# Managing Fugitive Methane Emissions in Inactive Oil and Gas Wells:

## Policy Diffusion Opportunities in Canada's Petrol Provinces

Caelin Palmer | Supervisor: Dr. Laurel Besco | SSM1100

Institute for Management & Innovation
UNIVERSITY OF TORONTO
MISSISSAUGA

MScSM
Master of Science in Sustainability Management UofT

Recent policy developments have been directed toward reducing methane emissions in active oil and gas infrastructure across Canada. However, regulations in the largest petrol-producing provinces—British Columbia, Alberta, and Saskatchewan—often exempt inactive facilities. Past studies have shown that fugitive emissions from inactive wells are largely underestimated and under-regulated; policy diffusion is a mechanism by which policymakers can close these gaps.

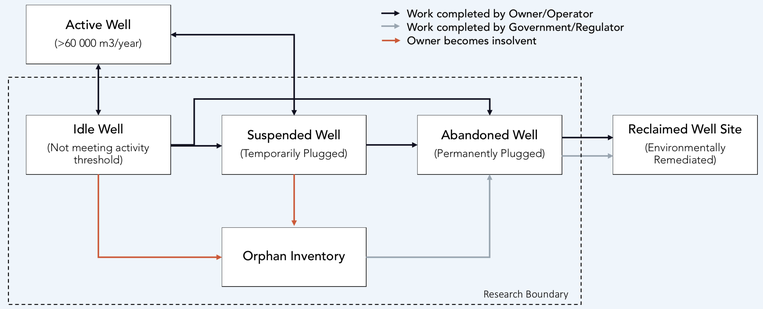



Figure 1. Process flow diagram of a well lifecycle

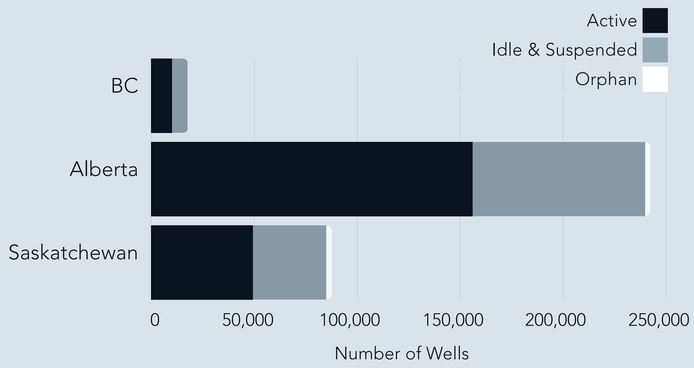
**Research Question: To what extent do regulations in BC, Alberta, and Saskatchewan address fugitive methane emissions in inactive oil and gas wells?** *Sub Question: Which method(s) of policy diffusion could help close identified gaps?*

## Background

- Methane makes up 13% of Canada's GHG emissions, 40% of which comes from the oil and gas sector[1]
- The national GHG inventory underestimated annual methane emissions from abandoned wells by 150%[2]
- Federal regulations targeting methane release in the upstream oil and gas sector apply only to facilities producing or receiving more than 60,000 $m^3$ of oil or gas annually

### Current Snapshot

38% of reported wells in Western Canada are currently inactive.




- Emission factors from past studies have broadly ranged from 0.002 g/h to 29.17 g/h for inactive wells[2,3]
- There are approximately 130,000 inactive, suspended, and orphan wells currently listed in provincial reports
- Based on these findings, annual emissions in Western Canada could amount to up to 846,057 t $CO_2e$

## Methods

The policy analysis compared current regulations in each province to best practices using two metrics:

**Decommissioning Timelines (Fig. 1)**

- Period a well can remain idle
- Period a well can remain suspended
- Mechanisms in place to identify priority wells

**Leak Detection and Repair (LDAR)**

- Required monitoring frequency
- Repair Requirements/Thresholds
- New technology allowances in LDAR.

To identify policy adoption routes to close regulatory gaps, four mechanisms of diffusion were considered: ***competition, learning, construction,*** and ***coercion***[4].

## Findings & Conclusion

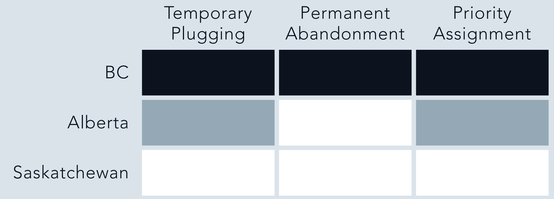
- Alberta and Saskatchewan can—through policy learning—look to BC and neighbouring states for more stringent decommissioning timeline regulations.
- Policy construction is a common method of diffusion evidenced by cross-jurisdictional groups such as the Interstate Oil and Gas Compact Commission[5].
- LDAR requirements can be imposed coercively through *CEPA*. Canada's proposed new regulatory framework will expand current requirements to non-producing assets[6]; the provinces will likely enter equivalency agreements.
- Further studies are required to quantify emissions from unreported assets and assess current compliance within the industry.

## Analysis

Best Practices
Needs Improvement/In Progress
Severely Lacking/Absent

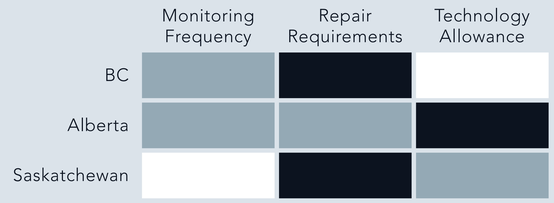
### Decommissioning Timelines

Regulations for decommissioning timelines increase in stringency from East to West: Saskatchewan and Alberta allow indefinite suspension for inactive wells; BC is aligned with best practices




### Leak Detection and Repair

LDAR best practices include three screenings per year. BC and Alberta require pressure tests every 1-5 years for suspended wells; Saskatchewan has no inactive monitoring requirements.




## References

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