

CANADIAN PERSPECTIVE

EMISSION REDUCTION TARGETS AND METHANE

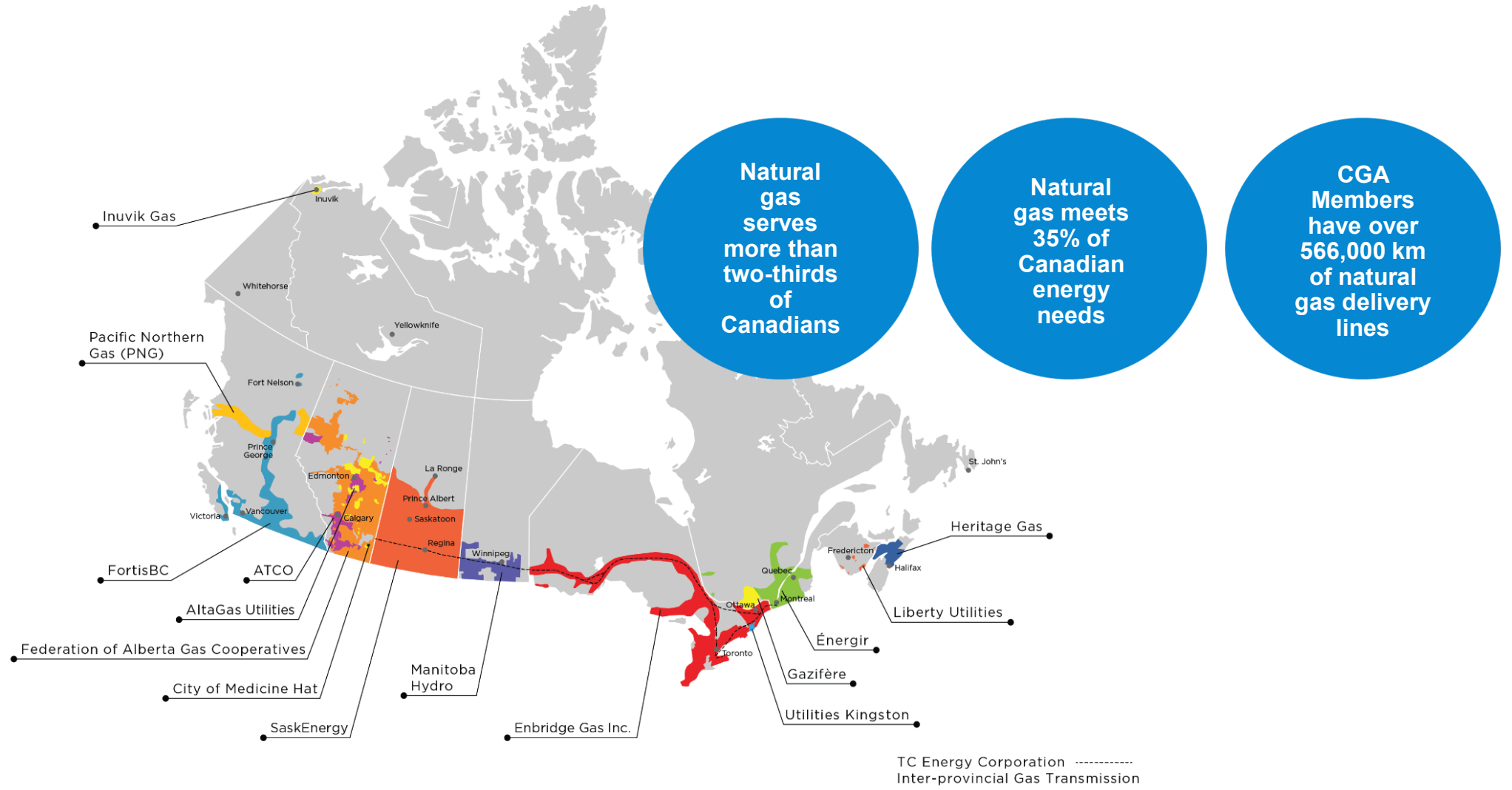
Presentation to: CH4 Connections Canada

November 18, 2020

Paul Cheliak, Vice President, Public and Regulatory Affairs, Canadian Gas Association
Jasmine Urisk, Executive Director, CEPEI



CGA Membership

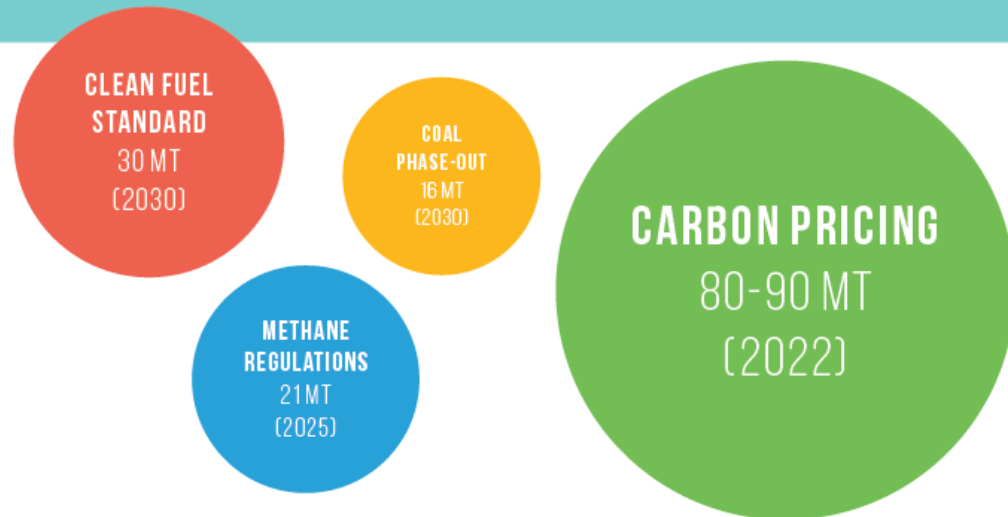


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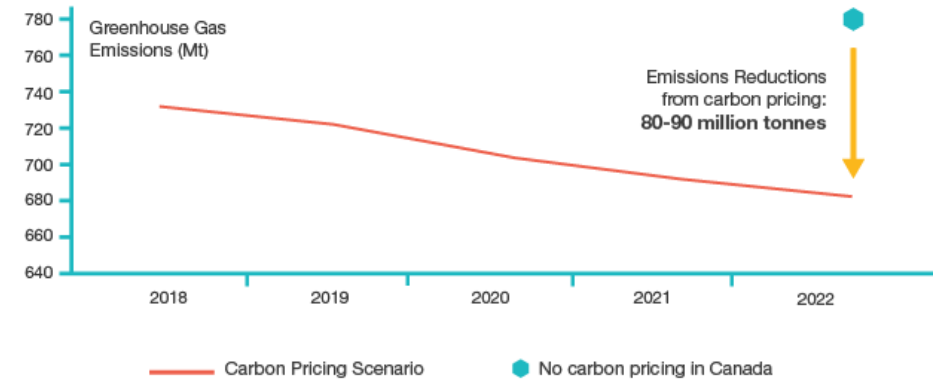
2030 and 2050 Climate Policy and Legislation

- In 2017, the Federal government released a plan to meet Canada's 2030 target: 30% GHG reduction from 2005 levels
- In fall 2020, the Liberal Government (ECCC) will release a new plan to EXCEED 2030.
- In fall 2020, the Liberal Government will table a 2050 net zero Bill in the House with 5-year legislative GHG targets.

PRICING POLLUTION IN PERSPECTIVE



PROJECTED GREENHOUSE GAS EMISSIONS IN CANADA WITH AND WITHOUT CARBON PRICING



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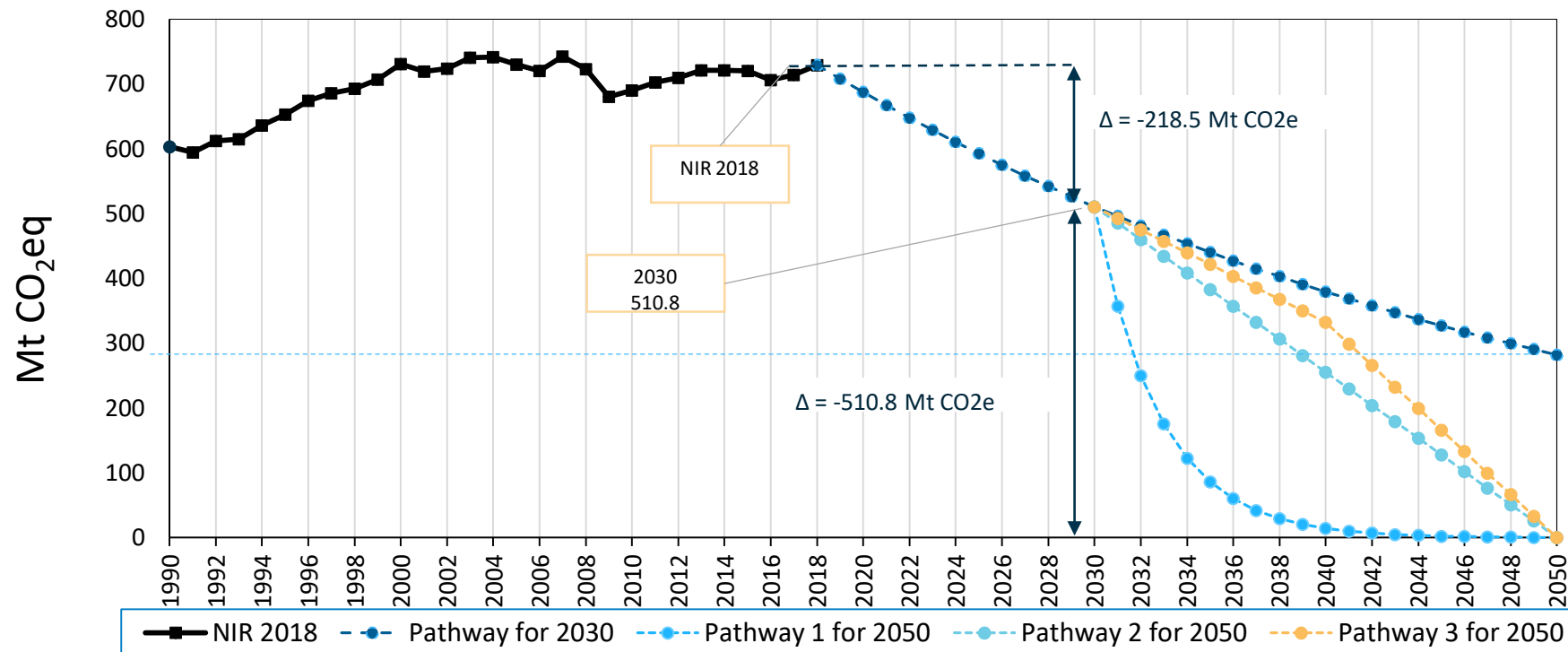
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CANADIAN GAS ASSOCIATION
ASSOCIATION CANADIENNE DU GAZ

Canada's 2030 and 2050 Emissions Profile

- Canada's GHG reduction target: 30% decline over 2005 levels (510.8 MtCO₂eq) by 2030
- Emissions will have to decline by 218.5 MtCO₂eq from their current 2018 level
- In 2020, Canada is set to commit to net zero by 2050 resulting in structural changes to the energy system.



Source: ECCC National Inventory Report 1990-2019

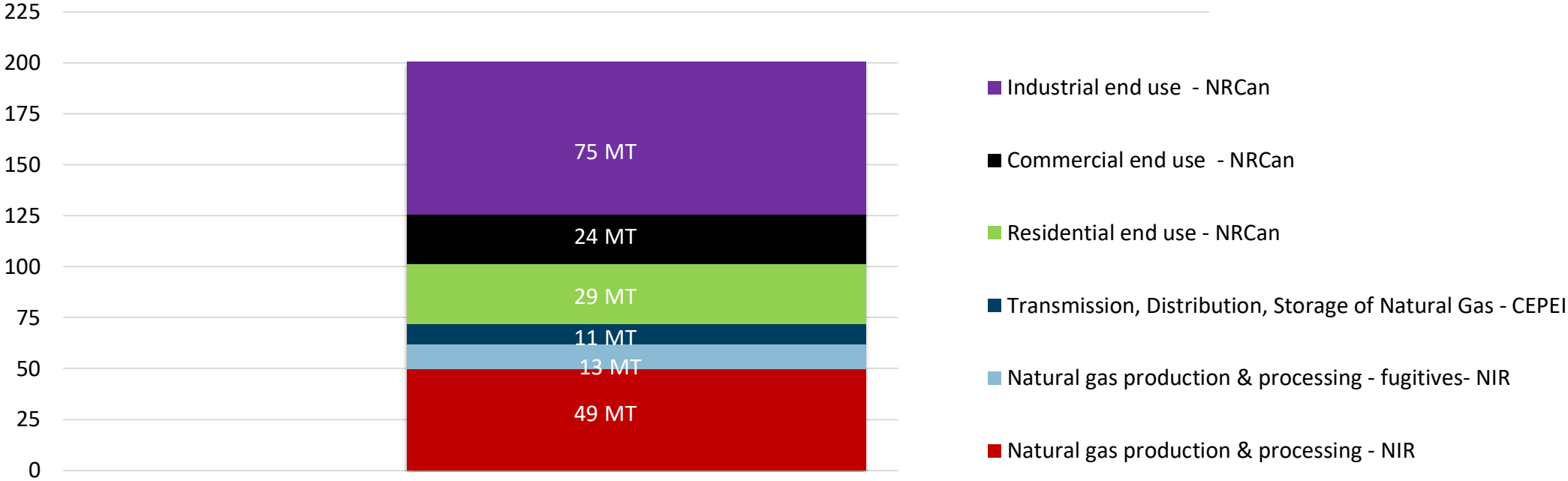


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Natural Gas GHG Emissions in Canada

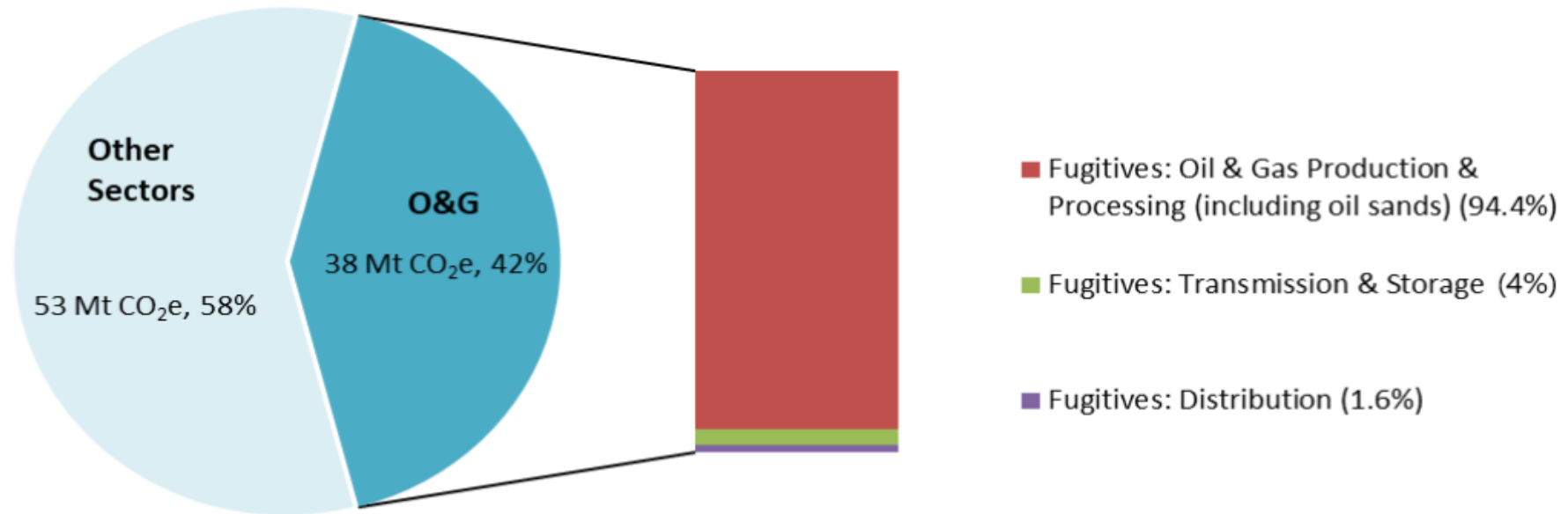
- Natural gas accounts for 200 MT of Canada's total 700 MT of GHG's
- The largest source of emissions are combustion at >90%.
- Industrial natural gas consumption is the largest source of emissions.
- Methane from natural gas upstream is 13 MT and 2 MT from downstream and transmission.

Natural Gas - Total Emissions (Mt CO2eq)



SOURCES: ECCC, NRCAN, CEPEI, CGA

Canada's 2018 Methane Emissions with Oil & Gas Sector Fugitives by Source Category (%)



Sources: ECCC (2020) and CEPEI (2020). Fugitive methane emissions for T,S&D include venting, leaks, flaring and damage events.



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Federal Regulatory Measures- Methane Regulations

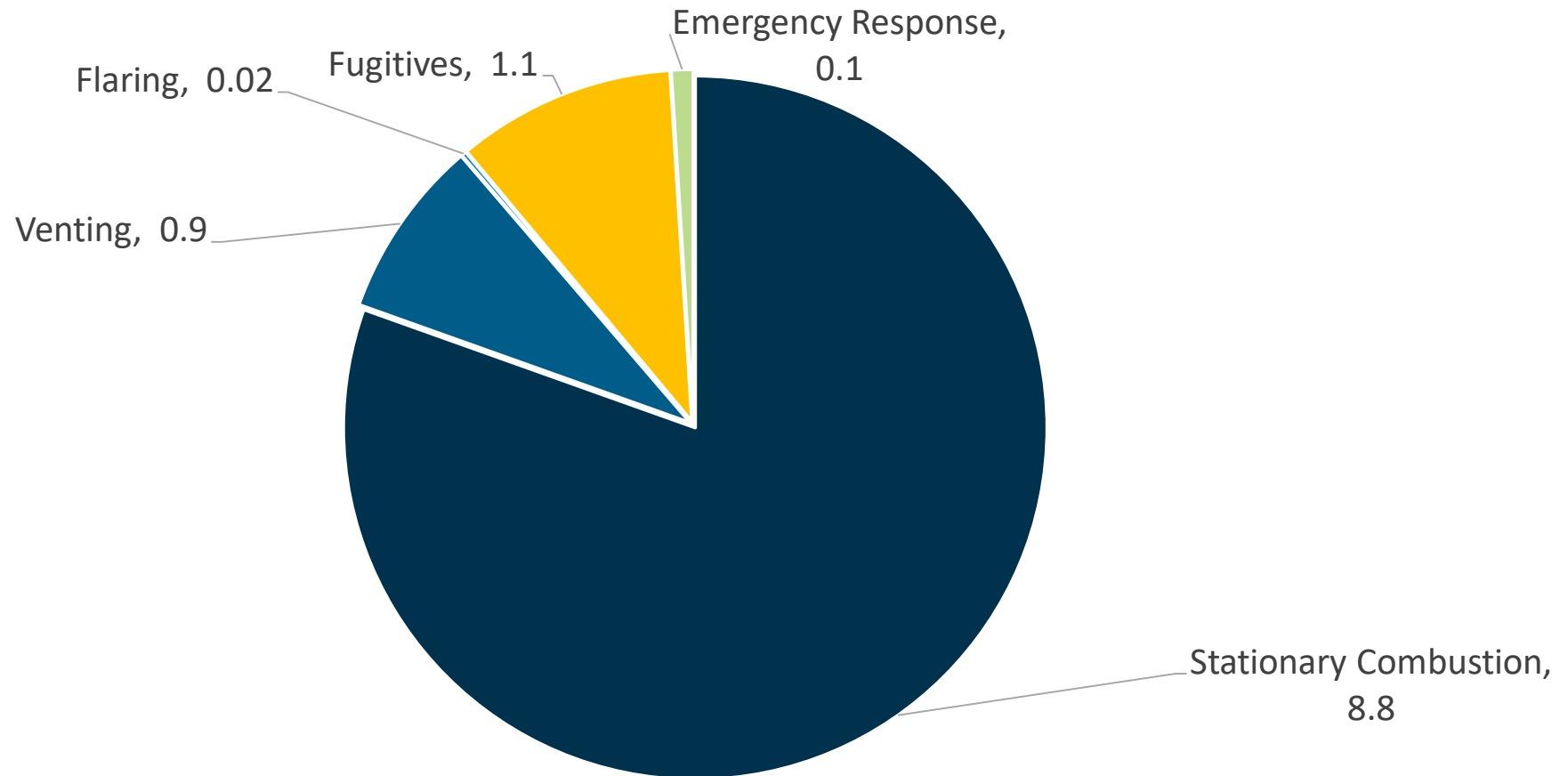
- Canadian Federal *Regulations Respecting Reductions in the Release of Methane and Certain Volatile Organic Compounds (Upstream Oil and Gas Sector)* published on April 26, 2018 under the *Canadian Environmental Protection Act, 1999*
- Objective - reduce methane emissions from the sector by 40 to 45% below 2012 levels.
- Regulations are phased in starting in 2020 and fully implemented by 2023
- Under provincial *equivalency provisions*, provinces and territories can choose to develop their own regulations, provided they can demonstrate equivalent emissions reductions are achieved; regulated sources may differ
- British Columbia, Alberta, Saskatchewan have achieved equivalency, so federal regulations stand down for next 5 years



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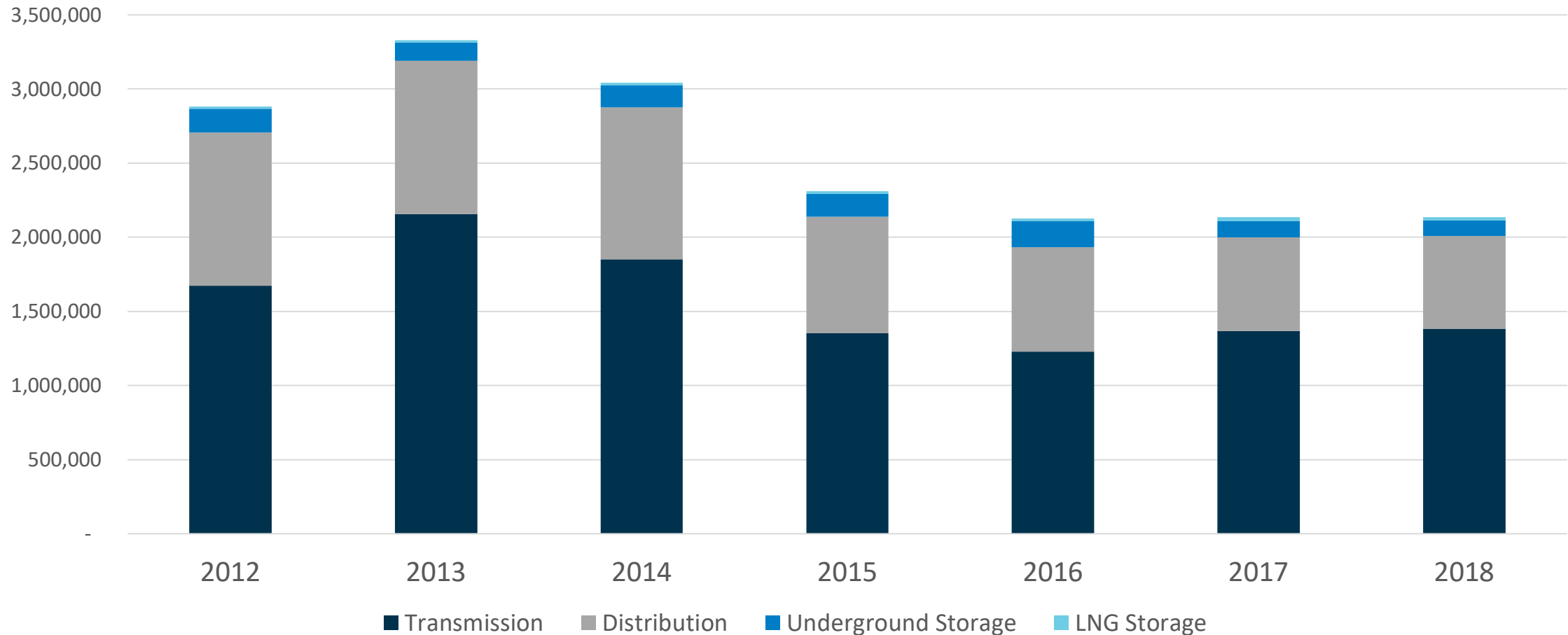
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Transmission, Storage & Distribution - GHG Emissions by Source Category (2018) - Mt CO₂e



Source: Canadian Natural Gas Transmission and Distribution Companies 2018 GHG Greenhouse Gas Inventory (CEPEI 2020)

2012-2018 Fugitive Emissions by Segment (t CO₂e)



Source: Canadian Natural Gas Transmission and Distribution Companies 2018 GHG Greenhouse Gas Inventory (CEPEI 2020)

Natural Gas Innovation Fund

Methane Venting, Flaring and Fugitive Emissions

- NGIF is developing a portfolio of advanced clean technologies can be deployed to **reduce or eliminate methane venting and fugitive emissions** from across the value chain.

Winterhawk Well

**WINTERHAWK
WELL
ABANDONMENT**

Demonstrate emissions reduction at an abandoned well through the operation of their Surface Casing Vent Flow (SCVF) technology.

Dale Kunz
President

Kinitics Automation

**KINITICS
AUTOMATION**

Demonstration of a shape memory alloy-based valve actuator for zero bleed valves at natural gas production facilities.

Dean Pick
President

Packair Industries

PACKAIR INDUSTRIES INC.

Demonstration and field trial of methane gas emission mitigation through an advanced instrument air compressor.

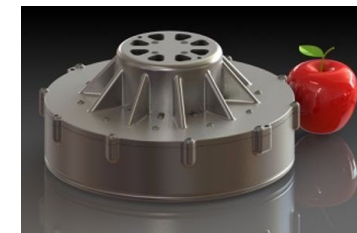
Cam Buss
Managing Director

Westgen

**WESTGEN
TECHNOLOGIES**

Demonstration of a proprietary low-cost, remote power generation and air compression system to eliminate fuel gas pneumatics and power remote well sites.

Connor O'Shea
President



Canadian Natural Gas Innovation Fund

Emission Monitoring and Measurement

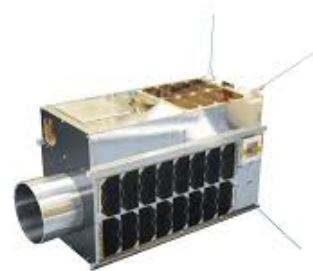
- NGIF is developing a portfolio of advanced clean technologies for Leak Detection and Repair **to monitor and measure fugitive methane emissions and leaks.**

GHG Sat



Demonstration of a satellite-aircraft hybrid system in BC's Montney region to detect GHG emissions.

Stéphane Germain
President



Luxmux



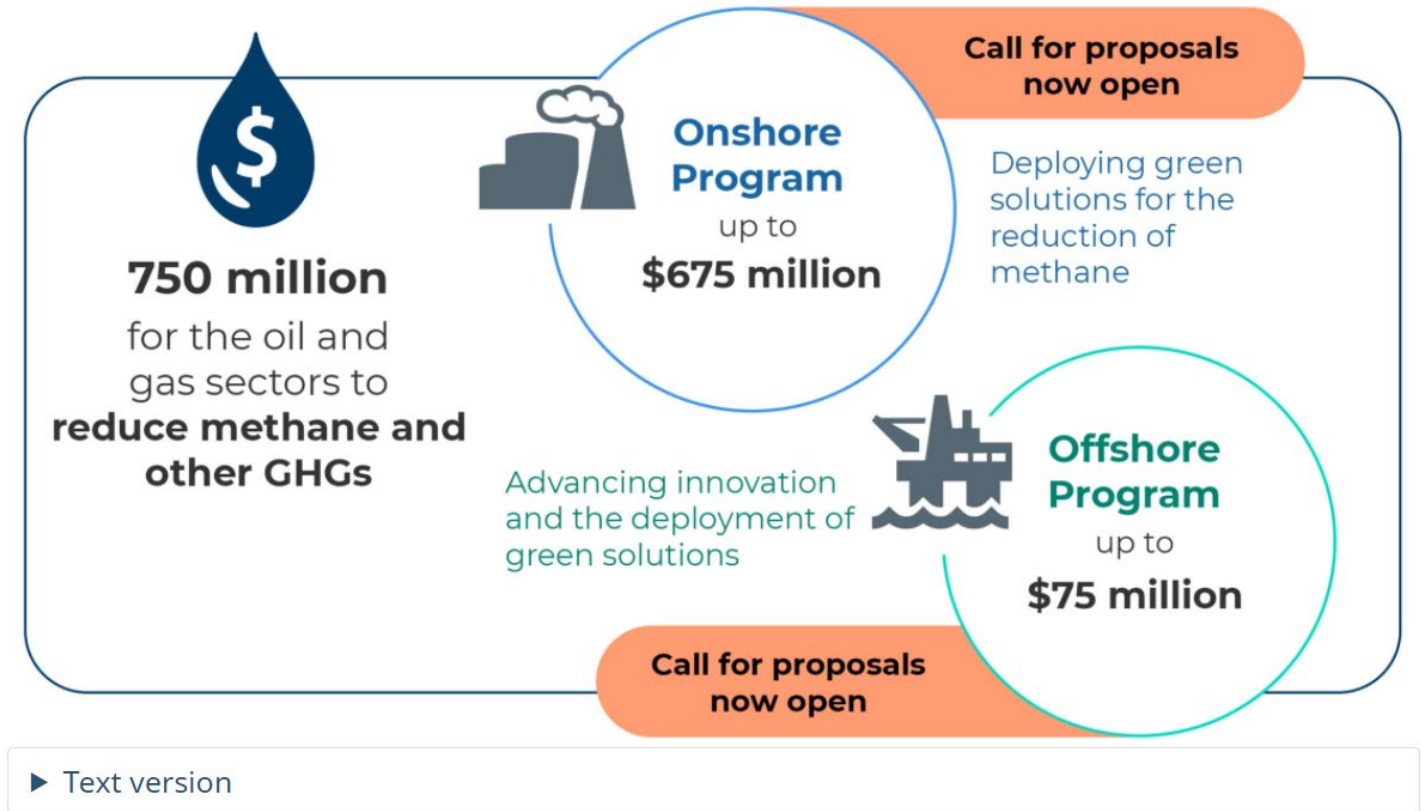
Demonstration of an on-site continuous emission monitoring system for methane and carbon dioxide at gas production sites.

Yonathan Dattner
President



New (2020) Federal Emission Reduction Fund

- ERF has on and offshore components.
- First round of funding open now, second in Jan 21.
- Aims to support achieving the federal regulation.
- Fund is a deployment fund, not a technology fund.



Contact Information



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