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Dr. Geoff Marke, Ph.D.
Direct Testimony
File No. ER-2022-0337

Exhibit No.: _____
Issue(s): Economic Indicators/Customer
Value Rankings/High Prairie Wind Farm/
Blues Power Play Goal for Kids/Private LTE
Network/Tripsavers/Income Eligible Programs
Witness/Type of Exhibit: Marke/Direct
Sponsoring Party: Public Counsel
Case No.: ER-2022-0337

DIRECT TESTIMONY
OF
GEOFF MARKE

Submitted on Behalf of the Office of the Public Counsel

UNION ELECTRIC COMPANY
D/B/A AMEREN MISSOURI

CASE NO. ER-2022-0337

**

**

Denotes Confidential Information that has been redacted

January 10, 2023

PUBLIC

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DIRECT TESTIMONY
OF
GEOFF MARKE
UNION ELECTRIC COMPANY
D/B/A AMEREN MISSOURI
CASE NO. ER-2022-0337

1 **I. Introduction**

2 **Q. Please state your name, title and business address.**

3 A. Geoff Marke, PhD, Chief Economist, Office of the Public Counsel (OPC or Public Counsel),
4 P.O. Box 2230, Jefferson City, Missouri 65102.

5 **Q. What are your qualifications and experience?**

6 A. I have been in my present position with OPC since 2014 where I am responsible for economic
7 analysis and policy research in electric, gas, water, and sewer utility operations.

8 **Q. Have you testified previously before the Missouri Public Service Commission?**

9 A. Yes. A listing of the Commission cases in which I have previously filed testimony and/or
10 comments is attached in Schedule GM-1.

11 **Q. What is the purpose of your testimony?**

12 A. The purpose of my testimony is as follows:

- 13 • To offer an overview of Ameren Missouri's rate case request and key economic
14 indicators that ratepayers are currently experiencing;
- 15 • Provide background regarding Ameren Missouri's performance with customers and
16 stakeholders since Ameren Missouri's last general rate case;
- 17 • Support my recommendations for cost disallowances related to: the High Prairie
18 Wind Farm; The Blues Power Play Goal for Kids; and prudence concerns related to
19 Ameren Missouri's investment in a private LTE Network and Tripsaver investments
20 on its distribution system; and
- 21 • Finally, recommendations related to income eligible bill assistance programs.

1 **II. Rate Case Request and Economic Indicators**

2 **Q. What revenue requirement increase is embedded in Ameren Missouri’s rates from its**
3 **last general rate case, Case No. ER-2021-0240?**

4 A. \$220 million.

5 **Q. How much is Ameren Missouri requesting to increase its revenue requirement used for**
6 **setting rates in this case?**

7 A. Less than a year since rates have gone into effect, Ameren Missouri is now requesting a \$316
8 million rate increase. This would result in an average residential electric customer (using
9 approximately 1,017 kilowatt-hours of electricity a month) to experience a bill increase of
10 approximately \$12.00 a month, which represents an 11.6% rate increase.

11 **Q. Are Ameren Missouri’s residential retail customers experiencing increases in their costs**
12 **of living in general?**

13 A. Yes. Consumers are currently being subject to inflationary trends as prices rose 7.1% annually
14 in November. Table 1 provides a breakdown on select item price increases as a result of
15 inflation.

16 Table 1: U.S. Bureau of Labor Statics Change in Price YoY (Nov. 21-Nov. 22)

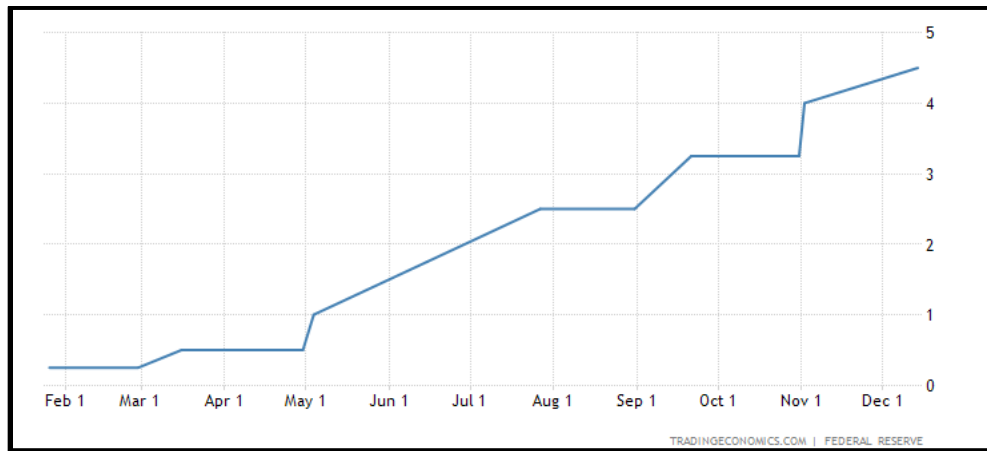
Food at elementary and secondary schools	254.1%
Fuel	65.7%
Eggs	49.1%
Airline fare	36.0%
Butter	34.2%
Flour and prepared flour mixes	24.9%
Public transportation	23.8%
Fats and oils	21.8%
Rice, pasta, cornmeal	16.8%
Bread	15.7%
Coffee	+14.6%
Poultry	+13.1%
Energy	+13.1%
Home furniture	+10.3%

Gasoline	+10.1%
Fruits and vegetables	+9.7%
Apparel	+3.6%
Beef and veal	-5.2%
Smartphones	-23.4%

1 **Q. Have interest rates increased recently?**

2 A. Yes. In an effort to curb inflation, the Federal Reserve raised interest rates seven times in 2022
3 with the current Federal Reserve interest rate at 4.25% to 4.50%. Figure 1 provides a visual of
4 those increases.

5 Figure 1: Federal Reserve Interest Rate Increases in 2022



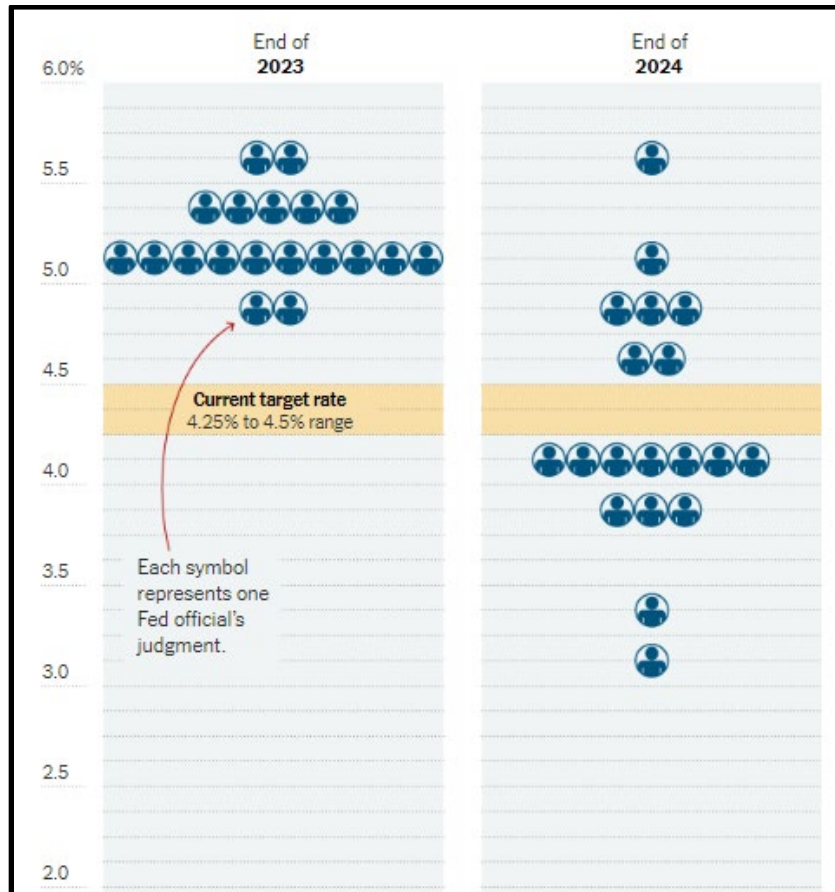
6
7 The Federal Reserve has indicated that it will need to raise interest rates more than it had
8 initially planned in 2023. According to the New York Times:

9 The central bank emphasized that it would do more to restrain the economy than
10 previously expected. Rates are expected to rise to 5.1 percent next year, officials
11 projected, up from 4.6 percent when they last issued forecasts, in September. The
12 next Fed decision will come Feb. 1. “We have more work to do,” the Fed chair,
13 Jerome H. Powell, said at a news conference. He also dismissed the idea of rate cuts
14 next year, which some traders have been predicting.¹

¹ *The New York Times* (2022) Fed Raises Rates at a Slower Pace: Live Updates. Dec. 14, 2022.
<https://www.nytimes.com/live/2022/12/14/business/fed-interest-rates-inflation#:~:text=Rates%20are%20expected%20to%20rise,said%20at%20a%20news%20conference.>

1 Figure 2 provides a breakdown of what each Federal Reserve official believes rates should be
2 in the next two years.

3 Figure 2: Expected Interest Rates Predictions by Federal Reserve Officials (Dec. 22)²

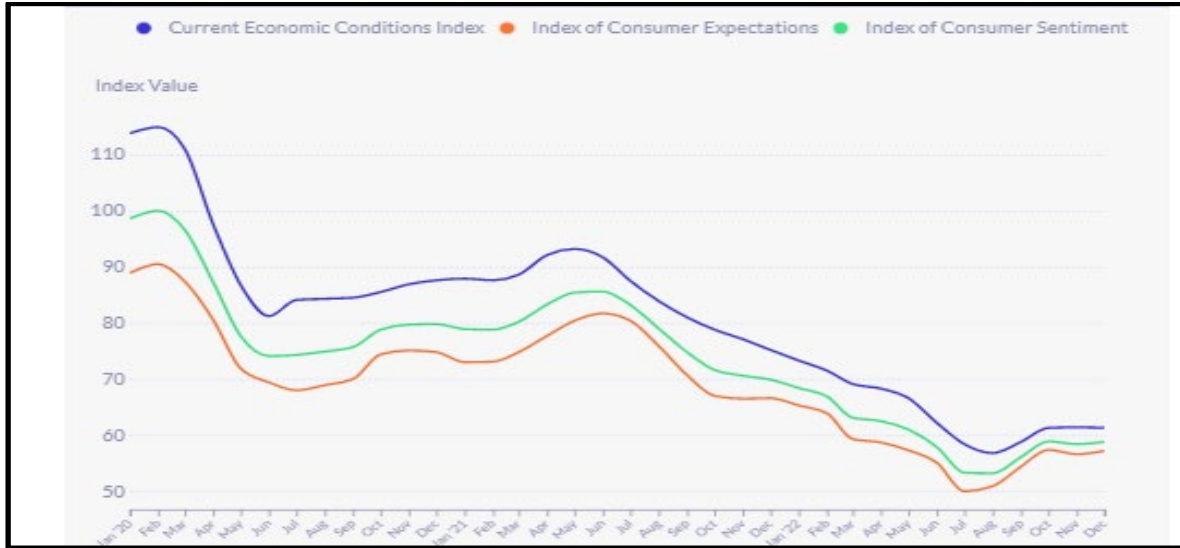


4

5 Fed rate hikes increase the cost of borrowing money for a car or house and of carrying a credit
6 card balance and ultimately impact consumer ability to buy things. Figure 3 provides a
7 graphical illustration of the steep decline in U.S. consumer sentiment from January 2020 to
8 December 2022 from the University of Michigan.

² Ibid.

1 Figure 3: U.S. Consumer Sentiment Indices (2020-2022)³



2

3 **Q. What are the economic demographics of Ameren Missouri’s customers?**

4 A. Based on 2021 US Census data, Ameren Missouri’s service territory includes 39 out of a
5 possible 60 counties (and the City of St. Louis) that have a greater percentage of residents
6 living in poverty than the Missouri average of 12.8%. These counties can be found in Table 2.

³ Lee Enterprises, Dataherald (2023) *St. Louis Post Dispatch*. Jan. 7, 2023. https://www.stltoday.com/news/state-and-regional/14-charts-that-show-how-the-economy-is-performing-in-st-louis-and-missouri/article_7c515d46-35f3-50aa-b943-247036cb4cfe.html

1 Table 2. Counties (and the City of St. Louis) with poverty greater than 12.8% (Missouri average)⁴

Persons in family/household	Poverty Guidelines
1	\$12,880
2	\$17,420
3	\$21,960
4	\$26,500
5	\$31,040
6	\$35,580
7	\$40,120
8	\$44,660

• Daviess	12.9%	• Scott	15.9%
• Clark	13.0%	• Pettis	16.1%
• Schuyler	13.1%	• Sullivan	16.1%
• Caldwell	13.2%	• Audrain	16.3%
• Camden	13.2%	• Reynolds	16.4%
• Montgomery	13.2%	• Boone	16.6%
• Dekalb	13.3%	• Pike	16.6%
• Saline	13.7%	• Knox	17.1%
• Livingston	13.8%	• Morgan	17.6%
• Marion	13.8%	• Stoddard	17.9%
• Madison	13.9%	• St. Francois	18.0%
• Gentry	14.1%	• Iron	18.6%
• Scotland	14.2%	• Washington	19.4%
• Linn	14.7%	• St. Louis City	21.5%
• Lewis	14.9%	• New Madrid	22.1%
• Bollinger	15.0%	• Dunklin	22.3%
• Miller	15.0%	• Mississippi	23.2%
• Monroe	15.0%	• Pemiscot	23.7%
• Randolph	15.3%	• Adair	23.9%
• Crawford	15.8%		

2

3 **Q. Those are 2021 numbers. What do you believe the numbers look like today?**

4 A. I expect the overall poverty percentages have increased.

5 **Q. Why?**

6 A. The census data has not been updated yet to capture inflationary trends; moreover the 2021
7 census data reflects a period when families were receiving multiple stimulus checks to help
8 encourage the economy due to the COVID-19 pandemic.

9 The impact will also be felt by households above the poverty line as credit card balances have
10 already increased back to the pre-pandemic peak from the fourth quarter of 2019. Year over
11 year, credit card debt also grew by 15% the largest jump in more than 20 years fueled by high

⁴ U.S. Census Bureau (2023) 2021 Small Area Income and Poverty Estimates <https://www.census.gov/programs-surveys/saipe.html#:~:text=The%20U.S.%20Census%20Bureau's%20Small,for%20all%2013%2C000%2B%20school%20districts.>

1 prices and higher interest rates.⁵ According to TransUnion, credit card delinquency is expected
2 to jump 20.3% year over year by the end of 2023 to levels not seen since 2010.⁶

3 **Q. What is the importance of this data for designing Ameren Missouri's rates?**

4 A. An 11.6% rate increase compounded by inflation and interest rate increases will negatively
5 impact customers across Ameren Missouri's service territory. A double-digit increase even in
6 the best of times can generally be considered grounds for "rate shock" for many families. The
7 combination of factors facing Ameren Missouri's customers make the timing of this rate case
8 particularly difficult.

9 **III. AMEREN MISSOURI'S CUSTOMER SATISFACTION**
10 **PERFORMANCE**

11 **Q. In terms of customer satisfaction, how has Ameren Missouri performed relative to its**
12 **peers since its last general rate increase?**

13 A. Ameren Missouri performed very well relative to its peers in the Midwest, as it received the
14 highest score for a Midwest Large Utility in business customer satisfaction and the second
15 highest score for Midwest Large Utility in residential customer satisfaction for 2022 from J.D.
16 Power.⁷ To my knowledge these are the highest customer satisfaction scores for any Missouri
17 utility since I have been tracking the data. Ameren Missouri's scores are made all the more
18 impressive given that 2022 began with a rate increase. It also certainly helped that Ameren
19 Missouri did not experience run-away excess fuel costs from Winter Storm Uri, like Liberty
20 and Evergy Missouri West did.

⁵ Cruz-Martinez, G. (2022) Credit card debt jumps by largest amount in two decades, Fed report says. *Yahoo! Money*.
<https://money.yahoo.com/credit-card-debt-222049660.html>

⁶ Siegfried, P. (2022) More Pronounced Changes Expected in Consumer Credit Market in 2023 Even as More Than
Half of Americans Remain Optimistic About Their Financial Future. *TransUnion*.
<https://newsroom.transunion.com/2023-consumer-credit-forecast/>

⁷ J.D. Power (2022) Business Customer Satisfaction with Electric Utilities Deteriorates as Rates Rise, J.D. Power Finds
<https://www.jdpower.com/business/press-releases/2022-electric-utility-business-customer-satisfaction-study>

J.D. Power (2022) Customer Satisfaction with Electric Utilities Declines Due to Increased Monthly Bills, J.D. Power
Finds <https://www.jdpower.com/business/press-releases/2022-electric-utility-residential-customer-satisfaction-study>

- 1 **Q. Do you have any other consumer metrics to judge Ameren Missouri’s value?**
 2 A. The Wired Group’s 2021 Overall Customer Value Ranking results can be seen in Figure 4.
 3 Figure 4: The Wired Group’s 2021 Overall Customer Value Ranking (Missouri emphasis)⁸

Rank	Utility	Rank	Utility	Rank	Utility
1	Florida Power & Light	35	Ameren Missouri	69	Minnesota Power
2	Nevada Power Co.	35	Ameren Illinois	69	Wheeling Power
3	Mid-American	37	Madison Gas & Electric	71	Alliant Energy
4	PPL Electric Utilities	38	Potomac Edison	72	Appalachian Power
5	Public Service Electric & Gas	39	Consolidated Edison	73	Entergy Mississippi
6	Toledo Edison	40	Public Service New Mexico	74	CLECO
7	Kentucky Utilities	40	Wisconsin Power & Light	75	Avista
7	Wisconsin Public Service	42	Puget Sound Energy	76	Northwestern Energy
9	Xcel Energy Colorado	43	Duke Energy Indiana	77	Evergy Missouri West
10	Xcel Energy Minnesota	43	Rochester Gas & Electric	78	Public Service New Hampshire
11	Gulf Power	45	El Paso Electric	78	Versant Power
12	Commonwealth Edison	46	Consumers Energy	80	Southern California Edison
13	Xcel Energy Wisconsin	47	Portland GE	81	Penelec
14	Cleveland Illuminating	48	Black Hills Colorado	82	Connecticut Light & Power
15	Louisville Gas & Electric	49	PECO	83	Otter Tail Power
16	Public Service Oklahoma	49	Green Mountain Power	84	Narragansett Electric
16	Southwestern Public Service	51	Duke Energy Florida	85	Niagara Mohawk
18	Ohio Edison	51	South Carolina Electric & Gas	86	NYSEG
18	PacifiCorp	51	Indiana-Michigan Power	87	Central Maine Power
20	Indianapolis Power & Light	54	Dominion	88	Massachusetts Electric
21	Penn Power	54	Entergy Texas	88	Entergy Arkansas
22	Wisconsin Electric	54	Oklahoma Gas & Electric	90	Black Hills Power
22	PEPCO	54	Met-Ed	91	Central Hudson Gas & Electric
24	Duke Energy Progress	58	Arizona Public Service	92	Empire District Electric
25	Georgia Power	59	Delmarva Power & Light	93	Orange & Rockland
26	Duke Energy Ohio	60	Mississippi Power	94	United Illuminating
27	Dayton Power & Light	61	Evergy Metro	95	Jersey Central Power & Light
28	Tampa Electric Co.	62	West Penn Power	96	San Diego Gas & Electric
29	Evergy Kansas Central	62	Alabama Power	96	Vectren
30	Idaho Power	64	Duquesne Light	98	Kentucky Power
31	Duke Energy Kentucky	65	DTE Energy	99	Entergy New Orleans
31	BG&E	65	Atlantic City Electric	99	MonPower
33	Ohio Power	67	Eversource	101	Pacific Gas & Electric
34	Duke Energy Carolinas	68	SWEPCO		

4
 5 Ameren Missouri is ranked considerably higher than any other Missouri electric investor-
 6 owned utility and had the largest single increase by a utility year-over-year moving up 35 spots
 7 from its 2021 ranking (#70).

⁸ The Wired Group (2022) Utility Evaluator. <http://www.utilityevaluator.com/customer-value-rankings.html>

1 **Q. What metrics does the Wired Group rely on to determine its rankings?**

2 A. According to the Wired Group:

3 All data is publicly available, and most of it is published by the utilities themselves.
4 Data is obtained from the FERC Form 1, EIA Form 861, SEC filings, state regulatory
5 filings, JD Power and Associates' annual overall satisfaction ratings, and other
6 respected sources. . . . Customer Value Rankings measure customer value by
7 comparing the benefits customers receive from utilities (as measured by reliability and
8 customer satisfaction performance) to the funds utilities spend, and for which
9 customers must pay (capital and operations & maintenance). The proprietary ranking
10 methodology uses regression analyses to identify and quantify the impact of various
11 utility characteristics on utility performance and spending. These findings are used to
12 adjust rankings, compensating for variation in customers served, customer density,
13 system load profiles, and business characteristics to the extent such factors are observed
14 to be statistically significant. Utilities missing one or more of the four ranking
15 components are not included in the overall ranking.⁹

16 **Q. Do you expect Ameren Missouri to have high scores again in 2023?**

17 A. I hope so. A double-digit rate increase request on the heels of an already large rate increase at
18 the beginning of 2022, on top of inflationary trends, will challenge customers—especially
19 those on the margins. It will be incumbent upon stakeholders and the Commission to properly
20 gauge risk and reward and all relevant factors in setting just and reasonable rates. A significant
21 rate increase from Spire Missouri and a significant rate increase request from Missouri

⁹ *Ibid.* See also:

Alvarz, P. & J. Leonard (2017) Busting myths: Investor-owned distribution utility performance can be credibly benchmarked. *The Electricity Journal* 30 (2017) 45-48.

<http://nebula.wsimg.com/2488dcb84adc4ec6882b3e556ca31664?AccessKeyId=490265DE4F8DABB7CA08&disposition=0&alloworigin=1> ; and

Alvarez, P. & S. Ericson (2018) Measuring distribution performance? Benchmarking warrants your attention. *The Electricity Journal* 31 (2018) 1-6.

<http://nebula.wsimg.com/aeda0aa942afd82b7b05f3bc8bdfd83c?AccessKeyId=490265DE4F8DABB7CA08&disposition=0&alloworigin=1>

1 American Water has also placed a more pronounced financial strain on customers at a time
2 when money is extremely tight and a pending recession a plausible outcome in 2023.

3 **Q. How would you characterize your interaction with Ameren Missouri during 2022?**

4 A. It was productive. There were a number of settlement issues that required collaborative work
5 with stakeholders following Ameren Missouri's last rate case. These included the creation of
6 a Plant-In-Service Accounting ("PISA") cost-benefit framework, several income-eligible
7 programs (e.g., Critical Needs and New Start), and a voltage optimization study. Ameren
8 Missouri made progress on all of these directives. Additionally, Ameren Missouri agreed to
9 work with stakeholders and the other Missouri electric investor-owned utilities on a
10 collaborative Value of Lost Load ("VOLL") study with Lawrence Berkeley National Lab's.
11 The VOLL Study will consist of an in-depth survey of Ameren Missouri's various customers.
12 The results of which will serve as a proxy for all of the Missouri electric investor owned utilities
13 for reliability cost/benefit considerations for distribution investments for Lawrence Berkeley
14 National Labs updated Interruption Cost Estimate ("ICE") Calculator as well as help inform
15 emergency curtailment tariffs in the future. I hope the productive interaction continues
16 throughout this rate case and into the future.

17 **IV. Wind Curtailment from Excessive Take of Protected and**
18 **Endangered Species**

19 **Q. What is Ameren Missouri's High Prairie Wind Farm?**

20 A. High Prairie is an approximately 400 MW wind generation facility consisting of 175 wind
21 turbines in Schuyler and Adair Counties spanning more than 60,000 acres. It is my
22 understanding that it is the largest wind generation facility in Missouri.

23 **Q. Is High Prairie operational at all-times?**

24 A. No, it has not been operating at full capacity for two years now.

1 **Q. Why not?**

2 A. Because the High Prairie Wind Farm has killed large numbers of threatened and endangered
3 species in a short period putting into jeopardy the continued operation of the facility.

4 **Q. Did you raise this same issue in Ameren Missouri's last rate case, Case No: ER-2021-**
5 **0240?**

6 A. Yes, I raised a "used and useful" argument surrounding the forced curtailment of the High
7 Prairie Wind Farm.

8 **Q. What was the outcome of this issue in that case?**

9 A. The issue was not explicitly resolved, as Ameren Missouri's last rate case concluded under a
10 black box settlement. Moreover, the same pronounced curtailment has occurred during the test
11 year the Commission ordered for this case making this issue relevant once again.

12 **Q. Would you provide some background on when and why Ameren Missouri is curtailing**
13 **the operation of its High Prairie Wind Farm?**

14 A. According to the "Project Description and History" section of the Stantec 2021 *Spring Post-*
15 *Construction Bat Mortality Monitoring Report of High Prairie Renewable Energy Center*
16 submitted on June 15, 2021:

17 Due to the potential risk of take¹⁰ of the federally-endangered Indiana bat (*Myotis*
18 *sodalis*) and federally-threatened northern long-eared bat (*Myotis septentrionalis*)

¹⁰ A **take** is a technical term, which here means: "the unintentional death of a threatened or endangered species due to the operation of a wind farm or accompanying transmission or distribution lines."

From Section 3(18) of the Federal Endangered Species Act: "The term '**take**' means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct."

Threatened species is defined as "any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range - - as defined in the Endangered Species Act."

Endangered species is defined as "The classification provided to an animal or plant in danger of extinction within the foreseeable future throughout all or a significant portion of its range." US Fish & Wildlife Service (2021) Midwest Region Endangered Species Glossary.

<https://www.fws.gov/midwest/endangered/glossary/index.html>

1 during operations, Ameren applied for an Incidental Take Permit (ITP)^[11] for these
2 species, as well as for the little brown bat (*Myotis lucifugus*). In the interim, the Project
3 operated under a Technical Assistance Letter (TAL)^[12] from the U.S. Fish and Wildlife
4 Service (USFWS).

5 To avoid potential effects to the Indiana bat and northern long-eared bat, the TAL
6 required feathering^[13] of all turbines below 6.9 meters-per-second (m/s) for 0.5 hour
7 before sunset to 0.5 hour after sunrise when air temperatures were above 50°F from
8 March 15 through October 31 based on the 10-minute rolling average at each individual
9 turbine. Due to the fatality of a male Indiana bat at the Project in September 2020,
10 Ameren voluntarily increased the avoidance measures to involve no operation of the
11 turbines when temperatures were above 50°F starting on March 15, 2021. Another
12 fatality was discovered on April 15, 2021; Ameren voluntarily stopped all night time
13 operations starting on April 19, 2021, but continued post-construction monitoring
14 under the TAL until the ITP was issued on May 14, 2021.¹⁴

15 To be clear, the High Prairie Wind Farm was curtailed from before dusk to after dawn from
16 the beginning of April through the end of October in both 2021 and again in 2022. That is, the

¹¹ An **incidental take permit** is a permit issued under Section 10 of the United States Endangered Species Act (ESA) to private, non-federal entities undertaking otherwise lawful projects that might result in the take of an endangered or threatened species. Application for an incidental take permit is subject to certain requirements, including preparation by the permit applicant of a conservation plan. A **habitat conservation plan** (HCP) must accompany an application for an incidental take permit. The purpose of the habitat conservation planning process associated with the permit is to ensure there is adequate minimizing and mitigating of the effects of the authorized incidental take. The purpose of the incidental take permit is to authorize the incidental take of a listed species, not to authorize the activities that result in take.

¹² A **technical assistance letter** is an informal consultation with US Fish and Wildlife Services (USFWS) in which information of a project is shared with the USFW and allows USFW to provide information on the presence and of protected species. The applicant/agency must then determine whether a project may affect identified species.

¹³ **Feathering** is the force stoppage of the rotor and can be done at high or low speeds for different reasons (e.g., feathering at high speeds because it exceeds maximum rate speed; and feathering at low speeds because the probability of bats being “taken” is more likely).

¹⁴ See GM-2.

1 farm is not producing power half of the day for seven months out of the year (or 29.18% of the
2 time) to avoid any further take of endangered or threatened species.

3 **Q. How many “incidental takes” have occurred at Ameren Missouri’s High Prairie Farm**
4 **since it began operating?**

5 A. As it pertains to protected and endangered species:

- 6 • 8 Indiana bats;
- 7 • 1 little brown bat and;
- 8 • 2 bald eagles

9 A recent USFWS posting of documented Indiana bat fatalities at wind energy facilities
10 suggests that Ameren Missouri’s High Prairie Wind Farm is responsible for 24% of all
11 recorded wind farm related Indiana bat fatalities to date in the United States.¹⁵

12 **Q. Are you confident that these numbers accurately represent all of the bird and bat species**
13 **deaths the High Prairie wind farm has caused?**

14 A. No. Nor would one reasonably expect to collect all of the carcasses generated from a 400 MW
15 wind farm that stretches across 60,000 acres of land. My understanding is that statistical
16 samples of set plots and times are conducted to provide a probability score, which is then
17 translated into an assumed take rate at a later date by the USFWS. If Ameren Missouri exceeds
18 that, further mitigation efforts could be enforced.

19 **Q. Is it unusual for wind farms to not operate during parts of the year?**

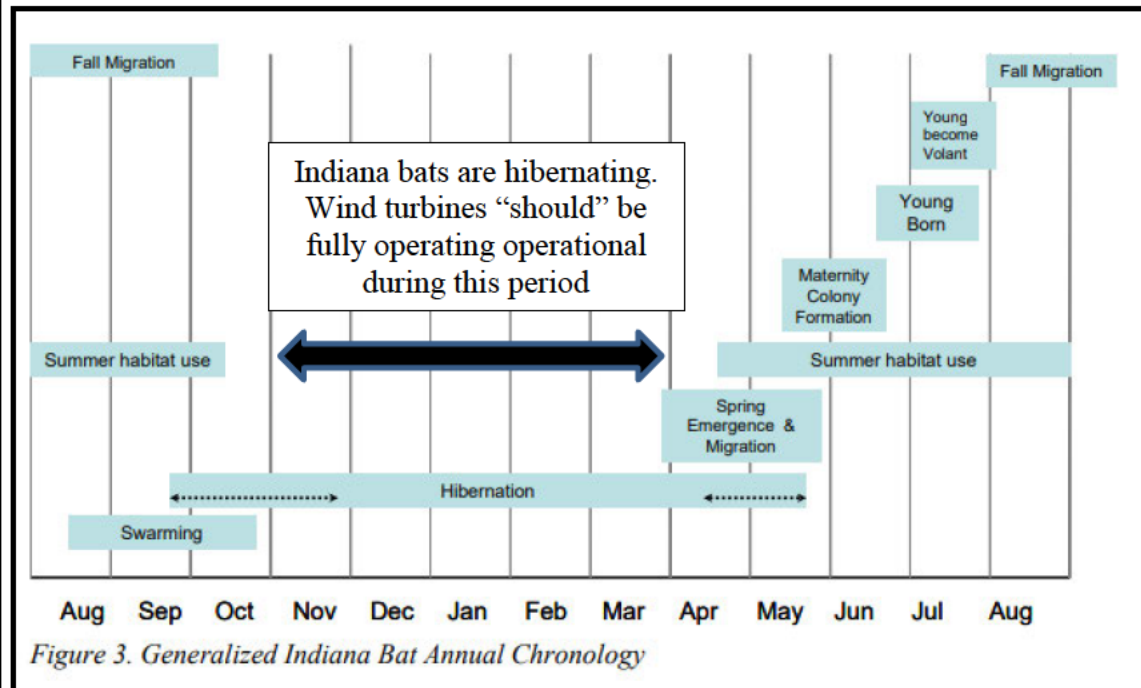
20 A. Yes. Properly sited wind farms should not have forced curtailments that are in effect for
21 prolonged periods of time. I am aware of no wind farm either operated by an investor owned-
22 utility in Missouri or through a power purchase agreement that has produced this sort of fatal
23 impact on endangered and threatened species or been subject to such strong mitigation action.

¹⁵ Pruitt, L. & M. Reed (2022) Indiana Bat Fatalities at Wind Energy Facilities. US Fish & Wildlife Service.
https://www.fws.gov/sites/default/files/documents/Indiana%20Bat%20Fatalities%20at%20Wind%20Energy%20Facilities_081622.pdf See also GM-3.

1 **Q. What are Indiana bat’s migration, habitat and hibernation patterns on an annual basis?**

2 A. Figure 5 provides a generalized Indiana Bat annual activity cycle. Additional emphasis has
3 been placed when High Prairie would not be curtailing at night (i.e., during bat hibernation).

4 **Figure 5: Generalized timing of Indiana of Indiana bat cycle** ¹⁶



5
6 **Q. Are there any guidelines for siting wind farms to mitigate the impact on endangered**
7 **bats?**

8 A. Yes. The 2021 Nature Conservancy’s report, “Site Wind Right: Accelerating Clean, Low-
9 Impact Wind Energy in the Central United States” cites to a 2016 USFWS report that
10 recommends to avoid wind development within 32 km of Indiana bats priority 1 hibernacula,
11 16 km of priority 2 hibernacula, and 8 km of other current and historical sites including bat

¹⁶ Herrington, K. (2021) Biological Opinion and Conference Opinion on the U.S. Fish and Wildlife Service’s approval of a Habitat Conservation Plan and the issuance of an associated Endangered Species Act Section 10(a)(1)(B) Permit (High Prairie Wind Energy Center, Adair and Schuyler Counties, MO, TAILS No. 03E14000-2016-TA-1577). US Dept. of Interior https://ecos.fws.gov/docs/plan_documents/bobs/bobs_3351.pdf

1 roosts.¹⁷ Known bat roosts have been plotted by the Nature Conservancy on Figure 6 for US-
2 specific bat roosts:

3 Figure 6: US-specific bat roosts¹⁸



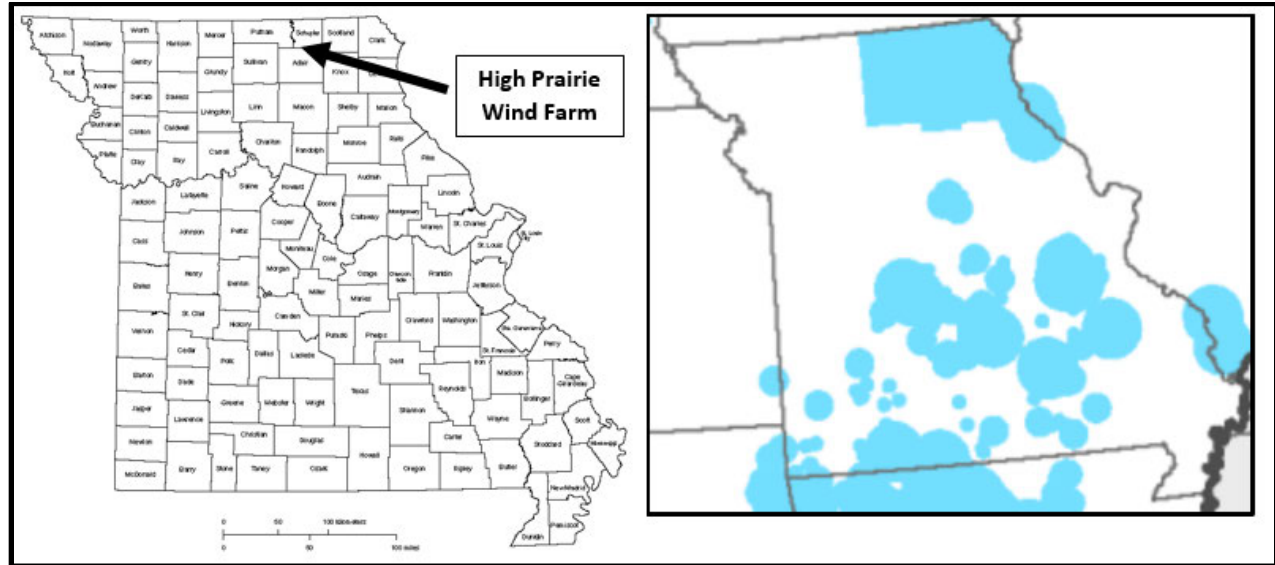
4
5 **Q. Are Schuyler and Adair counties (where High Prairie Wind Farm is located) in areas**
6 **where it is known that bats roost?**

7 A. Yes. Figure 7 enhances the Nature Conservancy’s report to focus on Missouri and additional
8 emphasis has been added to indicate the locations of Schuyler and Audrain counties.

¹⁷ Fuhr, M. et al. (2021) Site Wind Right: Accelerating Clean, Low-Impact Wind Energy in the Central United States: Bat roosts https://www.nature.org/content/dam/tnc/nature/en/documents/SWR_Methods_20190703.pdf

¹⁸ Ibid.

1 **Figure 7: Missouri-specific bat roosts**



2

3 **Q. Did anyone bring up the liability of Ameren Missouri taking ownership of a farm on a**
4 **location associated with endangered species before Ameren Missouri acquired High**
5 **Prairie Wind Farm?**

6 A. Yes. I filed rebuttal and surrebuttal testimony in Case No: EA-2019-0202 along with Dr.
7 Kathryn Womack (Bat expert), Dr. Janet Haslerig (Eagle expert) and Missouri Department of
8 Conservation Policy Coordinator Jennifer Campbell advising the Company against the siting
9 of High Prairie and liability inherent of that specific location in relation to both the Indiana bat
10 and bald eagles.

11 **Q. In your last answer you mentioned bald eagles. Is Ameren Missouri taking any action at**
12 **High Prairie with regard to bald eagles?**

13 A. My understanding is that it is pursuing an incidental take permit for bald eagles, and for
14 golden eagles as well. If High Prairie were to somehow take an excessive amount of those
15 federally protected species Ameren Missouri may have to curtail High Prairie during the
16 day as well.

1 **Q. Given the foregoing circumstances surrounding High Prairie, what do you recommend**
2 **that the Commission do?**

3 A. I recommend that 29% of Ameren Missouri’s costs related to the High Prairie Wind Farm in
4 this test year be removed from Ameren Missouri’s revenue requirement to account for the fact
5 that High Prairie is only operational 71% of the year. Additional analysis needs to be conducted
6 to determine what the impact on foregone Production Tax Credits would be to ratepayers. As
7 such, I will update my recommendation in future testimony.

8 **VI. The Blues Power Play Goal for Kids**

9 **Q. What is the Power Play Goals for Kids (“PPGK”) program?**

10 A. According to the National Hockey League’s St. Louis Blue’s webpage for the 2022-2023
11 season:

12 ST. LOUIS – Heading into the eighth season of their partnership, the St. Louis Blues
13 and Ameren Missouri will once again present the Power Play Goals for Kids program
14 during the 2022-2023 season.

15 For every power play goal the Blues score during the regular season, Ameren Missouri
16 will donate \$500 to a local children’s charity. Four finalist will be announced on
17 Thursday, Dec. 1, with the winning charity to be decided by public vote.

18 More to the point, the PPGK is a \$265,002 adverting campaign that consists of a roughly 20
19 second musical and flashing goal light interlude on the St. Louis Blues Enterprise Arena’s
20 scoreboard between when a penalty is called against an opposing Blues team and when play
21 resumes.¹⁹ The Blues arena announcer states publicly that “this power play is sponsored by
22 Ameren Missouri.” Figure 8 shows said advertising campaign in action.

¹⁹ The PPKG song is the 1992 hit “Twilight Zone” by 2 Unlimited which was remixed as the main theme of the first movie adaptation of Mortal Kombat (1995).

1 Figure 8: Ameren Missouri Ratepayer-Sponsored Power-Play Goals for Kids²⁰



2
3 The PPGK also consists of viral videos, a devoted webpage for fans to vote and a large check
4 award ceremony. The Ameren Missouri and STL Blues partnership culminates in a monetary
5 donation for every power play goal scored by a STL Blues player during the season.²¹ The
6 pool of money is then given to a fan voted kids charity.

7 **Q. How much has this PPGK advertising campaign cost Ameren Missouri's retail**
8 **customers to date?**

9 A. Table 3 breaks down the amount charged to ratepayers as well as the charitable amount given
10 to various non-profits by year.

²⁰ Ameren UE Power Play St. Louis Blue dance song. <https://www.youtube.com/watch?v=BwTwwbssC9k>

²¹ The amount awarded for a power play goal has varied over its eight years. For the current 2022-2023 season it is \$500 per power play goal. The specific charitable dollars are borne below-the-line by shareholders.

1 Table 3: Season-by-Season breakdown of Ameren Missouri PPGK costs

	Costs to Ratepayers	Charitable Contributions	Advertising spend for each \$1.00 of charitable donation
2015-16	\$158,000	\$16,200	\$9.75
2016-17	\$216,625	\$10,000	\$21.66
2017-18	\$219,874	\$13,000	\$16.91
2018-19	\$223,172	\$27,500	\$8.11
2019-20	\$243,172	\$21,000	\$11.58
2020-21	\$245,602	\$24,000	\$10.23
2021-22	\$248,058	\$34,500	\$7.19
2022-23	\$265,002	TBD (\$13,00 to date)	TBD
	\$1,819,505	\$159,200	\$11.43

2
3 **Q. Does Ameren Missouri receive any other benefits from the PPGK advertising**
4 **campaign?**

5 A. ** _____

- 6 • _____
- 7 • _____

8 **Q.** _____
9 _____
10 _____

11 A. _____ **

²² See GM-4.

1 **Q. What is your position on Ameren Missouri recovering costs for the Power Play Goals for**
2 **Kids Campaign through its retail rates?**

3 A. The partnership with the Blues and the long-standing PPGK campaign is arguably one of
4 Ameren’s most popular advertisements.²³ Ameren Missouri should continue it as a fair amount
5 of Ameren Missouri’s service territory consists of Blues fans, but it is absolutely not a prudent
6 use of ratepayer funds. The campaign is clearly in the self-serving category, cost excessive
7 (\$265,002), a horribly inefficient way to help kids in need, and ** _____
8 _____ ** have no relevance to providing safe and adequate service at just
9 and reasonable rates. The costs should be disallowed in its entirety.

10 **Q. Why is it your opinion that the campaign is self-serving?**

11 A. The campaign’s goal is clearly to induce a halo effect through positive association with the St.
12 Louis Blues and kids charities. What the Blues, Ameren Missouri and children charities have
13 in common outside of this campaign or how this is promoting safety or public policy objectives
14 (or anything electric service related) I cannot identify.

15 **Q. Why do you opine that this is a horribly inefficient way to help kids in need?**

16 A. Ratepayers have spent \$1,819,505 to “give away” approximately \$159K to kids’ charities that
17 a couple thousand fans vote as most worthy. Stated differently, ratepayers have paid roughly
18 \$11.43 for every dollar Ameren Missouri has donated, and three charities (each year) full of
19 kids in need are “not voted winner” and go away with a consolation \$1,000 cardboard check
20 and perhaps the knowledge they were not chosen. Stated out loud the entire set up is ethically
21 questionable and it is frankly shocking to me that this program is included in rates let alone for
22 so many years.

²³ There are a fair amount of online videos devoted to the Blues Power Play dance.

VII. Private LTE Networks

Q. What is a LTE Network?

A. First implemented in 2008 LTE stands for “long-term evolution” and it has become the default standard for high-speed connectivity for fourth-generation (“4G”) cellular networks worldwide. LTE or “4G” mobile subscriptions are expected to be eclipsed by 5G technology (introduced in 2018-2019) within this decade.

Q. Does Ameren Missouri utilize a public LTE network?

A. Today it does, but that is set to change. Beginning in 2019 Ameren was piloting a private LTE network option that was utilizing a spectrum in the 900 MHz band with its partner, Nokia across select segments of its system.²⁴ According to *Fierce Wireless*:

The trial used a tower in Peoria and an office building in St. Louis. Ameren’s partner Nokia installed eNodeBs in St. Louis, Champaign and Peoria, with roughly 18 field devices connected via premise equipment for testing. Nokia used its Airscale remote radio heads and Flexi Zone Multiband Micro base transceiver stations.²⁵

On September 30, 2022 Enterprise IOT Insights reported that Ameren had signed a 10-year private networks deal with LTE provider Ericsson.

Q. Are there benefits to building and owning your own private LTE network?

A. Sure. If money is not an option, building and owning your own closed network could enhance security, reliability and operational benefits by decreasing the complexity and increasing the control the utility has on the proliferation of potential rooftop solar or other Distributed Energy Resources (“DER”) technology and internet-of-things devices. Building out a private LTE network could also create revenue streams through ancillary opportunities such as increasing internet access to rural communities. And of course, rate basing an entire LTE network will necessarily increase the return on investment for investors.

²⁴ DeGrasse, M. (2020) Ameren shares private LTE network details. *Fierce Wireless*.

<https://www.fiercewireless.com/private-wireless/ameren-shares-private-lte-network-details>

²⁵ Ibid.

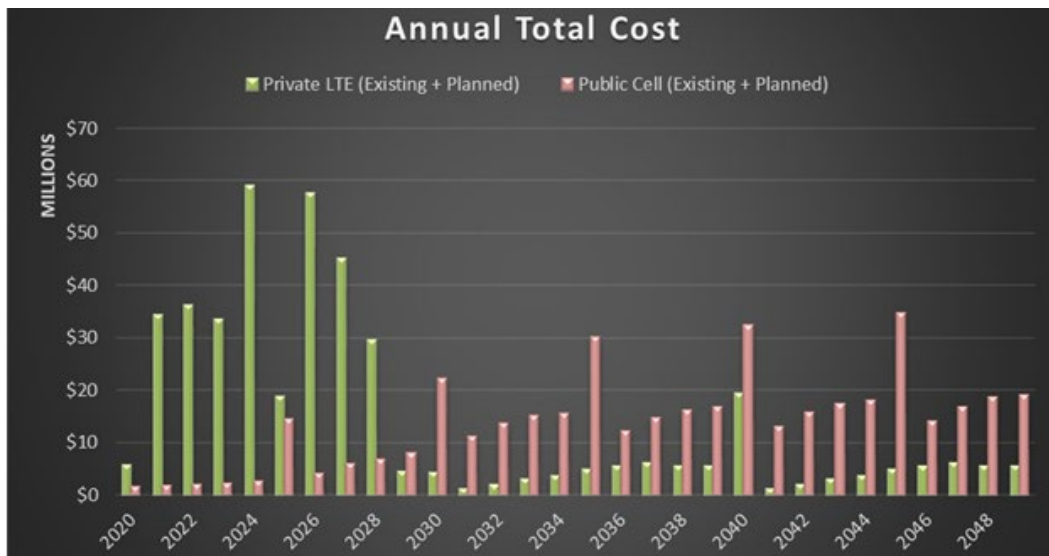
1 **Q. In your opinion do these benefits outweigh the costs to Ameren Missouri’s customers if**
2 **the costs of such a private LTE network is included in Ameren Missouri’s revenue**
3 **requirement used for designing retail rates?**

4 A. I am skeptical based on the limited information I have reviewed. Through OPC DR-2011 I
5 asked the following question:

6 What, explained in detail, particularly as to its cost/benefit analysis, is Ameren
7 Missouri’s rationale for deploying its own Private LTE network, particularly as
8 opposed to utilizing an existing third party service?

9 The Company responded with a five-page response that included both a projected annual
10 capital expenditure and an annual O&M expenditure breakdown between a privately owned
11 and public option.²⁶ Those results are shown in Figures 8 and 9 below:

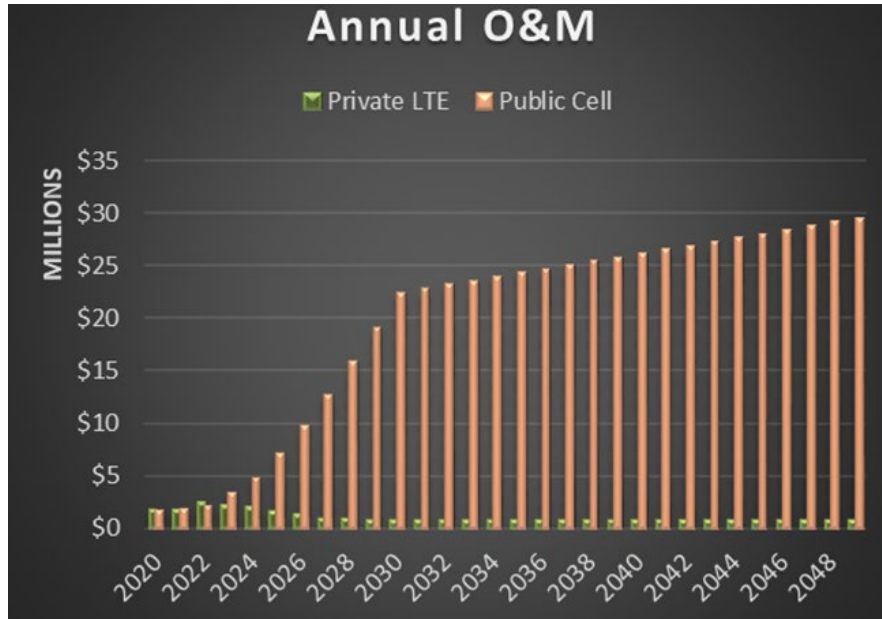
12 Figure 8: Capital Costs for Private and Public LTE network 2020-2048



13

²⁶ See GM-5.

1 Figure 9: Capital Costs for Private and Public LTE network 2020-2048



2
3 **Q. Does Ameren Missouri’s response to your OPC DR 2011 alleviate your concerns about**
4 **it pivoting to a private LTE network?**

5 A. No. Ameren Missouri did not provide the work papers to support the cost assumptions
6 surrounding those inputs. I also find it concerning that LTE is enabling a 4G platform and not
7 a 5G platform, which would seemingly be the more future-proof option. This fact alone raises
8 some concerns surrounding the capital cost trajectory that Ameren has assumed (i.e., the
9 Company will have to invest additional capital to upgrade to 5G after its 4G is in place).
10 Moreover, Missouri has historically lagged in DER-like adoption relative to other US states. I
11 find it concerning that Ameren Missouri is responding as a “first-mover” in rate-basing its own
12 private LTE network when the use case would seemingly be much stronger in states like
13 California or Hawaii. Why not adopt a wait-and-see approach instead of undergoing an
14 expensive path dependent investment when the current operating climate does not call for it?
15 As it stands, considerably more dialogue and discovery is warranted before I can make any
16 recommendations on this issue. As it stands, I am not entirely sure this is an issue that will be
17 germane to this rate case as it may be outside the test year. As such, I welcome Ameren

1 Missouri's response and will update my testimony based on the Company's response to future
2 discovery and testimony.

3 **VIII. Tripsavers**

4 **Q. What is a Tripsaver?**

5 A. A Tripsaver is a cutout-mounted recloser on overhead distribution lines. They are a relatively
6 new and fairly expensive feature used to minimize blown fuses and reduce O&M expenses.
7 Tripsavers are a more common feature in severe-weather prone areas such as Florida or due to
8 increased wild fire areas such as California.

9 **Q. Why are you testifying about Tripsavers?**

10 A. I am concerned about the excessive costs. Ameren Missouri is replacing distribution system
11 fuses with expensive Tripsavers. According to Ameren Missouri a single TripSaver costs
12 \$2,900 where a 100T fuse (which the TripSaver is protecting) costs \$75.²⁷ Stated differently,
13 thirty-nine 100T fuses would need to be replaced before a single TripSaver at a location could
14 be cost justified if only hardware costs are considered.

15 **Q. What about the reductions to operations and maintenance expenses for things like the
16 cost of a truck-roll to replace the fuse?**

17 A. Ameren Missouri estimates the average truck roll cost to replace a fuse is \$1000. This figure
18 seems overly excessive and requires further explanation, but even if we accept this average,
19 the next question one would need to know is how often fuses are blown to necessitate
20 replacement and how long an average system interruption results from a blown fuse.

21 **Q. Did you inquire of Ameren Missouri as to whether it performed a cost-benefit analysis
22 for replacing distribution fuses with Tripsavers?**

23 A. Yes. Ameren Missouri responded with the following:

²⁷ See GM-6.

1 As discussed with Staff and OPC earlier this year, Ameren Missouri is not relying
2 on monetized benefits (e.g., the value of avoided or shortened outages to customers)
3 for its installation of Tripsavers. Ameren Missouri relies on an annual evaluation
4 by distribution system subject matter expert's (*sic*) of our Worst Performing Circuits
5 (WPC) and Multiple Device Interruptions (MDI) lists, which focus on those circuits
6 and customers experiencing the poorest reliability on the system. Tripsavers are
7 deployed as an effective means to address these problem circuits by turning would-
8 be outages that can last hours, or days in the case of storms, into only a momentary
9 outage for the customers.²⁸

10 **Q. How many Tripsavers did Ameren Missouri deploy in the test year for this case?**

11 A. According to Ameren Missouri, 635 Tripsavers have been installed from 4/1/21 to 3/31/22.
12 This would result in approximately \$1.8M in hardware costs with additional costs of
13 installation.

14 **Q. In total, how many Tripsavers does Ameren Missouri intend to deploy on its distribution
15 system?**

16 A. According to Ameren Missouri the Company intends to install approximately 2,800 Tripsavers
17 by 2026 (approximately \$8.1M in hardware costs). This would represent fewer than 10% of
18 the fuses on its system.

19 **Q. What is your recommendation to the Commission regarding Ameren Missouri
20 recovering its costs for replacing distribution fuses with Tripsavers, including return of
21 and on its investment in Tripsavers?**

22 A. It would not be a cost-effective or prudent use of limited ratepayer funding to retrofit all of
23 Ameren Missouri's exposed fuses with Tripsavers across its distribution system. Fortunately,
24 this does not seem to be Ameren Missouri's intention. Without more information I am skeptical
25 that Ameren Missouri's current practice is cost-effective or in the public's interest, but I am
26 not going to recommend a cost disallowance at this point as further discovery is warranted. At

²⁸ See GM-7.

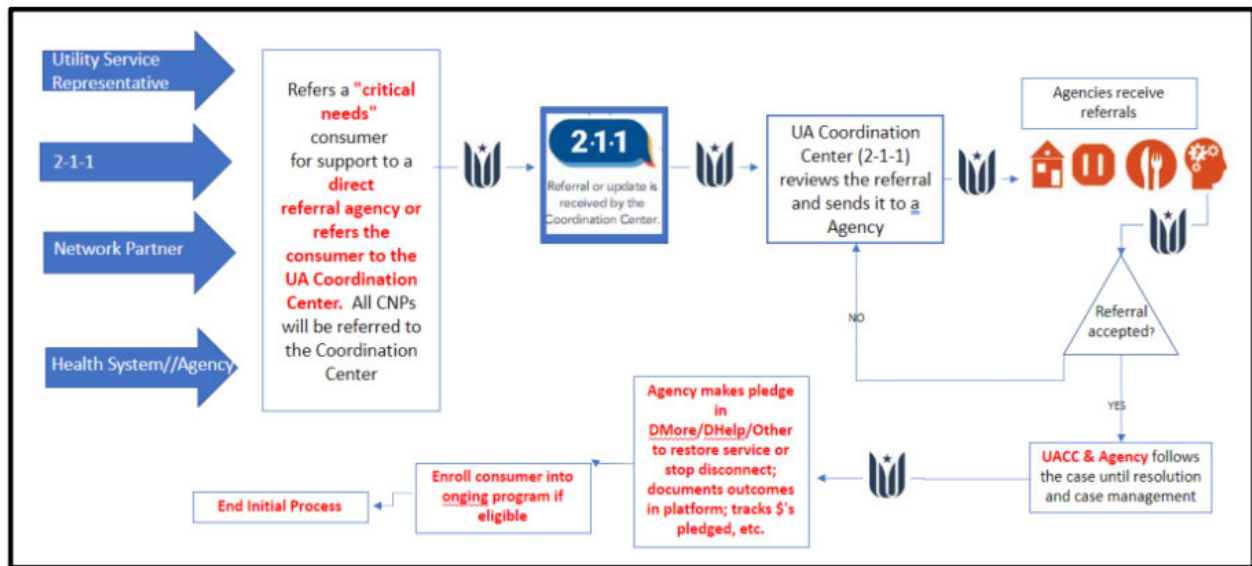
1 a minimum, this testimony should be considered a placeholder for my concerns on this
2 investment and I welcome Ameren Missouri's response.

3 **IX. Income Eligible Assistance Programs**

4 **Q. What is the Critical Needs Program in which Ameren Missouri participates financially?**

5 A. The Critical Needs Program is a \$500k annual program funded 50/50 by shareholders and
6 ratepayers that is a networked screening and referral process designed to ensure that clients
7 most in need of service are properly identified and streamlined for available funding and
8 services through the network collaboration of pooled resources that includes hundreds of
9 partners in the greater St. Louis Metropolitan region. Figure 10 provides a graphical illustration
10 of that screening and referral process.

11 Figure 10: Critical Needs flow chart



12
13 **Q. What organizations are participating in this program?**

14 A. The Critical Needs Program is being administered by two United Way branches (St. Louis and
15 Joplin/Springfield) with funding from Ameren Missouri, Liberty Utilities, and Spire.
16 Discussion is underway to incorporate Evergy West and Metro with the United Way of Kansas

1 City and Missouri American Water across all three locations (St. Louis, Kansas City and
2 Joplin/Springfield). Referrals and participating partners include hundreds of hospitals, clinics,
3 shelters, and non-profits. It is stakeholders hope that if the program proves successful, it can
4 expand to the rest of the state with inclusion of applicable Missouri departments (e.g., social
5 services, mental health, health and senior services).

6 **Q. Is the program currently operational?**

7 A. Not as of this writing; however, stakeholders anticipate a launch within the first quarter of
8 2023.

9 **Q. Do you have any recommended changes for the Critical Needs Program?**

10 A. Presently, both contracts and tariff write-ups across each participating utility are occurring and
11 although I am not anticipating a disagreement, I have yet to receive confirmation from Ameren
12 Missouri on the following bulleted points:

- 13 • A customer or permanent household resident can be placed in the critical needs
14 program if they have received medical certification that involuntary disconnection or
15 suspension of utility service would aggravate an existing serious illness or may prevent
16 the use of life-support equipment;²⁹
- 17 • Customers on the program are given a 30-day reprieve from having their utility shut-
18 off for non-payment; and
- 19 • If more than one occupant in a household has been medically verified for the program
20 the 30-day reprieve will be extended an additional 30 days for each occupant eligible
21 under an account.

22 I am cautiously optimistic that this issue settles in the near future before rebuttal testimony,
23 however, out of an abundance of caution, I am making the aforementioned recommendations
24 that are consistent with the program parameters to which Spire Missouri has agreed, and,

²⁹ Certification of an existing serious illness can be made by a licensed physician, physician's assistant, certified nurse practitioner or licensed mental health professional.

1 ultimately, the program parameters to which I anticipate the rest of the participating utilities to
2 agree for continuity of program delivery.

3 **Q. What is Ameren Missouri’s New Start Energy Relief Program?**

4 A. Commission approved in Ameren Missouri’s last rate case (Case No. ER-2021-0240), the
5 New Start Energy Relief program is a targeted program designed to help former customers
6 transition back into stable housing. Through partnerships with various homeless shelters in
7 the greater St. Louis and St. Charles areas, this pilot program is allowing up to \$1,000 to
8 help pay down bad debt and historic arrearages and/or be allocated towards future bill
9 credits for service. Ameren Missouri and various stakeholders have been working on
10 designing this program for the past year, which has a budgeted amount of \$500,000 and if
11 fully expended should result in 500 participants. Like similarly funded income-eligible
12 programs, the New Start Energy Relief program is split 50/50 between shareholders and
13 ratepayers. To qualify for the program, applicants must have been an Ameren Missouri
14 customer with previous electric service, have an outstanding bill and have been unhoused or
15 spent time in a homeless shelter in the past year.

16 **Q. Do you have any recommended changes for the New Start Energy Relief Program?**

17 A. Not at this point. The program was officially announced in late December and although I have
18 been informed of clients that have already signed up and taken advantage of this program, there
19 is no program data to report yet.

20 **Q. What is Ameren Missouri’s Low Income Weatherization Assistance Program?**

21 A. It is a program designed to weatherize income qualified domiciles that is funded through a
22 50/50 sharing mechanism by both shareholders and ratepayers. This program can be viewed
23 as a complement to the federal funds administered through the U.S. Department of Energy’s
24 Low Income Weatherization Assistance Program (“LIWAP”).³⁰ Under federal regulations,

³⁰ Weatherization assistance can cover anything from energy efficient lights to new windows to improved insulation. To be eligible, households must live at or below 200% of the poverty line, which for one person living alone is \$27,180, and \$55,500 for a family of four. The program gives preference to seniors, people with disabilities, and those with children.

1 many otherwise eligible³¹ homes are often deferred because inspectors find that work would
2 be ineffective because of significant repair needs, health or safety concerns, or exceedingly
3 high repair costs. In theory, that means residents can reapply once they deal with the
4 underlying issues. In reality, many can't afford to.

5 Ameren Missouri's program has been temporarily redesigned to complement the influx of
6 federal funding by allowing area non-profit community action agencies the opportunity to
7 utilize funding for traditional weatherization as well as health and safety concerns,
8 advertising, training, and other related expenditures that have historically prevented federal
9 funds from being fully spent down.

10 The program has been extremely successful and the State of Missouri is anticipating a
11 significant amount of federal funding for weatherization activity in the next fiscal year.³²

12 **Q. Do you have any recommended changes for Ameren Missouri's Low Income**
13 **Weatherization Assistance Program?**

14 A. I am not recommending any changes. The program is running as designed and requires neither
15 an increase nor a decrease in expenditures at this point.

16 **Q. What is Ameren Missouri's Keeping Current and Keeping Cool Programs?**

17 A. The Keeping Current Program is a \$4 million dollar annual program funded 50/50 by
18 shareholders and ratepayers which, provides eligible participants with year round monthly bill
19 credits and arrearage reduction for customers who continue to make monthly bill payments.
20 Ameren Missouri introduced the Keeping Current Program in Case No. ER-2010-0036 and
21 has undergone a number of evaluations and changes over the past twelve years. The
22 evaluations have found that the Keeping Current Program has been successful in enrolling low-

³¹ A 2017 survey in Pennsylvania found about 36% of homes in the state are rejected (See: <https://nascsp.org/wp-content/uploads/2020/12/PA-2019-2020-LIHEAP-Deferral-Program-Guidelines.pdf>) Additionally, an agency in western Wisconsin found it was deferring nearly 60% of homes (See: <https://nascsp.org/success-story/couleecaps-weatherization-deferral-program-makes-homes-safer-and-more-energy-efficient/>)

³² The Bipartisan Infrastructure Law allocated \$3.5 billion in federal weatherization assistance in 2022. See also: <https://www.energy.gov/eere/articles/how-historic-weatherization-investments-will-make-life-better-low-income-families#:~:text=With%20an%20unprecedented%20%243.5%20billion,money%20on%20their%20energy%20bills.>

1 income households, improving energy affordability, improving participants' bill payment
2 regularity, coverage rates, and reducing collections actions.

3 The energy assistance program has two components – The Keeping Current year-round
4 component and the Keeping Cool summer assistance component. The Keeping Cool
5 component of the Program provides participants bill credits in the summer months, primarily
6 June, July, and August to offset the costs of air conditioning usage. The objectives of both
7 programs are as follows.

- 8 • Improve affordability of utility payments for very low-income customers.
- 9 • Promote a level of usage that ensures health and safety.
- 10 • Minimize program costs and maximize efficiencies by working with agencies that
11 serve low-income households.
- 12 • Minimize program costs and maximize efficiency by linking program participation to
13 application for Weatherization and the Low Income Home Energy Assistance Program
14 ('LIHEAP').

15 Keeping Current Stakeholders meet on a quarterly basis to discuss strengths, weaknesses,
16 opportunities, and threats to the program. It has historically been one of the most successful
17 utility-sponsored income eligible programs in Missouri. Most recently, the Keeping Current
18 program has encountered some challenges in spending down the approved funding.

19 **Q. What challenges has Keeping Current experienced?**

20 A. As a result of various federal stimulus programs and COVID-19 relief measures there has been
21 an influx of available utility assistance funding through the Low Income Home Energy
22 Assistance Program ("LIHEAP") and The State Assistance for Housing Relief ("SAFHR")
23 Program for certain eligible customers. Consequently historical participants and/or customers
24 targeted for this program in some cases have found that clearing their entire bad debt through
25 LIHEAP or SAFHR (or other funding streams) an immediate more attractive option than
26 paying down a portion of their bill through Keeping Current program.

1 **Q. Do you have any recommended changes for the Keeping Current and Keeping Cool**
2 **Programs?**

3 A. I do. I believe the Keeping Current and Keeping Cool programs are fundamentally sound
4 programs that are operating in a bit of an anomaly at the moment and require some adjustments
5 to better spend down both the budget and to address targeted customer's needs. As such I am
6 making the following the recommendations:

- 7 • Increase Keeping Cool amount seniors receive to \$50;
- 8 • Allow for return check fees in amount that can be covered by a pledge, rather than
9 customer have to come up with it;
- 10 • Increase flexibility for enrollment criteria by allowing participants with up to two weeks
11 of a past due balance;
- 12 • Increase flexibility of enrollment and continuous participation by allowing or
13 maintaining eligibility if customer is within \$25 of full payment (e.g., if bill is \$100 and
14 a customer pays Flexibility with enrollment criteria – case by case \$75);
- 15 • Increase focus on non-LIHEAP agencies and consider marketing opportunities;
- 16 • Institute automatic renewal rather than removing customers who complete 24 months
17 following a needs assessment (phone call) by an Ameren or participating agency
18 employee; and
- 19 • Institute automatic renewals every six months to motivate customers (i.e., make six
20 months of on-time payments and earn another six months of credits).

21 I am also open to any additional suggestions or feedback from Ameren Missouri or other
22 stakeholders.

23 **Q. Are you recommending any changes to the Keeping Current/Keeping Cool budget?**

24 A. I am recommending a modest increase of \$250K or \$125K apiece shareholder/ratepayer to
25 account for my recommendation for an increase a doubling in the amount of available funding
26 for Keeping Cool participants (currently at \$25, with a recommendation to raise it to \$50).

1 **Q. Does this conclude your testimony?**

2 A. Yes.

**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 Its)
Revenues for Electric Service) Case No. ER-2022-0337

VERIFICATION OF GEOFF MARKE

Geoff Marke, under penalty of perjury, states:

1. Attached hereto and made a part hereof for all purposes is my direct testimony in the above-captioned case.

2. My answer to each question in the attached direct testimony is true and correct to the best of my knowledge, information, and belief.

/s/Geoff Marke
Geoff Marke
Chief Economist
Office of the Public Counsel