Bio Fuels for Heating and Transportation

Bio Clean Tech Forum
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ENBRIDGE

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About Enbridge

We deliver the Energy our customers want and need

- Enbridge is a leader in the safe and reliable delivery of energy to North Americans
- Enbridge transports 2.2 million barrels of oil per day
- Enbridge provides economical natural gas to more than two million customers
- We have also invested more than $4 billion in wind, solar, geothermal, power transmission and emerging technology projects.
- Together, our renewable projects represent more than 2,200 MW of green power capacity – enough to meet the needs of nearly 750,000 homes

Enbridge Renewable Assets Map

A Canadian Leader in Renewable Energy generation

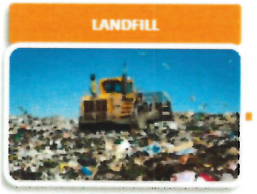
Key focus on Bio Fuels

Renewable Natural Gas (RNG) solves waste problem and achieves GHG targets economically

- Digester – Farm-based / Agricultural Waste
  - Highest market potential for fugitive GHG reductions

- Digester – Municipal Source Separated Organics (SSO)
  - Divest organics from waste stream for the creation of renewable biogas

- Wastewater Treatment Facilities
  - Today this biogas is flared or inefficiently used for generating electricity

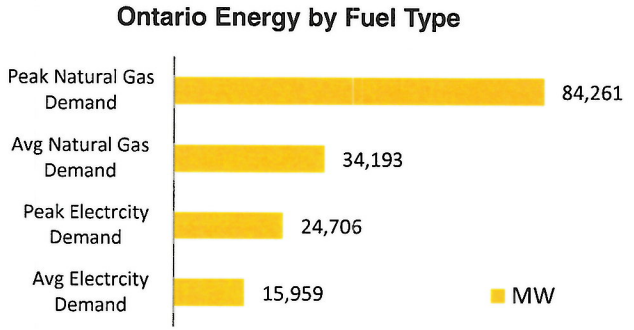


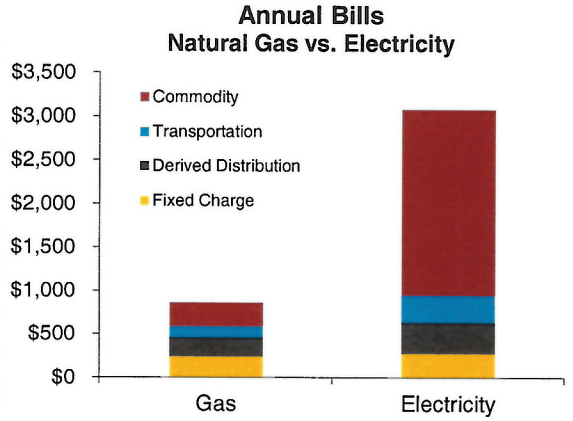
- Landfill Gas clean up and injection into Pipelines
  - Earliest entry point for lower-cost RNG

Greening the Gas Grid using Bio Gas

Cost effective home heating, leverages existing natural gas infrastructure in Ontario

- Pathway to 3.6 million customers with low cost renewables
  - 75% of Ontario Energy Customers
  - Leverages $30 billion + in existing installed customer equipment
  - Path to 80% + GHG reduction in heavy duty transportation
- Up to 70% cheaper than further electrification
- Opportunity to utilize existing renewable energy
- Long-duration underground gas storage capacity
  - Existing assets provide 80 TWh of energy storage





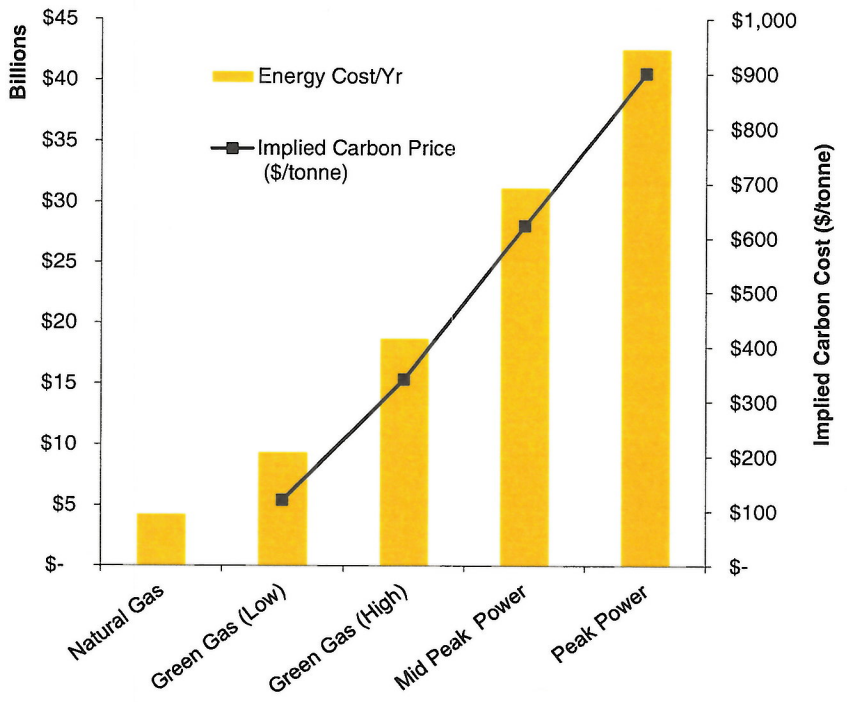
Note: Does not include rate riders

Notes: 1. Ontario Peak natural gas demand is 6.9 bcf/day
2. Avg. natural gas demand includes refill of storage
3. Peak electricity demand recorded in Summer 2006 (IESO)

Comparison of Green Fuel prices

Pricing energy in similar units provides better understanding of cost impacts

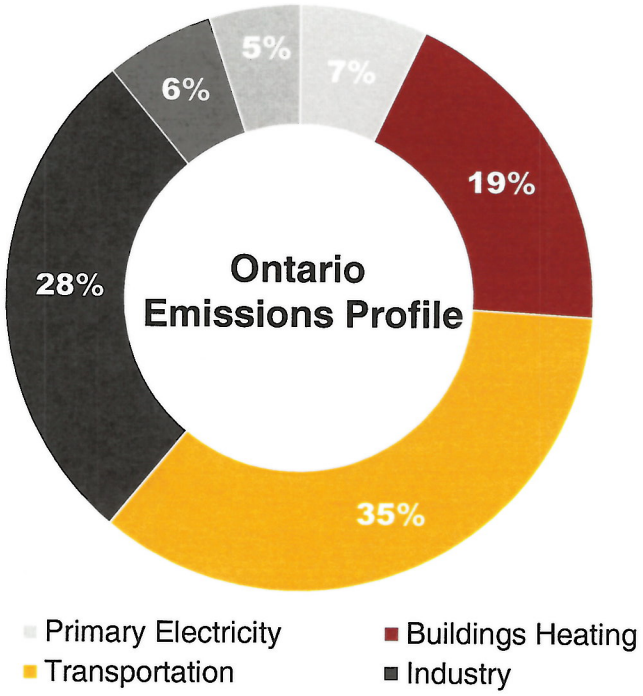
Fuel	$/GJ	Cents/kWh
Natural Gas	5.00	1.8
Renewable Natural Gas (Low cost)	11.00	4.0
Renewable Natural Gas (High cost)	22.00	7.9
Off-Peak Electricity	24.17	8.7
Mid-Peak Electricity	36.67	13.2
Biogas mFIT	46.64	16.8
On-Peak Electricity	51.94	18.7

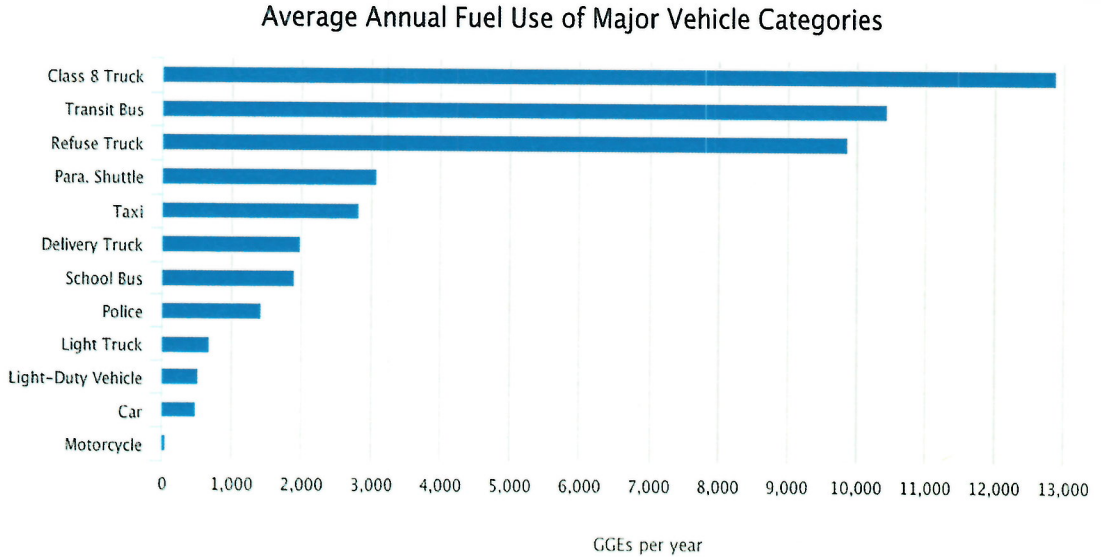


Cost Impacts; Replacing Ontario's Natural Gas Energy with Low-Carbon Alternatives

Our plan displaces the highest emitting fuels

Extensive pipeline system in Ontario can be the backbone to build natural gas vehicle refueling stations for heavy transportation





- Conventional natural gas has 20% less emissions than Diesel
- Renewable Natural Gas provides further offsets by reducing fugitive emissions

Evolution potential of Green Gas

Start from Biogas from waste and expand into other green gas options

- Biogas Upgrading from Agricultural & Farm-based Wastes, Municipal Source Separated Organics (SSO), Wastewater Plants & Landfills
- Offsets Potential from Digesters / Landfills a market entry point for lower-cost RNG
- Expand supplies to RNG from Bio Mass

6% by 2024

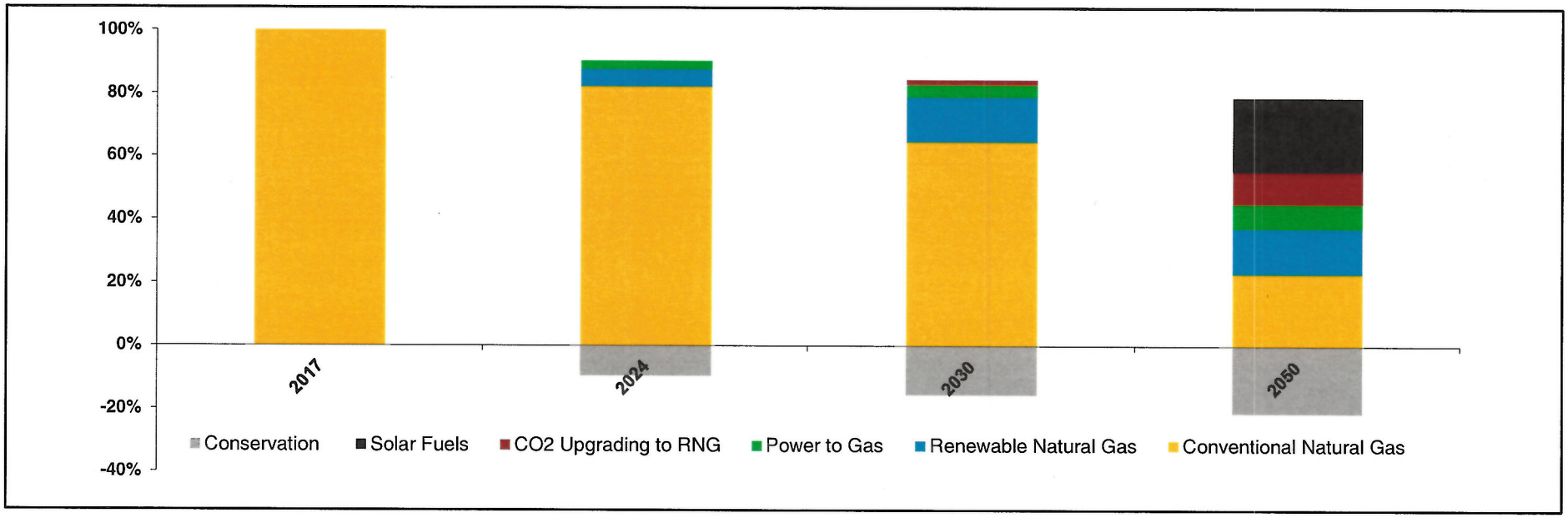
16% by 2030

50% + by 2050

- Methanation to upgrade CO2 to Green Fuel and Solar Fuels
- Combining CO2 streams with Hydrogen to create synthetic green gas

Enbridge Vision for 2050

By 2050, we expect to reduce emissions from heating sector by 80% through conservation, Bio Fuels and end use technology



- Role of Bio Fuels in other sectors?
  - Light transportation
  - Industrial

Summary

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Life Takes Energy

- Greening the Natural Gas Grid using Bio Fuels complements our low-carbon power supplies as a balanced approach to meeting cost-effective GHG reductions
- Using existing infrastructure to transport Bio Gas for heavy transportation reduces Transportation sector emissions
- Diversity in energy infrastructure enhances energy resiliency, affordability of renewable energy and offers improved flexibility for energy planning to achieve GHG reductions
- Lowest $/tonne must be a priority for reinvestment of cap-and-trade proceeds. Delivers maximum GHG reductions in neat-term to provide time for research breakthroughs

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Questions