

ACADIA CENTER EXPLAINS

Heat Pumps

Summary and Recommendations - Fall 2023



HOW DO HEAT PUMPS WORK?

A heat pump is an electric heating and cooling technology for buildings that extracts heat from the air, the ground, or a body of water outside of a building and uses it to heat the inside. A standard air conditioner is a type of heat pump that moves heat from the inside of a building to the outside. A heat pump uses the same process in the summer, and it is able to reverse the process in the winter for heating.

Because heat pumps move heat rather than generate heat, they are highly efficient—more than three times as efficient as the best fossil gas units. This means that heat pumps consume less energy to produce the same amount of heat. Heat pump options are available that fit the needs of many types of homes and buildings and can serve as the primary heating system or as a supplementary heating system. For many homes, installing a single air source heat pump, commonly called a “ductless mini-split,” for supplemental heat in a heavily used area like a living room can improve comfort and reduce costs by providing heat where residents spend most of their time. In different configurations, heat pumps can be used as the primary heat source and some models can be integrated with existing ducts.



HOW EXPENSIVE IS A HEAT PUMP?

Under the Inflation Reduction Act, heat pumps will be eligible for rebates and tax credits of up to \$8,000, in addition to the rebates already in place from state programs like MassSave, Rhode Island Energy, EmPower NY, Efficiency Vermont, and Jersey Central. Depending on where you live and the availability of installation experts in your area, heat pumps can end up being incredibly affordable when utilizing rebates and tax credits.



DO HEAT PUMPS WORK IN EXTREME HOT OR COLD CLIMATES?

Yes! Heat pumps were up to the challenge of extreme weather this past year in the Northeast. In summer, heat pumps were able to keep homes cool and cut the humidity without issue. In winter, as temperatures fell to staggering lows, heat pumps ensured families stayed warm. You can read testimony from our own staff on what life with heat pumps is like in both blistering summers and teeth-chattering winters in the Northeast [here](#).



WHY SHOULD YOU SWITCH TO A HEAT PUMP?

Eliminating the greenhouse gas emissions that are coming from our heat, particularly in the Northeast, is one of the biggest things that an individual consumer can do to fight climate change. In addition to that fact, reduced exposure to pollutants, improved health and safety, reduced demand for fossil fuel infrastructure, and sizeable winter fuel savings are all reasons to switch to a heat pump system.



HOW IS ACADIA CENTER ADVOCATING FOR HEAT PUMPS?

Acadia Center has long advocated for clean, efficient energy solutions, including heat pumps. In our latest report, we encourage the installation of heat pumps in residential buildings in New Jersey to help electrify homes and reduce emissions, all while saving consumers money on heating bills. We continue to advocate across the region for clean energy solutions, and heat pumps are one of the key components of the clean energy future we strive for in our work.

To learn more about heat pumps, check out our [Clean Heating Pathways report](#).



Challenges and Solutions

CHALLENGE

1. Customers can maximize energy savings by installing heat pumps in efficient homes with integrated controls, but this opportunity is often left untapped.
2. New fossil fuel heated homes lock in future emissions that will put the region over its carbon budget and leave ratepayers paying for stranded infrastructure assets.
3. While consumers will save money on heating and cooling by using heat pumps, those savings may not be great enough to overcome initial barriers to adoption, such as retrofit costs or the perceived risk of an unfamiliar system.
4. Utilities have an economic incentive to promote gas heat over heat pumps at the expense of customers.
5. Heat pumps decrease fuel costs for consumers and reduce emissions, but barriers exist to accessing these savings, especially for customers switching from fossil gas.
6. Current frameworks leave customers – who have limited time and resources – with the disproportionate responsibility for the clean heating transition, slowing the pace of technology adoption.

SOLUTION

1. Couple heat pumps with home weatherization and integrated controls.
2. Only build efficient or Passive House new residences with clean electric heating.
3. If operating costs are reduced, consumers can save even more from heat pumps, encouraging more homeowners to consider clean heat options in their existing or new homes while minimizing grid impacts from electrification.
4. Align utility incentives with public policy objectives to reduce greenhouse gas emissions by making oil-to-gas conversions and new gas infrastructure less lucrative.
5. Assist customers in accessing bill savings by offering incentives that align with state emissions reduction laws.
6. Adopt state targets and accountability mechanisms that require heat pump adoption and share the responsibility for electrification across utilities and state agencies.