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| Exhibit No.: |  |
| Issues: | Ameren Missouri’s Proposed MEEIA Cycle III Low-Income Multifamily offerings |
| Witness: | Matthew Socks |
| Sponsoring Party: | Natural Resources Defense Council |
| Type of Exhibit: | Rebuttal Testimony |
| Case No.: | EO-2018-0211 |
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Rebuttal Testimony of

**Matthew Socks**

On Behalf of

**Natural Resources Defense Council**

August 30, 2018

**Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

A. Matthew Socks, Optimal Energy, Inc., 10600 Route 116, Hinesburg, VT 05461.

**Q. ON WHOSE BEHALF ARE YOU TESTIFYING?**

**A.** I am testifying on behalf of the Natural Resources Defense Council.

**Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?**

**A.** I am a senior consultant at Optimal Energy, Inc., a consultancy specializing in energy efficiency and utility planning. Optimal Energy advises numerous parties including utilities, non-utility program administrators, government and environmental groups.

**Q.** **PLEASE PROVIDE A SUMMARY OF YOUR QUALIFICATIONS AND EXPERIENCE.**

**A.** I have 11 years of experience in all aspects of energy efficiency, including policy development and research, integrated resource planning, cost-benefit analysis, and efficiency and renewable program design, implementation and evaluation. I have contributed to the design and evaluation of utility and non-utility residential, commercial and industrial energy efficiency programs throughout North America.

I have also completed numerous studies of efficiency potential and economics in many locations, including, but not limited to, Delaware, Massachusetts, New England, New York, and Vermont. These studies ranged from high level assessments to extremely detailed, bottom-up assessments evaluating thousands of measures among numerous market segments. As a recent example, I served as the technical lead on a multistate affordable multifamily potential study for the Energy Efficiency for All initiative[[1]](#footnote-1) and conducted subsequent, related studies for the California investor owned utilities and the Los Angeles Department of Water and Power.

I am currently a member of Optimal Energy consulting team working as advisors on energy efficiency planning and programs in Massachusetts on behalf of the Energy Efficiency Advisory Council. In these roles, Optimal Energy oversees and advises on utility program administrators’ plans, program designs, implementation and performance in that state.

I have an *B.S.* in Mechanical Engineering from the Massachusetts Institute of Technology.

**Q. PLEASE SUMMARIZE YOUR TESTIMONY.**

A. My testimony begins by comparing Ameren Missouri’s (“the Company”) proposed MEEIA portfolio for 2019-2024 (“Cycle III”) and the current MEEIA portfolio for 2016-2018 (“Cycle II”). I indicate that there is a significant increase in the Multifamily Low-Income program budget and savings in Cycle III. My testimony supports this increase but recommends a shift in the trajectory of how the budget and savings goals are laid out over the 6 years in Cycle III. I express concern over the current trajectory and budgets, as they may primarily incentivize lighting and other low-cost direct install measures, which will hamper the Company’s ability to implement a comprehensive program. I then introduce a low-income multifamily spending benchmark from another jurisdiction and present an illustrative analysis of potential budgets and saving targets, including the necessary ramp up, that may be required to allow the Company to its achieve the desired deep, comprehensive Multifamily Low-Income program for Cycle III.

**Q. Are Ameren’s Multifamily Low-Income annual program budgets and savings goals appropriately distributed over the six-year plan period?**

A. Ameren’s budgets and savings targets for the “Multifamily Low-Income” program represent a significant increase relative to Cycle II. We generally find the cumulative total savings targets acceptable and encourage the increased emphasis the plan places on developing comprehensive projects in the low-income multifamily segment, and while we support the aggressiveness of the goals, we have some concerns about the trajectory of the both the budgets and savings targets over the six-year planning period. Specifically, we caution that the savings targets in the initial years may be unattainable without heavy reliance on low-cost direct-install (“DI”) measures. It is very unlikely that the overall savings targets can be met with the annual budgets proposed without a portfolio of measures much more heavily skewed toward lighting and other low-cost, low barrier measures such faucet aerators.

While there is still considerable uncertainty surrounding the 2020 Energy Independence and Security Act (EISA)[[2]](#footnote-2) impacts on program savings, it is likely that the importance of lighting savings in the portfolio will be significantly diminished by 2021, if not earlier. Therefore, the program will need to shift to a broader set of measures to meet savings targets.

Developing a program that successfully captures comprehensive energy efficiency in the low-income multifamily segment requires significant time to build relationships with building owners and a ramp up to meet the program’s full potential. We suggest the Company start with lower budgets in the first year and then ramp up steadily, to build in time for this relationship-building and for any changes in implementation contractors between Cycle II and Cycle III. Implementing the proposed program “as is” will lead to a heavy dependence on simple, low cost, direct-install measures in the early years which will likely delay the development of key relationships and impede the successful development of comprehensive savings in future years. The first year of the program should be about setting a strong foundation for the proposed comprehensive program.

For historical perspective, in its 2016-2018 MEEIA Plan (“Cycle II”), Ameren Missouri proposed Residential Low-Income Program savings targets and budgets that corresponded to total budget dollars per first year annual kWh saved of $0.67, $0.73, and $0.59 for 2016, 2017, and 2018, respectively.[[3]](#footnote-3) These low “$/kWh saved” values indicate a strong reliance on low cost, direct-install measures for 2016-2018. Even with these somewhat low $/kWh saved targets, actual program performance in 2017 yielded a much lower spending rate of $0.31/kWh[[4]](#footnote-4) suggesting the program was more heavily leveraged towards low-cost measures than planned. We have some concern without adequate planning and budgets, the same could happen again during Cycle III. For reference, the planned total budget dollars per first year annual kWh saved for the Cycle III Residential Multifamily Low-Income Program are presented in the Table below:

Table 1: 2019-2024 MEEIA Plan Residential Multifamily Low-Income Program Budgets and Savings Targets[[5]](#footnote-5)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **2019** | | **2020** | **2021** | **2022** | **2023** | **2024** |
| Estimated Annual Budget ($ million) | | 3.9 | 4.5 | 4.7 | 4.7 | 4.3 | 4.1 |
| MWh Target/Savings | | 6,164 | 7,527 | 7,790 | 7,316 | 7,247 | 6,945 |
| *$/kWh Saved* | | *0.62* | *0.60* | *0.61* | *0.64* | *0.59* | *0.59* |
|  | |  |  |  |  |  |  |

The planned $/kWh saved values for 2019-2024 are not significantly different from the planned 2016-2018 values, and do not appear to reflect an increased emphasis on comprehensive improvements. In short, hitting these targets would likely require business-as-usual, direct-install heavy implementation of low cost measures.

As a point of comparison, Massachusetts program administrators spent, on average, $1.14 and $1.27 per first year kWh saved in their Low-Income Multifamily Retrofit programs for 2016 and 2017, respectively.[[6]](#footnote-6) While not fully comprehensive, the Massachusetts programs achieved significant success with more complex measures such as heat pump installations.

To develop an illustrative program spending scenario that may more realistically represents what the Company may expect to spend to achieve comprehensive energy efficiency in the low-income multifamily segment, we first assume it is possible that, given well-designed, mature programs, equipment costs and program administrative spending could both be reduced over time such that overall program spending per unit of energy saved could be held to $1.00 while still running a comprehensive program. Next, we assume the $/kWh saved increases linearly from the Company’s proposed $0.62/kWh in year 1 to a maximum of $1.00 in years 4 through 6 to reflect a gradual shift from a direct-install-based to a more comprehensive program design. In addition, as discussed above, we assume a year 2019 budget slightly lower than that proposed in the Company’s plan to allow for adequate implementation contractor transition. Finally, we ramp up the budget linearly to roughly maintain the same 6-year cumulative energy savings target presented in the Company’s plan. The result of this exercise is presented below:

Table 2: 2019-2024 Illustrative Modified Residential Multifamily Low-Income Program Budgets and Savings Targets, Scenario 1.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **2019** | | **2020** | **2021** | **2022** | **2023** | **2024** |
| Estimated Annual Budget ($ million) | | 3.00 | 4.20 | 5.88 | 8.23 | 8.23 | 8.23 |
| MWh Target/Savings | | 4,839 | 5,874 | 7,259 | 8,232 | 8,232 | 8,232 |
| *$/kWh Saved* | | 0.62 | 0.72 | 0.81 | 1.0 | 1.0 | 1.0 |
|  | |  |  |  |  |  |  |

This illustrative example presents a considerable increase in the overall 6-year cumulative budget—$11.6 million. As a potential alternative, Table 3 below presents the budgets and savings targets if the budget increase is held to half the amount presented in Table 2 while allowing the savings target to fall and maintaining all other assumptions described above.

Table 3: 2019-2024 Illustrative Modified Residential Multifamily Low-Income Program Budgets and Savings Targets, Scenario 2.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **2019** | | **2020** | **2021** | **2022** | **2023** | **2024** |
| Estimated Annual Budget ($ million) | | 3.00 | 3.90 | 5.07 | 6.59 | 6.59 | 6.59 |
| MWh Target/Savings | | 4,839 | 5,455 | 6,259 | 6,591 | 6,591 | 6,591 |
| *$/kWh Saved* | | 0.62 | 0.72 | 0.81 | 1.0 | 1.0 | 1.0 |
|  | |  |  |  |  |  |  |

Finally, to further bolster the argument that Tables 2 and 3 may present more realistic spending scenarios if the intention is to capture comprehensive savings, we point out that Ameren Illinois’s budget for the Residential Income-Eligible Program for 2018-2021 is $1.66/kWh saved.[[7]](#footnote-7) While this reflects spending for both single family and multifamily buildings, it is comparable to combined spending in Massachusetts—$1.48/kWh saved in 2017.[[8]](#footnote-8)

These illustrative examples are provided in the spirit of collaboration. We applaud the Company’s willingness and dedication to pursuing deeper savings in the low-income multifamily sector, but we would like to ensure that the proposed budgets and spending trajectory are adequate to capture truly comprehensive efficiency.

**Q: DOES THIS CONCLUDE YOUR TESTIMONY?**

A. Yes, it does.

1. 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> [↑](#footnote-ref-1)
2. H.R. 6 — 110th Congress: Energy Independence and Security Act of 2007. <https://www.congress.gov/bill/110th-congress/house-bill/6/text> [↑](#footnote-ref-2)
3. 2016-2018 MEEIA Plan, Appendix A - Program Templates. Note that this data reflects both single family and multifamily low income. Data on savings targets and budgets specific to the low income multifamily segment are not publically available for Cycle II. [↑](#footnote-ref-3)
4. Case No.EO-2015-0055. Ameren Missouri PY2017 Summary Tables.xlsx [↑](#footnote-ref-4)
5. 2019-2024 MEEIA Plan, Appendix B - Program Templates. [↑](#footnote-ref-5)
6. http://masssavedata.com/Public/home [↑](#footnote-ref-6)
7. P.17, Second Revised Direct Testimony of Philip H. Mosenthal On Behalf of The People of the State of Illinois. AG Exhibit 1.0-2R. Docket No. 17-0311. State of Illinois. Illinois Commerce Commission. [↑](#footnote-ref-7)
8. <http://masssavedata.com/Public/home> [↑](#footnote-ref-8)