

Exhibit:
Issue(s): *Green Button*
Connect My Data
Witness: *Matthew W. Lucas*
Sponsoring Party: *MoPSC Staff*
Type of Exhibit: *Rebuttal Testimony*
Case No.: *ER-2024-0261*
Date Testimony Prepared: *August 18, 2025*

MISSOURI PUBLIC SERVICE COMMISSION

INDUSTRY ANALYSIS DIVISION

ENGINEERING ANALYSIS DEPARTMENT

REBUTTAL TESTIMONY

OF

MATTHEW W. LUCAS

**THE EMPIRE DISTRICT ELECTRIC COMPANY,
d/b/a Liberty**

CASE NO. ER-2024-0261

Jefferson City, Missouri
August 2025

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1 earlier efforts to allow customers to download their historical data, to now allow customers to
2 directly connect to utility databases to provide near real-time data. This would enable customers
3 to directly monitor and adjust their energy usage either themselves, or through a third-party
4 Demand Side Management (“DSM”) aggregator to save money. This could also include a
5 customer allowing a third-party energy manager access to the customer’s data in order to help
6 optimize the customer’s bill.

7 Q. Is GBC different from Green Button Download My Data (“GB Download”)?

8 A. Yes. GB Download is also part of the Green Button Initiative, and enables
9 customers to download their usage data through the utility’s online portal. As part of the
10 stipulation in its previous rate case,¹ Empire currently offers GB Download to its customers.

11 The key difference between the two programs is that with GB Download, the customer
12 must actively choose to download the data themselves through the customer portal, where GBC
13 allows the customer or their agent to directly connect to a utility’s billing system for near
14 real-time data that is easier for energy managers to access and track.

15 Q. What are the issues related to GBC raised in this case?

16 A. In the revenue requirement direct testimony of Renew Missouri witness Michael
17 Murray, Mr. Murray argues for the implementation of GBC and requests a revenue requirement
18 of \$201,000 be added to Empire’s cost of service to facilitate that implementation and study
19 participation in a regional data hub.² In Mr. Murray’s subsequent class cost of service direct
20 testimony,³ Mr. Murray additionally proposes a new tariff to govern Empire’s hypothetical
21 GBC program.

¹ ER-2021-0312.

² Direct Testimony of Michael Murray (7-2-25). Page 19, lines 10-11. \$101,000 for implementation of GBC, and \$100,000 to for the regional data hub study.

³ Direct Testimony of Michael Murray (7-21-25), Schedule MM-1.

1 Q. Does Staff have any technical concerns related to the potential implementation
2 of GBC?

3 A. Yes. First, there are real cybersecurity concerns associated with GBC. GBC is
4 not only about adopting a standard computer-friendly format to data, but also involves the direct
5 connection of customers or their third-party representatives to a utility's data systems through
6 an Application Programming Interface ("API"). While APIs are commonly used throughout the
7 world safely each day, care does need to be taken to minimize potential security vulnerabilities.
8 Staff is also concerned about the risk to customer privacy since there are few guardrails on what
9 third-party energy managers can do with customer data after the customer has authorized the
10 third-party to obtain it. Finally, Staff is concerned with the costs associated with a GBC
11 implementation and the costs to operate and maintain such a system. Currently Staff does not
12 have a reliable estimate for how much GBC would cost ratepayers.

13 While Staff is concerned about these issues surrounding GBC, Empire witness
14 Candice Kelley states that Empire is currently Green Button certified.⁴ Staff would need
15 additional information about the implementation costs, operations and maintenance costs,
16 and any potential privacy safeguards related to GBC before it could recommend GBC on
17 technical grounds.

18 Q. Are there any additional factors that would be relevant for Empire to
19 implement GBC?

20 A. Yes. In April 2024, Empire implemented a new billing system⁵ as part of its
21 Customer First initiative. Since that time, Empire has not been able to consistently and

⁴ Direct Testimony of Candice Kelley, Page 4, lines 8-13.

⁵ SAP software provided by IBM.

1 accurately bill its customers. These issues are fully described by Staff witness Charles Tyrone
2 Thomason in his direct testimony in this case. Additionally, the Commission has ordered an
3 investigation docket⁶ to fully examine these issues, and could lead to a potential complaint case.

4 Q. Why are problems with the billing system relevant to a potential GBC
5 implementation?

6 A. Any GBC implementation would require a significant enhancement to the
7 billing system since it would be the source of all data needed to drive GBC use. Empire is
8 limited each month in the number of work-hours⁷ provided by its contract with IBM for its
9 SAP software. Currently, the billing issues are so pervasive that any diversion of resources
10 away from solving these issues would be unwise. In Staff's opinion, implementing GBC at this
11 time would compromise Empire's ability to resolve their billing issues.

12 Q. If the implementation of GBC was ordered while the billing system issues
13 persisted, would there be any harm to Empire's customers?

14 A. Yes. One of the issues Empire is experiencing regards the integration between
15 its AMI meter system and SAP. Often, there are several hours of interval data that do not get
16 uploaded, resulting in customers getting estimated interval readings used for time-of-use
17 billing. Since the main purpose of GBC is to allow third-party DSM aggregators to monitor and
18 potentially adjust their customers' usage in real-time, if the data includes estimates due to
19 persisting integration problems, this could ultimately cost participating customers money due
20 to the incorrect decisions made by their DSM aggregator based on estimated data. Further, this

⁶ Case No. OO-2025-0233.

⁷ Staff Data Request No. 0249. ** [REDACTED] **

1 could harm the reputations of both participating aggregators and Empire, leading to less
2 customer participation than would otherwise be present.

3 Q. Mr. Murray suggests that because Staff agreed to a future implementation of
4 GBC for Ameren Missouri in ER-2024-0319 that it would not be fair for Empire customers to
5 be deprived of the same programming. How do you respond?

6 A. The big difference between the two situations is that Ameren Missouri
7 customers are generally receiving timely and accurate bills. That is not the case for all Empire
8 customers. Also, Ameren Missouri has not implemented GBC at present. According to the
9 Stipulation, Ameren Missouri will implement GBC by December 31, 2026, with a Tariff to be
10 filed 60 days prior to the offering of the program. No tariff has been filed at this time, nor has
11 there been any discussion of the prospective tariff between the parties involved. In Staff's
12 opinion, Empire does not have the capacity to fix its billing system and implement GBC on a
13 timeline similar to that of Ameren Missouri. Until Empire solves its billing system problems,
14 Staff will remain opposed to its implementation of GBC.

15 Q. Please summarize Staff's position on the implementation of GBC?

16 A. Staff agrees that there are significant customer benefits that could be realized
17 through GBC adoption. Granting customers more access to their data and more control of their
18 energy usage is something that Staff generally supports. However, though the cost of obtaining
19 GBC certification is low,⁸ an implementation of GBC needed to obtain that certification could
20 still be technically difficult and costly, and for any utility those challenges need to be
21 thoughtfully considered before moving forward with GBC.

⁸ \$3,200 according to <https://www.greenbuttonalliance.org/testing>.

1 That being said, it would be completely irresponsible to force Empire to implement
2 GBC at this time. Empire's billing system issues⁹ are extensive, especially with its integration
3 with Empire's AMI meters. At a time when customers cannot rely on receiving a timely and
4 accurate bill, all billing system related IT resources should be devoted to fixing the basic
5 problems all customers are experiencing rather than being diverted to a new program that would
6 allow only those customers who can afford to work with a DSM management company.
7 The suggestion that Empire should adopt GBC as part of this case is frankly tone-deaf, and
8 should be completely disregarded by the Commission.

9 **RENEW'S PROPOSED GBC TARIFF**

10 Q. Does Staff agree that adopting a tariff governing the use of GBC as proposed by
11 Mr. Murray is appropriate at this time?

12 A. No. The tariff proposed by Mr. Murray is premature. Should the Commission
13 order Empire to adopt GBC, and after Empire assesses the ability of its existing systems to
14 incorporate GBC standards, only then would it be appropriate to consider tariff language to
15 govern its use. As it is, Mr. Murray is suggesting a tariff that mandates the offering of GBC
16 data without the infrastructure needed for Empire to comply.

17 Q. You mentioned cybersecurity and customer privacy risks among Staff's
18 concerns with GBC. How is alleged illegal activity relating to GBC addressed in the
19 proposed tariff?

20 A. Section (f)4 of the proposed tariff¹⁰ states:

21 Termination. – Liberty is prohibited from terminating an active customer
22 authorization. If Liberty has a reasonable suspicion that an authorized
23 third party is engaged in illegal conduct or is violating customer privacy,

⁹ Explained in detail in Direct Testimony of Charles Tyrone Thomason (7-2-25).

¹⁰ Direct Testimony of Michael Murray (7-21-25). Schedule MM-1, Page 5.

1 then Liberty shall report such suspicions to the Commission for
2 investigation. Only a customer or the Commission may direct Liberty to
3 terminate an active customer authorization.

4 According to this language, Empire cannot revoke service if they detect likely illegal
5 activity. This provision makes Staff's concerns about cybersecurity and customer privacy more
6 serious since potential risks may be left unaddressed until the Commission has time for a full
7 investigation and hearing on the matter. Additionally, this leaves the Commission in the
8 position of regulating the activities of third-parties outside its jurisdiction. Therefore, Staff
9 recommends the Commission reject the Termination provision in its entirety.

10 **RENEW'S PROPOSED REVENUE REQUIREMENT**

11 Q. What is Mr. Murray's proposed revenue requirement?

12 A. Mr. Murray proposes a \$201,000 revenue requirement, where \$101,000 is for
13 GBC implementation, and \$100,000 is for studying coordination with a regional data hub.

14 Q. Is the revenue requirement suggested by Mr. Murray for GBC implementation
15 reasonable?

16 A. No. Putting aside the fact that Staff is opposed to the implementation of GBC at
17 this time, Mr. Murray used the up-front and on-going costs per meter of several studied utilities
18 during the years of 2017-2020¹¹ to construct his revenue requirement. There are two main
19 problems with this. First, the mixture of up-front and on-going costs make constructing a per
20 meter cost problematic. While the on-going costs of GBC may be affected by the number of
21 customers served, most of the up-front costs are not. The problems with this manifest as the
22 extreme cost per meter differences that Mr. Murray provides,¹² ranging from \$0.14 to \$1.73 per

¹¹ Direct Testimony of Michael Murray (7-2-2025). Pages 12-18.

¹² Direct Testimony of Michael Murray (7-2-2025). Page 18.

1 meter. While the \$0.60 per meter cost proposed by Mr. Murray is less than the midpoint of the
2 range, there is still too much uncertainty in whether this is an appropriate level, especially since
3 this may be drastically low due to the billing issue problems experienced by Empire.
4 Mr. Murray claims¹³ that:

5 Based on my experience working with utilities and regulators across
6 15 states, I know that it is significantly easier and less costly to provide
7 via GBC all of the customer data types I have described when the utility
8 has modern information technology systems. In particular, the back-end
9 integration costs will be significantly lower, because premise addresses,
10 the “readingQuality” attribute, and other customer characteristics require
11 less effort to extract, transform and load from various systems.

12 Mr. Murray may be correct that it is generally easier and less expensive to implement GBC on
13 modern billing systems, however, this comes back to resource allocation as previously
14 discussed. Since it is unlikely that Empire can implement GBC without additional work outside
15 its support contract with IBM due to all contracted resources being used on the billing issues,
16 a GBC implementation could come at a huge additional cost.

17 The second reason this is a problem is that this is all based on old data. Mr. Murray
18 claims more recent data is not currently available despite his attempts to obtain it. The actual
19 revenue requirement needed to implement GBC may be significantly higher or lower than
20 Mr. Murray’s estimate, and will be heavily dependent on the ease or difficulty to adapting
21 Empire’s systems to the GBC standards. While Mr. Murray’s methods do provide a rough
22 estimate of costs, they are inadequate for using to base a revenue requirement that will be
23 charged to the ratepayers. Additionally, any new infrastructure needed to implement GBC
24 would not be in-service during the update period of this case, and so would not be appropriate
25 to include in the revenue requirement as these are not “known and measurable costs”.

¹³ Direct Testimony of Michael Murray (7-2-2025). Page 26.

1 At this time there is simply not enough information available to set a meaningful revenue
2 requirement should the Commission decide Empire should pursue GBC.

3 Q. Is the \$100,000 Mr. Murray proposing for studying Empire's participation in a
4 regional data hub reasonable?

5 A. Mr. Murray provides no justification for how he arrived at \$100,000 for this
6 study, so Staff cannot evaluate its reasonableness at this point. While participation in a regional
7 data hub may be appropriate if the Commission orders Empire's implementation of GBC, the
8 cost of such a study is unknown. Without additional information on how this figure was derived,
9 Staff recommends the Commission not include it in the revenue requirement.

10 Q. Does this conclude your rebuttal testimony?

11 A. Yes it does.

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of the Request of The Empire)
District Electric Company d/b/a Liberty for)
Authority to File Tariffs Increasing Rates)
for Electric Service Provided to Customers)
in Its Missouri Service Area)

Case No. ER-2024-0261

AFFIDAVIT OF MATTHEW W. LUCAS

STATE OF MISSOURI)
)
COUNTY OF COLE) ss.

COMES NOW MATTHEW W. LUCAS and on his oath declares that he is of sound mind and lawful age; that he contributed to the foregoing *Rebuttal Testimony of Matthew W. Lucas*; and that the same is true and correct according to his best knowledge and belief.

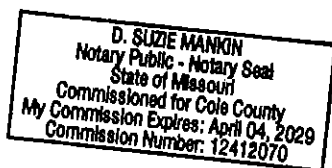
Further the Affiant sayeth not.

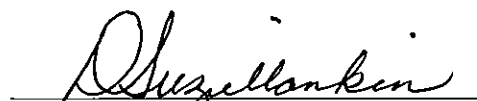


MATTHEW W. LUCAS

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 13th day of August 2025.





Notary Public

Credentials and Case Participation

Matthew W. Lucas

Education

I completed my undergraduate studies at Marshall University in Huntington, WV in December 2012, receiving a Regents B.A. with minors in Physics and Mathematics. I received a M.A. in Mathematics at Marshall University in May 2015.

Employment Background

I am currently employed as a Senior Project Manager in the Engineering Analysis department within the Industry Analysis division of the Missouri Public Service Commission (Commission). I have been employed by the Commission since November 2023.

Prior to tenure at the Commission I was employed by City of Columbia Utilities for six years. I was first hired there in August 2017 as a Rate Analyst and was promoted to Senior Rate Analyst in October 2019. In those positions I did work for each of its electric, water, sewer, solid waste, and stormwater utilities. A non-comprehensive list of my duties there includes: maintaining and programming the billing system, compiling data for and conducting cost of service studies, electric load forecasting, renewable portfolio planning, rate design, departmental budgeting, and DSM program analysis.

Case Participation

Case Number	Utility	Participation	Issues
GO-2024-0180	Spire Missouri (Gas)	Staff Memo	Carbon Offset Program
ER-2024-0189	Evergy Missouri West	Case Coordinator	-
EA-2024-0212	Ameren Missouri (Electric)	Case Coordinator, Staff Memo	Community Solar Program expansion
ER-2024-0319	Ameren Missouri (Electric)	Case Coordinator, Rebuttal testimony, Surrebuttal testimony	Green Button Connect, Residential Battery Pilot

Case Number	Utility	Participation	Issues
JE-2025-0111/JE-2025-0112	Empire (Liberty) Electric	Staff Memo	Cogeneration & NM rate update
JE-2025-0110	Ameren Electric	Staff Memo	Cogeneration & NM rate update
ER-2024-0261	Empire (Liberty) Electric	Case Coordinator, Rebuttal Testimony	Green Button Connect
OO-2025-0233	Empire (Liberty) Electric		CIS Testing, Project Management
EO-2025-0281	Ameren Electric	Staff Memo	RES Plan
EO-2025-0284	Evergy West Electric	Staff Memo	RES Plan
EO-2025-0285	Evergy Metro Electric	Staff Memo	RES Plan
EO-2025-0287	Empire (Liberty) Electric	Staff Memo	RES Plan