Opening the Door

Clean energy solutions can save households hundreds of dollars every month, but some Canadians still face upfront barriers to adoption. Governments at all levels can help.

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CLEAN ENERGY CANADA

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Opening the Door

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SFU MORRIS J. WOSK CENTRE FOR DIALOGUE

The way in

Over the last two years, the energy transition has really been going places.

The U.S. Inflation Reduction Act and the EU's Green Deal have fuelled household-level clean energy shifts at a pace never seen before. Here in Canada, the Greener Homes Grant helped Canadians from coast to coast to coast install heat pumps and retrofit their homes, while EV sales have risen rapidly thanks to growing model availability and purchase incentives.[1]

Thousands of Canadians have made a shift away from fossil fuels, reaping many benefits. One such person is Vancouverite Stephen Fung, who says he saves $700 a month ferrying his three kids around in an EV instead of a gas car.

His situation isn't unique. Almost every household in Canada can benefit from clean energy. **Our latest analysis finds that a household in Toronto that switched out its gas cars for electric versions, ditched their natural gas appliances, installed a heat pump, and made a few energy efficiency upgrades would cut $550 off their monthly bill, even taking into account upfront costs. A similar house in Vancouver could save $777.** And to make it even better, these families would reduce the carbon footprint of their cars and homes by more than 90%.

The picture is the same across most of the country. The equivalent household would save hundreds of dollars a month in almost every province.

To get a better sense of what you could save based on where you live, how you drive, and what kind of home you have, visit Clean Energy Canada's new online calculator:

mycleanbill.ca

Stephen, pictured with his kids in front of the family's Kia Niro EV in Coquitlam, B.C., shares with us his favourite parts about driving electric—one of which is, of course, the substantial savings.

One thing is clear: Canadians' continued reliance on fossil fuels is costing them. In fact, a recent study found that energy prices are the most volatile component of inflation in the country, worsening recent inflation-driven affordability struggles.[2]

But despite the savings benefits of clean technologies, the barrier to entry for many Canadians is higher than it was a year ago. For one, the federal government's Greener Homes Grant (that offered up to $5,000 off the price of a heat pump and other energy savings measures) has been discontinued, although it is set to be replaced by a programme assisting low- to median-income households. Many of the most affordable and best-selling EVs in Canada have also either increased in price or disappeared. The 2024 Nissan Leaf is more expensive than the 2023 version, while the production of both the Chevrolet Bolt and the Kia Soul has been paused or discontinued, leaving a gap in the market.

Polling suggests that upfront cost remains the number one concern for prospective EV buyers, despite EV sticker prices dropping in recent years. It needn't be the case.[3] Europeans can choose from at least 12 different electric options with a purchase price of less than C$45,000, compared to just three in Canada.[4] It's perhaps no surprise that EVs represented 24% of all vehicle sales in Europe in 2023 compared to 12% in Canada. Put simply, automakers are not delivering lower-priced electric options to the North American market (a fact not likely helped by Canada's new competition-limiting 100% tariff on Chinese EVs).

And yet, even with upfront costs included, EVs are by far the biggest money-saving option for many households. In fact, opting for an electric Volkswagen ID.4 instead of a gas-powered Honda CR-V would save a driver around $3,000 a year over the lifetime of the car. The problem is that not everyone can finance a car with a higher sticker price, even if they know they'll pay significantly less along the way in gas and maintenance.

The lack of options points to the critical importance of government policy, to both help cut the upfront cost via purchase incentives and encourage automakers to make more affordable models. In fact, a recent report from the Parliamentary Budget Officer on the impacts of the federal government's Electric Vehicle Availability Standard (which requires automakers to make an increasing portion of EVs available for sale) found that it will be key to incenting automakers to bring more affordable EVs to market.[5] And yet, the future of the policy remains uncertain with the Official Opposition publicly stating they would repeal it, if elected.[6]

When it comes to home upgrades, many provinces stepped up after the federal government dropped its program earlier this year, retaining or expanding support for heat pumps and energy retrofits. A median income household in B.C. would receive $12,000 toward a heat pump, for instance.[7] But the result is a geographically unequal transition. Ontarians, for example, can access no government support to switch their gas furnaces for a heat pump.

We are at a critical time in the energy transition. We have the solutions to fight both climate change and growing energy bills, but it is vital that all Canadians can benefit. To that end, all levels of government must take action, offering rebates to cut upfront costs or supporting community infrastructure upgrades like public charging.

It is vital that the door to cleaner homes and lower bills is open to all Canadians.

The households

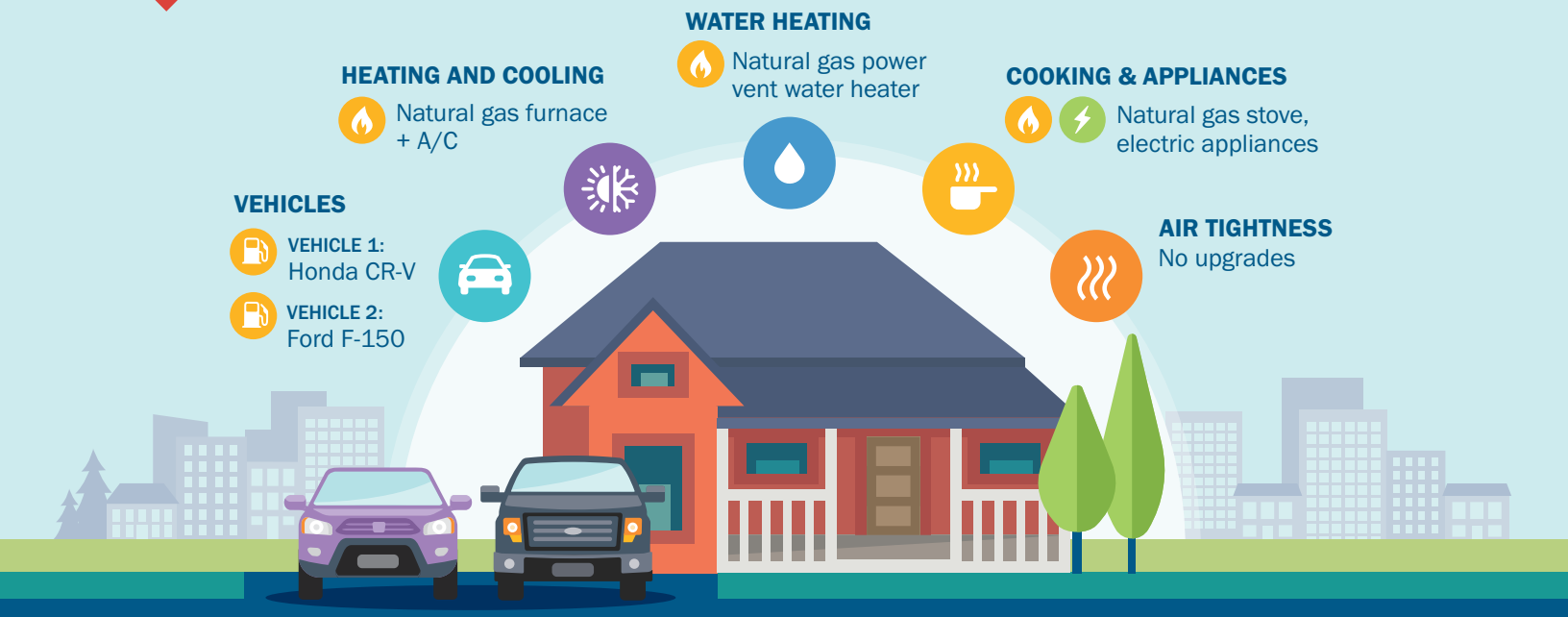
There is a range of decisions that a homeowner can make to cut both carbon and costs from their energy bill. To illustrate the financial implications of various energy-related changes, we calculated the monthly energy bills of three sets of hypothetical neighbours—in both Toronto and Vancouver—in detached houses, townhouses, and condos. See our methodology on page 25 for more details and visit **mycleanbill.ca** for household savings in other provinces in Canada.

Why are the savings different from last year?

In *A Clean Bill,* a report released by Clean Energy Canada in October of 2023, we found that a detached home in Toronto could save almost $800 a month by ditching fossil fuels. While the methodology this year has been updated, the like-for-like savings in both reports are largely comparable. However, in this year's edition, households have different cars, which has changed the topline numbers. Specifically, the cars in this year's calculation have been replaced with the equivalent electric version, rather than a smaller electric version, as was the case last year. In addition, households are currently unable to access the discontinued federal Greener Homes Grant to cut some of the upfront cost from their heat pump.

DETACHED HOUSE

Starting from zero



Toronto

MONTHLY BILL

	OPERATING COSTS	EQUIPMENT COSTS*	TOTAL
Vehicle 1: SUV	$542	$237	$779
Vehicle 2: Truck	$660	$312	$972
VEHICLE TOTAL			**$1,751**
Heating and cooling	$116	$49	$166
Natural gas connection costs	$26		$26
Water heating	$22	$12	$34
Appliances (incl. stove)	$20	$16†	$36
Other electricity usage (lighting, personal electronics, etc.)	$49		$49
HOME TOTAL			**$311**
Carbon pricing rebate	$(81)		$(81)
TOTAL	$1,354	$627	$1,981

$1,981 PER MONTH

$551 MORE than the clean energy family

Vancouver

MONTHLY BILL

	OPERATING COSTS	EQUIPMENT COSTS*	TOTAL
Vehicle 1: SUV	$592	$234	$826
Vehicle 2: Truck	$736	$324	$1,059
VEHICLE TOTAL			**$1,886**
Heating and cooling	$78	$49	$127
Natural gas connection costs	$14		$14
Water heating	$21	$12	$34
Appliances (incl. stove)	$20	$16†	$36
Other electricity usage (lighting, personal electronics, etc.)	$50		$50
HOME TOTAL			**$261**
Carbon pricing rebate			
TOTAL	$1,512	$634	$2,146

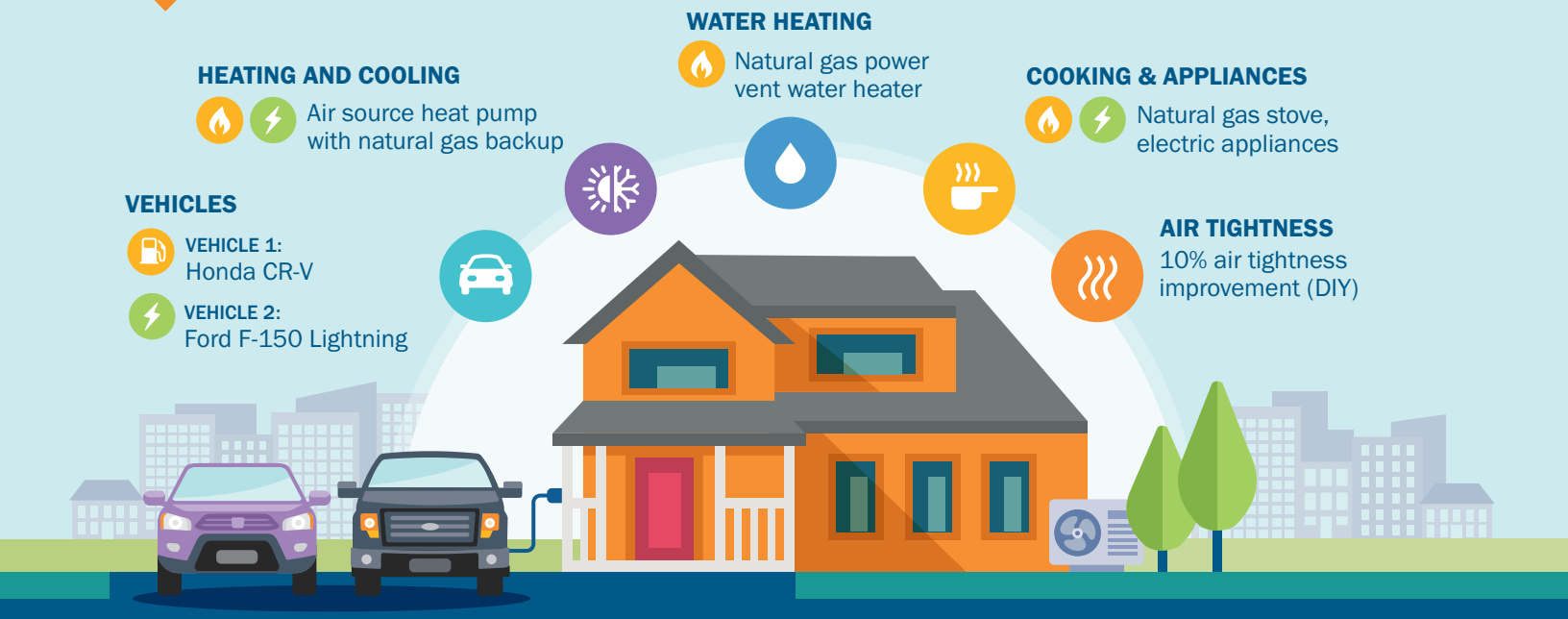
$2,146 PER MONTH

$777 MORE than the clean energy family

* Monthly equipment costs do not include interest. Upfront purchase costs are spread out over the ownership period of the technology to ensure all costs are captured in the monthly comparison. † Only the stove is included in the equipment cost calculation because it is the only appliance that changes in the different scenarios (whereas the cost of the stove along with other appliances are included in the energy cost calculation).

DETACHED HOUSE

Making some changes



Toronto

MONTHLY BILL

	OPERATING COSTS	EQUIPMENT COSTS*	TOTAL
Vehicle 1: SUV	$542	$237	$779
Vehicle 2: Truck	$369	$277	$646
VEHICLE TOTAL			**$1,425**
Heating and cooling	$106	$71	$177
Natural gas connection costs	$26		$26
Water heating	$22	$12	$34
Appliances (incl. stove)	$20	$16†	$36
Other electricity usage (lighting, personal electronics, etc.)	$49		$49
HOME TOTAL			**$322**
Carbon pricing rebate	$(81)		$(81)
TOTAL	$1,053	$613	$1,665

$1,665 PER MONTH

SAVINGS OF UP TO $316

Emissions reductions from the household changes: -50%

Vancouver

MONTHLY BILL

	OPERATING COSTS	EQUIPMENT COSTS*	TOTAL
Vehicle 1: SUV	$592	$234	$826
Vehicle 2: Truck	$370	$237	$607
VEHICLE TOTAL			**$1,434**
Heating and cooling	$64	$73	$137
Natural gas connection costs	$14		$14
Water heating	$21	$12	$34
Appliances (incl. stove)	$20	$16†	$36
Other electricity usage (lighting, personal electronics, etc.)	$50		$50
HOME TOTAL			**$271**
Carbon pricing rebate			
TOTAL	$1,132	$572	$1,705

$1,705 PER MONTH

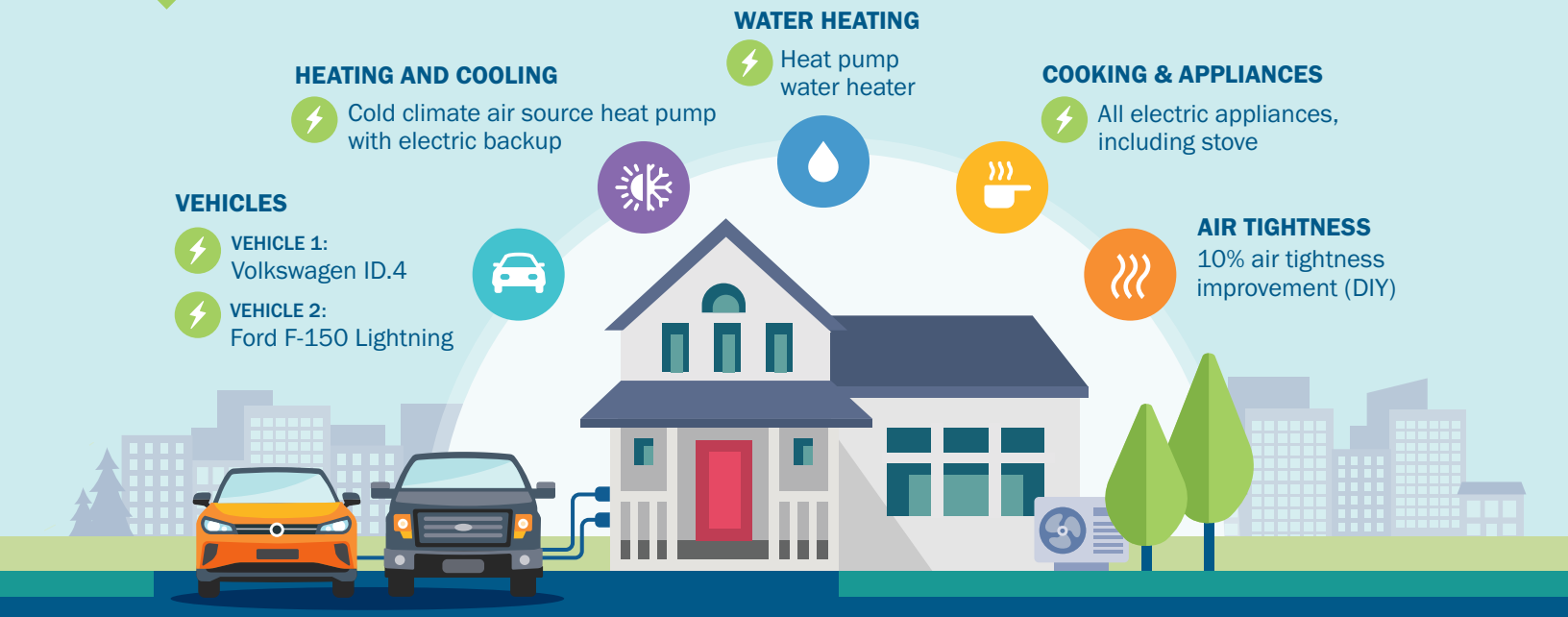
SAVINGS OF UP TO $441

Emissions reductions from the household changes: -59%

* Monthly equipment costs do not include interest. Upfront purchase costs are spread out over the ownership period of the technology to ensure all costs are captured in the monthly comparison. † Only the stove is included in the equipment cost calculation because it is the only appliance that changes in the different scenarios (whereas the cost of the stove along with other appliances are included in the energy cost calculation).

DETACHED HOUSE

Living the clean energy life



Toronto

MONTHLY BILL

	OPERATING COSTS	EQUIPMENT COSTS*	TOTAL
Vehicle 1: SUV	$326	$240	$566
Vehicle 2: Truck	$369	$277	$646
VEHICLE TOTAL			**$1,211**
Heating and cooling	$97	$80	$176
Natural gas connection costs			
Water heating	$17	$16	$32
Appliances (incl. stove)	$23	$19†	$42
Other electricity usage (lighting, personal electronics, etc.)	$49		$49
HOME TOTAL			**$300**
Carbon pricing rebate	$(81)		$(81)
TOTAL	**$800**	**$630**	**$1,430**

$1,431 PER MONTH

SAVINGS OF UP TO $551

Emissions reductions from the household changes: -94%

Vancouver

MONTHLY BILL

	OPERATING COSTS	EQUIPMENT COSTS*	TOTAL
Vehicle 1: SUV	$327	$235	$562
Vehicle 2: Truck	$370	$237	$607
VEHICLE TOTAL			**$1,169**
Heating and cooling	$55	$24	$79
Natural gas connection costs			
Water heating	$16	$13	$29
Appliances (incl. stove)	$24	$18†	$42
Other electricity usage (lighting, personal electronics, etc.)	$50		$50
HOME TOTAL			**$201**
Carbon pricing rebate			
TOTAL	**$842**	**$527**	**$1,370**

$1,370 PER MONTH

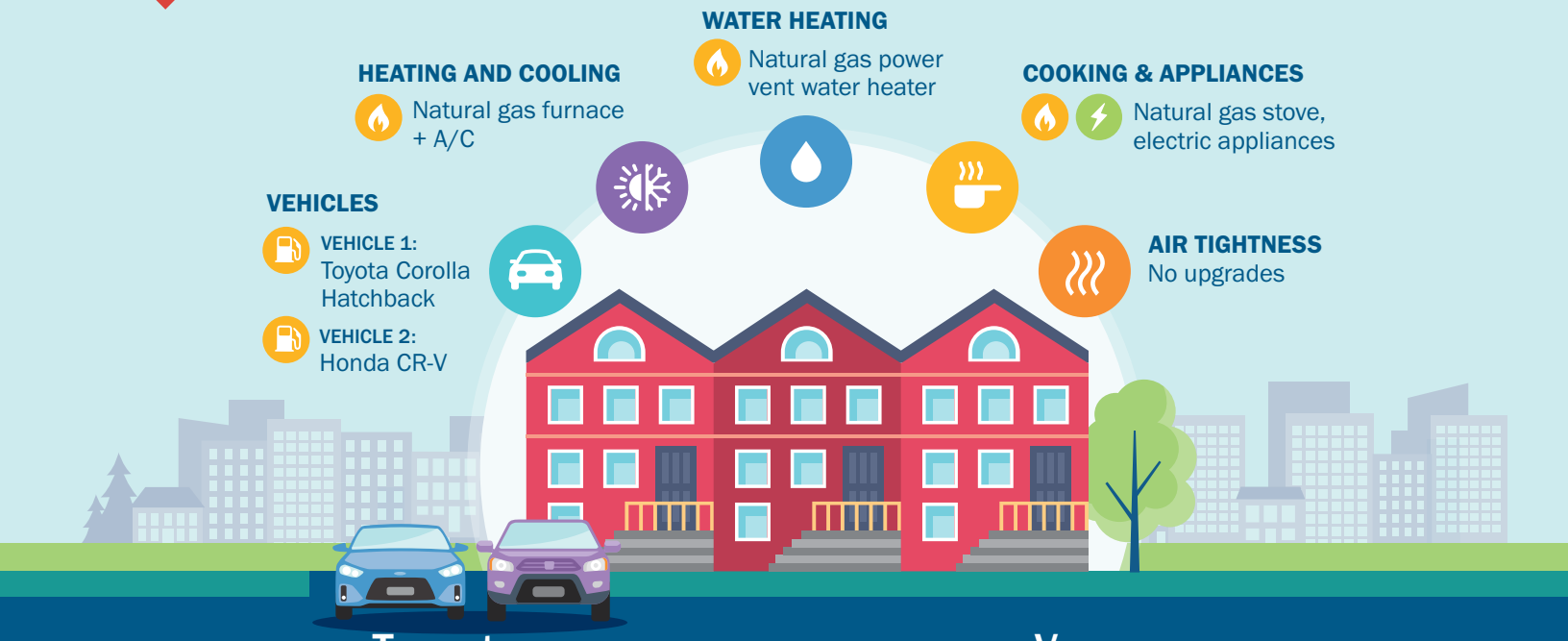
SAVINGS OF UP TO $777

Emissions reductions from the household changes: -97%

* Monthly equipment costs do not include interest. Upfront purchase costs are spread out over the ownership period of the technology to ensure all costs are captured in the monthly comparison. † Only the stove is included in the equipment cost calculation because it is the only appliance that changes in the different scenarios (whereas the cost of the stove along with other appliances are included in the energy cost calculation).

TOWNHOUSE

Starting from zero



Toronto

MONTHLY BILL

	OPERATING COSTS	EQUIPMENT COSTS*	TOTAL
Vehicle 1: Hatchback	$512	$223	$735
Vehicle 2: SUV	$542	$237	$779
VEHICLE TOTAL			**$1,514**
Heating and cooling	$57	$46	$103
Natural gas connection costs	$26		$26
Water heating	$22	$12	$34
Appliances (incl. stove)	$20	$16†	$36
Other electricity usage (lighting, personal electronics, etc.)	$49		$49
HOME TOTAL			**$248**
Carbon pricing rebate	$(81)		$(81)
TOTAL	$1,147	$534	$1,681

$1,681 PER MONTH

$421 MORE than the clean energy family

Vancouver

MONTHLY BILL

	OPERATING COSTS	EQUIPMENT COSTS*	TOTAL
Vehicle 1: Hatchback	$555	$220	$776
Vehicle 2: SUV	$592	$234	$826
VEHICLE TOTAL			**$1,602**
Heating and cooling	$31	$46	$77
Natural gas connection costs	$14		$14
Water heating	$21	$12	$34
Appliances (incl. stove)	$20	$16†	$36
Other electricity usage (lighting, personal electronics, etc.)	$50		$50
HOME TOTAL			**$210**
Carbon pricing rebate			
TOTAL	$1,285	$528	$1,812

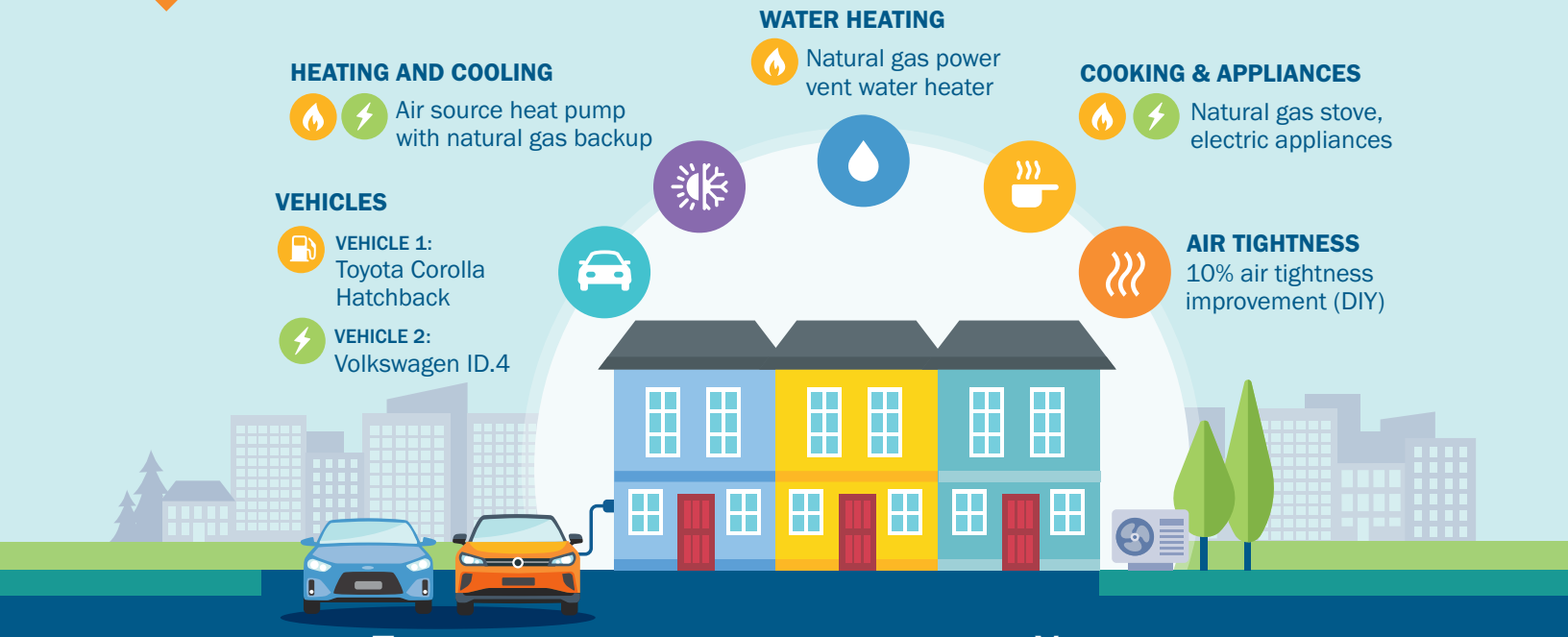
$1,812 PER MONTH

$596 MORE than the clean energy family

* Monthly equipment costs do not include interest. Upfront purchase costs are spread out over the ownership period of the technology to ensure all costs are captured in the monthly comparison. † Only the stove is included in the equipment cost calculation because it is the only appliance that changes in the different scenarios (whereas the cost of the stove along with other appliances are included in the energy cost calculation).

TOWNHOUSE

Making some changes



Toronto

MONTHLY BILL

	OPERATING COSTS	EQUIPMENT COSTS*	TOTAL
Vehicle 1: Hatchback	$512	$223	$735
Vehicle 2: SUV	$326	$240	$566
VEHICLE TOTAL			**$1,301**
Heating and cooling	$52	$66	$118
Natural gas connection costs	$26		$26
Water heating	$22	$12	$34
Appliances (incl. stove)	$20	$16†	$36
Other electricity usage (lighting, personal electronics, etc.)	$49		$49
HOME TOTAL			**$263**
Carbon pricing rebate	$(81)		$(81)
TOTAL	**$926**	**$557**	**$1,482**

$1,482 PER MONTH

SAVINGS OF UP TO $199

Emissions reductions from the household changes: -44%

Vancouver

MONTHLY BILL

	OPERATING COSTS	EQUIPMENT COSTS*	TOTAL
Vehicle 1: Hatchback	$555	$220	$776
Vehicle 2: SUV	$327	$235	$562
VEHICLE TOTAL			**$1,338**
Heating and cooling	$26	$68	$94
Natural gas connection costs	$14		$14
Water heating	$21	$12	$34
Appliances (incl. stove)	$20	$16†	$36
Other electricity usage (lighting, personal electronics, etc.)	$50		$50
HOME TOTAL			**$227**
Carbon pricing rebate			
TOTAL	**$1,014**	**$552**	**$1,565**

$1,565 PER MONTH

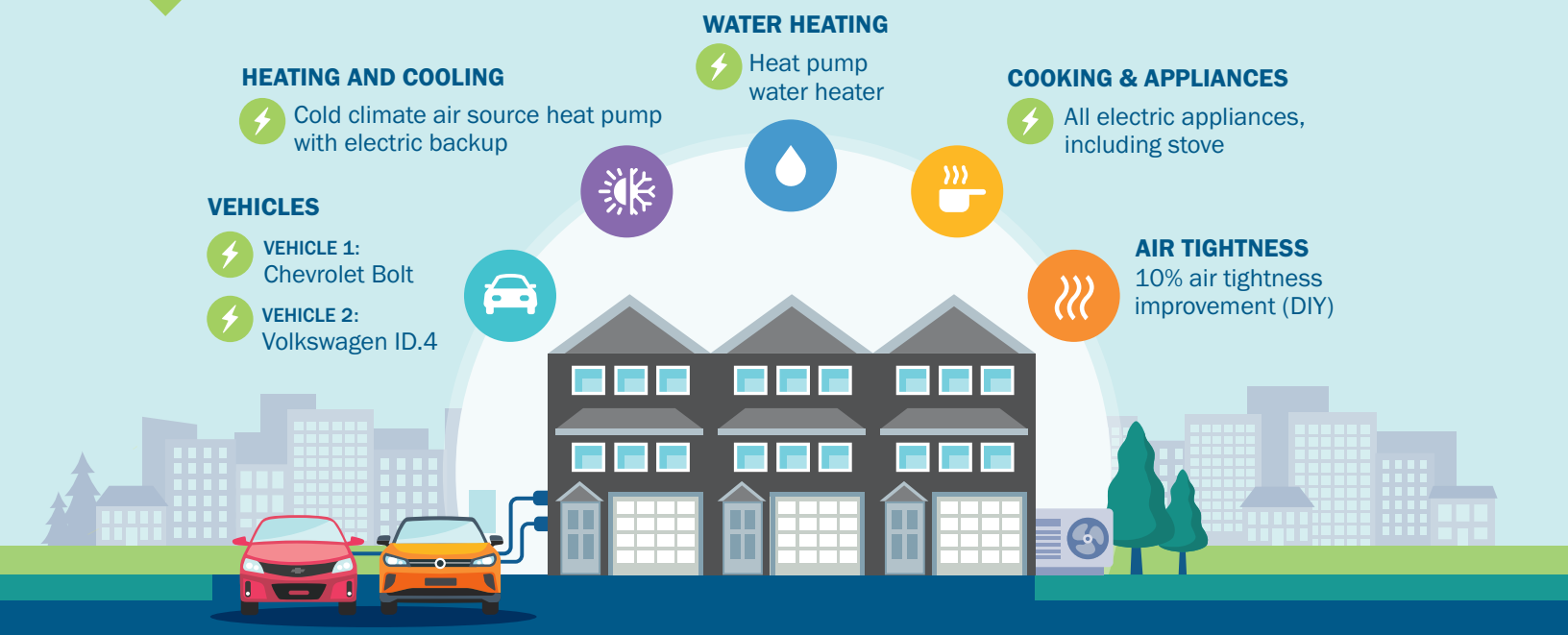
SAVINGS OF UP TO $247

Emissions reductions from the household changes: -49%

* Monthly equipment costs do not include interest. Upfront purchase costs are spread out over the ownership period of the technology to ensure all costs are captured in the monthly comparison. † Only the stove is included in the equipment cost calculation because it is the only appliance that changes in the different scenarios (whereas the cost of the stove along with other appliances are included in the energy cost calculation).

TOWNHOUSE

Living the clean energy life



Toronto

MONTHLY BILL

	OPERATING COSTS	EQUIPMENT COSTS*	TOTAL
Vehicle 1: Hatchback	$323	$206	$529
Vehicle 2: SUV	$326	$240	$566
VEHICLE TOTAL			**$1,094**
Heating and cooling	$53	$71	$123
Natural gas connection costs			
Water heating	$17	$16	$33
Appliances (incl. stove)	$23	$19†	$42
Other electricity usage (lighting, personal electronics, etc.)	$49		$49
HOME TOTAL			**$247**
Carbon pricing rebate	$(81)		$(81)
TOTAL	**$709**	**$551**	**$1,260**

$1,260 PER MONTH

SAVINGS OF UP TO $421

Emissions reductions from the household changes: -93%

Vancouver

MONTHLY BILL

	OPERATING COSTS	EQUIPMENT COSTS*	TOTAL
Vehicle 1: Hatchback	$323	$169	$492
Vehicle 2: SUV	$327	$235	$562
VEHICLE TOTAL			**$1,054**
Heating and cooling	$26	$15	$41
Natural gas connection costs			
Water heating	$16	$13	$29
Appliances (incl. stove)	$24	$18†	$42
Other electricity usage (lighting, personal electronics, etc.)	$50		$50
HOME TOTAL			**$162**
Carbon pricing rebate			
TOTAL	**$766**	**$451**	**$1,217**

$1,217 PER MONTH

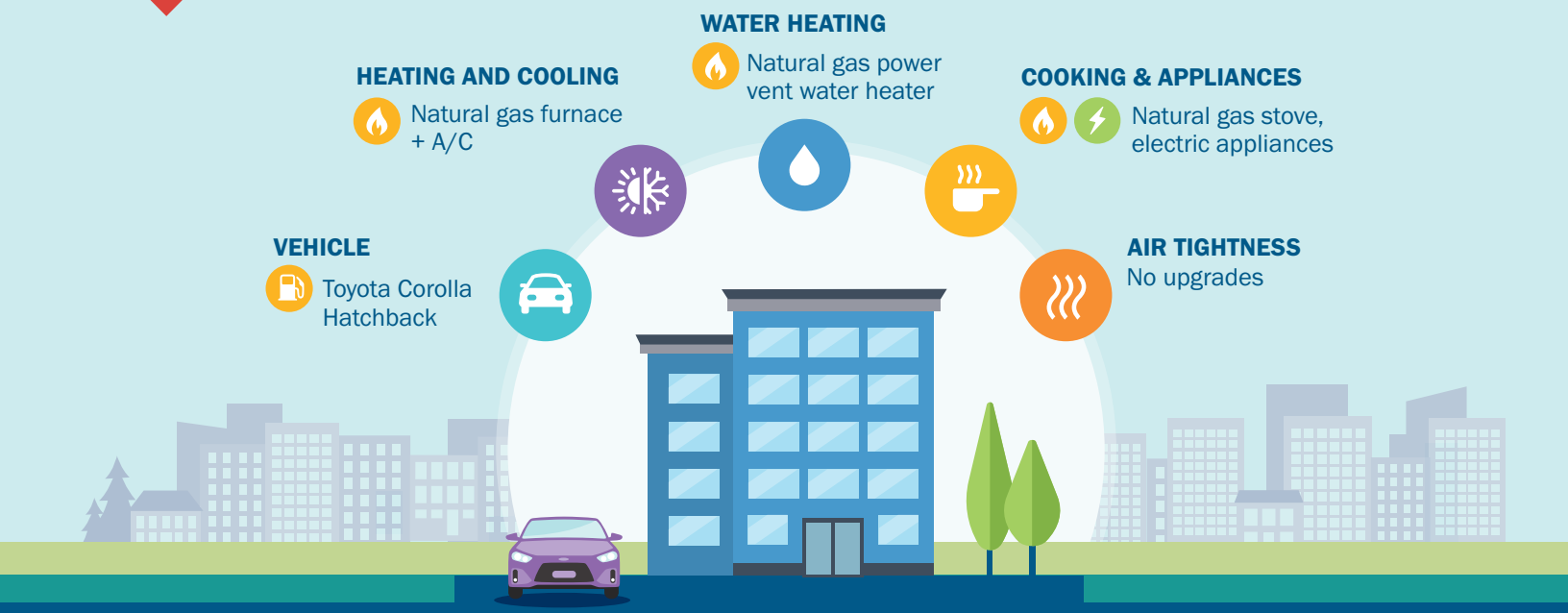
SAVINGS OF UP TO $596

Emissions reductions from the household changes: -97%

* Monthly equipment costs do not include interest. Upfront purchase costs are spread out over the ownership period of the technology to ensure all costs are captured in the monthly comparison. † Only the stove is included in the equipment cost calculation because it is the only appliance that changes in the different scenarios (whereas the cost of the stove along with other appliances are included in the energy cost calculation).

CONDO

Starting from zero



Toronto

MONTHLY BILL

	OPERATING COSTS	EQUIPMENT COSTS*	TOTAL
Vehicle	$512	$223	$735
VEHICLE TOTAL			**$735**
Heating and cooling	$27	$40	$67
Natural gas connection costs	$26		$26
Water heating	$12	$4	$16
Appliances (incl. stove)	$16	$16†	$31
Other electricity usage (lighting, personal electronics, etc.)	$25		$25
HOME TOTAL			**$165**
Carbon pricing rebate	$(61)		$(61)
TOTAL	**$556**	**$282**	**$838**

$838 PER MONTH

$220 MORE than the clean energy family

Vancouver

MONTHLY BILL

	OPERATING COSTS	EQUIPMENT COSTS*	TOTAL
Vehicle	$555	$220	$776
VEHICLE TOTAL			**$776**
Heating and cooling	$17	$39	$56
Natural gas connection costs	$14		$14
Water heating	$12	$4	$15
Appliances (incl. stove)	$16	$16†	$32
Other electricity usage (lighting, personal electronics, etc.)	$25		$25
HOME TOTAL			**$143**
Carbon pricing rebate			
TOTAL	**$640**	**$279**	**$919**

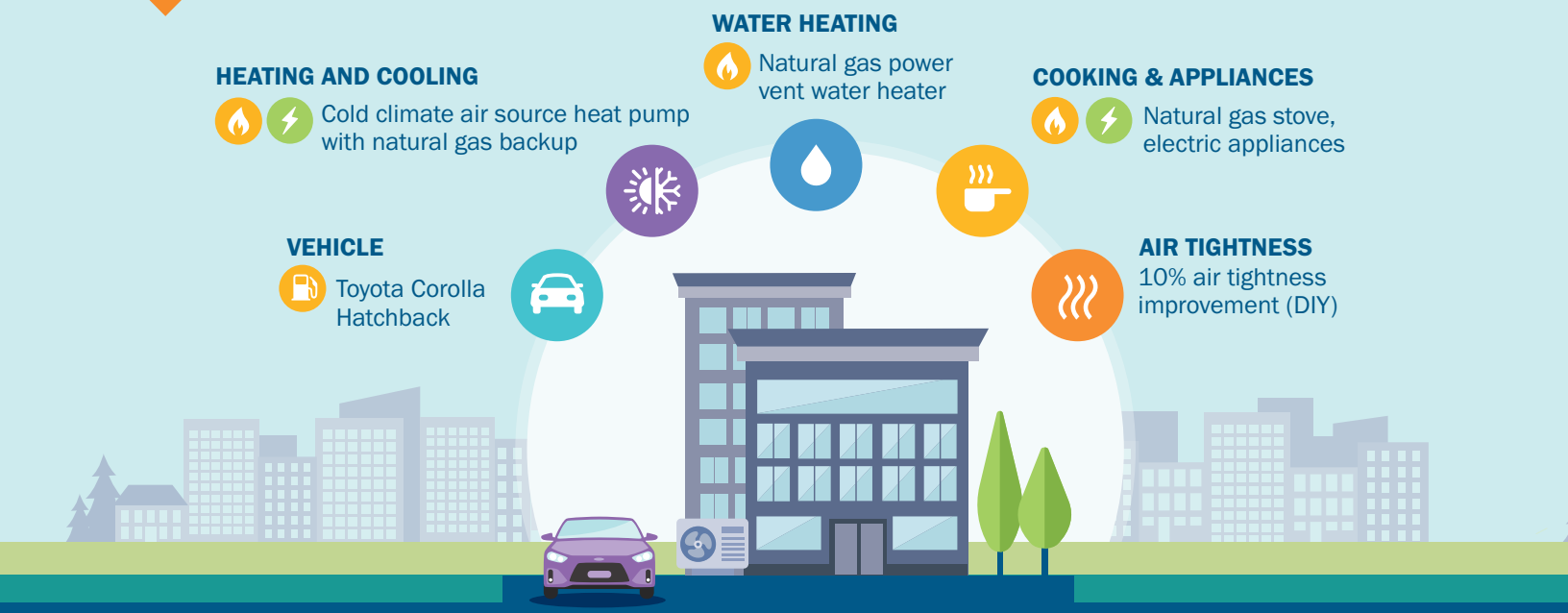
$919 PER MONTH

$286 MORE than the clean energy family

* Monthly equipment costs do not include interest. Upfront purchase costs are spread out over the ownership period of the technology to ensure all costs are captured in the monthly comparison. † Only the stove is included in the equipment cost calculation because it is the only appliance that changes in the different scenarios (whereas the cost of the stove along with other appliances are included in the energy cost calculation).

CONDO

Making some changes



Toronto

MONTHLY BILL

	OPERATING COSTS	EQUIPMENT COSTS*	TOTAL
Vehicle	$512	$223	$735
VEHICLE TOTAL			**$735**
Heating and cooling	$24	$52	$76
Natural gas connection costs	$26		$26
Water heating	$12	$4	$16
Appliances (incl. stove)	$16	$16†	$31
Other electricity usage (lighting, personal electronics, etc.)	$25		$25
HOME TOTAL			**$174**
Carbon pricing rebate	$(61)		$(61)
TOTAL	**$554**	**$294**	**$848**

$848 PER MONTH — NO SAVINGS

Emissions reductions from the household changes: -12%

Vancouver

MONTHLY BILL

	OPERATING COSTS	EQUIPMENT COSTS*	TOTAL
Vehicle	$555	$220	$776
VEHICLE TOTAL			**$776**
Heating and cooling	$14	$53	$67
Natural gas connection costs	$14		$14
Water heating	$12	$4	$15
Appliances (incl. stove)	$16	$16†	$32
Other electricity usage (lighting, personal electronics, etc.)	$25		$25
HOME TOTAL			**$153**
Carbon pricing rebate			
TOTAL	**$637**	**$292**	**$929**

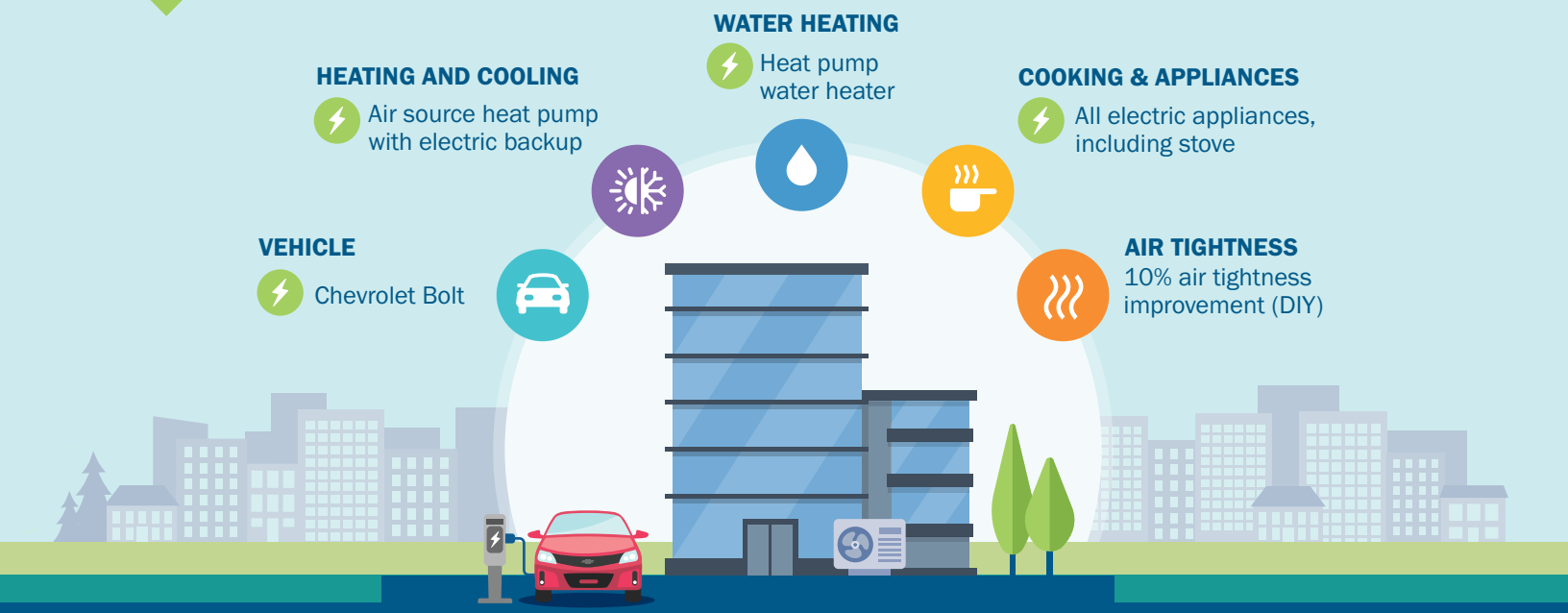
$929 PER MONTH — NO SAVINGS

Emissions reductions from the household changes: -10%

* Monthly equipment costs do not include interest. Upfront purchase costs are spread out over the ownership period of the technology to ensure all costs are captured in the monthly comparison. † Only the stove is included in the equipment cost calculation because it is the only appliance that changes in the different scenarios (whereas the cost of the stove along with other appliances are included in the energy cost calculation).

CONDO

Living the clean energy life



Toronto

MONTHLY BILL

	OPERATING COSTS	EQUIPMENT COSTS*	TOTAL
Vehicle	$323	$206	$529
VEHICLE TOTAL			**$529**
Heating and cooling	$25	$46	$72
Natural gas connection costs			
Water heating	$10	$6	$16
Appliances (incl. stove)	$19	$19†	$38
Other electricity usage (lighting, personal electronics, etc.)	$25		$25
HOME TOTAL			**$151**
Carbon pricing rebate	$(61)		$(61)
TOTAL	**$341**	**$277**	**$618**

$618 PER MONTH

SAVINGS OF UP TO $220

Emissions reductions from the household changes: -93%

Vancouver

MONTHLY BILL

	OPERATING COSTS	EQUIPMENT COSTS*	TOTAL
Vehicle	$323	$169	$492
VEHICLE TOTAL			**$492**
Heating and cooling	$14	$47	$61
Natural gas connection costs			
Water heating	$10	$6	$16
Appliances (incl. stove)	$20	$18†	$38
Other electricity usage (lighting, personal electronics, etc.)	$25		$25
HOME TOTAL			**$140**
Carbon pricing rebate			
TOTAL	**$392**	**$240**	**$633**

$633 PER MONTH

SAVINGS OF UP TO $286

Emissions reductions from the household changes: -96%

* Monthly equipment costs do not include interest. Upfront purchase costs are spread out over the ownership period of the technology to ensure all costs are captured in the monthly comparison. † Only the stove is included in the equipment cost calculation because it is the only appliance that changes in the different scenarios (whereas the cost of the stove along with other appliances are included in the energy cost calculation).

The importance of **rebates**

In most provinces, the cost of operating a heat pump will be less than the costs associated with running air conditioning combined with gas or oil furnaces or electric baseboard heaters.

However, because heat pumps typically cost more to buy, the rate at which the savings on your monthly bills make up for the extra upfront cost depends on the province you live in. Before March 2024, every Canadian could access dollars from the federal government's Greener Homes Grant to reduce upfront cost. And some could access more if their province or municipality offered additional rebates. Since the federal program was discontinued, the equation has shifted in provinces without their own rebate. The change is such that in some provinces, a heat pump is not always the cheapest option overall, despite usually being cheaper to run, highlighting the fundamental importance of rebates in helping Canadians access technology that can lower energy bills and shrink carbon footprints. Rebates are used all over the world for this exact reason, including in the U.S. and almost every country in Europe.[8,9]

Municipal grants are also available in many cities.[10] Rebates listed below are all aimed at homeowners who live in their homes year-round.

Federal rebates

Up to **$10,000** toward replacing an oil furnace with a heat pump.[11]

Up to **$40,000** interest-free loan toward heat pump installation and efficiency upgrades.[12]

Budget 2024 provided **$800 million over five years**, starting in 2025-26, "to launch a new Canada Greener Homes Affordability Program that will support the direct installation of energy efficiency retrofits for Canadian households with low- to median-incomes." Details of the program have yet to be released.[13]

Ontario

Customers of Enbridge Gas are eligible for rebates of up to **$2,000** for a cold climate air source heat pump.[14]

Homeowners currently heating with electricity can receive up to **$5,000** toward an air source heat pump from IESO's Save On Energy program, and low-income households could receive a free cold climate air source heat pump.

Nova Scotia

Free heat pumps (up to $30,000) for low-income homeowners switching away from oil heating.[15,16]

Up to **$2,000** rebate for heat pumps in other households.[17]

Prince Edward Island

Free Heat Pump program for households with a net income below $100,000.[18]

Point-of-sale rebates up to **$2,500** for air source heat pumps and up to **$4,000** for ground source heat pumps for other households.

British Columbia

Between **$3,000 and $16,000** in rebates depending on income, household size, and heat pump type.[19,20]

Manitoba

Various rebates available for heat pumps depending on heated floor area, heat pump capacity, and certain characteristics of the home.[21]

New Brunswick

Up to **$1,500** rebate for an air source and up to **$2,000** for a ground source heat pump.[22]

Newfoundland and Labrador

Up to **$9,000** to switch from oil heating to a central heat pump and up to **$22,000** for income-qualified households.[23]

Quebec

Hydro-Québec provides up to **$6,720** for the installation of a high-performance heat pump.[24,25]

Yukon

40% off heat pump project costs up to a maximum of **$8,000**.[26]

Alberta, Saskatchewan, Northwest Territories and Nunavut

No rebates for heat pumps.

Other changes to **cut dollars and pollution**

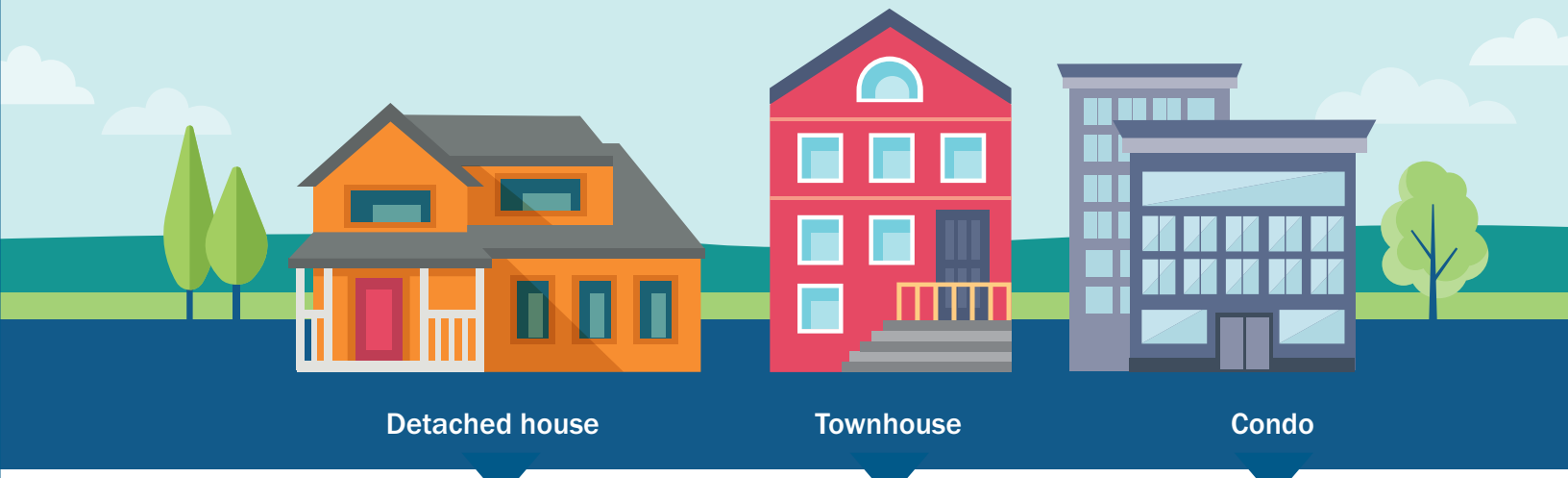
In this report, we consider the savings from directly swapping existing gas cars with electric equivalents. However, there are additional lifestyle changes that can cut costs further. A family hoping to trade in a gas-powered SUV and truck for electric options would save $100 more a month if they chose an electric sedan instead of an electric truck. Meanwhile, a Toronto family that swapped out an SUV for a Toronto Transit Commission pass could save $258 per month. And there are other potential cost-saving measures too, like electric bikes (which some governments, like B.C., offer rebates for).[27] **In short, smaller or fewer cars means more dollars in your pocket.**

Monthly savings by province

Total savings from switching to a heat pump, EVs, and other clean energy upgrades as detailed in the household comparisons.

Note that the pre-existing heating systems are different for each province, according to common heating types. Specifically:

- Gas furnaces in B.C., Alberta, Saskatchewan, Manitoba, and Ontario.
- Electric baseboard heating in Quebec, New Brunswick, and Newfoundland and Labrador.
- Heating oil in Prince Edward Island and Nova Scotia.



	Detached house	Townhouse	Condo
British Columbia	$777	$596	$286
Alberta	$(21)*	$64	$51
Saskatchewan	$256	$277	$149
Manitoba	$528	$448	$240
Ontario	$551	$421	$220
Quebec	$746	$594	$318
New Brunswick	$837	$593	$287
Nova Scotia	$919	$667	$329
Prince Edward Island	$921	$727	$356
Newfoundland and Labrador	$860	$555	$281

* An EV is still cheaper to own in Alberta, but electricity and gas prices are less favourable for heat pumps.

Calculate your own **savings**

Every home is different. That's why we created an online tool to help you determine how much your specific household could save.

my clean bill

Head to mycleanbill.ca to calculate your potential savings. You can even share your results with friends, family, and neighbours.

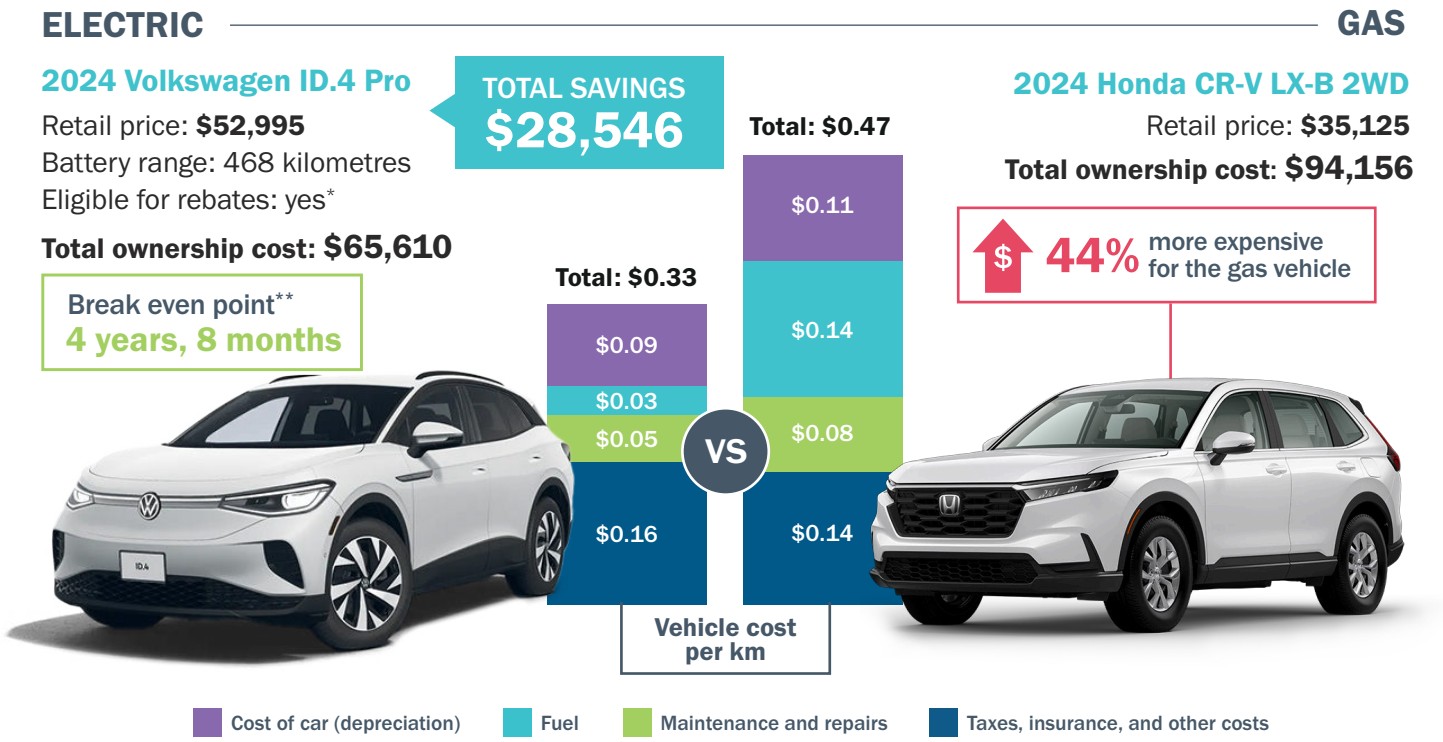
Taking the **scenic route**

Swapping your gas car for an EV is easily the biggest change you can make to cut both monthly bills and emissions, with EVs saving money in every household in Canada.

Today's EV drivers pay the equivalent of $0.40 per litre of gas to charge their cars—less than what drivers paid during the gas wars of the '90s. In fact, 40 cent gas today is the equivalent of 25 cents in the '90s. And unlike the gas wars of decades past, low charging prices aren't just a blip—they're here to stay.

All told, when considering the full costs of ownership over the course of a decade—from the car's purchase price to fuel and maintenance—a typical EV saves drivers roughly $30,000 or about $3,000 a year.

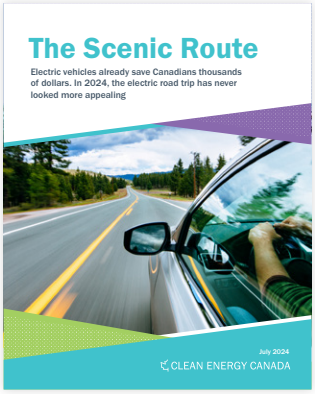
EVs are major money savers



** B.C. recently lowered its MSRP cap for rebates to $50,000, and while the cheapest ID.4 remains eligible, the base model only has 332 kilometres of range.*
*** All break even points include rebates (a Canada average) and exclude depreciation.*

With many cars now offering 400 or even 500 kilometres of range, from the Tesla Model 3 to the Hyundai Ioniq 6 (both of which cost less than the average new car in Canada today), road trips are not only easy in an EV—they're cheap.[28] In fact, if you travel from Montreal to Toronto, your friends in their gas-powered car are going to pay four times what you would pay in an electric vehicle. If you live on Vancouver Island, driving from Victoria to Nanaimo is going to be five times more expensive in a gas car. And gas-car-owning Edmontonians will have to pay almost twice as much as their EV-driving counterparts to roadtrip to Calgary for the stampede.

Visit our recent report, *The Scenic Route*, for more car and road trip comparisons.

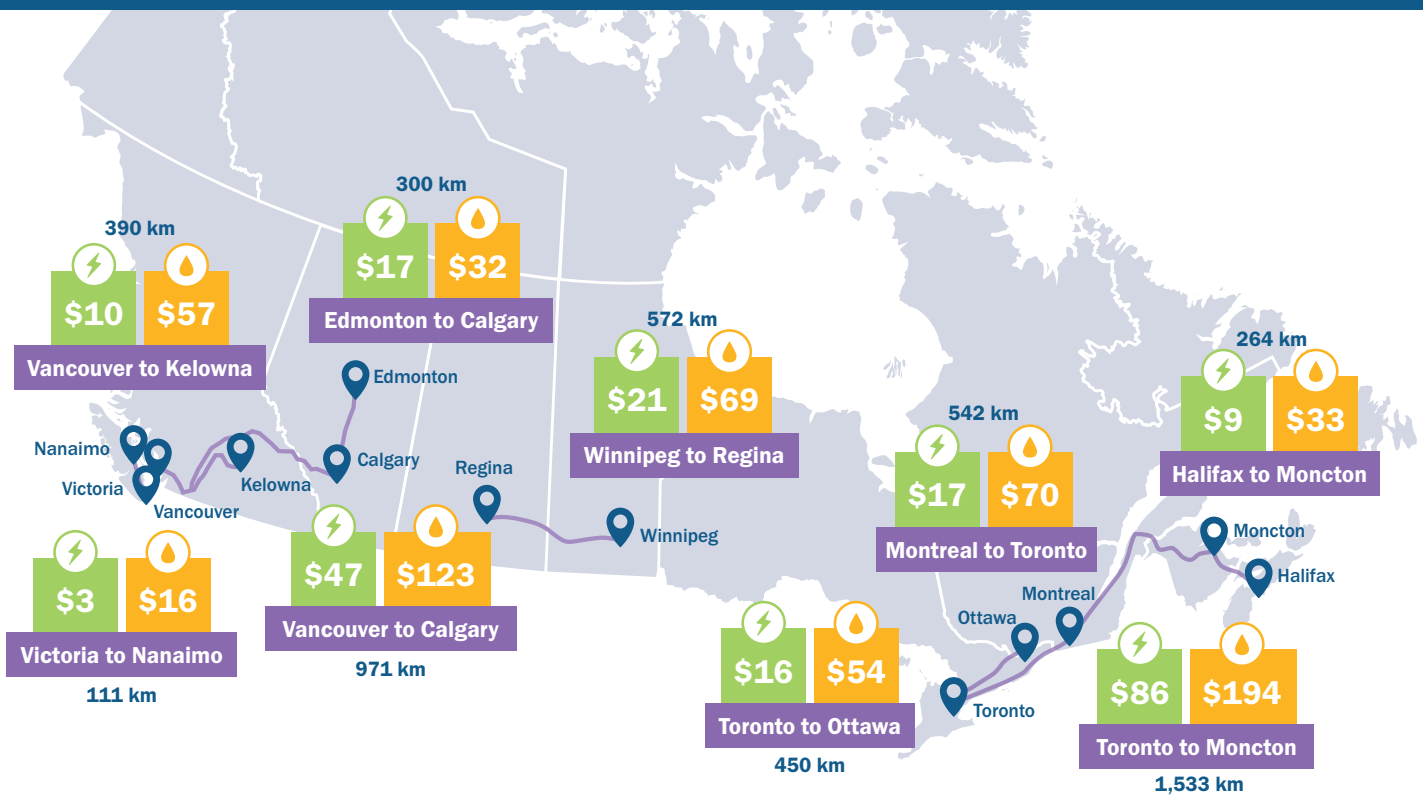


ROAD TRIP COST COMPARISONS

ELECTRIC
Volkswagen ID.4

VS

GAS
Honda CR-V



Based on a road trip in a Volkswagen ID.4 compared to a Honda CR-V. Assumes a home charging rate for the first 80% of the EV range and a public charging rate for the rest of the trip. The home charging rate is based on the province where the trip begins. Longer trips requiring en route charging will therefore be more expensive than those where most or all of the trip can be achieved with lower home charging rates. In addition, while the electric option is considerably cheaper for all trips, the gap is smallest in provinces with lower gas prices and higher electricity prices.

Sticker shock

There's no doubt that EVs are cheaper to own, a fact now recognized by 63% of Canadians.[29] However, despite ownership savings, Canadians still cite upfront cost as the number one barrier to buying an EV. But this barrier is bigger in Canada than in other parts of the world. Europeans can choose from no less than 12 different electric options with a purchase price of less than $45,000, versus three such models in Canada. It's probably not surprising that EVs represented 24% of all vehicle sales in Europe in 2023 and this summer hit over 50% in China, compared to just 12% in Canada last year.[30]

The typically higher upfront cost of EVs points to the importance of government policy to help drive down cost. We also ran our calculations assuming that no rebates were available (provincial or federal), and while the EV in almost every location still comes out ahead over a 10-year period—thanks to sizable fuel and maintenance savings—the absence of rebates notably increases the breakeven time (the point at which an EV's savings makes up for its higher upfront cost compared to a gas equivalent).

What's more, since rebates are a fixed amount, they represent a greater percentage discount for more affordable cars. Specifically, removing rebates increases the breakeven time for an electric hatchback from only two months to more than four years.

It is still important that governments help Canadians overcome upfront cost barriers so that they can reap cost-saving benefits closer down the road. In particular, it is crucial that provinces without their own rebate programs, namely Ontario, Alberta, and Saskatchewan, introduce them.

"I can't afford to drive a gas car"

Like many young parents, Vancouverite Stephen Fung spends much of his time behind the wheel shuttling his kids from place to place—whether picking up one from lacrosse practice at their school or dropping another off at a gymnastics competition across the city. But unlike most drivers, Stephen pays significantly less to power these trips because he drives an electric Kia Niro, which gets plugged into his home EV charger at the end of the day. No more dealing with unpredictable gas prices. **All told, Stephen's EV saves him some $700 a month in avoided gas and maintenance costs,** he says. And that's on top of other perks, like quieter road trips and no longer having to breathe in harmful exhaust fumes from his vehicle.

WATCH VIDEO
2 minutes

Busting **EV myths**

1 “EVs have greater lifecycle emissions than gas cars”

2 “EV batteries need replacing before the vehicle’s end of life”

3 “EVs do not have enough range”

4 “The electricity grid can’t handle EVs”

Gas cars emit three times more pollution than EVs over their lifetime.

Globally, electric vehicles have been shown repeatedly to have lower lifecycle emissions than traditional gas-powered vehicles even in regions with fossil-fuel-dependent electricity grids. Specifically, studies have shown that EVs emit as much as 71% less carbon pollution than gas cars—that includes pollution from mining, manufacturing, and driving.[31] What’s more, EVs are especially clean when battery recycling is included (up to 95% of the material from an EV battery can be recycled).[32]

EV batteries have been shown to last for more than 20 years of driving.

All EVs sold today include a battery warranty of at least eight years and 160,000 kilometres.[33] A recent study found that EV batteries degrade just 1.8% per year on average—meaning EV batteries can typically last more than 20 years.[34] Another analysis indicated that, out of 20,000 cars studied, only 2.5% have required a battery replacement, and most have occurred under warranty.[35] Tesla has claimed that the range on its Model S and X vehicles decreased by just 12% after 321,000 kilometers of driving (these models are older and therefore offer insights based on real-world data).[36,37]

The average Canadian drives 60 kilometers per day—far less than the average EV range of 480 kilometres.

The average range of new EVs is now almost 480 kilometres—and rising.[38] Most Canadians drive less than 60 kilometres per day, while the average EV driver does between 80% to 90% of charging at home, usually just plugging in overnight for convenience.[39–41] As Canada’s fast-charging network grows, range and charging will become less of a concern for longer trips. There are now fast chargers at 20 out of 23 ONroute rest stops in Ontario, while PetroCanada has already installed chargers along the TransCanada highway from Halifax to Victoria.[42] The Government of Canada has committed to deploy 84,500 chargers by 2029 and is on track to meet its 2026 target.[43,44]

With proper planning, grid-related issues are easily avoidable.

While the switch to EVs will require provinces to plan for EV growth, other countries around the world (EVs account for some 80% of new cars sold in Norway) have not experienced grid-related issues as a result of high EV adoption.[45] A Canadian government study on the anticipated electricity needs of EVs found that they would represent 3%, 16%, and 22% of electrical power demand in 2030, 2040, and 2050, respectively.[74] As the study states, “This number is significant, but since the growth is spread over 30 years, with most happening during the 2030 to 2050 timeframe, Canadian utilities have 10 years to refine the load forecast and plan for grid expansion.”

Time-of-use **electricity pricing**

Ontarians may be used to starting the laundry or dishwasher right before going to bed to save on energy bills. For Canadians in most other parts of the country, however, timing your electricity use has not been a way to save, but it may be soon. Ontario is now one of several provinces that offers time-of-use pricing, where power is cheaper at periods of low demand.

Typically, households have paid a flat rate per kilowatt hour of electricity (or start paying more if they exceed a certain limit). However, time-of-use pricing is becoming more popular. **The variable rates help utilities manage demand to avoid costly peaks and importing or generating more expensive power. Time-of-use rates are now available in Ontario, British Columbia, and parts of Alberta.**[46–48]

This can be especially advantageous for households with electric vehicles that charge overnight. In Ontario, for example, customers on the ultra-low overnight pricing plan pay only 2.8 cents per kilowatt hour used between 11PM and 7AM, compared to the 10.3 or 12.5 cents per kWh that they would pay if they were on the time-independent rate structure.

For context, charging a 2025 Hyundai Ioniq 5 from empty to 100% with an ultra-low overnight rate would cost $2.35, whereas charging it on the regular rate would cost $8.65—more than three times as much.

But whatever the time of day you choose to charge, it is significantly cheaper to charge up than fill up. In fact, the ultra-low rate is the equivalent of paying $0.22 per litre of gas, while regular rate charging is the equivalent of $0.81 per litre.

In addition, heat pumps tend to draw more electricity during off-peak hours than on-peak hours and so may be cheaper to to run with a time-of-use pricing scheme.[49] At night, when it is colder outside and your heat pump uses more electricity to heat to the same indoor temperature, prices are lowest. Heat pump owners can also use a smart thermostat to pre-heat or cool your home at times when electricity is cheaper, packing more savings. Some smart thermostats even have time-of-use settings.[50]

Pollution in **your kitchen**

Keen cooks (and those who live with them) will be used to the delicious smell wafting through the home as dinner sautes or simmers on a gas stove. What you may not realize is that among the mouth-watering scent is a host of polluting and harmful emissions. In fact, a recent study from Stanford University found that natural gas and propane stoves emitted benzene that frequently reached indoor concentrations well above World Health Organization benchmarks. **In about a third of the homes studied, a single gas burner on high raised benzene levels above the concentrations seen in secondhand tobacco smoke. Worryingly, another study found that kids in homes with gas stoves are 42% more likely to develop asthma.**[52] Ditching your gas stove isn't just a good way to cut your carbon footprint—it's also a great way to improve your family's health.

Finding the **perfect heat pump**

While the results in this report are based on a typical home, it's important to tailor your solution to your particular household by speaking to an installer or energy advisor when you decide to start living that clean energy life. **When installing a new heating or cooling system, you'll want to get the model, size, and setup that makes the most sense for your home.**

All heat pumps cool as well as heat and are more efficient than air conditioners or fossil fuel powered furnaces. Heat pumps come in many shapes and sizes: from small ductless mini-split units that heat and cool one room or floor to larger central heat pumps that provide heat and cooling for the whole building through ducts. Some heat pumps draw on the outside air (air source heat pumps), while others draw on heat from the ground (ground source heat pumps).

How a heat pump should be sized also depends on the setup: whether you want to rely on your heat pump year-round with minimal use of a backup system or rely on a hybrid heating system, like combining a conventional air source heat pump with an (existing) natural gas furnace, for example.[53]

In many parts of Canada, it is advisable to install a cold climate heat pump if you want to rely on it year-round. The newest models can provide heat in temperatures as low as -31 degrees Celsius, below which back-up systems will kick in.[54]

If you opt not to install a cold climate heat pump, a standard air source heat pump can operate at temperatures as low as -8 degrees Celsius.[55] It's important to note that all heat pumps remove the need for (and cost of) central air conditioning, regardless of whether they are the standard or cold climate varieties.

Often, it is also worth investing in better air tightness or insulation of your house to ensure the heat your system is producing isn't seeping out.

What about the renters?

A third of Canadians do not own but rent their home, and that share is increasing.[56] Tenants typically pay the energy bills but do not usually have a say in the installation of more efficient energy technologies, such as heat pumps.

Landlords, meanwhile, would bear the costs of an energy improvement, but they do not always benefit directly from the cost savings (as these usually go to tenants). What's more, incentivizing landlords to perform upgrades on buildings could have adverse effects such as increasing rent costs or enabling "renovictions."[57] This "split incentive" problem hinders widespread adoption of clean energy solutions in rental units, and it needs to be addressed to ensure that all Canadians can benefit from clean energy. A number of jurisdictions globally have used regulations to address the issue, including the U.K., which sets minimum energy efficiency standards for residential rental properties.[58]

Recommendations

The shift to clean energy isn't just a way to fight climate change—it is something we should do to make life cheaper and healthier for Canadians. While governments are already taking important steps to encourage households to lower their carbon footprint, a number of additional moves could make clean energy solutions even more accessible and affordable for all Canadians.

Improve affordability

In addition to extending the life of existing programs that help bring down the upfront cost of clean energy technologies, there is more that all levels of government can do:

- Initiate rebate programs for new and used EVs, heat pumps, solar panels, and other home energy-efficiency upgrades in provinces or territories that do not yet have them.
- Provide additional incentives or low-interest loans to speed the adoption of cold climate heat pumps in Canada's colder regions.
- Establish energy efficiency standards for rental units to lower operating costs for renters (a measure the U.K. has had in place for years).[59]
- Require that all newly installed cooling systems are heat pumps and explore efficiency standards for both heating and cooling systems to incentivize cleaner systems over time. Local governments can join the likes of Montreal or New York by building a plan today to transition off fossil fuel heating in new buildings.

Enhance accessibility

Governments must also take the following steps to ensure all Canadians can benefit from the cost savings clean energy technologies provide, regardless of income or housing situation:

- Fund EV-ready retrofits in existing multi-family buildings and introduce 100% EV-ready building code requirements for new builds.
- Advance right-to-charge legislation for condo owners who are willing to pay to install a charger.
- Support community EV charging hubs.
- Provide funding or interest-free loans for multi-unit residential buildings like purpose-built rentals and condominiums to implement clean energy retrofits and prioritize energy-efficiency retrofits for low-income homeowners and tenants.
- Make accessing incentive, loan, and rebate programs easier.
- Implement zero-emission vehicle sales regulations to make it easier to find an EV to purchase.

Empower the customer

One of the key roles that provincial and municipal governments will play is removing barriers and supporting homeowners who want more control over their electricity use and production:

- Improve rate design and approve time-of-use pricing (like Ontario, B.C., and parts of Alberta). Time-sensitive rate designs can take advantage of the relative efficiency and flexibility of heat pumps and EV charging, allowing them to charge when electricity is least in demand, which helps with grid management and can help save households money.
- Remove regulatory barriers to rooftop solar for households that want to generate their own electricity.
- Encourage smart grid technologies, such as home energy management and vehicle-to-grid systems, to help lower energy bills.

Methodology

General assumptions and sources

Energy prices are for 2023:

- Average annual retail prices for regular gasoline as provided by Natural Resources Canada.[60]
- Electricity prices are based on Hydro-Québec's comparison of electricity prices in major North American cities, except in Ontario, where a weighted average of time-of-use pricing under the ultra-low overnight plan is used (the only province in Canada to have time-of-use pricing available in 2023). Note that a more strategic use of time-of-use pricing could have increased savings further.[46,61]
- Natural gas prices are based on rates from utilities in each province.
- Heating oil prices are based on average retail prices for October 2023 (when most homeowners will buy their fuel) as provided by Natural Resources Canada.[62]

- Emissions associated with the consumption of electricity, natural gas, heating oil, and gasoline in homes and vehicles are based on factors for 2023 from Natural Resources Canada.[63]
- All prices include sales tax.
- Equipment costs do not include cost of financing.

Operating and equipment costs for vehicles

- Vehicles of each type were selected based on their popularity on the Canadian market.
- The operating costs for vehicles shown in this report were calculated using the Fleet Procurement Analysis Tool by Atlas Public Policy.[64] The necessary vehicle performance data was taken from Natural Resources Canada.[65]
- We assumed an annual vehicle mileage of 20,000 kilometres as per information from Natural Resources Canada and combined fuel/electricity consumption ratings that reflect 55% city and 45% highway driving.[66]
- We assume 88% home charging of EVs based on the midpoint of a range provided in a report from the U.S. National Renewable Energy Laboratory.[67]
- The public charging price is based on a review of per-minute rates in B.C., Ontario, and Quebec to charge a 75 kWh battery (the sales-weighted average battery size in the U.S. in 2021) at an average charging speed of 70 kW (the average rated fast-charging speed in Quebec and Ontario) and assumed losses in charging and grid delivery of 36%.[68–70]
- Equipment costs for vehicles account for federal and provincial EV rebates where available. Vehicles are amortized based on an expected ownership period of 10 years.

Operating and equipment costs for homes

Operating costs

- Energy usage and emissions in each city and scenario were modelled by Eco-Efficiency Consulting and A&J Energy Consultants.[71]
- The single-detached house is based on a 2,300-square-foot, two-storey detached house with a full-height basement built in 1980.
- The townhouse is based on a 1,520-square-foot, two-storey end-unit townhouse with a full-height basement built in 1983.
- The apartment is based on a condo in a six-unit low-rise multi-unit residential building. The building is two stories plus a full-height basement, totalling 5,648 square feet (around 940 square feet per unit) and built in 1980.
- All buildings have double-pane windows and an average level of insulation and airtightness for buildings of their type and build year in the baseline case ("starting from zero").
- For the single-detached house and townhouse, we assume a household of two adults and two children, while for the condo we assume a household of two adults.
- Baseline cases ("starting from zero") are based on common heating fuels in each province. This is natural gas for British Columbia, Alberta, Saskatchewan, Manitoba and Ontario; electricity for Québec, New Brunswick, and Newfoundland and Labrador; and heating oil for Nova Scotia and Prince Edward Island.
- Heat pumps in the fully electrified case ("living the clean energy life") were sized to 100% of the heating load of the building. The heating system was set to switch to the secondary system at -22 degrees Celsius.
- Heat pumps in the hybrid case ("making some changes") were sized to 125% of the cooling load, which in many Canadian climates means the secondary heating system is covering most of the heating load. The heating system was set to switch to the secondary system at 0 degrees Celsius.
- Since the fully electrified case ("living the clean energy life") no longer uses natural gas, the relevant connection costs are subtracted in the cities with natural gas as heating fuel.
- The carbon pricing rebates, in provinces where the federal carbon price applies (i.e. all but B.C. and Quebec), are based on quarterly rebates for 2023 to 2024.

Equipment costs

- Equipment cost estimates are based on national averages (with province-specific taxes and rebates). Note that cost is highly dependent on regional markets, as well as on the sizing of equipment based on home size and local climate conditions. Equipment estimates are therefore indicative, and homeowners are advised to obtain quotes most relevant to their particular circumstances.
- Equipment costs for heating and cooling include the cost of a 10% air tightness improvement as well as an electric panel upgrade. Modelled air sealing improvements were chosen as to be achievable through do-it-yourself upgrades.
- Equipment costs for heating and cooling (furnaces, heat pumps, air conditioning, baseboards) were derived from multiple sources, including analysis by Dunsky, the Building Decarbonization Alliance, and the U.S. National Renewable Energy Laboratory (NREL).[72,73]
- Equipment costs for water heating and stoves are based on average prices from a review of popular models suitable for each scenario and available at large retailers operating in Canada.
- Equipment costs were amortized according to their estimated lifetimes, which vary per equipment.
- Equipment costs include provincial rebates, where available, including rebates provided by governments and the main utility (FortisBC, Enbridge, etc.). Additional municipal programs are not included but may be available.
- Rebates are included insofar as a household with median income would be eligible. In many provinces, more financial support is available for low-income households specifically. Almost all rebates require the applicant to be the owner of the property, and we have assumed that residents of our modelled buildings are owners with agency to make the relevant upgrades.

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