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FROM: Kevin O'Neill, Citizens Climate Lobby (RI chapter)

TO: Senate Commerce Committee c/o [SLegislation@rilegislature.gov](mailto:SLegislation@rilegislature.gov)

SUBJECT: Testimony opposing S2516 and suggesting how to truly reduce residents' energy costs

If efficiency programs were to be defunded, as proposed in this bill, the result would be to save everyone a few dollars in the near term while costing all residents more in both the short term and long term.

In Rhode Island, efficiency funds collected by the electric and gas utility programs have been used in three ways: to help residents understand how they can reduce energy costs, to subsidize weatherization measures that reduce heat loss from homes in winter, and to incentivize the installation of more efficient lights and appliances. I have saved many thousands of dollars by taking advantage of that technical assistance and by responding to such incentives. It would be unfair and unwise to defund state programs that provide such assistance now, while so many others still need it and could save so much, and while continued federal support of efficiency program is anything but certain.

To provide relief from high energy bills, we should be looking at the energy affordability problem holistically. To explain what I mean by that, and because more of Rhode Island's energy spending occurs in winter than in summer, I want to focus on energy efficiency as it relates to heating costs. *See the last page of this testimony for a simple graphic that summarizes the ways efficiency measures can directly reduce heating costs, or continue reading to learn more details.*

Eliminating efficiency fees would reduce average residential electric bills and gas bills by less than 5%.

In contrast, basic weatherization measures will typically reduce heating bills by 10-25% AND will noticeably improve comfort. The potential to reduce annual heating costs by so much is why weatherization assistance has enjoyed bipartisan support at the federal level for 50 years and has been augmented by ratepayer-funded efficiency programs in Rhode Island for 18 years.

Changing to a more efficient heating system can yield even greater annual savings than weatherizing a home:

Electric resistance heating is the least efficient, most expensive way to heat a building or to make hot water; changing to any other heating system will typically reduce heating costs by 60% or more.

Changing from oil- or propane-fired heating systems to electric heat pumps can reduce annual heating costs by 10-45% AND improve summer comfort AND reduce summer cooling costs.

Switching from gas heat to an air-source heat pump, at current gas and electric rates, would increase annual heating costs if the heat pumps are used 100% of the time – as owners might choose to do if their goal is to eliminate CO<sub>2</sub> emissions from their heating system. On the other hand, when heat pumps are added to a home that has an operable gas heating system, local HVAC contractors typically set things up to minimize operating costs; they install simple controls that automatically run the old gas heat system at sub-freezing temperatures where it is the cheaper source of heat; at higher temperatures (when the heat pump is more efficient and can deliver a COP\* 4.0 or higher) the gas heat system is automatically disabled and the heat pump runs instead; and in this way annual heating costs can be reduced. In either case, where heat pumps are replacing older air conditioning equipment, they will reduce summer cooling costs.

Where economies of scale or other considerations would favor using a ground-source heat pump rather than an ASHP, a COP of 4 or higher can be easily maintained year-round and annual costs would be minimized by never

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\* COP stands for "coefficient of performance", a measure of efficiency. At a COP of 4, a heat pump delivers four units of heat for every unit of energy input.

using the old gas heat system. For new homes and other new buildings, designing around heat pumps will deliver lower construction costs than designing around hybrid fossil-heat and conventional air conditioning; and with gas/electricity price ratio expected to rise in the future, heat pumps will lower the total cost of ownership.

More consistent funding of efficiency programs, and the adoption of heat pump energy credits or rates such as those available to Massachusetts residents this year, will upgrade our housing stock and encourage widespread adoption of heat pumps. That will do more than reduce heating costs for those homeowners and business owners who install heat pumps. It will reduce electricity rates for all customers and improve resiliency in several ways:

- By taking advantage of the spare electric capacity currently available in colder months, heat pumps will spread the fixed costs of transmission and distribution systems over more kilowatt hours, thus reducing the delivery charge that currently accounts for 40% of typical residential electric bills.
- By enrolling heat pumps in a demand management system (like ConnectedSolutions) – and by encouraging owners of existing homes to retain their legacy heating systems for emergency backup and peak shaving purposes when they do install heat pumps – the electricity supply charge will be reduced. This will happen for two reasons:
  - Gas consumption will be reduced, thus minimizing the need to burn oil for electricity generation, directly suppressing the price of gas supply, and thus suppressing the price of electricity from gas-fired generators. This price suppressing effect will become even more pronounced as offshore wind provides more of the electricity consumed in New England.
  - ISO-NE will be able to avoid procuring expensive electric capacity for winter peaks. In recent years, at times of peak winter demand, the regional grid operator has needed to press inefficient gas turbine and diesel generators into service. ISO-NE pays for those peaking facilities to be available each year, even in mild winters when not needed. When called into service, ISO-NE pays them even more for the energy they produce. All those costs are passed on to electric ratepayers. In the future, if the grid operators see that electricity demand might exceed supply, they can use demand management systems to turn up some heat pumps temporarily when electricity is abundant and to turn them down when it is scarce. If those heat pumps are turned down too long, then the legacy heating systems will automatically maintain comfort in those homes.

Heat pump adoption will have another beneficial effect on the economy. Over the next 10-15 years it will stimulate hiring and business growth by local HVAC contractors. And workers drawn into that industry during that period will have secure jobs for decades after that.

Thus, widespread heat pump adoption would do much more than help our state achieve the goals of the Act on Climate. It would reduce annual energy costs for all electric customers and would reduce the energy costs of heat pump adopters by much more than the proposed elimination of efficiency fees. To accelerate adoption, and to make heat pumps available to everyone, even to building owners with poor credit ratings:


- The legislature should properly align efficiency program funding with the goal of electrifying building heat by:
  - sustaining or expanding total efficiency program spending,
  - reducing the efficiency fee on electric bills and, to compensate,
    - increasing the efficiency fee on gas bills, and
    - imposing a new efficiency fee on delivered heating fuels (oil and propane)
- The electric company should be encouraged to offer on-bill financing of heat pumps – not just through zero-interest loans, but through a [tariffed on-bill payment plan](#) that would deliver immediate savings and would not affect the customer's credit rating.
- A similar financing plan for batteries, or leasing of utility-owned batteries, would help to maximize the peak-shaving capacity of homes with heat pumps, improve resiliency, maximize the value of distributed solar, and minimize the need for upgrading distribution transformers and home electric panels.

# Energy Efficiency Programs Reduce Heat Loss and Lower Heating Cost

**Before weatherization**

More heat escapes through leaks and poor insulation.




Higher heat loss → more energy needed to stay comfortable.



Heat loss  Higher

**Weatherization reduces heat loss**


Common weatherization measures

-  Air sealing (seal leaks)
-  Attic insulation (add or top up)
-  Duct sealing (seal and insulate)

**After weatherization**

Air sealing + insulation keep more heat inside.

Lower heat loss → less energy needed to stay comfortable.



Heat loss  Lower

higher efficiency = lower operating cost ➔

Electric resistance heat	Oil heat	Gas heat	Heat pumps
 <p>Electric baseboard or wall heater    Electric water heater</p>	 <p>Oil boiler and water heater</p>	 <p>Gas furnace    Gas water heater</p>	 <p>Air-source heat pump    Heat pump water heater</p>
<p><b>1) Space heating</b></p>  <p>1 unit of heat per 1 unit of electricity input Electric resistance heat: COP 1.0 / 100% at point of use</p>	<p><b>1) Space heating</b></p>  <p>0.8–0.87 units of heat per 1 unit of fuel input Typical oil furnace / boiler: 80–87% AFUE</p>	<p><b>1) Space heating</b></p>  <p>0.8–0.95 units of heat per 1 unit of fuel input Typical gas furnace / boiler: 80–95% AFUE</p>	<p><b>1) Space heating</b></p>  <p>2–4 units of heat per 1 unit of electricity input Air-source heat pump: COP ~2–4</p>
<p><b>2) Hot water</b></p>  <p>0.9–0.95 units of hot-water heat per 1 unit of electricity input Typical electric resistance water heater: UEF ~0.90–0.95</p>	<p><b>2) Hot water</b></p>  <p>0.74–0.84 units of hot-water heat per 1 unit of fuel input Typical oil water heater: UEF ~0.74–0.84</p>	<p><b>2) Hot water</b></p>  <p>0.74–0.95 units of hot-water heat per 1 unit of fuel input Typical gas water heater: UEF ~0.84</p>	<p><b>2) Hot water</b></p>  <p>2–3 units of hot-water heat per 1 unit of electricity input Heat pump water heater: about 2–3× more efficient</p>
<p>Estimated total gas burned to provide (space heat + hot water)</p> <p>~4,050 Btu gas per kWh of useful heat (space-heat COP 1.0; electric water heater UEF 0.90)</p>	<p>Estimated total oil used to provide (space heat + hot water)</p> <p>~4,070 Btu oil per kWh of useful heat (space-heat AFUE 0.85; oil water heater UEF 0.80)</p>	<p>Estimated total gas burned to provide (space heat + hot water)</p> <p>~3,700 Btu gas per kWh of useful heat (space-heat AFUE 0.95; gas water heater UEF 0.84)</p>	<p>Estimated total gas burned to provide (space heat + hot water (space-heat pps hwatet in mixer grid))</p> <p>~1,390 Btu gas per kWh of useful heat (Assumes space-heat COP 3.0; heat-pump water-heater COP 2.5)</p>
<p>Estimated energy cost:</p> <p>~30.7¢ per kWh of useful heat</p>	<p>Estimated energy cost:</p> <p>~11.8¢ per kWh of useful heat</p>	<p>Estimated energy cost:</p> <p>~6.9¢ per kWh of useful heat</p>	<p>Estimated energy cost at standard rate:</p> <p>~10.5¢ per kWh of useful heat</p> <p>at heat pump rate with intent to minimize cost</p> <p>~6.8¢ per kWh of useful heat (Assumes: heat pump used for space heating when more economical than gas; average space-heat COP 4.0, heat pump rate \$0.24/kWh)</p>

**Key takeaways:** Weatherization cuts heat loss, and heat pumps deliver more useful heat per unit of fuel than any other heating method.

**Calculation basis:** ISO-NE electric-grid gas assumption = 7,800 Btu/kWh heat rate \* 51% gas share = about 3,978 Btu gas per delivered kWh of electricity. End-use mix assumption for homes: 77% space heat / 23% hot water. Combined estimates use central appliance assumptions shown in each panel.

Prices: Rhode Island EIA January 2026 residential prices — electricity = \$0.3014/kWh; natural gas = \$19.39/MCF; heating oil = \$4.00/gallon.

Illustrative ranges based on commonly cited U.S. DOE / ENERGY STAR performance values. Actual performance varies by equipment, climate, and installation.