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Witness: Alex Schroeder
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MISSOURI PUBLIC SERVICE COMMISSION

UNION ELECTRIC COMPANY

d/b/a

AMEREN MISSOURI

CASE NO. EO-2015-0055

REBUTTAL TESTIMONY

OF

ALEX SCHROEDER

ON

BEHALF OF

MISSOURI DEPARTMENT OF ECONOMIC DEVELOPMENT

DIVISION OF ENERGY

Jefferson City, Missouri
March 20th, 2015

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of Union Electric Company d/b/a Ameren Missouri's 2nd Filing to Implement Regulatory Changes in Furtherance of Energy Efficiency as Allowed by MEEIA	))))	File No. EO-2015-0055

AFFIDAVIT OF ALEX SCHROEDER

STATE OF MISSOURI)
) ss
COUNTY OF COLE)

Alex Schroeder, of lawful age, being duly sworn on his oath, deposes and states:

1. My name is Alex Schroeder. I work in the City of Jefferson, Missouri, and I am employed by the Missouri Department of Economic Development as a Planner III, Division of Energy.
2. Attached hereto and made a part hereof for all purposes is my Rebuttal 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.

Alex Schroeder

Subscribed and sworn to before me this 20th day of March, 2015.

Notary Public

My commission expires:

KAY A. JOHANNPETER
Notary Public - Notary Seal
STATE OF MISSOURI
Cole County
My Commission Expires: Aug. 4, 2015
Commission # 11551967

KAY A. JOHANNPETER NOTARY PUBLIC SEAL STATE OF MISSOURI

I. INTRODUCTION

Q. Please state your name and business address.

A. My name is Alex Schroeder. My business address is 301 West High Street, Suite 720, PO Box 1766, Jefferson City, Missouri 65102.

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

A. I am employed by the Missouri Department of Economic Development - Division of Energy ("DE") as a Planner III - Senior Energy Policy Analyst.

Q. Please describe your educational background and employment experience.

A. In 2008 I graduated from the University of Evansville in Evansville, Indiana with a B.S. in business economics. In 2009 I obtained an M.A. in economics from Fordham University in New York City. And in 2014, I graduated from the University of Missouri - Columbia with a Ph.D. in agricultural economics.

I have been employed by DE since January, 2014. Prior to that, I was employed by the Manhattan Institute in Washington, D.C. as a research associate. During my doctoral studies, I was employed on a part-time basis by the Department of Personal Financial Planning and the Department of Agricultural and Applied Economics as a graduate assistant and a research assistant, respectively.

II. DE'S RESPONSE TO AMEREN MISSOURI'S MEEIA 2016-2018 FILING

Q. According to page 6 of Ameren Missouri's 2016-2018 Energy Efficiency Plan ("Plan"), its proposed 2016-2018 MEEIA portfolio is "based on RAP [Realistic Achievable Potential] levels of energy efficiency savings." What is DE's assessment of the RAP as outlined in Ameren's 2014 Integrated Resource Plan ("IRP")?

A. DE echoes Staff's concerns[1] about Ameren's potential underestimate of RAP. The relatively low RAP established in Ameren's IRP is brought into sharp relief when compared to the analogous figures from Kansas City Power & Light Company ("KCPL") and Kansas City Power & Light Company – Greater Missouri Operations ("GMO"). Slide 24 from Ameren's 7th technical conference on March 3rd contains a graph illustrating that Ameren's RAP is merely a fraction of KCPL's and GMO's RAP for much of the time period between 2016 and 2033.[2]

Q. On page 20 of its Plan, Ameren Missouri includes cost-effectiveness scores at both the program and portfolio levels. Do these figures raise any concerns for DE?

A. Yes. DE would like to emphasize that the MEEIA rules do not require the entire portfolio to meet a cost-effectiveness test, as low-income and educational programs are to be evaluated based on a "public interest" standard. Importantly, requiring the entire portfolio to meet a cost-effectiveness standard could function as a barrier to low-income and educational programs.

The MEEIA statute has to be given effect when it says, "Programs targeted to low-income customers or general education campaigns do not need to meet a cost-effectiveness test, so long as the commission determines that the program or campaign is in the *public interest*".[3] Low-income and educational program approval is explicitly singled out as a "public interest" standard, not a cost-effectiveness standard. If these programs were factored in to the cost-effectiveness determination of the residential

[1] As outlined on page 15 of its report on Ameren's 2014 IRP
[2] In the MEEIA 2016-2018 technical conference on March 19th, Ameren Missouri did explicate some of the reasons their RAP differs so substantially from those of KCPL and GMO.
[3] RSMo., §393.1075.4. (http://www.moga.mo.gov/mostatutes/stathtml/39300010751.html). Italics added.

portfolio, that would severely undermine a key point of the cost-effectiveness exemption by requiring a *de facto* test of the cost-effectiveness of such programs.

Most importantly, lowering the TRC of a portfolio by including low-income and educational programs in an overall portfolio TRC calculation would pressure the Company to reduce or modify these programs' offerings to boost portfolio TRC; this would give undue decision-making weight to the cost-effectiveness of said programs. The clear standard for low-income and educational programs is thus rightfully the legislatively-dictated "public interest." Any requirement for cost-effectiveness at the portfolio level is inconsistent with the MEEIA statute and could lead to the marginalization of these programs.

Q. Ameren's proposed lighting program for its MEEIA Cycle 2 portfolio is projected to yield only 22% of the net incremental energy savings (61,507 MWh) achieved by its Cycle 1 lighting program (280,466 MWh). What is DE's perspective on this?

A. This reduction in Ameren's lighting program is the primary contributing factor to the considerable scaling down of its Residential portfolio as a whole (505,469 MWh of net incremental energy savings in Cycle 1 vs. 165,667 MWh in Cycle 2). The Company attributes this steep decline in projected energy savings to Energy Independence and Security Act (EISA) standards. The shift in the baseline in accordance with these standards will largely limit the lighting program to LED-related measures. According to page 67 of the Plan, "the residential lighting technologies to be offered for standard A base bulbs in 2016-18 are solely LED technologies. There are no standard A base CFLs, with the exception of high wattage bulbs, included in the MEEIA 2016-18 plan due to most CFLs no longer being cost effective."

DE agrees that shifting the baseline in accordance with evolving EISA standards limits the 2016-18 energy savings associated with the lighting program and can limit cost effective lighting measures to LEDs. However, treating the EISA standard as the baseline against which savings are to be measured is problematic. The EISA standard governs the import and manufacture of inefficient bulbs, but does not ban the sale or use of remaining bulbs that do not meet said standard.[4] Therefore, it says nothing about the kinds of bulbs that Ameren's customers are actually using, particularly in the aftermath immediately following the point at which it goes into effect. In other words, the EISA standard says nothing about the actual bulbs Ameren's customers would be replacing with rebated bulbs. It is more appropriately viewed as the standard against which energy savings should be measured in the *long-run*[5], rather than the short-run.

Q. Is the Company's position regarding the EISA standards internally consistent?

A. No. The Company actually acknowledges the point made above on page 83, chapter 8 of its 2014 IRP: "Current 2014 residential lighting program assumptions are that the halogen bulb which represents the [EISA] baseline energy consumption represents the MEEIA program baseline. The reality, however, is that *the baseline lighting technology should be represented by whatever lighting technology that has the highest market share.*"[6] Further down, on page 89, Ameren cites the EISA language in large, capitalized print, reminding readers that EISA's prohibitions pertain to *sales*, not *use*. The EISA standards and a

[4] LED Lighting Facts: A Program of the U.S. Department of Energy. "Frequently Asked Questions: Energy Independence and Security Act of 2007." (http://www.lightingfacts.com/library/content/faqs/eisa). Accessed March 12th, 2015.
[5] In the long-run, household socket saturation can "catch up" with the EISA standard. An exception to this would arise in contexts in which the EISA standard prohibited bulbs that had already naturally fallen out of favor with consumers.
[6] Ameren Missouri, "2014 Integrated Resource Plan: Chapter 8 - Demand-Side Resources", October 1st, 2015. Italics added.

realistic baseline are not necessarily one and the same, as there is not necessarily a direct relation between the EISA standard at any given moment and the actual bulbs people use in the short run.

The National Renewable Energy Laboratory (NREL) recommends that "in cases where actual pre-program measure wattage is not available, [evaluators should] continue to adopt the EISA standards as the new baseline." However, NREL offers the following qualification:

> [P]rogram administrators who have adequate resources should conduct ongoing monitoring and research to determine whether the delta watts assumptions reflect *actual market conditions* during the phase-in of the EISA requirements and use a lagged approach to phasing in the requirements. For example, after conducting shelf stocking studies for several Massachusetts program administrators, evaluators implemented a time-dependent, shifting baseline.[7]

A baseline standard that is not representative of reality[8] can lead to a) an underestimate of projected energy savings, and b) the exclusion of cost-effective measures that are in reality cost effective (i.e., CFLs in the present context). We know that in even the most progressive states, CFL socket saturation tops out at around 40%.[9] This certainly raises questions about the prudence of ceasing rebates for CFLs.

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[7] National Renewable Energy Laboratory, "Chapter 6: Residential Lighting Evaluation Protocol. The Uniform Methods Project: Methods for Determining Energy Efficiency Savings for Specific Measures", February 2014. Subcontract Report authored by Scott Dimetrosky, Katie Parkinson, and Noah Lieb. (http://www.google.com/url?sa=t&rct=j&q=&esrc=s&frm=1&source=web&cd=3&cad=rja&uact=8&ved=0CCwQFjAC&url=http%3A%2F%2Fwww.nrel.gov%2Fextranet%2Fump%2Fpdfs%2F20140514_ump_res_lighting_draft.pdf&ei=BPoCVeqBCYOkyQTvlYHICw&usg=AFQjCNGPSbZWF1OZcGvoS6UjohTtpbRvTg&sig2=vp6PWKul_igfUaDkgTtnnA). Accessed March 13th, 2015. (Quotations from pages 6-14 – 6-15). Italics added.

[8] I.e., a standard that assumes a given technology has significantly penetrated the market, when in reality a less sophisticated technology prevails in said market.

[9] American Council for an Energy-Efficient Economy, "Expanding the Energy Efficiency Pie: Serving More Customers, Saving More Energy Through High Program Participation", January 2015. Report authored by Dan York, Max Neubauer, Seth Nowak, and Maggie Molina. (http://aceee.org/research-report/u1501). Accessed March 13th, 2015. For example, in Massachusetts this figure is 40%. In New York this figure is 25%.

Q. Would you agree that providing rebates for CFLs is inappropriate given that less efficient light bulbs may no longer be manufactured?

A. No. This line of thinking sees little point in providing rebates for bulbs that represent the so-called "efficiency floor," despite two flaws in the logic of the argument. The first is that, as mentioned above, EISA does not prohibit the continued sales of remaining inventories of bulbs that do not meet current standards. This means that there remain alternative options for customers in the short-run, and rebates can help incent customers to purchase a CFL over a less efficient bulb. But we can go one step further. Even if we assume that CFLs are the least efficient option available (i.e., inventories of less efficient bulbs have been sold off), rebates can still play an important role in accelerating the diffusion of CFLs in Ameren's service territory. Rebates lower the price a consumer faces in the market, which may very well incent her to purchase more CFLs than she otherwise would. If those CFLs subsequently replace less efficient bulbs (e.g., incandescents), significant energy savings would occur, savings that would not be accounted for if CFLs were the baseline. When determining when and to what extent to end rebates for CFLs (or any other bulb), therefore, household usage patterns are a more relevant metric than EISA standards.

DE would welcome further inquiry into the appropriate baseline against which to measure savings from the lighting program. Given the importance of the lighting program - both in absolute terms and relative to the other programs in the residential portfolio - the savings associated with Ameren's MEEIA Cycle 2 portfolio will to a significant extent be a function of this baseline.

Q. In the fourth technical conference that Ameren held with stakeholders on February 4th, the Company suggested that CHP is a potential MEEIA program, but that its inclusion may require a statutory or regulatory change. What is DE's response?

A. While DE was pleased to see CHP included in MEEIA discussions, we do not believe that integrating it into a MEEIA portfolio would require a statutory or regulatory change. Sections 393.1075.2(4) RSMo, 4 CSR 240-3.163(1)(N), 4 CSR 240-3.164(1)(K), 4 CSR 240-20.093(1)(U), and 4 CSR 240-20.094(1)(Q) all define energy efficiency as "… measures that reduce the amount of electricity required to achieve a given end-use." CHP systems offer energy efficiency savings; they can achieve efficiencies of 60 to 80 percent, compared to just 45 percent efficiency from separate heat and power.[10] In its original comments on the ongoing MEEIA rule revision workshop, DE explained that the MEEIA statute and rules enable CHP to count towards MEEIA on a kWh or kWh-equivalent basis.[11] As indicated by questioning from Renew Missouri and DE, CHP was widely accepted by stakeholders as acceptable under MEEIA; even KCPL indicated that there was no need for rule revision.

In addition to these energy efficiency gains, CHP also fits into MEEIA under the broader definitions of "demand-side program" in § 393.1075.2(3) RSMo, 4 CSR 240-3.163(1)(E), 4 CSR 240-3.164(1)(F), 4 CSR 240-20.093(1)(L), and 4 CSR 240-20.094(1)(I). In

[10] Missouri Public Service Commission Case No. ER-2014-0258, *In the Matter of Union Electric Company d/b/a Ameren Missouri's Tariffs to Increase Its Revenues for Electric Service*, Direct Testimony of Alex Schroeder on Behalf of Missouri Department of Economic Development, Division of Energy. December 19, 2014. (https://www.efis.psc.mo.gov/mpsc/commoncomponents/viewdocument.asp?DocId=935896250). Accessed March 13th, 2015.

[11] Missouri Public Service Commission Case No. EW-2015-0105, *In the Matter of a Working Case to Review The Commission's Missouri Energy Efficiency Investment Act (MEEIA) Rules 4 CSR 240-3.161, 4 CSR 240-3.164, 4 CSR 240-20.093, and 4 CSR 240-20.094,* Missouri Division of Energy's Comments Regarding the MEEIA Rule. November 14th, 2014. (https://www.efis.psc.mo.gov/mpsc/commoncomponents/viewdocument.asp?DocId=935887229). Accessed March 20th, 2015.

general, these definitions provide that a demand-side program is, " ... *any program* conducted by the utility to *modify the net consumption of electricity on the retail customer's side of the meter* including, but *not limited to*, energy efficiency measures, load management, demand response, and interruptible or curtailable load."[12] The broadly enabling words "any program" and "including, but not limited to" provide sufficient flexibility to include CHP. Any applicable program must only "modify the net consumption of electricity on the retail customer's side of the meter," but the applicable language does not mandate a decrease in electricity consumption over a specified period of time. CHP, like load management and interruptible or curtailable load programs, allows for peak shaving and load shifting to off-peak periods, reducing the need for additional generation and transmission infrastructure to meet peaking requirements. While DE does not believe that any additional rulemaking is necessary in this instance, the Commission should clarify that CHP is an eligible demand-side measure.

Q. On the 25th slide from the presentation given in Ameren's 5th MEEIA Cycle 2 technical conference, the Company asserts that CHP, among other supply-side resources, "currently do[es] not meet the TRC>1.0 requirement." What is DE's response?

A. Ameren's 2014 Demand-Side Management Market Potential Study included "in-depth case studies of DG-CHP applications for two Ameren customers: a major corn milling facility and a major manufacturing facility." *In both cases, the analysis found CHP to be cost-effective*, albeit marginally. The TRC values of the applications were 1.17 and 1.04, respectively.

[12] Italics added

More importantly, Ameren's conclusion that CHP is limited in its cost-effectiveness is a function in part of the Company's Rider E: "An additional factor to consider is the customer's Ameren Missouri [sic] rate structure, which contains a standby charge (Rider E) for Ameren to maintain the necessary capacity if the customer would choose to revert to grid power in the event of an emergency shutdown of their DG-CHP system."[13] But treating Rider E as an exogenous given is problematic; in fact, on March 19th, 2015 the Commission approved a *de jure* unanimous stipulation and agreement that will lead to a revised Rider E.[14] Thus, before drawing any substantive conclusions about the cost effectiveness of CHP in its service territory, the Company should consider how a revised supplementary service rider would impact CHP potential. Including variations of the terms of standby service would have made for a more meaningful potential study, thereby improving the Company's MEEIA Cycle 2 filing.

Q. The joint delivery of programs with Laclede or Ameren Gas was an issue brought up in the previous MEEIA case (EO-2012-0142). Is joint delivery still something that should be explored?

A. Absolutely. There would be a number of benefits associated with joint delivery. Joint delivery allows for the sharing of fixed costs and the harnessing of economies of scale,

[13] The two quotes in this answer are taken from: Enernoc Utility Solutions, "Demand-Side Management Market Potential Study, Volume 5: Distributed Generation Analysis." Study prepared for Ameren Missouri and presented on December 20th, 2013. (https://www.google.com/url?sa=t&rct=j&q=&esrc=s&frm=1&source=web&cd=3&ved=0CCYQFjAC&url=https%3A%2F%2Fwww.ameren.com%2F-%2Fmedia%2FMissouri-Site%2FFiles%2Fenvironment%2Frenewables%2Firp%2Firp-chapter8-appendixb-vol5.pdf%3Fla%3Den&ei=PQIHVYW_CreJsQTj74CQCg&usg=AFQjCNFtYADobUAkljc5cHOlkjzpWJbG7Q&sig2=BUJz3lwfYfYx4qEsdOAFbQ&bvm=bv.88198703,d.cGU). Accessed March 16th, 2015. Pages 3-1 - 3-2.

[14] Missouri Public Service Commission Case No. ER-2014-0258, In the Matter of Union Electric Company d/b/a Ameren Missouri's Tariffs to Increase Its Revenues for Electric Service, Order Approving Stipulation and Agreement Regarding Supplemental Service Issues. March 19th, 2015. (https://www.efis.psc.mo.gov/mpsc/commoncomponents/viewdocument.asp?DocId=935917009). Accessed March 20th, 2015.

which in turn could effect greater efficiency in program delivery. In his rebuttal testimony in the previous MEEIA case, Laclede witness James Travis[15] highlighted a few examples of particular programs that would lend themselves to joint delivery. This is an idea that should be explored by parties to the present MEEIA case in greater detail. Gas and electric efficiency measures often share common ground in terms of costs and benefits. Despite Ameren's assertion in its 8th technical conference on March 19th that gas savings should not count towards cost effectiveness savings, this practice is accepted by KCPL in its potential study. It simply does not make sense to abstain from exploiting this common ground, which would help maximize the efficiency and cost-effectiveness of program delivery.

Q. Does DE have any concerns pertaining to Ameren's low-income program(s)?

A. To pivot off the comments provided by the National Housing trust, DE would like to emphasize the tremendous savings potential that exists in Missouri for multifamily housing. A recent White Paper sums up the situation in Ameren's Missouri and Illinois service territories:

> In total, there are 224,569 households in affordable multifamily[16] buildings in the Ameren Illinois and Ameren Missouri service territories. Of these homes, 70,175, or 31 percent, are participating in an energy efficiency program, but of those participating, 68,775, or 98 percent, are benefitting largely from direct install measures, see Appendix. Comprehensive or whole-building efficiency programs for multifamily buildings are very limited across these service territories in both states, and multifamily buildings do not currently have access to any targeted

[15] Missouri Public Service Commission Case No. E0-2012-0142, In the Matter of Union Electric Company d/b/a Ameren Missouri's Filing to Implement Regulatory Changes in Furtherance of Energy Efficiency as allowed by MEEIA, Rebuttal Testimony of James Travis on Behalf of Laclede Gas Company. April 13th, 2012. (https://www.efis.psc.mo.gov/mpsc/commoncomponents/viewdocument.asp?DocId=935684340). Accessed March 17th, 2015.

[16] "Multifamily" is defined in the referenced White Paper as buildings of five or more units.

> one-stop programs. Energy savings of up to 30 percent are achievable in multifamily buildings.[17]

In Ameren Missouri territory specifically, there are 94,381 households in affordable multifamily buildings, of which 29,500 are participating in an energy efficiency program (note that 100% of these 29,500 are benefitting from direct install measures).[18] In light of this untapped potential, it is prudent to explore solutions beyond direct install measures in multifamily units. It is essential that the design and delivery of any program targeted to multifamily housing units should be grounded in an understanding of how said units differ from their single family analogs. Further, Ameren should ensure that it is targeting unsubsidized low-income housing, in addition to the subsidized units that are more typically associated with notions of low-income housing. The White Paper referenced above contains a number of recommendations for how to effectively harness the potential inherent in multifamily housing to effect energy and demand savings, as well as a number of non-energy benefits.

Q. Does this conclude your rebuttal testimony?

A. Yes.

[17] "Scaling Up Energy Efficiency in Missouri and Illinois Multifamily Affordable Housing." Collaborative White Paper produced by the 2014 St. Louis Metropolitan Area "Dialogue on Improving Energy Efficiency for Affordable Multifamily Housing." March, 2015. Hosted by the National Housing Trust and the Natural Resources Defense Council. (Paper is attached as Appendix A). (Quotation from pages 2-3).
[18] Ibid.

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Scaling up Energy Efficiency in Missouri and Illinois Multifamily Affordable Housing

INTRODUCTION

Over the past seven years, utilities in Illinois and Missouri have made significant investments in programs designed to help their customers use less energy. The programs were prompted, in large part, by state policies seeking to maximize the many benefits of energy efficiency. These investments have improved the lives of utility customers by reducing their energy expenses and creating healthier, more comfortable living environments that can reduce incidences of illnesses like asthma. Additionally, these investments reduce pollution and contribute to local economies by creating jobs. Recent studies have found that energy efficiency jobs make up fully 62 percent of clean energy jobs in Illinois and 83 percent in Missouri—60,000 and 32,500 jobs, respectively.[1]

All utility customers benefit from the lower system costs associated with energy efficiency investments. However, low-income residents of multifamily affordable housing spend a high proportion of their income on energy services, and therefore, the value of providing effective programs for these customers is greater than for the general population. Capturing these benefits requires using innovative strategies to penetrate persistent market barriers.

This paper summarizes the outcomes of a seven-month dialogue examining ways to capture the benefits of energy efficiency for multifamily affordable housing in the St. Louis metropolitan area—specifically in the areas served by Ameren Missouri, Laclede Gas, and Ameren Illinois. Because the Illinois Department of Commerce and Economic Opportunity (DCEO) is charged with providing energy efficiency programs for low-income customers in Illinois, DCEO was a key stakeholder in this dialogue as well.

On April 11, 2014, Missouri Public Service Commission Chairman Robert Kenney and St. Louis Mayor Francis Slay, with support from Illinois Commerce Commission Chairman Douglas Scott, hosted the first in this series of meetings at the St. Louis Botanical Garden's EarthWays Center. The goal was to bring together a diverse set of relevant stakeholders to discuss the opportunities for maximizing cost-effective energy efficiency in the multifamily housing sector and the barriers to maximizing those opportunities, and to recommend solutions to ensure that energy efficiency programs capture the full potential for cost-effective savings in this sector.

It should be noted that, while not every contributor to the dialogue endorsed every recommendation, this document includes only the recommendations that were supported by a strong majority of the participants. These recommendations include actions that can be carried out by a range of actors in the marketplace, including utilities, regulators, legislators, executive branch agencies, and the financial sector.

The National Housing Trust (NHT) and the Natural Resources Defense Council (NRDC) facilitated the dialogue and coordinated the inputs to this summary. We greatly appreciate the diverse perspectives of the stakeholders who came together and the enormously valuable contributions made by each participant. The intent of this summary paper is to lay the groundwork for a longer collaboration to turn these recommendations into reality.

THE OPPORTUNITY: UNLOCKING THE BENEFITS OF ENERGY EFFICIENCY IN MULTIFAMILY AFFORDABLE HOUSING

As noted above, utilities in Illinois and Missouri have begun investing significantly in energy efficiency programs: over the course of the past seven years in Illinois (four years for gas), and in the past six years (with additional investments in the past two) in Missouri. In both states, the utility portfolios include program offerings designed to save energy in multifamily buildings. However, for a variety of reasons described below, a majority of buildings have not yet benefited from these programs, and even those buildings that have participated can be targeted for additional savings.

Many of the programs offered are "direct install." These programs offer residents or building owners specific measures such as energy-efficient light bulbs or faucet aerators, which are directly installed by implementation contractors or utility staff. Direct install programs deliver energy savings and can introduce multifamily buildings to the benefits of implementing efficiency upgrades. For example, Ameren Missouri offers a free direct install program to owners of eligible federally subsidized apartments. More than 25,800 households have been served by the program, with each saving approximately $125 annually, on average.

However, direct install program measures are limited and miss opportunities for deeper and more persistent savings. Further, capturing additional savings opportunities outside of direct install programs often requires coordination with multiple programs and implementation contractors. This can increase complexity and create confusion for building owners, which suppresses participation in these multiple offerings.

In total, there are 224,569 households in affordable multifamily buildings in the Ameren Illinois and Ameren Missouri service territories. Of these homes, 70,175, or 31 percent, are participating in an energy efficiency program, but of those participating, 68,775, or 98 percent, are benefiting largely from direct install measures, see Appendix. Comprehensive or whole-building efficiency programs for multifamily buildings are very limited across these service territories in both states, and multifamily buildings do not currently have access to any targeted one-stop programs.

Energy savings of up to 30 percent are achievable in multifamily buildings. There are many examples of effective programs to emulate. Studies from 2012 and 2013 by the American Council for an Energy Efficient Economy (ACEEE) included several case studies and examples in which effective partnerships among utilities, program managers, housing finance agencies (HFAs), and building owners were able to break through the persistent barriers to savings in these apartment buildings.[2] Examples of programs highlighted in the ACEEE report include Elevate Energy's Comprehensive Multifamily Program, the California Statewide Multifamily Energy Efficiency Rebate Program (MEERP), and multifamily programs offered by Efficiency Vermont and the New York State Energy Research and Development Authority (NYSERDA).

Clearly, there is a gap between the potential to lower energy intensity and energy bills for the residents and owners of multifamily affordable buildings, and the extent to which those opportunities are being captured by existing programs. Of those who have participated in the utility programs, most are capturing only the lowest-hanging fruit. Below, the barriers to moving past the low-hanging fruit are explained.

BARRIERS TO CAPTURING SAVINGS IN MULTIFAMILY AFFORDABLE HOUSING

A number of barriers have been recognized as posing challenges to both utility program administrators and building owners trying to access the potential energy savings in multifamily residential buildings. These include the general lack of reliable information on the costs and benefits of retrofits and the split incentive between landlords and tenants, where the cost of implementing energy efficiency improvements is borne by the landlord but the savings from reduced energy bills are realized by the tenants and vice versa.

Our dialogue focused specifically on the challenges faced by stakeholders in Illinois and Missouri, which are summarized as follows:

- Insufficient funds and incentive levels to capture the full cost-effective potential. Overall energy efficiency budgets are often insufficient to capture the potential across all customer and building types, and there is a significant disparity between gas and electric funding.
- Owners' lack of access to capital, which may require higher incentive levels or more creative financing options for programs targeted to multifamily affordable housing than are needed for other sectors.
- Underestimation of cost-effective potential. Contractors who perform efficiency potential analyses are often unfamiliar with more recent breakthroughs in program delivery to unique market segments like multifamily, so they underestimate the "program achievable" potential. Further, they may use cost-effectiveness assumptions that undervalue or fail to incorporate or measure the benefits of energy efficiency to affordable housing residents, and therefore underestimate the full economic potential.
- Regulatory incentives to maximize first-year rather than lifetime energy savings. A predominant focus on first-year (or "annual") savings can limit support of deeper retrofits that provide persistent savings. If utility program managers must hit annual savings targets with constrained overall budgets, they may rationally shift funds away from programs like deep retrofits of multifamily buildings that would produce cost-effective savings, but over longer time frames.
- Undervaluation of, or inability to capture, the non-energy benefits to tenants and building owners from energy improvements, such as reduced maintenance costs and improved health. Some multifamily programs may fail the cost-effectiveness tests that serve as a threshold for inclusion in a utility portfolio simply because the regulatory regime fails to recognize the higher non-energy benefits of efficiency to the residents and owners of multifamily buildings, as well as to society.
- Regulatory barriers to combining gas and electric utility budgets to get maximum fuel savings. Gas and electric program managers often have too little flexibility in their ability to combine their revenue streams to fund programs that capture both gas and electricity savings.
- Market confusion created by failure to coordinate programs and marketing. Building owners often face a complicated web of uncoordinated program offerings. While efforts have been made to co-deliver gas and electric programs, the provision of multiple programs both within and by different utilities and state agencies can create confusion, which discourages participation.
- Lack of access to financial products that would supplement utility incentives to enable retrofits. Unlike owners of commercial buildings, owners of multifamily affordable housing often cannot easily access capital. Specialized loan products are needed that would allow the buildings to finance a retrofit, in combination with a utility incentive to buy down the first costs.
- Lack of coordination between utilities and the state housing finance agency in each state to ensure that building owners have efficiency opportunities during periodic funding and refinancing cycles.
- Inadequate access by building owners to energy usage data and reliable assessments of energy savings potential.
- Split program paths for general energy efficiency and low-income programs, which can create ambiguity and complexity.
- Single versus master metered buildings, and split incentives that hamper demand for energy efficiency improvements.

SOLUTIONS: RECOMMENDATIONS GAINING SIGNIFICANT STAKEHOLDER SUPPORT

Over the course of five half-day meetings held between April and October 2014, participants collectively identified a series of actions that can be taken to ensure that existing multifamily affordable housing becomes more energy efficient. The dialogue culminated in several broad sets of consensus recommendations, including the following:

1. Develop comprehensive energy efficiency programs targeted to affordable multifamily building owners and residents that provide incentives for all cost-effective energy saving measures and that are easy for owners to access and navigate.
2. Eliminate barriers to financing energy efficiency projects, and provide access to financing products to fill energy efficiency funding gaps.
3. Increase building owners' ability to measure energy consumption and assess the financial benefits of energy efficiency investments.
4. Improve coordination and collaboration among energy efficiency and housing program administrators in order to leverage resources and align policy and program requirements.

Each of these recommendations requires the participation and cooperation of a range of stakeholders. For example, if comprehensive, whole-building energy efficiency programs are to be developed, regulators will need to act to ensure that cost-effectiveness tests account for the full range of benefits that result from efficiency improvements, including non-energy benefits. For their part, utilities will need to develop unified programs that provide incentives for both common-area and resident-area efficiency measures via a single point of contact. Housing finance agencies can help by making timely connections between utilities and eligible multifamily properties.

RECOMMENDATION #1: DEVELOP COMPREHENSIVE, EASY-TO-USE PROGRAMS TO CAPTURE ALL COST-EFFECTIVE ENERGY SAVINGS

Multifamily owners experience substantial difficulty accessing existing energy efficiency programs. For a single building, owners may be asked to fill out multiple applications for gas, electric, residential, and commercial/common-area incentives; meet differing eligibility guidelines; or painstakingly gather information from tenants, such as household income level or energy consumption data. Because programs do not generally offer deeper, whole-building savings, the transaction costs of participating in complicated programs can outweigh the benefits received. By working together, stakeholders can ensure that energy efficiency programs become not only easier to use, but also more comprehensive, capturing all cost-effective energy savings. The deeper savings, delivered through more comprehensive programs, have a meaningful impact on owners' operational expenses and residents' energy bills.

Sub-recommendation 1.1: Improve cost-effectiveness tests to fully count substantial non-energy benefits such as health, comfort, economic, and environmental impacts.

Why? Cost-effectiveness tests that undervalue or fail to incorporate non-energy benefits (NEBS) result in programs that are undersized relative to the achievable, cost-effective energy savings potential. Non-energy benefits are especially significant in the case of affordable multifamily housing, which often has deferred maintenance and fewer energy efficiency features than other housing types. Stakeholders identified the small scale of existing programs relative to need as one barrier to serving the multifamily market. Reforming cost-effectiveness tests so that they fully capture non-energy benefits can help improve utility programs, enabling utilities to pursue more comprehensive, whole-building programs that yield deeper energy and bill savings.

How? Regulators or legislators can work to institute reforms such as directing utilities to quantify non-energy benefits or, as is becoming more common, to use a non-energy benefits "adder" (some states use up to a 25 percent multiplier, for example) in cost-effectiveness calculations.[3] Missouri does not currently include non-energy benefits in its calculations. While low-income programs are not required to meet cost-effectiveness tests, they contribute to portfolio-level cost-effectiveness determinations; thus, a more accurate accounting of the benefits of multifamily energy efficiency improvements will ensure that programs in this area are valued more highly and can grow. Although Illinois does allow for non-energy benefits via adders that vary by utility, there is room for improvement.

Sub-recommendation 1.2: Ensure that multifamily measures are fully captured by utility potential studies and technical reference manuals.

Why? Potential studies (which estimate the achievable energy savings in a given sector) and technical reference manuals (lists of measures and the energy savings that regulators and/or utilities agree can be attributed to each) are critical tools in helping utilities determine which measures to include in their program portfolios. If the multifamily sector is not accurately and adequately addressed in these resources, utilities face greater uncertainty when crafting their portfolios. On the other hand, if these resources fully address this sector, utilities will be better able to expand their portfolios to include a larger list of more comprehensive, whole-building measures for multifamily properties.

How? Regulators can issue guidance and/or utilities can commit to carrying out high-quality potential studies for multifamily housing. Regulators can convene stakeholders from multiple sectors and/or direct existing stakeholder groups to ensure multifamily measures are adequately addressed in a high-quality statewide technical reference manual (TRM). Such a solution, suggested by current statute in Missouri, could address additional topics beyond a statewide TRM. While an individual Missouri utility may have its own TRM, Missouri does not currently have a statewide TRM. While Illinois does have a statewide TRM, there is room for improvement on multifamily measures with an expanded list.

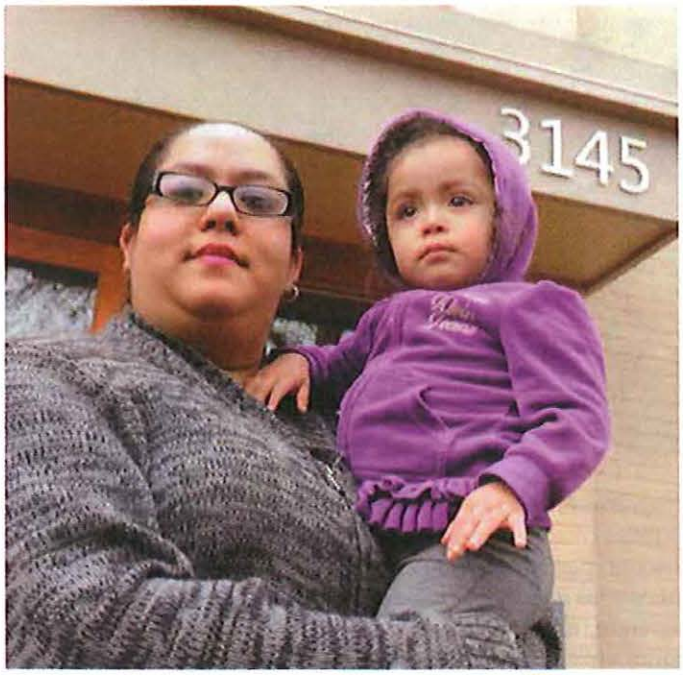
Sub-recommendation 1.3: Provide "one-stop shop" programs that deliver access to incentives for multiple fuels and meter types via a single access point

Why? Owners and managers of affordable multifamily properties are often asked to navigate a complicated maze of programs and requirements in order to access energy efficiency incentives for their properties. Electric and gas

programs may require separate applications and processes. Utilities often provide incentives for common-area spaces through participation in commercial programs, while incentives for adjacent apartments are available only through separate residential programs. Moreover, residential and commercial programs are typically administered by different utility program managers, making coordination of incentives difficult. These program design barriers and silos in delivery unnecessarily discourage participation in energy efficiency programs, are more burdensome than necessary for owners, managers, and residents, and can negatively affect program cost-effectiveness.

How? Gas and electric utilities should collaborate more closely in order to offer access to incentives from multiple utilities via a single point of contact and application process. Regulators can aid this process by directing utilities to collaborate, synchronizing program design calendars across utilities (potentially by region), encouraging the sharing of leads between the gas and electric programs, or enabling utilities to count cross-fuel savings. Additionally, regulators can institute changes to incentivize efficiency activities by gas utilities. Regulators could choose to encourage a statewide one-stop-shop collaboration, which would create economies of scale for utilities and further simplify participation, since owners often have properties across multiple utility service territories.

As a first step, utilities should collaborate on comprehensive one-stop-shop pilots, similar to Elevate Energy's multifamily program in Illinois, which makes owner participation easy. The one-stop-shop model addresses energy savings opportunities at a whole-building level (across meters and fuel types) in order to generate deeper energy savings in each property it touches. It integrates into a single process all stages of an energy efficiency improvement project, including conducting an energy assessment, selecting measures, choosing contractors, securing low-cost financing if needed, applying for incentives, making the improvements themselves, and quality assurance. Resident and building operator education can also be integrated into such a model, in order to ensure that energy savings persist.



In order to successfully carry out comprehensive retrofits under the one-stop-shop approach, utilities should assess the knowledge and capacity of the local contractor population, including minority contractors, providing structured training programs as warranted.

Sub-recommendation 1.4: Eliminate barriers that unnecessarily prevent affordable multifamily properties from participating in utility programs

Why? In Missouri, various barriers have unnecessarily restricted the eligible pool of multifamily properties. Recent statutory revisions opened up Missouri Energy Efficiency Investment Act (MEEIA) program participation for low-income customers in properties that have received Missouri state tax credits for historic rehabilitation (Missouri Revised Statutes 253.545 to 253.559) or Missouri state low-income housing tax credits (Missouri Revised Statutes 135.350 to 135.362). However, it is not clear that these revisions have eliminated all MEEIA eligibility barriers for customers (owners) seeking to improve common areas and building systems in these low-income properties. Another barrier is the overly restrictive definition of "low income" used in Missouri to determine eligibility for some programs. Also, in both Missouri and Illinois, structural conditions such as mold or a hole in the roof can prevent utilities from carrying out measures in certain buildings: Since energy efficiency program dollars cannot be spent on such repairs, utilities must walk away from the potential energy efficiency project. As a result, utilities must work harder to find eligible properties, interested owners are prevented from participating, deserving residents do not receive the many benefits of energy efficiency retrofits, and energy savings opportunities are left on the table.

How? Several actions can be taken to address these barriers and extend program eligibility to households in need of energy efficiency services, including:

- Any remaining statutory restrictions (Missouri Revised Statutes 393.1075.14) that prevent buildings that have received Missouri state tax credits for historic rehabilitation or state low-income housing tax credits from participating in utility programs should be eliminated.
- Missouri utilities and regulators should propose and approve tariff changes that allow properties containing both affordable and market-rate units to participate in low-income multifamily programs, and should expand the current, overly conservative definition of "low income" to include a greater portion of the low-income population. Ameren Missouri's recent filing of a new tariff that allows the utility to offer its low-income program to buildings with 51 percent or greater low-income residents is a successful example that should be replicated.
- In both Missouri and Illinois, stakeholders should work together to identify funding that can resolve walk-away issues so that utilities can undertake improvements. State community-action agencies should take a lead in coordinating these activities.

RECOMMENDATION #2: ELIMINATE FINANCING BARRIERS AND PROVIDE FINANCING PRODUCTS TO FILL FUNDING GAPS

Owners of multifamily affordable housing in Missouri and Illinois often lack access to the up-front capital necessary to finance high-dollar energy efficiency improvements. This capital may simply not exist, or, in the case of subsidized affordable housing, its use may be restricted. There are numerous entities that place restrictions on how owners of subsidized properties may use their capital reserves and operating income; these may include a property's investors, its lenders, the state housing finance agency (the Missouri Housing Development Commission [MHDC] in Missouri and the Illinois Housing Development Authority [IHDA] in Illinois), the U.S. Department of Housing and Urban Development (HUD), or the Rural Development office of the U.S. Department of Agriculture (USDA). Owners must often obtain consent from multiple parties before investing in upgrades and/or taking out a loan for energy upgrades. Innovative financing products that accommodate such challenges are needed to fill the funding gaps owners face when making energy efficiency upgrades.

Sub-recommendation 2.1: Eliminate barriers to funding energy efficiency improvements

Why? Cost-effective energy efficiency improvements often have short paybacks and can greatly improve residents' quality of life. However, even in the presence of well-designed efficiency programs, owners may decline to make improvements to their properties due to misaligned incentives, a lack of information (including energy use data; see more under Recommendation #3 below), and the consent requirements of their funders.

For example, when owners of subsidized properties with individually-metered utilities invest in energy efficiency, they are not able to recover the cost of the improvements via lower energy bills unless they are able to adjust the utility allowances that are in place for the building's residents. This takes away a large part of the owner's incentive to invest in the property. In other cases, owners may not want to invest because they are unaware of the positive payback of energy efficiency improvements, or they do not trust that the projected savings will materialize.

How? State housing finance agencies (MHDC and IHDA) can realign owners' incentives to invest by promoting or requiring energy-efficiency-friendly utility allowance calculation methodologies, such as the Internal Revenue Service's Energy-Based Consumption Model or the use of actual energy usage information. They can also enable owners to obtain front-end consent for future energy efficiency improvements in their limited partnership agreements with investors and lenders. This would introduce the idea of future improvements to these stakeholders and clear the way for smoother approval processes down the line.

Both state housing finance agencies (MHDC and IHDA) and utilities can work to better inform owners about the payback and other benefits—such as lower turnover and health benefits—of efficiency investments. These parties should jointly develop case studies and in-person opportunities to deliver this message from peers and other trusted messengers, in order to increase owner confidence in energy efficiency investments.

Sub-recommendation 2.2: Provide access to innovative financing products to fill energy efficiency funding gaps

Why? Without access to capital to fill funding gaps, owners may not be able to participate in utility programs. Owners of affordable housing can face specific barriers to accessing energy efficiency financing. For example, existing investors might be unwilling to agree to additional debt on the property if the loan must be secured by the value of the asset.

How? Utilities can partner with lenders to develop appropriate financing products, such as on-bill financing, low-interest loans with flexible underwriting criteria, loan products that are structured as leases to avoid triggering consent requirements, property-assessed clean energy financing, or the establishment of loan loss reserves. Other stakeholders, such as local governments, state housing finance agencies, other state agencies, or governors can also work to develop or encourage innovative financing products.

RECOMMENDATION #3: HELP OWNERS MEASURE ENERGY USE AND ASSESS THE FINANCIAL CASE FOR EFFICIENCY RETROFITS

Property owners are more likely to invest in energy efficiency if they are confident that a sufficient level of energy savings will result. To help make that calculation, owners need access to data on energy use in their properties. This can be very challenging, and even owners who can access this information may lack the analytical tools to draw meaningful conclusions from it.

Sub-recommendation 3.1: Provide owners with the aggregate whole-building energy use data needed to assess the financial benefits of energy efficiency investments

Why? Affordable multifamily properties often have multiple meters billed across common areas and resident units, so owners often lack access to crucial energy use data. Despite recognized approaches for maintaining customer privacy and a compelling case for owner access in order to assess the financial benefits of energy efficiency investments, utilities do not always provide easy access to these data. It is extremely laborious (if not impossible) for owners to manually collect utility consumption data from tenants.

How? Utilities should provide owners access to summed (or "aggregate") building-level energy usage data in an easy-to-use format. An emerging industry best practice is to recognize owners as a special party with a legitimate interest in such data and provide web access via a "landlord portal." Owners should begin including standard data release forms in their lease agreements.

Sub-recommendation 3.2: Help owners benchmark the energy (and water) usage of their properties

Why? It can be difficult for owners to get a clear picture of relative energy and water usage across multiple properties, let alone in comparison with a peer group. Thus, they may not be sure how their properties are objectively performing or where to focus their limited investment dollars.

How? The state housing finance agencies, MHDC and IHDA, should launch a benchmarking pilot for some or all of their multifamily properties using a web-based platform (such as Wegowise, Energy ScoreCards, or EnergyStar Portfolio Manager), possibly in collaboration with utilities. Free or reduced-cost audits and additional technical support can be provided as appropriate to assist with implementation of energy reduction opportunities. Utilities could also undertake this effort on their own, including both subsidized and unsubsidized buildings. As with other efforts, the state housing finance agencies and/or utilities should market this project using trusted messengers, case studies, testimonials, and/or peer outreach. The benchmarking pilot should include an effort to link participants to energy and water efficiency resources, such as utility incentives and third-party financing products. Utilities should use the resulting benchmarking data to target the most energy inefficient buildings among participating properties.

RECOMMENDATION #4: IMPROVE COLLABORATION AMONG ENERGY EFFICIENCY AND HOUSING PROGRAM PROVIDERS

Better coordination and collaboration among energy efficiency and housing program administrators can leverage resources and align policy and program requirements. Despite having common interests, there has been limited collaboration among these stakeholders in the St. Louis area to date. This has resulted in duplication of efforts and missed opportunities for energy efficiency improvements, with program timing and design features that are not always matched to owner schedules and needs.

Sub-recommendation 4.1: Better align low-income/affordability definitions and program eligibility criteria across entities

Why? When utilities and housing program administrators (e.g., MHDC and IHDA) differ in their definitions of "low-income," affordability standards, and program eligibility criteria, then multifamily building owners face the complex and time-consuming task of translating among the various definitions, which can discourage participation. For example, eligibility or affordability criteria might refer to household income as a percentage of the poverty level or, alternatively, as a percentage of the local median income.

For subsidized buildings, owners already must comply with specific affordability requirements and, therefore, must regularly certify the income level of their residents. However, utilities may still require owners to verify their tenants' incomes according to different definitions, even though owners and state housing finance agencies can easily verify which buildings are affordable without having to recertify tenant income information.

How? Utilities and housing program administrators (e.g., MHDC and IHDA) should initiate a state-level dialogue on the income/affordability definitions used by their programs and identify opportunities to align definitions and/or provide multiple pathways for owners to establish building eligibility. Utility regulators can help by issuing guidance identifying acceptable proofs of eligibility, such as existing affordability covenants; a building's participation in a HUD, USDA, or other affordable housing program; tenant income as a percentage of poverty level or alternatively as a percentage of area median income; or a building's prior participation in the federal Weatherization Assistance Program.

Sub-recommendation 4.2: Find better ways to match programs to multifamily owner needs and to meaningfully connect utilities to multifamily owners

Why? Owners of subsidized multifamily properties have a close relationship with their state housing finance agency (MHDC or IHDA) and operate according to timelines and requirements set by this agency, including annual funding cycles and periodic (e.g. every 15 years) refinancing processes. A building's progress through these processes affects the type of investments an owner is able to make and whether the owner will have access to capital reserves. For example, a direct install or measure-based program could be appropriate for a building that is in the midst of operations and not facing an opportunity for refinancing. On the other hand, a building undergoing refinancing or an unsubsidized property is in a better position to take advantage of incentives and financing that support moderate or major energy efficiency improvements.

Current utility programs are not tailored or flexible enough to match owners' capacity for different types of improvement projects as their buildings proceed through defined funding life cycles. Utilities' annual or multiyear program plans may not match up with the timelines for MHDC and IHDA funding. Moreover, while utilities and the state housing finance agencies have made limited efforts to collaborate to connect multifamily owners to utility programs, they have found that owners have trouble understanding the value proposition offered by current utility programs.

How? Utilities and housing program administrators (e.g., MHDC and IHDA) should initiate state-level or utility-level dialogues on utility program designs that are tailored to fit the different stages of a building's life cycle, for example by targeting direct install, moderate retrofit, or major rehabilitation measures according to an owner's ability to invest during the current stage in the building's funding life cycle. In order to prevent owners from having to record operating income, utilities should consider directing incentives to contractors rather than owners during business-as-usual retrofits. During recapitalization, utilities should consider providing up-front dollars (perhaps in the HFA-managed capital stack) so that owners do not need to bridge rebate dollars.

Utilities, regulators, and the state housing finance agencies should also consider how they can align their timelines to maximize owners' ability to take advantage of utility programs. At a minimum, state HFAs should provide owners with information on the relevant utility programs for their properties and integrate utilities into information sessions and agency processes where it makes sense.

These utility–HFA dialogues should also include cross-sector education so that both sets of stakeholders can more accurately convey the value proposition of energy efficiency improvements to multifamily owners using language and arguments that owners will find clear and compelling. This might include jointly-developed case studies as well as peer testimonials. Utilities may find they need to change their messaging in order to better appeal to owners of multifamily affordable housing.

CONCLUSION

Energy efficiency is an incredible resource that can address much more than just the burden of high energy costs. It can provide a more comfortable, affordable living space, reduce pollution, create healthier living environments, and maintain affordable housing—particularly meaningful for those living in multifamily affordable housing, who pay a high proportion of their incomes for energy services. Though meeting the needs of this group has traditionally been difficult, by continuing to collaborate and to adapt and improve program design and financing mechanisms, we can reach the vast untapped potential and bring meaningful benefits to tenants, building owners, and utilities alike.

APPENDIX:

Affordable Multifamily Unit Count in Buildings of 5+ Units" subtitle "Statewide and St. Louis Metro Area Utility Totals						
				Affordability Types		
	Type of Service Territory	Utility	Total Affordable (units)	Unsubsidized Affordable (units)	Subsidized Affordable (HUD, LIHTC, Rural, etc.) (units)	PHA-Owned Affordable (units)
Illinois (Statewide total—not a sum of items below)			605,865	326,270	219,479	60,116
Illinois	Electric	Ameren IL	107,491	46,172	42,970	18,349
Illinois	Gas	Ameren IL	118,857	50,433	49,596	18,828
Illinois	Gas Electric	Ameren IL Electric-Gas overlap	96,142	43,073	37,260	15,809
Missouri (Statewide total—not a sum of items below)			221,490	94,072	109,158	18,260
Missouri	Electric	Ameren MO	91,532	34,767	48,387	8,378
Missouri	Gas	Ameren MO	14,983	6,778	6,260	1,945
Missouri	Gas	Laclede	75,763	30,391	40,221	5,151
Missouri	Gas Electric	Ameren Laclede overlap	74,049	30,214	38,745	5,090
Missouri	Gas Electric	Ameren Gas-Electric overlap	12,134	4,991	5,917	1,226

Units in Ameren IL Service Territory	
	Total Units
Electric only	11,349
Gas only	17,483
Gas and Electric Overlap	96,124
Total Gas and Electric	124,956

Units in Ameren MO Service Territory	
	Total Units
Electric only	79,398
Gas only	2,849
Gas and Electric Overlap	12,134
Total Gas and Electric	94,381

Total Ameren IL and MO Gas and Electric	224,569

Units Participating in Ameren Illinois Programs			
	Direct Install Units	Comprehensive Units	All Participating Units
Ameren Direct Install	39,000	-	
Ameren Common Area Lighting	275	-	
Ameren Major Measures	-	1,400	
Total	39,275	1,400	40,675

Units Participating in Ameren Missouri Programs			
	Direct Install Units	Comprehensive Units	All Participating Units
Ameren Residential Low-Income Program	25,800	-	
Laclede/ Ameren Community Savers	3,700	-	
Total	29,500	-	29,500

Total Units Participating in Ameren IL and MO Programs	70,175

Ameren IL and MO Summary Table	All Participating Units
Total IL Direct Install	39,275
Total MO Direct Install	29,500
Total IL and MO Direct Install	68,775

Percent of Participating Ameren IL and MO Units Receiving Direct Install Only	98%

Project partners Elevate Energy and the National Housing Trust provided estimates of multifamily housing unit counts by state, electric utility service territory, building size, and subsidy type. The affordable housing market was subdivided in two ways: by the number of units in the building (i.e., 5-49 units and 50 or more units) and its affordability (i.e., unsubsidized affordable, subsidized, and public housing authority-owned). This allows for six possible combinations. Figure 4 below presents the unit counts by state and subsidy type.

All information on subsidy type was pulled from the National Housing Preservation Database (NHPD) from the Public and Affordable Housing Research Corporation and the National Low Income Housing Coalition. This includes any property that has received at least one subsidy of any sort, including HUD, USDA Rural, LIHTC, PHA, and FHA. The "unsubsidized affordable" units are any units on low/moderate income census tracts, designated by the New Market Tax Credits, which do not have subsidies. These are calculated based on a combination of ACS 2012 5-year estimate total unit counts and the tract-level unit counts from NHPD. In some areas, the census estimates credited fewer units in total on a tract than were represented by NHPD subsidized unit records. In these cases, geocoded NHPD counts were trusted as reliable and used as total counts, so final unit estimates were slightly higher in some areas than the census data.

After unit counts were determined at the census tract level, they were aggregated up to electric utility territories with 2013 Platts Geospatial Data for any service territory with 100,000 or more residential customers.

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*Ameren Missouri and Ameren Illinois each participated only as an observer and the company cannot not endorse these recommendations at this time.

Endnotes

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