

# A Vision From Ottawa

## *The Natural Gas Opportunity*

*What does the future hold for industrial gas use in Canada?*

**Paul Cheliak**  
Vice President, Government and Regulatory Affairs  
Canadian Gas Association

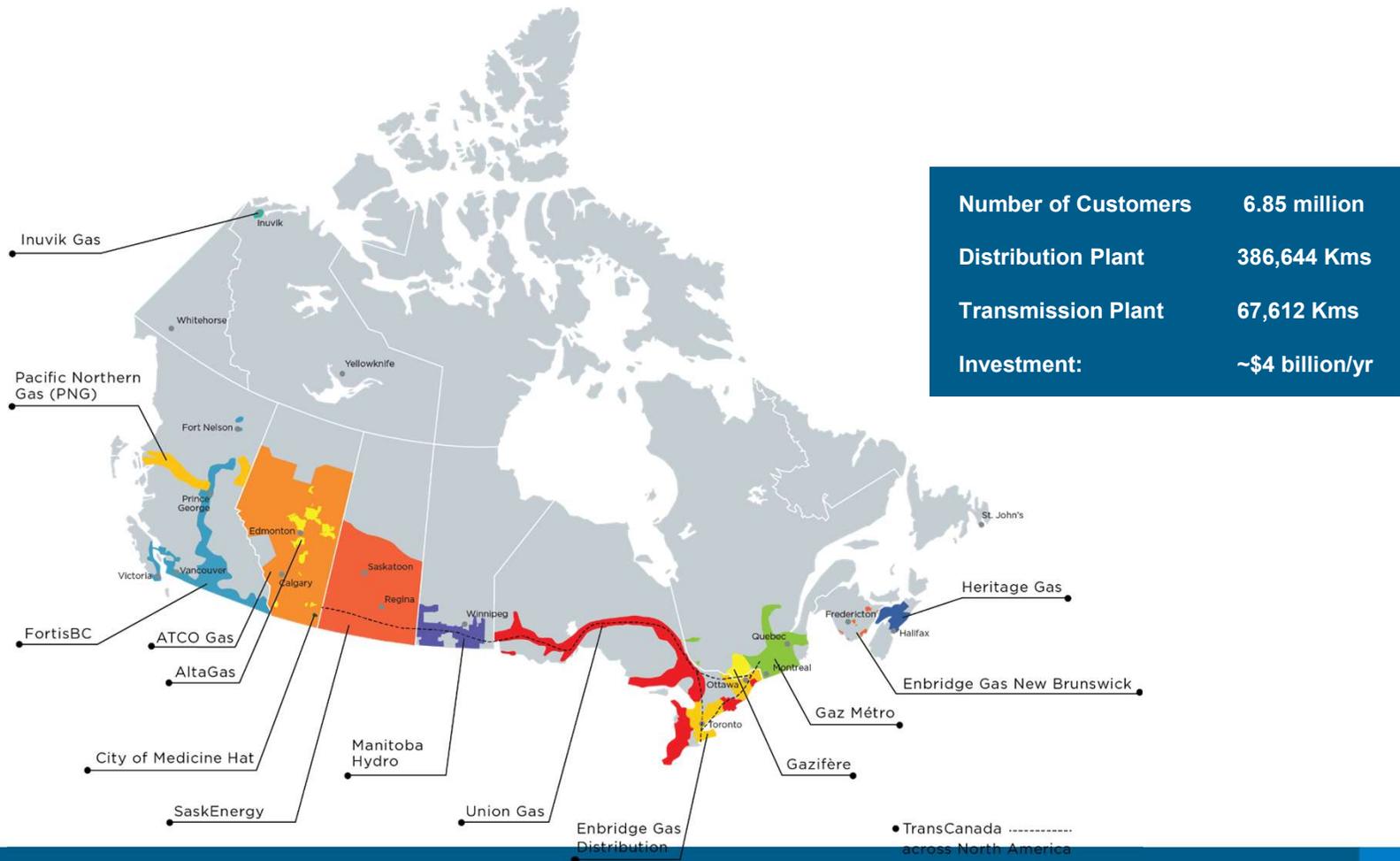
October, 2017



## What you will Hear Today

- The Facts on Natural Gas
- The Politics and the Policy in Canada
- The 2050 Vision for Gas
- Implications for Industrial Gas Users

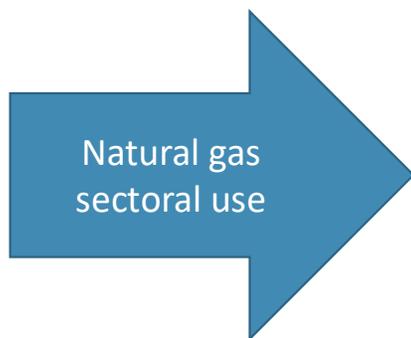
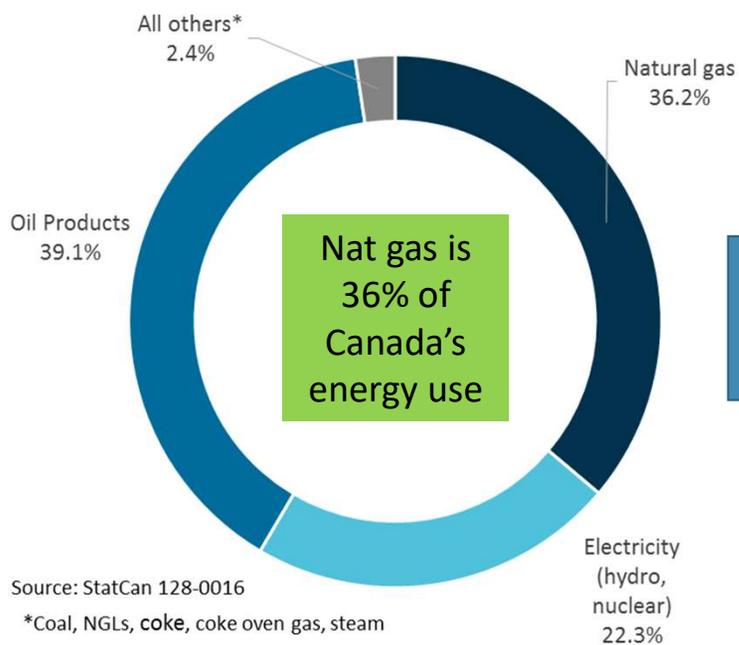
# CGA Membership



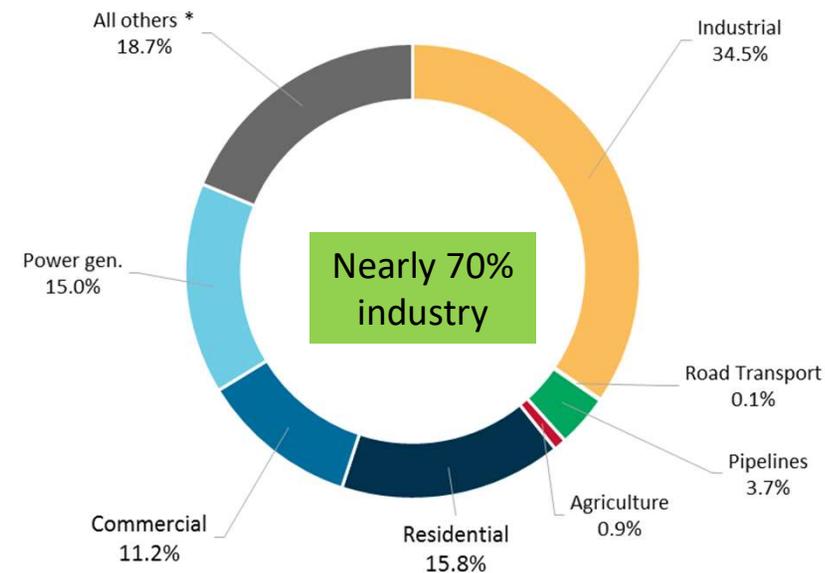
# The Facts

# Natural Gas Use in Canada

Energy final demand - 2015 - Canada - by type (%)

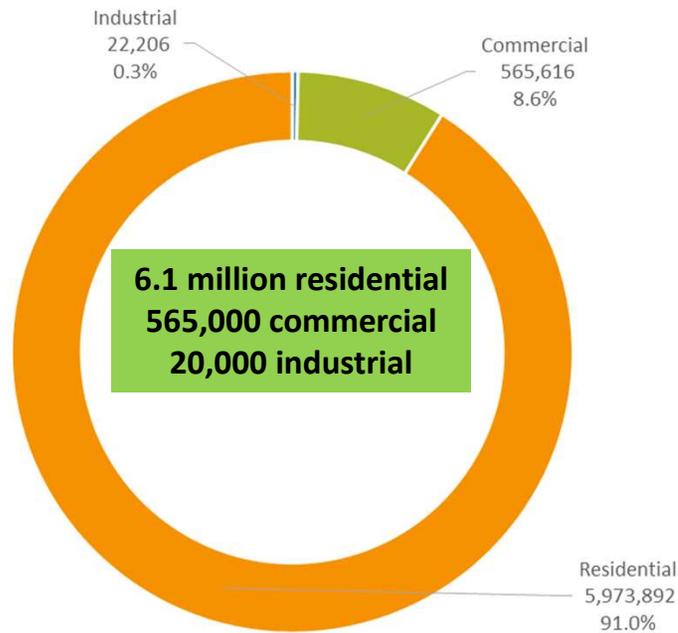


Natural gas - demand by sector 2015 (TJ,%)



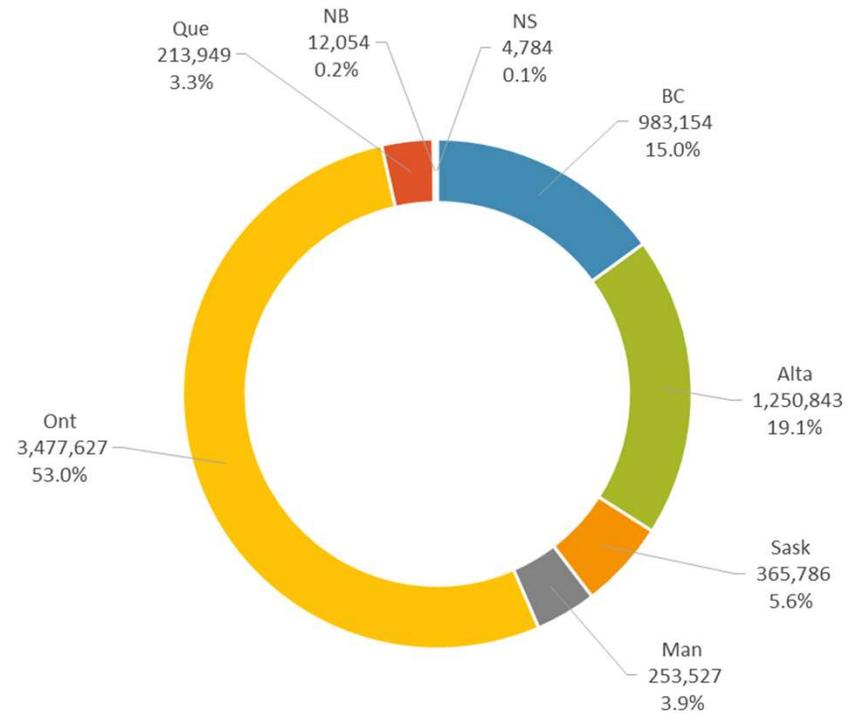
# Natural Gas Customers in Canada

Natural gas customers - Canada - by type (number)



Source: StatCan 129-0003

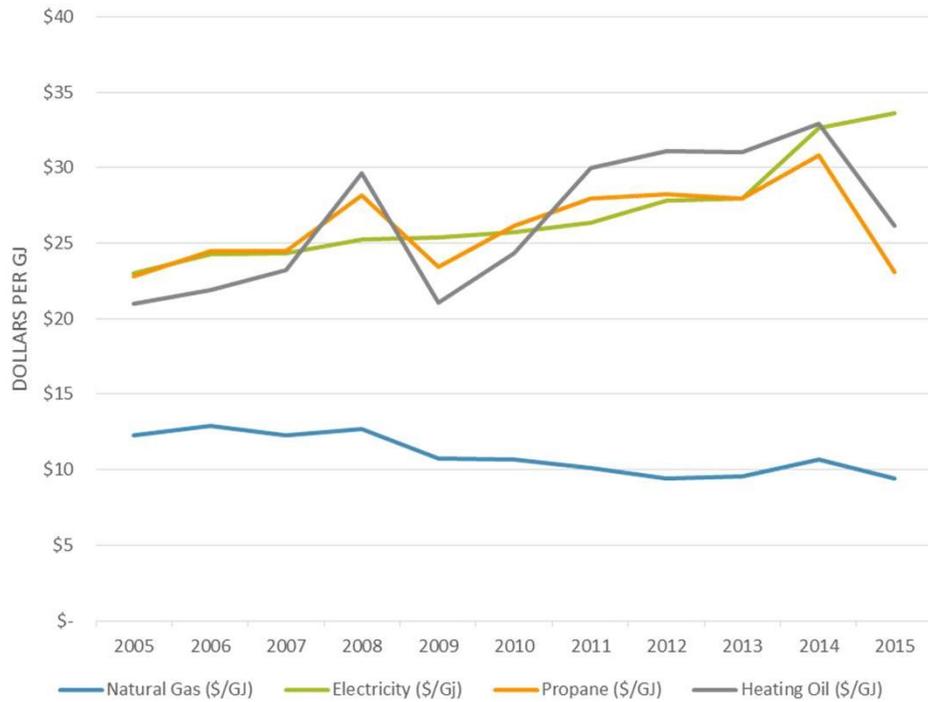
Natural gas customers - by province (number)



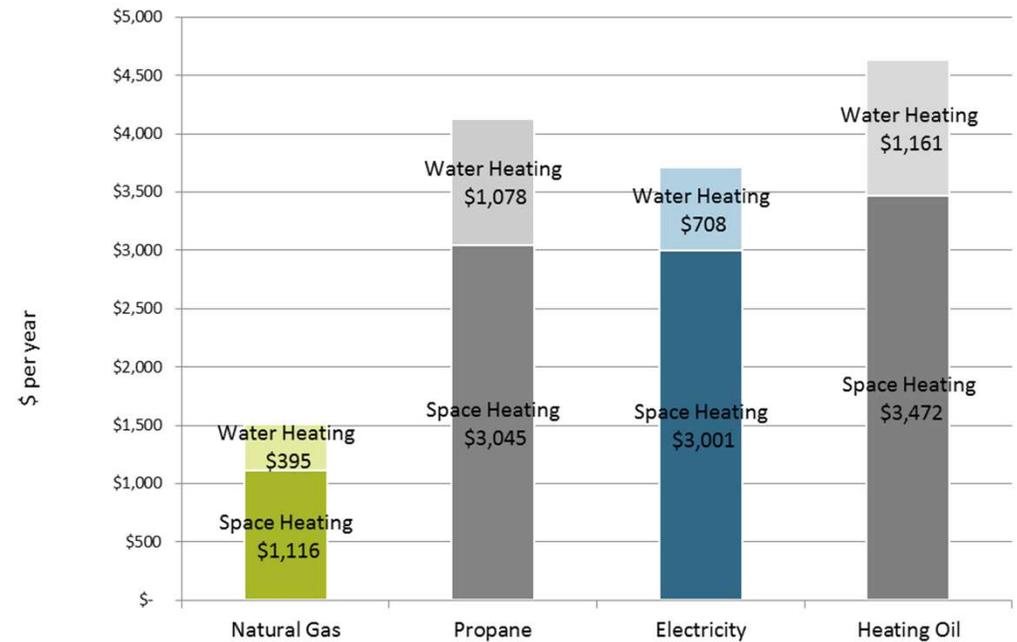
Source: StatCan 129-0003

# Natural Gas Affordability

Delivered Energy Cost - Residential Consumers -Canada



Residential Space & Water Heating Costs - Canada, 2015



Source: StatsCan, Hydro Quebec, Kent Marketing, Canadian Gas Association

# The Politics and the Policy

# Canadian Political Leadership on Energy

## STRATEGISTS



## FIGUREHEADS



## TACTITIANS

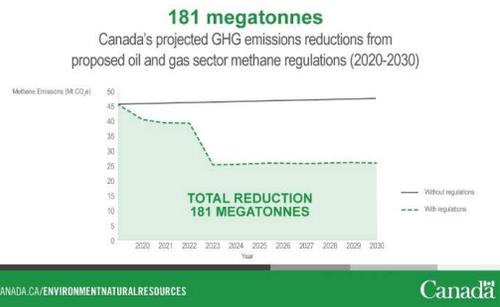


# What Is Dominating the Agenda

## Kinder Morgan and Energy East Pipelines



## Methane Regulations



## Environmental Assessment Reviews

**BUILDING COMMON GROUND**  
**A New Vision for Impact Assessment in Canada**

The Final Report of the Expert Panel for the Review of Environmental Assessment Processes

## LNG Exports

**LNG CALLING ON B.C.'S COAST**  
*Nearly a dozen proposals to export liquefied natural gas*

**PROPOSED EXPORT TERMINALS**

**Kitimat, B.C.**

1. Owners: Chevron Canada and Apache Canada
2. Owners: Haisla First Nation and LNG Partners
3. Owners: Shell Canada, Korea Gas, Mitsubishi Corp., PetroChina

**Prince Rupert, B.C.**

1. Owners: Petronas
2. Owners: BG Group
3. Owners: Progress Energy Canada

**Grassy Point, B.C.**

1. Owners: Nexen Inc., CNOOC, INPEX
2. Owners: Woodside Petroleum
3. Owners: SK E&S
4. Owners: Imperial Oil, ExxonMobil

**Kitsault, B.C.**

1. Owners: Krishnan Suthanthiran

SOURCE: FINANCIAL POST, CANADIAN ENERGY RESEARCH INSTITUTE, JONATHAN RIVAT / NATIONAL POST

## Carbon Pricing

**86% of Canada's population is already covered by a carbon price, and by 2018 that number will rise to 100%**

## Energy and Environment Consultations

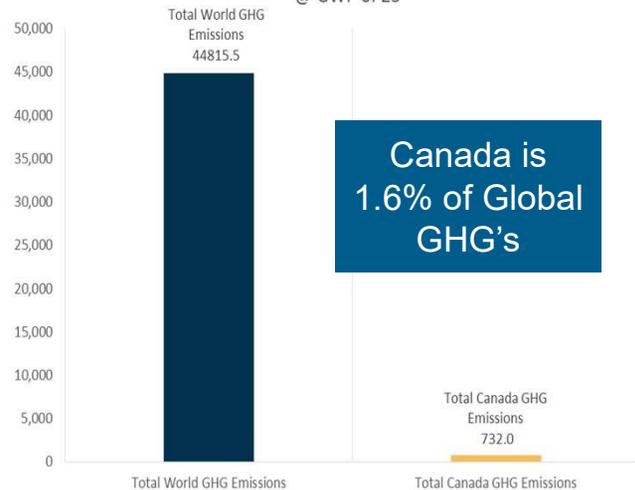


# The Policy

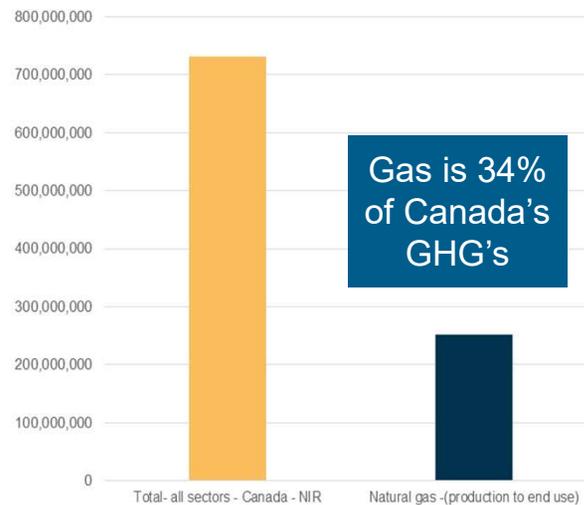
# Situating Canada's GHG's and those of Gas

- Canada accounts for 1.6% of Global GHG emissions.
- Natural gas account for 34% of Canada's GHG emissions or 0.5% of global GHG emissions.
- Canada natural gas GHG emissions are 66% end use, 22% production and processing, 8% processing and 4% transmission, distribution and storage of gas.

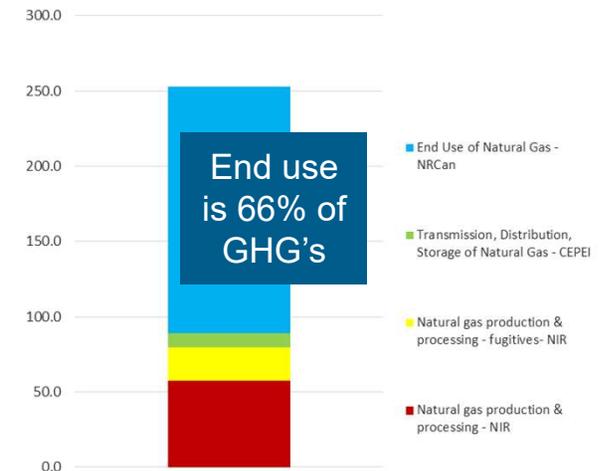
Canada's GHG Emissions - Methane Component - Mt CO<sub>2</sub>eq  
@ GWP of 25



Natural Gas Emissions - (tonnes CO<sub>2</sub>eq)



Natural Gas - Total Emissions (Mt CO<sub>2</sub>eq)



Source: Statistics Canada 153-0114, NRCan, CEPEI, CGA

# 2030 Climate Policy - Pan Canadian Framework

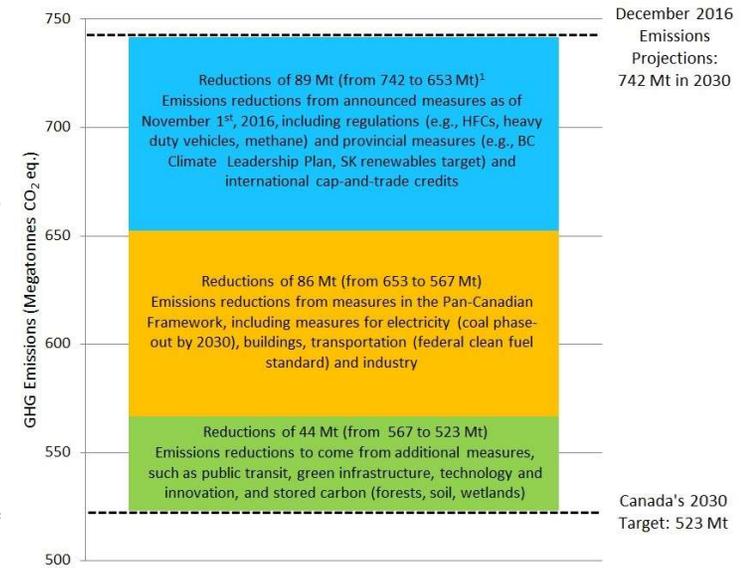
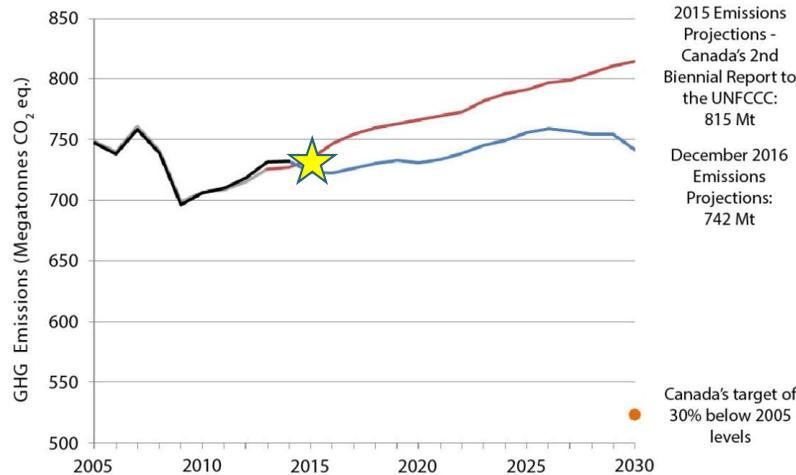
- In 2016, the federal government, released with (most) provinces, a plan for meeting Canada's 2030 target of 30% GHG reduction from 2005.
- Canada's emission were 742MT in 2015. The reduction to 525 MT by 2030 is equal to all transport + nearly all buildings' GHG's combined.
- The government plans for both carbon pricing (\$10/t in 2018 to \$50/t in 2022) and a regulatory pathway (coal phase-out, clean fuels standard, net zero buildings, methane management, etc.)

## PAN-CANADIAN FRAMEWORK



### on Clean Growth and Climate Change

Canada's Plan to Address Climate Change and Grow the Economy



Note: Reductions from carbon pricing are built into the different elements depending on whether they are implemented, announced, or included in the Pan-Canadian Framework. The path forward on pricing will be determined by the review to be completed by early 2022.

<sup>1</sup>Estimates assume purchase of carbon allowances (credits) from California by regulated entities under Quebec and Ontario's cap-and-trade system that are or will be linked through the Western Climate Initiative.

# 2030 Climate Policy - Pan Canadian Framework

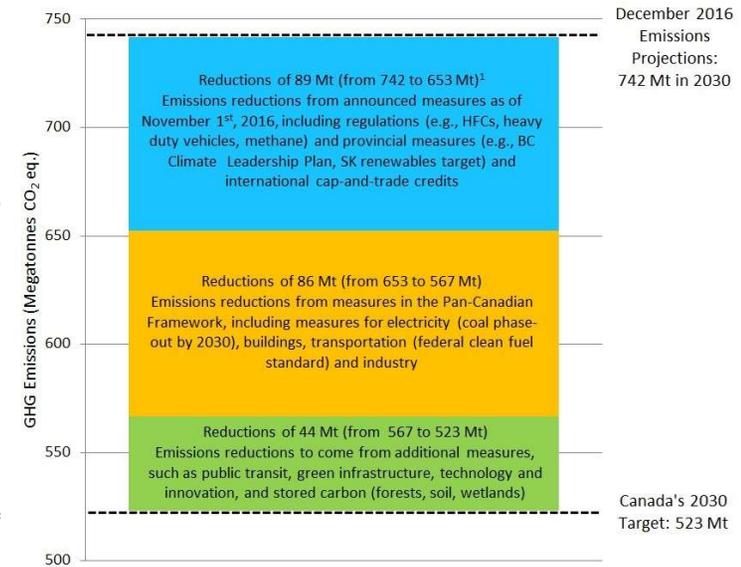
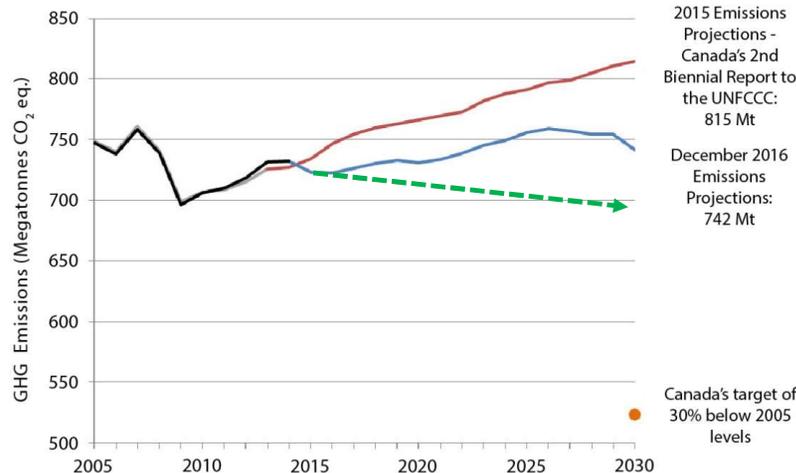
- In 2016, the federal government, released with (most) provinces, a plan for meeting Canada's 2030 target of 30% GHG reduction from 2005.
- Canada's emission were 742MT in 2015. The reduction to 525 MT by 2030 is equal to all transport + nearly all buildings' GHG's combined.
- The government plans for both carbon pricing (\$10/t in 2018 to \$50/t in 2022) and a regulatory pathway (coal phase-out, clean fuels standard, net zero buildings, methane management, etc.)

## PAN-CANADIAN FRAMEWORK



### on Clean Growth and Climate Change

Canada's Plan to Address Climate Change and Grow the Economy



Note: Reductions from carbon pricing are built into the different elements depending on whether they are implemented, announced, or included in the Pan-Canadian Framework. The path forward on pricing will be determined by the review to be completed by early 2022.

<sup>1</sup>Estimates assume purchase of carbon allowances (credits) from California by regulated entities under Quebec and Ontario's cap-and-trade system that are or will be linked through the Western Climate Initiative.

# 2030 Climate Policy - Pan Canadian Framework

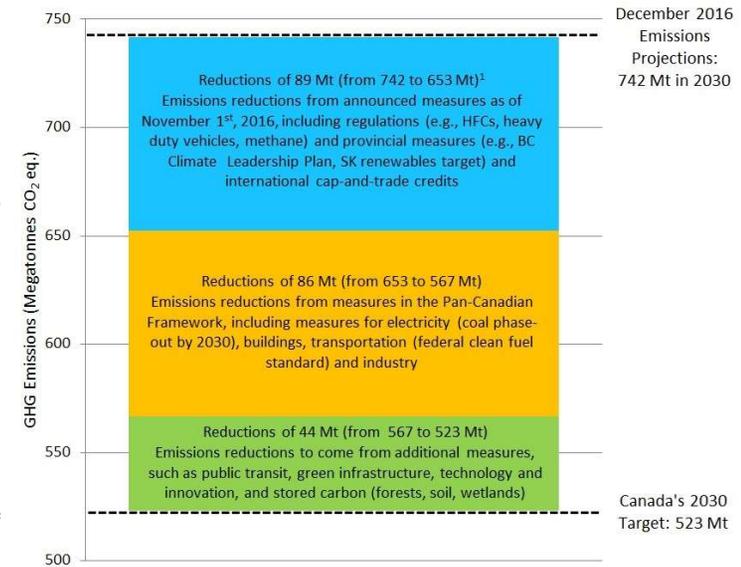
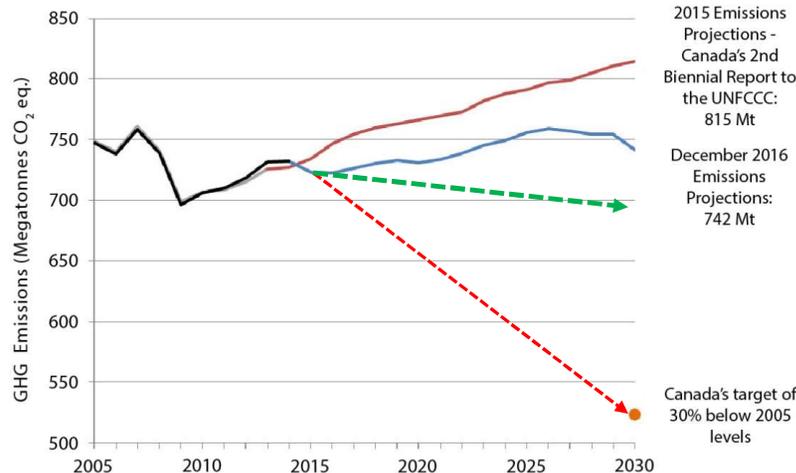
- In 2016, the federal government, released with (most) provinces, a plan for meeting Canada's 2030 target of 30% GHG reduction from 2005.
- Canada's emission were 742MT in 2015. The reduction to 525 MT by 2030 is equal to all transport + nearly all buildings' GHG's combined.
- The government plans for both carbon pricing (\$10/t in 2018 to \$50/t in 2022) and a regulatory pathway (coal phase-out, clean fuels standard, net zero buildings, methane management, etc.)

## PAN-CANADIAN FRAMEWORK



### on Clean Growth and Climate Change

Canada's Plan to Address Climate Change and Grow the Economy



Note: Reductions from carbon pricing are built into the different elements depending on whether they are implemented, announced, or included in the Pan-Canadian Framework. The path forward on pricing will be determined by the review to be completed by early 2022.

<sup>1</sup>Estimates assume purchase of carbon allowances (credits) from California by regulated entities under Quebec and Ontario's cap-and-trade system that are or will be linked through the Western Climate Initiative.

# The Future

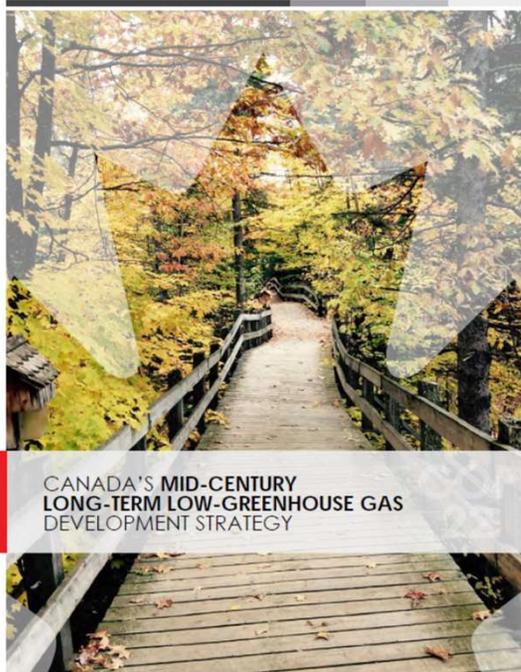
## 2050 – The Tale of Two Visions

*Implications for Industrial Gas Users*

# 2050 Climate Policy – Mid-Century Framework

- At COP 22, Canada released its mid-century outlook for fuel sources under 5 scenarios (and a baseline year of 2014 – shown on left).
- This report shows significant declines in natural gas use and corresponding increases in the use of electricity.
- In three of the 5 cases, natural gas falls from 35% of Canada’s energy use in 2014 to between 0-5%. In the high case, gas retains 20% share.

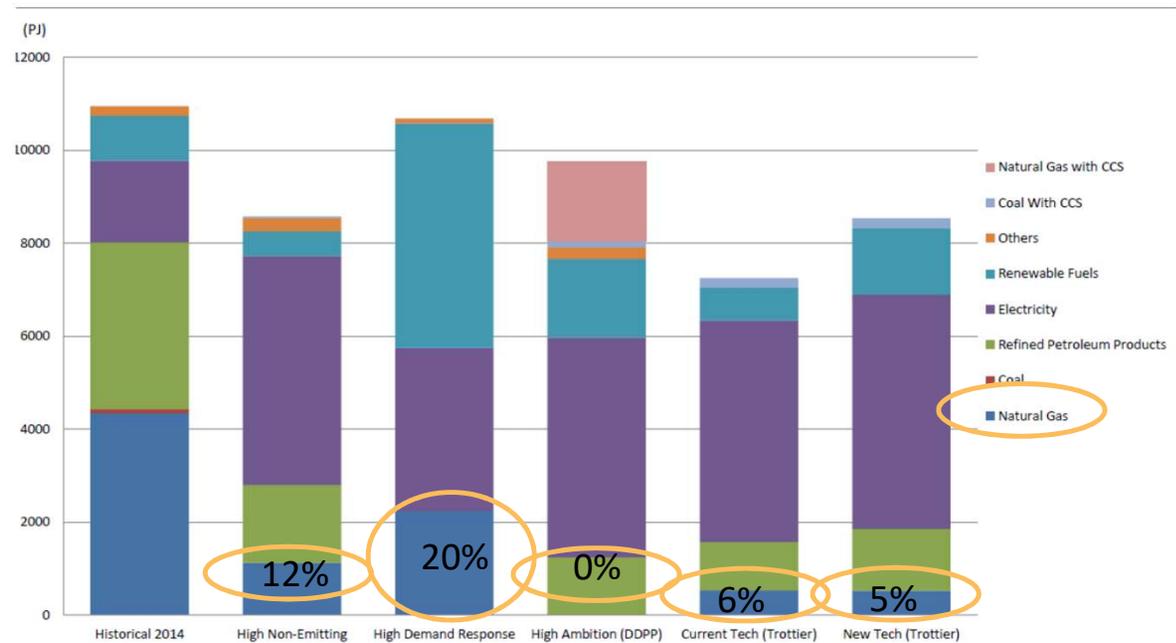
Government of Canada / Gouvernement du Canada



CANADA'S MID-CENTURY  
LONG-TERM LOW-GREENHOUSE GAS  
DEVELOPMENT STRATEGY

Canada

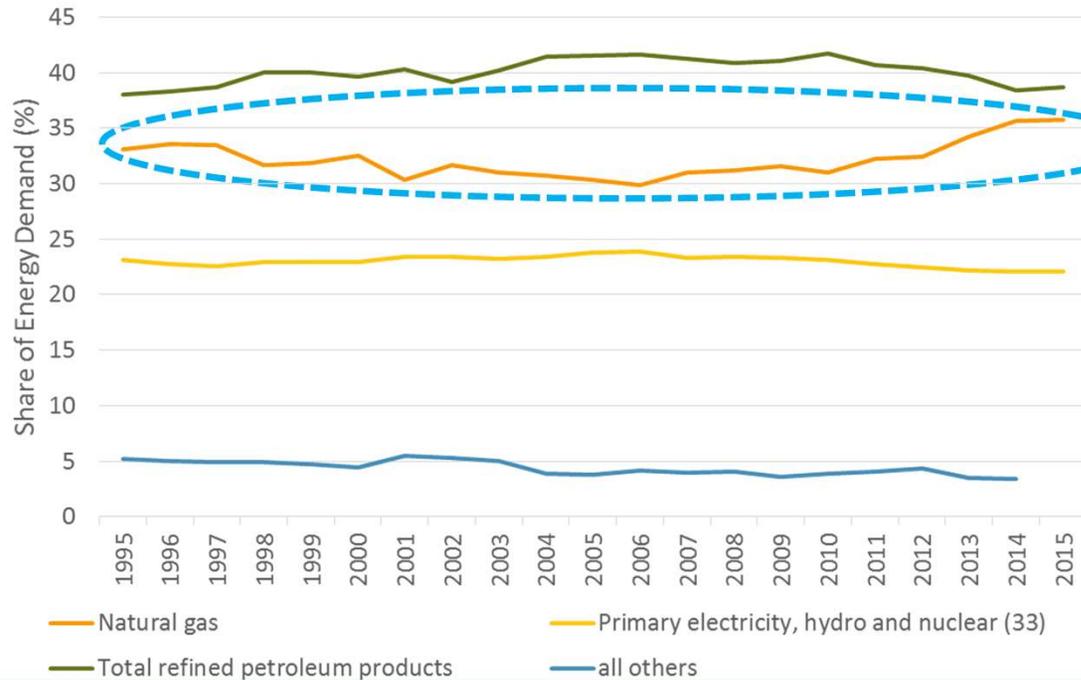
Figure 7: 2050 Projections of Total Energy Consumption by End Use Fuel



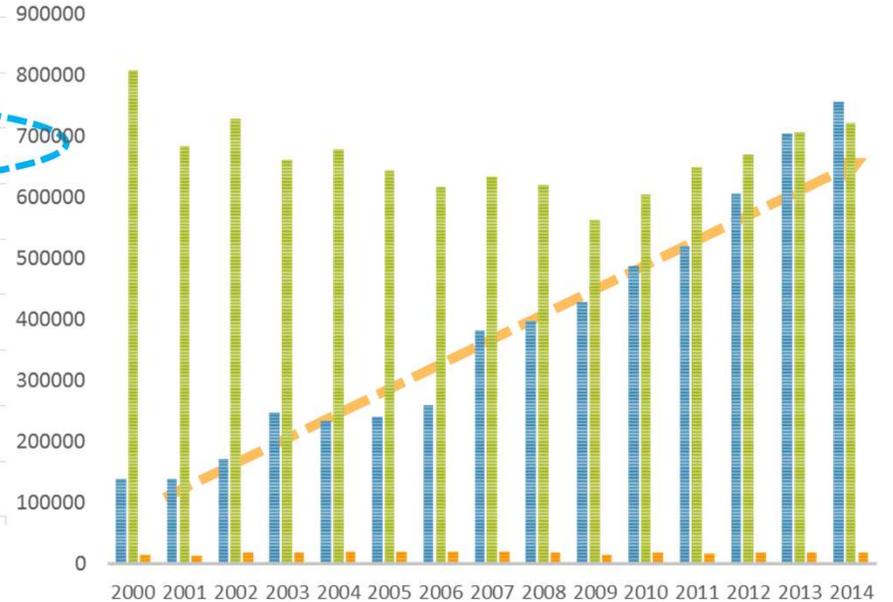
# But....The Market is Trending To More Gas Use

- Federal 2050 forecasts show next to no natural gas use in 2050.
- However, natural gas is poised to overtake refined petroleum products in the next 5-10 years
- And.... note the slow decline in electricity use since 2006.

Energy Demand by - Source (1995-2015)

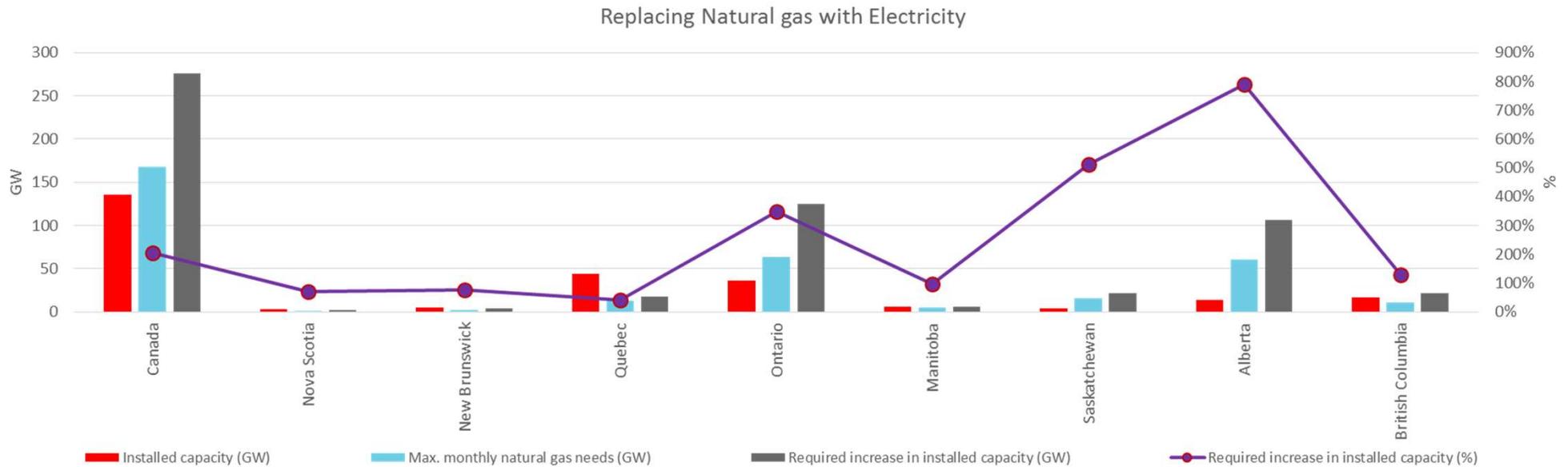


Mining and Oil and Gas Manufacturing Other



# So – What Would it Take to Replace Gas?

- The red bars show installed Canadian electric generation capacity. Actual generation is 50% of installed figure.
- Blue bars show max, average monthly natural gas demand in the winter. Peak day/hr is even greater.
- Grey shows the required incremental GW increase in installed generation capacity to replace peak gas (add red to grey)
- The purple bar corresponds to the right hand % axis. It shows % increase in generation capacity to replace gas heating.
- In sum, a 200% increase in installed capacity is needed to replace natural gas (up to 800% in Alberta).



Source: Statistics Canada 129-0002 & 127-0002

# 2050 – The Tale of Two Visions

2050 – Utility Vision	Impact on Industrial Gas Users
Significant renewable gas blending in the pipeline network (RNG, hydrogen, synthetic methane).	Lower btu gas impacts steady state heat needs of industry.
Natural gas is the largest fuel source in Canada, surpassing oil by 2030.	Continued connection to homes and businesses maintains low pipeline tariffs for industrial clients.
CO2 capture, conversion and monetization technologies are in place in homes, businesses and industry.	Supports continued use of natural gas across all sectors of the economy.

2050 – Alternative Vision	Impact on Industrial Gas Users
Erosion of residential and commercial gas users due to electrification policies.	Industrial pipeline rates increase 200%
\$250/tonne carbon taxes	Increases commodity costs by \$12.50 GJ
De-industrialization of Canada	Market erosion raises rates for remaining natural gas consumers.

# So, What do we do to Realize the Utility Vision

#1

## INDUSTRY

Tell our story.

Bring forward solutions  
(technology, policy, etc)

Demonstrate leadership  
(innovation and technology) and  
be bold in out thinking.

#2

## GOVERNMENTS AND REGULATORS

Allow natural gas/RNG to compete  
on a level playing field vs. other  
energy options

Expand regulatory mandates to  
allow utility to fund innovation

Support, via carbon revenues,  
technology development, market  
access, etc.

#3

## END USERS

Work with industry to understand  
what your energy choices are

Get involved in projects – ask hard  
questions, leverage early adopters  
experiences

Share your views and concerns  
about new technology and your  
energy future

For more information visit  
[www.cga.ca](http://www.cga.ca)