

Energy NEWS

Heat Pumps

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Heat Pumps - What's It All About?

If you've been hearing a lot about heat pumps but you still don't really understand what one is, you're not alone.

Heat pumps have recently gained a lot of attention in North America due to rising energy prices and concerns about climate change.

So what are they?

Despite their name, heat pumps are used to both heat and cool a space.

They don't make heat - instead they move warm and cool air around. This makes them over 300% more efficient than fossil fuel furnaces!

In cold weather, they pump heat from outside your home to the inside. (Yes! There is actually enough from cold outside air to make a difference!)

An outdoor unit extracts warm air, then sends it traveling through a refrigerant line connected to an indoor unit.

The air gets compressed along the way, which heats it up even more before it gets pushed into the home.

In warm weather, the system does the reverse: sucking up warm air from inside and pumping it outdoors (just like an air conditioner).

FEATURE VIDEO

Reducing Heating Costs and Improving Health with Heat Pumps for First Nation



Ecotrust Canada partnered with Heiltsuk Tribal Council on a project reducing heating costs and improving health in Bella Bella homes. Twenty heat pumps were installed to date to replace oil furnaces in Bella Bella.

<https://www.youtube.com/watch?v=H0elp5rLRRY&t=1s>



FEDERAL FUNDING

Households will be eligible for up to \$5K up front rather than seeking reimbursement

CBC News · Posted: Nov 21, 2022

The federal government has announced details of a new grant aimed at helping low- to median-income Canadian households make the switch from oil to heat pumps.



(Laura Meader/CBC)



The Oil to Heat Pump Affordability (OHPA) Grant will provide households with up to \$5,000 - depending on the household income - to cover costs that include the purchase and installation of heat pumps, necessary electrical upgrades and safe removal of the oil tank.



MORE VIDEOS

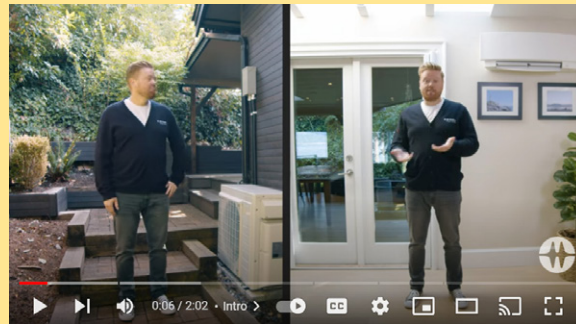
Adapting heat pumps to our Canadian climate – Natural Resources Canada

<https://www.youtube.com/watch?v=-wTRGbDY7Kk>



How Do Heat Pumps Work? | Heat Pumps Explained - BCHydro

<https://www.youtube.com/watch?v=iQaycSD5GWE>



Did you know?

- You can have your heat pump gather heat from the ground or a lake?
- Heat pumps can be tied in with your furnace ducts or just stand alone in selected rooms?

What is a heat pump?
Heat pumps are energy-efficient devices that use a small amount of energy to move heat from one location to another. Heat pumps can heat out of the air or ground to heat a home or office building and they can be reversed to cool the building. If you know how an air conditioner or refrigerator works, then you already understand how a heat pump works.

How Does a Heat Pump Work?
It is easier to understand how heat pumps work by learning about the individual parts (see Figure 1 below).

Refrigerant - the fluid that circulates through the heat pump, absorbing, transporting and releasing heat. Depending on the direction of flow, it can be used to heat or cool.

Compressor - squeezes the molecules of the refrigerant gas together, increasing the temperature of the refrigerant. This device helps to transfer the heat energy between outdoors and indoors.

Condenser - a coil in which the refrigerant gives off heat to its surroundings and becomes a liquid.

Expansion Device - lowers the pressure created by the compressor. This causes the refrigerant to drop, and the refrigerant becomes a low-temperature vapour/liquid mixture.

Outdoor unit - where heat is transferred to/from the outdoor air in an air-source heat pump. This unit generally contains a heat exchanger coil, the compressor, and the expansion valve. It looks and operates in the same manner as the outdoor portion of an air conditioner.

Indoor coil - where heat is transferred to/from indoor air in certain types of air-source heat pumps. Generally, the indoor unit contains a heat exchanger coil, and may also include an additional fan to circulate heated or cooled air in the occupied space.

What is that box for?

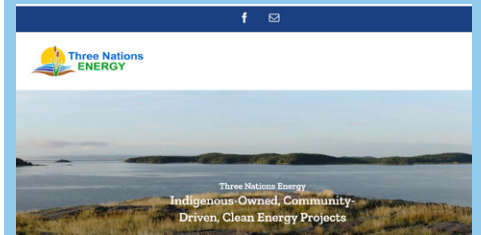
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