



Methane Regulations for the Upstream Oil & Gas Sector

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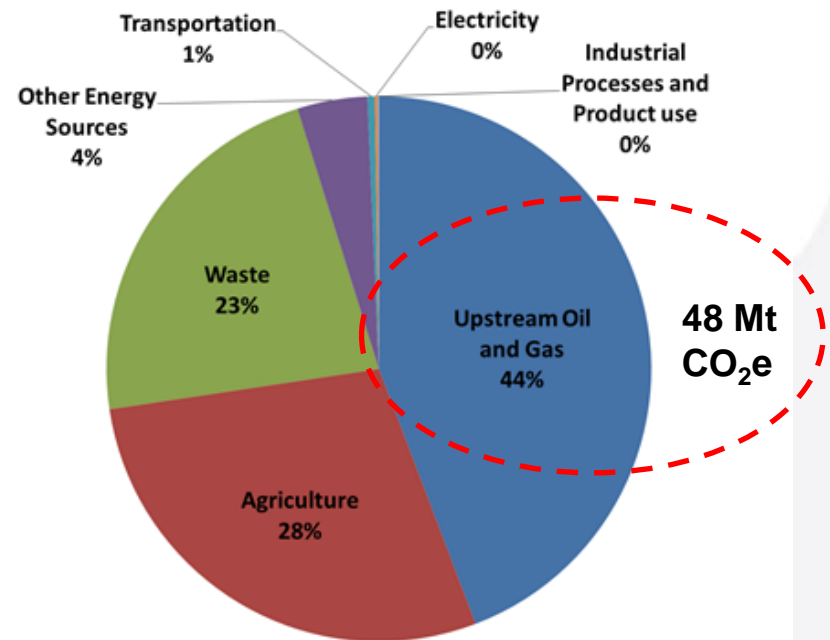


***Intentional release of natural
gas (methane) from a storage
tank only visible through an
infrared camera***

Where is Methane Emitted?

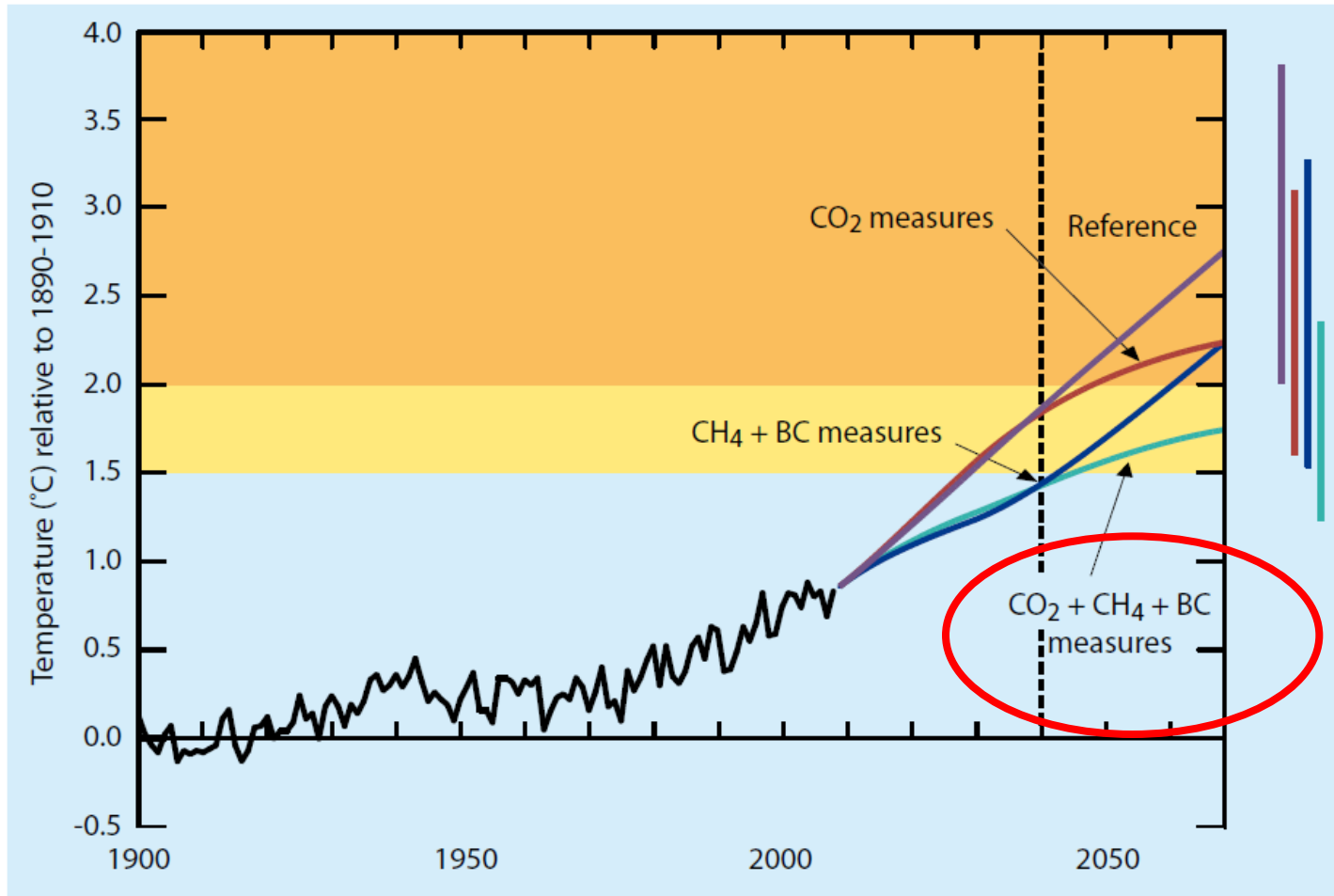
- Oil and gas facilities account for 26% of Canada's total GHG emissions and are Canada's **largest industrial emitters** of methane.
- The majority of these emissions are released by **fugitive** (unintentional release) and **venting** (intentional release) sources.

Canada's 2012
Total Methane Emissions
(110 Mt CO₂e)



Source: 2017 NIR

CO₂ and SLCP measures are complementary strategies



Source: UN Environment Program / World Meteorological Organization 2011

Upstream Oil & Gas Sector in Canada

- Canada is the **5th-largest producer of natural gas** and the **6th-largest producer of crude oil** in the world.
- Most upstream oil and gas facilities are found in **AB, BC** and **SK**.
- These facilities operate at **various scales and sizes**, from very small facilities (single well) to major facilities with multiple wells and equipment.
- They carry out a **variety of operations**: production, processing and transmission (pipelines)



Crude oil well



Compressor



Gas processing

Key Methane Sources in Oil & Gas Sector

1. Fugitive Emission Sources (34%)

- **Leaks** arising from inadequate maintenance or regular wear and tear of equipment (e.g. valves, flanges, connectors)



Leak from a wellhead



Intentional venting from storage tank

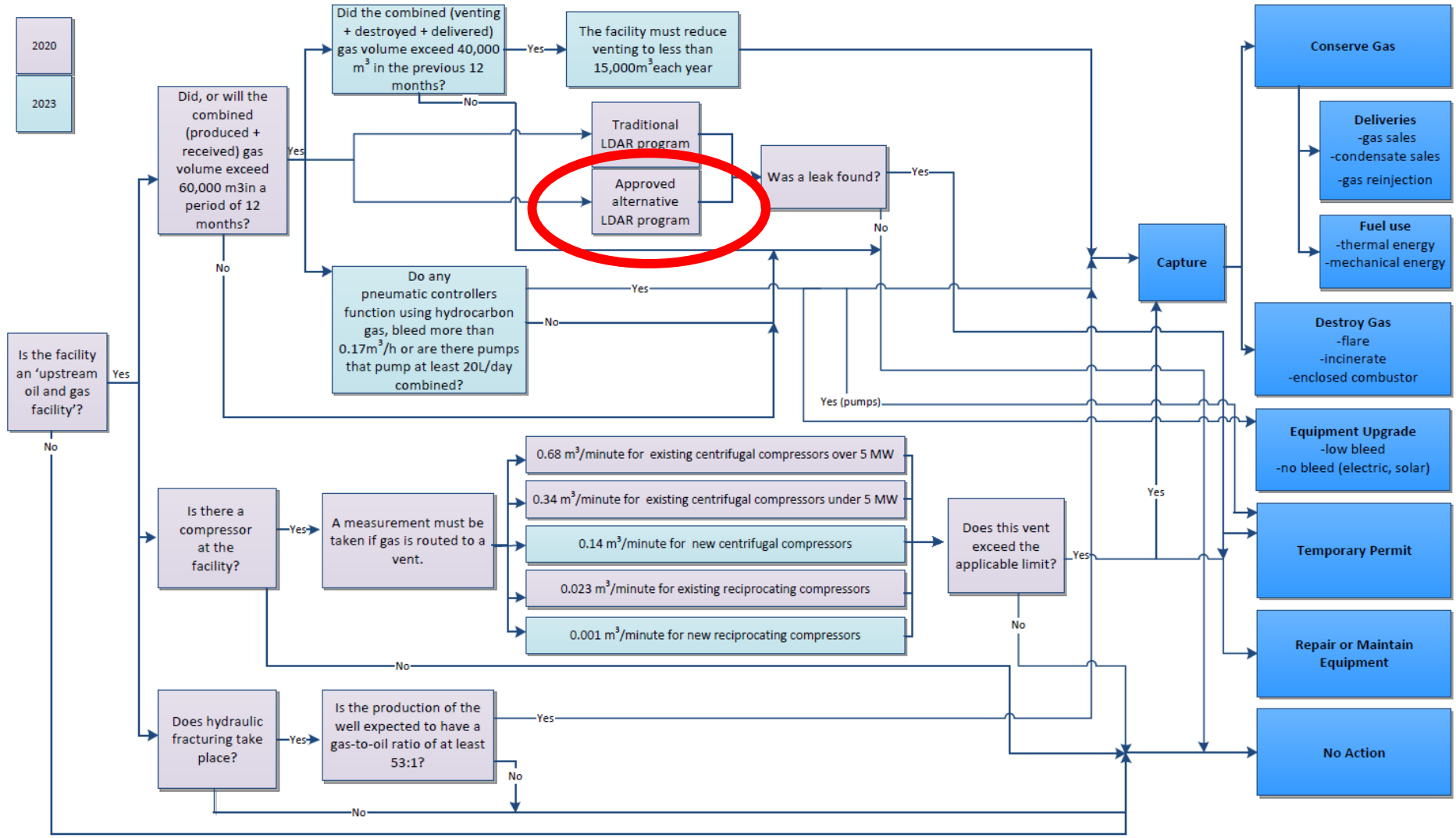
2. Venting Emission Sources (52%)

- **General facility venting** from wells, equipment and tanks
- Regular **compressor** venting, which can increase as internal components wear and age
- Venting of natural gas from **pneumatic** controllers and pumps
- **Well completions** involving hydraulic fracturing: if the gas in the flowback is directly vented

Methane Regulations – Design

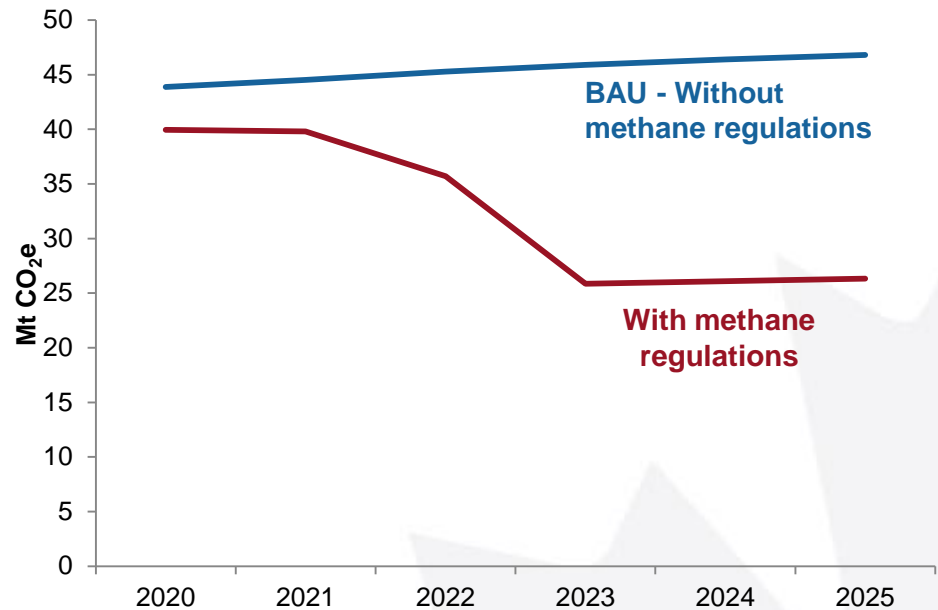
- The regulations will achieve significant reductions in GHG emissions, through **reductions in fugitive and venting emissions**.
- The Regulations would require onshore and offshore upstream oil and gas facilities to comply with standards depending on the source of the emissions:
 - **Standard for fugitive emissions (leaks):**
 - Implementation of a **Leak Detection and Repair Program** to inspect and repair leaks (using traditional or alternative methods)
 - **Standards for venting emissions:**
 - **Site limit** for intentional venting (excludes compressors and pneumatics which have their own limits, and well completion with hydraulic fracturing, emergencies, blowdowns)
 - **Specific limits** for compressors and pneumatic devices
 - **No venting** allowed for well completions involving hydraulic fracturing

Compliance Flowchart – Draft



Methane Regulations – Benefits

- The regulations will allow Canada to **meet its commitment** to reduce methane emissions from the oil and gas sector by 40% of 2012 levels by 2025.
- **Avoided climate change damages: \$11.6 billion**
- **Reduced air pollution health and environmental benefits: \$240 million**
- **Expected net benefits: \$8.9 billion**



Methane Regulations – Timeline

Publication of Final Regulations in CG2

Apr 26

**Coming into force -
1st set of
requirements**

Jan 1

**Coming into force -
2nd set of
requirements**

Jan 1



Today

Development of potential equivalency agreements (BC, AB, SK)

Establishment of working group

Compliance-promotion (preparation & delivery)

For More Information

- Methane webpage on CEPA Registry: <https://pollution-waste.canada.ca/environmental-protection-registry/regulations/view?id=146>