Cap and Trade Impact on the Natural Gas Market

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Enbridge Gas Distribution

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Enbridge: An Evolving Energy Company

- Canada's largest transporter of crude oil
- Ontario's largest and longest-serving natural gas distribution company
- One of the largest wind and solar energy companies in Canada
- A new developer of electricity transmission in Ontario

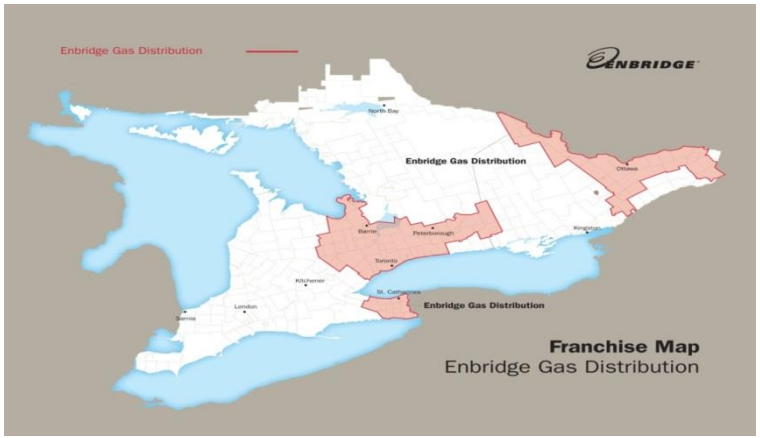
Renewable Energy Projects in Ontario:

Wind	Solar
Cruickshank, Bruce County (8 MW)	Sarnia Project, Sarnia (80MW)
Underwood, Bruce County (182 MW)	Tilbury Project, Tilbury (5 MW)
Talbot, Chatham (99 MW)	Amherstburg II Project, Amherstburg (15 MW)
Greenwich, Dorian (99 MW)	

Enbridge Gas Distribution

- Formerly Consumers Gas, began as a street lighting company in Toronto over 165 years ago
- More than 2,200 employees in Ontario, plus thousands of indirect employees
- 2.1 million customers located in Toronto, Barrie, Ottawa and Niagara

Distribution
Retail Customers: 2.1 million (*92% Residential)
Annual Throughput: 440 BCF (equal to 130 TWh)
Distribution Pipe: 37,600km
Markets Served: Toronto, Barrie, Ottawa, Niagara
Storage
Capacity: 103 BCF



GHG Emissions Reductions at Enbridge Gas

- Energy efficiency (DSM) programs between 1995 and 2014 cumulatively reduced customers emissions by 18 million tonnes CO_2e. This is roughly enough natural gas savings to serve nearly 4 million homes and in emissions; equal to removing 3.5 million cars from the road for a year.
- Fugitive GHG emissions are now approximately 140,000 tonnes CO_2e per year lower than 1990 due to complete removal of cast iron mains from our distribution system
- Approximately 75% of our 648 fleet vehicles run on natural gas, reducing emissions by 400 tonnes of CO_2e per year (over gas/diesel)

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What does Cap and Trade Mean for Enbridge Gas?

1) Expanded reporting and verification of our GHG emissions

2) Work with customers needs in mind to be compliant with cap and trade regulations and Ontario Energy Board regulatory requirements

3) Get business ready for implementation

4) Enable ways in which we as a business can provide our customers solutions to help mitigate or manage their GHG footprint

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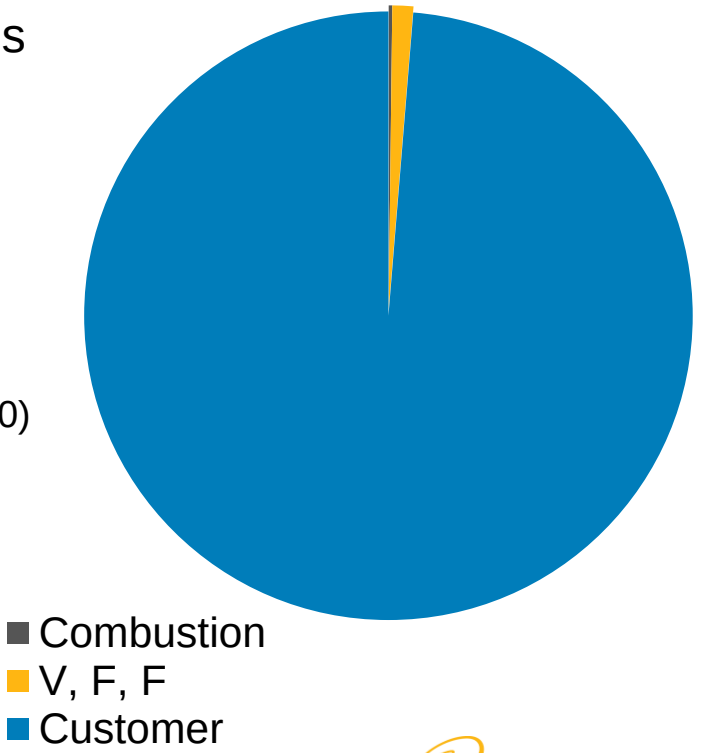
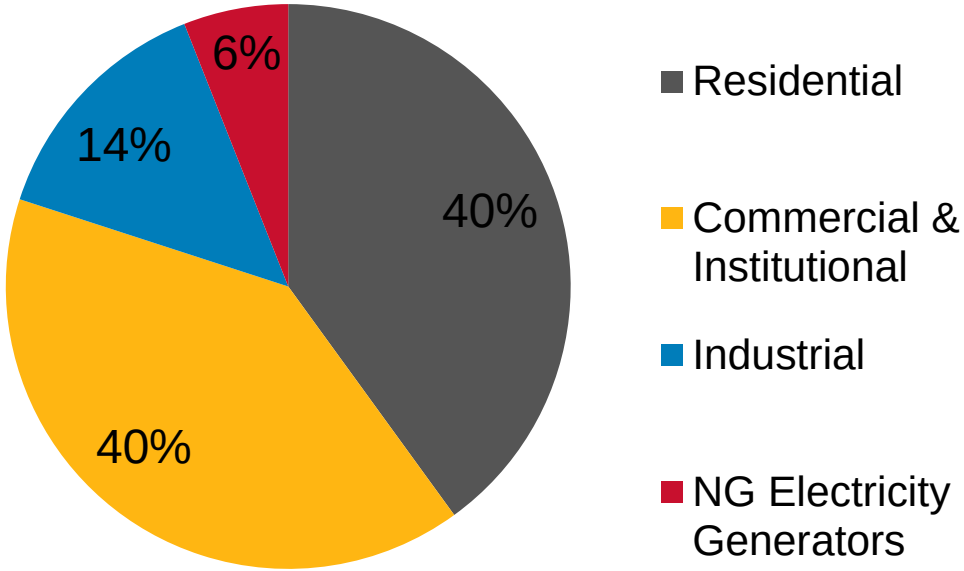
Enbridge Gas GHG Emissions Reporting

- Already reporting verified combustion emissions (ON.20)
- Starting in 2016, will also begin reporting emissions from:
  - Venting, flaring and fugitive emissions (ON.350)
  - Combustion emissions from natural gas distributed (ON.400)
- Starting in 2017 will also be required to verify combustion emissions from natural gas distributed



Emissions by Enbridge Gas Customer Type

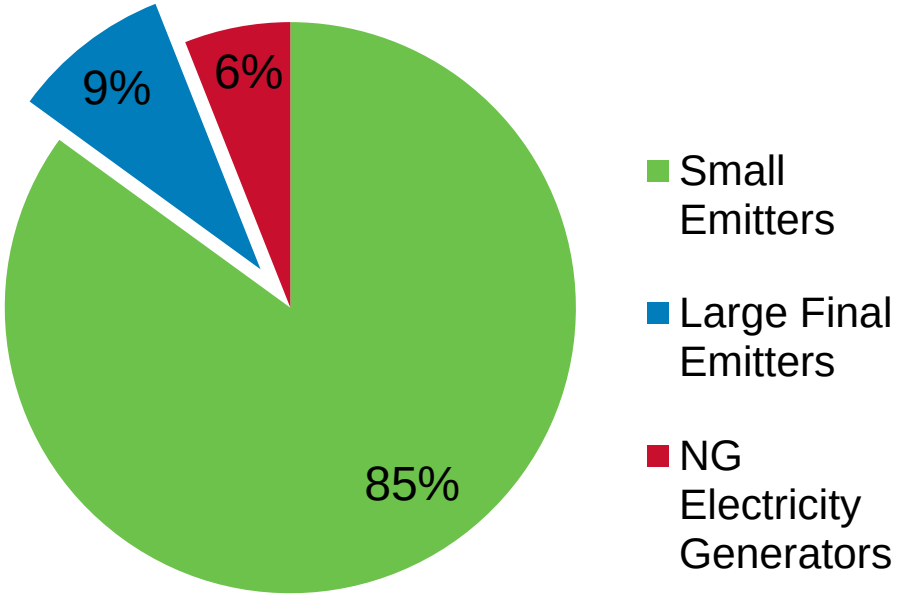
- Emissions from customer combustion of natural gas come primarily from the residential, commercial and institutional sectors



Customer Emissions Under Cap and Trade

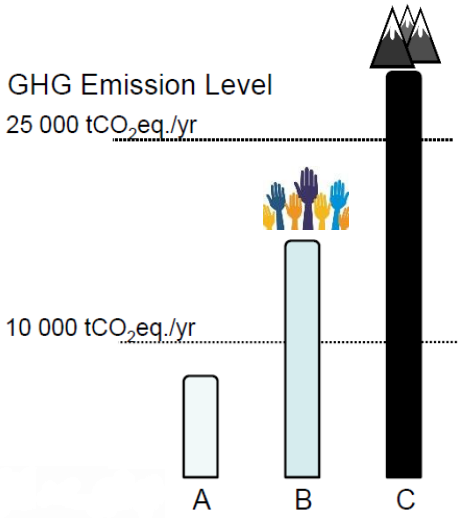
- Only about 9% of the emissions come from large final emitters

- The rest of the emissions will be covered by Enbridge
  - Residential, commercial, institutional, small industrial
  - Natural gas electricity generators



Ontario Cap & Trade Impact on Customers

- Customers under <10,000 tonnes CO2e/year
  - Do not need to report their emissions
  - EGD will purchase allowances
- Customers between 10,000 and 25,000 tCO_2e/year
  - Required to report their emissions
  - EGD will purchase allowances, unless they “opt-in” to cap and trade
  - If they opt in, they will purchase own allowances
- Customers who are “large final emitters” (>25,000 tCO_2e/year)
  - Required to report and verify their emissions
  - Will purchase their own allowances



Cap & Trade Regulatory Context

- Natural gas distributors will be subject to a regulatory process by the Ontario Energy Board (EB-2015-0363)
- Board to develop a framework for cap and trade with input from stakeholders
  - OEB staff discussion paper released in May 2016
  - Anticipated timing for Final Framework – October 2016
- OEB proposing to integrate cap and trade charges into existing rates, have an annual true-up
- Enbridge required to submit carbon procurement plan to Board for Approval
  - Submission timing anticipated to be late 2016, with approvals gained through regulatory process anticipated to conclude in Q1 2017

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Meeting Enbridge Gas's Cap and Trade Obligation

- Enbridge will have several ways of meeting our compliance obligation
- Purchase allowances from:
  - Quarterly government auction
  - Quarterly reserve sale
  - Directly from other participants
  - Secondary markets
- Reducing customer emissions through demand side management programs
- Abatement of our own emissions
- Early reduction credits?
- No free allowances for natural gas distributors

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Role of Natural Gas in the Lower-Carbon Economy

– Enbridge Gas Distribution has identified several ways for natural gas utilities to help Ontario meet it's carbon reduction targets

Energy Efficiency and Conservation

Greening the Natural Gas Grid

Natural Gas Vehicles

Innovation and Technology Development

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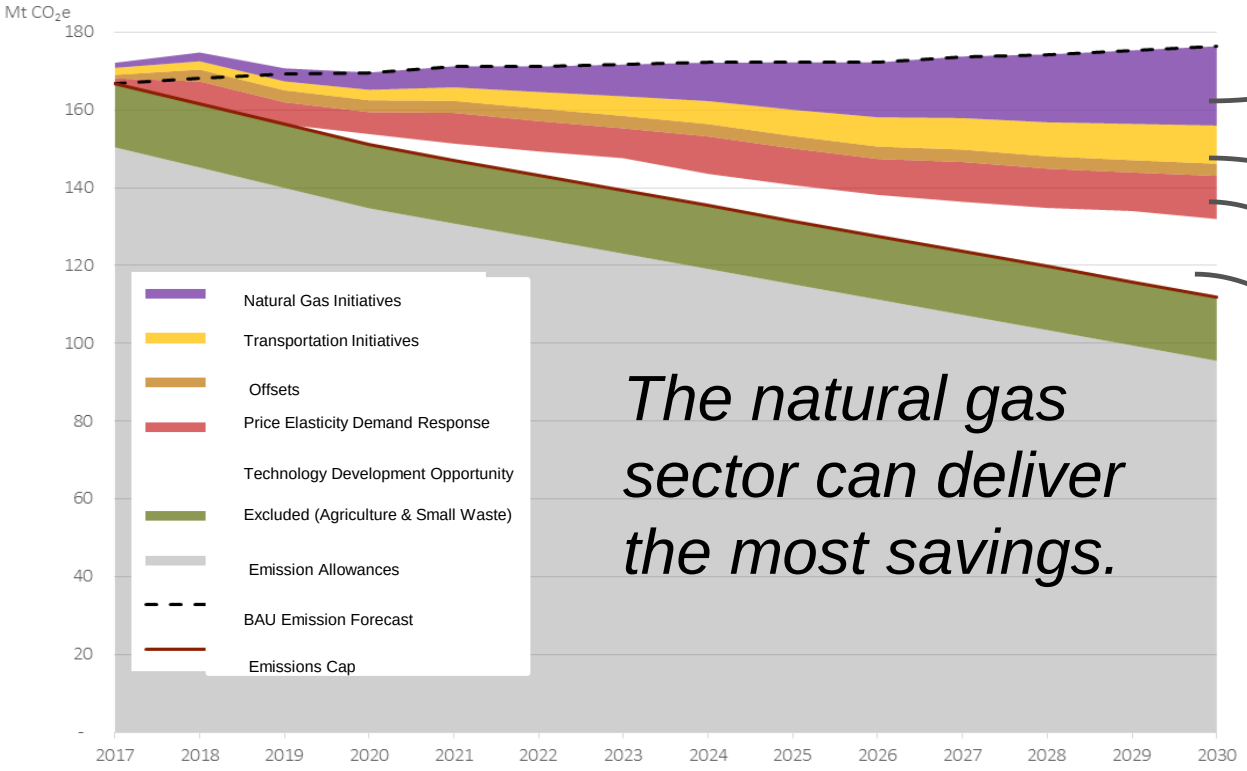
Ontario's Emission Reduction Forecast



Natural Gas Initiatives offer 21 Mt CO2e

Electrify light-duty cars and biofuels offer 10 Mt CO2e

Price-related demand reductions 11 Mt CO2e

Technology Innovation can address 20 Mt CO2e

Source: ICF Consulting

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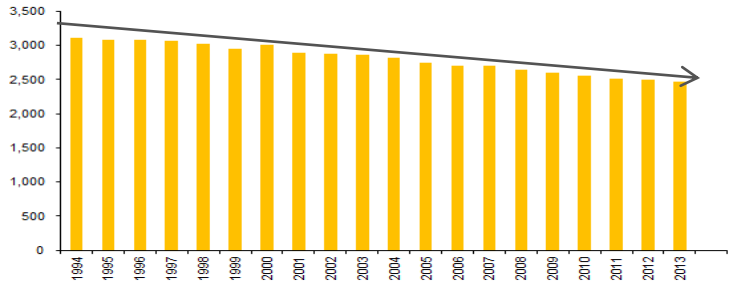
Energy Efficiency and Conservation

- Conservation / energy efficiency programming = Demand Side Management (DSM)
- Between 1995 and 2014, EGD has helped Ontarians conserve roughly 18 tonnes of CO_2e and enough natural gas savings to remove 3.5 million cars from the road for one year
- EGD is a leader in conservation with expertise in many markets & technologies (e.g., commercial greenhouses, boilers, ovens and industrial furnaces, residential)
- 6-year plan approved at significantly higher spend for 2015 – 2020 by OEB
- EGD also active in improved codes and standards in Ontario

Residential Customer Average Use (m^3)



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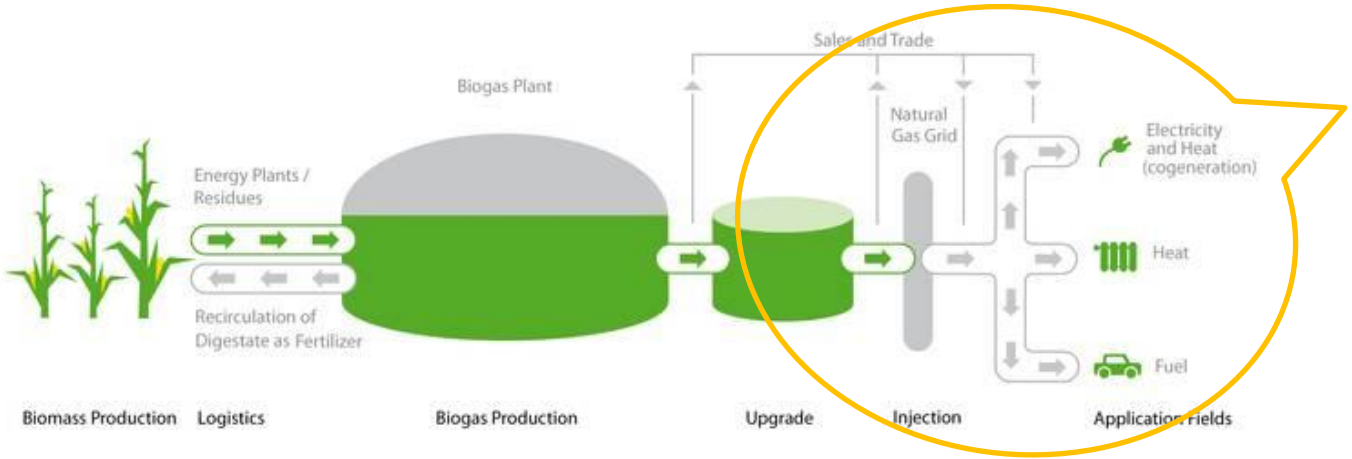
Greening the Natural Gas Grid

- Renewable natural gas (RNG) can be part of a diversified supply to meet Ontario's renewable energy needs

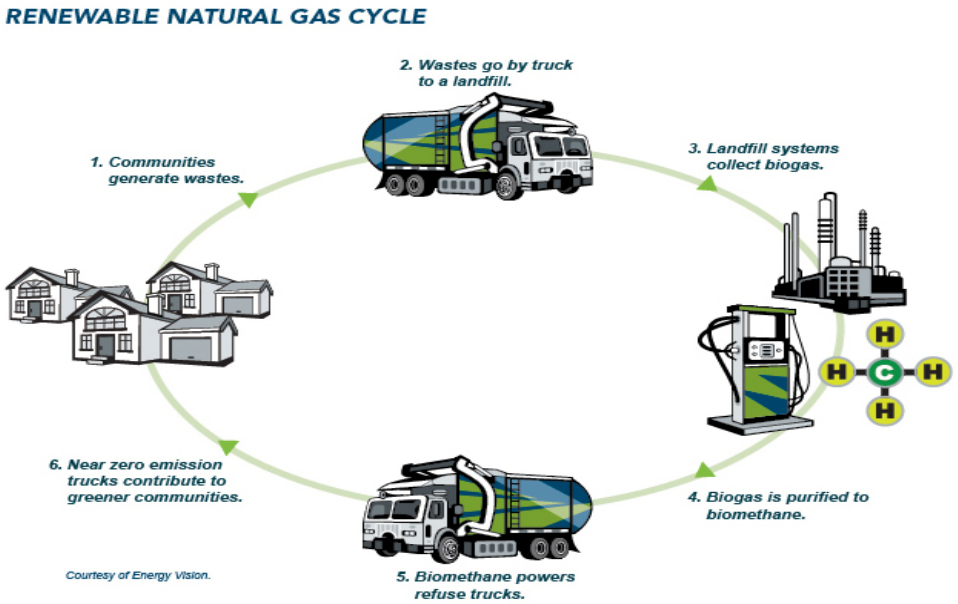
- Can be created from different sources (i.e. landfill, municipal organic waste, agricultural waste, wastewater treatment facilities)



Role for natural gas utilities in upgrading, injection and distribution of Ontario's biogas supplies as RNG

Greening the Natural Gas Grid (continued)

- Incorporating renewable natural gas (RNG) in Ontario's pipeline network has significant benefits:
  - Less expensive than renewable electricity
  - Not intermittent / does not need to be backed up
  - Can easily be stored



Natural Gas Vehicles

- Transportation = 34% of Ontario's total emissions (30% from over-the road heavy-duty vehicles)
- Natural gas has up to 25% lower GHG emissions and is up to 40% less expensive than diesel or gasoline
- Untapped GHG emissions reduction potential in manufacturing and freight as well as rail and marine
- If 10% of transportation fuel was replaced by natural gas, Ontario could reduce GHG emissions between 1.5 Mt and 4.2 Mt CO2e per year. Results dependent on levels of renewable gas blending (up to 40%)

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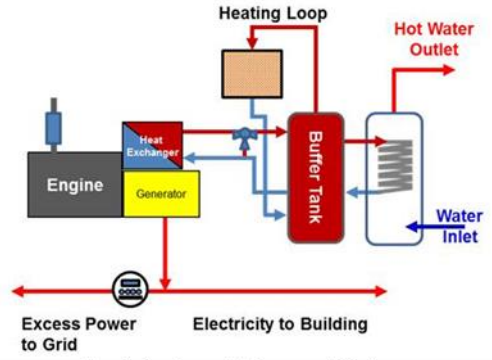
Innovation and Technology Development

- Strategic investments through the Smart Grid Fund, the OPA and IESO storage procurements, and the IESO's Conservation and Innovation Fund, have been successful in driving advancements

- Natural gas utilities need to make key investments in promising technologies:
  - Renewable Natural Gas and Power-to-gas storage conversion technologies (hydrogen)
  - Next-generation solutions like micro-CHP and natural gas heat pumps

Natural Gas Heat Pump
Source; Gas Technology Institute



Fuel Cells or Advanced Pules Engines for Micro CHP
Source; Energy Solutions Center Inc.

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Questions?

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