

Heat Pump

BASICS

TRANSITIONING
FROM GAS HEATING



What is a heat pump?

An electric heat pump is a heating and cooling system. It is fully reversible, meaning that it can both heat and cool your home.

An electric heat pump uses less energy to heat and cool the space in your home than traditional equipment does and is an excellent choice for both new homes and retrofits of existing heating and cooling systems.

How does a heat pump work?

During the cooler months, a heat pump extracts heat from the outside air, using electricity to increase the temperature of the heat and transfer it inside your home. The heat pump's advanced technology enables it, even during Canada's cold winter days, to extract heat from the outside air to heat your home. Although heat pumps are best known for heating, they also provide cooling by transferring warm indoor air to the outside. In fact, if you have an air conditioner at home, you are already familiar with heat pump technology – they work in the same way.

Heat pumps transfer heat rather than generate heat, making them energy-efficient while they provide comfortable temperatures for your home year-round. In fact, a heat pump can heat when temperatures go down to -30°C and can cool when temperatures exceed 40°C .

What is a gas hybrid system?

Gas hybrid systems typically consist of an electric heat pump and a gas furnace. Depending on the outdoor temperature and current electricity rates (or both), the system will automatically use smart switching controls to alternate between using the heat pump and the gas furnace to provide the most efficient heating possible. They can also be switched manually.

Benefits

of using an electric heat pump or gas hybrid system to heat the space in your home

Lower heating bills

Heat pumps and gas hybrid systems can help lower your space heating bills, and savings may increase over time because carbon pricing is projected to increase.

Both heating and cooling

Heat pumps provide efficient cooling in addition to heating, which is an important consideration because of rising temperatures and more intense heat waves in Canada.

Financial incentives

Federal, provincial, territorial and municipal financial incentives help homeowners with the upfront costs of a heat pump or gas hybrid system.

Personal and environmental

Unlike traditional space heating systems that use fossil fuels, heat pumps do not produce greenhouse gas emissions. They also do not pose the risk of carbon monoxide leaks that gas furnaces do.



TYPES

Air source heat pumps

Air source heat pumps (ASHP) are the most common heat pump on the Canadian market. They use **air as their source** to provide heating.



Heats space up to **2.5 times more efficiently** than a gas furnace, with up to \$500 in annual heating savings in some regions.*



Reduces emissions by up to 6 tonnes of carbon dioxide equivalent (CO₂e) per year!

Cold climate air source heat pumps

Cold climate air source heat pumps (ccASHP) are a type of ASHP. They are **better adapted to the colder Canadian climate** and can work in lower temperatures, well below freezing **down to -30°C**.



Heats space up to **3 times more efficiently** than a gas furnace, with up to \$1,000 in annual heating savings in some regions.*



Reduces emissions by up to 6 tonnes of CO₂e per year!

Ground source heat pumps

Ground source heat pumps (GSHP) use the earth and/or ground water as their source to provide heating. Compared to ASHPs, GSHPs can provide more heat during the winter because the system is not subject to extreme fluctuations in temperature.



Heats space up to **3.5 times more efficiently** than a gas furnace, with up to \$1,500 in annual heating savings in some regions.*



Reduces emissions by up to 6 tonnes of CO₂e per year!

Gas hybrid (ASHP with natural gas backup)



Heats space up to **2 times more efficiently** than heating with a gas furnace alone, with up to \$500 in annual heating savings in some regions.*



Reduces emissions by up to 2 tonnes of CO₂e per year!

***These efficiencies refer to the average performance over the winter and take into account variations in temperature throughout the heating season. Savings are calculated on a \$65/tonne carbon price and 2023 energy prices. Costs vary by province and territory. Save even more money by participating in financial incentive programs such as grants and rebates.**

Which heat pump is right for you?

ASHPs and ccASHPs can be ducted or ductless. (Ductless heat pumps are also known as mini-splits or multi-splits.) The most common hybrid systems are combined with ASHPs and ccASHPs by connecting to either existing ductwork in a central system or connecting them in a multi-split configuration.



DUCTED

Heating and cooling are provided to the entire home via ductwork (similar to a central gas furnace).

DUCTLESS

Mini-split: Provide heating and cooling to localized areas within the home, typically a single room

Multi-split: Provide heating and cooling to localized areas within the home, typically multiple rooms



General inquiries

USE A SKILLED CONTRACTOR

Your contractor will be able to **design, install and service** the equipment to meet the requirements of your home while complying with local by-laws and any related building codes, legislation and guidelines.

There are risks and dangers associated with the improper sizing or installation of a heat pump if performed by a non-certified contractor. It is your responsibility to find the right contractor for your heat pump installation.

QUESTIONS TO ASK YOUR CONTRACTOR

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- What type of heat pump is best to upgrade my heating and/or cooling system?
 - How are you ensuring that the heat pump is properly sized for my home?
 - In the case of a hybrid system, what are the settings of the automated controls to switch between the primary heating system and the backup source?
 - What maintenance schedule should be followed?
 - What is the warranty on the equipment? Is there a warranty certificate?



WHEN TO INSTALL A HEAT PUMP

Don't wait until you need an emergency replacement! Proactively ask your contractor when you will need a new air conditioning or heating system. You may need as much as a year to complete electrical upgrades and other renovations for optimal performance of the electric heat pump you install.

AVAILABLE GRANTS AND REBATES

The Canada Greener Homes Initiative includes programs that provide incentives for the purchase and installation of energy efficiency retrofits, including heat pumps. Check if your province, territory, municipality, or utility provider is offering additional rebates for heat pump installations. For more information, visit canada.ca/greenerhomesinitiative.

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