Agriculture’s Role in Alberta’s Specified Gas Emitters Regulation
Alberta

- 17% of Canadian GDP
- 33% Canadian Greenhouse Gas Emissions
  - 88% from energy sector
  - 7% from agriculture

- Agriculture effects/effected by climate change
How Carbon Offsets Work

- **Regulated Sector**
  - Forced to reduce emissions

- **Unregulated Sector**
  - Receive credits for reducing emissions
  - Action must be *real*, *quantifiable*, *verifiable*
    - additionality
  - Sell offsets to regulated sector
Specified Gas Emitters Regulation

- Introduced in Alberta in 2007
- Applies to firms emitting over 100 000 tCO2e annually

These Firms Must (one of the following):
1. reduce their emissions by 12% annually
2. pay into a "climate change and emissions management fund"
3. purchase carbon offsets through the Alberta offset program
Alberta’s Current Climate Plan

- Business-as-usual emissions
- Conservation + efficiency
- Carbon capture + storage
- Remaining emissions
- Greening energy production

Year:
- 2010
- 2020
- 2030
- 2040
- 2050

Mt CO₂e/Year:
- 0
- 20
- 50
- 100
- 200
- 300
- 400
Agriculture’s Role in SGER

- No-Till Agriculture
  - Increases carbon sequestration in soil
  - Can meet 10% of Canada’s Kyoto required reductions
- Improved manure management
- Improved energy efficiency
- Unregulated → earn offsets to sell
Benefits

- Reduces emissions (more efficiently)
- Financial aid to Farmers
- Co-benefits to farmers
- Promotion of superior methane management systems
Anaerobic Digesters: Profit vs Herd Size

![Graph showing the relationship between profit and herd size.](image-url)
Costs

- Financial Costs to Regulated Sector
- Financial Cost to Energy Consumer
- Costs to farmers trying to earn offsets
  - Reduced profits due to no-till
  - Transaction costs
- Poor Use of a Public Good
- Capture and storage
  - Range from $75–$230/Ton
Problems

- Adverse Selection
- Moral Hazard
- Soils Carbon Sequestration Limit
  - Redistribution, not sequestration
- Inefficient monetary incentives
- Imperfect additionality
- Lack of agricultural participation
## Pembina Institute Rating of SGER

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Specified Gas Emitters Regulation</th>
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<tbody>
<tr>
<td>Effectiveness — near term</td>
<td></td>
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<tr>
<td>Effectiveness — longer term</td>
<td>−−−</td>
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<tr>
<td>Economic efficiency</td>
<td>+</td>
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<tr>
<td>Good use of public resources</td>
<td>−−−</td>
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<tr>
<td>Good design</td>
<td>o</td>
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<td>Accountability and adaptiveness</td>
<td>−</td>
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</tbody>
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**Note:** Rating system:

- + + + very good
- + + good
- + average
- + poor
- + + average
- + + poor
- + + very poor

- - - very poor
Solutions

- Transition from partial to full carbon tax
  - Every ton emitted taxed, not only 10% above regulation
  - Amount to $1.5 billion in tax revenue

- Increase Carbon Price Ceiling
  - Promote free market powers

- Anaerobic digesters (methane management)
  - Reduces emissions in two phases?
Economic costs
- Powerful energy sector
- Abundance of small scale farms

Cost of Capturing CO2: $75–$230/Ton
- Cost of emitting: $15/Ton

Uncertainty of price of offsets
Recommendation

- Remove Carbon Price Ceiling
  - Allow free market to prevail