy savings with each customer. This becomes even more important when the alternative costs of not acting could be considerably higher, especially when factoring in future fuel price uncertainties and potential for future carbon mitigation concerns.

**Q: What is your general understanding of Black Hills’ allocation of budget across its energy efficiency programs?**

A: I applaud the philosophy behind the development of the programs and offerings provided by the Black Hills plan:

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Because of Black Hills Energy’s strong commitment to providing customers with a variety of savings opportunities, it was a priority to develop this Plan to carefully balance achieving a cost-effective portfolio with maintaining programs Iowans can count on year after year. (EE Plan, pg. 4).

Black Hills has allocated its energy efficiency budgets across 5 targeted residential non-low-income programs, 4 targeted nonresidential programs, 5 low-income programs, and a school-based energy education program. The table below gives information on the percentages of the EE budgets allocated to each program in the 2014-2018 plan, along with information on the five-year average cost of acquiring first-year savings (\$/kWh and \$/therm) and societal cost-effectiveness for each program. Acquisition costs are also given for recent (2012) actual performance for comparison (data from the Black Hills Energy 2012 Annual Report).

Cost of Energy Savings - Gas	2012 Actual	2014-2018 EEP	% of 2014-2018 EE Budget	2014-2018 Societal C-E
	\$/therm	\$/them		
<i>Energy-Efficiency Portfolio - TOTAL</i>	\$3.91	\$5.22	100%	1.02
Residential Evaluation/Audit	\$22.13	\$12.67	12%	0.58
Residential Prescriptive	n/a	\$4.45	46%	1.10
Residential New Construction	\$11.22	\$5.22	9%	0.71
Residential Space and Water Heating	\$2.25			
Residential Envelope Measures	\$16.56			
<i>Residential Sector - all programs</i>	\$5.21	\$5.17	67%	0.97
NonResidential Evaluation/Audit	\$845.71	\$30.20	2%	0.02
NonResidential Prescriptive	\$1.10	\$4.79	15%	2.01
NonResidential Custom	\$0.95	\$0.88	1%	4.93
NonResidential New Construction	\$10.81	\$2.07	0%	2.51
<i>Nonresidential Sector - all programs</i>	\$1.45	\$3.93	19%	2.07
Low Income Weatherization		\$36.25	11%	0.40
Low Income Energy Education		\$2.43	< 1%	1.90
Low Income Multifamily Efficiency		\$690.63	< 1%	0.00

Cost of Energy Savings - Gas	2012 Actual	2014-2018 EEP	% of 2014-2018 EE Budget	2014-2018 Societal C-E
	\$/therm	\$/them		
Improvement Initiative				
Low Income Affordable Housing		\$9.78	< 1%	1.32
Low Income Weatherization Team		\$2.03	< 1%	7.20
<i>Low-income Sector – all programs</i>	\$2.93	\$19.69	12%	0.58
Public Purpose School-Based Energy Education	\$1.35	\$2.22	1%	2.42

1 2012 Low-income programs reported in the aggregate only.

2 Residential non-low-income programs (the first 5 program listed in these  
3 tables) account for 67% of the new plan’s budget; the Nonresidential programs  
4 make up 19% of the budget. Budgets for low-income programs represent 12%  
5 total budget. The two prescriptive programs represent the bulk of spending at  
6 61% of the plan total. For comparison, the allocation of savings in the plan is  
7 fairly close to these budget allocations - expected to be 68% from Residential  
8 programs, 25% from Nonresidential programs, and 3% from low-income  
9 programs. This allocation also corresponds fairly closely to the findings from  
10 the Assessment, which indicated that 68% of market potential savings will come  
11 from the residential sector and 32% from the commercial and industrial sectors.  
12 Cost of acquiring first-year savings has risen for the gas portfolio over that for  
13 2012, most significantly in the Nonresidential and the Low-income sectors. The  
14 change in the cost of acquiring energy for individual programs varies; it appears  
15 that the increase in \$/therm for the Nonresidential sector is primarily driven by  
16 increases in the cost of the NR Prescriptive program.

17 **Q: Do you have any concerns about this allocation of effort across programs?**

1 A: While the overall portfolio is cost effective, with a societal C-E ratio of 1.02, not  
2 all individual programs are cost effective. Since avoided costs play a large role  
3 in cost-effectiveness levels, natural gas price volatility can lead to rapid changes  
4 in C-E ratios from year to year and, if strict thresholds of program cost-  
5 effectiveness are required, to variability in program offerings. I do agree with  
6 the discussion of this point provided by Mr. Dillon in his testimony (Dillon  
7 Testimony, page 8) that:

8 If program approval is conditioned on passage of the  
9 societal test, the market will see a lack of consistency in  
10 program offerings, as programs may be approved in one  
11 plan only to be excluded from a subsequent plan due to  
12 changes in forecasted natural gas prices.

13 It is important to provide stable information on program measures and activities  
14 so that the market can develop long-term capacity to deliver energy efficiency in  
15 response. The programs that might raise the most concern with respect to their  
16 low C-E ratios are the two Evaluation programs. These programs are designed  
17 to inform customers of efficiency opportunities and drive them to participate in  
18 other programs, with the only program savings coming from directly installed  
19 measures. Costs for these programs are therefore in some sense in support of  
20 savings allocated to other programs. In addition, overall performance could be  
21 enhanced through more focus on the more cost-effective opportunities within  
22 the Residential and, even more so, the Nonresidential sectors, while reviewing  
23 and adjusting spending on measures that are not cost-effective.

1                    However, societal C-E ratios of much greater than 1.00, such as those  
2                    seen for the other Nonresidential programs, can also be interpreted to mean that  
3                    there is more cost-effective potential left to acquire, reinforcing the point made  
4                    above that Black Hills should consider a plan that seeks to achieve a larger  
5                    portion of the potential. As long as savings are cost-effective, there should be  
6                    ample reason to consider acquiring more savings in individual markets and  
7                    undertaking a broader range of activities designed to address barriers to  
8                    incorporating energy efficiency further in Iowa's markets. In the context of  
9                    energy efficiency, pursuing cost effectiveness does not mean finding the least  
10                    expensive way to accomplish objectives (although performance criteria should  
11                    be in place to encourage cost efficiency and energy efficiency objectives), but  
12                    rather identifying all investments that return a benefit that is greater than the  
13                    cost to procure them. This means that any activity that is cost-effective at any  
14                    level  $\geq 1.00$  can be expected to return benefits that outweigh the cost. None of  
15                    the information presented provides a compelling reason to limit Black Hills'  
16                    investment in energy efficiency to the C-E levels proposed, particularly in its  
17                    Nonresidential programs.

18    **Q: Do you have any concerns with the budget allocation to cost categories?**

19    A: Review of the categories to which program budgets are allocated can reveal an  
20                    indication about the Company's vision and approach for driving energy  
21                    efficiency (*see* table below for a summary of budget categories for the full EE  
22                    portfolio across the plan years). Incentives make up 63% of the total plan

1 budget. The budget category for Evaluation Delivery, primarily costs paid to  
 2 contractors for walk-through audits, makes up an additional 22% of the total.  
 3 Overall administrative costs are low, as would be expected given that there are  
 4 less than 4.5 FTE of Black Hills’ staff supporting these programs (Black Hills  
 5 Energy 2014-2018 EE Plan, p. ES-xiv).

<b>Total Plan Budgets by Category</b>		
<b>Budget Category</b>	<b>Total</b>	<b>% Total</b>
Administration	<b>\$1,043,600</b>	4%
Marketing & Training	<b>\$1,135,900</b>	4%
Program Delivery	<b>\$228,200</b>	1%
Evaluation Delivery	<b>\$6,298,000</b>	22%
Dealer Incentives	<b>\$515,700</b>	2%
EM&V	<b>\$1,417,200</b>	5%
<b>Total Admin. Cost</b>	<b>\$10,638,600</b>	<b>37%</b>
Customer Incentives	<b>\$17,912,100</b>	<b>63%</b>
<b>Total Cost</b>	<b>\$28,550,700</b>	<b>100%</b>

6 Operational efficiency is a good thing – however, striving to reduce all  
 7 costs that are not incentives or installation is not necessarily optimal for  
 8 supporting effective growth of energy efficiency. And while one component of  
 9 the definition used by the Joint Assessment for “*market potential*” is “*savings*  
 10 *that might be achievable under an aggressive acquisition scenario where:*  
 11 *utilities offer incentives of 100% of incremental measure costs...*”<sup>2</sup> increasing  
 12 levels of incentives to very high levels is not the only way to grow program  
 13 savings.  
 14

<sup>2</sup> Assessment of Energy and Capacity Savings Potential in Iowa, Cadmus Group, Feb. 28, 2012, page 4. Filed as Appendix A with the Black Hills EE Plan.

1                   Black Hills follows a basic resource acquisition-based approach to  
2                   program delivery throughout the plan: relatively high rebate levels in some  
3                   programs (including high incentives for some measures, such as quality  
4                   installation for furnaces and boilers, that are not cost-effective), single program  
5                   implementers, and limited customer engagement and follow-up. This model  
6                   leads to a focus on near-term savings acquisition at the expense of building  
7                   markets that perceive the value of and are willing to pay for energy efficiency in  
8                   the long run. This approach does not sufficiently address the coordination needs  
9                   and lost efficiencies that arise under the patchwork of energy efficiency  
10                  providers that exists in Iowa (Docket No.EEP-2008-0003, OCA Ex. 100,  
11                  Schedule D). I recommend that Black Hills focus more efforts on overcoming  
12                  these barriers in order to more fully address customers' energy efficiency  
13                  opportunities and move toward more market-based efficiency.

14   **Q:   What mechanisms other than high incentive levels are being used by other**  
15   **programs to drive demand and result in high-quality savings?**

16   A:   The allocation given to incentives and contracted program delivery in the Black  
17   Hills plan, and the low levels of internal program staffing (where administrative  
18   support levels seem somewhat out of line with expected participation and  
19   planned delivery methods), may signal a lack of vision for options that go  
20   beyond simply procuring savings toward the support of an ultimate objective of  
21   transforming markets to support energy efficiency. Market support will require  
22   investments in program planning, design, and delivery, as well as associated

1 staff time, that pay off over the long run in increased customer engagement and  
2 market development. Incentives alone will not result in such transformation.

3 Top-performing EE program administrators are not necessarily driving  
4 savings through massive incentive offerings. In the past, programs were able to  
5 acquire savings fairly easily through simple delivery of incentives for highly  
6 cost-effective measures, and through relatively straightforward standardized  
7 programs delivered by contractors. However, all program administrators are  
8 now facing challenges created by changes in technologies, policies, and  
9 markets. Researchers, policy-makers, and program administrators continue to  
10 investigate, identify, and define “high performing” programs and their strategies  
11 for reaching ambitious savings goals. According to one such study,<sup>3</sup>  
12 *“Significant potential savings remain as programs evolve and advance through*  
13 *new program designs and new technologies that reach more customers and*  
14 *achieve high savings despite concerns that customer energy efficiency programs*  
15 *are reaching limits”*. To achieve the high savings these programs will target,  
16 the focus must shift from acquiring savings from the “low-hanging fruit” to  
17 program approaches that can gain higher customer participation and achieve  
18 high savings per customer – particularly through support for new technologies  
19 and new approaches to program design, delivery, and marketing. Such new  
20 programs will likely emphasize approaches designed to drive demand and to  
21 develop markets that value energy efficiency and are prepared to ultimately

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<sup>3</sup> “Frontiers of Energy Efficiency: Next Generation Programs Reach for High Energy Savings”, York, *et al.*, ACEEE Report # U131, 2013 (page viii).

1 support it without incentives. Based on available research and VEIC’s own  
2 experience designing and implementing programs, these programs will likely  
3 focus on:

- 4 • Involving more participants through engaging a broader customer base  
5 when possible, and designing outreach to specifically target hard-to-  
6 reach and underserved customers when necessary. This requires an  
7 improved understanding of customer segments and their individual  
8 barriers and opportunities, and focused marketing and incentives. Black  
9 Hills has identified the need to target one such segment through its  
10 Multifamily program (though very limited resources are devoted to this  
11 segment in the plan).
- 12 • Enhancing customer engagement, with the goal of achieving more  
13 savings per customer. Recognizing that a piecemeal approach is costly,  
14 adopting engagement strategies that motivate customers to undertake  
15 multiple actions, either all at once or over time, leads to fewer “touches”  
16 and to lower administrative and program delivery costs. Stressing  
17 comprehensive, whole-house efficiency projects in residential settings,  
18 and expanding account management support for nonresidential  
19 customers, can lead to these outcomes.
- 20 • Identifying system efficiencies in both residential and commercial  
21 buildings, and optimization of production processes in industrial settings,  
22 leading to more-comprehensive savings.
- 23 • Motivating trade allies to become strong advocates for efficiency  
24 through offering training that focuses on addressing their barriers, and  
25 incentives and services structured to foster and reward performance.
- 26 • Fully leveraging bargaining power of upstream programs and other trade  
27 ally engagement approaches by coordinating with other regional  
28 efficiency providers.
- 29 • Continuously identifying and supporting the next level of efficient  
30 technology. When baseline codes or standards change, resulting in loss  
31 of savings potential from “low-hanging fruit”, adding incentives for  
32 higher-efficiency tiers can drive demand toward continued improvement  
33 in efficiency. Rather than omitting emerging technologies that have high  
34 potential but little current customer demand, programs play a critical role  
35 in identifying and removing barriers and creating demand.
- 36 • Strategically using the efficiency industry’s current understanding of  
37 customer behavior and motivations. This may take many forms:



1 targeting, tailoring, and delivering services to overcome all the barriers  
2 impeding customer investment in efficiency opportunities in that market .<sup>4</sup>  
3 Under this framework, program staff work to understand specific markets and  
4 the barriers they include, and to forge and sustain ongoing relationships both  
5 with customers and with all the market actors with influence over their  
6 efficiency choices.

7 I believe undertaking many of the recommendations in this section  
8 would be highly beneficial to Black Hills’ customers and ratepayers, but it will  
9 require a re-focusing of the current approach to program delivery. It seems  
10 reasonable that Black Hills spend the first year of the plan engaging with its  
11 stakeholders and consultants to adjust to this new savings approach. At that  
12 time, I recommend that proposed targets be reconsidered, and a ramp-up of  
13 savings targets be developed for the rest of the five-year period. Budget levels  
14 and innovative program designs that would be necessary to achieve these targets  
15 could then be established.

16 **Q: Are there other ways in which Black Hills’ plan might be improved?**

17 A: Yes; there are a number of approaches used by innovative energy efficiency  
18 program administrators that provide customer service and capture savings that  
19 are not included in Black Hills’ portfolio. I recommend that Black Hills explore  
20 and include the following services and offerings; implementing these within the  
21 next five years should be both feasible and effective:

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<sup>4</sup> Black Hills has taken some steps in this direction by recasting two of its residential programs (Space and Water Heating, and Envelope Measures) into components of the Prescriptive and Evaluation programs.

- 1 • More-extensive and customer-friendly financing (with a focus at  
2 minimum to ensure that any current referrals and products work well for  
3 customers)
- 4 • Enhanced customer engagement, based on research on new motivational  
5 tools and approaches, as a component of many programs, and use of  
6 community-based social marketing techniques
- 7 • Support for emerging technologies, including RD&D support
- 8 • New approaches to reaching hard-to-reach customers (*see*  
9 recommendations for targeted outreach to non-residential industry  
10 groups in other testimony)
- 11 • Commercial building operations and performance programs (such as the  
12 Superior Energy Performance initiative)

13 **Q: What are other likely key features of high-performing energy efficiency**  
14 **programs?**

15 A: Research has shown that key factors most consistently associated with strong  
16 energy efficiency performance include: size of budget; strong legislative  
17 requirements; and a regulatory environment that is committed to energy  
18 efficiency as a priority resource.<sup>5</sup> Utility motivation is also generally regarded  
19 as an important factor, and there are different regulatory policies and program  
20 delivery approaches that can influence utility motivation toward energy  
21 efficiency. Such motivation can come in the form of regulatory penalties and  
22 incentives, but is also often seen in the addition of program goals that help meet  
23 additional objectives along with budgetary or savings goals. Examples include  
24 low-income equity spending targets or market penetration targets designed to  
25 motivate the development of markets. As has been recommended for several

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<sup>5</sup> See "Can We Get There from Here? Identifying Key Factors in Meeting Aggressive New State Energy Efficiency Savings Goals," M. Kushler, *et al.*, International Energy Program Evaluation Conference, Portland, 2009.

1 programs in this and other OCA testimony, Black Hills should strongly consider  
2 including these types of market-related program performance goals in most of  
3 its programs to provide measurable targets for program objectives beyond  
4 energy savings.

5 One additional characteristic that is beginning to be seen in many  
6 leading programs is the presence of a strong statewide stakeholder input  
7 collaborative group. This kind of formal collaborative structure can provide  
8 some of the benefits of a statewide approach to the delivery of EE services in a  
9 state where multiple utilities administer energy efficiency programs. It allows  
10 individual utilities to gather information on stakeholder interests, incorporate  
11 their input into the design and delivery of efficiency programs, and offer  
12 consistent statewide programs to all customers.

13 **Q: Is the current stakeholder input process effective?**

14 A: In my opinion, it is not. As a result of settlement agreements with the utilities  
15 for the current energy efficiency plans, OCA led a series of stakeholder  
16 collaboration meetings over the course of the current plan period. The process  
17 generally sought to invite stakeholder feedback in areas where additional  
18 collaboration and coordination could be expected to improve the delivery and  
19 availability of energy efficiency in Iowa and to consider steps to harness these  
20 opportunities. The OCA-led stakeholder collaboration process served to  
21 supplement the utility-led collaboration that occurs on a 5-year basis in

1 conjunction with the utilities' assessment of potential and new EE plan  
2 development.

3 While I applaud the utilities' willingness to provide stakeholders more  
4 opportunities to collaborate in their program design and administration, there are  
5 many prospects for further improvement in the collaboration process.

6 Information on program performance is not available at a level of detail and  
7 within a timeframe that allows review and feedback to be useful, and there is  
8 still little opportunity for fully informed, substantive input from stakeholders  
9 into program design, changes, and evaluation. Effective collaboration is  
10 hampered by a number of limitations:

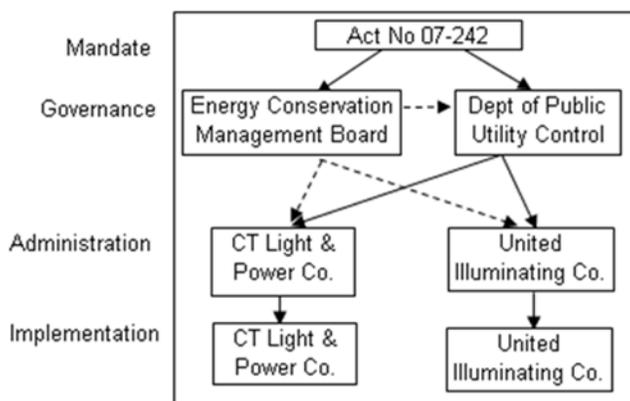
- 11 • The lack of information at the level of detail that allows truly effective  
12 review and understanding of the Company's performance and thinking  
13 behind proposals and changes.
- 14 • Limits on the timing of input opportunities. Input opportunities must be  
15 frequent and early enough in the review and feedback process to allow  
16 feedback to be effectively incorporated into changes in programs.
- 17 • Stakeholders currently play a role limited to review rather than defining  
18 needs and driving toward consensus-based solutions.

19 **Q: Are there recommendations on a structure and process to enhance**  
20 **stakeholder support and involvement in expanded energy efficiency efforts**  
21 **for Black Hills and in Iowa more broadly?**

22 **A:** Yes. The progress of OCA-led collaboration efforts is addressed by the OCA  
23 witnesses who helped oversee and administer these processes in their respective  
24 areas of program expertise. While these collaboration efforts were useful, I  
25 believe that developing a formal structure and process for a partnership between  
26 utility program administrators and a broad stakeholder collaborative group will

1 be an effective next step toward advancing energy efficiency as a priority  
2 resource in Iowa. Incorporating the full interests of all constituencies will allow  
3 the development of a more responsive approach toward capturing all available  
4 benefits over the next five years.

5 As examples of effective ways to work together, recent trends indicate  
6 that many states are moving toward a utility model that includes an Advisory  
7 Board to the regulator and appropriate state legislative committees. As one  
8 example, the figure below illustrates how such a structure is organized in the  
9 state of Connecticut.



10  
11 While the state of Connecticut still relies on its utilities to implement the  
12 efficiency programs and holds them accountable for achieving savings goals, the  
13 utilities' plans are shaped by a variety of stakeholders that make up the Energy  
14 Efficiency Board (originally the Energy Conservation Management Board)  
15 before being submitted to the Department of Public Utility Control (PUC) for  
16 approval. Thus, this advisory board, created in 1999, serves an important public  
17 policy purpose. By reviewing utility plans, hiring outside expertise, and holding

1 public meetings, the advisory board is in the position to independently collect  
2 and assimilate input from a variety of sources in a non-litigated environment.  
3 Advisory board members are then able to provide utility managers, regulators,  
4 and state representatives with policy guidance for incorporation into the utilities’  
5 efficiency plans. This level of oversight and input by a group of knowledgeable  
6 community leaders, stakeholders, and market participants provides ratepayers  
7 with a greater level of assurance that the efficiency plans are not only  
8 comprehensive but also workable and responsive to market needs. In short, an  
9 advisory board can provide the necessary oversight and coordination of program  
10 delivery and administration while simultaneously allowing the utilities sufficient  
11 operational flexibility to pursue ambitious savings goals.

12 In Massachusetts, the Energy Efficiency Advisory Council (EEAC)  
13 plays a key role in designing and approving the Commonwealth’s utility- and  
14 municipal aggregator-operated energy efficiency programs. This stakeholder  
15 group, put in place in 2008 to review and monitor success, fills a number of  
16 functions.

- 17 • The Council’s primary mandate is to seek to “maximize the net  
18 economic benefits through energy efficiency and load management  
19 resources and to achieve energy, capacity, climate and environmental  
20 goals through a sustained and integrated statewide energy efficiency  
21 effort.”
- 22 • The principal means to meet that mandate is the development and  
23 approval of three-year comprehensive energy efficiency plans,  
24 developed in cooperation with electric and gas Program Administrators.
- 25 • The Council is also charged with developing a longer-term vision,  
26 including recommendations concerning studies and research needed to  
27 achieve the goals of acquiring all cost-effective efficiency that is less

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than the cost of generation, and maximizing economic and environmental benefits that can be realized through increased energy efficiency.

- The Council has 11 voting members that represent interests/organizations such as: residential customers; the Low Income Weatherization and Fuel Assistance Network (LEAN); the environmental community; businesses including large C/I end users; the manufacturing industry; energy efficiency experts; organized labor; the MA Department of Environmental Protection (DEP); the Attorney General; the Executive Office of Housing and Economic Development; and the Department of Energy Resources (DOER). There are 13 non-voting members – including utilities, program administrators, and energy efficiency businesses.

Formal stakeholder collaboratives exist in a number of other jurisdictions where the utilities provide energy efficiency program administration. Examples of these advisory bodies are given below with date of creation.

- Other legislatively created advisory councils:
  - Rhode Island Energy Efficiency and Resource Management Council (EERMC) – 2008
  - New Hampshire Energy Efficiency & Sustainable Energy Board (EESE) – 2008
  - Michigan Energy Efficiency Collaborative – 2008
  - Northwest Power and Conservation Council, which covers Washington, Oregon, Idaho, and Montana, includes several public advisory boards. Among them are: The Conservation Resources Advisory Committee (CRAC) and the Regional Technical Forum (RTF) – 1999
- Stakeholder collaboratives mandated by regulator initiative:
  - Indiana DSM Coordination Committee – 2010
  - Illinois Stakeholder Advisory Group – 2008
- Stakeholder collaboratives have also been formed to undertake particular tasks such as program audit and evaluation review and TRM development, as in the Arkansas EM&V Collaborative – 2012

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Other states that have implemented the utility model (where the utilities provide EE program administration) with a strong public advisory role include: California, Colorado, Florida, Kansas, Minnesota, Texas, and Washington.

I recommend that, over the next five years, the IUB undertake actions to define and establish a Stakeholder Advisory Council to:

- Represent broad stakeholder interests in energy efficiency planning and implementation, EM&V activities (discussed further below), potential assessments, and other research and strategy development;
- Provide the utility program administrators with expanded information, insights, and ideas for enhanced approaches to the delivery of energy efficiency services;
- Provide recommendations to policy makers; and
- Explore additional methods to equitably extend the reach of efficiency programs to all Iowans, including municipal and cooperative service providers as appropriate, and to include all fuels in a comprehensive and coordinated delivery structure. This would also greatly facilitate the effectiveness of efficiency programs by coordinating the delivery of the services of the three main investor-owned utilities and the municipal and cooperative utilities.

Development of the roles and responsibilities of this Council could be staged over the next five years by establishing its practice and authority as certain requirements arise. For example, the Stakeholder Council could be founded and given responsibility and authority for guiding the development of a statewide Technical Reference Manual (discussed below), leading to the establishment of effective working relationships for further collaboration going forward to include evaluation oversight and then the development of EE plans in the next planning cycle.

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I also recommend establishing requirements for enhanced energy efficiency program reporting as part of this new structure. More-frequent, timely, and detailed reporting on performance and planning allows the full value of stakeholder participation to be achieved. The following should be available to the Stakeholder Council to support their role as informed partners in the development of effective energy efficiency offerings:

- Quarterly reports on program performance that feed into utility analysis of needed program adjustments, including detailed data and information on program delivery and performance impacts.
- Annual operating plans with detailed data and program delivery and performance adjustment proposals at the level of that provided for the 5-year plans. These should be provided to stakeholders 2-3 months before the end of each year to allow stakeholders to be involved in review and comment before plans for the new year are finalized. Full explanations of and rationale for proposed changes should also be included.
- A process that ensures appropriate opportunity for more involvement prior to filing of 5-year plans. Providing earlier, detailed program design information to stakeholders 4-6 months in advance of formal plan filing dates will allow “settlement negotiations” to take place before and outside of the regulatory process and can result in a filing to the IUB that contains plans that reflect truly collaborative work. This approach provides for more-substantive input from all parties and can streamline the subsequent regulatory proceedings.
- A process that ensures full stakeholder involvement in design and management of EM&V and other research and development activities (such as potential assessments), including input on evaluation and research design and selection of contractors.

These reporting requirements and process enhancements would be appropriate and are strongly recommended even if the IUB does not elect to move forward with the creation of a Stakeholder Advisory Council.

## EVALUATION, MONITORING, AND VERIFICATION

**Q: Is the proposed level of evaluation activity sufficient to effectively support the energy efficiency activities?**

A: The limited information available in the plan indicates that evaluation, monitoring, and verification (EM&V) proposed for the next cycle will follow the current approach – one process and impact evaluation for each program during the five-year period – with the proposed addition of a process to develop a statewide Technical Reference Manual (TRM) in conjunction with other Iowa utilities. Black Hills’ total five-year budget for program-specific monitoring and evaluation is \$1.4 million, and an additional, unspecified amount is included in the budget for Other Funding Initiatives to contribute toward development of a statewide TRM. Spending for portfolio-level EM&V in amounts from 3% to > 5% of total budget are commonly seen in many programs across the country.<sup>6</sup> The budget proposed by Black Hills falls in this range (~5% of total), suggesting that, if used effectively to support robust EM&V activities, this level of funding should be adequate.

**Q: Is the current EM&V process effective?**

A: In my opinion, it is not. Well-planned and rigorous EM&V activities are important in a number of ways: 1) as a means to assess the accuracy and reliability of costs and savings claims; 2) to assure that energy savings are being properly attributed to utility programs; and 3) to confirm that ratepayer funds are

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<sup>6</sup> See “Review of Evaluation, Measurement and Verification Approaches Used to Estimate the Load Impacts and Effectiveness of Energy Efficiency Programs,” Lawrence Berkeley National Laboratory, April 2010.

1 being judiciously spent. They are also critical components of program planning  
2 and readjustment. Robust EM&V is necessary to understand how programs are  
3 doing, how markets are changing, and how to improve activities in response to  
4 both.

5 Relying on a single verification and process evaluation for each program  
6 in a five-year plan cycle does not give feedback that is timely enough for on-  
7 going program modification, nor does such a timeline keep up with the rapidly  
8 changing energy efficiency technologies and markets or respond to the needs of  
9 programs with higher than expected participation. This single evaluation  
10 approach does not give sufficient information to program administrators or  
11 stakeholders for well-informed annual program review and adjustment.

12 In addition, Black Hills' plan is based on savings determinations made as  
13 part of the development of the state-wide Assessment. While the Assessment  
14 does provide general measure-level savings assumptions for those measures  
15 considered as part of that analysis, the value of the Assessment as a savings  
16 reference is limited in several ways. First, there is not sufficient detail provided  
17 in the Assessment for the large number of underlying assumptions that are used  
18 in the development many of the savings values. In addition, many of the  
19 references given for assumptions are geographically general and not sufficiently  
20 up-to-date for use in this context. Finally, the objective of the Assessment is to  
21 provide an estimate of region-wide energy efficiency potential, and, while a  
22 certain level of thoroughness is necessary to identify likely measures and saving

1 potential, the exercise is not designed to provide the level of technical scrutiny  
2 and rigor that should distinguish the savings characterizations used for program  
3 planning or for assessing validity of savings goals.

4 **Q: How might Black Hills improve its planned monitoring and evaluation**  
5 **efforts?**

6 A: Successful program development and implementation is achieved through an  
7 iterative process where learning and improvement are achieved over time. In  
8 order to capitalize on the value of rigorous evaluation and adjustment, I  
9 recommend that Black Hills expand its planned EM&V activities and budget to  
10 accommodate the activities outlined below.

- 11 • Process and impact evaluations, such as those currently conducted by  
12 Black Hills once every plan cycle, should continue, and be enhanced to  
13 include true savings impact analyses (*i.e.*, on-site metering to assess  
14 actual savings of installed measures, etc.). These evaluations should  
15 occur early, and often, enough that findings can (and should) be  
16 incorporated into program activities as well as performance reporting  
17 during the term of the plan, but also should inform development of plans  
18 for the future. The best way to assure a prudent EM&V plan and reliable  
19 results is for the EM&V work to be conducted by independent  
20 contractors and managed by a party or parties other than the utility or  
21 utility association. If there are barriers in moving to an independent  
22 management structure (legal or practical), then it is especially important  
23 to build in procedural guidelines to better assure an independent and  
24 objective review process that produces useful information in a timely  
25 manner. Stakeholders should have a major role in the design of the  
26 evaluations and the selection and management of contractors. Proposed  
27 actions in response to EM&V findings should be addressed as part of  
28 annual program performance review.
- 29 • Portfolios should have annual savings verifications undertaken by an  
30 independent third party that provides assessment of the reliability  
31 (considering completeness and accuracy) of claimed energy savings.  
32 Verification of savings would ensure that the reported savings are  
33 reasonable and identify any appropriate adjustments to gross savings,

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based on review of programs, operating approaches, data collection and management systems, and tools and models used.

- Budgets should be available to support periodic market assessment studies in support of program needs. Effective market transformation requires good market research data on the reasons consumers are not already buying (or being sold by key trade allies) efficient products or making energy efficiency decisions. For example, 25 residential evaluations were carried out in Massachusetts in the 2011-2012 program year; about half of these were program process or impact evaluations. The remaining studies were market reports of some sort, including product market saturation reports, building baseline reports, on-site product installation and use reports, or consumer surveys.<sup>7</sup> Market studies are also essential to determine critical components of savings calculations, such as product installation rates, persistence, measure lives, and incremental costs. The determination of the most-important market evaluation needs should be made in coordination with stakeholders.
- All activities should be designed and carried out by independent third parties and with input from – and in collaboration with – stakeholders. As Black Hills’ EM&V activities become better defined, with input and in collaboration with stakeholders, the budget may require some adjustment.

**Q: How does this process improve current EM&V development and implementation?**

A: The EM&V schedule processes and plans for Iowa utilities are typically developed and overseen by IOUs after new EE plans are submitted, approved, or subject to contested case proceeding. This hinders effective collaborative input and coordination opportunities for EM&V plan development. Current EM&V activities suffer from a lack of transparency and standardization, and generally do not provide sufficient opportunities for independent stakeholder input. The failure to achieve EM&V objectives under the current plan provides support for the more-structured, transparent, and collaborative approach advocated here for

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<sup>7</sup> The list of reports is available at: <http://www.ma-eeac.org/2011-2012%20EM&V.htm>.

1 the establishment of a statewide TRM and Stakeholder Advisory Council. The  
2 recommended enhancements will address these deficiencies. This process offers  
3 better prospects for actually fulfilling the purposes of EM&V by giving more-  
4 thorough attention to the underlying measure assumptions used and more  
5 rigorous process for review and update that will be available for consideration  
6 and implementation within each current plan cycle. I recognize that these  
7 recommendations offer ideal methods and solutions and that there must be  
8 tradeoffs made in every evaluation to maintain cost efficiencies.

9 **Q: Can benefits accrue from coordinating EM&V activities with other**  
10 **program administrators in the state?**

11 A: Proposals have been made in Black Hills' plan to address some of these issues  
12 through a movement toward joint development and administration of a state-  
13 wide TRM by the Iowa IOUs. I believe that there is additional value in  
14 coordination of EM&V activities more broadly across the utilities. However, I  
15 do recommend that such coordinated activities be administered not by the  
16 utilities (whether individually or jointly) but by the proposed Stakeholder  
17 Council. Simple input from the OCA and other interested parties during the  
18 bidding and development process is not sufficient to ensure appropriate  
19 guidance and independence. As long as the contracts are held and work  
20 performed under the management of the utility or utilities, the design and  
21 implementation of evaluations and other work (such as TRM development and  
22 maintenance) cannot be considered truly independent. I recommend moving

1 toward a requirement for all savings verification and program and market  
2 evaluations to be administered by a party independent of the utilities to ensure  
3 an unbiased, third-party review of results and improve the usefulness of  
4 evaluation for planning purposes. Such work could be administered by a  
5 stakeholder council, the IUB, or the OCA. While structuring evaluation services  
6 through a Joint Evaluation Contract, perhaps administered by the Iowa Utility  
7 Association, could have benefits such as cost sharing, such an approach does not  
8 improve independence of the evaluator or increase opportunities for input from  
9 stakeholders. It may also be useful to test the viability of an independent  
10 management structure through a coordinated TRM development process, which  
11 I discuss below.

12 **Q: What if the independent review process is not adopted or is delayed?**

13 A: Even if barriers prevent the immediate adoption of an independent management  
14 structure, the recommended EM&V enhancements (above) are steps that can be  
15 implemented to help assure an appropriate EM&V plan, timely schedule, and  
16 credible EM&V results.

17 In addition, Black Hills should re-think its evaluation planning strategy  
18 and timing to increase effectiveness. An approach that yields useful benefits  
19 from a program design perspective is to select an independent evaluator for a  
20 program up front, have the utility and stakeholder group meet with the evaluator  
21 to develop a logic model (agree on metrics for success, decide what data to track  
22 along the way, etc.), and design the program so that it can be easily evaluated.

1 The program gets delivered, and evaluation is done, assessing process and  
2 impacts as laid out by the plan, at interim points per the plan, and the end.  
3 Evaluators are more effective if they are not only involved at the conclusion of  
4 programs.

5 In order to ensure statewide consistent and agreed-upon savings  
6 assumptions/claims within each utility and across utilities, I strongly concur  
7 with the suggestion, developed by stakeholders in Iowa and discussed in the  
8 Black Hills plan, to develop a statewide technical reference manual (TRM), and  
9 recommend that it be a project overseen by a consortium of stakeholders. This  
10 approach has been used successfully in other jurisdictions, such as the current  
11 statewide TRM development process in Illinois, which is managed by the  
12 Illinois Stakeholder Advisory Group. The development of standard and  
13 defensible protocols for calculating savings would be expected to contribute to  
14 reported savings that more closely map to verified savings as well as provide  
15 structure for program planning and goal setting. Such development should be  
16 accompanied by a rigorous plan for updating and maintaining the reference on  
17 an ongoing basis, with administration and input from the broad stakeholder  
18 group and with a timeline laid out to assure that effective information is  
19 available at all critical points in the EE plan cycle.

20 **Q: Are there other recommendations for calculation and tracking of savings?**

21 A: It is not clear from the plan whether adjustments to savings found through the  
22 Tetra Tech evaluations have been incorporated into the calculation methodology

1 used for the measures in the plan, as the plan does not include information on  
2 measure-level savings calculations. This general lack of transparency and  
3 infrequent updates to measure characterizations exposes Black Hills to risks that  
4 could substantially reduce claimed savings in the future.

5           There is nothing in this plan to indicate that Black Hills has factored net-  
6 to-gross adjustments, which account for effects of program freeriders and  
7 spillover, into its savings forecasts. If this is the case, the savings given in the  
8 plan may in addition be overstated relative to programs in many other states that  
9 incorporate these adjustments into their reporting to appropriately recognize  
10 only saving that is deemed attributable to program efforts. Understanding net  
11 savings – those that are actually attributable to program efforts – is a critical  
12 consideration in program design, and stakeholders need assurance that programs  
13 are motivating customers who would otherwise not be participating. Black Hills  
14 should begin to track and report both gross savings and savings adjusted for the  
15 effects of freeridership and spillover, and use such adjusted values as the basis  
16 for savings targets and reporting.

17           In short, I recommend that Black Hills accelerate the development of  
18 technical reference manuals and project screening tools to ensure transparency  
19 and accurate calculation of expected energy savings. In addition, I recommend  
20 that current tracking systems be enhanced to include measure-level tracking for  
21 all programs.

22 **Q: Do you have any concluding remarks?**

1 A: In conclusion, I would like to recognize the positive attributes of the plan and  
2 applaud Black Hills' continuing efforts to provide a comprehensive portfolio of  
3 effective programs and initiatives to their customers. This testimony is intended  
4 to provide recommendations to build upon the past successes Black Hills has  
5 achieved and move these programs to the next level of exemplary and  
6 innovative energy efficiency on behalf of Black Hills' customers.

7 **Q: Does this conclude your testimony?**

8 A: Yes, it does.

