

Air Source Heat Pump

Frequently Asked Questions

Is an air source heat pump right for me?

There is a heat pump solution for every home. If you answer “Yes” to any of the questions below, a heat pump system could be a particularly good fit for you:

- Do you heat with oil, propane or electric resistance?
- Do you want central air conditioning but don't have/don't want to install ductwork?
- Do you have persistent hot or cold spots in your home?
- Do you want more control over the temperature in individual rooms in your home?
- Are you sensitive to air pollutants and allergens?
- Do you want to reduce your carbon footprint?

Which HeatSmart installers offer air source systems?

Three partner installers offer comprehensive air source heat pump services for HeatSmart, including site visits, design and installation. Click for their profile and contact information:

- [Alpine Air](#)
- [Nebrasky](#)
- [Rycor](#)

How efficient are air source heat pumps?

Heat pumps are typically rated for heating efficiency based on their Heating Seasonal Performance Factor (HSPF) or seasonal Coefficient of Performance (COP), both of which describe the system's efficiency over the course of the heating season. The seasonal efficiency of heat pumps can range from 220% to 300%+ (i.e. COP of 2.2 to 3.0+) depending on the system type and application. That means that for every 1 unit of electricity used, 2.2 to 3 units of heat are transferred into the home. By comparison, electric resistance heating has a COP of 1.

Heat pumps also provide efficient cooling, comparable to highest-efficiency air conditioners. Ductless heat pumps can give you the opportunity to get AC throughout your home without using loud window units!

Why should I consider a cold climate air source heat pump?

If you're interested in using a heat pump as a primary source of heating—and are interested in saving on your heating bill—we recommend installing a cold climate heat pump to ensure that you can get high-efficiency performance and comfort year-round. Cold climate models are eligible for substantial rebates, and the size of these rebates typically cover the incremental cost between a cooling-only and a heat pump unit.

If you're only interested in using a heat pump for cooling (e.g. you don't have ductwork but want air conditioning or are a seasonal homeowner), a cold climate model may not be necessary, though there are still benefits to heating system redundancy and shoulder season heating. We encourage you to speak with your installer about options for meeting your needs and if a cooling-only or non-cold climate heat pump might better meet your needs.

How do the annual maintenance costs of an air source heat pump compare to other heating systems?

Annual system maintenance, which consists of cleaning air filters and an annual maintenance checkup for the outside unit, costs about the same as annual servicing charges for a boiler or furnace

How long do air source heat pumps last?

Heat pumps have an expected lifetime of about 15 years—similar to the average furnace or central AC system.

How noisy are air source heat pumps?

A ductless indoor unit is quieter when running than a refrigerator and much quieter than a typical window AC unit. High-efficiency, variable-speed ducted heat pumps are quieter than a typical furnace or central air conditioner.

Can air source heat pumps provide hot water?

There are water heaters that use heat pump technology (heat pump water heaters or HPWH) though they are installed as a separate system. The HeatSmart installer partners can tell you more about your home's fit for a HPWH.

How complicated is installing a heat pump and how much time will it take?

A heat pump installation is typically a straightforward process with minimal disruption to your home. A simple, single-zone ductless heat pump system

can be completed in less than a day and only requires a single 2-3 inch hole to be cut (and later, sealed) in your wall.

If you are installing a “multi-zone” ductless system or a ducted system that requires modifications to your ductwork, your installation may take a few days to complete. Additionally, if your system needs extra time to minimize aesthetic impacts, it may take more time to run piping through walls.

How can I maximize energy savings from my heat pump?

While most heat pump systems work right out of the box, there are a few things you may want to consider for getting the most out of your system:

“Set it and forget it.” While many of us are accustomed to turning down the heat when we leave the home, heat pumps are most efficient when running continuously at partial output without sudden increases in heating demand that result from cranking the thermostat up. Think about it as similar to the way your car’s mileage improves when you drive at a constant speed instead of constantly stopping and starting. Consider only setting back the thermostat on your heat pump system when you’re gone for several days.

Know when to use your backup system. If you have a backup heating system, depending on the weather and the cost of your backup heating fuel, it may be more efficient to use your backup system during the coldest parts of the year when heat pumps are at their least efficient. If you expect the temperature to

be in the single digits or lower for the day, consider just turning your heat pump system off and firing up your backup boiler or furnace.

Keep your system well maintained. A well-maintained system will keep performing at high efficiency. Remember to clean your indoor dust filters; keep the outdoor condenser free of snow, ice, and other obstructions; and consider getting regular annual service.

Improve the efficiency of your home. A heat pump in a well-insulated home will perform better than one in a poorly insulated home. Consider getting approved, incentivized insulation, air sealing, and weatherization upgrades through NYSERDA prior to installing your heat pump. Not only will your home be even more comfortable, and your system perform better, but you may be able to install a smaller (and cheaper) system to meet your home's needs.

How well do heat pumps work in the middle of winter?

Quite well! While traditional, non-cold climate heat pumps struggle in freezing weather, the newer cold climate heat pumps promoted through HeatSmart are designed to be used in a Northeast winter, providing efficient heating all the way down to 5°F while continuing to provide useful heat all the way down to -13°F or lower.

On some of the colder days, your heat pump might not put out as much heat and you may need to use some backup heat to help stay warm. As such, the installer will keep your existing heating system in place (or install a backup) for the coldest days of the year.

Additionally, you will want to keep the outdoor unit of your heat pump system clear of snow to make sure it has sufficient airflow--just like you need to keep your furnace vents clear to prevent carbon monoxide build-up.

Nervous about heat pump performance in January? Don't be: Mainers and Vermonters have installed more cold-climate heat pumps than any other New England states in the past few years—over 30,000 since 2013—and both Maine and Vermont are significantly colder than New York in the winter!

How do I go about selecting an air source heat pump installer?

All 3 HeatSmart NY air source heat pump installers have extensive experience with air source heat pump installations. Qualified installers were competitively selected for HeatSmart by a volunteer selection committee with support from home energy experts. You are welcome to ask for more than one no-obligation quote.

- [Alpine Air](#)
- [Nebrasky](#)
- [Rycor](#)

Will I need an electrical service upgrade?

If you have 100Amp electrical service, you will likely need an upgrade. All of the HeatSmart Air Source Heat Pump Installers make it a practice to assess your electrical needs on the first visit, so you can be sure of an accurate proposal.

Why are air source heat pumps considered “clean heating and cooling” technologies?

Air source heat pumps are considered to be “clean” heating and cooling systems because they do not create heat, but rather they move heat from the ambient air from one place to another. This process is powered by electricity, which can also be sourced from renewable sources like solar, wind, or hydro. You can increase your use of clean energy by participating in solar subscription services or Community Choice Aggregation.

Even though our grid is only about 12% renewable today, a heat pump system powered by grid electricity will still reduce your greenhouse gas emissions from heating by 40-60%! These emissions will continue to decrease from year to year as our grid becomes greener, whereas the emissions from fossil fuels will stay the same.