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Staff – Exhibit 114
Kim Cox
Direct Testimony
File No. ER-2022-0337

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Witness: Kim Cox
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MISSOURI PUBLIC SERVICE COMMISSION

INDUSTRY ANALYSIS DIVISION

TARIFF/RATE DESIGN DEPARTMENT

**DIRECT TESTIMONY
Revenue Requirement**

OF

KIM COX

**UNION ELECTRIC COMPANY,
d/b/a AMEREN MISSOURI**

CASE NO. ER-2022-0337

*Jefferson City, Missouri
January 2023*

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KIM COX
UNION ELECTRIC COMPANY,
d/b/a AMEREN MISSOURI
CASE NO. ER-2022-0337**

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1 underlie the Staff's fuel and production cost modeling, and will be the basis of Staff's
2 recommended rate designs.

3 Q. Through this testimony, do you provide any recommendations that should be
4 specifically reflected in the Commission's Report and Order in this case?

5 A. Yes, I recommend that the Commission Order reflect Staff's adjusted rate
6 revenue as provided in my testimony and as updated in my true-up direct testimony along with
7 the billing determinants which were used to calculate the adjusted rate revenue.

8 **RATE REVENUES AND BILLING DETERMINANTS**

9 Q. What are rate revenues?

10 A. Rate revenues are defined as the revenue a utility collects from its customers
11 based on its Commission approved base rates.

12 Q. What are base rates?

13 A. Base rates are made up of a fixed monthly customer charge and variable rates
14 that are dependent on usage (demand, energy, etc.) and the season (summer vs. winter).
15 Rate revenues are the largest component of operating revenues.

16 Q. What are billing determinants?

17 A. Billing determinants are what a revenue requirement is divided into to produce
18 rates. Billing determinants are the combination of components to which rates are applied to
19 calculate the customer's bill. Examples of billing determinant components are: customer
20 charge, usage, peaks, and demand.

21 Q. How does Staff use the billing determinants?

1 A. Staff uses billing determinants in two ways. First, billing determinants are used
2 to establish normalized revenues. Second, billing determinants are used to calculate the new
3 base rates.

4 As an example, every month an Ameren Missouri residential (“RES”) anytime
5 customer¹ is billed a fixed monthly customer charge and an energy charge based on the season²
6 and the block³ in which the usage occurred. For Staff to calculate the RES monthly rate
7 revenue, the billing determinant components, the number of RES customer charges and the
8 usage per month, are multiplied by the applicable tariff rate. Inversely, billing determinants are
9 what a revenue requirement is divided by to produce rates.

10 Q. What are operating revenues?

11 A. Operating revenues are composed of three components: (1) Rate Revenue,
12 (2) Other Operating Revenue, and (3) Off System Sales. This testimony will address rate
13 revenues for Ameren Missouri.

14 Q. What is the purpose of calculating operating revenues?

15 A. It is a test of the adequacy of the currently effective retail electricity rates⁴ and
16 the cost of service.

17 One of the major tasks in a rate case is to determine the magnitude of any deficiency
18 (or excess) between cost of service and operating revenues. Once determined, the deficiency

¹ RES anytime customers do not receive service either through an advanced meter or under an optional residential rate.

² Ameren Missouri summer season consist of the monthly billing periods of June through September. The winter season consist of the monthly billing periods of October through May.

³ Ameren Missouri residential anytime customer’s summer usage is billed at the same rate regardless of use while the winter usage is billed a different rate for the first 750 kWh and over 750 kWh.

⁴ The fixed monthly customer charge and variable rates that are dependent on usage and the season.

1 (or excess) can only be corrected (or otherwise addressed) by adjusting retail rates (i.e., rate
2 revenue) prospectively.

3 Q. How did Staff determine the retail rate revenue for Ameren Missouri rate
4 classes?

5 A. Staff adjusted Ameren Missouri jurisdictional billing units and rate revenues
6 based upon information that is “known and measurable” as of the end of the update period.
7 In these two particular cases, the test year is the 12 months ended March 31, 2022, updated for
8 known and measurable changes through December 31, 2022. The two major categories of
9 revenue adjustments are known as “normalization” and “annualization.”

10 Q. What is normalization?

11 A. Normalization are adjustments to the company’s billing determinants that
12 account for unusual and unlikely events that would not be repeated in the years when the new
13 rates from this case are in effect, e.g., events such as the update period weather.

14 Q. What are annualizations?

15 A. In this instance, annualizations are adjustments to the company’s billing
16 determinants to reflect known conditions at the end of the update period. Adjustments for
17 customer growth are an example of an annualization.

18 Q. What rate classes did Staff normalize and annualize?

19 A. Staff normalized and annualized billing determinants for the RES, small general
20 service (“SGS”), large general service (“LGS”), small primary service (“SPS”), Metropolitan
21 Sewer District (“MSD”), and the Lighting service classes⁵.

⁵ Staff witness, Nancy L. Harris discusses the large primary service (“LPS”) rate class in her direct testimony.

1 Q. What rate revenue adjustments did Staff make to these classes?

2 A. Staff made the following adjustments, however not all of these adjustments
3 affect both sales and rate revenue dollars, and not all rate classes are subject to all adjustments.

- 4 a. Update period adjustment;
5 b. Rate switcher adjustment;
6 c. Weather normalization and 365 days adjustment;
7 d. Missouri Energy Efficiency Investment Act (“MEEIA”) adjustment;
8 e. Customer growth and inter-class switching⁶ adjustment;
9 f. Community solar adjustment; and
10 g. Rate change annualization adjustment.

11 **Update Period Adjustment**

12 Q. What is the update period adjustment?

13 A. The update period adjustment is the difference of billed usage and revenue
14 through March 31, 2022, compared to the billed usage and revenue through June 30, 2022.

15 Q. How did Staff calculate its update period adjustment?

16 A. Staff first calculated the test year revenue⁷ based on Ameren Missouri’s billing
17 determinants provided by the Company. Staff requested and the Company provided the billing
18 determinants for April 1, 2021 through March 31, 2022. Staff then calculated the revenue for
19 the 12 months ending June 30, 2022.

20 Q. What classes did Staff adjust for the update period?

21 A. Staff adjusted Residential, SGS, LGS, SPS, MDS, and the lighting rate classes⁸.

22 **Rate Switchers Adjustment**

23 Q. What rate switcher adjustment did Staff make?

⁶ The residential anytime and evening and morning rate codes were adjusted for interclass switching.

⁷ Twelve months ending March 31, 2022.

⁸ Staff witness, Nancy L. Harris discusses LPS in her direct testimony.

1 A. During the update period the following customers switched rate classes.

2 LGS customers:

- 3 • One customer switched to SPS
- 4 • One customer switched from SPS

5 SPS customers:

- 6 • One customer switched from LPS
- 7 • Two customers switched from LGS
- 8 • One customer switched to LGS
- 9 • One customer switched to SPS

10 Staff removed and added the customer billing units and revenue from the LGS and SPS
11 rate classes⁹.

12 **Weather Normalization and 365 Days Adjustment**

13 Q. How did Staff calculate the weather normalization and 365 days adjustment?

14 A. Staff witness Hari K. Poudel, PhD provided the monthly weather normalization
15 factor for each rate class and the 365 days adjustment for each rate class. Mr. Poudel discusses
16 the data he provided in his direct testimony of this case.

17 Staff applied the combined weather normalization and 365 days factor to each month
18 for each rate class. For example, if the normalized and annualized kWh factor is .97 for the
19 month of September in the RES rate class, then the total actual usage for that month and for that
20 rate class is decreased by .03. Staff witness Michael L. Stahlman provided the normalized first
21 block percentage that was applied to distribute normalized and annualized monthly kWh to the

⁹ Staff witness Nancy L. Harris provides testimony on the LPS rate switchers.

1 rate blocks¹⁰. The total normalized and annualized rate block usage was multiplied by the
2 appropriate rates.

3 **MEEIA Adjustment**

4 Q. What MEEIA adjustment did Staff make?

5 A. Staff witness Poudel provided total kWh MEEIA adjustment¹¹ for the Res, SGS,
6 LGS and SPS¹². Staff developed and applied a monthly MEEIA factor equally to all rate blocks
7 for each tariff rate class¹³. The total normalized and annualized usage was multiplied by the
8 appropriate rates. The MEEIA revenue adjustment accounts for the test period revenue
9 difference of applying the change in normalized and annualized usage.

10 **Growth and Inter-class Switching Adjustment**

11 Q. What is inter-class switching?

12 A. Inter-class switching is when a customer switches from one rate schedule to
13 another within the same class.

14 Q. Why did Staff make an adjustment for the residential inter-class switching?

15 A. Ameren Missouri updated the default residential rate policy following the
16 conclusion of Case No. ER-2021-0240. After a customer receives an advanced meter and has
17 had service for six months, the customer is automatically switched from the Anytime rate to the
18 Evening Morning Savers¹⁴ rate unless they choose a different rate.

¹⁰ Mr. Stahlman discusses the normalized usage by rate block in his direct testimony.

¹¹ Mr. Poudel discusses MEEIA and the calculation of the MEEIA kWh adjustment in his direct testimony.

¹² Mr. Poudel provided LPS total kWh MEEIA adjustment to Staff witness Nancy L. Harris. She discusses it in her direct testimony.

¹³ The factor developed is the weather normalized and 365 days adjusted usage minus the MEEIA kWh divided by the weather normalized and 365 day adjusted usage.

¹⁴ This rate schedule is available to residential customers being served through an advanced meter. The rate consist of a basic service charge and an energy charge that varies by the time of day that energy is used.

Direct Testimony of
Kim Cox

1 Q. How did Staff account for customers switching from the Anytime rate to the
2 Evening Morning Savers rate?

3 A. Staff calculated the difference of customer counts for June 2022 from each
4 month of the update period¹⁵. The chart below provides the customer counts switching from
5 each rate and the combined growth for each month.

6

	202107	202108	202109	202110	202111	202112	202201	202202	202203	202204	202205	202206
Anytime Users												
Update	1,039,577	1,002,303	962,785	928,937	903,591	888,481	869,732	847,393	826,819	809,981	784,264	754,732
	-284,845	-247,571	-208,053	-174,205	-148,859	-133,749	-115,000	-92,661	-72,087	-55,249	-29,532	0
Evening Morning												
Savers Update	37,721	74,906	114,969	148,399	173,875	190,502	209,797	232,839	253,211	269,104	294,921	324,192
	286,471	249,286	209,223	175,793	150,317	133,690	114,395	91,353	70,981	55,088	29,271	0
Growth	1,626	1,715	1,170	1,588	1,458	-59	-605	-1,308	-1,106	-161	-261	0

7

8 Q. What is customer growth and why did Staff make a growth adjustment?

9 A. Staff made a growth adjustment to reflect the impact in the change of
10 customer levels (for each rate) for the update period kWh sales, kW demand, and revenues that
11 would have occurred if the number of customers taking service had existed throughout the
12 update period.

13 Q. What customer classes did Staff adjust for customer growth?

14 A. Staff calculated customer growth for the following customer classes: RES, SGS,
15 LGS, and SPS.

16 Q. Did Staff apply customer growth the same for all classes?

¹⁵ 12 months ending June 2022.

1 A. No. Staff applied customer growth differently for the Anytime rate and Evening
2 Morning Savers rate for the RES class because of the inter-class switching that occurred during
3 the 12 months.

4 Q. How did Staff apply the growth adjustment for the Anytime rate and Evening
5 Morning rate?

6 A. Staff first combined the customer counts and usage for the Anytime rate and the
7 Evening Morning Savers rate for each of the 12 months ending June 2022. Staff then calculated
8 the use per customer ("UPC") for the combined rates by dividing the monthly customer count
9 by the monthly kWh usage. Finally, Staff calculated the kWh growth of each month and rate
10 by multiplying the combined monthly UPC by the number of rate switchers each month.

11 Q. How did Staff apply the customer growth adjustment to the remaining RES
12 customer rates and the SGS, LGS and SPS rate classes?

13 A. For each rate, Staff applied the June 2022 customer counts to all 12 months.
14 Staff developed a growth factor¹⁶ and applied it to kWh sales and kW demand. The total
15 normalized and annualized usage for each rate and class was multiplied by the appropriate rates.

16 Q. Will Staff update its growth adjustment in its true-up direct filing?

17 A. Staff will review customer growth through December 31, 2022, true-up cut-off
18 and make adjustments as necessary to reflect the change in customer levels.

19 **Community Solar Adjustment**

20 Q. Please explain the community solar programs Ameren Missouri provides.

¹⁶ The growth factor is customer count for June 2022 divided by each of the 12 months customer counts.

1 A. Ameren Missouri currently has a community solar pilot program and a
2 permanent community solar program (“CSP”). The pilot program is the only one that impacts
3 billing determinants and revenues as part of this rate proceeding. The pilot program is offered
4 to RES and SGS customers. If available, a customer can subscribe to a solar block that is
5 equivalent to 100 kWh. The customers’ billed kWh is reduced by the applicable solar blocks
6 subscribed to and, in return, the customer is billed the solar block charge¹⁷.

7 Q. Did Staff make an adjustment for kWh and revenues associated with the solar
8 block charge to test year and update period?

9 A. Staff did not adjust the kWh when calculating test year revenues or update
10 revenues, as the kWh was already reduced in the billing determinants that Ameren Missouri
11 provided. However, Staff did make an adjustment to revenues for the test year and update
12 period, as Ameren Missouri did collect the solar block charge.

13 Q. Did Staff make any other adjustments for community solar?

14 A. Yes. Staff made a kWh and solar block annualization adjustment. The solar
15 availability bank increased by 9,884 as another solar facility was in service as of March 22,
16 2022. In order to account for the additional facility coming on, Staff applied the difference of
17 the actual and the maximum subscribed blocks and kWh to the 12 months ending June 2022 for
18 the RES and SGS rate classes. Staff applied the kWh reduction to the developed percent in
19 each applicable season and block. The total normalized and annualized usage for each rate and
20 class was multiplied by the appropriate rates¹⁸.

21 Q. Will Staff update its community solar adjustment in its true-up direct filing?

¹⁷ The solar block charge consist of the solar generation charge and the facilities charge.

¹⁸ Staff witness, Sarah L.K. Lange will discuss community solar rate design in her direct rate design testimony.

1 A. Staff will review the subscribed community solar bank through December 31,
2 2022, true-up cut-off, and make adjustments as necessary to reflect the change in subscribed
3 solar blocks and kWh usage.

4 **Rate Change Annualization Adjustment**

5 Q. What rate change annualization adjustment did Staff make?

6 A. Staff made a rate change annualization adjustment to all rate classes. Ameren
7 Missouri’s currently effective rates went into effect February 28, 2022. Staff applied the current
8 rates to all billing determinants for the 12 months ending June 2022. The adjustment is the
9 difference between the currently effective rates and the rates prior to February 28, 2022.

10 Q. Once Staff completed its analysis of the rate revenue adjustments as discussed
11 above, what did Staff do with its results?

12 A. Staff provided the normalized and annualized usage for Ameren to Staff witness
13 Hari K. Poudel, PhD for inclusion in his calculation of Net System Input (“NSI”) and to
14 Staff witness Alan J. Bax for inclusion of their determination of jurisdictional allocations.
15 These witnesses provide more detail in their direct testimony. Staff also provided each
16 revenue adjustment discussed above to Staff witness Keith Majors to include in the overall
17 revenue requirement.

18 **CONCLUSION**

19 Q. What are your recommended rate revenue adjustments?

20 A. The Commission should base its awarded revenue requirement on Staff’s rate
21 revenue adjustments as provided below and as updated in true up direct¹⁹.

¹⁹ Staff will update growth to reflect the most current customer charge counts and may update community solar.

Direct Testimony of
Kim Cox

1

<u>Rate Class</u>	<u>Test Year Revenue</u>	<u>Update Period Adj.</u>	<u>Rate Switch & Large Customer Annualization</u>	<u>Weather & Days Adj.</u>	<u>MEEIA Adj.</u>	<u>Growth Adj.</u>	<u>Community Solar</u>	<u>Rate change annualization</u>	<u>Low Income Charge</u>	<u>EDI Adj.</u>	<u>Total Normalized Revenue</u>
Res 1M	\$ 1,288,410,742	\$ 36,774,669		\$ (24,005,088)	\$ (5,387,648)	\$ 1,670,945	\$ 309,414	\$ 84,253,690	\$ (1,814,219)		\$ 1,380,212,504
SGS 2M	\$ 281,277,422	\$ 9,499,924		\$ (3,509,106)	\$ (1,732,680)	\$ 1,797,408	\$ 23,361	\$ 17,795,243	\$ (310,195)		\$ 304,841,376
LGS 3M	\$ 520,252,648	\$ 14,986,823	\$ 1,140	\$ (3,275,441)	\$ (1,851,093)	\$ (1,487,699)		\$ 33,147,944	\$ (263,837)	(482,414)	\$ 561,028,072
SPS 4M	\$ 222,687,480	\$ 6,480,369	\$ (2,612,133)	\$ (1,559,854)	\$ (428,867)	\$ 2,212,400		\$ 13,978,220	\$ (16,562)	(179,990)	\$ 240,561,062
LPS 11M	\$ 190,174,326	\$ 4,244,098	\$ 1,677,473	\$ (785,375)	\$ (49,051)			\$ 11,680,178		(61,598)	\$ 206,880,052
Lighting 5m	\$ 35,346,814	\$ 874,654						\$ 2,099,963			\$ 38,321,431
Lighting 6m	\$ 881,596	\$ 17,243						\$ 66,885			\$ 965,723
Lighting 6m metered	\$ 1,810,487	\$ 12,866						\$ 145,553			\$ 1,968,907
MSD	\$ 75,516	\$ 1,649						\$ 4,398			\$ 81,564
Total	\$ 2,540,917,031	\$ 72,892,296	\$ (933,520)	\$ (33,134,865)	\$ (9,449,340)	\$ 4,193,054	\$ 332,775	\$ 163,172,075	\$ (2,404,813)	\$ (724,002)	\$ 2,734,860,691

2

3

Q. Does this conclude your direct testimony?

4

A. Yes it does.

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

AFFIDAVIT OF KIM COX

STATE OF MISSOURI)
)
COUNTY OF COLE) ss.

COMES NOW KIM COX and on her oath declares that she is of sound mind and lawful age; that she contributed to the foregoing *Direct Testimony of Kim Cox*; and that the same is true and correct according to her best knowledge and belief.

Further the Affiant sayeth not.


_____)
KIM COX

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 5th day of January 2023.

D. SUZIE MANKIN
Notary Public - Notary Seal
State of Missouri
Commissioned for Cole County
My Commission Expires: April 04, 2025
Commission Number: 12412070


_____)
Notary Public

KIM COX

Education and Employment Background and Credentials

I attended Central Missouri State University at Warrensburg, Missouri. In May 1996, I received a Bachelor of Science degree.

I am currently employed as a Senior Research/Data Analyst with the Tariff/Rate Design Department within the Industry Analysis Division of the Missouri Public Service Commission (Commission). I have been employed by the Commission since July, 2009. From July 2009 to June 2013, I worked in the Tariffs/Rate Design Section of the Energy Unit as a Rate and Tariff Examiner III, where my duties consisted of analyzing applications, reviewing tariffs and making recommendations based upon those evaluations. On June 16, 2013, I assumed the position of a Utility Policy Analyst II (which is now reclassified as a Senior Research/Data Analyst) within the same Section, where my duties consist of coordinating highly complex activities, analyzing applications, reviewing tariffs, and making recommendations based upon my evaluations. I currently serve on the NARUC Staff Subcommittee on Rate Design. Prior to joining the Commission, I held the position of a Quality Assurance Analyst in the regulatory field for ten years.

KIM COX

Summary of Case Involvement

	Company	Issue	Type of Filing
GR-2009-0434	The Empire District Gas Company	Weather Normalized Sales and Coincident-Peak Day Demand	Staff Report
GR-2010-0171	Laclede Gas Company	Weather Normalized Sales, Blocks and Coincident-Peak Day Demand	Staff Report
GR-2010-0171	Laclede Gas Company	Weather Normalized Sales	Rebuttal
GR-2010-0363	Union Electric d/b/a AmerenUE	Weather Normalized Sales, Blocks and Coincident-Peak Day Demand	Staff Report
GR-2010-0347	Southern Missouri Natural Gas	Weather Normalized Sales	Staff Report
GR-2010-0192	Atmos	Weather Normalized Sales and Coincident-Peak Day Demand	Staff Report
HR-2011-0241	Veolia	Weather Normalized Sales	Staff Report
ER-2012-0175	KCP&L and GMO	L&P Normalization and Annualization	Staff Report
GR-2014-0007 Coordinated	Missouri Gas Energy	Direct COS sponsor of Weather, Weather Normalization and Large Volume Customer Revenue Adjustment	Direct Testimony
GR-2014-0007 Coordinated	Missouri Gas Energy	Direct CCOS sponsor of Rate Design, Miscellaneous Tariff Issues, School Transportation Capacity, Gas Supply Incentive Plan and Staff's CCOS	Direct Testimony
GR-2014-0086	Summit Natural Gas	Lake Ozark Transportation	Staff Report
GR-2014-0152	Liberty Utilities	Special Contract, Large and Industrial Customers	Staff Report, Rebuttal and Surrebuttal
ER-2016-0023	Empire	Large Power Feed Mill Annualization	Staff Report
GR-2017-0215 and GR-2017-0216	Spire Missouri Inc.	Executive Summary, Background, Test Year/True-Up Period and Staff's Revenue Requirement Recommendation	Staff Report

	Company	Issue	Type of Filing
ER-2018-0145 and ER-2018-0146	Kansas City Power & Light Company and KCP&L Greater Missouri Operations Company	Rate Revenues Introduction, The Development of Rate Revenue, Regulatory Adjustments to Test Year Sales and Rate Revenue, Customer Growth, and Adjustment for Non-Missouri classes	Staff Report
GR-2019-0077	Union Electric Company, d/b/a Ameren Missouri	Class Cost of Service, Rate Design and Bill Format Recommendation	Staff Report
ER-2019-0335	Union Electric Company, d/b/a Ameren Missouri	Cost of Service, Update Period Adjustments, Large Customer Annualization, MEEIA Revenue Adjustment, Weather Normalization of Revenue and 365 Day Adjustment	Staff Report
GR-2021-0108	Spire Missouri Inc.	Cost of Service, Large Customer Annualization, Weather Normalization of Revenue and 365 Day Adjustment, Rate Switching Adjustment and Growth Adjustment	Staff Report and Surrebuttal
ER-2021-0240	Union Electric Company, d/b/a Ameren Missouri	Cost of Service, Update Period Adjustments, Community Solar, Rate Switching, MEEIA Revenue Adjustment, Weather Normalization of Revenue and 365 Day Adjustment, and Growth Adjustment	Staff Report and Rebuttal Testimony
ER-2021-0312	The Empire District Electric Company, d/b/a Liberty	Cost of Service, Update Period Adjustments, Weather Normalization of Revenue and 365 Day Adjustment, Rate Switching, Customer Growth, Adjustments for Non-Missouri classes	Staff Report and Rebuttal Testimony

cont'd Kim Cox

	Company	Issue	Type of Filing
ER-2022-0129 & 0130	Evergy Metro, Inc. d/b/a Evergy Missouri Metro & Evergy Missouri West, Inc. d/b/a Evergy Missouri West	Test year revenues, Update Period Adjustment, Rate Switchers, Weather Normalization, 365 days adjustment, MEEIA Revenue Adjustment, and Customer Growth	Direct Testimony, Rebuttal and Surrebuttal/True- up