

# Unlocking the benefits of heat pumps for households across Canada



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## ● How heat pumps work



**Heat pumps move heat**, rather than generating it

**Provide heating and cooling** in one device

**Extremely efficient**, operating 2-5x more efficiently than gas furnaces

## ● Benefits of heat pumps



**An essential tool for freeing homes** from fossil energy and reducing emissions from homes and buildings



**Provide protection from extreme heat** – increasingly important as the climate changes



## ● Barriers to heat pump adoption



High upfront costs  
remain a major barrier

Complex and cumbersome  
programming impedes uptake

Consumer confidence is  
undermined by **a lack of  
familiarity and unclear  
information**

Structural barriers  
limit access for  
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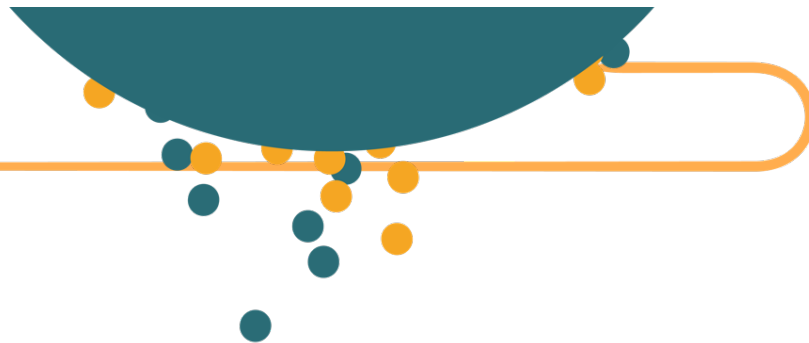
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# Replacing AC with Heat Pumps



## ● Dual Challenge

Addressing **energy affordability** and **expanding active cooling**



## ● AC-to-HP Opportunity

Ducted heat pumps and air conditioners **are almost the same machine**...except one can heat and the other can't.

In Ontario in 2022:

**4,000** ducted air conditioners installed **each week**

**8,000** new ducted heat pumps installed **in the whole year**

## Effects on Household Bills and GHG Emissions, 2030

	Bill Savings (\$)	GHG Savings (tCO <sub>2</sub> e)
Electric	\$1,359	0.1
Efficient Gas	\$113	0.7
Inefficient Gas	\$170	0.9
Oil	\$482	1.0
Efficient Propane	\$157	0.6
Inefficient Propane	\$223	0.7

## ● Outcomes for Ontario, 2025-2035

**2.6 billion** dollars in additional capital costs

**3.7 million** additional heat pumps installed

**13.7 million** metric tons of emissions reductions

**7.1 billion** dollars of energy bill reductions

**4.1 billion** dollars of monetized climate benefits

## ● Implications for Low-Income Canadians

**Bill savings** especially important for those facing **energy poverty**

**Guaranteeing heat pumps** instead of AC makes sure **renters** get the best technology

Government still needs to ensure upfront **affordability**



# The Cool Way to Heat Homes

Installing Heat Pumps Instead of Central Air Conditioners in Canada

Authors: Alexander Gard-Murray, Brendan Haley, Sarah Miller, Mathieu Poirier





# Implementation Routes



## Implementation Routes

- 1 Could transform the market with a **national mandate** that all central air conditioners sold in Canada also have heating capabilities.
- 2 Local governments could use **performance standards and building codes** to encourage market transformation, as **Vancouver** has done.
- 3 Federal or provincial governments could offer **upstream incentives** to manufacturers to stop selling ducted ACs and sell heat pumps instead.

Many other complementary policies are also needed to maintain **affordability**, address **large multi-unit residential buildings**, speed up the development of **window unit technology**, encourage more **efficient models**, and support **contractor training**.



Thank you