



CLEAN GAS STANDARD

A Policy Proposal for Canada

Fall 2023
BiogasAssociation.ca/CleanGas



Clean Gas
Coalition

WHAT IS CLEAN GAS?



A photograph of a brown and white cow standing in a green field under a cloudy sky. The cow is the central focus, looking directly at the camera. The background shows other cows and a bright, overcast sky.

GASES WITH LOWER LIFE-CYCLE CARBON INTENSITY THAN FOSSIL-SOURCED GASES.

CLEAN GAS INCLUDES:

- Biogas
- Renewable natural gas
- Bio-synthetic gas
- Low-carbon hydrogen

BIOGAS AND RENEWABLE NATURAL GAS

Biogas

Is gas produced from the decomposition of organic materials such as agricultural waste, manure, municipal waste, wastewater, plant waste, and food waste under anaerobic conditions.

Renewable Natural Gas

Is a term used to describe biogas that has been upgraded for use in place of fossil natural gas.

Raw biogas typically has a methane content between 40 - 65 percent, and must go through a series of steps to be converted into RNG.



BIOGAS AND RENEWABLE NATURAL GAS SOURCES

Landfill Gas

Landfill gas is a mix of different gases created by the action of microorganisms within landfill as they decompose organic waste.

Agricultural and Municipal Waste

Animal manure, crop residue, and municipal organic wastes are converted into RNG via anaerobic digestion.

Wastewater Treatment Facilities

Many municipal wastewater treatment facilities use anaerobic digestion to treat sewage sludge on site. Biogas is one of the by-products of sludge treatment.

Synthetic Natural Gas (Bio-SNG)

Synthetic natural gas from gasification of biomass is produced using a wide range of biomass materials such as forestry or agricultural residues.



BIOGAS AND RENEWABLE NATURAL GAS APPLICATIONS

- RNG is interchangeable with conventional fossil-based natural gas and can be injected into energy networks as a substitute for conventional natural gas.
- RNG can replace fossil natural gas to produce electricity, heat buildings, and provide thermal heat for industrial use.
- RNG can also be used as a vehicle fuel after it is converted to compressed natural gas or liquefied natural gas.
- Blending RNG into Canada's natural gas distribution networks displaces conventional natural gas and decarbonizes the gaseous fuel stream in Canada.



LOW-CARBON HYDROGEN SOURCES

The majority of hydrogen is currently produced using natural gas in a process called steam methane reforming. The CO₂ is typically vented to atmosphere, adding to climate change.

Blue Hydrogen

Blue hydrogen is produced from natural gas via the typical steam methane reforming process. CO₂ can be captured to reduce the carbon intensity of blue hydrogen.

Green Hydrogen

Green hydrogen is produced by using electrolyzers and a clean electricity source such as hydro power or wind power to split water into hydrogen and oxygen.



LOW-CARBON HYDROGEN APPLICATIONS

- Low-carbon hydrogen has a wide-range of potential uses including manufacturing fertilizer, petrochemicals and alcohols, and refining oil.
- Hydrogen can be used to decarbonize steel production
- Hydrogen can provide long-term energy storage for the power system, and can power trains, long-haul transport trucks, and other vehicles.

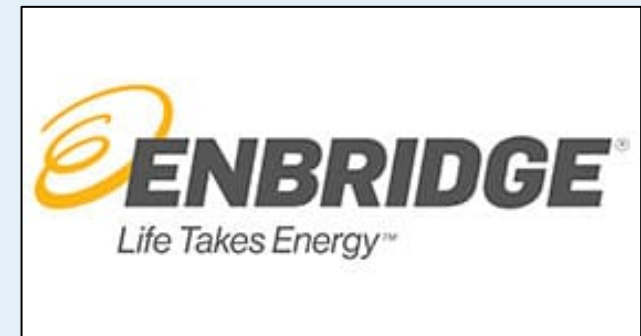
PANEL DISCUSSION



1. WHY CLEAN GASES ARE IMPORTANT FOR CANADA?
2. WHAT IS YOUR ROLE IN CLEAN GASES?
3. WHAT IS THE ROLE OF POLICY FOR CLEAN GAS?



Nicole Brunner
Enbridge Gas Inc.
Director, Gas Supply



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Marie-France Gravelle
GHD
Canadian Future Energy Leader



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Brandon Moffat
StormFisher
Co-Founder & VP – Development



CURRENT POLICIES AND THE ROLE FOR CLEAN GAS



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**FEDERAL AND PROVINCIAL
GOVERNMENTS HAVE
INTRODUCED VARIOUS
REGULATIONS THAT
PROVIDE ONLY LIMITED
SUPPORT FOR CLEAN GAS.**





FEDERAL AND PROVINCIAL POLICIES

Federal

Current federal policies and programs do not provide strong support for clean gas on a national basis. More can and should be done.

- Federal Carbon Pricing (OBPS)
- Federal Clean Fuel Regulations

Provincial

A limited number of provinces have policies that would provide support for clean gas.

- British Columbia Greenhouse Gas Reduction Regulation
- Québec 2030 Energy Policy Action Plan

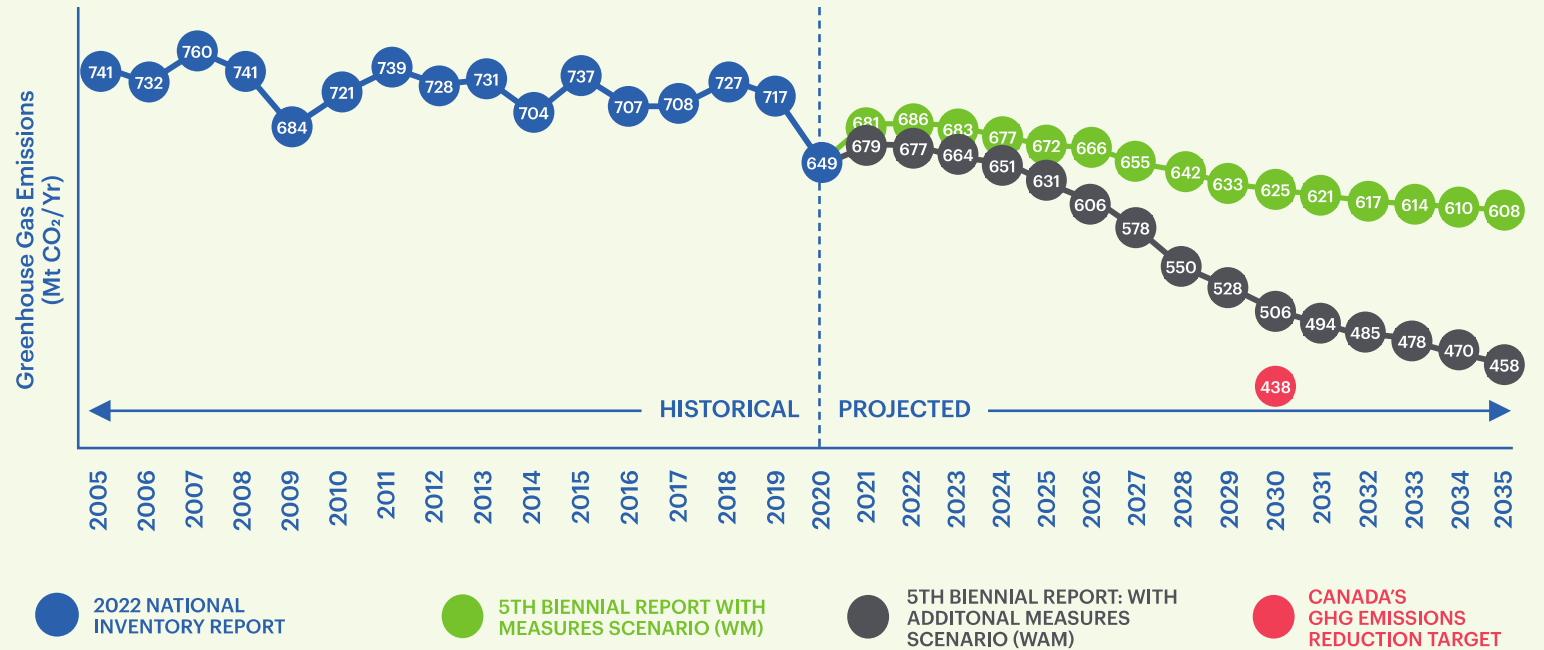


CANADA'S GHG EMISSIONS REDUCTION PLAN

- Under the Paris Agreement, Canada has committed to reducing greenhouse gas emissions 40-45% below 2005 levels by 2030
- Emissions must be reduced to 438 million tonnes of CO₂e by 2030.
- Current government analysis shows that even with all announced policies in place, emissions would be reduced to 506 million tonnes by 2030, leaving a gap of approximately 68 million tonnes.
- **Additional policies are required to bridge this gap and meet the national target.**

CANADA'S GHG EMISSIONS REDUCTION PLAN

CANADA'S GHG EMISSIONS REDUCTION TARGET



PROPOSED CLEAN GAS STANDARD



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CLEAN GAS STANDARD POLICY PROPOSAL

A Clean Gas Standard can deliver Greenhouse Gas reductions for Canada and help close the gap to achieve national emission reduction targets.

Requirements

Natural gas suppliers must have minimum clean gas content based upon volume of natural gas delivered to end users.



CLEAN GAS STANDARD: VOLUMETRIC REQUIREMENT (% OF NATURAL GAS VOLUME)

YEAR	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
% VOLUME	1.5	2.25	3.0	3.75	4.5	5.25	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0

CLEAN GAS STANDARD POLICY PROPOSAL

Covered Fuels

The regulation applies to all natural gas supplies in Canada *except* natural gas used as feedstock in industrial production or natural addressed by sector-specific regulations in the electricity and petroleum sectors.

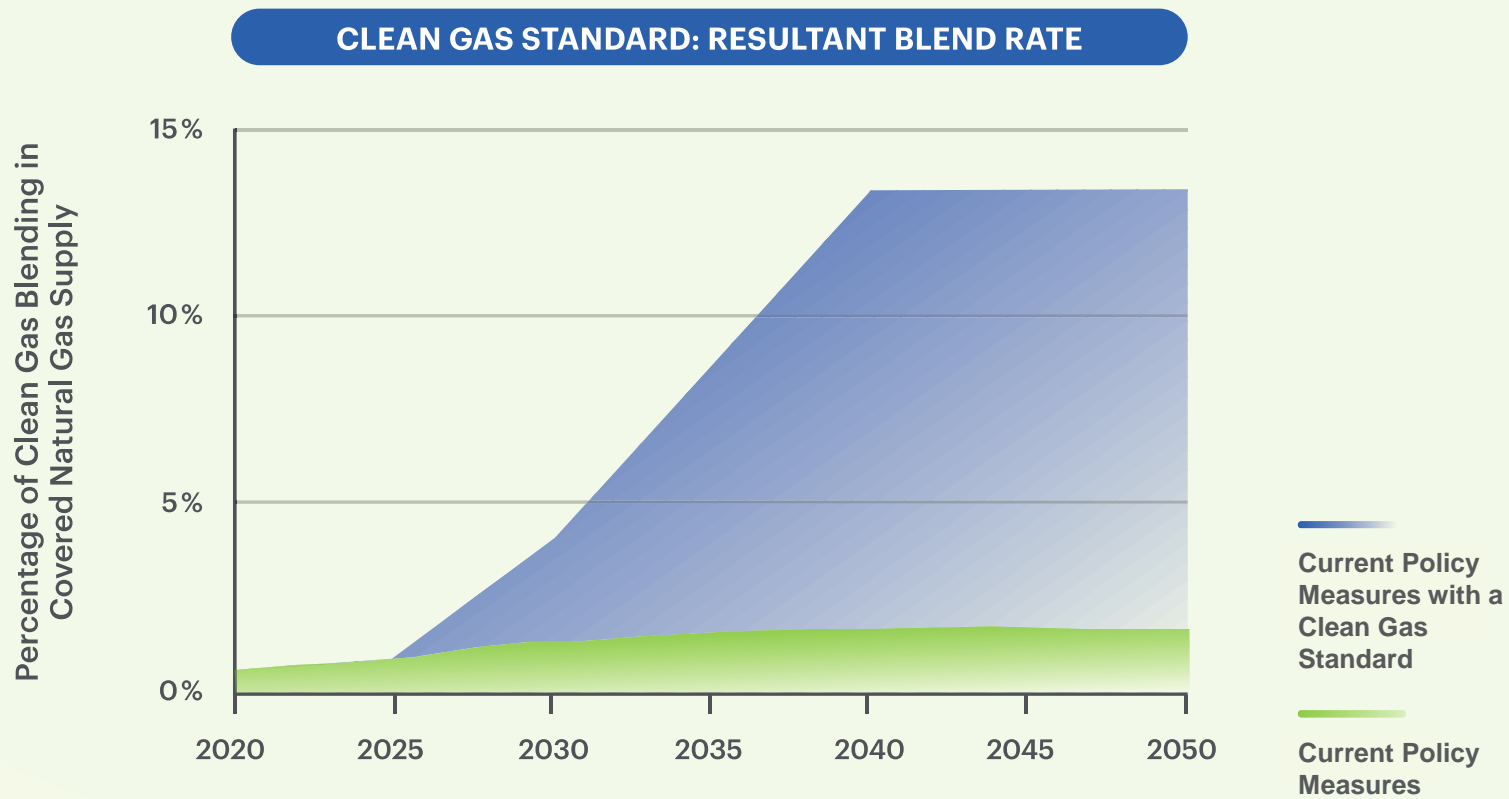
Compliance Options

Compliance is demonstrated through the submission of compliance credits.

Credit Generation

Companies that produce or import eligible clean gas can generate credits based on the volume supplied to the Canadian market. Volumes must meet specific carbon intensity limits.

PROPOSED CLEAN GAS POLICY BLEND RATE





THE IMPACT OF A CLEAN GAS STANDARD

Clean Gas Volumes

The Clean Gas Standard would increase the share of clean gas in the market from 0.6% in 2020 to 3.75% in 2030 and 13.0% by 2040.

Cost to End-Users

The additional costs for average residential users are projected to be modest, around \$0.25/GJ (\$21/year) by 2030, and \$1.27/GJ (\$113/year) by 2040.

THIS PROPOSAL COULD RESULT IN SUBSTANTIAL GREENHOUSE GAS REDUCTIONS, WITH AN ESTIMATED 4.8 MILLION TONNES REDUCED ANNUALLY BY 2030, INCREASING TO 19 MILLION TONNES REDUCED ANNUALLY BY 2040.

A CLEAN GAS STANDARD FOR CANADA

The Clean Gas Standard would:

- Decarbonize the natural gas stream
- Deliver significant GHG reductions
- Support Canada in meeting national GHG emission reduction targets
- While utilizing current infrastructure.
- At modest additional cost to end-users

QUESTION AND ANSWER



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A BETTER TOMORROW CANADA'S CLEAN GAS STANDARD

GET INVOLVED

- Join the Clean Gas Coalition
- Share the Factsheet with your network
- Contact the CBA for more information



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275 Slater Street, Suite 1800
Ottawa ON, K1P 5H9 Canada

jgreen@biogasassociation.ca