

Tuesday, May 21, 2024

Secretary of the Board  
New Jersey Board of Public Utilities  
44 South Clinton Ave., 1st Floor  
PO Box 350  
Trenton, NJ 08625-035

Secretary Sherri L. Golden:

[Impulse Labs](#) is grateful for the opportunity to comment on the design of the program to implement the federal Inflation Reduction Act Home Efficiency Rebate (“HER”) and Home Electrification and Appliance Rebates (“HEAR”) presented by the New Jersey Board of Public Utilities (“BPU”).

Impulse is a team of engineers, designers, and innovators building all-electric battery-integrated home appliances. Our [first product](#) is a 30-inch, four-burner cooktop with a built-in 3 kWh lithium iron phosphate battery. In addition to significant performance improvements compared to traditional induction, the technology offers benefits such as grid-edge support, easy 120v outlet installation, and resilience during power outages that can help New Jersey attain a low-carbon future.

Impulse commends New Jersey for carefully considering how the Home Energy Rebate programs can be deployed in a manner that will move New Jersey towards meeting goals set in Executive Order 316. In submitting comments, Impulse aims to provide feedback on New Jersey’s proposed M-RISE program: **to accurately reflect the goals of the IRA program, BPU should clarify that induction stoves are an eligible measure for the M-RISE program.**

Acknowledging the benefits of these stoves in the transition to a low-carbon future, the original Inflation Reduction Act created latitude for states to administer an income-qualified incentive for induction technologies of as much as \$840 under the HEAR program. Induction stoves transfer energy directly to pots and pans, enabling the most energy efficient and low-carbon form of cooking. Beyond emissions benefits, induction technology should be included as an eligible technology under New Jersey’s proposed M-RISE program for two reasons:

1. Public health benefits: While cooking may have a lower carbon footprint than heating and cooling, switching from fossil gas cooking to induction provides significant health benefits. A growing body of research suggests that fossil gas stoves produce emissions harmful to human health. NO2 exposure increases the likelihood that children develop

respiratory illness or asthma; one December 2022 study<sup>1</sup> attributes 12.7% of all childhood asthma cases to fossil gas stove exposure. Allowing funding to be used for induction stoves helps New Jersey work towards the decarbonization goals set out in the 2019 New Jersey Energy Master Plan while also providing public health benefits.<sup>2</sup>

2. Last lifeline for fossil gas infrastructure: Of all appliances in the household, the stove is the hardest to electrify. Many residents have an emotional connection<sup>3</sup> to their stoves due to frequency of use, preventing them from wanting to switch from fossil gas to lower-carbon technologies. In fact, over 40% of electrification hold-outs would be willing to electrify if they were allowed to keep their gas stove.<sup>4</sup> This provides a lifeline for gas appliances in homes, and maintains fossil gas infrastructure that can otherwise be decommissioned. Providing upfront incentives for electric cooking – especially technologies that rival and surpass gas stove performance – encourages households to pursue electrification.

Additionally, battery-integrated appliances offer additional benefits above and beyond standard induction stoves. These include:

1. Grid support: Battery-integrated appliances enable residents to provide a number of energy services that help strengthen New Jersey's grid and lower energy costs for all residents. Enabled by software, these appliances can be set to automatically charge during low-cost, off-peak times (for customers with time-of-use rates that are available through JCP&L, PSEG, and other New Jersey utilities today) and then discharged at times when energy costs and emissions intensity are highest. Additionally, these appliances act as distributed energy resources that can respond automatically to demand response events and, under certain conditions, backfeed power to the grid. Delivering batteries to homes today primes households to be able to take advantage of these energy-saving, grid-hardening programs as they are rolled out to New Jerseyans.
2. Easy installation: Battery-integrated appliances can be plugged directly into a 120v outlet without additional wiring work or panel upgrades. This limits associated costs and can speed up the time required to electrify homes across the state. Labor cost savings will extend the reach of HEAR funds, allowing New Jersey to serve more households and increasing both affordability and accessibility of home electrification technologies.
3. Resilience: Battery-integrated appliances provide a useful means of putting battery energy storage into the homes and providing backup power in the event of a major

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<sup>1</sup> See Gruenwald, Talor, Brady A. Seals, Luke D. Knibbs, and H. Dean Hosgood, III. 2023. "Population Attributable Fraction of Gas Stoves and Childhood Asthma in the United States" International Journal of Environmental Research and Public Health 20, no. 1: 75. <https://doi.org/10.3390/ijerph20010075>.

<sup>2</sup>See "[2019 New Jersey Energy Master Plan: Pathway to 2050](#)", NJBPU, June 2019.

<sup>3</sup>See "[The gas stove regulation uproar, explained](#)", Vox, Jan 11 2023.

<sup>4</sup>See "[How many Americans want an electric home?](#)", Yale Program on Climate Change Communication, Nov 16 2023.

storm. Battery integrated induction can function easily when the power is out – a main selling point of fossil gas appliances.

Overall, Impulse views New Jersey's proposal for the new M-RISE program as a welcome step in the direction of the State's low-carbon future. By explicitly permitting battery-integrated induction stoves in the M-RISE program, New Jersey has the possibility of working towards decarbonization goals while also offering new health, resilience, and grid support benefits. Impulse thanks New Jersey BPU for the consideration of these comments and looks forward to supporting the State of New Jersey in further efforts to electrify.

Sam D'Amico  
CEO of Impulse