Canadian Biogas Association

• Mandate
  – The collective voice of the biogas industry promoting development of biogas to its fullest by capturing and processing organic materials through anaerobic digestion to maximize the utility and value inherent within that material

• Roles
  – Education and outreach
  – Advocacy and policy
  – Research
Biogas and RNG Opportunities Across Canada
Biogas/RNG Sources

Leveraging these diverse sources of biogas and RNG can help Canada achieve a low-carbon economy today!
Biogas/RNG Applications

Biogas/RNG are renewable, low-carbon alternatives that can be utilized to/for:

- Inject directly into the grid
- Produce transportation fuel
- Offset on-site energy needs

Homes
Farms
Municipalities
Businesses
Institutions
Industries
Biogas and RNG in Canada

Biogas and RNG Energy Capacity
Operational and initiated projects generate:
Greater than **196 MW**
Greater than **400,000 GJ** from RNG

Biogas Energy Utilization
- Heat & Electricity
- Heat Only
- RNG
- Electricity & RNG
- Electricity Only

Operating Biogas and RNG Projects in Canada
- 61 Agricultural & Food Waste Digesters
- 86 Wastewater Treatment Facilities
- 53 Landfill Gas Projects
### Policy Drivers Across Canada

<table>
<thead>
<tr>
<th>Province</th>
<th>Policies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Federal</td>
<td>• Clean Fuel Standard achieving 30MT reductions by 2030</td>
</tr>
<tr>
<td>British Columbia</td>
<td>• CleanBC climate plan with a minimum requirement of 15% renewable content in natural gas by 2030</td>
</tr>
<tr>
<td>Alberta</td>
<td>• Community Generation Program</td>
</tr>
</tbody>
</table>
| Ontario        | • Made-in-Ontario Environment Plan released November 2018 including:  
|                | • Requiring natural gas utilities to implement a voluntary renewable natural gas option for customers  
|                | • Consulting on the appropriateness of clean content requirements for RNG  
|                | • Developing a proposal to ban food waste from landfills.                                                                             |
| Quebec         | • Draft regulation for the Quantity of renewable natural gas to be delivered by a distributor issued in August 2018 setting a minimum quantity of RNG at 1% by 2020 |
Building the Biogas Sector With You

RNG Programs in Canada

- British Columbia, Quebec, Ontario are leading the way with RNG policy and programs.

<table>
<thead>
<tr>
<th>Province</th>
<th>Date of RNG Program</th>
<th>Cost per GJ</th>
<th>Number of Projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>British Columbia</td>
<td>2007</td>
<td>Up to $30</td>
<td>5 (2 more approved)</td>
</tr>
<tr>
<td>Quebec</td>
<td>2017</td>
<td>$7-22</td>
<td>4 (others expected soon)</td>
</tr>
<tr>
<td>Ontario</td>
<td>TBD</td>
<td>TBD</td>
<td>1 (others expected soon)</td>
</tr>
</tbody>
</table>
Biogas in Canada

The biogas industry is helping to close the loop in Canada by breaking down organic wastes in the absence of oxygen and converting them to low-carbon energy and soil amendment to fuel our economy.

DID YOU KNOW...

Canada generates 18.4 million tonnes of organic waste annually, with only 32% being diverted through compost and anaerobic digestion facilities. Landfilled organic materials emit methane – 25x more harmful than CO₂.
Biogas/RNG Potential from SSO

SOURCE SEPARATED ORGANICS

An anaerobic digestion facility is a well understood technology with over 100 operational facilities operating across Canada.

If Canada diverted 50% of that food waste to AD facilities, it could reduce GHG emissions by 1.44 MT of eCO₂ (equivalent to taking 288,000 cars off the road).

Canada generates 6 million tonnes of food waste annually, equivalent to the weight of nearly 50 CN towers.

Building the Biogas Sector With You
Biogas/RNG Potential from Agriculture

**AGRICULTURE**
Currently there are over 50 on-farm AD facilities across Canada.

There is potential to reduce GHG emissions in Canada by over 13 Mt of eCO₂ by processing manure and crop residuals in AD facilities (equivalent to taking 2.6 million cars off the road).

This represents a significant opportunity to:
- $ Diversify farm revenue
- Increase crop yields and reduce pathogens in manure
- Reduce GHG emissions

Building the Biogas Sector With You

[Canadian Biogas Association]
Biogas/RNG: A Winning Solution

The sustainable solution for priority government policies

BIOGAS

- Renewable clean energy
- Economic development and innovation
- Resource recovery/organic diversion
- Climate change/ GHG reductions

Building the Biogas Sector With You
CONTACT
Jennifer Green
jgreen@biogasassociation.ca
613-822-4630

www.biogasassociation.ca