

Exhibit No.:  
Issue: Green Button Alliance  
Witness: Michael L. Rush, PE  
Sponsoring Party: MoPSC Staff  
Type of Exhibit: Rebuttal Testimony  
Case Nos.: ER-2018-0145 and  
ER-2018-0146  
Date Testimony Prepared: July 27, 2018

**MISSOURI PUBLIC SERVICE COMMISSION**

**COMMISSION STAFF DIVISION**

**ENGINEERING ANALYSIS DEPARTMENT**

FILED  
October 22, 2018  
Data Center  
Missouri Public  
Service Commission

**REBUTTAL TESTIMONY**

**OF**

**MICHAEL L. RUSH, PE**

Staff Exhibit No. 215  
Date 9-25-18 Reporter TLL  
File No. ER-2018-0145 + 0146

**KANSAS CITY POWER & LIGHT COMPANY  
CASE NO. ER-2018-0145**

**AND**

**KCP&L GREATER MISSOURI OPERATIONS COMPANY  
CASE NO. ER-2018-0146**

Jefferson City, Missouri  
July 2018

1 REBUTTAL TESTIMONY

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3 MICHAEL L. RUSH, PE

4 KANSAS CITY POWER & LIGHT COMPANY  
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6 AND

7 KCP&L GREATER MISSOURI OPERATIONS COMPANY  
8 CASE NO. ER-2018-0146

9 Q. Please state your name, title, and business address.

10 A. Michael L Rush, PE, Critical Infrastructure Security Engineer, Engineering  
11 Analysis Department, Commission Staff Division, Missouri Public Service Commission,  
12 200 Madison Street, Jefferson City MO, 65102.

13 Q. What are your qualifications and experience?

14 A. I have been a practicing professional engineer since 1995 and have been in my  
15 present position since November 2016. I am responsible for interfacing with Missouri  
16 utilities on physical and cyber security issues. I am also the critical infrastructure intelligence  
17 analyst at the Missouri Information Analysis Center ("MIAC") as well as a lead responder for  
18 the energy sector emergency response function at the Missouri State Emergency Management  
19 Agency ("SEMA"). I previously held a PSC staff position in the Procurement Analysis Unit.  
20 Other experience includes employment as an Engineering Research Scientist at Lincoln  
21 University of Missouri, a civilian instructor at the Army Corps of Engineers' Prime Power  
22 School, a Researcher at the Arizona State University Center for Cognitive Ubiquitous  
23 Computing ("CUbiC"), and a Sr. Project Engineer at the General Motors Corporation.

24 Q. What is the purpose of your testimony?

1           A.     To address issues related to the direct testimony of Geoff Marke of the Office  
2 of the Public Counsel concerning the function of the Green Button Alliance, the current state  
3 of the Green Button Alliance, the advantages to the customer of adhering to industry  
4 standards, and the efforts necessary to utilize the advantages of the Green Button Alliance.

5     **GREEN BUTTON ALLIANCE AND THE ADVANTAGES OF CONFORMANCE**

6           Q.     Briefly explain the Green Button Alliance.

7           A.     The Green Button Alliance (“Alliance”) is an industry-led effort to develop  
8 and promote standards so that a customer, or Energy Consumer, has easy access to energy  
9 usage data in both a customer and computer friendly manner. The Alliance itself is not a  
10 platform for data sharing but an organization that promotes the use of standards for sharing of  
11 energy data. The initial effort was supported by the US Department of Energy (“DOE”), the  
12 National Institute of Standards and Technology (“NIST”), and the North American Energy  
13 Standards Board (“NAESB”) in addition to other industry and governmental organizations.

14          Q.     Would joining the Alliance be beneficial to a customer of an energy provider?

15          A.     The concept behind the Alliance would be useful for an Energy Consumer who  
16 wants to have more control over how much, when, and what kind of energy they consume.

17          Q.     How does the Alliance assist an Energy Consumer in gaining more control  
18 over their energy usage?

19          A.     The Alliance promotes the adoption of an industry data exchange standard  
20 (“Data Standard”) which includes a data format and a standardized interface for the exchange  
21 process. Think of the Data Standard as defining what is exchanged and how it is exchanged.  
22 The Data Standard was developed in cooperation with NAESB, an industry forum that

1 promotes the development and implementation of all manner of industry standards.  
2 The exchange process is to be used by both the energy provider ("Data Custodian") that  
3 collects usage data on an Energy Consumer as well as any authorized third party company  
4 ("Third Party") that requires the data to provide a product or service to the Energy Consumer.  
5 The data format is to be used by all parties as a common form of data exchange.

6 The Alliance also certifies compliance to the standard. Currently the Alliance can  
7 certify that data downloaded from the Data Custodian by the Energy Consumer conforms to  
8 the standard data format. The ability to certify the data exchange process between the  
9 Data Custodian and an authorized Third Party is currently under active development but is not  
10 yet available.

11 Q. What else does the Data Standard do for the Energy Consumer?

12 A. Widespread adoption of the Data Standard will help speed up development of  
13 new energy products and services available to the Energy Consumer by creating an  
14 environment where data interoperability is the norm and proprietary data exchange formats  
15 are limited.

16 Q. How does the Energy Consumers' data get from the Data Custodian to the  
17 Third Party?

18 A. The process by which the Third Party acquires the data can be either through  
19 the Energy Consumer or directly from the Data Custodian. An Energy Consumer could  
20 download the data in the standard format from the Data Custodian through the Energy  
21 Consumers account interface and send the data electronically to the Third Party.  
22 Alternatively, the Third Party could access the Energy Consumers' data directly from the  
23 Data Custodian with the express permission of the Energy Consumer.

1 Q. Why would a Third Party need to access the Energy Consumers' data directly  
2 from the Data Custodian?

3 A. If the Third Party were providing a product or service that automatically  
4 altered the Energy Consumers' consumption on a near real time basis, direct access would be  
5 required. As an example, a product or service that limited the operation of certain devices at  
6 times of high energy cost, increased the use of those same devices during periods of low  
7 energy cost, or limited energy consumption during times when a capacity charge might be  
8 levied, that product or service would require the use of near real time data.

9 Q. Would allowing a Third Party to access Energy Consumer data directly from  
10 the Data Custodian create a data security issue?

11 A. This is a real concern that needs to be balanced with any advantage that the  
12 Energy Consumer may gain from the ability to better control the amount and cost of their  
13 energy needs.

14 Q. Who certifies that the Data Custodian is providing the data in a manner that  
15 conforms to the Data Standard?

16 A. The Alliance has processes in place to determine if data downloaded from a  
17 Data Custodian conforms to the standard data format. The Alliance is also working on a  
18 process to certify that Data Custodians who are providing data directly to Third Parties are  
19 providing the data in a manner that conforms to the Data Standard.

20 Q. Who certifies the Third Party applications to ensure that any product or service  
21 does not present an unacceptable level of risk to the Energy Consumer or Data Custodian?

22 A. The Alliance does not currently certify Third Party applications but is starting  
23 the development of a process for this type of certification.

Rebuttal Testimony of  
Michael L. Rush, PE

1 Q. Would you recommend utilizing the Green Button Alliance services?

2 A. Any development or update to a customer information system should, at a  
3 minimum, provide the ability for an Energy Consumer to download data in the industry  
4 standard format for use by any Third Party with which the Energy Consumer wants to  
5 interact. As for Third Party direct access to data held by a Data Custodian, that is a more  
6 complex question involving industry certification processes that are not yet fully developed  
7 and questions of data security that have not yet been addressed. However, once the  
8 certification and data security issues have been addressed, Third Party access to Energy  
9 Consumer data should be implemented.

10 Q. Does this conclude your rebuttal testimony?

11 A. Yes.

**BEFORE THE PUBLIC SERVICE COMMISSION**

**OF THE STATE OF MISSOURI**

In the Matter of Kansas City Power & )  
Light Company's Request for Authority ) Case No. ER-2018-0145  
to Implement a General Rate Increase for )  
Electric Service )  
and

In the Matter of KCP&L Greater )  
Missouri Operations Company's Request ) Case No. ER-2018-0146  
for Authority to Implement a General )  
Rate Increase for Electric Service )

**AFFIDAVIT OF MICHAEL L. RUSH, PE**

STATE OF MISSOURI )  
 ) ss.  
COUNTY OF COLE )

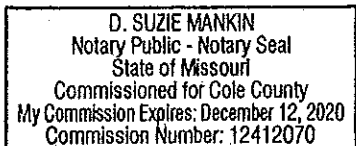
COMES NOW MICHAEL L. RUSH, PE and on his oath declares that he is of sound mind and lawful age; that he contributed to the foregoing *Rebuttal Testimony* and that the same is true and correct according to his best knowledge and belief.

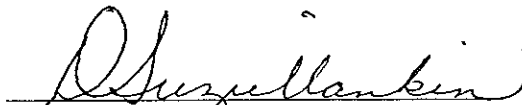
Further the Affiant sayeth not.

  
MICHAEL L. RUSH, PE

**JURAT**

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 27<sup>th</sup> day of July 2018.



  
Notary Public