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## STAFF MEMORANDUM

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**TO:** COMMISSIONERS AND ADVISORS

**FROM:** BRITTANY MEHLHAFF, JOSEPH REZAC, & AMANDA REISS

**RE:** **EL17-026 - IN THE MATTER OF THE APPLICATION OF BLACK HILLS POWER, INC. DBA BLACK HILLS ENERGY FOR APPROVAL TO MODIFY AND EXTEND ITS ENERGY EFFICIENCY SOLUTIONS PLAN**

**DATE:** August 24, 2017

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### 1.0 OVERVIEW

On June 1, 2017, Black Hills Power, Inc. dba Black Hills Energy (BHP or Company) filed an application for Commission approval to modify and extend its currently effective Energy Efficiency Solutions Program (EESP). BHP's currently effective EESP was approved in Docket EL14-038 which commenced on September 1, 2014, and will expire August 31, 2017. In compliance with Commission order, BHP removed certain measures that were not cost effective, modifying Program Years 2015 and 2016. BHP's current Program Year and associated rates and tariff sheets were approved in Docket EL16-034.

BHP is requesting a three year extension to the current EESP with minor modifications to become effective on September 1, 2017. In years past, BHP filed EESP dockets which contained not only any changes to the program, but also status reports, new rates, and revised tariffs. In EL16-034, Staff suggested changing the timing of the annual filings. BHP used to file its updated EESA on October 15<sup>th</sup> for rates to be effective December 1<sup>st</sup>, for program years running September 1<sup>st</sup> through August 31<sup>st</sup>. Therefore, Staff suggested the Company file any proposed modifications to the plan by June 1<sup>st</sup> of each year, with approval expected prior to September 1<sup>st</sup>. This is to avoid any cost recovery issues associated with measures that might be revised or even removed from the program. BHP will make another filing October 1<sup>st</sup> with the status report for the prior year, balancing account, and new rates to be effective December 1<sup>st</sup>. The Company and Staff agreed to this new schedule and believe it will avoid future timing and cost recovery issues.

### 2.0 ANALYSIS

BHP again retained Applied Energy Group (AEG) to update the demand-side management portfolio for Program Years 2017-2019. BHP utilizes the widely-accepted Total Resource Cost Test (TRC) to assess the cost-effectiveness of energy efficient measures and programs. BHP's proposed minor modifications to

its currently effective EESP include the removal of certain residential measures that were no longer able to demonstrate a TRC measure of 1.0 or greater<sup>1</sup>.

BHP also proposed slight changes to the Residential Lighting Program such as removing the Advanced Power Strip measure due to low participation. In addition, the Online Store option for purchasing discounted LEDs is no longer available due to suspicious activity within the e-commerce portion of the Online Store. Customers will now have the option to purchase LEDs from any retail store and receive a rebate check from BHP.

In addition, BHP modified the list of qualifying Commercial and Industrial prescriptive measures to better reflect what is currently available in the market and to bring in line with programs in other Black Hills service territories.

Staff agrees with BHP's proposed modifications, but also investigated further program measures that failed to demonstrate a TRC of 1.0 or greater. Staff discusses these programs in further detail below.

One model assumption in BHP's DSM program that has changed since its most recently approved EESP is the avoided cost of energy. The avoided cost of energy that is now embedded in the model comes from Docket EL16-042 which established a generation credit rate for small power production facilities. The lower avoided cost that is now reflected in this filing has decreased almost all TRC scores in BHP's EESP portfolio. Even with BHP removing some non-cost effective measures, there are still measures that are proposed to be included that do not demonstrate a TRC of 1.0 or greater.

### **2.1 Staff Proposed Measures to be Removed/Revised**

In addition to the residential measures BHP proposed to remove, Staff investigated and proposes to remove other programs and measures that do not demonstrate a TRC of 1.0 or greater. Staff's recommendation includes removal of the Residential Audit Program, Weatherization Program, and the Air Source Heat Pump, Ductless Mini-Split Heat Pump, and Heat Pump Water Heater measures of the Residential HVAC Program. These programs and measures currently do not demonstrate a TRC of 1.0 or greater and are not expected to be cost effective at any point in the proposed EESP period.

In addition to the Residential Audit and Weatherization programs and certain measures of the Residential HVAC Program, the Whole House Efficiency Program also fails to demonstrate a TRC of 1.0 or greater throughout the proposed EESP period. In general most audit type programs usually fail to demonstrate high TRC levels so the results and expectations of this program are not overly surprising. Staff does not recommend removal of this program at this time. This program is a jointly sponsored program with Montana-Dakota Utilities in which the costs are shared between the two companies. Should the Commission seek to discontinue this program, Staff believes it would be best to let BHP continue to offer it until a time in which the programs be jointly discontinued which would be during MDU's next scheduled update filing.

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<sup>1</sup> See Page 4 of BHP's Application to Modify and Extend Its Current Energy Efficiency Solutions Plan filed 06/01/17.

There are a few residential programs that do not have a TRC of 1.0 or greater during the start of the proposed extended EESP period but are expected to become cost effective in later Program Years. Staff feels that there is a benefit to consistency for the Residential Lighting and School-Based Education Programs and supports BHP in continuing to offer these programs as a part of their EESP for the extension period.

BHP also proposed to include a number of Commercial and Industrial prescriptive measures that do not meet a TRC of 1.0 or greater. Staff recommends moving all non-cost effective prescriptive measures to the Commercial and Industrial Custom Program. Staff believes that continuing to offer these measures as a part of the Custom Program will not only serve to attract more businesses to participate in energy efficiency measures, but also ensure that any implemented programs will achieve a cumulative TRC of 1.0 or greater.

BHP provided a revised model implementing Staff’s recommended changes in response to Staff Data Request 3-1.

**2.2 Budgets and Total Resource Cost Scores**

Table 1 shows the Budgets for Program Years 2017-2019, consistent with Staff’s proposed revisions. The Company’s initially proposed total budgets are provided for comparison<sup>2</sup>.

<b>Table 1: PORTFOLIO SUMMARY OF PROJECTED BUDGET BY SECTOR</b>			
	<b>PY2017 Budget</b>	<b>PY2018 Budget</b>	<b>PY2019 Budget</b>
Sector			
Residential	\$139,239	\$144,424	\$149,608
Commercial & Industrial (C&I)	\$536,903	\$542,027	\$547,083
Cross Marketing & Training	\$116,514	\$118,710	\$120,893
General Administration	\$57,841	\$58,564	\$59,281
<b>Total</b>	<b>\$850,496</b>	<b>\$863,725</b>	<b>\$876,866</b>
BHP Initial Total	\$914,740	\$928,901	\$943,062

Table 2 below displays budgets broken down further by individual programs.

<sup>2</sup> Refer to the Company’s Exhibit B, Table ES1 & ES2 Tab, filed on 06/01/17.

	PY2017 Budget	PY2018 Budget	PY2019 Budget
<b>Residential Programs</b>			
Residential Lighting:	\$33,550	\$33,962	\$34,374
Residential Appliance Recycling:	\$13,104	\$13,104	\$13,104
Residential High Efficiency HVAC:	\$19,086	\$23,859	\$28,631
Whole House Efficiency:	\$10,350	\$10,350	\$10,350
Residential Audit:	\$0	\$0	\$0
School-Based Education:	\$63,150	\$63,150	\$63,150
Weatherization:	\$0	\$0	\$0
<b>C&amp;I Programs</b>			
Prescriptive:	\$97,049	\$97,118	\$97,118
Custom:	\$439,854	\$444,910	\$449,966
Cross Marketing & Training	\$116,514	\$118,710	\$120,893
General Administration	\$57,841	\$58,564	\$59,281
<b>Total</b>	<b>\$850,496</b>	<b>\$863,725</b>	<b>\$876,866</b>

Table 3 below displays the expected TRC scores by Program and at the Total Portfolio level throughout Program Years 2017-2019.

Program	Program Year		
	2017	2018	2019
Residential Lighting	0.74	0.75	0.76
Appliance Recycling	1.21	1.23	1.25
Residential HVAC	0.96	0.97	0.98
Whole House Efficiency	0.63	0.64	0.65
Residential Audits	-	-	-
School-Based Education	0.97	0.99	1.00
Weatherization	-	-	-
<b>Total Residential</b>	<b>0.88</b>	<b>0.89</b>	<b>0.90</b>
C&I Prescriptive	2.00	2.03	2.06
C&I Custom	1.06	1.07	1.09
<b>Total Commercial &amp; Industrial</b>	<b>1.20</b>	<b>1.21</b>	<b>1.23</b>
<b>Total Porfolio</b>	<b>1.15</b>	<b>1.17</b>	<b>1.18</b>

As mentioned in response to Staff DR 1.9(c), Program level TRC calculations include administrative costs separate from incentive costs, such as marketing and education, evaluation, and program staff labor costs. These costs are not included at the measure-level calculations, which is why the program-level TRCs are less than that of the individual measures when the program administrative costs are taken into program. For instance, all the measures contained in the residential lighting and residential HVAC

programs demonstrate a TRC of 1.0 or greater at the individual measure level calculation<sup>3</sup> either throughout or during the three year EESP.

Removing measures and programs does not necessarily significantly decrease administrative costs and therefore, certain costs are simply shifted to other program measures. The Residential Lighting program, and in particular the LED lighting measure, provides all residential customers who pay the rates for the program a readily available option to participate. Therefore, Staff supports continuation of the Residential Lighting Program even though as a program the TRCs appear low.

### **3.0 STAFF RECOMMENDATION**

In summary, Staff recommends approval of BHP's request for a three year extension of the Company's EESP, effective September 1, 2017, with the modifications described below.

Staff agrees to the removal of the Company proposed residential measures as listed below and other minor changes proposed by the Company.

- Early Retirement Heat Pump SEER  $\geq 15$ , EER  $\geq 12.5$ , HSPF  $\geq 8.5$
- Ductless Mini-Split AC SEER  $\geq 119$ , EER  $\geq 12.8$
- Geothermal EER  $\geq 21$ , COP  $\geq 4.1$
- Early Retirement Geothermal EER  $\geq 21$ , COP  $\geq 4.1$
- Electric Storage Water Heater EF  $< 0.95$
- Electric Storage Water Heater EF  $\geq 0.95$

In addition, Staff proposes the following adjustments:

- Removing the Residential Audit and Weatherization Programs.
- Removing the following individual measures that are part of the High Efficiency HVAC Program:
  - Air Source Heat Pump
  - Ductless Mini-Split Heat Pump
  - Heat Pump Water Heater
- Moving all non-cost effective Commercial and Industrial Prescriptive Measures to the Commercial and Industrial Custom Program.

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<sup>3</sup> Refer to the Company's response to Staff DR 3-1, Attachment 3-1, Analysis Tab, for the TRC scores at the individual measure level.