

# 2017 ALBERTA CLIMATE SUMMIT

## METHANE EMISSIONS ABATEMENT

How local business will grow to meet our emissions reduction goals



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## FEDERAL & PROVINCIAL: REGULATORY UPDATES

- Carbon Levy
- Output Based Allocation
- Carbon Offsets
- Methane Rules

Provincial



- Paris
- Carbon Tax
- Methane Rules

Federal

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## UPDATE : REGULATORY LANDSCAPE

### Alberta Regulations

#### Directive 017

Measurement Requirements for Oil and Gas Operations

#### Directive 060

Upstream Petroleum Industry Flaring, Incinerating, and Venting

#### Directive 039

Reduce Benzene Emissions from Glycol Dehydrators

#### Directive 084

Requirements for Hydrocarbon Emission Controls and Gas Conservation in the Peace River Area

### Other Regulations

#### NPRI

National Pollutant Release Inventory

#### BLIERS

Base-level Industrial Emission Requirements

#### EPAP

Enhanced Production Audit Program

#### FEMP

Fugitive Emission Management Program

## METHANE : REGULATORY OVERVIEW

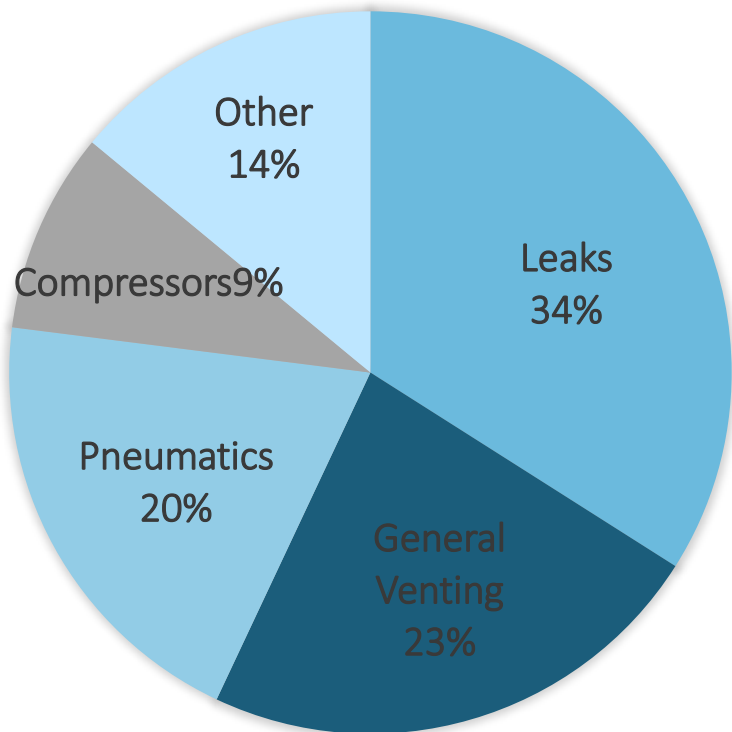
Methane Emissions		
	Alberta	Federal
Reduction Target	45%	40-45%
Baseline Year	2014	2012
Target Date	2025	
Effective Dates	2019-2023	2020-2023
Methane Source Categories	Compressors & Dehys	
	Fugitives/LDAR	
	Pneumatics	
	Venting	
	MMR	Well Completions
Draft Release Date	Q3 2017	Q2 2017

BC, SK, MB in discussions with Alberta & Feds

# UPDATE: METHANE REGULATIONS

## Federal Summary Table

“Federal” Level Emissions

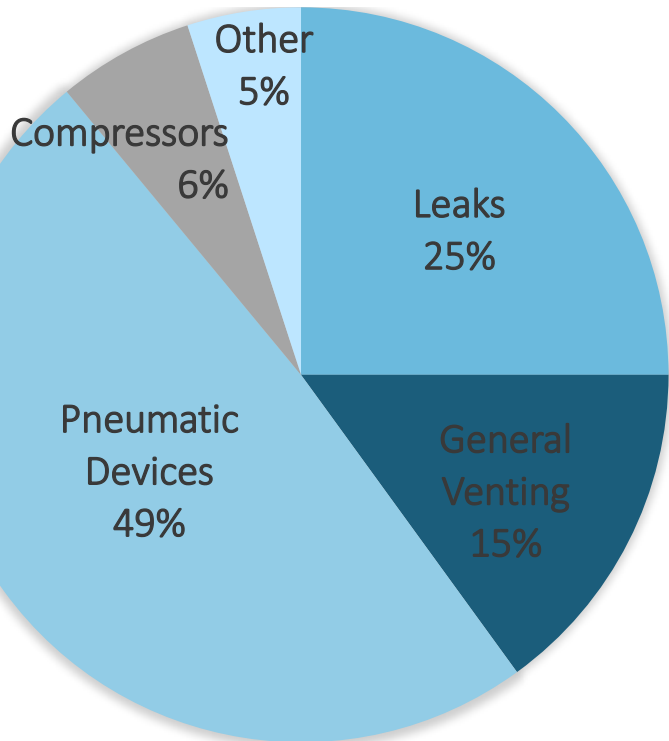


Source Category	Coming Into Force	Considerations
Fugitives: Equipment Leaks	2020	<b>Frequency of Inspection:</b> 3 times per year
Venting	2023	<b>Maximum allowable venting limit:</b> 250 m <sup>3</sup> / month
Pneumatic Devices	2023	<b>Reduction Method:</b> Conservation or destruction or replacement with non-emitting/low-bleed
Compressors	2020	<b>Limit:</b> 0.17 m <sup>3</sup> /minute for centrifugal compressors; 0.023 m <sup>3</sup> /minute per rod packing for reciprocating compressors

# UPDATE: METHANE REGULATIONS

## Provincial Summary Table

“Alberta” Level Emissions



Source Category	Coming Into Force*	Considerations
Fugitives: Equipment Leaks	2019	Leak Detection and Repair Requirements
Venting	To be updated	
Pneumatic Devices	To be updated	
Compressors	To be updated	
Reporting	2019	Detailed equipment & GHG emissions inventory

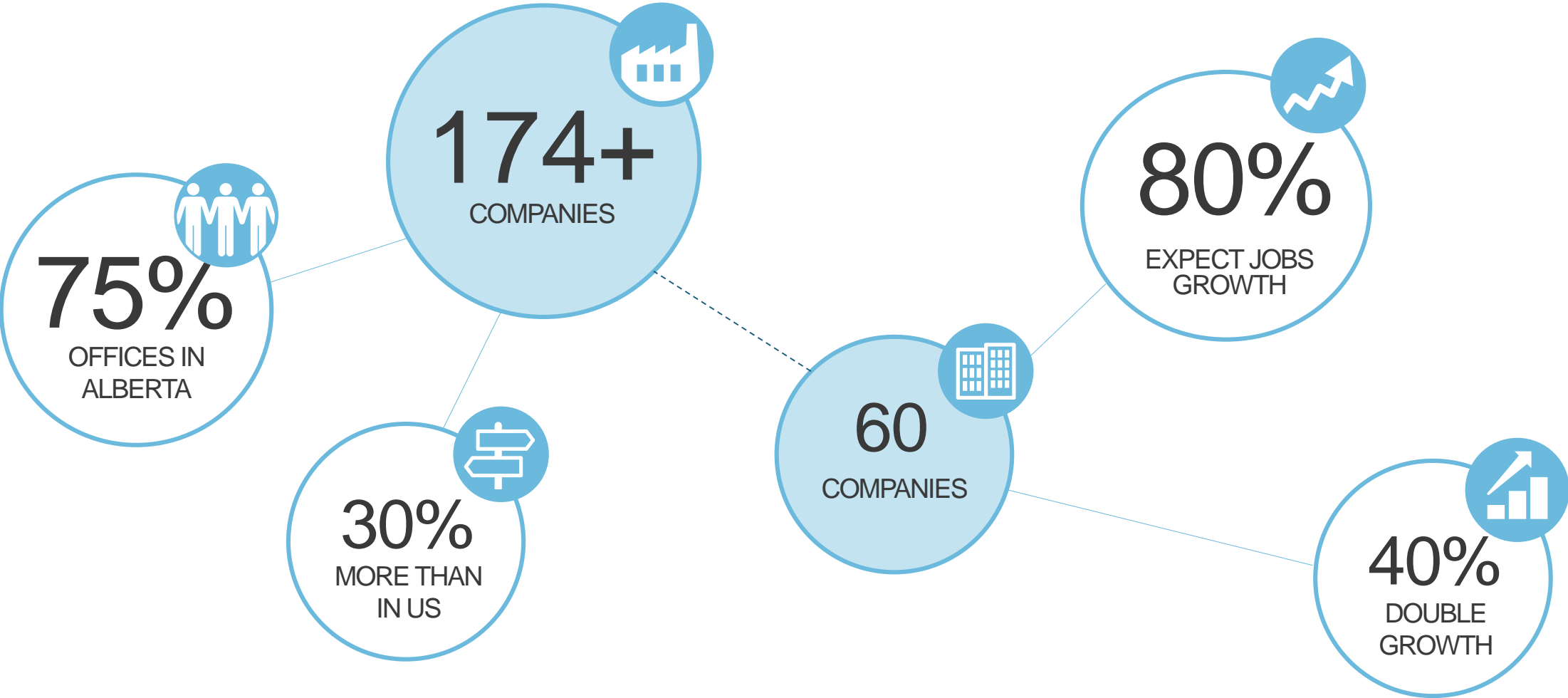
\*Assumed

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## METHANE : SOURCES

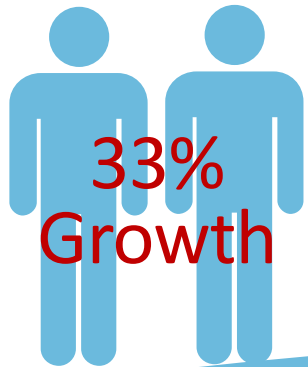
Methane Emission Sources	
Source Category	Definition
Compressors	Seals, rod packing, start-up process
Fugitive Equipment Leaks	Unintended emissions from flares, valves, pipes, purge, start-up, operating upsets
Pneumatic Devices	Continuous or intermittent bleed controllers, actuators, pumps
Venting	Storage tanks, hatches, glycol dehydrators, process vents, production casing, surface casing
Well Completions	Completion flow back, liquids unloading, solids removal

# METHANE JOBS MARKET ANALYSIS: KEY STATISTICS

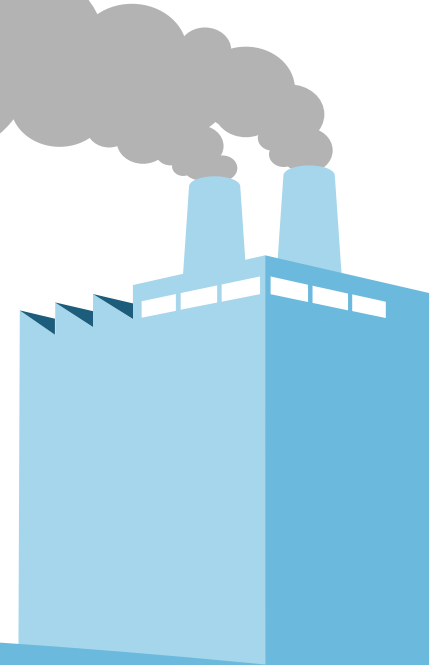
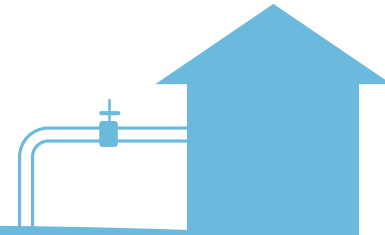




# LDAR: GROWTH OPPORTUNITY



**33%  
Growth**



**15-20**

Companies providing on-site LDAR services

**2,000**

Facilities to be inspected per year, per company

**Ave. 1,500**

**30k-40k**

Facilities to be inspected annually

METHANE EMISSIONS LEADERSHIP ALLIANCE  
TECHNOLOGY. PARTNERSHIPS. INNOVATION.



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