

EXHIBIT 2
Direct Testimony
Michael Pogany

Before the South Dakota Public Utilities Commission
of the State of South Dakota

APPLICATION OF BLACK HILLS POWER, INC. d/b/a BLACK HILLS ENERGY FOR
APPROVAL TO PROVIDE AN LIGHT EMITTING DIODE (LED) OPTION FOR STREET
LIGHTING SERVICE CUSTOMERS

Docket No. EL22-_____

February 1, 2022

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ATTACHMENT

Attachment MP- 1 Black Hills Power Specification for LED Luminaires

1 **I. INTRODUCTION AND STATEMENT OF QUALIFICATIONS**

2 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

3 A. My name is Michael Pogany. My business address is 409 Deadwood Avenue, Rapid
4 City, South Dakota, 57702.

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

6 A. I am employed by Black Hills Power Inc. dba Black Hills Energy (“Black Hills Power”,
7 or “Company”), which is a subsidiary of Black Hills Corporation. I am the Director of
8 Electric Operations.

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

11 A. I am responsible for electric operations for Black Hills Power. This includes management
12 of the electric distribution, substation, and metering operations as well as fleet
13 maintenance, engineering, and construction service departments. The electric operations
14 department is responsible for installing and maintaining the Company’s street and private
15 or public area lights.

16 **Q. WOULD YOU PLEASE OUTLINE YOUR EDUCATIONAL AND**
17 **PROFESSIONAL BACKGROUND?**

18 A. I have my bachelor’s degree in Environmental Engineering from the South Dakota
19 School of Mines and Technology in Rapid City. I am a registered professional engineer
20 in South Dakota, Wyoming, and Colorado. I started at Black Hills Power in 2008 as an
21 Environmental Engineer. After nine years as an Environmental Engineer and manager, I
22 became the Rapid City Electric Operations Manager in 2017. In 2020, I was promoted to
23 my current role as Director of Electric Operations for Black Hills Power. Prior to my 13

1 years at Black Hills Power, I spent six years as a water quality regulator for the South
2 Dakota Department of Environment and Natural Resources (now Department of
3 Agriculture and Natural Resources).

4 **II. PURPOSE OF TESTIMONY AND EXHIBITS**

5 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

6 A. The purpose of my testimony is to support the proposed Light Emitting Diode (“LED”)
7 Light Transition Program. My testimony also provides details on Black Hills Power’s
8 LED lighting standards and the process to replace existing street lights with LED’s, if
9 approved.

10 **III. BACKGROUND INFORMATION**

11 **Q. PLEASE DESCRIBE THE ISSUES BEING ADDRESSED IN THIS**
12 **APPLICATION.**

13 A. The standard street light portfolio today consists of either High Pressure Sodium Vapor
14 (“HPSV”) or Metal Halide (“MH”) street lights in multiple fixture designs, served by an
15 overhead or underground feed and either on a wood or ornamental pole. The Company is
16 proposing to transition from HPSV and MH lighting fixtures to LED lighting fixtures, a
17 more efficient and direct lighting. This transition program will be similar to the
18 technology change during the 1990’s when Mercury Vapor lights were phased out and
19 the then-new technology was HPSV street lights.

20 **Q. HAS BLACK HILLS POWER BEEN APPROACHED BY LIGHTING**
21 **CUSTOMERS ABOUT PRICING ON THESE LIGHTING TECHNOLOGIES?**

22 A. Yes. Black Hills Power has had discussions with several cities and customers in our
23 service territory concerning their interest in pursuing new street lighting technologies.

1 These cities include Rapid City, Sturgis, Spearfish, and Deadwood. Each of these
2 customers have expressed positive interest and support of this project.

3 **Q. PLEASE EXPLAIN THE PROPOSED PROCESS FOR CHANGING OUT**
4 **STREET LIGHTS, IF APPROVED?**

5 A. The Company is proposing a mass conversion approach with the introduction of
6 Company-offered LED street lights. Also, any new light installation will be provided
7 with an LED Luminaire.

8 **Q. WHAT ARE THE BENEFITS OF THE PROPOSED LED LIGHTING OPTION?**

9 A. The general benefits of high-quality LED lights include reduced energy consumption,
10 longer life when compared to HPSV fixtures, and improved color rendering. LED
11 fixtures are also expected to be more resistant to vandalism and adverse weather than
12 traditional HPS lighting options. Finally, the longer lifespan and improved durability of
13 the LED fixtures could reduce operation and maintenance costs along with the
14 environmental impact caused by maintenance, as fewer truck-rolls are anticipated.

15 **Q: HAS THE COMPANY DEPLOYED ANY LED FIXTURES IN A PILOT OR**
16 **OTHER PRELIMINARY STUDY?**

17 A: Yes, in 2015, Black Hills Power began buying a variety of LED fixtures to pilot and
18 determine which fixture would best suit the needs of our customers. We have piloted
19 LED fixtures across our service territory (urban and rural) to evaluate their light quality,
20 output, and durability to our climate and weather conditions. Based on this evaluation the
21 Company selected American Electric Lighting – Autobahn Series ATBS fixtures for LED
22 street light installations.

1 **Q. HAS BLACK HILLS POWER DEVELOPED A LIGHTING STANDARD FOR**
2 **LED LIGHTING?**

3 A. Yes. Black Hills Power has adopted the LED lighting standard attached to my direct
4 testimony in Attachment MP 1. This specification covers the minimum requirements for
5 100-Watt replacement of HPSV and MH to LED luminaries intended for use in street and
6 roadway applications. The standard ensures high quality LED lighting luminaires by
7 requiring them to meet strict American National Standards Institute (ANSI), Institute of
8 Electrical and Electronics Engineers (IEEE), Illuminating Engineering Society of North
9 America (IESNA), and UL electrical and roadway standards. The specification also
10 requires high quality construction standards, performance criteria, warranty, marking, and
11 inspections and testing.

12 **Q. DESCRIBE THE SIZE AND TYPE OF THE COMPANY-PROVIDED LED**
13 **LIGHT OPTIONS.**

14 A. As LED street lights continue to evolve, the exact LED wattage replacement equivalent
15 to the current HPSV lights is ever-changing. A more reasonable comparison can be
16 shown in a lumen-versus-lumen comparison. A lumen is a measurement of the amount of
17 light that is contained in a certain area. Lumens are a more accurate way of measuring
18 the amount of light a particular light fixture is emitting, because lumens are a direct
19 measurement of light output. Wattage, even though people have become accustomed to
20 seeing on packaging as a measure of light, is not an accurate way to measure light output.
21 Wattage measures energy use, not light output. Technological advances in LED
22 efficiency have provided a continued improvement in lumens per watt provided by
23 current LEDs. Just a couple of years ago, Black Hills Power saw LEDs that provided

1 around 4000 lumens, using 70 watts. Some newer LED fixtures today will provide 5000
2 lumens, while using only 40 watts. For LED streetlight fixtures, the Company will be
3 implementing either a Type II LED fixture or a Type V LED fixture, depending on the
4 location of light and the desired lighting pattern.

5 **Q: IF APPROVED, WHAT WILL BE THE RATE IMPACT TO CUSTOMERS?**

6 A: Black Hills Power is requesting to utilize its existing HPSV 9,500 Lumen (100 Watt) rate
7 for customers taking service under the new LED 5,000 Lumen (40 Watt) rate, because the
8 new LED 5,000 Lumen fixtures will be replacing the HPSV 9,500 Lumen fixtures. The
9 rate will not be changed until either Black Hills Power's next filed rate review or an
10 extraordinary event such as a change in the corporate tax rate.

11 **Q. IF APPROVED, HOW WILL CUSTOMERS BE NOTIFIED OF THESE NEW**
12 **LED LIGHTING OPTIONS?**

13 A. If the new LED lighting options are approved, the Black Hills Power will communicate
14 the changes to our customers in multiple ways. First, the Company will post information
15 on its website, www.blackhillsenergy.com/ledstreetlights, about the new LED tariffs with
16 FAQs. Additionally, the call centers and customer service groups will be informed of the
17 new LED program and rates, so they can answer questions from customers that inquire
18 online, over the phone, or in person.

19 **IV. CONCLUSION**

20 **Q. IS THE PROPOSED LED LIGHTING TARIFF BENEFICIAL FOR THE**
21 **CUSTOMERS AND COMMUNITIES SERVED BY BLACK HILLS POWER?**

22 A. Yes. The Company has received requests from several of our cities and customers in our
23 service territory to make LED lighting options available. Customers want LED lighting

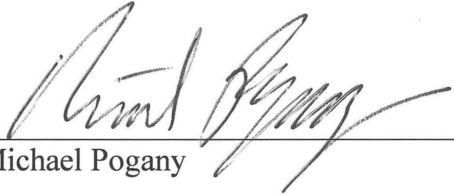
1 because it is efficient—it typically uses about 50% less electricity and provides a similar
2 intensity of light as the current HPS lights. The LED lights are reliable, rated for a
3 minimum 100,000-hour life expectancy, and produce a high-quality light. LEDs are also
4 cost effective, as the purchase price for LED fixtures continues to fall, closer to the cost of
5 historical HPSV and MH fixtures.

6 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

7 **A. Yes.**

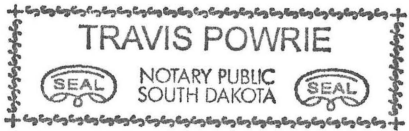
STATE OF SOUTH DAKOTA)
) ss
COUNTY OF PENNINGTON)


I, Michael Pogany, being first duly sworn on oath, depose and state that I am the witness identified in the foregoing prepared testimony and I am familiar with its contents, and that the facts set forth are true to the best of my knowledge, information, and belief.


Michael Pogany

Subscribed and sworn to me this 1st day of February, 2022.

(SEAL)




Notary Public

My Commission Expires: May 7, 2027