

# Alberta Offset System

## Background

There is an increasing concern about high levels of greenhouse gases (GHGs) in the atmosphere. The main GHGs consist of carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O), the higher global warming potentials of CH<sub>4</sub> and N<sub>2</sub>O (see sidebar) are usually converted to carbon dioxide equivalents (CO<sub>2</sub>e) for representing a common unit for all GHGs.

Gas	Global Warming Potential
CO <sub>2</sub>	1
CH <sub>4</sub>	21
N <sub>2</sub> O	310

Alberta is the first jurisdiction in North America to have regulations in place to reduce GHG emissions. As of July 1, 2007, Alberta's [Climate Change and Emissions Management Amendment Act](#) requires facilities that emit more than 100,000 tonnes (T) of CO<sub>2</sub>e per year, to reduce their emission intensity by 12% annually. Large final emitters have three options to meet this target reduction:

1. Go beyond their 12% reduction target, earning Performance Credits they may choose to sell;
2. Contribute \$15/tonne to the Climate Change and Emissions Management Fund, earning a 'Fund Credit' against their compliance;
3. Purchase carbon offsets or credits from Project Developers in the Alberta Offset market.

An offset must originate from a voluntary action in a non-regulated sector or operation. Additional criteria include:

- result from actions taken on or after January 1, 2002;
- be real, demonstrable and quantifiable;
- not be required by law;
- have clearly established ownership;
- be counted once for compliance purposes;
- be verified by a qualified third party; and,
- have occurred in Alberta.

These are minimum criteria. It is important to note that meeting these criteria does not guarantee that an offset will be eligible for compliance use. To ensure that Projects meet the above criteria, a number of quantification protocols have been developed by the Government of Alberta. Some agricultural management systems such as reduced tillage management will qualify as carbon offset projects in Alberta, and are identified through these quantification protocols ([www.carbonoffsetsolutions.ca](http://www.carbonoffsetsolutions.ca); Offset protocols tab). The protocols are based on the best scientific knowledge available and written using the ISO 14064-2 standard.

## Alberta Approved Quantification Protocols

Acid Gas Injection	Landfill Bioreactor
Afforestation/Agro-Forestry	Landfill Gas
Beef Feeding (Edible Oils)	Modal Freight Shift
Beef Feeding (Reducing Days-On-Feed)	Pork Operations
Beef Lifecycle (Reducing Slaughter Age)	Road Rehabilitation
Biofuel	Run-of-the-River Electricity System
Biogas/Anaerobic digestion	Solar Electricity Systems
Biomass Combustion	Tillage (Reduced/No Till)
Compost (Non-Ag materials)	Waste Heat Recovery (Multiple Entity)
Energy Efficiency (Pork, Dairy, Poultry)	Waste Heat Recovery (Single Entity)
Enhanced Oil Recovery	Wind Powered Electricity Systems
Enhanced Oil Recovery (Streamlined)	



## Climate Change Central

Edmonton 1560, 10303 Jasper Avenue Edmonton, AB T5J 3X6 Office: (780) 408-4580 Toll Free : 1 (866) 609-2700 <a href="http://www.climatechangecentral.com">www.climatechangecentral.com</a>	Calgary 100,999-8th St.SW Calgary, AB T2R 1J5 Office: (403) 517-2700
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[www.agric.gov.ab.ca](http://www.agric.gov.ab.ca)

### Additional Protocols In Draft/Review

Solar Thermal  
Low Impact, Water-Powered Electrical Energy Gen.  
Green Building Projects (Residential)  
Intermodal Switching  
Waste Non-incineration

### Protocols Under Consideration

Nitrogen Use Efficiency  
Wetlands Management  
Reducing Summerfallow  
Conversion to Perennial Forages  
Residue Management  
Native Grass/Rangeland Management  
Beef (Residual Feed Intake Genetic Markers)  
Pasture Management  
Pulse Crops  
Lagoons

To qualify for compliance in the Alberta Offset Market, the carbon offsets created by a project developer must be real, measurable and verified by a third party. There are four key steps to offset creation. Understanding these steps will lead to an understanding of the Alberta Offset System (see [www.carbonoffsetsolutions.ca](http://www.carbonoffsetsolutions.ca) ).

1. **Offset Project Plan** – describes the project, including referencing the Alberta government approved quantification protocol for measurement of offsets. A third party verifier will use this information to verify against. A Buyer will likely want to see this Plan before they engage.
2. **Project Implementation** – While underway, it is important for the project developer to follow proposed monitoring plans and implement a data management system. Both buyers and verifiers will need this information.
3. **Project Reporting** – a detailed project report should outline the activities of the project, any changes from the initial project plan, methods and calculations for greenhouse gas emission reductions/removals, time period for the report, and any associated documentation and signatures. Central to reporting is the GHG assertion, where the developer makes a claim to a certain number of potential offsets. Verification will be done against this Project Report and the Project Plan, resulting in a Verification Statement.
4. **Offset Submission** – once the Project Report and Verification Statement are complete, the GHG Assertion, Project Report and Verification Statement are interlinked and cannot be separated. They are submitted together to Alberta Environment along with the regulated emitter's Compliance Report. Government will recognize these verified emission reductions for compliance purposes. Random audits of Compliance Reports will occur periodically and if issues with particular emission offsets arise, then the Government will be asking for clarification/resolution from the regulated entities.

NOTE: In Alberta, offset credits will not be issued by the government. Rather, regulated entities can submit verified offsets and related reports with their annual compliance report under the Specified Gas Emitters Regulation.

For greater detail on the Alberta Offset system please review the [Alberta Offsets Guidance Document](#) and the [Alberta Verification Guidance Document](#).

### Additional Resource Information:

Carbon Offset Solutions: [www.carbonoffsetsolutions.ca/index.html](http://www.carbonoffsetsolutions.ca/index.html)

Climate Change Central: [www.climatechangecentral.com/](http://www.climatechangecentral.com/)

Alberta Environment – Climate Change: [www.environment.alberta.ca/1319.html](http://www.environment.alberta.ca/1319.html)

Alberta Agriculture – Climate Change: [www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/cl11618](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/cl11618)



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