



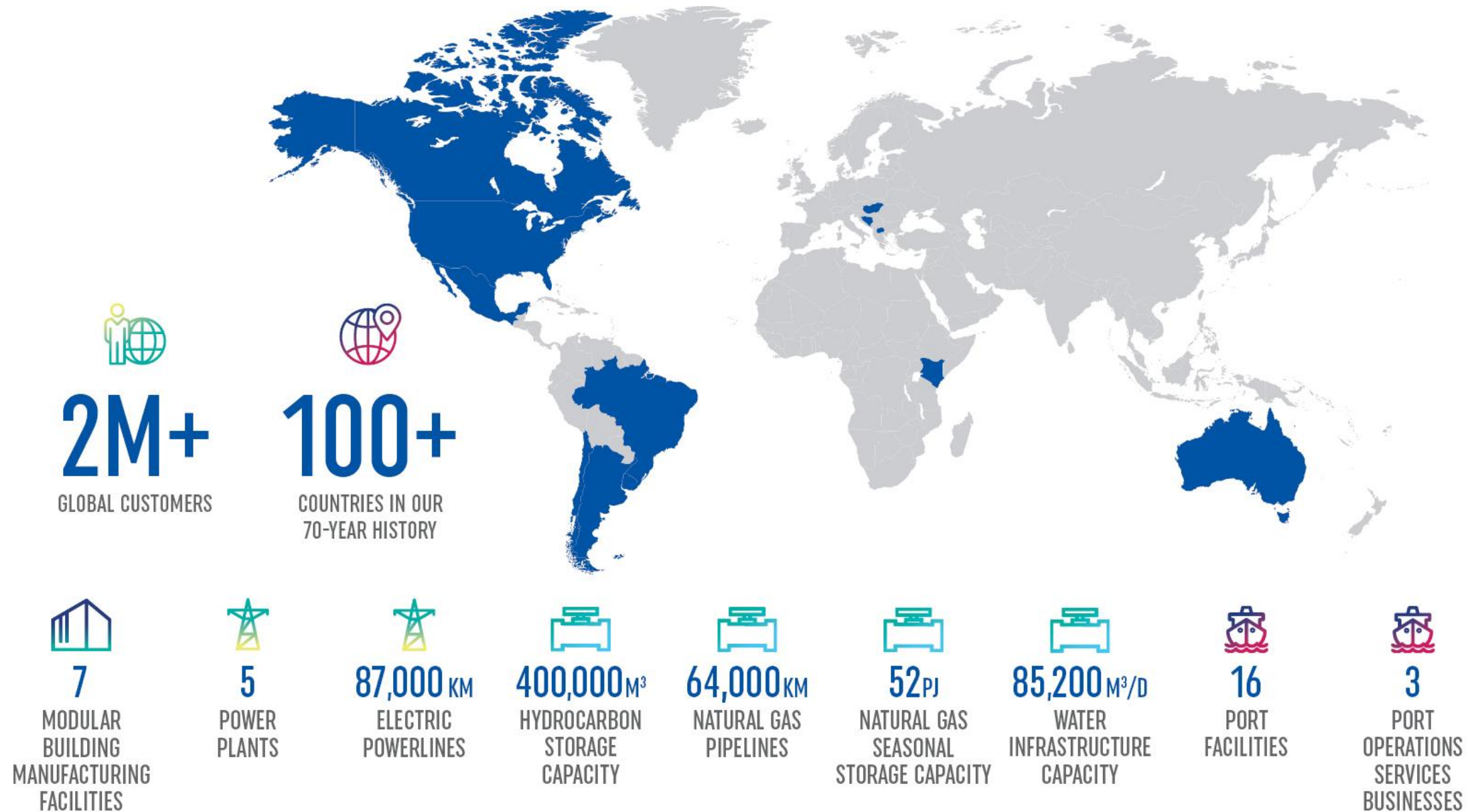
**ATCO**

**Virtual BEN Symposium:  
A Utility's Perspective on Renewable  
Natural Gas**

*August 5, 2020*

# ATCO at a Glance - GLOBAL OPERATIONS

We have provided products and services in **100+ countries** around the world for **70 years**.



# Agenda

- RNG Overview
- The RNG Opportunity in Canada and AB
- Why RNG for Utilities?
  - Policy Drivers North America
- ATCO's perspective

# RNG Overview – How is it Made?

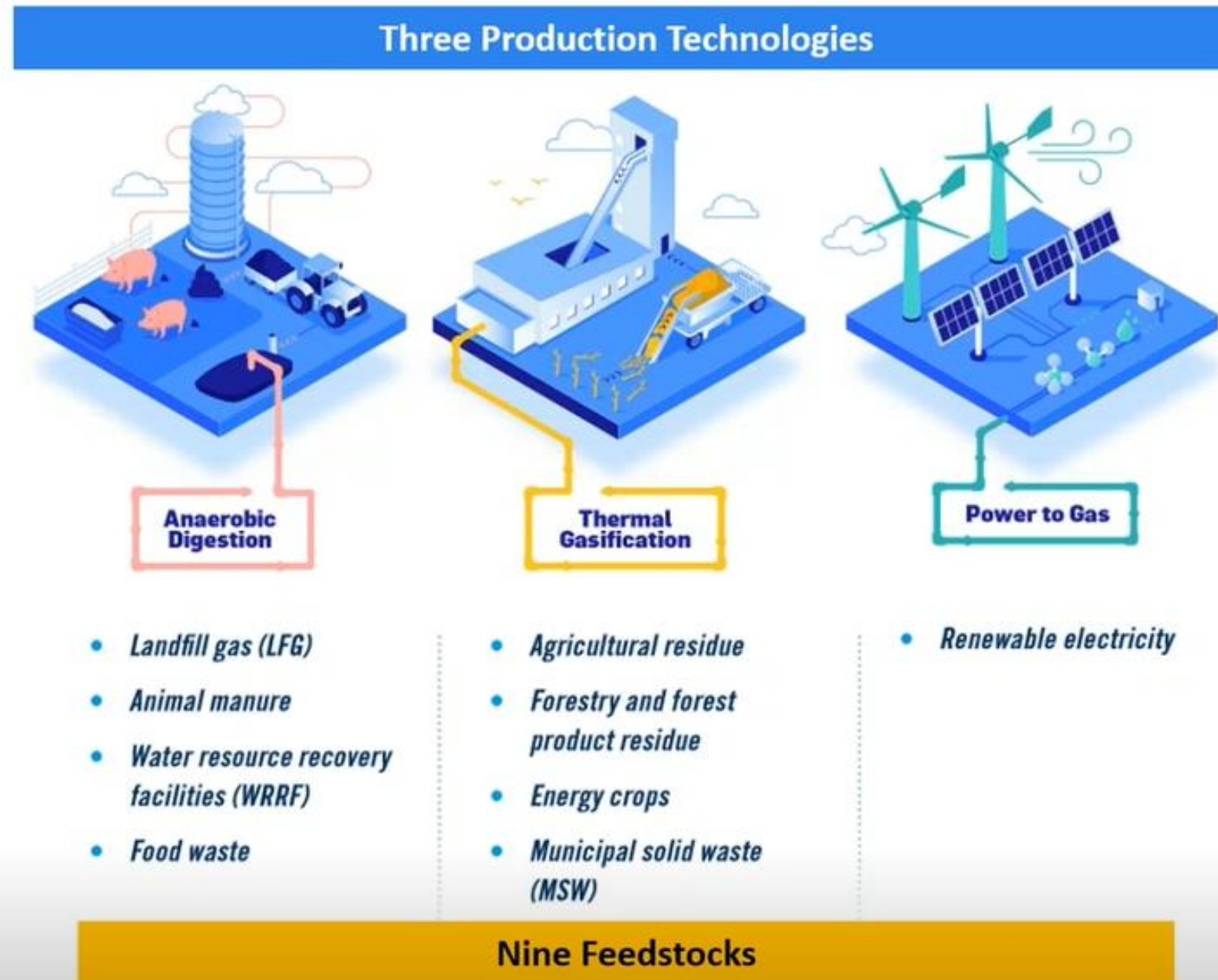
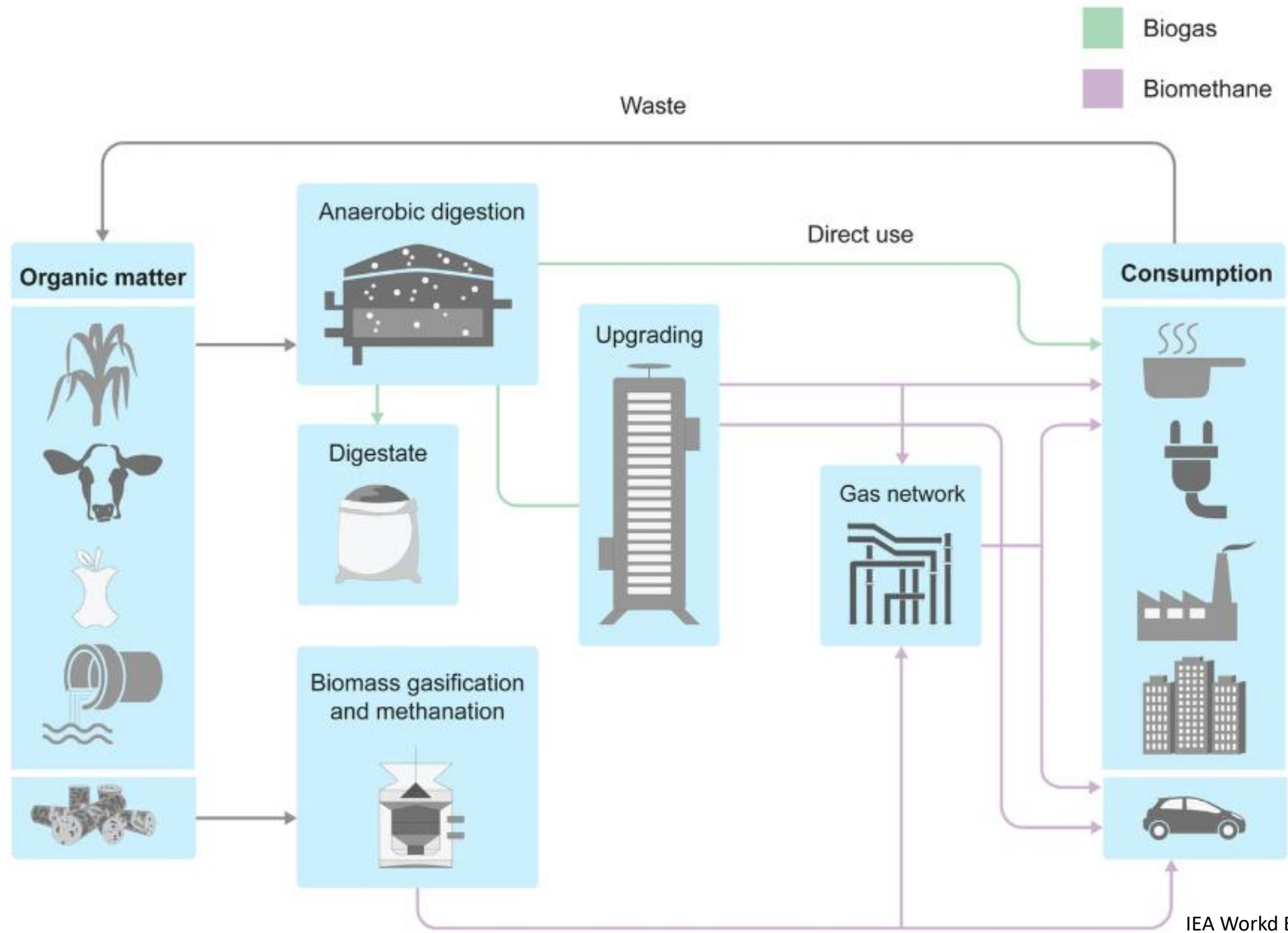


Image from ICF 2019 Study – Renewable Sources of Natural Gas



IEA World Energy Outlook

# Canadian Natural Gas Opportunity: GHG Reduction Potential to 2030

- ICF International Study, September 2016 “The Canadian Natural Gas Opportunity: GHG Reduction Potential to 2030”
- Five areas of natural gas use where significant GHG reductions can be realized, and the potential reductions involved, are the following:

Measure	2030 GHG Reduction Potential (tCO <sub>2</sub> e/yr)	Assumptions
RNG	14,703,036	5% of natural gas throughput replaced with RNG
Transport	5,564,089	~25% of heavy duty fleet converted to natural gas
LNG	4,293,036	Variability province by province
Energy Efficiency	11,833,098	~6% reduction in energy usage vs BAU
Coal to Natural Gas	11,491,721	Variability province by province
<b>TOTAL</b>	<b>47,884,980</b>	~6.5% reduction in national emissions

# Canadian Natural Gas Opportunity: GHG Reduction Potential to 2030 – Province to Province

- On a province by province basis we see differences in total potential and relative potential of each measured based on size of the province, energy demand and energy / emissions profile.

	RNG	Transport	LNG	EE	Coal to NG	TOTAL
NB	100,839	61,400	161,053	90,539	687,500	1,101,331
NS	134,291	58,850	263,381	52,301	821,618	1,330,440
QC	500,000	538,495	583,489	1,200,000	-	2,818,000
ON	8,078,800	3,266,544	1,174,699	5,669,924	-	18,189,969
MB	206,335	130,800	95,068	245,015	-	677,218
SK	620,456	205,450	162,195	813,865	2,196,253	3,998,218
AB	4,337,196	715,500	1,232,836	3,058,158	7,786,350	17,130,195
BC	725,119	587,050	620,315	703,296	-	2,635,751
<b>TOTAL</b>	<b>14,703,036</b>	<b>5,564,089</b>	<b>4,293,036</b>	<b>11,833,098</b>	<b>11,491,721</b>	<b>47,884,980</b>

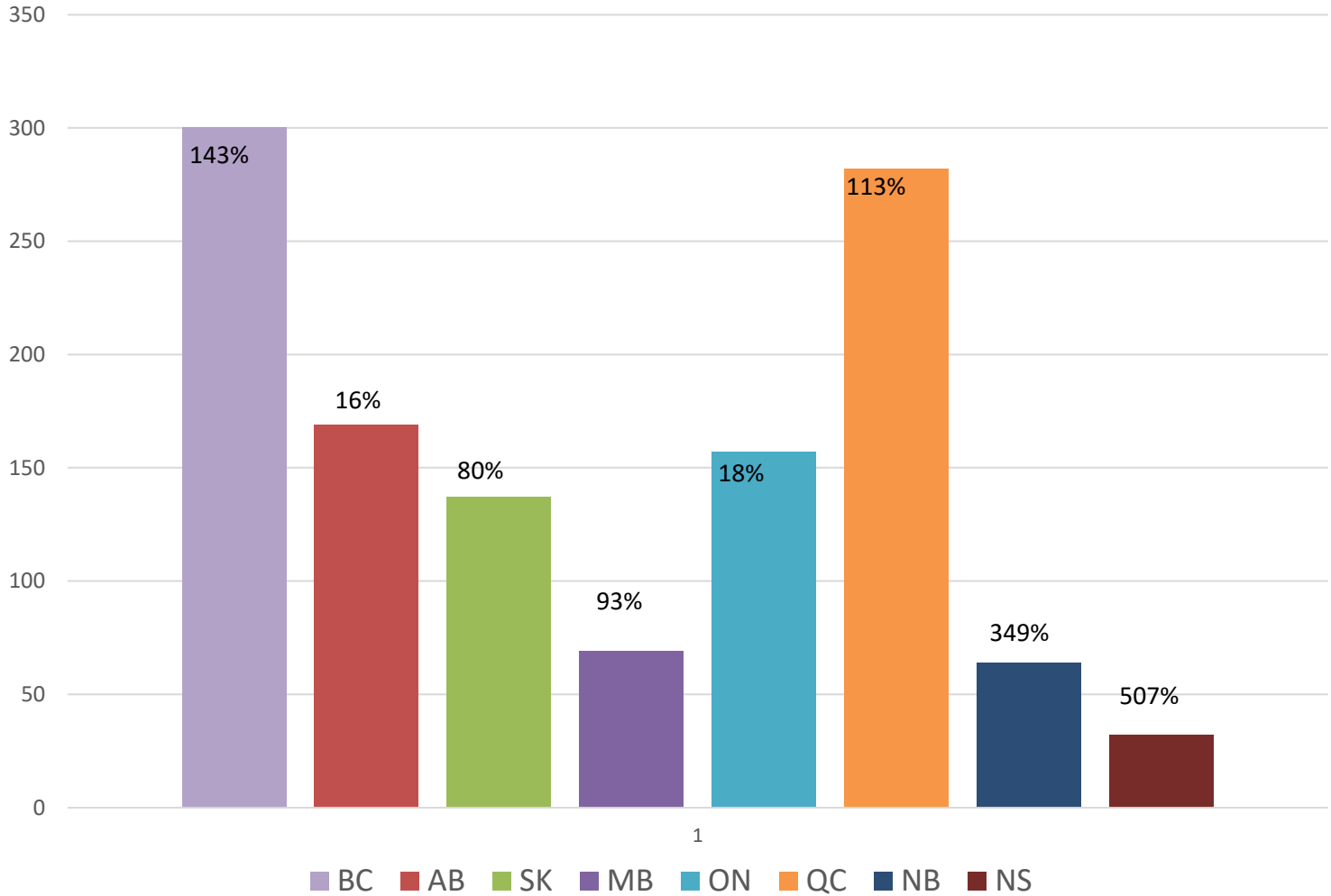
# Canada's RNG Opportunity

Canada's total gas demand is 2,670 Bcf

10% of Gas Demand with RNG delivers 14-22 MT GHG reductions, equal to 2.8-4.4 million cars emissions

Canada's RNG Potential is 1,415 Bcf

RNG Potential (bcf/year) vs. Provincial Gas Demand



Sources: Statistics Canada, Table 128-0016. Alberta Innovates, 2010



# Summary of Biogas Use in Canada

		Agriculture	WWTP	MSW	Landfill	P&P	
Total Number of Facilities		61	48	43	18	103	7
Biogas Use	RNG	2	1	1	7	3	
	CHP	19	31	15	8	5	
	On-site Heating		5	2	1		
	Electricity	39	6	2	1	31	2
	Off-site use					7	
	Flare/Incinerator			7		18	
	Unknown/other		5	16	1	39	5
Source		AAFC	Kelleher Contract			Industry	

- WWTP means wastewater treatment plant
- MSW means municipal solid waste
- P&P means pulp and paper
- CHP means combined heat and power
- AAFC means Agriculture and Agri-food Canada

# Existing North American RNG Projects & Owners



# Why RNG?

Solar, wind and hydro alone are not enough.



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We need to use ALL the tools in our toolbox – including **Renewable Natural Gas.**



Image From - Getting the Facts on RNG – 2<sup>nd</sup> Annual AGA-EPA Natural Gas STAR/Methane Challenge

# Legislation supporting future demand

- Continued Progression towards reducing emissions will drive demand for alternative sources. RNG in legislation is a key component to achieving these reductions.
  - Existing North American Legislation and Mandates
    - Canada
      - BC Low Carbon Fuel Standard – 15% RNG by 2030
      - Quebec target 5% RNG mandate by 2020
    - United States
      - US Federal EPA Renewable Fuel Standard - RIN credit
      - California LCFS
      - Oregon Clean Fuels Program
      - Washington Low Carbon Fuel Standard (Expected 2019)
      - North Carolina Renewable Energy and Energy Efficiency Portfolio Standard (REPS)
      - Regional Greenhouse Gas Initiative (RGGI) – 9 mid-Atlantic states
      - New York’s NYSERDA program – Funds Anaerobic Digesters
  - Imminent Canadian Legislation
    - Canada’s Clean Fuel Standard updated for gaseous fuels (CFS)

# ATCO's Perspective

- Provincial policies driving RNG market (BC, QC)
- Federal policy will drive gaseous fuels to lower carbon
  - RNG will be one pathway
- ATCO's Role
  - Be an enabler and allow RNG onto our system
  - Consider taking a more active role



# Questions?

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