

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 No.: GR-2019-0077

MISSOURI PUBLIC SERVICE COMMISSION

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

CASE NO. GR-2019-0077

DIRECT TESTIMONY

OF

SHARLET E. KROLL

ON

BEHALF OF

MISSOURI DEPARTMENT OF ECONOMIC DEVELOPMENT

DVISION OF ENERGY

Jefferson City, Missouri
April 19, 2019

(Revenue Requirement)

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

In the Matter of the Propriety of the Rate)
Schedules for Natural Gas Service of)
Union Electric Company, Doing Business)
As Ameren Missouri)

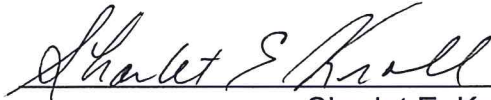
File No. GR-2019-0077

AFFIDAVIT OF SHARLET E. KROLL

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

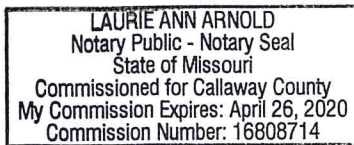
Sharlet E. Kroll, of lawful age, being duly sworn on her oath, deposes and states:

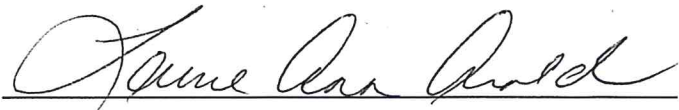
1. My name is Sharlet E. Kroll. I work in the City of Jefferson, Missouri, and I am employed by the Missouri Department of Economic Development, Division of Energy as Planner III.
2. Attached hereto and made a part hereof for all purposes is my Direct Testimony on behalf of the Missouri Department of 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 19th day of April 2019.





Notary Public

My commission expires: 4/26/20

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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
4 720, PO 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 III.

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

9 A. I am testifying on behalf of DE, an intervener 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 federal
13 Weatherization Assistance Program (“WAP”) funding in Missouri. DE is also
14 responsible for administering the federal State Energy Program (“SEP”) in
15 Missouri. The SEP, established by the United States Congress in 1978, is
16 managed nationally by the United States Department of Energy (“DOE”). DE’s
17 powers and duties are outlined in Section 640.150, RSMo.

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

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

1 **Q. What specific work experiences assisted you most in preparation of this**
2 **testimony?**

3 A. From March 2017 to November 2018, I was DED-DE's Administrative Manager of
4 the State WAP where I supervised the procedural operations and staff. I have over
5 25 years of state government program experience in areas related to low-income,
6 public health, and energy efficiency ("EE"). I started my career as a Social Service
7 Worker with the Missouri Department of Social Services ("DSS"). During my
8 service with DSS, I conducted home visits with seniors and adults with disabilities.
9 I was also cross-trained to receive and process Medicaid applications related to
10 Old Age Assistance and the Permanently and Totally Disabled. From 2002 to
11 2015, I was employed by the Missouri Department of Health and Senior Services.
12 When I joined the DE team in 2015, I represented DE at investor-owned utility
13 ("IOU") advisory group meetings and worked on a project to detail the EE case
14 history of each utility. I am currently completing my national certification for
15 Building Analyst through the Building Performance Institute ("BPI"). Additionally, I
16 recently attended the Healthy Homes Assessment Principles and Practice Course
17 taught by Children's Mercy in Kanas City who is a National Healthy Homes
18 Training Center, and will take the written exam for BPI certification.

19 **Q. Please describe your educational background.**

20 A. I was awarded dual Bachelor of Arts degrees in Sociology and Political Science in
21 1993 and a Master of Public Affairs in 2018 from the University of Missouri –
22 Columbia.

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

2 A. I reviewed DE weatherization files, the Union Electric Company d/b/a Ameren
3 Missouri (“Ameren Missouri” or “Company”) Weatherization Productions Reports
4 that DE files annually with the PSC, past Stipulation and Agreements and Report
5 and Orders from previous Company rate cases, Missouri’s Annual State Plan
6 Application for DOE Funding, Missouri Weatherization Assistance Program
7 Technical Manual, Missouri Weatherization Assistance Program Procedural
8 Manual, weatherization fact sheets, federal regulations and rules: 10 Code of
9 Federal Regulations (“CFR”) Part 440 and DOE Financial Assistance Rules at 2
10 CFR 200, and weatherization program guidance (“WPN”).

11 **II. PURPOSE AND SUMMARY OF TESTIMONY**

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

13 A. The purpose of my testimony is to present DE’s recommendations regarding
14 administration and funding of the Company’s income-eligible weatherization
15 assistance program (“IEWAP”). I will provide information on (1) weatherization, (2)
16 the relationship of the Company’s IEWAP to the DOE WAP which is administered
17 by DE, (3) the history and performance of the Company’s IEWAP, (4) and discuss
18 energy burden and other household income related considerations.

19 **Q. What are your recommendations regarding the Company’s Program?**

20 A. DE requests that the Commission continue the current level of funding for the
21 Company’s program at \$263,000, along with any associated roll-over provisions,
22 in order to alleviate the energy burdens discussed in Section VII. I also
23 recommend that the Commission authorize the Company to work with DE to

1 transition administration of the Company's IEWAP back to the Company and that
2 the Commission allow the Company's IEWAP to be administered differently than
3 the DOE WAP guidelines. Lastly, DE is interested in continuing in an advisory role
4 to support the program and requests that the Company hold at least one annual
5 in-person meeting with its weatherization agencies and any interested
6 stakeholders. The purpose of this meeting would be to review IEWAP budget and
7 expenditures, program implementation, and opportunities for improvement in
8 program delivery and customer service.

9 **III. WEATHERIZATON OVERVIEW**

10 **Q. What is weatherization?**

11 A. Weatherization is a program that takes whole-house approach to EE. EE
12 measures are deemed cost-effective for installation on a case-by-case basis using
13 modeling calculations derived from home audits conducted by BPI-certified
14 weatherization professionals. Thus, two homes on the same street could receive
15 different weatherization measures because of each home's unique needs. The
16 most commonly known income-based weatherization program is the DOE WAP,
17 which is an evidence-based and cost-effective national model.¹ However, there
18 are other weatherization programs. All ten of Missouri's regulated utilities have
19 IEWAPs. The Low-Income Home Energy Assistance Program ("LIHEAP") also
20 funds WAP.

¹ U.S. Department of Energy. (2018). Weatherization Works! DOE/1561.
https://www.energy.gov/sites/prod/files/2018/06/f52/EERE_WAP_Fact%20Sheet-v2.pdf

1 **Q. What are some benefits of weatherization?**

2 A. Weatherization can reduce customer energy use and provide economic benefits
3 for utilities, ratepayers, and local communities. Low-income households are more
4 likely to have difficulty connecting to utility service due to outstanding account
5 balances, have energy disruptions due to shut-offs, and experience negative
6 health and employment outcomes due to challenges related to acquiring and
7 maintaining basic household energy services.² Low-income households are less
8 likely to have the financial resources to make meaningful energy efficiency
9 improvements that will reduce their energy burden.³ Without weatherization,
10 homeowners may resort to using broken or malfunctioning equipment that can
11 result in fires or carbon monoxide poisoning.⁴ Homeowners may go without
12 heating or cooling or forgo needed medical appointments, medications, and/or
13 food.⁵ This is particularly concerning for households with premature babies,
14 elderly persons, or persons who suffer from chronic diseases such as asthma,
15 chronic obstructive pulmonary disease, diabetes, or congestive heart failure.⁶
16 When low-income household parents cannot establish or re-establish utility
17 services under their names, they may employ other measures to gain service such

² Hernandez, D. (2015). Sacrifice Along the Energy Continuum: A Call for Energy Justice. *Environmental Justice*. 2015 August 18; 8(4): 151-156. doi: 10.1089/env.2015.0015.

³ Ross, L., Drehobl, A., & Stickles, B. (2018). The High Cost of Energy in Rural America: Household Energy Burdens and Opportunities for Energy Efficiency. *American Council for an Energy-Efficient Economy*.

⁴ Hawkins, B., Tonn, B., (2016) Evaluation of DOE's WAP Health and Household-Related Benefits. *Home Energy*. Fall 2016, PP 16-22. www.homeenergy.org

⁵ Hernandez, D. (2016). Understanding 'energy insecurity' and why it matters to health. *Social Science & Medicine*. 2016, October; 167: 1-10, doi: 10.1016

⁶ World Health Organization. (2006). Report on the WHO technical meeting on quantifying disease from inadequate housing. Bonn, Germany. November 2005. EUR/00/50, PP 6-7.

http://www.euro.who.int/_data/assets/pdf_file/0007/98674/EBD_Bonn_Report.pdf?ua=1

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

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

16 A. Yes. Weatherized homes have improved energy efficiency, which helps low-
17 income households to reduce energy usage and better manage energy bills. When
18 customers can afford their energy bills, there are fewer shut-offs and
19 reconnections, fewer notices and customer calls, reduced collection costs, and

⁷ Tonn, B., Rose, E., Hawkins, B., & Conlon, B. (2014). Health and Household-Related Benefits Attributable to the Weatherization Assistance Program. *Oak Ridge National Laboratory*. ORNL/TM-2014/345.

1 lower bad debt.⁸ This, in turn, lowers the utility's costs associated with unpaid
2 balances and results in a positive impact on future rates for all customers.

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

4 **Q. Please describe the federal WAP.**

5 A. Congress established the federal WAP in response to the energy crisis of the early
6 1970s. WAP is the nation's largest residential energy efficiency program, and it
7 provides cost-effective, energy-efficient home improvements to Missouri's low
8 income households, especially households in which the elderly, children, those
9 with physical disadvantages, and others most affected by high utility costs reside.⁹
10 The program is intended to be a more effective, long-lasting solution to address
11 energy insecurity. Its goal is to lower utility bills and improve comfort while
12 ensuring health and safety. The WAP utilizes a "whole house retrofit" approach to
13 building improvement. Per Missouri's Weatherization Assistance Program
14 Technical Manual,¹⁰ all participating homes must undergo an energy audit to
15 identify energy efficiency and health and safety opportunities, such as
16 malfunctioning or substandard equipment. Home efficiency and health and safety
17 measures which have been determined to be cost-effective or necessary for
18 occupant health and safety are installed by trained weatherization professionals.¹¹

⁸ M.Schweitzer. (April 2002). Nonenergy Benefits From The Weatherization Assistance Program: A Summary of Findings From the Recent Literature, *Oak Ridge National Laboratory*.

⁹ Tonn, B., Rose, E., Hawkins, B., & Conlon, B. (2014). Health and Household-Related Benefits Attributable to the Weatherization Assistance Program. *Oak Ridge National Laboratory*. ORNL/TM-2014/345.

¹⁰ Missouri's Technical and Procedural Manuals can be accessed at <https://energy.mo.gov/assistance-programs/liwap/facts#wxopmanual>

¹¹ U.S. Department of Energy. (2016). WPN 16-8: Revised Energy Audit Approval Procedures and Other Related Audit Issues.

1 Since July 1, 2015, every DOE-funded weatherized home is required to pass a
2 thorough, quality-control inspection (“QCI”) before the dwelling can be reported as
3 completed.¹² The final inspection must certify that all repairs and installations were
4 completed in a professional manner and in accordance with the DOE Technical
5 Standards. Finally, per 10 CFR 440.18(e)(2)(iii) regarding allowable expenditures,
6 homes previously weatherized on or after September 30, 1994 cannot be re-
7 weatherized except in cases where weatherization work was destroyed due to
8 disaster events.¹³

9 **V. THE COMPANY’S INCOME-ELIGIBLE WEATHERIZATION ASSISTANCE**
10 **PROGRAM**

11 **Q. What entity administers the Company’s IEWAP?**

12 A. DE administers the Company’s IEWAP as specified per Case No. GR-2007-0003
13 and the Cooperative and Funding Agreement dated June 28, 2007.¹⁴ DE oversees
14 contractor (“Subgrantee”) delivery of program services within the Company’s
15 service area. There are seven Subgrantees, which are Community Action
16 Agencies (“CAA”) contracted by DE to provide approval and installation of IEWAP
17 measures for some of the most vulnerable households in the Company’s service
18 territory: Central Missouri Community Action (“CMCA”), Delta Area Economic
19 Opportunity Corporation (“DAEOC”), East Missouri Action Agency (“EMAA”),
20 Missouri Ozarks Community Action, Inc. (“MOCA”), North East Community Action

¹² Ibid

¹³ U.S. Department of Energy. (2016). WPN 17-1 Program Year 2017 Weatherization Grant Guidance.

¹⁴ The Cooperative and Funding Agreement is dated June 28, 2007 and is between the Company, EIERA, PSC, and DE.

1 Corporation (“NECAC”), South Central Missouri Community Action Agency
2 (“SCMAA”), and West Central Missouri Community Action Agency (“WCMCAA”).

3 **Q. How are the Subgrantees paid for their IEWAP activities?**

4 A. The Subgrantees receive payment through the Environmental Improvement and
5 Energy Resources Authority (“EIERA”). EIERA was established in 1972 by the
6 Missouri General Assembly and is housed within the Missouri Department of
7 Natural Resources (“DNR”). EIERA is a quasi-governmental environmental
8 finance agency that has a five-member board whose members are appointed by
9 the Governor for a three-year term and confirmed by the Senate. EIERA does not
10 receive state general revenue funds. Since 2003, all DE-administered utility
11 IEWAP funds have been held by EIERA. Every year, the Company disburses its
12 entire annual IEWAP budget to EIERA, which holds the funds in an interest-
13 bearing account and issues monthly reimbursement payments to the Subgrantees
14 on behalf of DE.¹⁵ The Cooperative and Funding Agreement¹⁶ allows EIERA to
15 retain up to \$3,000 of Company IEWAP funds in order to cover legal and
16 accounting fees incurred from holding the Company’s funds.

17 **Q. How many households have been served with IEWAP funds?**

18 A. DE Subgrantees have provided weatherization services to 766 households in the
19 Company’s service area with IEWAP funds from 2008 through February 28, 2019,
20 as shown in Table 1 below.

¹⁵ Missouri Public Service Commission Case No. GR-2003-0003. *In the Matter of Union Electric Company d/b/a AmerenUE for Authority to File Tariffs Increasing Rates for Natural Gas Service Provided to Customers in the Company’s Service Area*. Stipulation and Agreement, Section 16, Page 8. March 8, 2007.

¹⁶ The Cooperative and Funding Agreement is dated June 28, 2007 and is between the Company, EIERA, PSC, and DE.

1 **Table 1. Company IEWAP statistics for 2007-2019.**

Table 1					
YEAR	BUDGET	EXPENDITURE	PERCENT	HOMES	COST/HOME
2007-2008*	\$263,000	\$220,467	83.83%	82	\$2,688.62
2008-2009	\$232,173	\$216,880	93.41%	74	\$2,930.81
2009-2010	\$305,898	\$274,877	89.86%	86	\$3,196.24
2010-2011	\$294,021	\$133,784	45.50%	47	\$2,846.47
2011-2012	\$423,237	\$161,149	38.08%	30	\$5,371.63
2012-2013	\$540,149	\$356,943	66.08%	69	\$5,173.09
2013-2014	\$446,206	\$276,136	61.89%	68	\$4,060.82
2014-2015	\$433,119	\$387,185	89.39%	110	\$3,519.86
2015-2016	\$308,696	\$298,917	96.83%	58	\$5,153.74
2016-2017	\$272,772	\$238,105	87.29%	66	\$3,607.65
2017-2018	\$297,805	\$254,175	85.35%	59	\$4,308.05
2018-2019**	\$307,126	\$84,560	27.53%	17	\$4,974.12
TOTAL	\$4,124,202	\$2,903,178	70.39%	766	\$3,790.05
Program year is November 1 - October 31					
* The first year of DE administration was a partial year and the first reimbursements were not submitted & paid until 2008.					
** Represents homes completed November 1, 2018 through February 28, 2019 which is four months or 33% of the contract year.					

2
 3 Further, the expenditure levels under the IEWAP over the past few years have
 4 exceeded 85 percent of available funds. This, along with the need to reduce the
 5 energy burdens of low-income customers, reinforces the need for continued
 6 funding.

7 **Q. Were there past challenges with fully spending IEWAP funds?**

8 A. Yes. The first program year (2007-2008) was a partial year (nine months), but 83
 9 percent of Company funds were expended. Additionally, Missouri received
 10 American Recovery and Reinvestment Act of 2009 (“ARRA”) funding from April 1,
 11 2009 to June 30, 2013. Since ARRA’s DOE WAP funds were required to be
 12 expended by a deadline, they had to be utilized in advance of the utility funds. This
 13 resulted in unspent utility funds in Program Years (“PY”) 2011 through 2012; those
 14 funds were carried into future years.

1 **Q. What steps are taken to ensure IEWAP funds are used in the year received?**

2 A. In order to maximize the number of homes which can be weatherized, subgrantees
3 first expend those funds which expire earliest and have no carryover provision, the
4 Subgrantees work with DE to ensure continuity in the use of utility program funds,
5 with the goal of expending 100 percent of the available funds. One strategy
6 towards accomplishing this goal is for Subgrantees to relinquish funds and allow
7 them to be reallocated to other Subgrantees that have exhausted their funds. In
8 2017-2018, DE reallocated funds between two Subgrantees, which resulted in four
9 of the seven Subgrantees fully expending their IEWAP funds.

10 **Q. Please further describe the information presented above in Table 1.**

11 A. Table 1 includes the annual budgets, expenditures, and average cost per unit
12 (“APCU”) dwelling expenditure for each year that DE has administered the
13 Company’s weatherization program. DE uses the number of homes completed
14 and level of expenditures to calculate the APCU.

15 **Q. How does the APCU affect the program?**

16 A. For the current PY, DOE requires DE to be at or below \$7,371 ACPU.¹⁷ Since
17 ACPU is calculated by comparing total expenditures to total homes weatherized,
18 DE can and does allow individual homes to exceed this amount in order to achieve
19 the goal of having all cost-effective measures installed in every home. However,
20 DE’s operational policies specify a \$12,000 threshold amount whereby the
21 subgrantee must obtain DE review and written approval prior to installation of

¹⁷ DOE WAP guidelines allow DOE funds to be leveraged with other fund sources and calculation of ACPU by fund source.

1 measures. It is uncommon for Subgrantees to have homes exceeding this
2 threshold.

3 **Q. Are there waiting lists for weatherization services?**

4 A. There are 1,876 homes statewide on Subgrantee waiting lists for weatherization
5 services, of which 97 (or 5.17 percent) are served by the Company. Subgrantees
6 use waiting lists to fairly manage the order in which applicants who have been
7 approved for weatherization receive services to avoid preferential treatment.

8 **Q. Do the efficiency measures and terms of service offered under the**
9 **Company’s IEWAP differ from those offered under DOE WAP?**

10 A. Not at this time. DE administers all utility IEWAP funds in accordance with DOE
11 WAP guidelines. In the case of the Company’s IEWAP funds, this is specified in
12 the Cooperative and Funding Agreement and the Stipulation and Agreements
13 transferring administration of the IEWAP to DE.

14 **Q. What do these agreements direct regarding DE’s administration of the**
15 **Company’s IEWAP?**

16 A. The Stipulation and Agreement to Case No. GR-2007-0003 states that,
17 “The program details shall be determined by the Collaborative established in Case
18 No. GR-2003-0517.”¹⁸ It further states:

19 Funds will be dispersed to weatherization agencies based upon the
20 recommendations of the DNR Energy Center and the Collaborative to assure
21 program consistency between the AmerenUE low income weatherization
22 program and the federal weatherization program administered by the DNR.¹⁹

¹⁸ Missouri Public Service Commission Case No. GR-2007-0003. *In the Matter of Union Electric Company d/b/a AmerenUE for Authority to File Tariffs Increasing Rates for Natural Gas Service Provided to Customers in the Company’s Service Area*. Stipulation and Agreement, Section 16, Page 7. March 8, 2007.

¹⁹ *Ibid.* Section 16, Page 8.

1 Additionally, the Stipulation and Agreement in Case No. GR-2010-0363 states:

2 \$263,000 of the \$700,000 referenced above shall be forwarded to the
3 Environmental Improvement and Energy Resources Authority (EIERA) for
4 administration by MDNR for the weatherization of homes of Ameren Missouri
5 low-income natural gas heating customers.²⁰

6 **Q. What does the Cooperative and Funding Agreement direct regarding DE**
7 **administration of the Company’s IEWAP?**

8 A. The Cooperative and Funding Agreement is between DE, the Company, EIERA,
9 and the PSC Staff and is dated June 28, 2007. Under the terms of the agreement,

10 “Monies from the Fund will be spent in a manner consistent
11 with the Federal Weatherization Assistance Program as
12 Administered by DNR.”²¹

13 The “Fund” in this quote refers to the Ameren Missouri IEWAP fund held by the
14 EIERA.

15 **Q. Why has DE supported uniformity in the services offered under the**
16 **Company’s IEWAP and those offered under DOE WAP?**

17 A. Uniformity of the terms and services offered under the DOE and Company funds
18 has allowed DE to use many of the same systems and processes to administer the
19 Company’s IEWAP as are used to administer the DOE WAP, reducing the
20 resources and costs to DE of administering the Company’s program. DE agreed
21 to provide administrative services without compensation to DE in order to ensure
22 that the Subgrantees would receive more funds to support their weatherization
23 activities. DE was able to forgo compensation because, in the past, the total

²⁰ Missouri Public Service Commission Case No. GR-2010-0363. *In the Matter of Union Electric Company d/b/a AmerenUE for Authority to File Tariffs Increasing Rates for Natural Gas Service Provided to Customers in the Company’s Missouri Service Area*. Stipulation and Agreement, Section 6A, Page 3. January 4, 2011.

²¹ Cooperative and Funding Agreement between DE, EIERA, PSC Staff, Company. Dated June 28, 2007.

1 funding for all DE-administered utility IEWAPs was relatively small. As these
2 programs have grown and DOE WAP requirements have increased, it has become
3 more difficult for DE to provide administrative services without compensation.

4 **Q. Is DE recommending that the Company assume administrative**
5 **responsibilities for its IEWAP?**

6 A. Yes. In recent utility cases,²² compensating DE for its administration of utility
7 IEWAPs using ratepayer funds has been a contentious issue. As a result, DE is
8 prepared to work with Ameren Missouri to ensure a smooth transition of
9 administrative functions to the Company.

10 **Q. Are there potential benefits to allowing the Company to administer its own**
11 **IEWAP?**

12 A. Yes. The Company will have additional flexibility in delivering its program, such as:
13 (1) installing additional cost-effective measures and/or re-weatherizing homes that
14 were weatherized after September 30, 1994; (2) when weatherizing rental
15 properties, allowing cost-effective replacement of refrigerators, water heaters,
16 heating, and air conditioners; and (3) working with other utilities to co-deliver
17 IEWAPs.

18 **Q. What is the potential benefit to re-weatherizing homes?**

19 A. Homes weatherized in Missouri between 1994 and 2009 did not have as many EE
20 measures installed compared to homes weatherized after 2009 because the ACPU

²² Missouri Public Service Commission Case No. GR-2018-0013. *In the Matter of Liberty Utilities (Midstates Natural Gas) corp. d/b/a Liberty Utilities' Tariff Revisions Designed to Implement a General Rate Increase for Natural Gas Service in the Missouri Service Areas of the Company*. Stipulation and Agreement.
Missouri Public Service Commission Case No. GR-2017-0215. *In the Matter of Laclede Gas Company's Request to Increase Its Revenues for Gas Service*. Stipulation and Agreement.

1 amount during that time was significantly less. Thus, these homes represent
2 additional energy savings that customers and the Company could capture. EE
3 technology has advanced substantially over the past 24 years, and EE measures
4 installed in 1994 may have exceeded their useful lives.

5 **Q. What is the opportunity for installing all cost-effective EE measures in rental**
6 **properties?**

7 A. The installation of heating systems, air conditioners, refrigerators, and water
8 heaters in rental units is viewed as “enhancing” the property for the landlord and
9 is therefore under DOE WAP guidelines. If Ameren Missouri administers its own
10 program, it will have the flexibility to achieve additional savings that are not
11 possible using DOE WAP funds.

12 **Q. Are there opportunities for program co-delivery if Ameren Missouri**
13 **administers its own program?**

14 A. Yes. Ameren Missouri will have the flexibility to work with other utilities to
15 potentially deliver additional services.

16 **Q. Would DE be willing to serve in an advisory capacity for the program?**

17 A. Yes. DE serves in an advisory capacity for other utility programs. DE’s
18 recommendations have focused on assisting with elements of program
19 management, including: (1) local agency contracts that specify budget amounts
20 and processes; (2) administrative monitoring requirements; (3) quarterly process
21 reports for all Subgrantees; and (4) annual on-site meetings with all Subgrantees.

1 **VI. DE'S ADMINISTRATION OF WEATHERIZATION ASSISTANCE PROGRAMS**

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

3 A. DE administers funds from three funding streams: DOE, LIHEAP, and some IOUs.
4 Currently, all funds are administered in accordance with DOE WAP guidelines.
5 From 1977 through February 28, 2019, funds administered by DE helped
6 weatherize 191,938 Missouri homes. DE annually submits an application to
7 receive DOE grant funds, which has traditionally been DE's primary source of WAP
8 funding. Beginning in 2013, LIHEAP funds have transferred from DSS to DE to
9 weatherize homes, providing a long-term – versus temporary – solution to
10 addressing the energy burden for low-income clients.

11 **Q. Which utility IEWAPs are administered by DE?**

12 A. DE administers six of the 10 utility IEWAPs: the Company, Empire District Electric,
13 Empire District Gas, Ameren Electric, Liberty Utilities, and Spire – Western District
14 Kansas City Power and Light ("KCP&L"), KCP&L Greater Missouri Operations,
15 Summit Natural Gas, and Spire Western District self-administer their IEWAPS.

16 **Q. Has there been any recent changes to DE's administration of some**
17 **IEWAPs?**

18 A. Yes. Per the Stipulation and Agreements in Case Nos. GR-2017-0215 and GR-
19 2018-0013,²³ DE will return administration of Spire's and Liberty Utilities' IEWAPs
20 by October 31, 2019 to each respective company. Additionally, DE's future
21 administration of Ameren Electric's IEWAP is uncertain. Per Case No. ER-2016-

²³ Ibid

1 0179, Ameren along with stakeholders compiled a report to the Commission
2 regarding future DE administration of Ameren Electric's IEWAP.

3 **VII. INCOME-RELATED ENERGY CONSIDERATIONS**

4 **Q. What is meant by “energy burden” and “energy insecurity?”**

5 A. Energy burden is the portion of annual income that a household pays for home
6 energy. Energy burdens are higher for low-income households. According to
7 research in “The Home Energy Affordability Gap,” Missouri households with
8 income between 50-100 percent of the federal poverty level (“FPL”) have a home
9 energy burden of 16 percent of their annual income. The home energy burden
10 increases to 29percent for those households below 50 percent of FPL.²⁴

11 Energy insecurity describes a family's ability to meet basic household energy
12 needs. It is, “...the interplay between structural conditions of housing and the costs
13 of household energy.”²⁵ Energy insecurity occurs when one or all of three things
14 are experienced 1) limited or uncertain access to energy; 2) receipt of a utility
15 termination notice; or, 3) the actual discontinuation of utility service.²⁶

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

17 A. A 2016 report examining energy burdens in the largest 48 US cities concluded that
18 low-income households paid more per square foot for energy due to energy
19 inefficient housing. Low-income households had median annual utility costs of

²⁴ Fisher, Sheehan & Colton. (April 2019). “The Home Energy Affordability Gap 2018: Missouri,” Public Finance and General Economics. Retrieved from http://www.homeenergyaffordabilitygap.com/03a_affordabilityData.html

²⁵ 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

²⁶ E. March. (January 2011). *Children's HealthWatch*. Behind Closed Doors, The hidden health impacts of being behind on rent.

1 \$1.41 per square foot, while non-low-income households had median annual utility
2 costs of \$1.17 per square foot. This resulted in a median energy burden of 7.2
3 percent for low-income households, versus 2.3 percent for non-low-income
4 households.²⁷

5 **Q. Is it true that low-income customers as a group consume more natural gas**
6 **than other customers?**

7 A. No. The LIHEAP Home Energy Notebook (“Notebook”) provides insight regarding
8 the relationship between income and consumption. The Notebook includes
9 national and regional data on four categories of users: all households, non-low
10 income households, low-income households, and LIHEAP recipient households.
11 Below is an abbreviated copy of Table A-2 from the last published Notebook
12 FY2014,²⁸ which compares average consumption per household by end user and
13 fuel source. Midwest Households across all categories consumed more natural
14 gas when compared to all categories of US households.

²⁷ 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>

²⁸ 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 2014, June, 2016. Table A-2, pp. 95. LIHEAP defines low-income as those which are at or below 150 percent of the poverty guidelines and do not receive LIHEAP assistance. FY2014 is the most current publication.

LIHEAP Home Energy Notebook Table A-2: 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 2014. Page 104.

Census Region	All Fuels (MMBtus)	Natural Gas (MMBtus)	Electricity (MMBtus)	Fuel Oil (MMBtus)	Kerosene (MMBtus)	LPG (MMBtus)
US - All households	92.4	113.2	60.8	123.3	67.8	114.7
US - Non-low income households	98.7	117.4	66.2	131.4	73.7	121.9
US - Low-income households	80.7	104.2	52.2	108.5	65.4	99.8
US - LIHEAP recipient households	94.8	115.3	56.3	116.8	85.7 *	102.4
Midwest - All households	119.4	133.5	68.3	116.3	NC	113.6
Midwest - Non-low income households	125.8	138.2	78	118.1	NC	137.1
Midwest - Low-income households	107.7	124.4	54.2	114.9	NC	125.7
Midwest - LIHEAP recipient households	113	128.5	60.5	101.9 *	NC	109.1

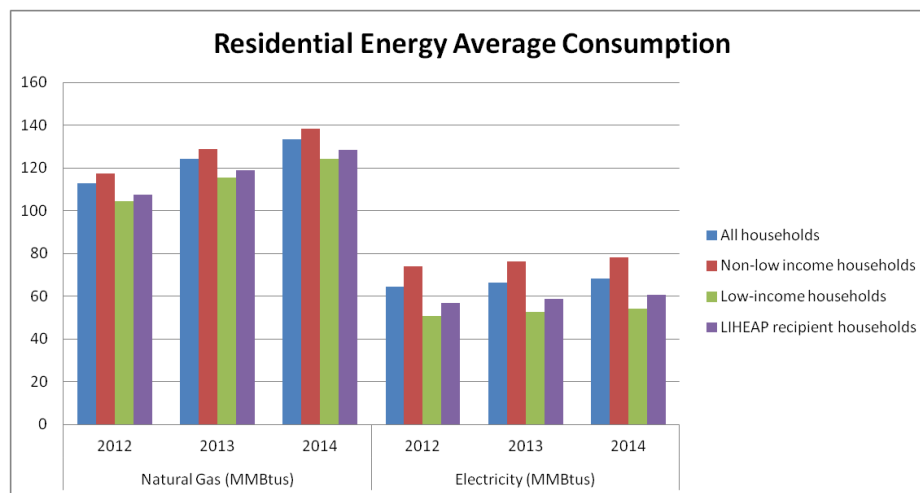
* view number with caution due to small number of sample cases.
 NC = no cases in the 2009 RECS household sample.

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Figure 1. Chart showing differences in natural gas consumption by household in the Midwest in FY 2014.



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Low-income households in the Midwest consumed less natural gas than all Midwestern households combined (124.4 MMBtu versus 133.5 MMBtu in FY 2014), while non-low income households consumed more natural gas than all other users (138.2 MMBtu). The natural gas consumption of LIHEAP recipient households in the Midwest was higher than low-income household consumption but lower than non-low income household consumption. If LIHEAP recipient

1 homes could reduce energy consumption through energy efficiency measures,
2 then their energy burden could be reduced and LIHEAP dollars would be more
3 impactful.

4 **VIII. CONCLUSIONS**

5 **Q. Please summarize your testimony.**

6 A. DE, respectfully submits, that the Company's IEWAP continue at its present level
7 of \$263,000, allowing for roll-over of unspent funds in order to alleviate energy
8 burden of qualifying customers. DE recommends the Commission allow the
9 company to self-administer their weatherization program and hold an annual
10 meeting with their CAAs in order to review IEWAP budget and expenditures,
11 program implementation, and opportunities for improvement in program delivery
12 and customer service. Lastly, DE is interested in continuing in an advisory role to
13 support the program and attend the annual in-person meeting with its
14 weatherization agencies and any interested stakeholders.

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

16 A. Yes, thank you.