

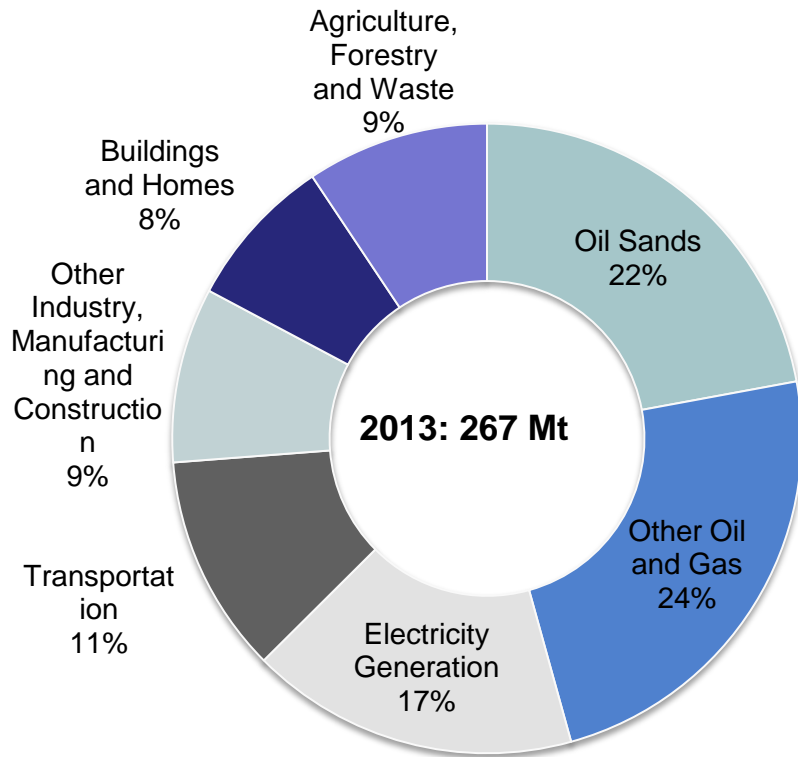
# Alberta Greenhouse Gas Regulations

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# Alberta Greenhouse Gas Profile



- Large facilities covered by Specified Gas Emitters Regulation (45%)
- Renewable fuel standard impacts transportation
- Offsets and funding programs for other sectors

# Actions to Date

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- Energy Efficiency and Conservation
  - incentive programs (residential, commercial, agricultural)
  - Municipal Climate Change Action Centre
  - GreenTRIP - \$2 billion towards public transit
  - *Regulation – Specified Gas Emitters Regulation*
- Carbon Capture and Storage
  - \$1.24 billion for two large-scale CCS projects, 2.76 Mt per year reduction by 2017
  - Regulatory Framework Assessment and offset protocol complete
- Greening Energy Production
  - Provincial generating capacity
    - Hydro, Wind, Solar and Biomass – 15 per cent (70% increase since 1998)
  - Bioenergy Producer Credit Program
    - \$440 million over 5 years will support 30 bioenergy facilities until March 2016
- Renewable Fuels Standard Regulation, Micro-generation Regulation, etc.

# Climate Change Act and Regulations

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## Climate Change and Emissions Management Act (2003)

Regulations	Issued
Specified Gas Reporting Regulation	2004
Specified Gas Emitters Regulation	2007
Administrative Penalty Regulation	2007
Climate Change and Emissions Management Fund Administration Regulation	2009
Renewable Fuels Standard Regulation	2010

# Regulatory Approach to Manage Emissions

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## Climate Change and Emissions Management Act (2003)

### Specified Gas Emitters Regulation (2007)

- regulating large industry ( $\geq 100,000$  t CO<sub>2</sub>e per year, over 100 sites)
- existing facilities required to immediately reduce per unit GHG output
  - currently 12% reduction stringency
  - 2016 increases to 15% stringency and 2017 increases to 20% stringency
- new facilities ramped up from operating years 4 to 9 to full stringency requirements
- Compliance flexibility
  - reduce emissions at facility
  - use emission performance credits
  - purchase serialized Albert-based carbon offset credits
  - pay into the Climate Change and Emissions Management Fund (dedicated fund defined in legislation)
    - currently \$15/tonne
    - 2016 increases to \$20/tonne and 2017 increases to \$30/tonne

# Alberta Carbon Offset System

## Primarily Alberta-based

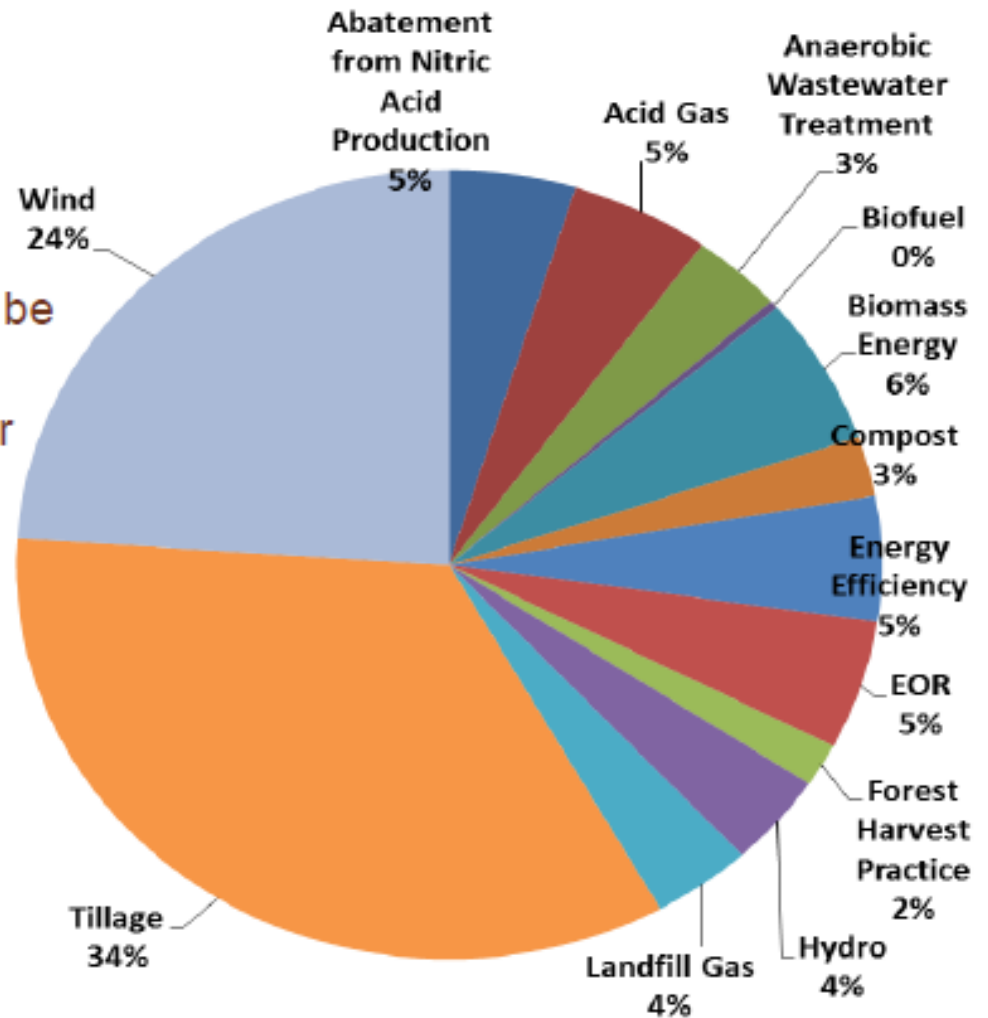
- credits must originate in Alberta to be used for Alberta's regulatory requirements
- can be sold outside Alberta (but must be retired from system)
- may be retired in or outside Alberta for voluntary systems

## Foundation of quantification

- 32 approved protocols
- ISO-based verification by third parties
- guidance on protocol development, project reporting and verification

## Since 2007

- 24.3 Mt of offsets retired
- 35 Mt registered



# Regulatory Compliance Results 2007-2014

- 61 Mt of emissions avoided (from BAU)
- \$578 million paid into the Climate Change and Emissions Management Fund

Compliance Cycle	Total Avoided Emissions		Fund Payment
	At Facility Reductions and Cogen	Offset Credits	
2007 (half year)	2.88 Mt	0.88 Mt	\$41.3 Million
2008	3.93 Mt	2.68 Mt	\$85.4 Million
2009	3.55 Mt	3.74 Mt	\$61.3 Million
2010	3.57 Mt	3.85 Mt	\$67.4 Million
2011	5.57 Mt	5.40 Mt	\$55.0 Million
2012	4.61 Mt	3.20 Mt	\$87.7 Million
2013	4.62 Mt	2.04 Mt	\$98.6 Million
2014	8.12 Mt	2.55 Mt	\$83.4 Million
<b>Total</b>	<b>36.85 Mt</b>	<b>24.34 Mt</b>	<b>\$577.9 Million</b>

# 2014 compliance results

	Facility Count	% of regulated emissions	tonnes owed/ tonnes emitted	Emissions Performance Credits Submitted (kt)	Funds Credits Purchased (kt)	Offset Credits Submitted (kt)	Reductions at facility (kt)	Recognition of Cogeneration (kt)
Chemical	10	6%	1%	74	91	158	419	172
Coal Mines	4	0%	13%	-	39	38	(1)	-
Fertilizer	5	3%	5%	36	269	0	(24)	107
Other*	10	6%	-7%	-	55	-	135	613
Gas Plant	29	4%	3%	176	313	105	557	55
In Situ	17	21%	-5%	464	237	486	3,414	932
Oil Sands	5	23%	3%	466	1,327	177	711	1,225
Pipeline	4	3%	21%	-	808	-	(381)	-
Refining	4	3%	3%	108	43	-	345	-
Power Plant - Coal	7	30%	12%	82	2,282	2,506	73	-
Power Plant - Gas	8	1%	7%	-	82	22	44	-
Total	103	100%	4%	1,405	5,545	2,534	5,292	3,104

\*other includes metals, minerals, forest products, and waste



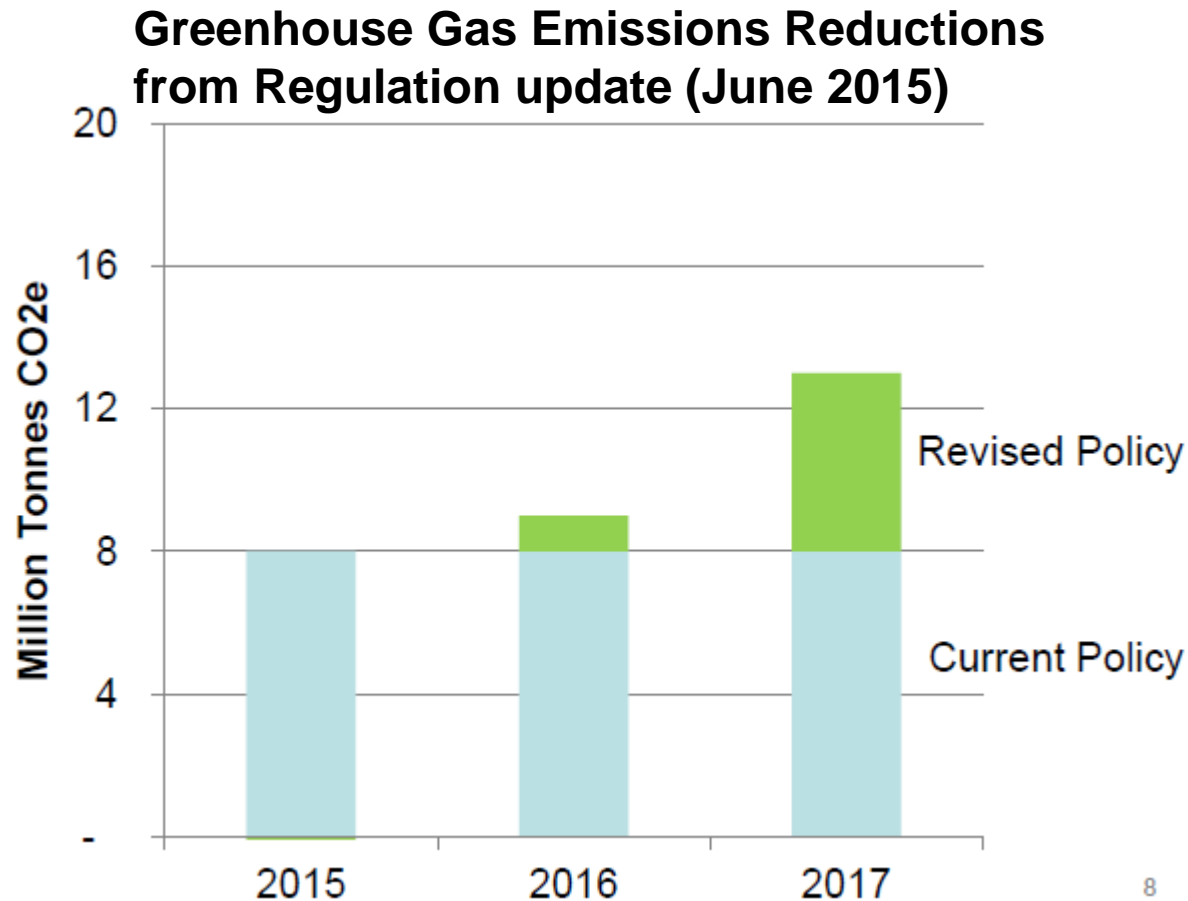
# Climate Change and Emissions Management Fund

- Legislation requires dedication of funds collected
  - reducing emissions or
  - improving Alberta's ability to adapt to climate change
- Climate Change and Emissions Management Corporation established to lead investment in innovation and technology
  - \$350 million invested
  - leveraged with other sources of funding to a \$1.6 B
  - funds can be (and are being) invested outside Alberta
- Alberta further investing
  - \$1.3B in two large scale carbon capture and storage projects
  - \$2B in GreenTRIP



# Regulation and Ministerial Order Amendments

Compliance Year	Stringency	Price
2015	12%	\$15 /tonne
2016	15%	\$20 /tonne
2017	20%	\$30 /tonne



# Other Amendments to the Regulation

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- **Amendments:**

- Extended the expiry date to December 2017.
- Strengthens enforceability by incorporating standards.
  - Guidance is established for facility baselines, facility compliance reporting, offset project development, and facility and offset verification.
- Established additional requirements for offset projects and offset project developers to improve compliance with carbon offset system.
- Made administrative improvements (outdated references, definitions, etc.).

# Administrative Penalty Regulation

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- ***Intent:*** Provides the authority to issue a penalty for compliance breaches as set out in the Specified Gas Emitters Regulation and Specified Gas Reporting Regulation.
- **•Amendments:**
  - Extended the expiry date to December 2017.
  - Expanded coverage to include offences related to non-compliance with standards incorporated in the Specified Gas Emitters Regulation amendments.
  - Increased penalty amounts to maintain the relevance of penalty amounts relative to the increased carbon price.

# Program Details

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- <http://aep.alberta.ca/climate-change/guidelines-legislation/default.aspx>

## Offset and Emissions Performance Registries

- <http://www.csaregistries.ca/albertacarbonregistries/home.cfm>

# Climate Leadership Plan highlights

# Climate Change Advisory Panel report released Nov 22, 2015

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4 key areas that the Alberta government is moving forward on:

- Phasing out coal-generated electricity and developing more renewable energy
  - Coal power emissions phase out by 2030
  - 30% of generation from renewables by 2030
- Implementing a new carbon price on greenhouse gas pollution
  - Extends price to all combustion
  - Industrial emitters transition to performance standard
- A legislated oilsands emission limit
  - 100 Mt CO<sub>2</sub>e limit, with provision for cogen emissions and new upgrading
- Employing a new methane emission reduction plan to reduce oil and gas methane emissions by 45% by 2025.

# Questions

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<http://alberta.ca/climate/index.cfm>

<http://esrd.alberta.ca/climate-change/default.aspx>