

CANADIAN GAS ASSOCIATION

2017 PRE-BUDGET SUBMISSION

REDUCING EMISSIONS, PROVIDING AFFORDABLE
ENERGY, DRIVING INNOVATION, AND GROWING
THE ECONOMY



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ASSOCIATION CANADIENNE DU GAZ

**Reducing Emissions, Providing Affordable Energy, Driving Innovation, and Growing the Economy:
Canadian Gas Association 2017 Pre-Budget Submission**

The natural gas delivery industry, in partnership with governments, can:

- Help Canadian families and businesses save money on energy costs;
- Help northern and remote industry and communities, including indigenous communities, have access to more affordable, clean, safe and reliable energy;
- Support market transformation in the heavy duty, return-to-base, off-road, and marine transportation sectors to a cleaner, more affordable fuel; and
- Develop new partnerships that drive Renewable Natural Gas (RNG) production, energy efficiency, and energy technology innovation.

With over 450,000 kilometers of transmission and distribution pipeline as well as above ground and underground storage facilities, natural gas is delivered to almost 7 million customer locations. Over 20 million Canadians rely and benefit from affordable, clean, safe, and reliable natural gas to heat homes, schools, hospitals and businesses, generate electricity, fuel vehicles, and power appliances. The investment in this infrastructure and commitment to customers has played an important role in helping Canadians achieve the quality of life which we enjoy today.

There is an opportunity for **more** Canadian homeowners, institutions, and businesses to benefit from natural gas because:

- Natural gas is affordable. Its savings are even more noticeable for consumers facing rising costs for other energy commodities and services.
- Natural gas is an efficient and clean burning energy choice. It has fewer emissions than many other fuels and is an important partner for renewables and emerging low emission technologies.
- Natural gas delivery companies are innovators. Natural gas utilities have a long history of supporting energy efficiency programs and driving innovation in energy end-use technology.

1. DRIVE ENERGY EFFICIENCY AND ENERGY END-USE INNOVATION

Recommendations:

Allocate \$250 million to support home and small business energy efficiency retrofits leveraging financial support from utility's low income energy efficiency programs. Allocate \$100 million of revenues generated from natural gas consumers under CO₂ cap and trade and/or tax policies to partner with provinces and utilities to advance innovation in promising energy end use technologies. This coordinated effort would be led by the Federal Department of Innovation, Science and Economic Development and Natural Resources Canada/CanmetENERGY, in conjunction with private industry and provincial-territorial research agencies.

The Opportunity:

For over 20 years natural gas distribution utilities have operated energy efficiency programs. These programs drive investments in more efficient equipment generating energy savings which result in lower energy costs for homeowners and increased productivity and competitiveness for industry. Since the year 2000, utilities have invested \$1 billion in their energy efficiency programs, saving \$1 billion in natural gas costs and reducing customer emissions by 50 megatonnes. In 2017, an estimated \$1 billion will be paid by homeowners and businesses in Canada under carbon polices that could, in part, be used to spur on innovation in energy end use technologies.

Canada's natural gas utilities are increasing their support for innovation by partnering with organizations such as Sustainable Development Technology Canada (SDTC), the National Research Council (NRC), the Natural Gas Technology Centre, the Gas Technology Institute, and the American Gas Association.

Examples of innovative natural gas-based energy end use innovations utilities are examining include:

- High efficiency combined heat and power (CHP) systems;
- Micro combined heat and power systems for residential/commercial use;
- Power-to gas systems to store renewable electricity;
- New NGV engine technologies; and
- Renewable natural gas technologies.

2. CONNECT MORE COMMUNITIES TO NATURAL GAS TO REDUCE EMISSIONS AND SAVE ON ENERGY COSTS

Recommendation:

Allocate \$250 million in clean energy infrastructure funding to support the construction of new natural gas infrastructure to deliver more affordable, cleaner energy to homes and businesses not currently serviced by the pipeline system.

The Opportunity:

Communities that do not have access to natural gas are dependent on more expensive, less reliable, and in many cases, higher GHG emission energy options. The average residential customer switching from their existing fuel would save on average approximately \$1,619 per year - or more than \$25,000 over the life of the gas heating equipment.

According to ICF International, a funding partnership between gas utilities and provincial and federal governments to connect rural communities would result in a cumulative reduction in CO₂ of 1.87 million tonnes, equivalent to removing 405,625 passenger vehicles from the road for one year. Further, over a 25 year period, this partnership would contribute \$1.7 billion to Canada's GDP, support 31,500 net job-years, and increase government revenues by over \$600 million.

Examples of recent cooperatively funded pipeline extension projects include:

A \$40 million project was funded cooperatively by the federal and Ontario governments, Goldcorp, the **Municipality of Red Lake**, and Union Gas to bring natural gas to Red Lake, Ontario.

A \$21 million project was funded by the federal government and Gaz Métro to bring lower cost, less emitting natural gas from Vallée-Jonction to **Thetford Mines** in Quebec.

A natural gas pipeline was built from Squamish to **Whistler, BC** in conjunction with Sea-to-Sky Highway improvements enabling Whistler to take advantage of the many benefits of natural gas.

3. ENERGIZE THE NORTH WITH NATURAL GAS TO REDUCE EMISSIONS AND SAVE ON ENERGY COSTS

Recommendation:

Allocate \$50 million of clean energy infrastructure funding to support the delivery of a more affordable energy option (LNG) to indigenous communities and industry in Canada's North.

The Opportunity:

Approximately 200,000 people living in nearly 300 remote communities across the country are disconnected from the natural gas network that delivers reliable and cost-effective energy to urban Canada. Without natural gas these remote communities and industry face significant disadvantages including:

- Their ageing diesel power generation systems emit 30 per cent more GHG emissions than LNG and carry a higher environmental risk, to water and soil, in the event of a fuel spill or leak.
- Their higher cost of energy with supply issues and capacity constraints deter investment in new businesses and limit future economic opportunities.
- Their power generating plants are operating past their designed service life creating reliability and safety issues in cold remote locations.

LNG is a clean, more affordable, and reliable energy option for indigenous communities and industry in Canada's North that makes economic sense. According to ICF International, by 2025, at least 16 power generation and 47 industrial customers in Canada's North could convert to LNG resulting in over \$2.1 billion in energy cost savings for these customers over a 25-year period. LNG use would provide a cumulative GHG reduction of 11.1 million tonnes by 2040 and contribute more than \$12.5 billion to Canada's GDP, support 117,000 net job-years of employment, and increase government revenues by \$4 billion.

Examples of LNG being used in the North include:

In Inuvik (NWT), the Northwest Territories Power Corporation is taking LNG trucked over 3,600 kilometres each way from a FortisBC LNG liquefaction plant in Delta, BC for use in power generation and heating. Cost savings: approx. \$2 million/year. GHG savings: 500 tonnes/year.

In Whitehorse, Yukon, LNG is trucked over 2,000 kilometres each way from a FortisBC LNG liquefaction plant in Delta, B.C. and used as an affordable and cleaner alternative to diesel for generating power. Cost savings: approx. \$2.7 - 4 million/year. GHG savings: 500 tonnes/year.

In northern Quebec, beginning this year, LNG will be trucked from Montreal, Quebec to the Stornoway Diamond Corp.'s Renard Mine to be used for power generation and heating. This will be the first mine in Canada to use LNG. Cost savings: approx. \$8-10 million/ year (initial 11 year mine-life). GHG savings: over 30 per cent reduction.

4. LOWER EMISSION, AFFORDABLE ENERGY FOR TRANSPORTATION

Recommendations:

Allocate \$650 million over five years to help cover a portion of the incremental cost of natural gas vehicle, marine, or rail engines to encourage deployment. Allocate \$200 million over five years in clean energy infrastructure funds to support the development of natural gas re-fueling infrastructure across Canada. Encouraging private investment in refueling infrastructure will facilitate greater use of natural gas as a transportation fuel, but also enable the strategic location of LNG across Canada for other domestic uses (e.g. for power generation in remote communities)

The Opportunity:

Natural gas can reduce the operating costs and emissions of heavy duty and medium duty trucks, transit, rail, marine, and off road fleets. Natural gas offers savings of as much as 10-20 per cent compared to diesel and natural gas is a clean burning fuel - with minimal NOX, SOX, and particulate matter emissions. In addition, using natural gas as an on road transportation fuel can reduce GHG pollution by up to 19 per cent over conventional fuels. However, market adoption of natural gas vehicles in Canada has been growing at only a modest pace. This is because: there is a higher capital cost for natural gas vehicles; there is a lack of widespread LNG and CNG supply and refueling infrastructure; and, there is uncertainty regarding taxation.

Examples of recent initiatives by governments to help give customers the natural gas choice as a transportation fuel include:

The British Columbia government allowing FortisBC, a natural gas utility in BC, to provide up to 75 per cent of the incremental capital cost between a natural gas vehicle and an equivalent diesel vehicle.

Since 2010, the Quebec government has provided fiscal incentives for the purchase of LNG trucks. The depreciation rate applicable to commercial trucks or tractors was increased from 40 per cent to 60 per cent and an additional 85 per cent cut for amortization reduction was granted if the truck or tractor runs on LNG. As a result, Robert Transport added 160 LNG trucks to its fleet traveling between Boucherville, Quebec, and Mississauga, Ontario.

5. PRODUCE RENEWABLE NATURAL GAS (RNG)

Recommendations:

First, allocate \$250 million in clean energy infrastructure funding to partner with natural gas utilities and municipal and provincial governments to increase the development of new RNG facilities. Second, support and allocate innovation funding to advance the development of RNG technology, focusing specifically on biomass gasification. Third, amend Canada’s Renewable Fuel Regulations to include RNG as a compliance option (when used as CNG or LNG as a transportation fuel) as is currently allowed in the United States under the Renewable Fuel Standard.

The Opportunity:

RNG is a CO₂ neutral, 100 per cent renewable energy source produced from organic waste from farms, forests, landfills, and water treatment plants. The gas is captured, cleaned, and delivered for use in the same way as natural gas in homes, businesses, institutions, and industries. RNG can assist communities and governments in meeting their GHG emission reduction and energy sustainability targets. Further, because RNG is produced from local waste sources, it supports local economic opportunities in a range of sectors, including agriculture and forestry.

Estimates place Canadian RNG potential as equivalent to 1,200 billion cubic feet of natural gas per year – approximately 50 per cent of Canada’s 2015 natural gas consumption. Gas utilities are aiming to harness approximately 10 per cent of Canada’s RNG potential by 2030 (267 bcf/year), an amount equal to the natural gas use by 3.1 million homes annually. This would result in 14 megatonnes per year of GHG emission reductions, equivalent to removing 3 million passenger cars from the road.

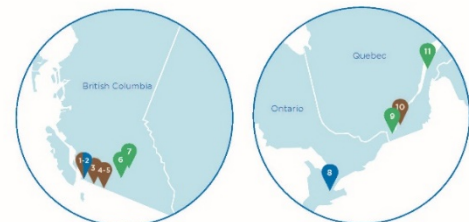
RNG is one of the most cost effective source of renewable energy in Canada, able to be produced, cleaned and injected into the natural gas distribution system at a cost of \$10 to \$25 per gigajoule (4 to 8 cents per kilowatt hour). Current renewable electricity offerings for wind and solar are between 13 to 39 cents/kwh.

Canadian natural gas utilities are well positioned to support RNG using their natural gas pipeline infrastructure and equipment. The map (right) provides information on the RNG facilities operating and in development as of 2017.

Canada’s natural gas distribution industry believes it can help the Government of Canada deliver better environmental performance and stronger economic growth, and wants to pursue the opportunity.

Canadian Renewable Natural Gas (RNG) Projects

Operating & In Development as of 2017



Project Name	Start Date	RNG Production (homes/year)	Status
Delta, BC (Digester)	2014	1348	Operating
Abbotsford, BC (Landfill)	2010	2327	Operating
Terrebonne, QC (Wastewater treatment gas)	2014	28,000	Operating
Richmond, BC (Digester)	2016	306	In development
Kelowna, BC (Landfill)	2014	1,032	Operating
St. Hyacinthe, QC (Wastewater treatment gas)	2017	5,054	In development
Surrey, BC (Digester)	2017	1,100	In development
Salmon Arm, BC (Landfill)	2017	1,011	Operating
Rivière du Loup, QC (Wastewater treatment gas)	2016	1,150	In development
Chilliwack, BC (Digester)	2016	13,481	Operating
Hamilton, ON (Landfill)	2011	2,665	Operating

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