

1 **BEFORE THE MISSOURI PUBLIC SERVICE COMMISSION**

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5 FILE NO. ER-2024-0319

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11 **SURREBUTTAL TESTIMONY OF**

12 **MICHAEL MURRAY**

13 **ON BEHALF OF RENEW MISSOURI**

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25 February 14, 2025

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1 I. **PURPOSE OF SURREBUTTAL TESTIMONY AND SUMMARY OF**
2 **RECOMMENDATIONS**

3 Q. PLEASE STATE YOUR NAME, TITLE AND BUSINESS ADDRESS.

4 A. My name is Michael Murray. I am the President of Mission:data Coalition
5 (“Mission:data”). My business address is 1752 NW Market Street #1513, Seattle, WA 98107.

6 Q. ARE YOU THE SAME PERSON WHO FILED DIRECT TESTIMONY ON
7 DECEMBER 4, 2024, AND DECEMBER 17, 2024 IN THIS PROCEEDING?

8 A. Yes.

9 Q. WHAT IS THE PURPOSE OF YOUR SURREBUTTAL TESTIMONY?

10 A. My purpose is to respond to the rebuttal testimony of various witnesses, including from
11 Staff of the Missouri Public Service Commission (“Staff”) and Ameren Missouri with regard to
12 Green Button Connect My Data (“GBC”). First, I respond to Staff witness Mr. Matthew W. Lucas
13 regarding GBC costs and the tariff language I proposed. Second, I respond to Ameren Missouri
14 witness Mr. Allen Clark, who makes incorrect claims regarding cost inflation and customer
15 demand for their energy data. Finally, I respond to Ameren Missouri witness Mr. Steven Wills
16 about the appropriateness of the tariff I proposed.

1 **II. RESPONSE**

2 **A. RESPONSE TO STAFF**

3 **Q. WHAT DID STAFF WITNESS MR. MATTHEW W. LUCAS STATE WITH**
4 **REGARD TO GREEN BUTTON CONNECT?**

5 A. In rebuttal testimony, Mr. Lucas states that Staff does not have enough information to
6 determine its position with regard to GBC costs and privacy safeguards.¹ Mr. Lucas argues that
7 the GBC tariff is premature,² and Mr. Lucas questions the accuracy of the cost estimates,
8 concluding that there is insufficient information to set a revenue requirement at this time.³

9 **Q. HOW DO YOU RESPOND ON MR. LUCAS'S POINT THAT THE TARIFF IS**
10 **PREMATURE?**

11 A. Mr. Lucas states that Ameren Missouri should assess the ability of its existing systems to
12 incorporate GBC standards, and only then should tariff language be considered.⁴ I disagree with
13 Mr. Lucas, as I believe his reasoning is backwards. By putting GBC design and feasibility
14 assessment first, *before* determining important details in a tariff such as data accuracy, uptime, and
15 other terms, Ameren Missouri would be doing the opposite of a well-executed software project. In
16 my experience as a former software executive, it is critical that functional and non-functional
17 requirements be determined *in advance* of project initiation and project scoping. This is because
18 the requirements directly affect the system design, architecture, and costs. Proceeding in the

¹ Lucas Rebuttal at 7:6-8.

² *Id.* at 7:11.

³ *Id.* at 9:2-4.

⁴ *Id.* at 7:11-14.

1 opposite order, as Mr. Lucas suggests, would almost certainly result in a GBC design that is ill-
2 suited to meet requirements that will be subsequently determined by the Commission, leading to
3 costly and unnecessary re-designs and re-engineering tasks. I do not believe that Mr. Lucas's
4 concerns about costs are effectively addressed by putting the design work before the tariff.

5 As an initial matter, if Mr. Lucas is asking the threshold question, "Is GBC even possible
6 in Missouri?" then I think the answer is unambiguously yes. I believe Ameren Missouri is capable
7 is offering GBC because (1) its affiliate in Illinois has already done so and (2) dozens of other
8 utilities have already done so, covering approximately 41 million electric meters nationwide. In
9 other words, I see no evidence that Ameren Missouri's information technology practices are so
10 unusual or wildly out of step with its peers that it would impossible, or outrageously expensive, to
11 offer GBC. The question I believe Mr. Lucas is getting to is the *how* – in other words, the design
12 of the system to pull the requisite information from Ameren Missouri's meter data management,
13 billing and customer information systems; manage third party registrations; securely authenticate
14 customers and process their consents; etc. On this point, I contend that the design process
15 inherently implicates important details about functional and non-functional elements that can and
16 should be determined at the outset, not after the fact.

17 Additional evidence that detailed tariff requirements should precede GBC design is
18 provided by Ameren Illinois. In discovery, Ameren Illinois's GBC, which originally had a one-
19 time development cost of approximately \$1 million,⁵ is now being re-engineered at a cost of
20 ** ____ **⁶ In my experience as a software executive, I think it is fair to say that much of this cost
21 could have been avoided by more thoughtful planning and design work, had that occurred prior to

⁵ Ameren Missouri Response to Discovery Request Renew MO 2-RMO 002(f), January 23, 2025.

⁶ Ameren Missouri Response to Discovery Request Renew MO 3-RMO 03, January 31, 2025 [CONFIDENTIAL].

1 Ameren Illinois’s original implementation. Unfortunately, the Illinois Commission’s
2 establishment of new requirements seems to be causing a costly redesign. I wish to prevent Ameren
3 Missouri from repeating the same misstep by having the Missouri Commission clearly outline in
4 advance what data needs to be provided electronically, the metrics for system performance, etc.
5 Resolving the tariff first will lead to lower costs and avoided re-designs.

6 **Q. HOW DO YOU RESPOND ON MR. LUCAS’S POINT THAT THE COSTS ARE**
7 **INSUFFICIENTLY ACCURATE?**

8 A. Mr. Lucas states that my cost estimate is “inadequate for using to base a revenue
9 requirement that will be charged to the ratepayers.”⁷ While I share Mr. Lucas’s desire for more
10 detailed cost information – both from other jurisdictions, which I have sought to obtain, as well as
11 from Ameren Missouri – I disagree that it is inadequate procedurally. No one has a perfectly
12 accurately estimate of the final costs at this time, but the detail contained in my estimates coupled
13 with Ameren Illinois’s experience support the idea that my estimate is sufficiently accurate for
14 determining a revenue requirement.

15 **Q. IS AMEREN ILLINOIS’S COST ESTIMATE OF \$4.76 MILLION FOR GBC**
16 **COMPARABLE TO WHAT COULD BE EXPECTED IN MISSOURI?**

17 A. I do not believe so, and for two reasons. First, the infrastructure could be shared with
18 Ameren Illinois, with costs allocated to each state, as described above. Second, the cost of \$4.76
19 million is in part associated with a ** _____
20 _____

⁷ Lucas Rebuttal at 9:1-2.

1 _____
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5 _____ **

6 **Q. WHAT DO YOU CONCLUDE ABOUT THE SUFFICIENCY OF YOUR GBC**
7 **COST ESTIMATE?**

8 A. While no estimate is perfect, my estimate of \$0.60 per meter is sufficient for determining
9 the revenue requirement. If there are variations in actual costs above or below this figure, those
10 can be addressed in a future rate case and evaluated for prudence at that time. With large potential
11 benefits to ratepayers from enhanced access to, and control over, their energy usage information,
12 I do not believe it would be wise to further postpone the customer benefits that result from GBC
13 simply in order to arrive at a more detailed cost estimate, particularly since that actual costs
14 incurred can be re-evaluated for prudence in a future rate case.

15 **Q. HOW DO YOU RESPOND ON MR. LUCAS’S POINT REGARDING DATA**
16 **PRIVACY?**

17 A. Mr. Lucas states that enforcing privacy laws or rules against “bad actors” is
18 hindered by putting the Commission “in the position of regulating the activities of third-parties
19 outside its jurisdiction.”⁸ I share this concern, which is why Section (c) of the tariff obligates third

⁸ Rebuttal Testimony of Matthew Lucas at p. 8, line 8.

1 parties to abide by the DataGuard privacy standard. As I stated in direct testimony, adherence to
2 DataGuard is used in states such as California and New Hampshire and is a commonsense
3 consumer protection measure. DataGuard gives the state Attorney General and the U.S. Federal
4 Trade Commission the ability to investigate and punish bad actors under laws governing deceptive
5 business acts or practices.

6 I also note that numerous states, such as California, Colorado, Illinois, and Texas are
7 similar to Missouri in that third party data recipients are not under the jurisdiction of the public
8 utility commission. Yet these states' utilities are required to offer GBC nonetheless. These states'
9 commissions were satisfied that existing privacy requirements could be enforced, and that it would
10 be improper to deny ratepayers control over their energy usage information simply due to the
11 commission's lack of jurisdiction over third parties. For example, California – which is very
12 privacy protective – provides for a notice period in which a utility with a “reasonable suspicion”
13 of a third party engaging in illegal activity can submit a pleading with the commission, whose Staff
14 then conducts an investigation. A third party may not be directly under the jurisdiction of the
15 California commission, but nonetheless it behooves third parties to cooperate with an investigation
16 in order to avoid termination. Given these states' experiences, it is not true that the Missouri
17 Commission's lack of authority over third party data recipients is reason to reject the tariff.

18 **Q. WHAT ARE AMEREN MISSOURI'S DATA ACCESS METHODS TODAY THAT**
19 **ARE IMPLICATED BY MR. LUCAS'S POINT REGARDING PRIVACY?**

20 A. In discovery, Ameren Missouri stated ** _____
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Q. HOW DO YOU RESPOND ON MR. LUCAS'S POINT REGARDING

5

TERMINATION?

6

A. Citing Section (f)4 of the tariff, Mr. Lucas is concerned that “Ameren Missouri

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cannot revoke service if they detect likely illegal activity.”⁹ While that concern has some validity,

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it is both improbable and undesirable to empower Ameren Missouri to become an enforcer. First

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of all, the likelihood that Ameren Missouri would have awareness of a third party’s acts is

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extremely low. Third parties, such as energy management firms, have contractual relationships

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with customers that are wholly separate from Ameren Missouri, and who operate at arm’s length

12

to Ameren Missouri. How would Ameren Missouri possibly know the data management practices

13

of a heat pump installer, a rooftop solar installer, a bank underwriting loans on energy efficiency

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improvements, or a plumber installing a new water heater? These economic transactions occur

15

without interaction with the utility. The only interface between Ameren Missouri and the third

16

party is limited to the electronic exchange of customer-authorized energy usage and billing

17

records. This is functionally identical to the web portal for aggregators, brokers and consultants

18

mentioned above, and to my knowledge Ameren Missouri does not “police” those entities.

19

Second, as I explained in direct testimony, granting Ameren Missouri “policeman” powers

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over third party data recipients is fraught with anti-competitive risk. Were such powers to be

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granted as Mr. Lucas suggests, Ameren Missouri could treat all data recipients as their vendors,

⁹ *Id.* at 8:4-5.

1 picking and choosing winners in the market based solely upon the third party's financial or
2 strategic value to Ameren Missouri and not the third party's value to customers as determined by
3 a competitive market. If Ameren Missouri could unilaterally terminate a data connection without
4 due process rights for the affected firm, then entrepreneurs and innovators will not have sufficient
5 business certainty to invest time and money into software-enabled energy management products.
6 As a result, customers would be deprived of the ability to choose new energy services that might
7 be of value to them.

8 Finally, while I note that parts of Mr. Lucas's concern are legitimate, it must be balanced
9 against the important rights that customers have to share their energy data shared conveniently
10 with any service provider they wish. Several other states have considered this topic in detail and
11 come to the conclusion that unilateral termination by utilities is inappropriate. For example, the
12 California Commission, which has very strong privacy rules, concluded in 2013 that:

13 To clarify further, it is reasonable for the Commission, in its oversight of the
14 utilities and smart meters, to take responsibility for ordering the suspension of third-
15 party access to customer data. Under the procedures adopted in this decision, it is
16 not necessary nor is it reasonable for a utility to suspend access to customer data
17 based on *suspicion* that a third party may be violating tariffs.¹⁰
18

19 I strongly encourage the Commission to follow the approach taken above, and not to grant Ameren
20 Missouri an enforcement role as suggested by Mr. Lucas, because it would enable Ameren
21 Missouri to act arbitrarily, capriciously, and anti-competitively in terminating the lawful and
22 consented sharing of information. The negative impact would be to create unworkable business
23 uncertainty for competitive firms who are trying to deliver customer benefits as a result of
24 investments in advanced metering, and who have obtained all the requisite permission from

¹⁰ California Public Utilities Commission. D.13-09-025, *Decision Authorizing Provision of Customer Energy Data to Third Parties Upon Customer Request* (September 23, 2013) at 53. Emphasis in original.
<https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M077/K191/77191980.PDF>

1 customers to access their information. Permitting Ameren Missouri to inspect, oversee and shut
2 off third parties' businesses, many of which the utility may see as threatening to Ameren
3 Missouri's profits from investments in grid infrastructure, would be an unfair abuse of monopoly
4 power.

5 **B. RESPONSE TO MR. ALLEN CLARK OF AMEREN MISSOURI**

6 **Q. WHAT DID MR. CLARK STATE WITH REGARD TO YOUR PROPOSAL FOR**
7 **GBC?**

8 A. Mr. Clark argues that my proposal should be rejected in its entirety. Mr. Clark states that
9 my cost estimate is flawed and substantially underestimates the total project costs.¹¹ Second, Mr.
10 Clark states that there is insufficient demand for a service like GBC to warrant the costs associated
11 with its creation.¹²

12 **Q. HOW DOES MR. CLARK ARGUE THAT THE GBC COST ESTIMATE IS**
13 **FLAWED AND AN UNDERESTIMATE?**

14 A. Mr. Clark cites two reasons: (1) inflation and that (2) my estimate did not account for
15 whether GBC is "a capability expansion with an existing technology partner, or net-new
16 capabilities."

¹¹ Rebuttal Testimony of Allen Clark at p 3, lines 5-6.

¹² *Id.* at 7:19-21.

1 **Q. WHAT IS MR. CLARK’S STATEMENT ABOUT INFLATION, AND HOW DO**
2 **YOU RESPOND?**

3 A. Mr. Clark cites the Consumer Price Index for all urban consumers, which rose nearly 23%
4 from 2020-2024¹³ and from there concludes that GBC implementation must cost more than my
5 estimates, which were from the period 2017-2020. While Mr. Clark’s association between CPI and
6 software costs appears reasonable at first, it does not hold up to scrutiny in several respects. First,
7 there is no evidence that Ameren Missouri has seen any such inflationary pressure in its own
8 operations with regard to hosted software. Mr. Clark claims in rebuttal testimony that “it is
9 commonplace for software contracts and hosting agreements to account for increasing annual costs
10 resulting from CPI fluctuations, with some even referencing it directly”¹⁴ but is unable to provide
11 any examples. When asked in discovery to cite examples of annual hosting contracts with software
12 providers that saw an increase, Mr. Clark did not provide any, stating that “A comprehensive list
13 of software contracts with annual cost escalation does not currently exist.”¹⁵ Mr. Clark’s claims
14 are therefore unsubstantiated.

15 Second, Mr. Clark provides no linkage between the CPI and software costs specifically.
16 The CPI is an average of the cost of basket of consumer goods across the United States and does
17 not necessarily have any direct or linear connection with software costs experienced by investor-
18 owned utilities across the United States. When asked in discovery “On what basis does Mr. Allen
19 connect the consumer price index to information technology costs for investor-owned electric
20 utilities?,” he responds that he is not an economist, and Mr. Clark simply re-states his
21 “understanding” and “expectation” that when CPI rises, information technology costs should rise

¹³ *Id.* at 5, Figure 1.

¹⁴ *Id.* at 5:2-4.

¹⁵ Ameren Missouri Response to Discovery Request Renew MO 3-RMO 02(a), February 5, 2025.

1 as well.¹⁶ Mr. Clark provides no specific examples linking CPI increases to software costs, nor
2 does he provide any cost figures for software as separate from the average basket of consumer
3 goods that is the focus of the CPI. This lack of evidence pertaining to software exists despite Mr.
4 Clark having 17 years of experience working in information technologies at Ameren Missouri,¹⁷ a
5 time period which presumably would afford him access to significant information about Ameren
6 Missouri’s costs for various software vendors. Given that Ameren Missouri is unable to cite a
7 single contract or instance across their enterprise that demonstrates a connection between average
8 CPI fluctuations across the U.S. economy and software costs specifically, Mr. Clark’s argument
9 should be dismissed by the Commission.

10 **Q. HOW DO YOU RESPOND TO MR. CLARK’S STATEMENT ABOUT**
11 **CAPABILITY EXPANSION?**

12 A. Mr. Clark argues that my cost estimate is invalid on the basis that the

13 ** _____
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¹⁶ Ameren Missouri Response to Discovery Request Renew MO 3-RMO 02(b), February 5, 2025.

¹⁷ Mr. Clark joined Ameren Missouri in 2008. Clark Rebuttal at 1:13.

1 _____
2 _____.

3 Importantly, it is unclear whether ** _____ ** is relevant or important to the question of
4 cost estimate reasonableness in the first place. It is entirely possible that, of the ten cost estimates
5 I provided in Table 1 of my direct testimony filed December 4, 2024, many of them could have
6 included ** _____ ** as Mr. Clark defines it. Mr. Clark does not dispute the ten cost
7 estimates I provided, nor does he provide evidence that ***“ _____
8 _____
9 _____.

10 **Q. WHAT DOES MR. CLARK STATE REGARDING CUSTOMER DEMAND FOR**
11 **GREEN BUTTON CONNECT?**

12 A. Mr. Clark states that there are low participation rates with Green Button Download My
13 Data in Ameren Missouri’s territory and GBC in Ameren Illinois’s territory. Mr. Clark states “I
14 would not expect a high rate of adoption of a GBC solution at this time.”¹⁸

15 **Q. HOW DO YOU RESPOND?**

16 A. While I accept that Mr. Clark’s statistics are likely accurate, his conclusory statements are
17 nevertheless disproven. In discovery, Renew Missouri asked whether there any other official or
18 unofficial data-sharing practices offered by Ameren Missouri that may be different from Green
19 Button Download or GBC, and the utility answered in the affirmative.
20 ** _____

¹⁸ *Rebuttal Testimony of Allen Clark*, at p. 8, lines 14-15.

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1 **Q. WHAT DO YOU CONCLUDE WITH REGARD TO MR. CLARK’S REBUTTAL**
2 **TESTIMONY?**

3 A. ** _____

4 _____ ** Mr. Clark offers a misleading portrayal of customer demand for
5 control over their information. At the same time as he understates customer demand, Mr. Clark
6 appears to want GBC implementation to cost more than my estimate. Given that his speculation
7 about higher costs and inflation are unsubstantiated, I encourage the Commission to view Mr.
8 Clark’s testimony with skepticism. It is clear that investor-owned utilities do not increase their
9 profits by making customer data easily portable. In fact, the more economical use of electricity
10 made possible by data portability and energy management offerings threaten to slow the pace of
11 electric grid infrastructure investment. Ameren Missouri’s desire to downplay the importance of
12 data portability while exaggerating its costs would thus be consistent with the utility’s financial
13 incentives as they are currently structured.

14 **C. RESPONSE TO MR. STEVEN WILLS OF AMEREN MISSOURI**

15 **Q. WHAT DOES MR. WILLS STATE REGARDING THE GREEN BUTTON**
16 **CONNECT TARIFF?**

17 A. Mr. Wills opposes any form of tariff, arguing that it would be inappropriate for the
18 Commission to “stand in for Company management in determining how the Company
19 conducts its business and builds its technology solutions.”¹⁹ Mr. Wills also states that a

¹⁹ *Rebuttal Testimony of Steven M. Wills*, at p. 35, lines 20-22.

1 tariff “is solely based on [Mr. Murray’s] speculation that the Company may not implement
2 Green Button CMD in an appropriate manner, if ordered to do so.”²⁰

3 **Q. HOW DO YOU RESPOND?**

4 A. Mr. Wills’s opposition to tariffs is puzzling because Ameren Illinois already
5 operates a GBC platform under a tariff approved by the Illinois Commerce Commission.²¹
6 Mr. Wills may not like tariffs, but they are a necessary part of the Commission’s oversight
7 role. Ameren’s regulated monopolies have accepted tariffs governing various services
8 before, including with regard to the delivery of customer data to authorized third parties.

9 **Q. MR. WILLS STATES THAT YOUR “PRESUMPTION IS THAT THE COMPANY
10 ACTS EITHER IN BAD FAITH OR INCOMPETENTLY.” HOW DO YOU RESPOND?**

11 A. That is entirely possible. In my experience with investor-owned utilities across over
12 a dozen states, I have seen utilities fail to deliver GBC, or implement it so poorly such that
13 it appears as though the utility is attempting to sabotage and undermine the distributed
14 energy resources that depend upon access to their customer’s energy data. For example, in
15 California, despite being ordered by the state commission to provide GBC, a demand
16 response provider has filed a formal complaint against Southern California Edison alleging
17 “data failures” that consist of sporadic and lengthy delays in data transfers; high
18 frequencies of error messages despite data requests stemming from lawfully granted
19 customer authorizations; and incorrect data being provided, i.e., data that pertains to a
20 different customer than the one who granted the authorization, presenting obvious privacy

²⁰ *Id.* at 35:14-16.

²¹ <https://gp.ameren.com/third-party-registration/third-party-tariff>

1 risks.²² Whether such alleged failures are due to incompetence or malfeasance on the
2 utility's part is arguably less important from the perspective of the data recipient, who
3 suffers unfair economic costs regardless of the underlying cause. I note that the California
4 case I mention is a complaint of a tariff violation, meaning that California has established
5 a tariff. In Missouri, without a tariff and without certain standards being defined for the
6 provision of customer data, as Mr. Wills states is his preference, it would be difficult or
7 impossible for data recipients to obtain a remedy for the utility's poor performance.
8 Outside of California, I have uncovered evidence of utilities who ostensibly offer GBC
9 with reasonable levels of service quality but nevertheless (i) fail to onboard third parties
10 who have registered through the appropriate channel and followed the lawful process; (ii)
11 respond with 403 ("forbidden") error messages to data requests that have been duly
12 authorized by customers; and (iii) take a very long time to process data requests such that
13 the GBC system is functionally useless.²³ Rather than the tariff representing idle concerns
14 or misplaced attempts at "micromanaging" Ameren Missouri, I believe the tariff is a
15 necessary and appropriate prophylactic given experiences from other jurisdictions.

16 Ultimately, the tariff I propose provides a specific mechanism to hold Ameren
17 Missouri accountable for delivering a service quality that is reasonable and appropriate. It
18 is also a sensible protection to ensure that ratepayer funds are spent prudently. If Ameren
19 Missouri is confident that it operates its information technology systems at reasonable
20 levels of quality and performance, then there should be no objection to the tariff. If,

²² Complaint of OhmConnect, Inc. Against Southern California Edison Company for Data Failures. California Public Utilities Commission, C1903005, March 8, 2019.

<https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M270/K419/270419349.PDF>

²³ <https://www.missiondata.io/news/2024/11/5/a-review-of-green-buttons-1st-year-in-ontario-incorrect-datanbspolicy-failures-persist>

1 however, Ameren Missouri lacks that confidence – whether with regard to GBC in isolation
2 or its upstream billing, customer information, and meter data management systems – then
3 the Commission will face a bigger set of problems that go well beyond the GBC tariff I
4 have proposed. Either way, it is reasonable and prudent for the Commission to establish a
5 GBC tariff with the specific terms governing uptime, errors, and contractual terms that I
6 have described.

7 **III. CONCLUSION**

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

9 A. Yes.

10

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of Union Electric Company)
d/b/a Ameren Missouri's Tariffs to Adjust) File No. ER-2024-0319
Its Revenues for Electric Service)

AFFIDAVIT OF MICHAEL MURRAY

STATE OF WASHINGTON)
)) ss
COUNTY OF OKANOGAN)

COMES NOW Michael Murray, and on his oath states that he is of sound mind and lawful age; that he prepared the foregoing Surrebuttal Testimony; and that the same is true and correct to the best of his knowledge and belief.

Further the Affiant sayeth not.

Michael Murray

Michael Murray

Subscribed and sworn before me this 14th day of February 2025.

Teresa B. Smith
Notary Public

My commission expires: 7-14-2026

