Exhibit No. 401

National Housing Trust – Exhibit 401
Annika Brindel
Rebuttal Testimony
File No. GR-2021-0108

Exhibit No.:	
Issues:	Revenue Requirement and Class Cost of Service
Witness:	Annika Brindel
Sponsoring Party:	National Housing Trust
Type of Exhibit:	Rebuttal Testimony
Case No.:	GR-2021-0108
Date Testimony Prepared:	June 17, 2021

MISSOURI PUBLIC SERVICE COMMISSION

FILE NO. GR-2021-0108

TESTIMONY

OF

ANNIKA BRINDEL

ON

BEHALF OF

NATIONAL HOUSING TRUST

June 17, 2021

Q. Please state your name and business address.

A. Annika Brindel, 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 its Midwest Director of Energy Efficiency Policy. 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 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 eleven years of professional experience with energy policy, affordable housing, and green building, both from an energy and a housing perspective. Beginning in 2011, I spent over two years leading the nonprofit Alliance to Save Energy's engagement of publicly-owned non-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.

In my work for the National Housing Trust, 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, Michigan, Iowa, and Kansas (under the name Annika Brink). In 2015, I worked with a Kansas City-based housing nonprofit to organize a series of three convenings to explore the experience, barriers, solutions, and potential recommendations related to expanding energy efficiency for affordable multifamily housing in the greater Kansas City metro area. In 2014-2015, I worked with St.-Louis-area and statewide stakeholders to produce a white paper on this topic, as relates to Missouri and Illinois. I was a member of the energy usage stakeholder group that provided input to the Missouri Division of Energy as they developed the last State Energy Plan. In February 2018 I began working with other stakeholders to form a "Low-Income Work Group" under the auspices of the Missouri Energy Efficiency Advisory Collaborative (MEEAC) and I am currently serving on this work group's Steering Committee.

In addition to my work at the National Housing Trust, 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.

Q. Have you previously testified before this Commission?

A. Yes, I previously provided testimony under the name Annika Brink in Ameren Missouri's 2016-18 MEEIA filing (EO-2015-0055), in Spire Missouri's 2017 rate cases (GR-

2017-0215 and GR-2017-0216), in Ameren Missouri's 2019-2024 MEEIA filing (EO-2018-0211), in Ameren Missouri Gas' rate case (GR-2019-0077) in Evergy's 2019-2024 MEEIA filing (EO-2019-0132 and EO-2019-0133), and in an Empire District rate case (ER-2019-0374). I have also presented to Commissioners and stakeholders at various workshops, convenings, and meetings, such as the MEEAC's events.

Q. Please summarize your testimony.

A. First, I address issues related to the revenue requirement. I begin by outlining why NHT opposes increases to Residential and Small General Service bills, the financial challenges facing Missouri's families, and what the Company's proposed rate increases would mean for low-income and low-income multifamily customers. I describe the size of the low-income multifamily population in the Company's territory 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 Company's proposal to continue its co-delivery low-income multifamily energy efficiency program as well as to roll out a new non-co-delivery low-income multifamily program. As part of this discussion, I highlight that the proposed low-income multifamily budgets are likely too low and recommend certain program design features. Next, I explain why NHT is opposed to the Company's proposed multifamily pilot to subsidize gas hookups in new construction multifamily buildings. Then, I comment and build on intervenors' Direct Testimony related to fees for reconnection, collection trips, and late payments. Finally, I express support for and supplement intervenors' Direct Testimony on data tracking and reporting, and the use of data to target homes with high energy burdens.

After the revenue requirement discussion, I address issues related to rate design and class cost of service. I begin by explaining why high fixed charges have an inequitable impact on low-income and multifamily households, and by expressing support for limiting the Residential and Small General Service fixed charges. Next, I outline why an inclining block rate is preferable to a single volumetric charge for Residential customers. Finally, I explain why NHT does not support the Company's proposed flat rate "single fixed charge" pilot, express support for the low fixed charge pilot, and recommend conditions to complement these proposed billing pilots.

Throughout my testimony, I will use "the Company" or "Spire" to refer to Spire Missouri.

REVENUE REQUIREMENT

Q. Does NHT support the Company's proposed increase to residential bills?

A. No.

Q. What would the Company's proposed rate increase mean for low-income and low-income multifamily customers?

A. In its Schedule WES-3, the Company indicates that the average Residential Spire customer will pay 5.55% or $39.36 more annually above current rates.[1] And, the average Small General Service customer, which includes master-metered and common area multifamily meters, will pay 7.59% or $1,332 more annually above current rates.[2] Contrast this proposed increase with the percentage of Missouri households living at 200% of the Federal Poverty Level, a common benchmark for qualifying for certain federal programs, such as the Weatherization

[1] *Schedule WES-3,* GR-2021-0108, p. 1.
[2] *Schedule WES-3,* GR-2021-0108, p. 2.

Assistance Program: 31.5%.[3] Nationally, Missouri ranks at 20th in the bottom half of states in terms of poverty rate (#1 being the worst).[4] For extremely low-income renter households (those making 30% or less of the area median income), an astounding 65% are severely housing cost burdened, meaning they pay more than 50% of their income for housing plus utilities: the affordability standard set by the federal government is no more than 30% of income going toward housing plus utilities.[5] It is difficult for low-income and low-income multifamily households to absorb utility bill increases, because they are already facing high housing and 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 Company's service territory and what are the levels of housing and energy burden facing these households?

According to analysis conducted for Energy Efficiency for All's 2015 Potential Study, 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. 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.

[3] Missouri Community Action, *2020 State of the State Poverty in Missouri*, data drawn from U.S. Census, 2018, pp. 3-4. https://missouripovertyreport.org/.
[4] Ibid, pp. 3-4.
[5] National Low Income Housing Coalition, *Housing Needs by State/Missouri*, tabulations of U.S. Census American Community Survey PUMS data, 2019. https://nlihc.org/housing-needs-by-state/missouri.

Table 1: Affordable Multifamily Unit Counts for Spire Missouri's territory[6]

Note: The 3+ numbers are the 5+ numbers plus units in buildings of 3-4 units: do not add the 5+ and 3+ numbers.							
	All Housing Units (Single Family + Multifamily)	**All Multifamily (5+)**			**All Multifamily (3+)**		
	Total	Total	Market-Rate	Affordable	Total	Market-Rate	Affordable
Spire	1,687,738	280,624	123,507	157,117	365,002	165,944	199,058

The different types of affordable multifamily housing are public housing (owned by a city, county, or other public entity), subsidized housing (privately owned, but with affordability restrictions in place following Low Income Housing Tax Credit, HUD, or USDA rules), and unsubsidized housing (privately owned, but without affordability restrictions, and affordable by virtue of market forces).

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, 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,

[6] 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

Milwaukee, Cincinnati, Cleveland, Detroit, and Minneapolis.[7] In both the Kansas City and the St. Louis metro areas, a quarter of low-income multifamily households experienced energy burdens topping 11% (12.87% for Kansas City and 11.08% for St. Louis).[8]

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

A. The Energy Efficiency for All / ACEEE report cited above found that energy efficiency was key to alleviating these high energy burdens:[9]

> *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.*

Therefore, as discussed below, we support Spire's proposed programs to upgrade the efficiency of low-income multifamily properties.

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 Company 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

[7] 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
[8] Drehobl and Ross, Table C1, p. 47.
[9] Drehobl and Ross, p. 19.

fewer in 2009 compared with other households.[10] This translates to significant unrealized low-income multifamily energy savings.

The 2015 Energy Efficiency for All potential study and subsequent supplementary analysis found that if Spire 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 usage sector-wide across its territory in 2034.[11] 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 Company's proposed low-income multifamily programs.

Table 2: Gas Maximum Achievable Savings Estimates, Optimal Energy, 2015[12]

		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%

[10] Pivo, Gary, *Unequal access to energy efficiency in US multifamily rental housing: opportunities to improve*, 2014. Building Research & Information, 42:5, pp. 551-573.
[11] 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.
[12] Mosenthal, P. and Socks, M.

Furthermore, the Company's 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 Company 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.

Table 3: Costs and Benefits for Gas Maximum Achievable Savings Scenarios, Optimal Energy, 2015[13]

	Total Costs (Million 2015$)	Total Benefits (Million 2015$)	Net Benefits (Million 2015$)	BCR
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

Energy efficiency programs are extremely beneficial to low-income renters 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.

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

Q. Do you support the Company's proposal to run both co-delivery and non-co-delivery low-income multifamily energy efficiency programs?

A. Yes, absolutely. The National Housing Trust applauds the Company's commitment to serving this chronically underserved and traditionally overlooked sector and to seeking solutions to working in different geographies. In general, we support the Company's proposed low-income multifamily programs, which contain many best practice design elements that are the result of extensive conversation and partnership. We are grateful for the Company's continued efforts to improve the existing low-income multifamily program offering and troubleshoot barriers to smooth program delivery. There are just a few program design improvements that we recommend be made in order to better serve low-income multifamily customers and take advantage of the available savings opportunities, as discussed later in this testimony.

Q. Do you support the Company's proposed budget levels for the Multifamily Low Income Program (co-delivery) and the Non-Co-Delivery Multifamily Low Income Program?

No, not without further information. The Optimal Energy analysis referenced above supports the feasibility of cost-effective low-income multifamily energy efficiency investments of $1.29 to $2.31 million annually. We recommend that, when combined, the budgets for the two proposed low-income multifamily programs (co-delivery and non-co-delivery) fall within this range. There is currently insufficient information in this case to assess the proposed budget level, as the Company has not stated a specific budget amount for the non-co-delivery program. Sheet No. R-30.13 states an annual budget of $500,000 for the co-delivery program (a substantial decrease), but Sheet No. R-30.13a states no specific annual budget amount for the proposed new

non-co-delivery program. In his Direct Testimony, Company witness Dean states that "the program would be funded by using unspent and/or carryover energy efficiency program portfolio funds from prior years."[14] We are pleased that these funds are being retained for investment in the low-income multifamily sector. If this unspent/carryover funding amount constitutes $790,000 or more annually, then the total combined amount to be invested by the two programs is appropriate for the energy savings potential of this sector. We anticipate, however, that the unspent/carryover funding falls short of this amount: we recommend that the Company's two proposed annual low-income multifamily budgets be adjusted to reach a combined total of at least $1.29 million after an initial ramp-up period of no longer than one year.

Q. Which program design improvements to Spire's proposed low-income multifamily programs do you recommend?

As an advocate for tenants and owners of low-income multifamily housing, NHT regularly advocates for free or low-cost low-income offerings and well-designed multifamily programs, which together ensure equitable program participation opportunities for low-income households.[15] In this case, we recommend two program design improvements.

First, for the non-co-delivery program, we recommend that Spire attempt to coordinate with local electric utilities where possible, though we believe Spire should retain full flexibility to deliver this program independently from other utilities.

[14] p. 8.
[15] 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

Second, we recommend that Spire intensify its efforts to deliver building shell and envelope savings in these two programs. We believe that these are largely untapped savings that would also deliver substantial health and comfort non-energy benefits to renters. EEFA potential study analysis estimates that 11% to 29% of the 20-year cumulative potential savings in affordable multifamily buildings statewide could come from building shell and envelope measures.[16] We recommend that Spire specifically call out building shell and envelope measures such as insulation and air sealing as eligible prescriptive measures in its tariff sheets and that it examine its incentive levels, marketing, and other program design elements related to these measures with a goal of deriving at least 11% of annual savings from building envelope measures across the two low-income multifamily programs.

NHT also supports 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 can enable utilities to ease gas transmission capacity constraints and delay or avoid costly investments in new pipeline infrastructure.[17] These are costs that would otherwise have been passed on to customers.

Q. What is your position on the proposed multifamily pilot program to subsidize gas hookups in new multifamily buildings?

A. NHT opposes this proposed multifamily pilot program. Furthermore, we believe that Spire should no longer be allowed to subsidize the cost of gas hookups in single family homes. If

[16] Mosenthal, P. and Socks, M. Here, 11% correlates to the "No NEBS" scenario and 29% correlates to the "High NEBs" scenario (more shell and envelope measures become cost-effective when NEBs are included in calculations).
[17] 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

alignment between how multifamily and single family are treated is desired, this alignment should be achieved by eliminating the single family subsidy, not adding a new multifamily subsidy.

Q. What are the economic arguments against the proposed multifamily pilot program for gas hookups?

A. There are four main economic arguments:

1) Future regulation of greenhouse gas emissions will likely result in natural gas becoming increasingly expensive.
2) The Company's analysis supporting the pilot appears to assume no free ridership, which is not a realistic assumption.
3) Even if there is a gas rate impact benefit to ratepayers, there will be a corresponding electric rate increase (assuming that fuel is displaced).
4) The Company's comparison of economics for gas heating vs. electric heating is flawed, because it does not consider the current generation of high-performance heat pumps.

Q. Please explain the economic argument related to the regulation of greenhouse gas emissions.

A. In the long run, we expect that the regulation of greenhouse gas emissions will likely result in natural gas becoming increasingly expensive. By subsidizing new natural gas hookups, the Company would lock buildings into natural gas for decades. It is not reasonable for ratepayers to subsidize investment in new natural gas infrastructure and the acquisition of new natural gas customers if we expect natural gas to become increasingly expensive over the

lifetime of the infrastructure. Furthermore, these subsidies would create a regulatory asset which, because it will be recovered over decades, is at serious risk of becoming a stranded asset if/when the state/utilities have to reduce their greenhouse gas emissions. Going forward, as the economic and regulatory constraints on the natural gas and electric systems evolve, and as the trend of a lower-emission electric grid continues, natural gas should compete with electricity and other fuels on its own merits.

Q. Please explain the economic argument related to free ridership.

A. It appears that the Company's analysis supporting the pilot assumes no free ridership, which is not a realistic assumption. Company witness Selinger's argument about the cost of the subsidy being recovered over time through lower rates appears to assume that every multifamily building that takes the subsidy would not have connected to gas without it – i.e., no free riders. That cannot possibly be the case. On page 31 of his Direct Testimony he makes the case that subsidizing multifamily gas hookups will benefit existing customers by spreading fixed costs across a larger customer base.[18] However, it is not at all clear that would be the case.

For it to be true, the upward pressure on rates from the $1,500 per apartment subsidy would need to be offset by downward pressure on rates from added gas sales spreading fixed costs. This may be the case if one assumed all new multifamily buildings receiving gas hookup subsidies would not have chosen to receive natural gas without a subsidy. However, that would obviously not be the case. Some level of free ridership is likely, and I imagine it would be a non-trivial percentage. Some new multifamily buildings are hooking up to gas without any subsidy, while some will not hook up even if there is a subsidy. Hypothetically, if eight out of ten

[18] *Direct Testimony of Wesley E. Selinger*, Spire Missouri, GR-2021-0108.

multifamily buildings that hook up with a gas subsidy would have hooked up anyway, then existing gas ratepayers would effectively be paying $7,500 in subsidies (five apartments) for every one apartment worth of increased gas consumption added to the system. I find it hard to see how this would result in lower rates. On page 33, Selinger says that the $1,500 investment would pay for itself in less than six years.[19] Again, I suspect that conclusion is premised on the notion that none of the gas sales would occur without the subsidy. If 80% of them would have hooked up to gas without the subsidy, then it would take 30 years for the subsidy to pay for itself.

Q. Please explain the economic argument related to gas rate and electric rate impacts.

A. Even if there is a gas rate impact benefit to ratepayers, there will be a corresponding electric rate increase (assuming that fuel is displaced). This point is related to the argument above. Consider the alternative to apartments receiving subsidized natural gas hookups – i.e., what that one apartment in five would have done otherwise, in this hypothetical example. If it would have installed electric heat, then you have to acknowledge that you are increasing electric rates because you are spreading fixed electric costs over a smaller volume of sales as a result of a gas subsidy. Why is it appropriate to use a gas subsidy to indirectly raise electric rates?

Q. Please explain the economic argument related to the cost of gas heating vs. the cost of electric heating.

A. The Company's comparison of economics for gas heating vs. electric heating is flawed, because it does not consider the current generation of high-performance heat pumps. Such heat

pumps are likely to result in lower total energy bills in efficient new multifamily buildings, even compared to very efficient gas furnaces (and other gas equipment).

On page 35 of his Direct Testimony, Selinger states that the average Missouri customer will save $800 per year by heating with gas. I suspect that this is the average existing customer and across single family and multifamily. The annual heating cost for new multifamily customers will be much lower than an overall residential average because (a) multifamily apartments are smaller than single family homes and have less surface area exposed to the outdoors; and (b) new construction is more efficient than existing construction on average.

On page 36, Selinger shows a chart (Figure 2) that suggests the national average heating cost with a 97% gas furnace (about $500) is about half of the cost of heating with an air source heat pump with an HSPF (efficiency factor) of 7.7 (about $1,000). However, a high-efficiency gas furnace should be compared to a high-efficiency heat pump, not a standard-efficiency model. If you compare instead to a high-performance heat pump with an HSPF of 11, the electric cost drops to about $700 (That is, (11.0-7.7)/11.0 = 30% savings and $1,000 x (100%-30%) = $700.). If switching to that heat pump eliminates the need for gas, you also eliminate a $22/month fixed gas bill, or $264 per year. That would mean that at $436 (that is, $700-$264), a high-performance heat pump is less expensive in terms of total annual cost to the customer in an average home. It would be interesting to see how that is different for efficient new construction for just multifamily.

Q. Please explain the potential health impacts from a policy to increase natural gas usage in homes.

A. There is mounting evidence that residential natural gas usage is associated with poor indoor and outdoor air quality and negative health impacts. Gas appliances such as stoves emit pollutants inside homes, including CO, NO_2, particulate matter, and formaldehyde. The use of gas stoves, in particular, is associated with respiratory effects, asthma attacks, and increased asthma symptoms.[20] According to the U.S. Environmental Protection Agency, homes with gas stoves have 50% to 400+% higher NO_2 levels than those with electric stoves, sometimes exceeding legal outdoor limits.[21]

A recent Harvard University study, which has also been turned by the Rocky Mountain Institute into an interactive tool,[22] seeks to quantify the cost of health impacts from burning fuels such as natural gas in buildings. It found that, in Missouri:

> *[A]ir pollution from burning fuels in buildings led to an estimated 596 early deaths and $6.677 billion in health impact costs in 2017….*
>
> *Of the total, nitrogen oxides (NO_x) and volatile organic compounds (VOCs)--two of the pollutants associated with burning gas specifically--cost the state an estimated $605 million and $294 million in health impact costs, respectively….*
>
> *[T]hese figures are underestimates and do not account for health impacts from exposure to indoor air pollution, direct exposure to other outdoor pollutants such as ozone or NO_x, or other health burdens like asthmas or emergency room visits.*

As noted above, these figures do not even consider health impacts from exposure to indoor air pollution, such as from gas furnaces or gas stoves. It is questionable whether a ratepayer subsidy

[20] Seals, Brady and Krasner, Andee. *Health Effects from Gas Stove Pollution*, Mothers Out Front, Physicians for Social Responsibility, Rocky Mountain Institute, and Sierra Club. 2020, https://rmi.org/insight/gasstoves-pollution-health. pp. 8, 12. For further reading, see: U.S. Environmental Protection Agency studies cited within this document on p. 12.

[21] Ibid, p. 11. For further reading, see: studies cited within this document on p. 11.

[22] https://iopscience.iop.org/article/10.1088/1748-9326/abe74c
https://rmi.org/health-air-quality-impacts-of-buildings-emissions#MO

that could have the effect of exposing additional families to high levels of indoor air pollution and potential additional health impacts is good policy and in the public interest.

Q. What actions should the Company take regarding fees for reconnection, collection trips, and late payments?

A. NHT supports the Direct Testimony submitted by other intervenors arguing for the elimination of late fees (Legal Services of Eastern Missouri witness Heggeman) and reconnection, collection trip, and punitive late fees (Consumers Council witness Hutchinson). When a customer has an inability to pay their bill, additional fees do not increase their ability to pay their bill.

Regarding the Company's proposed late payment rules for its Arrearage Repayment Program, as outlined in Company witness Lavin's Direct Testimony, we recommend that the Company amend its proposed rules to allow participants to remain in the program so long as they do not have "more than two" rather than the proposed "two" consecutive late payments. When households are in crisis, the crisis may well extend longer than one month: we feel a longer grace period is sufficiently warranted. In addition, we recommend that the Company not attach additional conditions to these payments in order for them to count as payments. That is, the Company should not require that payments are full or complete in addition to being timely.

Q. What actions should the Company take regarding tracking, reporting, and leveraging data?

A. NHT supports the Direct Testimony submitted by Consumers Council witness Hutchinson calling for Spire to be ordered to track and report energy burden data, number of cut-offs, collection actions, and other data. Building on the need Hutchinson has stated, NHT

believes it is important that these data be publicly available on the Company's website (not only in the Missouri Public Service Commission's online EFIS system) in order to facilitate wide stakeholder engagement with these data. Furthermore, the Company should include racial, ethnic, and geographic characteristics when tracking and reporting these data. Geographic reporting should be at the Census tract level in order to leverage Census information when interpreting the Company's data.

NHT also supports Hutchinson's call for the Company to target services to homes with high energy burdens. Specifically, NHT thinks these homes should be targeted, not only with energy efficiency programs, but also with health and safety measures, which can enable energy efficiency work to take place in homes with substantial deferred maintenance and safety deficiencies. When targeting by energy burden, it is important to account for housing type by targeting households with high energy burden *within* different categories of housing, so that the most burdened single family *and* multifamily households will be served.

RATE DESIGN / CLASS COST OF SERVICE

Q. How do high fixed charges affect low-income and multifamily households and what are your recommendations regarding fixed charges in this case?

Recall that Missouri's low-income and multifamily households have high energy burdens, as explored earlier in my testimony. Midwestern multifamily homes use 43% *more energy per square foot* than single family detached homes.[23] Yet, Midwestern multifamily

[23] U.S. Energy Information Administration, *Residential Energy Consumption Survey*, 2009. Table CE1.3: Summary Totals and intensities, Midwest Homes, https://www.eia.gov/consumption/residential/data/2009/. Note: 66,000 Btu per square foot for households in multifamily buildings of 5+ units vs. 46,100 Btu per square foot for single family detached homes.

households tend to use *less total energy* than other households: less than half of what is consumed by a Midwestern single family detached home according to 2009 Residential Energy Consumption Survey data.[24] As comparatively low energy users, low-income multifamily households are at particular risk of harm from high fixed charges.

The Company should seek to alleviate (or at a minimum, not add to) the energy burden faced by low-income households generally (which also tend to be low energy users), and low-income multifamily households specifically, while incentivizing energy savings behavior and investments in low-income multifamily buildings. Low fixed charges are one component of a strategy to achieve these goals.

Q. What are your opinions on the Company's proposal to increase the fixed customer charges for residential customers?

A. I caution the Company against its proposal to raise the Residential fixed charge from $20 and $22 in the west and east territories, respectively, to $22 statewide.[25] In addition to penalizing low energy users, including those living in lower-square-footage homes, such as multifamily apartments and many low-income homes, higher fixed charges would make it harder for customers to impact their total bills through installing measures that save energy in their homes. Each energy saving step taken would have lower payback, thereby disincentivizing behavior change and the installation of energy saving measures. We support lower fixed charges: for

[24] *Id.* Note: 51.9 million Btu per household for multifamily buildings of 5+ units vs. 128.0 million Btu per household for single family detached homes.

[25] Tariff YG-2018-0117, Sheet No. 2, Tariff YG-2018-0118, and the Company's proposed tariff in this case, Sheet No. 2.

example, Consumers Council of Missouri witness Hutchinson's recommendation to limit the Residential fixed charge to $16.

The National Housing Trust strongly supports lower residential fixed charges. The Company's proposal to raise residential fixed charges seems to be working in direct opposition to the beneficial low-income energy efficiency programs proposed by the Company. These low-income programs are essential, because while low-income multifamily households can respond to price signals with behavior change to conserve energy, they have little ability to invest in physical improvements to their apartments and are thus particularly vulnerable to rising energy costs. First, they lack the means to invest in upgrades. Second, most multifamily households rent, and thus lack the decision-making power to change the physical characteristics of their apartments via new many types of energy-saving equipment/measures.

Q. What are your opinions on the Company's proposal to increase the fixed customer charge for Small General Gas Service customers?

I caution the Company against its proposal to raise the Small General Gas Service fixed charge from $30 and $35 in the west and east territories, respectively, to $35 statewide.[26] Both the proposed Residential and the proposed Small General service charge are relevant to the multifamily sector: Residential rates are relevant for individually-metered buildings, and the Small General Gas Service charge is relevant for common area meters and for master-metered buildings. A higher fixed charge would make energy efficiency upgrades less financially

[26] Tariff YG-2018-0117, Sheet No. 3., Tariff YG-2018-0118, Sheet No.3.1, and the Company's proposed tariff in this case, Sheet No. 3.

attractive in master-metered affordable multifamily buildings and in common areas, thus disincentivizing owners from pursuing improvements.

NHT strongly supports low fixed charges across all service categories impacting the affordable multifamily sector, including the Small General Service rate class.

Q. Should the Company switch from an inclining block rate to a single volumetric charge, as it has proposed to do for the Residential rate class?

A. No. An inclining block rate design such as the Company currently has in place, is preferable to a single volumetric charge. A single volumetric charge tends to discourage desirable efficiency and conservation activities by limiting the cost signals of marginal natural gas usage and decreasing the cost-effectiveness of such activities. This may also impact energy efficiency program uptake and make it more difficult for the Company to fully expend its energy efficiency budgets. We recommend that the Company retain an inclining block rate design for its residential customers.

Q. What recommendations do you have regarding the Company's proposed flat rate "single fixed charge" pilot in its Customer Choice Billing Program?

A. NHT recommends that the Company not be allowed to offer this pilot. Per Company witness Selinger's Direct Testimony, this pilot would charge customers a flat monthly rate via a single fixed charge of $40.50, based on the Company's average residential cost of service per month.[27] We have two main objections. First, this billing structure provides no price signals to customers and therefore discourages desirable energy conservation and energy efficiency activities relative to standard billing. Second, because the single fixed charge is based on average

[27] *Selinger Direct Testimony*, p. 25.

residential cost of service, a large portion of residential customers – and specifically low energy users such as low-income and multifamily households – would pay more if enrolled in this pilot. Yet, the Company has not sufficiently outlined steps it would take to ensure that low-income households and other low energy users are not signed up for a pilot that is at the outset already likely to result in higher bills.

Q. If the Commission decides to approve the single fixed charge pilot, what conditions should it impose?

A. If the Commission rejects these arguments and agrees to allow the Company offer a flat rate ("single fixed charge") pilot, it should require the Company to meet certain conditions. First, the pilot should only be offered to customers with at least 12 months of energy usage data and the Company should be required to use customers' individual weather-normalized historical billing data to show prospective participants what their total bills might be in the upcoming year under both the flat rate monthly charge pilot billing and standard billing. There should be standard counseling and a signed customer acknowledgement that their bills may be higher under the pilot than they would have been under standard billing. Second, the Company should be required to present potential participants with alternative/additional billing, payment, assistance, and energy efficiency options available to qualified low-income, elderly, and/or disabled customers, and to instead/additionally enroll potential participants in these options as applicable. Third, the Company should be required to track and issue a public report on changes in energy usage among participants in the two pilots and as compared to customers with standard billing. This report should control for variables that may impact which billing structure a customer selects, as well as other variables.

Q. What recommendations do you have regarding the Company's proposed low fixed charge pilot in its Customer Choice Billing Program?

A. NHT supports this pilot. Here, it is important that the Company educate potential participants about, and enroll participants in, opportunities to reduce their energy usage via the Company's energy efficiency programs.

And, as outlined above, the Company should be required to track and issue a report on changes in energy usage among the two pilots and as compared to customers with standard billing. This report should control for variables that may impact which billing structure a customer selects, as well as other variables.

Q. Does this conclude your testimony?

A. Yes it does.

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of Spire Missouri Inc.'s Request for Authority to Implement a General Rate Increase for Natural Gas Service Provided in the Company's Missouri Service Areas.	))))	Case No. GR-2021-0108

AFFIDAVIT OF ANNIKA BRINDEL

CITY OF MINNEAPOLIS,	)	
	)	**SS**
STATE OF MINNESOTA	)	

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

1. My name is Annika Brindel. I work in the City of Minneapolis, State of Minnesota and I am employed by The National Housing Trust as the Midwest Director of Energy Efficiency Policy.

2. Attached hereto and made a part hereof for all purposes is my Rebuttal 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.

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

/s/ Annika Brindel
Annika Brindel

Subscribed and sworn to me this 17th day of June, 2021

/s/ Gaoye Kong
Notary Public

My commission expires: Jan 31, 2024

GAOYE KONG
NOTARY PUBLIC - MINNESOTA
My Commission Expires Jan. 31, 2024