

Exhibit No.:  
Issues: Low-Income Weatherization  
Income Related Considerations  
Witness: Sharlet E. Kroll  
Sponsoring Party: Missouri Department of Economic  
Development – Division of Energy  
Type of Exhibit: Direct Testimony  
Case Nos.: ER-2016-0179

**MISSOURI PUBLIC SERVICE COMMISSION**

**UNION ELECTRIC COMPANY**

**d/b/a/ AMEREN MISSOURI**

**CASE NO. ER-2016-0179**

**DIRECT TESTIMONY**

**OF**

**SHARLET E. KROLL**

**ON**

**BEHALF OF**

**MISSOURI DEPARTMENT OF ECONOMIC DEVELOPMENT**

**DVISION OF ENERGY**

Jefferson City, Missouri

December 9, 2016

**BEFORE THE PUBLIC SERVICE COMMISSION  
OF THE STATE OF MISSOURI**

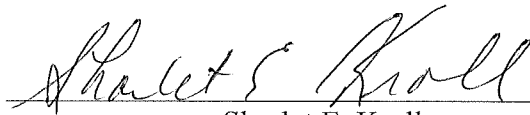
In the Matter of Union Electric Company d/b/a )  
Ameren Missouri's Tariffs to Increase Its ) ER-2016-0179  
Revenues for Electric Service )

**AFFIDAVIT OF SHARLET E. KROLL**

**STATE OF MISSOURI** )  
 ) **ss**  
**COUNTY OF COLE** )

Sharlet E. Kroll, of lawful age, being duly sworn on his oath, deposes and states:

1. My name is Sharlet E. Kroll. I work in the City of Jefferson, Missouri, and I am employed by the Missouri Department of Economic Development, Division of Energy as a Planner II.
2. Attached hereto and made a part hereof for all purposes is my Direct Testimony (Revenue Requirement) on behalf of the Missouri Department of Economic Development – Division of Energy.
3. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded are true and correct to the best of my knowledge.

  
 \_\_\_\_\_  
 Sharlet E. Kroll

Subscribed and sworn to before me this 9<sup>th</sup> day of December, 2016.

  
 \_\_\_\_\_  
 Notary Public

My commission expires:

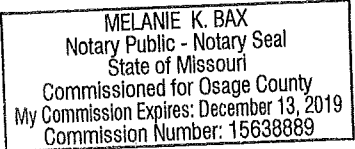


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1 **I. INTRODUCTION**

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

3 A. My name is Sharlet E. Kroll. My business address is 301 West High Street, Suite 720, PO  
4 Box 1766, Jefferson City, Missouri 65102.

5 **Q. By whom and in what capacity are you employed?**

6 A. I am employed by the Missouri Department of Economic Development (“DED”) –  
7 Division of Energy (“DE”) as a Planner II Energy Policy Analyst.

8 **Q. On whose behalf are you testifying?**

9 A. I am testifying on behalf of DE, an intervenor in these proceedings.

10 **Q. What are the responsibilities of the Division of Energy?**

11 A. DE is a division within DED which serves as Missouri’s state energy office. DE is  
12 responsible for the administration of federal programs and grants such as the federal Low  
13 Income Weatherization Assistance Program (“LIWAP”). DE is also responsible for  
14 administering the federal State Energy Program (“SEP”). The SEP, established by the  
15 United States Congress in 1978, is managed nationally by the United States Department  
16 of Energy (“USDOE”). DE powers and duties are outlined in Section 640.150, RSMo.

17 **Q. Have you previously testified before any state regulatory commission?**

18 A. Yes. I have testified before the Missouri Public Service Commission (“MPSC” or  
19 “Commission”). Please see Schedule SEK-1.

20 **Q. Please describe your educational and professional background.**

21 A. I was awarded a dual Bachelor of Arts degree in Sociology and Political Science in 1993  
22 from the University of Missouri – Columbia (“UMC”). I have over 23 years of  
23 experience in state government and began my career with the State of Missouri in the

1 Department of Social Services (“DSS”), initially with the Division of Family Services  
2 (“DFS”) and later with the Division of Aging (“DA”) where I conducted hotline  
3 investigations, provided protective services, assessed medical and physical functionality  
4 for authorization of services for daily living activities, and made routine home visits to  
5 assess authorized Medicaid funded services. As part of my training with DA, I  
6 completed 26 hours of Investigative Technique and Report Writing offered by the  
7 University of Missouri Law Enforcement Training Institute and School of Law. During  
8 my service with DA, I was assigned to a pilot program co-delivered by DA, DFS, and the  
9 two area hospitals in Jefferson City, Missouri. As part of the pilot program, I worked as a  
10 liaison between DA and the hospitals arranging home services for qualifying at-risk  
11 individuals and was trained to receive and process Medicaid applications: Old Age  
12 Assistance and Permanently and Totally Disabled. In 2002 I accepted an internal  
13 promotion, and my area of expertise was the development and implementation of  
14 statewide public health programs – primarily public health emergency response and  
15 volunteerism. I spent nine of those 13 years developing and implementing public health  
16 emergency plans as the “State MRC/Volunteer Program” Coordinator. I completed all  
17 National Incident Management System curriculum required for public health. I  
18 participated in and evaluated several disaster preparedness exercises. The last two years  
19 of my career with DHSS were in the Office of Primary Care and Rural Health where I  
20 coordinated the statewide Oral Health Preventive Services Program, which works with  
21 schools and communities to address access to care barriers for low-income children. I  
22 joined the DED/DE team in 2015. My responsibilities include representing DE at  
23 investor-owned utility (“IOU”) advisory group meetings, conducting DE’s internal

1 budget tracking of energy efficiency (“EE”) measures in Missouri, evaluating and  
2 developing policy recommendations on the non-energy benefits and low-income issues  
3 related to initiatives under the Clean Power Plan, and work on a project to detail the EE  
4 case history of each utility. I completed Building Operator Certification (“BOC”). BOC  
5 is a national workforce training and credentialing program that offers job skills in EE  
6 building and operation maintenance practices. I have accompanied DE weatherization  
7 technical staff on monitoring visits to pre- and post-weatherized homes. I have a  
8 certificate of knowledge in Building Science Principles, which is a home performance  
9 course. I am currently enrolled in the Master of Public Affairs program at the Harry S  
10 Truman School of Public Affairs.

11 **Q. Please describe your work assisting Missouri utilities with energy efficiency**  
12 **initiatives.**

13 A. I serve as DE’s designated representative to all electric and natural gas IOU  
14 collaboratives,<sup>1</sup> including: Liberty Utilities EE Advisory Group, Missouri Gas Energy -  
15 Laclede Gas Company EE Collaborative, Ameren Missouri<sup>2</sup> Demand-Side Management  
16 Stakeholder Group (“DSMAG”), Ameren Missouri Natural Gas EE Advisory Group,  
17 Kansas City Power and Light Company DSMAG, KCP&L Greater Missouri Operations  
18 Company DSMAG, Summit Natural Gas EE Advisory Group, Empire District Company  
19 DSMAG and Empire District Gas Company DSMAG. I am also DE’s representative for  
20 the Missouri American Water Company’s EE Collaborative. Most collaboratives meet  
21 quarterly via conference call, web cast, or in-person. Three collaboratives meet

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<sup>1</sup>Missouri Public Service Commission Case No. AO-2011-0035. *In the Matter of the Chairman’s Request for A Status Report Regarding Energy Efficiency Advisory Groups and Collaboratives*. Status Report. August 7, 2015.

<sup>2</sup> Union Electric Company d/b/a Ameren Missouri

1 biannually. Each collaborative addresses company specific issues, which may include  
2 EE measures and programs, weatherization efforts, the potential for co-delivery of  
3 programs, and program evaluation.

4 **Q. What information did you review in preparation of this testimony?**

5 A. In preparation of this testimony, I reviewed the direct testimonies of Michael Moehn,  
6 Julie Catron, Tara Oglesby, Laura M. Moore, and William R. Davis and past tariffs and  
7 case documents regarding Ameren Missouri's ("Ameren" or "Company") EE and  
8 weatherization programs including DE weatherization reports.

9 **II. PURPOSE OF TESTIMONY**

10 **Q. What is the purpose of your testimony in these proceedings?**

11 A. The purpose of my testimony is to present DE's recommendations regarding  
12 administration and funding of Ameren's income-eligible weatherization  
13 ("weatherization") program. I will also provide information on the history and  
14 performance of the weatherization program, and discuss energy burden and other  
15 household income related considerations.

16 **III. RECOMMENDATIONS**

17 **Q. What are your recommendations regarding administration of the company's  
18 weatherization program?**

19 A. DE requests that the Commission direct Ameren to convene interested stakeholders to  
20 begin discussions of how administration of the Ameren program should be handled going  
21 forward, and to develop a report to be submitted with Ameren's direct testimony in the  
22 next general rate proceeding outlining options for future weatherization program

1 administration. DE has provided administrative services for the Company's  
2 weatherization program since May 2003.

3 **Q. How is the Company's weatherization program currently administered?**

4 A. DE administers Ameren's weatherization program and the program of three other IOUs.  
5 DE oversees contactor ("subgrantee"), delivery of program services within Ameren's  
6 service area. These subgrantees are contracted by DE to provide approval and  
7 installation of weatherization measures to Missouri's most vulnerable households and to  
8 date has weatherized 3,153 homes for Ameren customers. While the subgrantees  
9 received compensation from utility weatherization programs, DE has not. DE has funded  
10 the vast majority of its administrative contribution to utility weatherization programs  
11 through the USDOE grant it receives to fund the LIWAP program. At the state level, DE  
12 receives no general revenue funds to administer weatherization programs nor does DE  
13 receive funds to administer the weatherization portion of Utilicare.<sup>3</sup> However, DE does  
14 intermittently receive some funds to administer the transfer of federal LIHEAP funds for  
15 weatherization. The amount approved for 2016 was less than three percent of the  
16 LIHEAP funds authorized for weatherization. Increasingly, DE has faced financial  
17 challenges in supporting adequate staff and covering related expenses to administer both  
18 LIWAP and utility weatherization programs.

19 **Q. Is DE willing to continue administration of the company's weatherization program?**

20 A. Yes. DE is willing to continue administering the Ameren and other utility programs on  
21 an ongoing basis provided that its administrative costs can be recovered. DE is willing to  
22 provide administration services at the lesser of costs or five percent of the program

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<sup>3</sup> Missouri Revised Statutes, *Utilicare Stabilization Fund Created – Used For Utilicare Program*. Chapter 660, Section 660.136.1, August 28, 2016. <http://www.moga.mo.gov/mostatutes/stathtml/66000001361.html>



1 budget. However, DE acknowledges that parties have expressed concerns in the past  
2 about providing such compensation. The report that I recommended above might also  
3 consider other options such as transitioning administration to Ameren or a third party.

4 **Q. What is the basis for DE's recommendations?**

5 A. As discussed above, DE is concerned about its on-going ability to administer the  
6 Company's program due to the increasing costs of managing the Ameren and other utility  
7 programs. In addition to the cost of staff time and related expenses associated with  
8 administration of the Company's program, DE is aware that the Environmental  
9 Improvement and Energy Resources Authority ("EI ERA"), which handles the receipt and  
10 disbursement of program funds on behalf of DE, may request an administration fee for  
11 the services they provide. Currently, EI ERA is reimbursed for explicit costs (accounting  
12 and legal fees) but does not receive funds for staffing. However EI ERA has recently  
13 expressed an interest in doing so. If DE is to be responsible for ongoing administration,  
14 we are interested in crafting a consistent and sustainable approach to program  
15 administration that addresses these issues.

16 **Q. What do you recommend regarding the Company's weatherization program**  
17 **funding level?**

18 A. DE recommends continuing the weatherization program at the annual level of  
19 \$1,200,000 which was approved in Case No. ER-2011-0028. DE is currently expending  
20 that amount.

1 **IV. FEDERAL LOW INCOME WEATHERIZATION ASSISTANCE PROGRAM**

2 **Q. Please describe the federal LIWAP administered by DE.**

3 A. Congress established the federal LIWAP in 1976 in response to the energy crisis of the  
4 early 1970s. The LIWAP provides cost-effective, energy-efficient home improvements  
5 to Missouri's low income households, especially households in which the elderly,  
6 children, those with physical disadvantages, and others hit hardest by high utility costs  
7 reside. The program is intended to be a more effective, long-lasting solution to address  
8 energy insecurity. Its goal is to lower utility bills and improve comfort while ensuring  
9 health and safety. Weatherization is the nation's largest residential energy efficiency  
10 program. From 1977 through October 2016, 188,827 homes in Missouri were  
11 weatherized with funds administered by DE. The LIWAP utilizes a "whole house  
12 retrofit" approach to building improvement. All participating homes must undergo an  
13 energy audit to identify energy efficiency and health and safety opportunities, such as  
14 malfunctioning or substandard equipment. Home efficiency and health and safety  
15 measures which have been determined to be cost effective or necessary for client health  
16 and safety are installed by trained weatherization professionals. Effective July 1, 2015,  
17 every weatherized home must pass a thorough, quality-control inspection by the  
18 subgrantee before the dwelling can be reported as completed. The final inspection must  
19 certify that work was completed in a professional manner and in accordance with the  
20 Technical Standards. A second home audit is performed to verify that all repairs and  
21 installations were completed properly. DE contracts with 17 local community action  
22 agencies ("CAAs") and one non-profit organization as subgrantees. Together, these  
23 agencies serve every region in the state. DE provides on-site monitoring, and fiscal and

1 technical oversight of the subgrantees to ensure appropriate utilization of funds, with a  
2 goal of fully spending funding allocations each contract cycle.

3 **Q. Please explain DE weatherization program activities.**

4 A. Administration includes several components: monitoring subgrantees, fiscal management  
5 of multiple funding sources with differing expiration cycles, training and technical  
6 support provided to subgrantees, home audit of weatherized home to ensure quality  
7 control and adherence with program guidelines, submittal of required reports and  
8 inquiries to USDOE, and responding to federal and state auditors inquiries. These  
9 activities can be aggregated to daily, monthly, and annual occurrences. DE compiles  
10 reports, invoice and expenditure tracking, answers numerous inquiries for technical  
11 assistance, and monitoring of the Missouri Weatherization Assistance Program  
12 (“MoWAP” or “Database”) Database. MoWAP is a real-time, web-based application  
13 used by DE and their subgrantees for tracking and reporting of DE administered  
14 weatherization funds. Each subgrantee request for reimbursement is reviewed once per  
15 funding source and entered into separate tracking systems for payment. For example, if  
16 a home is weatherized using USDOE funds, Company funds, and LIHEAP funds, then  
17 DE staff would review the reimbursement request three times for authorization of  
18 payment from each fund and enter each of the three requests into separate ledgers.  
19 Monthly, DE authorizes subgrantee payment of funds. Annually, DE issues subgrantee  
20 weatherization contracts, assigns a risk assessment to each subgrantee, hosts a technical  
21 training in Jefferson City, conducts at least one on-site fiscal and procedural monitoring  
22 of each subgrantee (Schedule SEK – 2 and 3), conducts two on-site technical monitorings  
23 of each subgrantee (Schedule SEK – 4), and conducts one desk monitoring of a specified

1 number of subgrantee client files based on the subgrantee's risk assessment score. Each  
2 subgrantee receives a risk assessment of low, medium, or high risk that is based on  
3 several factors including: organization management, expenditures, production, and prior  
4 monitoring risks. The higher the risk assessment score, the more monitoring DE  
5 conducts and client files which are reviewed. USDOE requires an on-site technical  
6 monitoring of a percentage of homes per subgrantee, based on USDOE rules. DE adds  
7 homes to this requirement in order to monitor homes from each funding source.

8 **Q. How many DE staff are assigned to the weatherization program?**

9 A. DE has seven full time staff and several part time staff, whose total time is equivalent to  
10 an additional three full time staff positions. Several DE staff are credentialed through  
11 certifications to ensure administration of LIWAP in compliance with USDOE program  
12 guidelines. USDOE requires some DE staff to be certified quality control inspectors  
13 ("QCI"). Additionally, some DE staff are Certified Building Analysts and Certified  
14 Healthy Home Specialists. In contrast, DE's Weatherization Program, in 2003 (the first  
15 year DE administered the Company's weatherization program), had one full time staff  
16 and three part time non-certified staff administering both LIWAP and the Company's  
17 program. At that time, DE's administrative costs for LIWAP were low resulting in ample  
18 funding for administration of both LIWAP and the Company's weatherization program.  
19 However, several factors have occurred since then which have impacted DE's  
20 administration. The USDOE program standards changed, a 2007 Missouri State Audit  
21 report identified deficiencies in DE's processes, and DE has assumed administration of  
22 three other IOU weatherization programs. Together, these necessitated increases in DE  
23 monitoring and oversight, credentials, and staffing.

1 **Q. What are the current sources of weatherization funding administered by DE?**

2 A. DE administers funds from four funding streams: USDOE, Low-Income Home Energy  
3 Assistance Program (“LIHEAP”), Utilicare, and four of the state’s IOUs (Ameren  
4 Missouri – electric and natural gas, Laclede Gas Company, and Liberty Utilities).  
5 Currently, DE does not administer the Kansas City Power & Light, KCP&L Greater  
6 Missouri Operations, Empire District Electric Company, Empire District Gas Company,  
7 Missouri Gas Energy, and Summit Natural Gas. However, the recent Stipulation and  
8 Agreement approved in Case No. EM-2016-0213 <sup>4</sup> allows for the transfer of  
9 administration of both Empire District’s electric and natural gas weatherization programs  
10 to DE. DE annually submits an application to receive USDOE grant funds, which has  
11 traditionally been DE’s primary source of LIWAP funding. A transfer of LIHEAP funds,  
12 to be used to weatherize homes, has provided additional funding which allows more  
13 homes to be weatherized. These funds provide a long-term – versus temporary – solution  
14 to addressing the energy burden for low-income clients. At times, DE also received  
15 Utilicare funding, from the state’s general revenue subject to the state budgetary process.  
16 DE administers all funds in accordance with USDOE LIWAP guidelines. DE does not  
17 receive any general revenue dollars towards administration of any weatherization  
18 program, nor does DE have the ability to charge an assessment for services as do the  
19 Commission and Public Counsel. In 2003, Missouri received \$5.8M in USDOE funds  
20 while today the level is \$5.5M. These funds account for DE’s costs required to oversee  
21 USDOE LIWAP, the Company’s program, the programs of the other three IOUs, and any

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<sup>4</sup> Missouri Public Service Commission Case No. EM-2016-0213. *In the Matter of The Empire District Electric Company, Liberty Utilities (Central) Co. And Liberty Sub Corp. Concerning an Agreement and Plan of Merger and Certain Related Transactions.* Stipulation and Agreement, pp 8.

1 Utilicare funds. DE administration of the LIHEAP transfer funds from DSS to DE  
2 started with FY 2014. While DE did receive 2.9 percent from LIPHEAP for personnel  
3 costs and expense and equipment costs for the current year, no administrative funding for  
4 DE was authorized the first two years of LIHEAP funding for LIWAP. Generally, all  
5 funding is received annually, but LIHEAP and Utilicare funding are subject to legislative  
6 appropriation.

7 **Q. Do organizations and companies typically charge for program administration?**

8 A. Yes. For example, DE allows its subgrantees a five percent allowance for administration.  
9 However, if the grant is less than \$350,000, then DE allows the subgrantee to request an  
10 additional five percent. The majority of subgrantees requested and received the  
11 additional five percent for the current program year. Even the Missouri State Employee  
12 Charitable Campaign receives a fee for all incurred Campaign costs. This fee varies from  
13 year to year but on average has been less than 10 percent. Table 4 shows the range of  
14 administration fees that participating charities receive.<sup>5</sup> Less than seven percent of  
15 participating charities waive an administrative fee with the majority receiving 11 – 20  
16 percent.

Admin Fee (%)	Number	Percent
0	63	6.30%
1 to 5	127	12.70%
6 to 10	170	17.00%
11 to 15	226	22.60%
16 to 20	226	22.60%
21 to 25	89	8.90%
26 to 30	42	4.20%

<sup>5</sup> Missouri State Employees Charitable Campaign. (2016). 2016 Quick Charity Reference Guide. Retrieved December 1, 2016 from [https://msecc.mo.gov/documents/2016\\_Quick\\_Charity\\_Reference\\_Guide.pdf](https://msecc.mo.gov/documents/2016_Quick_Charity_Reference_Guide.pdf).

31 to 35	28	2.80%
over 35	29	2.90%

1 In the Stipulation and Agreement to Case No. EM-2016-0213,<sup>6</sup> the Commission  
 2 approved an administrative fee of up to five percent for DE’s administration of both  
 3 Empire District’s electric and natural gas weatherization programs.

4 **V. AMEREN’S LOW-INCOME ELIGIBLE WEATHERIZATION PROGRAM**

5 **Q. Please discuss the Company’s weatherization program.**

6 A. DE administers the Company’s program according to the USDOE’s LIWAP guidelines.  
 7 The Company’s weatherization program is performing well as shown in Table 2 below.  
 8 Ameren provides service to customers in 61 (54 percent) of the 114 counties in Missouri.  
 9 Missouri received American Recovery and Reinvestment Act (“ARRA”) funding from  
 10 April 1, 2009 to June 30, 2013. Because ARRA’s LIWAP funds were required to be  
 11 expended by a deadline, they had to be utilized ahead of IOU funds. This resulted in a  
 12 surplus (“carryover”) of utility funds. However, in recent years, DE has reduced the  
 13 amount of carryover and is expending weatherization funding at their full allocations.

<b>Fiscal Year</b>	<b>Budget</b>	<b>Expenditure</b>	<b>Percent</b>	<b>Difference</b>	<b>Average Cost Per Home</b>	<b>Number Homes</b>	<b>Average Homes Per Month</b>
2013	\$1,975,074	\$1,566,150	79.30%	\$408,924	\$3,801.33	412	34.33
2014	\$1,522,231	\$1,338,415	87.92%	\$183,816	\$3,405.64	393	32.75
2015	\$1,267,559	\$1,158,136	91.37%	\$109,423	\$2,596.72	446	37.17
2016	\$1,357,128	\$1,269,464	93.54%	\$87,664	\$3,142.24	404	33.67

<sup>6</sup> Missouri Public Service Commission Case No. EM-2016-0213. *In the Matter of The Empire District Electric Company, Liberty Utilities (Central) Co. And Liberty Sub Corp. Concerning an Agreement and Plan of Merger and Certain Related Transactions.* Stipulation and Agreement, pp 8.

1 **Q. How many Ameren customers are on waiting lists for weatherization services?**

2 A. There are 2069 households statewide on waiting lists for weatherization services and 725  
 3 (35 percent) are Ameren customers as shown in Table 3. The number of households on  
 4 waiting lists throughout Missouri has decreased in the last ten years, however, the  
 5 number of Ameren customers on those lists have increased. In 2006, there were 2,800  
 6 households on waiting lists and 558 (20 percent) were Ameren customers.<sup>7</sup>

**Table 3: ER-2016-0179**

CAA	Ameren CAA?	Waiting List	Ameren Customers		
CAASTLC	Y	81	81	100.00%	
CAPNCM	Y	54	7	12.96%	
CAPNEMO	Y	31	19	61.29%	
CMCA	Y	54	11	20.37%	
CSI	Y	66	0	0.00%	
DAEOC	Y	60	29	48.33%	
EMAA	Y	134	79	58.96%	
ESC	N	88	0	0.00%	
JFCAC	Y	121	115	95.04%	
MOCA	Y	48	5	10.42%	
MVCAA	N	102	4	3.92%	
NECAC	Y	395	213	53.92%	
OACAC	N	175	0	0.00%	
OAI	N	217	0	0.00%	
SCMAA	N	84	0	0.00%	
ULMSL	Y	158	158	100.00%	
USCAA	Y	79	0	0.00%	
WCMCAA	N	122	4	3.28%	
<b>TOTAL</b>		<b>12</b>	<b>2069</b>	<b>725</b>	<b>35.04%</b>

November 30, 2016

<sup>7</sup> Missouri Public Service Commission Case No. ER-2007-0002. *In The matter of Union Electric Company d/b/a AmerenUE for Authority to File Tariffs Increasing Rates for Electric Service Provided to Customers in the Company's Missouri Service Area.* Direct Testimony of Brenda Wilbers, December 2006, pp 12, lines 17-18.



1 **Q. Has Ameren’s weatherization program been evaluated?**

2 A. Yes. A process and impact evaluation was ordered in Case No. ER-2007-0002. Further,  
3 Case No. ER-2011-0028 ordered an evaluation by an independent third party to be  
4 completed by April 2012 and every two years thereafter. The DE-administered LIWAP  
5 undergoes regular evaluations by USDOE and each installed efficiency measure must  
6 pass a cost-effective analysis, which is based on a savings to investment ratio.

7 **Q. What are some of the benefits of low-income weatherization?**

8 A. Low-income weatherization programs can reduce customer energy use and provide  
9 economic benefits for utilities, ratepayers, and local communities. Low-income  
10 households are more likely to have difficulty connecting to utility service due to  
11 outstanding account balances, have energy disruptions due to shut-offs, and experience  
12 negative health and employment outcomes due to challenges related to acquiring and  
13 maintaining basic household energy services. Low-income households are less likely to  
14 have the financial resources to make meaningful energy efficiency improvements that  
15 will reduce their energy burden. Without weatherization, homeowners may resort to  
16 using broken or malfunctioning equipment that can result in fires or carbon monoxide  
17 poisoning. Homeowners may go without heating or cooling or forgo needed medical  
18 appointments, medications, and/or food. This is particularly concerning for households  
19 with occupants who are premature babies, elderly, take medications which can affect core  
20 body temperature, or suffer chronic diseases such as asthma, chronic obstructive  
21 pulmonary disease, diabetes, or congestive heart failure. Premature babies or babies born  
22 with weakened immune systems are at a higher risk for developing respiratory syncytial  
23 virus (“RSV”) and asthma. When low-income household parents cannot establish or re-

1 establish utility services under their names, they may employ other measures to gain  
2 service such as make-shift connections from neighboring properties, utilization of gas-  
3 powered generators or charcoal grills, or creating utility accounts under the name of a  
4 minor child. The short-term fixes can have lasting negative health, safety and economic  
5 impacts on individuals and within communities. The weatherization program is intended  
6 to achieve a long-term energy solution in contrast to LIHEAP bill assistance, which is a  
7 temporary stop-gap measure that does not cure the problem of high energy use.  
8 Weatherization improves health and safety by enabling the homeowner to afford to heat  
9 their home to a comfortable level, and the risk of fire is reduced by eliminating the use of  
10 space heaters, cooking ovens, or hot plates to heat homes. Weatherization programs also  
11 have a positive impact on local economies through locally made purchases of energy  
12 efficiency related materials, equipment, and labor. The housing stock is improved when  
13 a home is weatherized, which in turn improves property values for both the homeowner  
14 and the community.

15 **Q. Are there utility benefits from low-income energy efficiency services?**

16 A. Yes. Weatherized homes have improved energy efficiency which helps low-income  
17 households to better control energy usage and reduce energy bills. When customers can  
18 afford their energy bills, there are fewer shut-offs and reconnections, fewer notices and  
19 customer calls, reduced collection costs, and lower bad debt.<sup>8</sup> This, in turn, lowers the  
20 utility's costs associated with unpaid balances, and consequently results in a positive  
21 impact on future rates for all customers.

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<sup>8</sup> M.Schweitzer. *Oak Ridge national Laboratory. Nonenergy Benefits From The Weatherization Assistance Program: A Summary of Findings From the Recent Literature*, April 2002.

1 **VI. INCOME RELATED ENERGY CONSIDERATIONS**

2 **Q. What is energy burden and energy insecurity?**

3 A. Energy burden is the portion of annual income a household pays for home energy.  
4 Energy burden disproportionately impacts low-income households. According to  
5 research in “The Home Energy Affordability Gap,” Missouri households with income  
6 between 50-100 percent of the federal poverty level (“FPL”) have a home energy burden  
7 of 16 percent of their annual income. The home energy burden increases to 29 percent  
8 for those households below 50 percent of FPL.<sup>9</sup> Energy insecurity describes a family’s  
9 ability to meet basic household energy needs. It is “...the interplay between structural  
10 conditions of housing and the costs of household energy.”<sup>10</sup> Energy insecurity occurs  
11 when one or all of three things are experienced:<sup>11</sup> 1) limited or uncertain access to  
12 energy, 2) receipt of utility termination notice, and 3) actual shut-off of utility service.

13 **Q. What factors, other than income, contribute to higher energy burden?**

14 A. A 2016 report sponsored by the American Council for an Energy-Efficient Economy  
15 (“ACEEE”) analyzed data from the U.S. Census Bureau’s American Housing Survey to  
16 examine energy burden for the largest 48 U.S. cities. The report concluded that low  
17 income households paid more per square foot for energy due to energy inefficient homes.  
18 Low-income households had median annual utility costs of \$1.41 per square foot while

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<sup>9</sup> Fisher, Sheehan & Colton. (April 2016). “The Home Energy Affordability Gap 2014: Missouri,” Public Finance and General Economics. Retrieved November 28, 2016 from [http://www.homeenergyaffordabilitygap.com/03a\\_affordabilityData.html](http://www.homeenergyaffordabilitygap.com/03a_affordabilityData.html)

<sup>10</sup> Hernandez, D., Aratani, Y., & Jiang, Y. (2014). Energy Insecurity Among Families with Children, New York: *National Center for Children in Poverty*, Columbia University Mailman School of Public Health. Retrieved October 4, 2016 from [http://www.nccp.org/publications/pdf/text\\_1086.pdf](http://www.nccp.org/publications/pdf/text_1086.pdf)

<sup>11</sup> E. March. (January 2011). *Children’s HealthWatch*. Behind Closed Doors, The hidden health impacts of being behind on rent.

1 non-low-income had \$1.17. This resulted in a median energy burden of 7.2 percent  
2 versus 2.3 percent.<sup>12</sup>

3 **Q. Is it true that low-income customers as a group consume more energy than other**  
4 **customers?**

5 A. No. While it is true that LIHEAP recipients, receiving targeted subsidies to offset energy  
6 costs, exhibit energy use resembling that of non-low income households, as a group low-  
7 income households actually use less energy than non-low income households. Utilities  
8 generally cannot determine household income from customer account information and  
9 can only determine low-income status by identifying accounts receiving bill assistance  
10 payments. The majority of low-income households do not receive bill assistance as a  
11 direct subsidy offsetting energy costs. Therefore LIHEAP recipients are not  
12 representative of low-income households in general. Other data sources must be  
13 examined to evaluate average low-income household energy use relative to households at  
14 other income levels. The LIHEAP Home Energy Notebook (“Notebook”) provides  
15 insight regarding the direct relationship between income and consumption (i.e.: more  
16 income, more consumption; less income, less consumption). The Notebook includes  
17 national and regional data on four categories of users: all households, non-low income  
18 households, low-income households, and LIHEAP recipient households. Below is an  
19 abbreviated copy of Table A-2 from the last published Notebook in 2011, which  
20 compares average consumption per household by end user and fuel source. Midwest  
21 Households across all categories consumed more electricity when compared to all  
22 categories of US households.

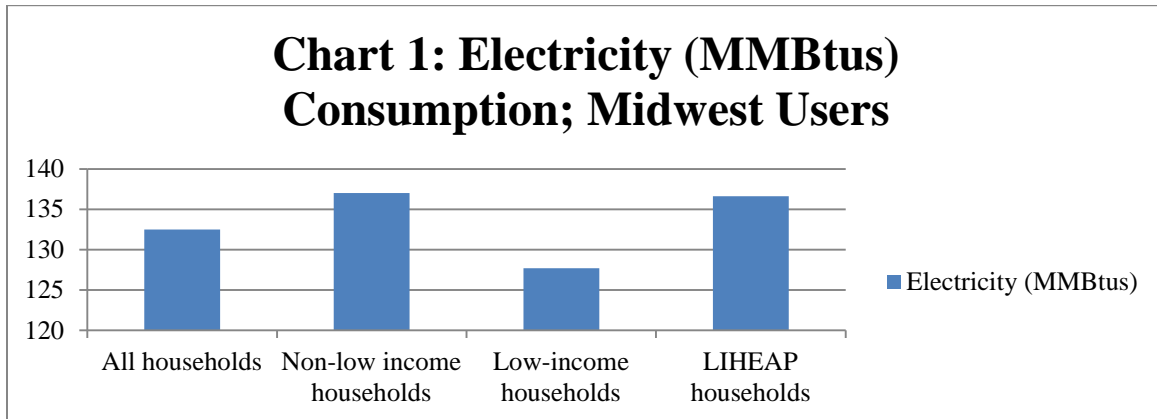
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<sup>12</sup> Drehobl, A. & Ross, L. (April 2016). *Lifting the High energy Burden in America’s Largest Cities: How Energy Efficiency Can Improve Low Income and Underserved Communities*. Retrieved September 9, 2016 from <http://aceee.org/research-report/u1602>

Notebook Table A-2:<sup>13</sup> *Residential energy: Average consumption in MMBtus per household, by all fuels and specified fuels, by all, non-low income, low income and LIHEAP recipient households, by Census region, FY 2011*

Census Region	Natural Gas (MMBtus)	Electricity (MMBtus)	Fuel Oil (MMBtus)	Kerosene (MMBtus)	LPG (MMBtus)	Other (MMBtus)
US – All households	99.1	115.4	62.7	151.7	55.7	112.5
US – Non-low income households	105.3	120.1	67.6	160.9	62.1	120.0
US – Low income households	87.5	105.5	54.4	137.7	54.5	98.4
US – LIHEAP recipient households	107.3	117.9	50.5	155.6	78.3	112.0
Midwest – All households	120.2	132.5	61.3	131.6	92.2	131.1
Midwest – Non-low income households	126.0	137.0	67.5	139.2	NC	132.6
Midwest – Low income households	110.4	124.7	53.7	122.0	92.2	125.7
Midwest – LIHEAP recipient households	124.0	136.6	50.5	153.5	90.0	107.7

<sup>13</sup> U.S. Department of Health and Human Services Administration for Children and Families Office of Community Services Division of Energy Assistance. LIHEAP Home Energy Notebook For Fiscal Year 2011, June, 2014. Table A-2: LIHEAP defines low-income as those which are at or below 150 percent of the poverty guidelines and do not receive LIHEAP assistance. FY2011 is the most current publication.



1 Low-income households, in the Midwest, consumed less electricity than all Midwestern  
2 households combined – 124.7 MMBtus versus 132.5 MMBtus (Chart 1), while **non**-low  
3 income households consumed more electricity than all other users – 137.0 MMBtus. The  
4 electricity consumption of LIHEAP recipient households in the Midwest resembled that  
5 of non-low income household consumption. If LIHEAP recipient homes could reduce  
6 energy consumption through energy efficiency measures and/or a rate structure that  
7 encouraged energy conservation, then their energy burden could be reduced and LIHEAP  
8 dollars would be more impactful.

9 **Q. What are other ways to reduce energy burden in addition to weatherization?**

10 A. Energy burden can be reduced through energy efficiency improvements incremental to  
11 weatherization and through rate structures that encourages conservation. In its Report  
12 and Order for Case No. 18,626, the Missouri Commission said, “Rate design should  
13 encourage the efficient use of energy and recognize and reward customers who choose to  
14 conserve.”<sup>14</sup> The Commission ordered a rate design investigation and in the order called  
15 the declining block rate structure a promotional rate structure that encouraged and

<sup>14</sup> Missouri Public Service Commission Case No. 18,626. (1976). *In the Matter of the Complaint of St. Joseph Light & Power Company as to Unreasonableness of Electric, Gas, Steam Heating and High Pressure Steam Rates Now on File and in Effect, and Application to Establish New Rates and Charges for Such Services*. Report and Order, pp 22-23.

1 rewarded consumption and was "...an anachronism which fails to rationally meet the  
2 changing circumstances which have substantially increased the cost of electric  
3 service...".<sup>15</sup> Roger Colton, economist and low-income advocate, stated in his testimony  
4 before the Minnesota Public Utilities Commission that low- and average- use customers  
5 save under an inclining block rate design.

6 "When those customers cannot afford to pay their energy bills,  
7 price signals are not effective. The viability of sending a price  
8 signal assumes that the customer has the ability to *receive and act*  
9 *upon* the signal..."<sup>16</sup>

10 DE witness Martin Hyman will offer detailed testimony on rate design.

11 **VII. CONCLUSIONS**

12 **Q. Please summarize your testimony.**

13 A. Ameren's weatherization program should continue and be funded at its present level of  
14 \$1,200,000. The Commission should direct Ameren to convene interested stakeholders  
15 and develop a report outlining options for future Weatherization program administration  
16 to be submitted with Ameren's direct testimony in the next general rate proceeding.

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

18 A. Yes, thank you.

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<sup>15</sup> Missouri Public Service Commission Case No. EO-77-56. *In the Matter of the Investigation of the Rate Design and Transit Department Subsidy of St. Joseph Light & Power Company*. Order dated September 14, 1976.

<sup>16</sup> Colton, R. (2014). *FSC's Law & Economics Insights*, Issue 14-5. Retrieved November 14, 2016 from [http://www.fsconline.com/downloads/FSC%20Newsletter/news2014/n2014\\_0910.pdf](http://www.fsconline.com/downloads/FSC%20Newsletter/news2014/n2014_0910.pdf)