



Maggie McCarey  
Head of Policy and Market Development, Aeroseal  
225 Byers Rd  
Miamisburg, Ohio 45342

January 5, 2024

Sherri L. Golden  
Secretary, New Jersey Board of Public Utilities  
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.**

Aeroseal appreciates the opportunity to provide input on New Jersey's proposed programs to implement the federal Inflation Reduction Act's (IRA) Home Energy Rebate programs. We commend the New Jersey Board of Public Utilities (BPU) for convening this call for comments and its commitment to leverage the IRA funding to advance building decarbonization in New Jersey.

**Introduction**

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 and the Environmental Protection Agency.

Aeroseal provides envelope and duct-sealing services to existing and new residential, multi-family, and commercial buildings. Aeroseal trains and certifies a variety of local contractors and businesses to participate in this market, including HVAC contractors, insulation installers, home improvement contractors, duct cleaners, and solar installers.

Aeroseal has a network of over 1,000 dealers that operate in all 50 states across the United States. This robust network has completed more than 230,000 energy-saving duct seals nationwide, including a growing market in New Jersey.

To enable New Jersey to achieve its goal to electrify 400,000 homes, 20,000 commercial spaces, and make 10% of homes in low income communities electrification-ready by 2030, technologies like Aeroseal are critical to minimize energy loss, maintain affordable energy bills, and ensure resident comfort.

### **Benefits of Advanced Duct Sealing**

According to EnergyStar, duct sealing can address up to 20% in energy savings for households in the United States. However, traditional manual sealing methods like tape and mastic are unreliable and difficult to do effectively especially in homes with inaccessible ducts.

Aeroseal's advanced sealing process uses a 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. The process includes, first, hand sealing large leaks using traditional methods, followed by full system sealing using Aeroseal's technology. This enables sealing of *all* ductwork in buildings, including ducts that are inaccessible, behind walls, or otherwise not reachable by traditional manual sealing processes. Installers measure results and leakage reduction in real-time, providing reliable results.

Sealing ductwork is critical for furnaces and cooling systems to perform at their designed efficiency levels. Data from over 230,000 advanced duct seals completed by Aeroseal installers nationwide suggests that Aeroseal results in natural gas savings of up to 30% per home per year and electricity savings of up to 40% per home per year depending on home type, climate zone, and type of HVAC equipment. Across 9000+ seals in the New Jersey area, advanced duct sealing has enabled average leakage reduction of 80%. By enabling such high levels of leakage reduction, advanced duct sealing meets the requirements of ANSI/ASHRAE/IES Standard 215 and can significantly reduce energy consumption and costs over the building's lifetime, as well as improve indoor air quality and comfort for residents.

Advanced duct sealing is even more impactful when pairing with a heat pump that utilizes existing ductwork in the home. High efficiency, variable speed heat pumps blow a low volume of air consistently through the ductwork, amplifying both the efficiency loss but also the comfort issues that come with leaky ducts. 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 and mitigate the added load from electrification, particularly reducing reliance in the winter on electric resistance heat.

Advanced duct sealing also helps increase comfort and resident acceptance of the heat pump technologies. When electrification is undertaken in a home or building with high duct leakage, leaky ducts result in reduced hot air temperatures at the register that often create a "cool heat" effect: many homeowners feel as if their heat pump is blowing cold air because the register air temperature is noticeably lower than body temperature. In fact, this experience has led both contractors and homeowners to hesitate in the adoption of heat pumps. Duct sealing can increase the air temperatures at registers during winter heating and reduce the customer dissatisfaction with heat pump conversions. Based on AeroSeal field data, well-sealed ducts can lead to an average register temperature increase of 7°F compared to poorly sealed ducts.

### **Comments**

AeroSeal appreciates New Jersey's commitment to ensure that the federal IRA rebate programs are implemented and coordinated to support building electrification and achieve the goals of Executive Order 316. To this end, AeroSeal recommends that the New Jersey BPU utilize federal funding to complement existing programs by prioritizing federal funds for measures that reliably reduce energy, prepare homes for electrification, and that are not currently incentivized by existing state and utility programs.

Specifically, AeroSeal recommends that:

1. For Home Efficiency Rebates (HER), the BPU should include testing and measuring duct leakage as part of the home energy audit to assess current leakage and recommend weatherization measures. Based on the levels of leakage in each home, there should be clear guidance on when traditional leakage reduction methods, e.g. duct sealing using tape and mastic, is acceptable and when advanced methods of leakage reduction, e.g. air sealing using AeroSeal, are required.

For example, the BPU could consider implementing a 200 CFM threshold where homes with leakage less than 200 CFM are recommended traditional duct sealing funded through existing programs such as the Home Weatherization for Income Qualified Customers program currently offered by the New Jersey utilities. Homes with leakage of 200 CFM or more are recommended to undertake advanced duct sealing, i.e. duct sealing that delivers leakage reduction of 70% or more.

For HER, AeroSeal recommends providing implementers with flexibility on incentive levels needed for customized whole-home retrofits, but recommend a total (utility plus federal funds) of \$1,250 per system for advanced duct sealing in line with current advanced duct sealing rebates in [Washington](#) and [Connecticut](#) for market rate residents

and higher incentive levels to cover the full cost for LMI residents. Incentives should also apply to multi-family buildings for sealing and optimizing central ventilation systems.

2. To ensure that low and moderate income residents have access to advanced sealing measures, the Home Electrification and Appliance Rebates (HEAR) should include the entire \$1600 point-of-sale weatherization rebate for higher impact measures including advanced duct sealing. The full \$1,600 rebate will ensure low and moderate income residents will have access to advanced sealing technology. As noted above, duct sealing is critical to ensure electrification measures deliver desired efficiency levels, minimize operational cost impacts, and improve occupant comfort. Therefore, the BPU should also stipulate required maximum duct leakage thresholds to access 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.
3. Finally, to maximize access to these programs, AeroSeal recommends that the BPU:
  - a. Adopt a streamlined income verification process by allowing self-certification and eligibility based on participation in other income-based programs;
  - b. Offer rolling or periodic qualification for contractors to allow a wide range of contractors, and therefore, communities to participate and ensure competition to keep prices low;
  - c. Support partnerships with local community organizations especially those serving disadvantaged communities, and
  - d. Consider alternative compliance pathways to the BPI 2400 requirement which can be quite onerous especially for low income communities.

### **Conclusion**

AeroSeal appreciates the opportunity to submit these comments, and looks forward to supporting these programs to deliver building decarbonization for New Jersey residents.

Respectfully submitted,



Maggie McCarey  
Head of Policy and Market Development  
AeroSeal