

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

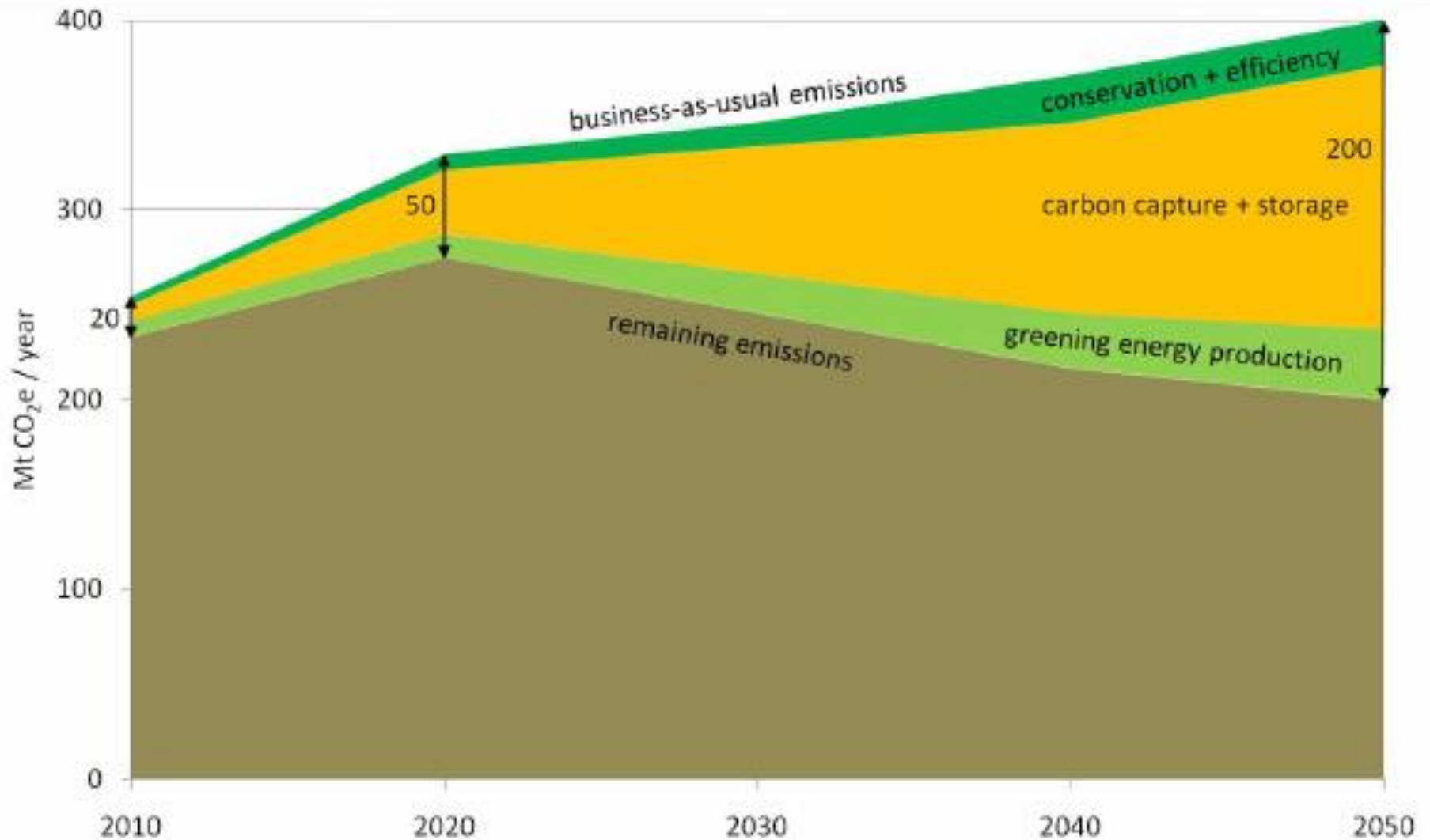
Specified Gas Emitters Regulation

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

These Firms Must (one of the following):

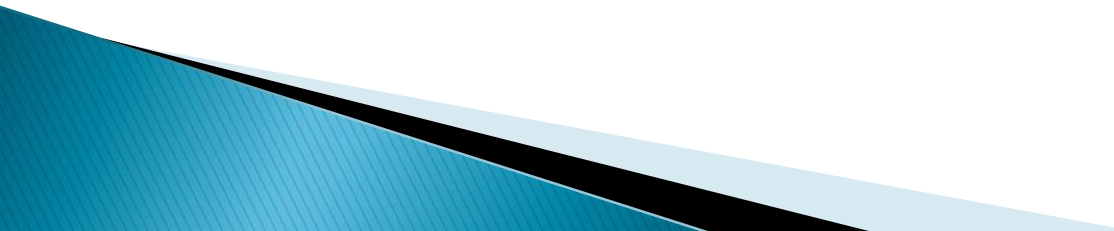
1. reduce their emissions by 12% annually
2. pay into a "climate change and emissions management fund"
3. purchase carbon offsets through the Alberta offset program

Alberta's Current Climate Plan

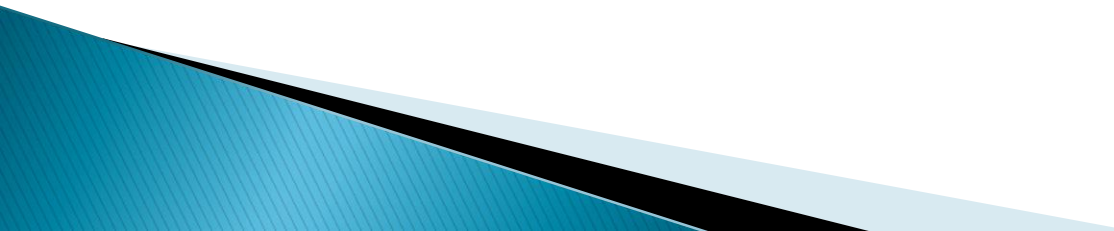


Agriculture's Role in SGER

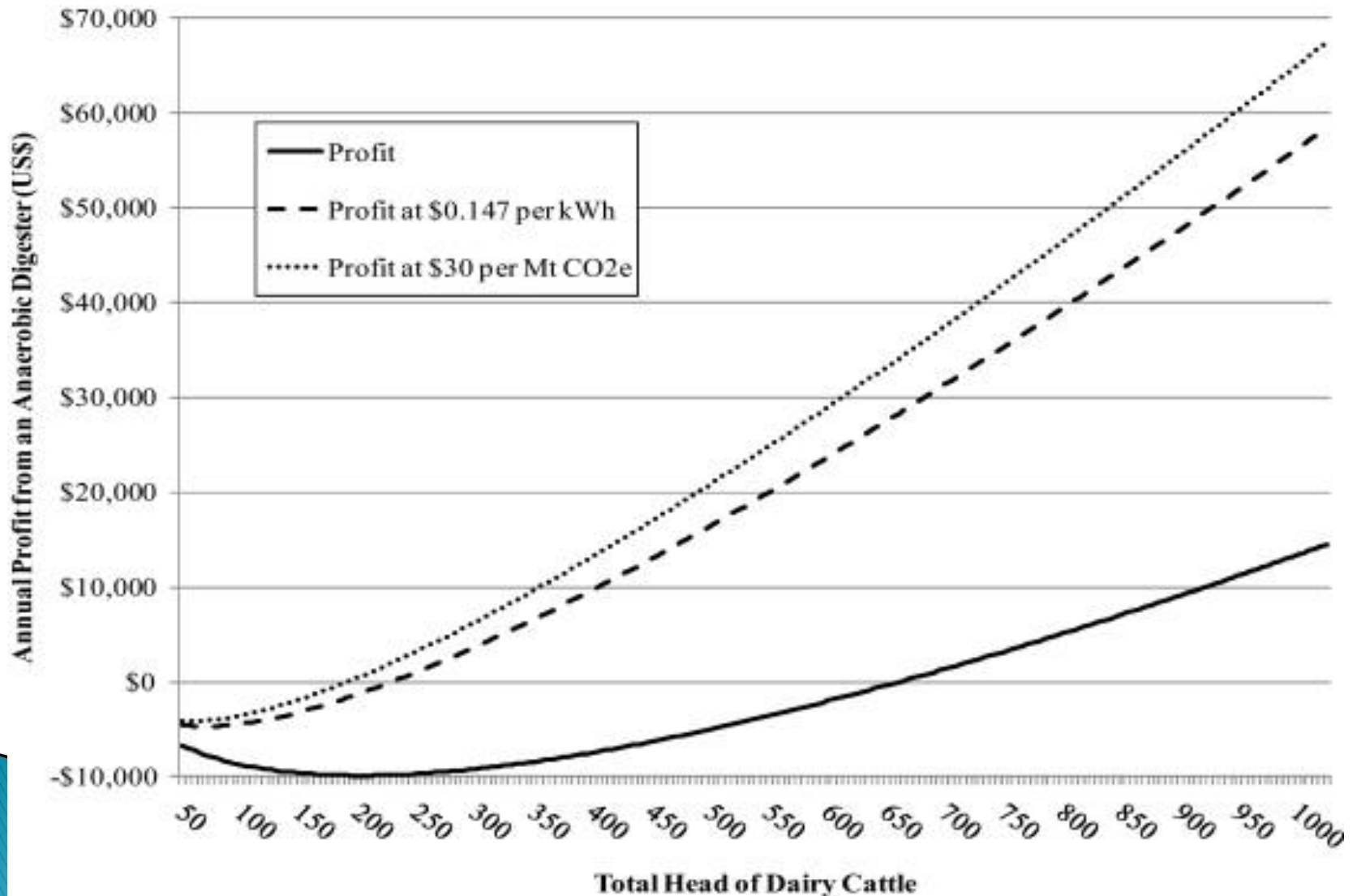
- ▶ No-Till Agriculture
 - Increases carbon sequestration in soil
 - Can meet 10% of Canada's Kyoto required reductions
 - ▶ Improved manure management
 - ▶ Improved energy efficiency

 - ▶ Unregulated → earn offsets to sell
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Benefits

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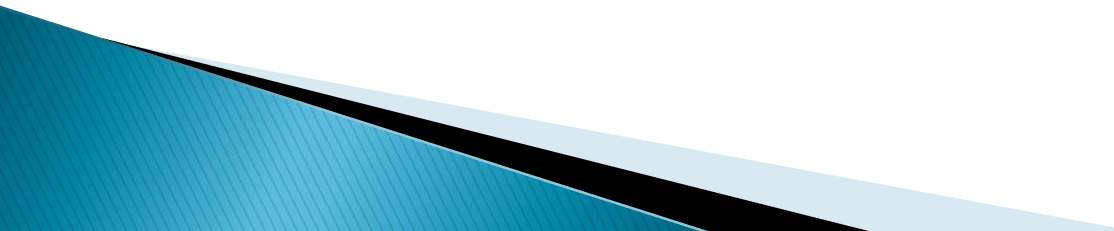
Anaerobic Digesters: Profit vs Herd Size



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
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Pembina Institute Rating of SGER

Criteria	Specified Gas Emitters Regulation
Effectiveness — near term	-
Effectiveness — longer term	--
Economic efficiency	+
Good use of public resources	--
Good design	o
Accountability and adaptiveness	-

Note: Rating system:

++ very good

+ good

o average

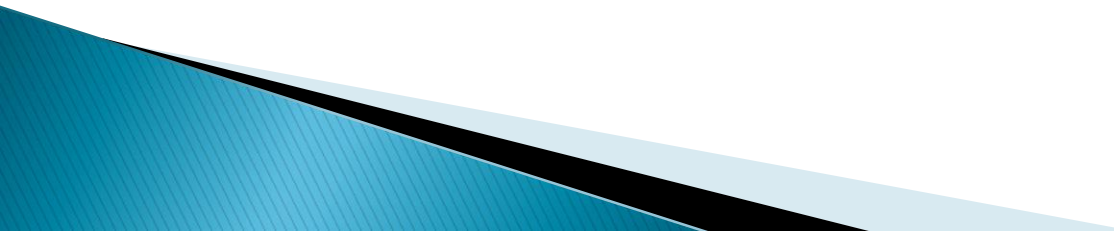
- poor

-- 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?

Barriers

- ▶ 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
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Recommendation

- ▶ Remove Carbon Price Ceiling
 - Allow free market to prevail