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May 21, 2024

Sherri L. Golden
Secretary of the Board
44 South Clinton Ave., 1st Floor
PO Box 350
Trenton, NJ 08625-0350

Re: Docket No. QO23100733, In the Matter of the Implementation of Federal Inflation Reduction Act HOMES (Home Efficiency Rebates) and HEEHR (Home Electrification and Appliance Rebates) Program

Dear Ms. Golden:

Aeroseal appreciates the opportunity to provide input on New Jersey's proposed programs to implement the Inflation Reduction Act's ("IRA") Home Energy Rebate programs. We commend the Board of Public Utilities ("BPU") for its commitment to effective and efficient implementation of the Home Energy Rebate programs to New Jersey residents and to achieve New Jersey's climate goals, particularly those outlined in Executive Order 316 (2023).

Aeroseal is a climate technology company that uses an innovative air sealing technology to seal leaks in building ductwork and envelope. Aeroseal's technology was developed at the US Department of Energy ("DOE")'s Lawrence Berkeley National Laboratory with partial funding from the DOE.

Aeroseal provides advanced, automated duct sealing, envelope sealing, and central ventilation upgrades to existing and new residential, multi-family, and commercial buildings. In addition to offering these services directly to buildings, Aeroseal trains and certifies a variety of local contractors and businesses to participate in this market, including HVAC and mechanical contractors, insulation installers, home improvement contractors, duct cleaners, and solar installers. Aeroseal and its network of over 1,000 certified contractors have completed more than 230,000 residential energy-saving seals and over 10,000 commercial buildings nationwide.

The summary of Aeroseal's comments are below with more detailed responses to the questions raised in the BPU's Request for Information (RFI) dated May 7, 2024 below.

Summary

Aeroseal supports the Staff's proposal to allocate 100% of the Home Efficiency Rebate ("HOMES or HER") funding and 85% of the Home Electrification and Appliance Rebate ("HEEHR or HEAR") funding to transform multifamily buildings in low-income neighborhoods through the M-RISE program. Further, Aeroseal supports the Staff's proposed "whole-building" approach and recommends that Staff prioritize adoption of technologies to reduce air leakage in existing buildings to maximize energy efficiency, enable electrification, and improve ventilation and indoor air quality in these buildings.

Detailed comments

Aeroseal's comments in response to the questions raised by the BPU in the RFI are as follows:

1. How well does this approach align with the goals of HER, HEAR, and the IRA more broadly?

   Aeroseal believes that the approach outlined by the BPU Staff aligns with the IRA's goals of helping households lower their energy bills, delivering holistic solutions, focusing on disadvantaged and low-income communities, and helping states achieve their climate goals. Multi-family buildings are often more challenging to serve through utility energy efficiency programs than single family homes, and need specifically designed programs, outreach strategies, and incentive structures to scale.

3. What criteria and process could be used to select buildings for the M-RISE Program?

   Aeroseal recommends selecting the buildings with high levels of energy waste/consumption. In our experience, multi-family buildings with the following characteristics have significant air leakage and poor ventilation, and should be prioritized:

   - 6 stories or taller with 50 units or more
   - Built between 1960-2010
   - Kitchen and bathrooms without windows

6. Do you have any other concerns regarding this approach or additional ideas for consideration?

   Aeroseal has the following additional recommendations:

   1. For the Home Efficiency Rebates (HOMES) program, Aeroseal recommends prioritizing central ventilation upgrades for large multi-family buildings. In Aeroseal's experience, multi-family housing built prior to 2010 is often over or under-ventilated due to leaky exhaust shafts, contributing to poor indoor air quality, high energy usage and costs, and poor building performance. Ventilation

is a critical and strategic measure for any energy efficiency or electrification program. Overhauling existing ventilation systems by sealing leaky exhaust shafts, replacing existing oversized and inefficient rooftop fans, and installing constant airflow regulators in existing bathroom and kitchen units results in significant load reductions. These projects can bring older leaky buildings up to *current* building code requirements for both energy efficiency and indoor air quality. Ventilation upgrades are critical to pair with electrification and envelope improvements as part of a whole building approach..

Advanced sealing technologies can seal exhaust shafts from the inside out, thereby enabling 90% leakage reduction exhaust shafts that are otherwise unreachable. This allows for optimization of central ventilation systems by eliminating leakage and reducing the fan design flow significantly, without disruption to building tenants. In Aeroseal's experience, advanced duct sealing solutions can cut gross exhaust flow by 50-60% (~7,000CFM – 10,000CFM of mechanical exhaust in a 100 unit building), improve indoor air quality, and reduce load as a complementary or pre-electrification measure.

An example of this type of project in New Jersey can be found here:

- https://aeroseal.com/wp-content/uploads/2020/06/AS-COM-CaseStudy-Northgate-II.pdf
- https://www.energy.gov/eere/success-stories/articles/eere-success-story-new-jersey-reducing-energy-bills-camdens-families

2. For the Home Electrification Rebate (HEEHR), Aeroseal recommends the program include $1,600 point-of-sale rebate for insulation, air sealing, and ventilation for higher impact measures including advanced duct sealing. Because weatherization and duct sealing is so critical to ensure electrification measures deliver desired efficiency levels, minimize operational cost impacts especially for low and moderate income residents, and improve occupant comfort, New Jersey should stipulate required maximum duct leakage thresholds for the $8,000 heat pump rebate, and consider incentivizing contractors to pair complementary measures like electrification and duct sealing by offering an increased rebate amount for bundling measures.

   Aeroseal's advanced duct sealing process uses a non-toxic water-based glue formula that is aerosolized and sprayed throughout a pressurized duct system, filling both small holes and cracks and all gaps throughout the entire duct system from the inside out. This approach to duct sealing delivers much greater leakage reduction than traditional manual sealing methods and can enable significantly lower duct leakage. Enabling an average of 90% leakage reduction, advanced duct

sealing meets the requirements of ANSI/ ASHRAE/ IES Standard 215. Sealing ductwork is critical for heat pumps, furnaces and cooling systems to perform at their designed efficiency levels. Additionally, this method enables sealing of *all* ductwork in buildings, including ducts that are inaccessible, behind walls, or otherwise not reachable by traditional manual sealing processes. When performed as a pre-electrification measure or paired with a heat pump conversion, advanced duct sealing helps ensure that heat pumps perform to their designed efficiency, mitigate operational cost impacts, and improve comfort by reducing hot air loss in the system.

Importantly, sealing through this advanced method allows measurement of results and leakage reduction in real-time during the sealing process, providing reliable results and instant, built-in verification.

Conclusion

Aeroseal appreciates the opportunity to submit these comments, and looks forward to supporting these programs to deliver energy and cost savings for New Jersey residents.

Respectfully submitted,

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Aeroseal