

# Pathways to Net Zero

Currently in Canada, natural gas meets 38% of the country's energy needs through the industry's more than 573,000 kilometres of world-class infrastructure. It is also the largest source of energy for the industrial and buildings sectors in Canada.

Given the current scale of gas consumption in Canada, ICF's report, *Potential Gas Pathways to Support Net-Zero Buildings in Canada*, reinforces that planning for a net-zero future should not necessitate a choice between one energy system or another (ie. gas or electric).

## Where we are now

# 730 million tonnes

Canada's total Greenhouse Gas (GHG) emissions in 2019

**18%**  
**for space and water heating**  
in residential and commercial buildings

**42.5 million tonnes**  
are attributed to residential emissions

**34.4 million tonnes**  
of emissions from commercial/institutional

## Utilities in Canada are using a range of gas solutions to reduce emissions including



Energy Efficiency



Hybrid Heating



Renewable Natural Gas



Hydrogen



Negative Emissions Technologies



Natural Gas Heat Pumps



Building Code Improvements

## There are 3 pathways to reduce emissions in buildings

Each pathway is distinct from each other based on the combination of solutions used and the level of customer adoption. The 3 illustrative pathways can be summarized as:

# 1

### Gas Energy Efficiency

Significant adoption of gas heat pumps for space and water heating

# 2

### Hybrid Heating

Significant adoption of hybrid heating options that pair electric air source heat pumps with gas furnaces

# 3

### Renewable Gases

Small portion of residential and commercial customers converting to use 100% hydrogen by 2050 and high RNG levels

## Gas Demand GHG Reductions

**35 million tonnes (43%)**

**45 million tonnes (56%)**

**24 million tonnes (30%)**

Energy Efficiency: SaskEnergy's Big Block Construction  
Hybrid Heating: Énergir and Hydro-Quebec partnership

## Renewable Gases GHG Reductions

**34 million tonnes (43%)**

**28 million tonnes (35%)**

**44 million tonnes (55%)**

Renewable Natural Gas: FortisBC, Enbridge, Énergir  
Hydrogen: Enbridge's hydrogen blending project in Markham, ON

## Offsets / Negative Emissions Reductions

**11 million tonnes (14%)**

**8 million tonnes (9%)**

**12 million tonnes (15%)**

Carbon capture: ATCO's proposed hydrogen project with Suncor



## Scenario Reaches Net Zero Target

### Key Takeaways

- Canada's natural gas industry will make important contributions to the nation's energy future, and **planning for net-zero targets does not necessitate a choice between energy systems (gas or electric)**;
- There are a **variety of end-use and renewable gas technologies** through which **gas utilities can support their customers in pursuing net-zero GHG emissions**, but all come with new cost pressures, and;
- Net-zero will require reform in the legislation and regulations that underpin utility investments in Canada**, and these changes will require **policy leadership** from provinces and territories, with a supporting role for federal decision makers.

### Interested in deeper insights?

Visit [cga.ca/netzero](http://cga.ca/netzero) to download the full *Gas Pathways to Net Zero in Canada* report and learn how the industry is exploring pathways to lower emissions.