



Powering Progress: Alberta's Roadmap to Renewables

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Table of Contents

01

Background

What's the Context?

02

Key Considerations

What are the risks and opportunities?
Justifying the role of government

03

Policy Options

What are our options?

04


Risks and Mitigation





Issue Statement

The government of Canada has recently announced its net-zero commitment by 2050. How can Alberta's Ministry of Energy equitably shift the province toward a cleaner, renewable energy grid?



01

Background: Why is this an issue?

- Average temperature in Canada rising at twice the global average, up to three times in the North
- Number of extreme weather events in Canada between 2010 and 2019 tripled that of the 1980s
 - Losses per disaster rose from \$8.3 million in 1970 to \$112 million in 2010s
- In 2021, the oil and gas extraction industry represented 51.2% of Alberta's total emissions

01

Background: What's the issue in Alberta?

- False / Underreporting from large GHG emitters on their total emissions
 - GHG from bitumen mining are 65% higher than industry claims from self-reporting
 - Excess of 31Mt in annual GHG emissions from Athabasca oilsands
- Current TIER system has stand-alone pricing for large emitters, allowing for measurement against past performance rather than the industry benchmark
- Alberta's emissions reduction plans all center around Carbon Capture, Utilization, and Storage (CCUS) technologies, placing other renewables on the back burner

Federal and Provincial Responses

Federal Government

- Adoption of net-zero commitment by 2050
- 2023: \$175 million investment in Albertan clean energy projects
- 2024: Estimated \$5.5 billion in investment tax credit for CCUS projects
- Stringent carbon pricing system

Government of Alberta

- Clean Energy Improvement Program (CEIP) launched in 2019
- 30% of electricity production through renewables by 2030
- \$1.8 billion committed to CCUS projects

02

Key Considerations: CCUS

CCUS Strengths



Federal government offering up to 50% of cost for capital expenditure on new CCUS operations

Ideal geological formation

Reduce emissions while continuing oil production

Fastest route to emissions reduction in Alberta

All credible pathways to net-zero by 2050 require CCUS



CCUS Limitations

High cost: \$60-\$150 per ton captured

Energy intensive: 30-50% of fossil fuel energy

Relative energy inefficiency: Maximum 21.3:1 to build and operate vs. 30:1 to build new renewables

Limited storage capacity

Path dependency

Regulatory uncertainty

02

Justifying the Role of Government

Risks of Climate Action



- Increased government spending
- Jurisdictional Complications with Intergovernmental Negotiation
- Potential backlash from GHG emitting industries
- Distortion of short term economy



Risks of Inaction

- Rising threat and cost of climate disasters
- Path dependency on GHG-emitting fuel sources
- Rising emissions due to lack of market accountability
- International backlash for a failure to meet climate commitments

03

Policy Options

Option 01

Continue to Invest Heavily in CCUS

- Legitimate carbon reduction technology
- Federal incentive through Investment Tax Credit
- Current plans all focus primarily on reduction vs. renewables

Option 02

Decrease Oil and Gas Subsidies & Incentivize Industry shift to Renewables

- Reallocate 2024 funds for CCUS projects toward renewables projects
- TIER funds & tax credits redirected toward building infrastructure for grid

Option 03

Focus Primarily on a Net-zero Grid for Consumers

- Alberta considers alternative fuel sources to natural gas (currently 60% of energy grid)
- Increase TIER carbon price for industry to alleviate high costs

03

Decision Criteria

	Speed for Reduction	Sustainability	High Financial Cost	Energy Cost
Option 1	✓	✗	✓	✗
Option 2	✓	✗	✓	✓
Option 3	✗	✓	✓	✓

03

Recommended: Option 3

Increase / Add



Increase TIER carbon price on GHG emissions for industry to above current benchmark of \$15/tonne annually.

- Generate greater revenues to re-invest in renewable energy grid while further pushing oil and gas industries to reduce their pollution

Install a third party organization which audits GHG emissions from the largest industry emitters, such as the Oil and Gas producers



Decrease / Eliminate

Eliminate current CCUS funding, reallocating the money toward the transition of the energy grid

- Reduce the role of government in providing money for technologies which industry themselves should be spending their profits on

Eliminate facility-specific benchmarks, subjecting all facilities to the high performance benchmarks

KPIs & Outcomes

1-2 Years

Establishment of third party organization.

- Expected increase in the accuracy of GHG reporting, leading to increased carbon payments

3+ Years

Eliminate facility-specific benchmarking

- Expected increase in carbon payments
- Decrease in GHG emissions

3+ Years

Implement a higher price floor for carbon for industry

- Expected decrease in GHG emissions as price is a strong market signal

1-5 Years

Reallocate current CCUS funding

- Expected significant infrastructure construction & transition of CCUS responsibility toward industry
- Increased employment from infrastructure building
- Decreased carbon costs for consumers as the grid becomes cleaner

04

RISKS and MITIGATION

PUBLIC PERCEPTION

Policy may be controversial among the public



MESSAGING

Diversifying Alberta's economy is popular

Taxing industry, not families

COST SHOCKS

TIER carbon price increase may bring difficult adjustment



PHASED IMPLEMENTATION

Allowing industry to adjust and invest into cleaner technologies

ENERGY POVERTY

Short-term energy prices may increase for low-income households



EFFICIENCY PROGRAMS

Provision of energy efficient appliances



THANKS + Q&A

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Appendix 1: TIER System Fact Sheet

- TIER stands for Technology Innovation Emissions Reduction. TIER is Alberta's industrial carbon pricing and emissions trading system
- TIER applies to all facilities emitting 100,000+ tonnes of GHG
- The current benchmarking facility works as follows:
 - Facilities may benchmark based on their historical production-weighted average emissions intensity
 - There is also a high performance benchmark, representing the average emissions intensity of the top 10% of facilities producing emissions
- The government sets an annual tightening rate for the benchmark of specific industries. In 2029 and 2030, the oil and gas industry will observe a 4% tightening rate.

Appendix 2: CCUS Energy Usage

- Assuming a typically-missed target capture ratio of 90% (6-56% is typical), with a very high capacity factor of 85% (50-60% is typical), CCUS returns energy invested by 21.3 to 1.
- Renewables generation and storage capacity projects can return energy invested in new construction by 30 to 1, under realistic storage arrangements.

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