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TESTIMONY

OF

ANNIKA LYNN BRINK

ON

BEHALF OF

NATIONAL HOUSING TRUST

September 7, 2017

Q. Please state your name and business address.

A. Annika Lynn Brink, National Housing Trust, 1101 30th Street NW, Suite 100A, Washington, DC 20007.

Q. On whose behalf are you testifying?

A. I am testifying on behalf of the National Housing Trust (NHT).

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

A. I am employed by the National Housing Trust (NHT) as their Energy Efficiency Advisor. In this capacity I work with state and local partners across the country to make multifamily housing healthy and affordable through energy efficiency. I have primary responsibility for NHT's energy efficiency policy work in the Midwest, including Missouri.

Q. Please provide a summary of your qualifications and experience.

A. I earned a Bachelor of Arts in both History and German Studies from Wesleyan University in 2005 and subsequently spent a year studying Architecture and Urban Planning at the Universität Stuttgart in Stuttgart, Germany. In 2011, I earned a Master in Public Policy from Harvard University where I focused on energy, sustainability, and social/urban policy and during which time I produced research on state and local policy solutions for rental sector energy efficiency.

I have seven years of professional experience with energy policy, affordable housing, and green building, both from an energy and a housing perspective. In my work for NHT, I analyze state, local, and utility efficiency policies and programs, help disseminate best practices, and facilitate coordination among housing and energy stakeholders. I have filed comments with utility regulators in Missouri, Minnesota, and Kansas. From 2011 to 2013, I led the nonprofit Alliance to Save Energy's engagement of publicly-owned not-for-profit electric power utilities, helping utilities share best practices, consider energy efficiency program models, benchmark their energy efficiency portfolios, develop innovative online tools, and achieve consensus on priority topics. Since 2013 I have been a LEED Green Associate. I have

worked for affordable housing developers in Grand Rapids, Michigan (internship) and Minneapolis, Minnesota, including work on green affordable housing, community development, and multifamily rehabilitation projects.

I have specific experience working on energy efficiency issues in Missouri. In 2014-2015, I provided input as a member of the energy usage stakeholder group for the Missouri Division of Energy's State Energy Plan. Since 2014, I have helped to organize a series of convenings in the St. Louis and Kansas City metro areas to explore the experiences, barriers, solutions, and potential recommendations related to expanding energy efficiency for affordable multifamily housing in Missouri and Illinois. Based on a White Paper[1] produced from discussions that occurred at several of these convenings (attached as Appendix 1), I helped to develop and advocate for the approved low-income multifamily efficiency programs as part of Ameren Missouri and Kansas City Power & Light's energy efficiency portfolio cases, approved pursuant to the Missouri Energy Efficiency Investment Act ("MEEIA"). Since the programs' approval, I have continued to engage with these utilities and their stakeholders to further address barriers to expanding energy efficiency opportunities for low-income and multifamily customers in Missouri.

Q. Have you previously testified before this Commission?

A. Yes, I submitted testimony in Ameren Missouri's MEEIA case (File No. EO-2015-0055).

Q. Please summarize your testimony.

A. First, I outline what the Companies' proposed rate increases would mean for low-income and low-income multifamily customers, describing the size of the low-income multifamily population in the Companies' territories and the housing and energy burdens they face. Then I describe the energy efficiency needs of low-income multifamily buildings and the opportunities presented by these needs. I then express support for the Companies' low-income multifamily programs and describe the barriers

[1] *Scaling Up Energy Efficiency in in Missouri and Illinois Multifamily Affordable Housing*, April 2015. http://energyefficiencyforall.org/sites/default/files/EEFA%20IL.MO_.pdf

facing these programs. I outline best practices for overcoming these barriers and propose changes to the Companies' proposed program designs in order to better serve affordable multifamily buildings. Last, I compare the Companies' proposed/approved energy efficiency spending to that of other natural gas utilities.

Throughout this testimony, I will use "the Companies" to refer to Laclede Gas Company and Missouri Gas Energy. Alternatively, I will use "Laclede" or "MGE" to refer to the individual business units.

Q. What would the Companies' proposed rate increases mean for low-income and low-income multifamily customers?

A. In their Tariff Revisions (YG-2017-0195 and YG-2017-0196), the Companies indicate that the average residential Laclede customer will pay 5% or $42 more annually vs. current rates and the average residential MGE customer will pay 9.1% or $67 more annually vs. current rates.[2] Contrast these proposed increases with Missouri's poverty rate, which is 15.5%, and with its child poverty rate of over 21%. The poverty rate in St. Louis City is an astonishing 28.8%.[3] These are the numbers for individuals below 100% of the federal poverty level: a family of four must make $24,250 or less to fall below this threshold. In fact, Missouri's low-income population is much larger: families making twice this amount are considered poor for purposes of qualifying for certain federal poverty programs, such as the Weatherization Assistance Program. Nationally, Missouri ranks 22nd: in the bottom half of states in terms of poverty rate (#1 being the worst).[4] It is difficult for low-income and low-income multifamily households to absorb these types of bill increases, because they are already facing high housing and

[2] Tariff Revisions YG-2017-0195 p. 141 and YG-2017-0196 p. 236.
[3] Missouri Community Action, *2016 State of the State Poverty in Missouri*, data drawn from U.S. Census, February 2016, pp. 3-5. http://www.communityaction.org/2016-poverty-report/
[4] Missouri Community Action, p. 11.

energy burdens. These households regularly make decisions between paying rent and energy bills and buying groceries, medicine, and other necessities.

Q. How many low-income multifamily households are in the Companies' service territories and what are the levels of housing and energy burden facing these households?

Across Spire's territory, there are approximately 199,058 households (12% of all households) living in affordable multifamily buildings of three or more units. This is shown in the following table, along with the number of units in buildings of five or more units, an alternative definition of multifamily. A more detailed table and notes on methodology are included in Appendix 2. It should be noted that not all affordable multifamily units in Spire's territory are served by natural gas: later energy savings estimates take this into account.

Table 1: Affordable Multifamily Unit Counts for Laclede and MGE Territories[5]

	NOTE: The 3+ numbers are the 5+ numbers plus units in buildings of 3-4 units. Thus, the 5+ and 3+ unit counts should not be added together.						
	All Housing Units (Single Family + Multifamily)	All MF (5+)			All MF (3+)		
Utility	Total	Total	Market-Rate	Affordable	Total	Market-Rate	Affordable
Laclede	903,304	158,183	82,420	75,763	212,618	109,104	103,514
MGE	784,434	122,441	41,087	81,354	152,384	56,840	95,544
Spire (LAC + MGE)	1,687,738	280,624	123,507	157,117	365,002	165,944	199,058

When we consider the different types of low-income multifamily housing, this includes public housing (owned by a city, county, or other public entity), subsidized affordable housing (privately owned, but with affordability restrictions in place according to Low Income Housing Tax Credit, HUD, or USDA

[5] Mosenthal, P. and Socks, M., *Potential for Energy Savings in Affordable Multifamily Housing*, Optimal Energy for NRDC, 2015. http://www.energyefficiencyforall.org/sites/default/files/EEFA%20Potential%20Study.pdf Supplementary analysis of Missouri's natural gas potential completed by Optimal in April 2015, with data in Table 1 provided here: http://energyefficiencyforall.org/sites/default/files/EEFA_MO_Multifamily_Potential_Study_.pdf

requirements), and unsubsidized housing (privately owned, but without affordability restrictions, and affordable by virtue of market forces).

Fully 45% of renters in Spire's Missouri service territories spend more than 30% of their income on rent plus utilities, the federal standard for housing affordability.[6] According to the U.S. Department of Housing and Urban Development, such households "may have difficulty affording necessities such as food, clothing, transportation and medical care."[7]

Low-income multifamily households face a higher energy burden than non-low-income households. A 2016 report by Energy Efficiency for All and ACEEE found that low-income multifamily households in the Kansas City metropolitan area had a median energy burden of 6.4%, compared to just 4.5% for the median household in the Kansas City metropolitan area. This means that the median low-income multifamily household spends 6.4% of its gross income on energy utility spending, the 10th worst energy burden for this group across the 48 large U.S. cities studied. For the St. Louis metropolitan area these numbers are 6.3% and 4.1%, respectively, ranking St. Louis' low-income multifamily households with the 11th worst energy burden. Cities where the median low-income multifamily household has a lower energy burden include Chicago, Oklahoma City, Louisville, Milwaukee, Cincinnati, Cleveland, Detroit, and Minneapolis.[8] In both the Kansas City and the St. Louis metro areas, a quarter of low-income multifamily households experience energy burdens topping 11% (12.87% for Kansas City and 11.08% for St. Louis).[9]

Q. How can the high energy burdens facing low-income multifamily households be alleviated?

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[6] U.S. Census Table B25070. *2011-2015 American Community Survey 5-Year Estimates.* Analysis conducted for Census tracts matched to Laclede and MGE service territories based on 2014 Platts geospatial data.

[7] Spending 30% of income on rent plus utilities is found in the U.S. Department of Housing and Urban Development's definition for whether a household is housing cost burdened. http://portal.hud.gov/hudportal/HUD?src=/program_offices/comm_planning/affordablehousing/

[8] Drehobl, A. and Ross, L., *Lifting the High Energy Burden in America's Largest Cities: How Energy Efficiency Can Improve Low Income and Underserved Communities*, Energy Efficiency for All and ACEEE, April 2016, p. 46. http://www.energyefficiencyforall.org/sites/default/files/Lifting%20the%20High%20Energy%20Burden_0.pdf

[9] Drehobl and Ross, Table C1, p. 47.

A. The Energy Efficiency for All/ACEEE report cited above found that energy efficiency was key to alleviating these high energy burdens: "for all low-income households and for multifamily low-income households, bringing their housing stock up to the efficiency level of the median household would eliminate 35% of their excess energy burden. As one might expect, the energy burdens of low-income households are driven in large part by their low-income status. However more than one-third of their excess energy burden was caused by inefficient housing stock."[10] Therefore, as discussed below, we support increased incentives to help low-income multifamily buildings upgrade the efficiency of their properties. We also support lower fixed charges as a way of helping low-income multifamily buildings lower their energy bills and incentivize investment in energy efficiency improvements. This will be discussed in NHT's rate design testimony to be filed later in this case.

Q. What are the energy efficiency needs of these low-income multifamily households and what are the opportunities presented by these needs?

A. A historical lack of access to energy efficiency for multifamily rental housing presents an opportunity for the Companies to tap latent energy savings. In fact, efficiency measures are far less likely to be installed in multifamily rentals than in any other type of housing. Multifamily units occupied by low-income renters had 4.1 fewer energy efficiency features in 2005 and 4.7 fewer in 2009 compared with other households.[11] This translates to significant unrealized low-income multifamily energy savings.

A 2015 Energy Efficiency for All potential study and subsequent supplementary analysis found that if Laclede and MGE pursued maximum achievable cost-effective gas savings in the affordable multifamily sector from 2015-2034, the cumulative savings would equate to 17% to 24% lower energy

[10] Drehobl and Ross, p. 19.
[11] Pivo, Gary, *Unequal access to energy efficiency in US multifamily rental housing: opportunities to improve*, 2014. Building Research & Information, 42:5, pp. 551-573.

usage sector-wide across their territories in 2034.[12] The low-end estimate represents cost-effective potential without factoring in the substantial non-energy benefits (NEBs) of low-income energy efficiency, while the high-end estimate represents cost-effective potential when NEBs are included in cost-effectiveness analysis (more on NEBs later in this document). As the table below outlines, Spire could be achieving, conservatively, 3.1 BBtu of first-year energy savings annually in low-income multifamily buildings. Note: these numbers—and the numbers in the two related tables below—apply to buildings with 5+ units, so these numbers are actually an *underestimate* of the potential for low-income multifamily buildings of 3+ units, which is the population eligible for the Companies' proposed low-income multifamily programs.

Table 2: Gas Maximum Achievable Savings Estimates, Optimal Energy, 2015[13]

		Cumulative Savings			Savings % of Total Usage		
		Year 1	Year 5	Year 20	Year 1	Year 5	Year 20
Laclede	Max Achievable, No NEBs (Gas BBtu)	1.5	17.9	197.5	0.1%	1.5%	17.0%
	Max Achievable, High NEBs (Gas BBtu)	3.3	30.5	276.2	0.3%	2.6%	23.8%
MGE	Max Achievable, No NEBs (Gas BBtu)	1.6	19.7	217.7	0.1%	1.6%	17.4%
	Max Achievable, High NEBs (Gas BBtu)	3.6	33.6	304.3	0.3%	2.7%	24.4%

Furthermore, the Companies' low-income multifamily energy efficiency investments would return $1.80 to $2.60 in benefits for every $1.00 invested, resulting in $21.1 million to $74.3 million in *net* benefits over 20 years. In order to achieve these results, the Companies would need to invest an average of between $1.29 million (for low-end net benefits) and $2.31 million (for high-end net benefits) in low-income multifamily energy efficiency each year for 20 years.

[12] Mosenthal, P. and Socks, M., http://www.energyefficiencyforall.org/sites/default/files/EEFA%20Potential%20Study.pdf and http://energyefficiencyforall.org/sites/default/files/EEFA_MO_Multifamily_Potential_Study_.pdf

[13] Mosenthal, P. and Socks, M.,

Table 3: Costs and Benefits for Gas Maximum Achievable Savings Scenarios, Optimal Energy, 2015[14]

		Total Costs (Million 2015$)	Total Benefits (Million 2015$)	Net Benefits (Million 2015$)	BCR
Laclede	Max Achievable, No NEBs	$12.4	$22.4	$10.0	1.8
	Max Achievable, High NEBs	$22.3	$57.5	$35.2	2.6
MGE	Max Achievable, No NEBs	$13.3	$24.5	$11.1	1.8
	Max Achievable, High NEBs	$24.0	$63.1	$39.1	2.6
Spire	Max Achievable, No NEBs	$25.7	$46.9	$21.1	1.8
	Max Achievable, High NEBs	$46.2	$120.6	$74.3	2.6
	Max Achievable, No NEBs, average annual	$1.29	$2.34	$1.06	n/a
	Max Achievable, High NEBs, average annual	$2.31	$6.03	$3.72	n/a

Q. What are you proposing that the Companies spend annually on low-income multifamily energy efficiency?

A. Based on the above analysis, *I am proposing that the Companies spend $1.29-$2.31 million annually on low-income multifamily energy efficiency.* Energy efficiency programs are extremely beneficial to low-income tenants and can help owners maintain the buildings they live in, especially in subsidized properties where owners have limited cash flow because of legal obligations to maintain low rents and other restrictions. Retrofits can result in non-energy benefits such as water/wastewater bill savings, reduced maintenance costs, lower turnover rates, increased resident comfort, increased durability, improved safety, and improved health (e.g. less asthma or aggravation of chronic conditions from extreme heat and cold, resulting in fewer sick days from work and school). Utilities can benefit from reduced arrearage carrying costs, reduced customer collection calls/notices, reduced termination/reconnection costs, and reduced bad debt write-offs.

[14] Mosenthal, P. and Socks, M.,

Q. Do you support Laclede and Missouri Gas Energy's current and proposed tariffs to deliver energy efficiency to low-income multifamily households in their service territories? Please explain.

A. The National Housing Trust applauds the Companies' commitment to serving this chronically underserved and traditionally overlooked sector. In general, we support the Companies' proposed low-income multifamily programs, which contain many best practice design elements, though there are a few program design improvements that should be made in order to better serve low-income multifamily customers. This is especially the case if the Companies implement their proposed Rate Stabilization Mechanism, which should be paired with a vigorous ramp-up of energy efficiency investment. At a minimum, the Companies should meet their 0.5% of Gross Operating Revenues goals. As noted above, we recommend low-income multifamily energy efficiency spending of $1.29 to $2.31 million annually vs. the Companies' current combined annual budget of $791,000 for this sector.

As an advocate for tenants and owners of low-income multifamily housing, we regularly advocate for well-designed multifamily programs. We also support energy efficiency investments more broadly because of their ability to lower system-wide energy costs for all customers, including in low-income multifamily housing. Well-designed energy efficiency programs enable utilities to ease gas transmission capacity constraints and delay or avoid costly investments in new pipeline infrastructure.[15] These are costs that would otherwise have been passed on to customers.

Free or low-cost low-income offerings are an essential part of any equitably designed energy efficiency portfolio. They ensure that low-income households are able to participate in and directly benefit from a utility's energy efficiency investments. Moreover, offerings that are targeted specifically to low-income multifamily buildings are necessary to ensure that such buildings are equitably served with

[15] For a more detailed explanation of the system and other benefits of natural gas energy efficiency programs, please refer to the following report: Hoffman, I., Zimring, M., and Schiller, S. R., *Assessing Natural Gas Energy Efficiency Programs in a Low-Price Environment*, Lawrence Berkeley National Laboratory, 2013. https://eta.lbl.gov/sites/default/files/publications/lbnl-6105e.pdf

energy efficiency offerings. Low-income multifamily buildings have unique barriers and needs, and are typically underserved by existing energy efficiency programs such as the federal Weatherization Assistance Program. For more information on the unique needs of low-income multifamily buildings, please refer to the Energy Efficiency for All Program Design Guide.[16]

Q. You indicate that low-income multifamily buildings should be served by targeted programs. Do you support Laclede and MGE's approach to serving low-income multifamily buildings via stand-alone Income-Eligible Multi-Family programs administered jointly with the local electric utilities, Ameren and KCP&L?

A. Yes. The National Housing Trust commends Laclede and MGE for proposing distinct "Income-Eligible Multi-Family" offerings that are specifically targeted to multifamily buildings. And, co-delivery with local electric utilities is a key step in simplifying program participation for multifamily buildings. Targeted programs and co-delivery are two best practices affirmed by NHT's experience as a multifamily owner of over 3,000 units of multifamily affordable housing and as a housing advocate; by my conversations with multifamily owners across the Midwest and during cross-sector convenings in Missouri, several of which Laclede and MGE staff have attended; and by best practice research.

Q. What barriers do low-income multifamily buildings face to implementing energy efficiency retrofits and how can these barriers be overcome?

A. Low-income multifamily buildings may have difficulty implementing energy efficiency retrofits because programs are not designed with multifamily needs in mind. For example, a program may be geared toward participation by individual tenants, even though owners are the decision-makers for investments in multifamily properties. Or, owners are often asked to apply separately to gas and electric programs and separately to programs for common area and tenant units: owners may decide the

[16] Energy Efficiency for All, *Program Design Guide: Energy Efficiency Programs in Multifamily Affordable Housing*, January 2015. http://www.energyefficiencyforall.org/resources/program-design-guide-energy-efficiency-programs-multifamily-affordable-housing

transaction costs of understanding, applying to, and participating in such disjointed programs are not worth the incentives being offered.

Other barriers are financial, such as insufficient financial incentives or owners' lack of access to capital. In some cases, contractors are unfamiliar with the multifamily building type and the potential savings it presents, leaving savings on the table. For affordable buildings financed through the state housing finance agency (the Missouri Housing Development Commission), utility-sponsored energy efficiency incentives may not be flexible or reliable enough to account for the long planning and construction timelines associated with this process, where time from energy audit to rehabilitation completion may be 24 months or more. Finally, owners often lack access to energy usage data for the tenant meters in their buildings, which can hamper their ability to make well-informed whole-building energy efficiency investment decisions and to prioritize such investments across their property portfolios.

While these barriers are significant and complex, there is compelling evidence from the field that programs can be designed to overcome these barriers, including two key best practice reports I would like to bring to the Commission's attention. The reports are summarized in Table 4 below along with their checklists of best practices for overcoming multifamily barriers to participation:

Table 4: Comparison of EEFA and ACEEE Best Practices Reports for Overcoming Barriers to Participation in Multifamily Efficiency Programs.

Energy Efficiency for All (http://www.energyefficiencyforall.org/resources/program-design-guide-energy-efficiency-programs-multifamily-affordable-housing) **Program Design Guide: Energy Efficiency Programs in Multifamily Affordable Housing** Best Practices Checklist for Policymakers and Program Administrators	*ACEEE* (http://aceee.org/research-report/e13n) **Apartment Hunters: Programs Searching for Energy Savings in Multifamily Buildings** Best Practices for Multifamily Energy Efficiency Programs
1. Establish a goal to capture all cost-effective efficiency in multifamily affordable housing (MFAH). 2. Assure coordination and count savings across electricity, gas, and water utility programs. 3. Assure that cost-effectiveness tests work for MFAH by accounting for non-energy benefits and applying cost-effectiveness tests across portfolio of programs. 4. Improve building owners' access to energy usage information. 5. Develop programs specifically targeted to MFAH buildings. 6. Structure incentives for whole-building savings. 7. Assure incentives are reliable at project outset. 8. Support benchmarking, audits, and other assessments. 9. Support a "one-stop-shop" where building owners can access integrated program services. 10. Build partnerships with key local market participants. 11. Help building owners finance efficiency projects by tailoring incentives to fit with conventional purchase and refinancing loans, partnering with lenders active in the local market, and exploring on-bill payment arrangements. 12. Assure robust quality assurance.	1. Provide a one-stop shop for program services. 2. Incorporate on-bill repayment or low-cost financing. 3. Integrate direct installation and rebate programs. 4. Streamline rebates and incentivize in-unit measures to overcome split incentives. 5. Coordinate programs across electric, gas, and water utilities. 6. Provide escalating incentives for achieving greater savings levels. 7. Serve both low-income and market-rate multifamily households. 8. Align utility and housing finance programs. 9. Partner with the local multifamily housing industry. 10. Offer multiple pathways for participation to reach more buildings.

Q. Are there any differences between the proposed Laclede "Multi-Family Low Income Program" and MGE "Income-Eligible Multi-Family Direct Install" program and, if so, which program's features more closely follow best practices?

A. There are differences. For the sake of consistency for owners and property managers with properties across both service territories, the programs should be as uniform as possible across the two territories. I draw here from tariff documents (Laclede: effective August 18, 2017. MGE: effective May 11, 2017); after each item I offer my recommendation:

1. EDUCATION: Only Laclede's program description mentions education about energy efficiency measures, with this education directed toward residents. Recommendation: Education is a positive feature. It should also include education of building operators and apply to both multifamily programs, not only Laclede's.
2. DIRECT INSTALL MEASURE LIST: Both program descriptions list programmable thermostats, low-flow faucet aerators, low-flow showerheads, and insulating water-heating pipe wrap as eligible direct install measures, but only Laclede's program description mentions furnace clean & checks. Recommendation: For consistency, and in order to maximize energy savings opportunities, the direct install measure lists should be as uniform as possible between the two programs. Thus, MGE's program should also include furnace clean & checks.
3. SAVINGS BEYOND DWELLING UNITS: Only MGE's program description states an intent to deliver savings in "shared common areas." Laclede's program description instead states only its intent to install measures "within income qualified dwelling units." Recommendation: As explored below, both programs should deliver savings in and beyond dwelling units, to include common areas. Laclede's tariff should be changed to match MGE's language.
4. CUSTOM MEASURES: Only MGE's program description outlines procedures for participating buildings to access custom measures. Recommendation: As explored below, in order to maximize the opportunity when they have an owner's attention, both programs

should seek to deliver savings wherever they can be found. Laclede's tariff should be changed to match MGE's language.

Otherwise, the two multifamily program designs appear to be identical.

Q. Are the proposed Laclede "Multi-Family Low Income Program" and MGE "Income-Eligible Multi-Family Direct Install" programs designed to overcome the barriers experienced in the low-income multifamily sector?

A. To answer this question, I will draw on the National Housing Trust's experience as well as the two best practice reports above. Laclede's "Multi-Family Low Income Program" and MGE's "Income-Eligible Multi-Family Direct Install" programs, henceforth "the multifamily programs," represent a solid start in serving this sector, incorporating several best practices for serving low-income multifamily buildings, but leaving room for immediate improvement and future growth.

We cannot praise the Companies strongly enough for the following program design decisions, which we strongly support and consider to be best practice:

1. A program targeted specifically to low-income multifamily buildings;
2. Joint delivery of electric and gas efficiency offerings;
3. In-unit and common area upgrades provided via a single program (MGE only);
4. Access to custom incentives in order to drive savings regardless of the specific measure (MGE only);
5. Integration of direct installation and other incentive offerings (MGE offers direct install, residential, and commercial/custom; per the Companies' response to NHT DR 010 it seems Laclede only offers direct install plus "residential" incentives).
6. Allowing participation by mixed-income properties.

Q. In what ways could Laclede and MGE improve low-income multifamily program design to be more in line with established best practices?

A. There are a few areas where we think the Companies could improve on its program design in order to better achieve established best practices:

1. Commit to a whole-building savings approach—addressing direct install, in-unit/residential and common area/commercial savings at once—across both the Laclede and MGE programs.

Multifamily buildings are a unique building type with multiple types of meters and diverse savings opportunities. It is extremely difficult to get affordable multifamily building owners' attention and these buildings often operate on periodic financing/re-financing cycles where they are only able to make major building upgrades every 15-20 years. Thus, it is imperative to address all possible energy savings opportunities in an affordable multifamily building at the moment when the utilities have the owner's attention. It is encouraging to see that MGE's tariff highlights the multifamily program's inclusion of direct install, common area, and custom measures. The Companies' response to NHT Data Request 011 further clarifies that buildings can access MGE residential rebates. While the Companies' response to NHT Data Request 010 clarifies that buildings can access Laclede residential rebates, Laclede's tariff does not indicate that it offers common area or custom rebates. In response to NHT Data Request 013 the Companies state: "Laclede is also looking at ways to work with Ameren to let customers know about our non-direct install incentives." It is important for Laclede to prioritize a whole-building approach internally and to reach agreement with Ameren on how to make it easy for owners to access all relevant Laclede rebates via the multifamily program—not only residential, but also commercial and custom.

2. Expand list of rebated measures to include specific measures with proven results in low-income multifamily buildings.

Part of a whole-building approach is trying to incentivize savings no matter their source. We applaud the Companies' openness to expanding the list of measures they incentivize: "We are also open to additional suggestions by NHT and other parties on other energy efficiency measures that we could

consider for future implementation."[17] The Companies should regularly assess potential additions to its lists of residential and commercial rebates (both of which apply to multifamily buildings). Specifically, the Companies should consider offering rebates for fiberglass pipe wrap, as well as other measures being incentivized by their peers. For example, Consumers Energy in Michigan believes that furnace tune-ups, direct hot water boiler tune-ups, and certain envelope measures are cost-effective for multifamily, including ENERGY STAR® doors and windows, airtight can lights, duct sealing, and roof insulation.[18]

3. Lift the limits on the number of rebates and on the dollar amount that a commercial customer can receive during a program year.

Both Companies propose limiting "owners of multiple individually metered dwelling units [...] to a maximum of 250 heating system rebates (furnace or boiler), 250 water heater rebates, or 250 combination unit rebates, and 250 thermostat rebates during one program year."[19] They also state that "During a program year, a commercial or industrial customer's total rebate is limited to $100,000."[20] The 250-rebate caps are a vast improvement over previous 50-rebate caps, but we question why these caps are necessary at all.

Given the difficulty of getting multifamily owners' attention, and the rareness of substantial rehabilitation projects, we encourage the Companies to maximize the energy savings opportunities within these buildings, rather than erect barriers to once-every-20-years chances to upgrade efficiency. We should be encouraging these buildings to *expand* their energy efficiency scopes of work, not contract them to stay under arbitrary rebate caps. Eliminating dollar amount caps also becomes more important if prescriptive incentive levels are increased.

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[17] Response to NHT Data Request 014.
[18] Consumers Energy, *2017 Multifamily Program Catalog*. Please note that in 2017 low-income buildings received incentives 50% higher than those listed in this catalog.
https://www.consumersenergy.com/~/media/CE/Documents/Energy%20Efficiency/multifamily-catalog.ashx?la=en
[19] Tariff Revisions YG-2017-0195 (Laclede) p. 105 and YG-2017-0196 (MGE) p. 200.
[20] Tariff Revisions YG-2017-0195 (Laclede) p. 114 and YG-2017-0196 (MGE) p. 209.

4. Increase low-income multifamily prescriptive incentive levels in order to drive demand for the multifamily programs, encourage early replacement of inefficient equipment, and achieve deeper energy savings.

In each of the past three program years, the Companies have only spent 60% to 79% of their energy efficiency budgets and have done particularly poorly at spending their low-income multifamily budgets—never spending more than 21%.[21] While some of the multifamily shortcomings can certainly be attributed to difficulties finalizing co-delivery contracts with Ameren and KCP&L, chronic underspending of portfolio budgets provides evidence that program design changes are needed as well.

NHT worked with partners to research the total cost, including both equipment and labor, of seven representative, multifamily-relevant measures from the list of rebates currently offered by the Companies. Interviews were conducted of six local contracting firms and two Community Development Corporations that serve affordable multifamily properties to obtain average total cost information from experts who deliver these efficiency services in the field. The table below compares the average total cost from this research to the rebates Spire is proposing to offer.

[21] Response to NHT Data Requests 003 and 004.

Table 5: Companies' Proposed Rebate Levels vs. Total Average Costs, and NHT's Recommended Rebate Levels

Equipment	Efficiency	Companies		NHT Research and Recommendations			
		Proposed Residential Rebate	Proposed Commercial Rebate	Total Cost Average from Contractors & CDCs	Companies' Rebate % of Total Cost	Recommended Rebates (two alternative strategies)	
						Cover 30% of Total Cost	Triple Current Rebates
Gas Furnace	> or equal to 92% AFUE	$200	$200	$2,800	7%	$840	$600
Gas Furnace	> or equal to 96% AFUE	$300	N/A	$3,400	9%	$1,020	$900
Gas Storage Water Heater (20-55 gallons)	EF > or equal to 0.67	$200	N/A	$1,500	13%	$450	$600
Gas Storage Water Heater (55-100 gallons)	EF > or equal to 0.77	$350	N/A	$2,000	18%	$600	$1,050
Gas Instantaneous Water Heater (< 2 gallons)	EF > or equal to 0.82	$300	$300	$2,000	15%	$600	$900
Gas Space Heating/Water Boiler 300-5,000 MBH	> or equal to 85% AFUE	N/A	$2.50/MBH	$55/MBH	5%	$16.50/MBH	$7.50/MBH
Gas Space Heating/Water Boiler 300-5,000 MBH	> or equal to 92% AFUE	N/A	$3.00/MBH	$65/MBH	5%	$19.50/MBH	$9.00/MBH

The Companies' rebates cover only a small percentage of the total cost of purchasing and installing efficient equipment, 10% on average based on our research, and that is not enough to motivate affordable multifamily owners to consider early replacement of equipment. Affordable multifamily owners operate on tight margins and rarely have sufficient cash available to cover the cost of capital upgrades outside of a major financing events such as taking on a new first mortgage. Those financing events only occur once every 15-20 years, leaving large spans of time where owners are frequently unable to invest in cost effective upgrades that generate savings for utilities and lower owner operating expenses, which helps to maintain the affordability of Missouri's affordable housing stock.

Raising prescriptive incentives *for the low-income multifamily programs* would also help to ensure that the Companies meet their spending targets. As noted above, in each of the past three program years, the Companies have failed to spend more than 21% of their low-income multifamily budgets. We believe that incentive levels have played a role in this by limiting customer demand.

We recommend that the Companies raise prescriptive incentive levels *for the low-income multifamily programs* to cover, at a minimum, 30% of total equipment and labor costs. RS Means can be used to source costs for some measures and NHT would be happy to help convene contractors and CDCs to estimate average total costs for the full array of low-income multifamily prescriptive incentives. Alternately, the Companies could triple incentives across the board to raise the estimated average cost coverage from 10 to 30%.

5. Provide properties that are undergoing financing/re-financing with a 36-month window for implementation of measures after pre-approval.

Properties that are applying for tax credit financing must complete an energy audit as part of their application process with the state. Utility involvement at this juncture is crucial, so that utilities can influence the rehabilitation design process to include more energy efficiency measures. However, this starts a clock ticking that will only end when construction has been completed and inspected. The utilities' current 6-month window for measure implementation after pre-approval is insufficient for substantial rehabilitation projects of this scale: applying for tax credits, being selected, pulling together the requisite additional financing, and completing construction more typically takes 24 months from the initial design phase when an energy audit would be completed—and more if there are construction delays or if tax credits are not awarded in the first year during which the owner applies.[22]

[22] "All measures that receive pre-approval must be implemented / installed within six (6) months of the date of pre approval, and all invoice(s) and other required project documentation must be submitted within eight (8) months of the date of pre-approval." Tariff Revisions YG-2017-0195 (Laclede) p. 114 and YG-2017-0196 (MGE) p. 209.

Q. What is your opinion of the Companies' decision to offer their low-income multifamily energy efficiency programs only in properties jointly served by Ameren or KCP&L—and the implications this has for the size of the program?

A. We strongly support the Companies' decision to seek energy savings via jointly-delivered programs: it is preferable to go deep in fewer buildings rather than conduct cream-skimming across a larger number of buildings. Two things are important in terms of program size. First, for the aforementioned reasons regarding difficulty in gaining owners' attention, the Companies should allocate sufficient budget to serve efficiency to *every* gas-served building coming through the Ameren and KCP&L multifamily programs. Second, and for the same reasons, the Companies should allocate sufficient budget to deliver as *deep* of savings as possible in each of these properties. This means delivering not only direct install savings, but in addition regularly awarding rebates for in-unit and common area prescriptive and custom measures. The potential study cited earlier in this testimony provides evidence that the savings opportunities are plentiful: while co-delivery is a great start, the Companies also need to allocate sufficient budget and improve program design in order to unlock these savings (see previous section). Later, as the programs mature, we expect the Companies to consider the best way of expanding beyond the shared Ameren and KCP&L territories.

Q. How do the Companies' proposed/approved energy efficiency budgets compare to those of other natural gas utilities?

A. As outlined on page 123 of the Companies' Tariff Revisions submitted on April 11, 2017: "The rates established in Case Nos. GR-2017-0215 and GR-2017-0216 include an allowance in rates of $2,033,354 for LAC and $1,794,361 for MGE to fund ongoing energy efficiency program expenditures." The utilities are working toward a goal of annual energy efficiency spending comprising 0.5% of Gross Operating Revenues for the prior three years averaged. Laclede target funding for the 2016 program year

was $2,679,910 relative to actual spending of $2,101,920.[23] MGE target funding for the 2016 program year was $2,567,871 relative to actual spending of $1,861,118.[24] Actual spending represents 0.39% and 0.36% of GOR for Laclede and MGE, respectively.

Compared to many of their peers, Laclede and MGE are already budgeting less for energy efficiency as a percentage of Gross Operating Revenues (GOR). For example, the following four natural gas utilities, all operating in states *without* state mandates for gas energy efficiency spending, budgeted between 1.16% and 3.0% of Gross Operating Revenues for energy efficiency in recent years.

- Columbia Gas of Ohio agreed to spend $26.8 million on demand side programs in 2016, representing 3% of their GOR for that year.[25] [26]
- MidAmerican in South Dakota invested 1.34% of GOR in demand side programming in 2016 equaling a $1.1 million expenditure.[27] [28]
- NorthWestern of South Dakota committed 1.38% of GOR to demand side programs in 2016.[29] [30]
- NorthWestern of Montana invested 1.16% of GOR in demand side programs in 2016.[31]
- Puget Sound Energy in Washington invested 1.53% of GOR or $13.6 million in energy efficiency in 2016.[32] [33]

In states *with* energy efficiency mandates, gas utilities are spending even more: in the five examples below, the utilities are spending from 1.2% to 4.24% of gross operating revenues annually.

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[23] Response to NHT Data Request 003 - *Laclede EEC Quarterly Report-FY2016-4Q_with 2016 Summary.*
[24] Response to NHT Data Request 004 - *MGE EEC Quarterly Report - FY2016-4Q.*
[25] Columbia Gas of Ohio, Inc., *Columbia Gas of Ohio 2016 Annual Report*, p. 64.
[26] Schilling, Matt. *PUCO approves Columbia Gas of Ohio's energy efficiency programs*, Press Release, Ohio Public Utilities Commission, 2016.
[27] MidAmerican Energy Company, *South Dakota Energy Efficiency Plan 2013-2017*, Docket GE15-004, 2015, pg. 2.
[28] Berkshire Hathaway Energy, Co., *Berkshire Hathaway Energy, Co. 2016 Annual Report*, Form 10-K, 2017, pp. 16-247.
[29] NorthWestern Energy, *NorthWestern South Dakota DSM Program Budget Estimates*, Attachment 5, Year 2 Budget, Docket GE16-005, 2015. http://puc.sd.gov/commission/dockets/gaselectric/2015/ge15-002/attach5.pdf
[30] NorthWestern, *2016 Annual Report*, 2017, pg. 47.
http://www.northwesternenergy.com/docs/default-source/documents/investor/annualreport2016.pdf
[31] NorthWestern, *2016 Annual Report*, 2017, pg. 9.
[32] Puget Sound Energy, *2016 Annual Report of Energy Conservation Accomplishments*, 2017, p. 16.
https://pse.com/aboutpse/Rates/Documents/ees_2016_annual_rpt_energy_conservation_accomplishments.pdf
[33] PSE, *PSE Energy Company 2016 Annual Report*, (Form 10-K, 2017), p. 76.
https://www.last10k.com/sec-filings/81100#sE6775C0EC3C0701028B050AD8640FC53

- In Minnesota, CenterPoint Energy will commit 4.01% of GOR in 2017 to energy efficiency, increasing to 4.24% of GOR by 2019.[34]
- Consumers Energy in Michigan had a planned investment of $47.2 million in 2016, approximately 2.8% of GOR.[35]
- In 2016, Michigan-based DTE's gas segment invested $21.7 million in energy efficiency programs or 1.6% of GOR.[36]
- In 2017, Nicor Gas in Illinois has a savings target of 1.12% of sales, reaching 1.2% in 2019.[37] This represents approximately 2% of GOR.[38]
- In 2016, Peoples Gas and North Shore Gas in Illinois achieved a combined gas savings of 5.7 million therms with energy efficiency expenditures totaling $19 million dollars.[39] [40] In 2017, their total energy efficiency program budgets represent approximately 1.4% of GOR.[41]

We look forward to seeing the Companies' energy efficiency budgets and program participation grow over the coming years, especially in the low-income sector. We hope the Energy Efficiency Collaborative will support the Companies in a growth trajectory by gradually raising its percent of GOR goals.

Q. Does this conclude your testimony?

A. Yes it does.

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[34] CenterPoint Energy, *2017-2019 Conservation Improvement Program Triennial Plan Filing*, Docket No. G008/CIP-16-119, 2016, pp. 6-7. https://www.edockets.state.mn.us/EFiling/edockets/searchDocuments.do?method=showPoup&documentId=%7BD08395C8-A2FB-4701-B8BB-1EB0491FF29F%7D&documentTitle=20166-121869-01

[35] Consumers Energy, *Consumers Energy Annual Report*, 2016, p. i. http://s2.q4cdn.com/027997281/files/doc_financials/consumers_annual_reports/2016-Consumers-Energy-Annual-Report.pdf

[36] DTE Energy Company, *DTE Energy Company 2016 Annual Report* (Form 10-K, 2017), pp.10 and 34. http://ir.dteenergy.com/phoenix.zhtml?c=68233&p=irol-sec_MichCon

[37] Nicor Gas, *Nicor Gas Ex. 1.1*, (Energy Efficiency Plan, 2016), Docket no. 16-0421, p. 22. https://icc.illinois.gov/docket/CaseDetails.aspx?no=16-0421

[38] Public Utilities Bureau Illinois Commerce Commission, *ILLINOIS COMMERCE COMMISSION Illinois Gas Utilities Comparison of Gas Sales Statistics For Calendar Years 2016 and 2015*, 2017, https://icc.illinois.gov/reports/report.aspx?rt=24, p. 15.

[39] North Shore Gas, *North Shore Gas Report*, 2017, Docket no 13-0550. https://icc.illinois.gov/docket/CaseDetails.aspx?no=13-0550.

[40] Peoples Gas, *Peoples Gas Report*, 2017, Docket no. 13-0050. https://icc.illinois.gov/docket/CaseDetails.aspx?no=13-0550.

[41] Peoples Gas, *NS-PG Ex 1.3, People's Gas Plan 3*, 2016, Docket no.16-0466. https://icc.illinois.gov/docket/CaseDetails.aspx?no=16-0466.

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of Laclede Gas Company's Request to Increase Its Revenue for Gas Service	))	File No. GR-2017-0215 Tariff No. YG-2017-0195
In the Matter of Laclede Gas Company d/b/a Missouri Gas Energy's Request to Increase Its Revenues for Gas Service	)))	File No. GR-2017-0216 Tariff No. YG-2017-0196

AFFIDAVIT OF ANNIKA LYNN BRINK

KINGDOM OF THE NETHERLANDS	)	
PROVINCE OF NORTH HOLLAND	)	
CITY OF AMSTERDAM	)	SS:
CONSULATE GENERAL OF THE	)	
UNITED STATES OF AMERICA	)	

Annika Lynn Brink, of lawful age and being first duly sworn on her oath, states:

4. My name is Annika Lynn Brink. I work in the City of Washington, District of Columbia and I am employed by The National Housing Trust as Energy Efficiency Advisor.

5. Attached hereto and made a part hereof for all purposes is my Direct Testimony on behalf of The National Housing Trust, which has been prepared in written form for introduction into evidence in the above-referenced docket before the Missouri Public Service Commission.

6. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded are true and correct.

/s/ Annika Brink
Annika Lynn Brink

Subscribed and sworn to me this 7th day of September, 2017

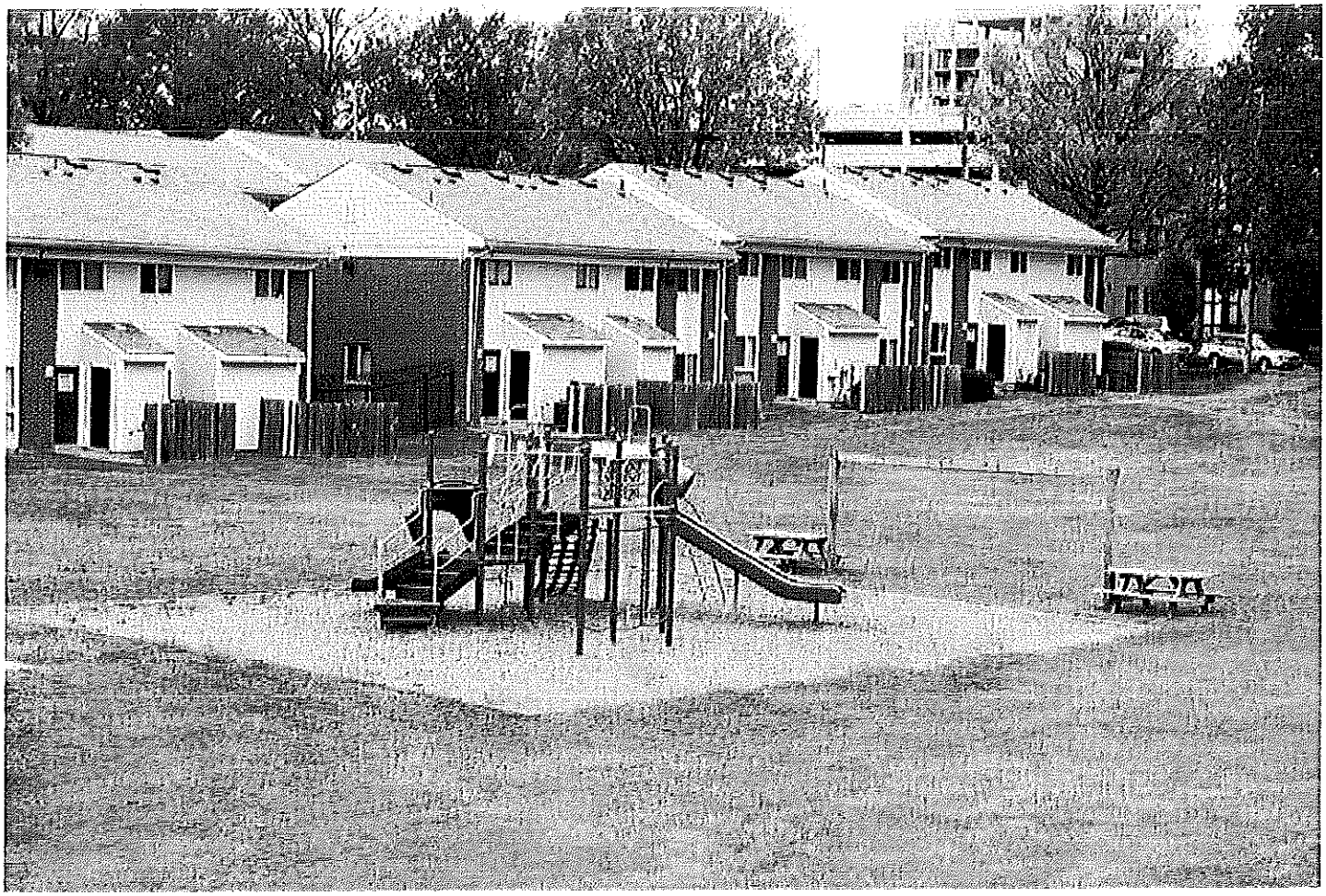
Mark A. Crognunis
Notarizing Officer
/s/
Notary Public

My commission expires: ~~at the pleasure of the President~~

Appendix 1: White Paper "Scaling up Energy Efficiency in Missouri and Illinois Multifamily Affordable Housing"

APRIL 2015
IB:15-02-D

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).

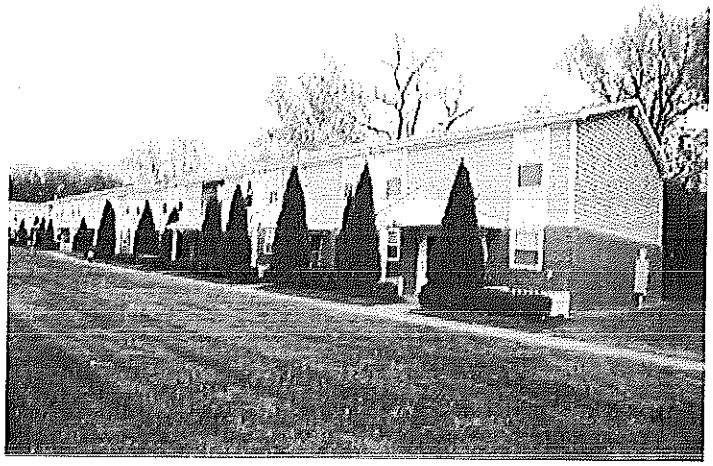
Clearly, there is a gap between the potential to lower energy intensity and energy bills for the residents and owners of multifamily affordable buildings, and the extent to which those opportunities are being captured by existing programs. Of those who have participated in the utility programs, most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

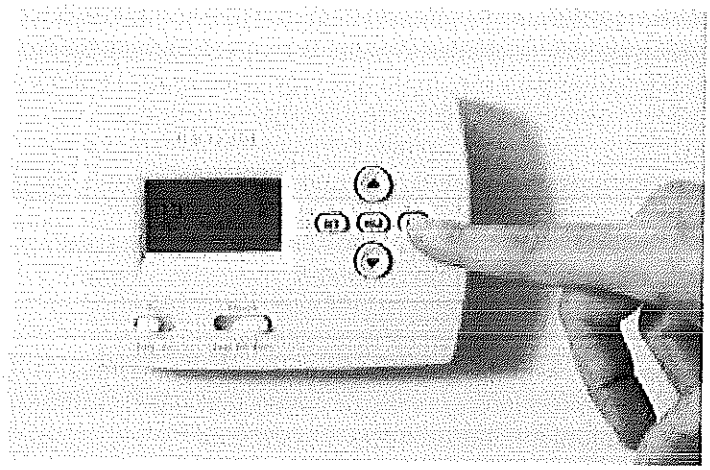
BARRIERS TO CAPTURING SAVINGS IN MULTIFAMILY AFFORDABLE HOUSING

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.

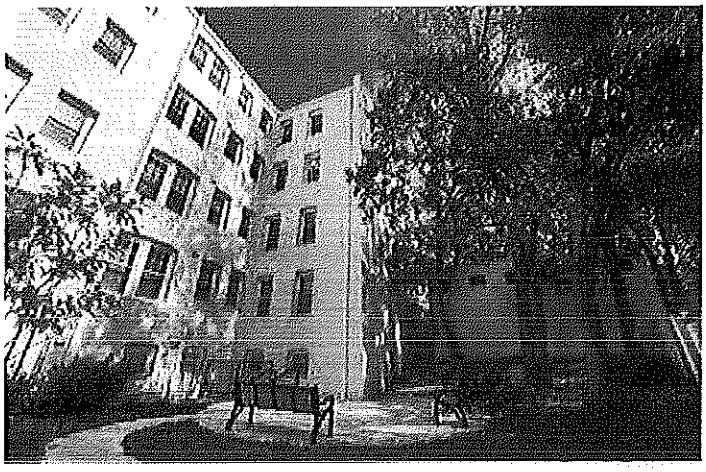
RECOMMENDATION #1: DEVELOP COMPREHENSIVE, EASY-TO-USE PROGRAMS TO CAPTURE ALL COST-EFFECTIVE ENERGY SAVINGS

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.

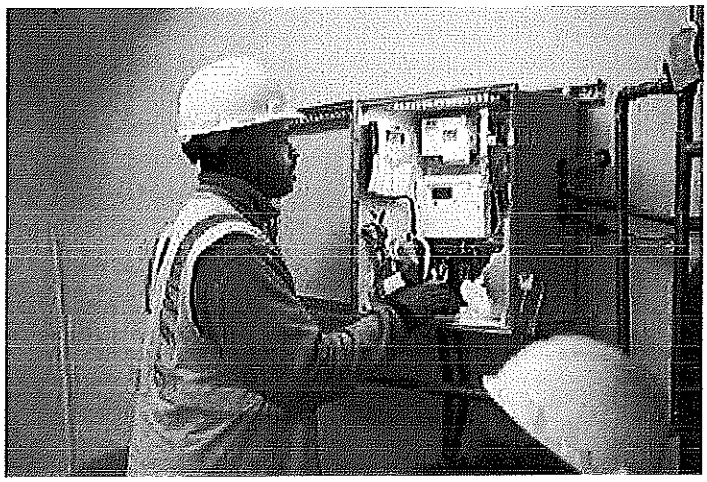
Sub-recommendation 2.2: Provide access to innovative financing products to fill energy efficiency funding gaps

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

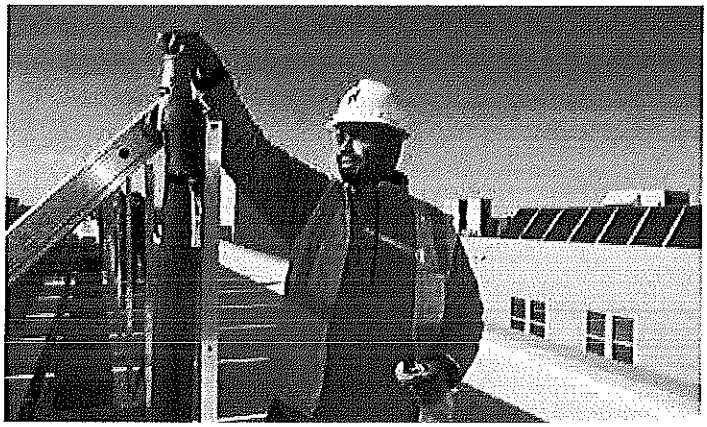
Better coordination and collaboration among energy efficiency and housing program administrators can leverage resources and align policy and program requirements. Despite having common interests, there has been limited collaboration among these stakeholders in the St. Louis area to date. This has resulted 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 endorse these recommendations at this time.

Endnotes

1 Clean Energy Trust, "Clean Jobs Illinois: An In-Depth Look at Clean Energy Employment in Illinois," 2014, info.cleanenergytrust.org/clean-jobs-illinois-full-length-report. Environmental Entrepreneurs, "Clean Jobs Missouri," February 2015.

2 ACEEE, "Engaging as Partners in Energy Efficiency: Multifamily Housing and Utilities," January 26, 2012. ACEEE, "Apartment Hunters: Programs Searching for Energy Savings in Multifamily Housing," December 2, 2013.

3 Malgrem, Ingrid and Skumatz, Lisa, "Lessons from the Field: Practical Applications for Incorporating Non-Energy Benefits into Cost-Effectiveness Screening," ACEEE Summer Study on Energy Efficiency in Buildings, 2014.

Appendix 2: Detailed Affordable Multifamily Unit Counts for Laclede and MGE Territories

NOTE: The 3+ number is the 5+ number to the left, plus units in buildings of 3-4 units. Do not add the 3+ and the 5+ numbers, as the 5+ numbers are already included in the 3+ numbers.

	All Housing Units (SF+MF)	All MF (5+)						All MF (3+)					
					Affordable							*Affordable*	
Utility	Total	Total	Market-Rate	Total Affordable	Un-subsidized Affordable	Subsidized Affordable (HUD, LIHTC, Rural, etc.)	PHA-Owned Affordable	Total	Market-Rate	Total Affordable	Un-subsidized Affordable	Subsidized Affordable (HUD, LIHTC, Rural, etc.)	PHA-Owned Affordable
Laclede	903,304	158,183	82,420	75,763	30,391	40,221	5,151	212,618	109,104	103,514	58,253	40,398	5,151
MGE	784,434	122,441	41,087	81,354	38,101	38,678	4,575	152,384	56,840	95,544	52,375	38,802	4,575
Spire = Laclede + MGE	1,687,738	280,624	123,507	157,117	68,492	78,899	9,726	365,002	165,944	199,058	110,628	79,200	9,726

Sources: U.S. Census American Community Survey 5-year estimates (2008-2012), National Housing Preservation Database (NHPD) from the Public and Affordable Housing Research Corporation and the National Low Income Housing Coalition, New Market Tax Credits Census tract data, 2014 Platts Geospatial Data. Analysis by Elevate Energy and the National Housing Trust.

All subsidized information was pulled from the National Housing Preservation Database (NHPD): www.preservationdatabase.com. This includes any property that has received at least one subsidy, including HUD, USDA Rural, LIHTC, PHA, and FHA. The "unsubsidized affordable" units are any units in 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 census data. After unit counts were determined at the census tract level, they were aggregated up to utility territories with 2014 Platts Geospatial Data.