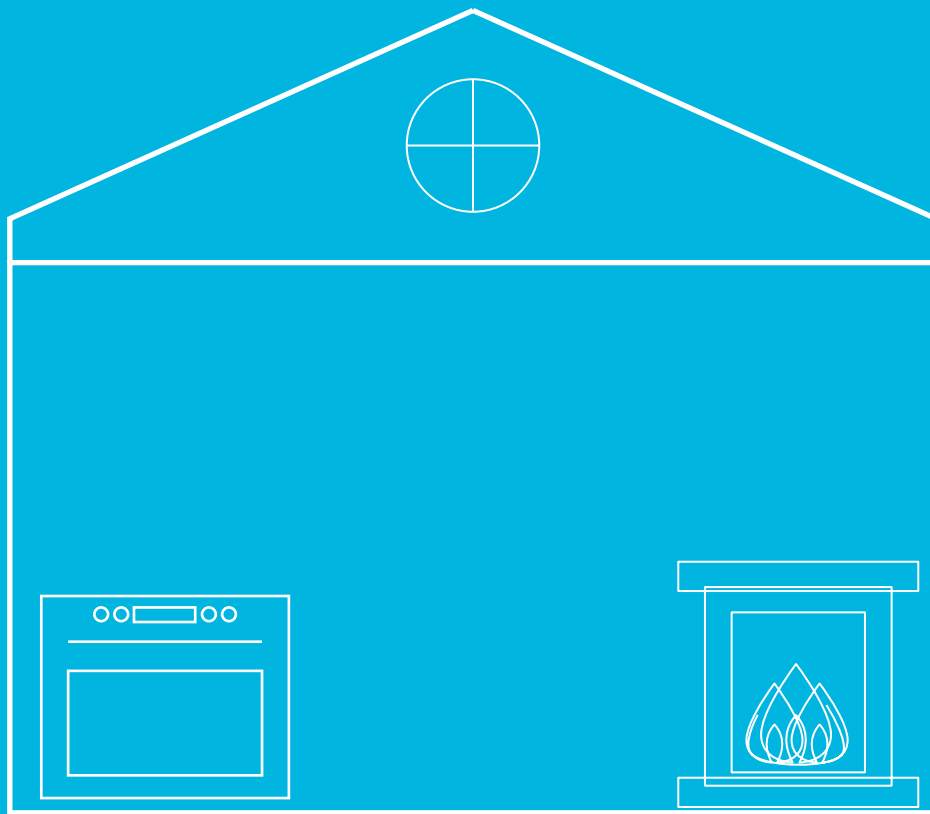


# Home on the range: How natural gas appliances are quietly fueling carbon footprints



# Home on the range: How natural gas appliances are quietly fueling carbon footprints

With changing temperatures and more severe storms, the effects of climate change have been evident in recent years here in British Columbia. While most British Columbians say they are concerned about the effects of climate change on the environment, some are also concerned about how extreme weather and climate change can lead to rising costs in their everyday lives – from groceries to gas. However, the majority are still using natural gas to power many things in their home – from heating to stoves and fireplaces– and while some are aware of the harmful emissions of natural gas, many stick to these appliances because they think they simply work best – even though electric appliances often outperform their gas counterparts.

## Highlights

- A recent survey<sup>1</sup> conducted on behalf of BC Hydro finds while more than half of British Columbians are very concerned about the impact of climate change in the future, many are adding to their carbon footprint by using natural gas appliances at home.
- This is because there is a perception that gas appliances are more effective or more luxurious than electric options, even though electric appliances can outperform gas.
- In fact, 46 per cent of British Columbians said they prefer using a gas stove over electric – and of those most prefer gas because they say it is more responsive (69 per cent), cooks more evenly (68 per cent), or cooks faster (65 per cent), while 15 per cent said it is more luxurious.
- Similarly, 56 per cent of British Columbians said they prefer a gas fireplace over electric, and of those 54 per cent said it heats better, and over half said it is easier to adjust, or that they like the real flame (73 per cent).
- Even though 42 per cent of British Columbians are concerned about their household’s carbon footprint, these perceptions are driving the popularity of gas appliances, especially in B.C. kitchens:
  - A quarter of BC Hydro customer households have at least one natural gas cooking appliance, such as a stove.<sup>2</sup>
  - A quarter of BC Hydro customers also have at least one gas fireplace.
- Over the past ten years, there has been a 47 per cent increase in natural gas cooking appliances in townhomes and detached homes, and the use of natural gas fireplaces is also on the rise.
- Natural gas appliances contribute about half a tonne per year to a household’s greenhouse gas emissions – the equivalent of driving a fossil fuel powered car over 2,000 kilometres.<sup>3</sup>
- In fact, recent research finds emissions from gas stoves in U.S. homes has the same climate impact as about 500,000 gasoline-powered cars.<sup>4</sup>
- Electricity, on the other hand, is a much cleaner option in B.C. where 98 per cent of the electricity BC Hydro generates comes from clean or renewable resources that are mostly powered by water.

## Solutions

Choosing an electric stove or fireplace over gas options is one of the best ways to reduce your carbon footprint at home and will pay off in the long run. BC Hydro recommends the following ways to kick gas appliances to the curb:

- Electrify your oven – Contrary to popular belief, in most cases, electric ovens are cheaper than their gas counterparts, outperform gas stoves and are easier to clean. In fact, electric convection ovens heat up quicker and distribute heat more evenly than gas, resulting in reduced cook times and less fuss – not to mention energy savings.
- Fire up the electric fireplace – While electric fireplaces will not produce a real flame, the newer models have very realistic flame effects, without the environmental drawbacks of gas. Electric fireplaces are also less expensive to install and require little to no maintenance.

<sup>1</sup> Online survey conducted by Majid Khoury of 800 British Columbians between Jan 26 - 28, 2022 – margin of error 3.46%.

<sup>2</sup> BC Hydro Residential End Use Survey (REUS) 2020

<sup>3</sup> Natural Resources Canada

<sup>4</sup> Stanford Woods Institute for the Environment

## Carbon footprint concerns

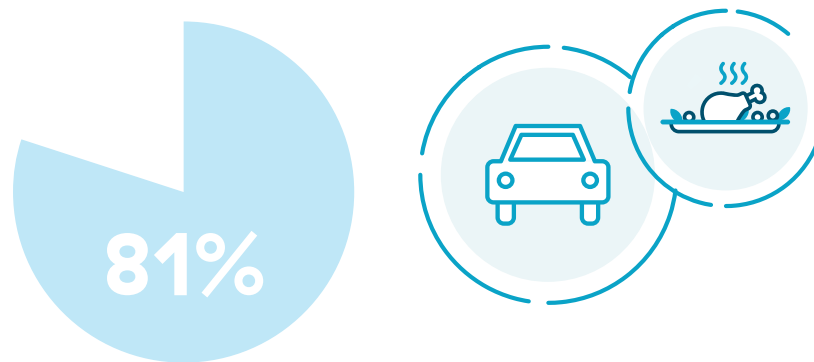
With storms and extreme weather becoming more common, British Columbians are increasingly concerned about the effects of climate change in B.C., and how their personal carbon footprint contributes.

However, a recent survey conducted on behalf of BC Hydro finds while over half of British Columbians are very concerned about the impact of climate change in the future, many are adding to their carbon footprint by using natural gas appliances at home. This is partly due to the perception that gas appliances are more luxurious or more effective than electric options. As a result, natural gas use is on the rise in townhomes and detached homes when it comes to cooking appliances and fireplaces.

This report will examine the appeal of gas appliances, and offer solutions for more environmentally friendly options, powered by clean electricity.

## Changing climate, changing costs

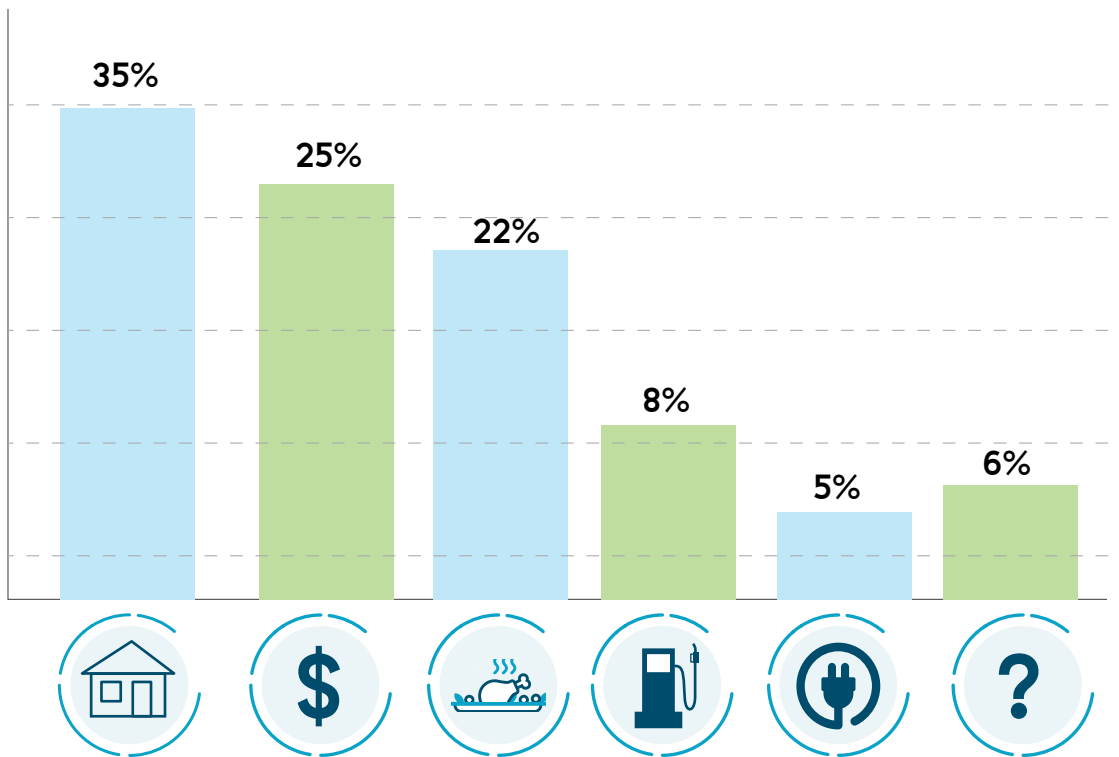
Concern over climate change is making British Columbians more aware of how their everyday habits can affect the environment. In fact, 77 per cent of British Columbians think the weather in British Columbia is becoming more extreme due to climate change, and 54 per cent are very concerned about the impact of climate change in the future.



**81% of British Columbians think climate change is having an impact on their everyday costs**

This has made British Columbians more aware of how their household may contribute to harmful emissions. In fact, 42 per cent said they are concerned about their personal carbon footprint. Part of this concern stems from the belief that climate change can lead to rising costs in their everyday lives – from groceries to gas. In fact, four in five British Columbians believe climate change impacts the cost of goods they consume. The rising cost of necessities like food and gas is listed as a top climate change concern for a quarter of British Columbians, second only to the ability of unpredictable weather to damage their home or community (35 per cent).

## British Columbians' top climate change impact concern



- Unpredictable weather damage on my home / community
- The rising costs of necessities like food
- The availability of essentials like food and power
- The rising costs of fossil fuels such as gas and natural gas
- The reliability of the electricity grid
- Other

## Appliance appeal

Despite concerns for the environment and impacts of climate change on the everyday lives of British Columbians, natural gas appliances are popular, especially in B.C. kitchens. In fact, natural gas appliance use is on the rise in townhomes and detached homes.

A quarter of BC Hydro customer households have at least one natural gas cooking appliance, such as a stove. Over the past ten years, there has been a 47 per cent increase in natural gas cooking appliances in townhomes and detached homes – with households in the Lower Mainland the most likely in the province to have a gas range, a gas cook top or a combination range (gas cook top with electric oven).<sup>5</sup>

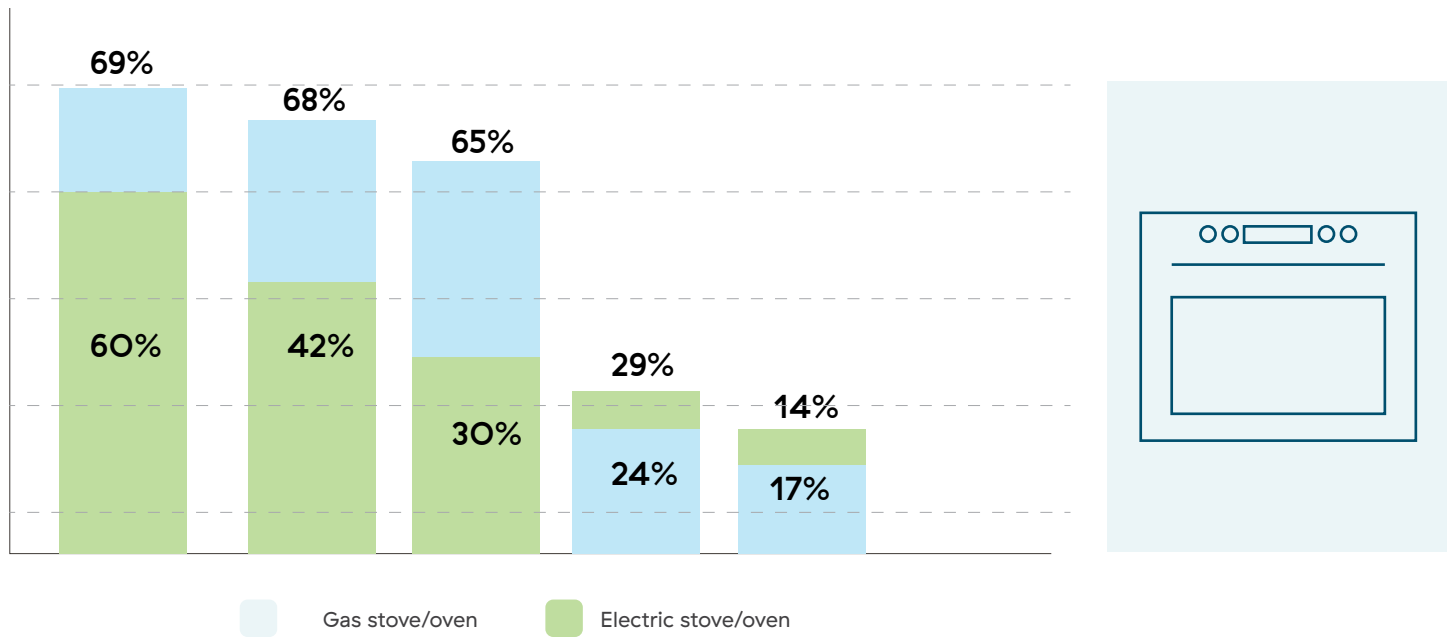
<sup>5</sup> BC Hydro residential End Use Survey 2020

The perception that gas appliances work better than their electric counterparts, is a big part of the reason why they are preferred amongst British Columbians. For example, 46 per cent of British Columbians said they prefer using a gas stove over electric – and of those most prefer gas because they say it is more responsive (69 per cent), cooks more evenly (68 per cent), or cooks faster (65 per cent), while about 15 per cent said it is simply a more luxurious option.

Another popular gas appliance in B.C. households is the gas fireplace – a quarter of BC Hydro customers have at least one gas fireplace used as a primary or secondary heating method.

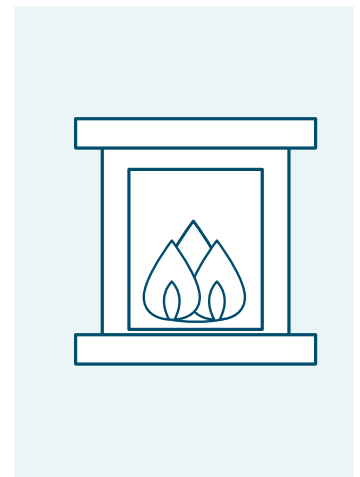
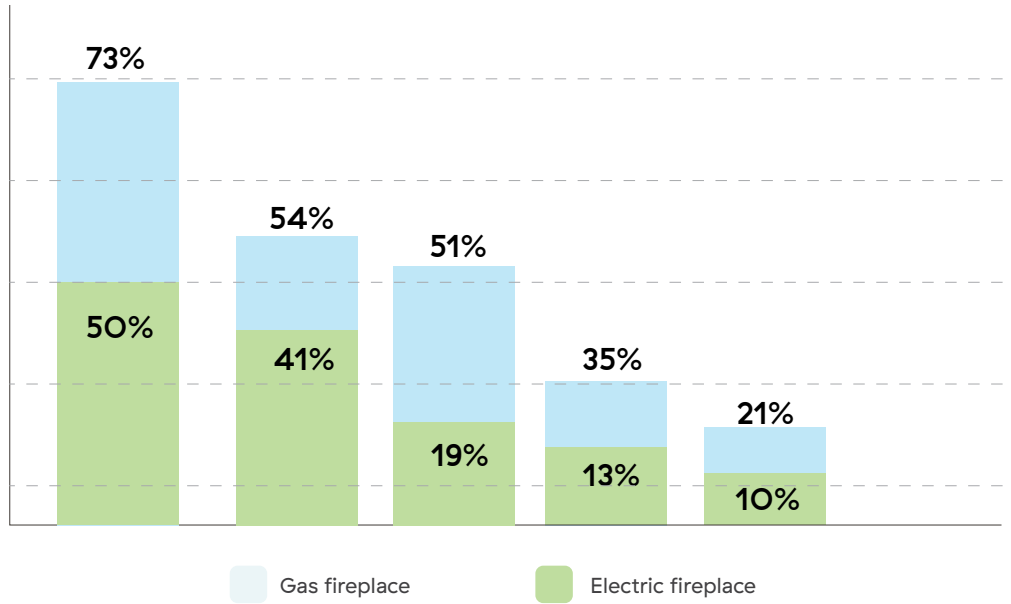
Similar to cooking appliances, 56 per cent of British Columbians said they prefer a gas fireplace over electric, and of those 54 per cent said it heats better, and over half said it is easier to adjust, or that they like the real flame (73 per cent). Another 23 per cent also use natural gas to fuel an outdoor fireplace or barbeque.

## Top reasons for appliance preferences – Stoves



Gas Stove/oven	Electric stove/oven
More responsive – 69%	Used to it – 60%
Cooks more evenly – 68%	Easier to maintain/clean – 42%
Cooks faster – 65%	Natural gas makes me uncomfortable – 30%
Used to it – 24%	Better for the environment – 29%
More luxurious – 14%	Cooks more evenly – 17%

## Top reasons for appliance preferences – fireplaces



Gas fireplace	Electric fireplace
Prefer the real flame – 73%	Better for the environment – 50%
Better heating – 54%	Can easily move/rearrange room – 41%
Can better adjust the flame/temperature – 51%	Better heating – 19%
Cheaper to use – 35%	Not sure – 13%
More luxurious – 21%	More luxurious – 10%

## Fueling carbon footprints

While many British Columbians said they prefer their natural gas appliances, some may not be aware of the emissions consequences. In fact, of those who said they prefer natural gas stoves, 11 per cent listed the notion that they are ‘better for the environment’ as a reason. This belief in ‘good for the environment gas’ goes up to 15 per cent in the Okanagan/Kootenay region.

However, the notion that natural gas is good for the environment is not accurate. Natural gas appliances contribute about half a tonne per year to a household’s greenhouse gas emissions – the equivalent of driving a fossil fuel powered car over 2,000 kilometres.

In fact, researchers recently examined how natural gas appliances warm the planet in two ways: generating carbon dioxide by burning natural gas as a fuel and leaking unburned methane into the air. The methane from natural gas-burning stoves inside U.S. homes has a climate impact comparable to the carbon dioxide emissions from about 500,000 gasoline-powered cars.<sup>6</sup> Electricity, on the other hand, is a much cleaner option in B.C. where 98 per cent of the electricity BC Hydro generates comes from clean or renewable resources that are mostly powered by water.

<sup>6</sup> Stanford Woods Institute for the Environment

## Getting over gas

Many British Columbians prefer gas powered appliances because of the perception that they are more effective or luxurious than electric options.

However, when it comes to stoves electric options in many cases outperform their gas counterparts, with the bonus of being less expensive to purchase and easier to clean. In fact, Consumer Reports finds smooth top electric ovens have an edge on gas models when using high heat, low heat (for simmering) and for baking.<sup>7</sup> Electric convection oven models are also proven to heat up quicker and distribute heat more evenly than gas options, thanks to an internal fan that continuously circulates hot air through the oven chamber, resulting in reduced cook times and less fuss. Convection ovens are more energy efficient than gas overall, as food is cooked faster and at a lower temperature.<sup>8</sup> While gas stoves are often touted for quick heating, they tend to have hotspots and uneven heat. In fact, convection ovens are best for roasting meats and veggies, baking batches of cookies or muffins, and toasting bread.

There have also been advances in recent years such as induction cooking which uses electric currents to directly heat pots and pans through magnetic induction. Induction is significantly more efficient than gas – food being cooked with induction will receive 90 per cent of the heat generated, as opposed to only 40–55 per cent for gas.

Regarding fireplaces, electric options have come a long way. While electric fireplaces will not produce a real flame, the newer models have very realistic flame effects, without the environmental drawbacks of gas. Electric fireplaces are also less expensive to install and require little to no maintenance. When it comes to heating, using a fireplace to space heat is not energy efficient, and most gas fireplaces should not be run for more than three hours at a time.

Choosing an electric stove or fireplace over gas options is one of the best ways to reduce your carbon footprint at home and will pay off in the long run. For more information on energy efficient appliances and heating visit [bchydro.com](http://bchydro.com).

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<sup>7</sup> Consumer Reports

<sup>8</sup> NRCAN Cooking Appliances

