



STATUS OF AGRICULTURAL PROTOCOLS

APPROVED PROTOCOLS (YEAR)

- Reducing Emissions from Fed Cattle (2016)
- Nitrous Oxide Emission Reductions (2015)
- Biofuel Production and Usage (2014)
- Waste Biomass (2014)
- Solar and Wind Micro-Generation (Distributed Renewable Energy Generation) (2013)
- Conservation Cropping (2012)
- Beef Low Residual Feed Intake (2012)
- Beef Reduced Age at Harvest (2011)
- Dairy Cattle (2010)
- Wind Powered Electricity (2008)
- Biogas (Anaerobic Decomposition of Agricultural Materials) (2007)
- Energy Efficiency (2007)

FARMERS HELPING TO LOWER CARBON FOOTPRINTS

Alberta's agricultural emission offsets are already making an important difference for agriculture, for Alberta and for the next generation.

Since 2002, close to 13 million tonnes of CO₂e have been voluntarily removed from the atmosphere in Alberta by improving agricultural management. This compares to removing about two and a half million cars from the road. These emission offsets are estimated to have generated about \$170 million for farmers and aggregators.

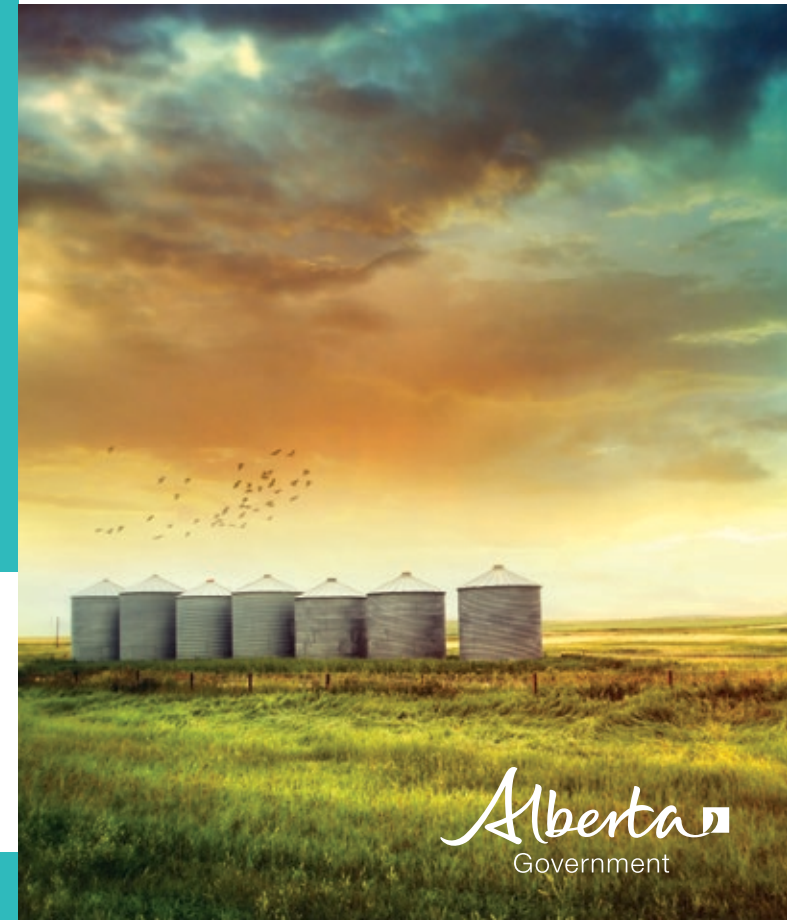
Emission offsets to date were created primarily from reduced tillage management, and by generating biogas energy from the digestion of cattle manure. Good progress has been made from on-farm pilot studies to identify records needed to show improved fertilizer management and beef feeding practices for use in other approved protocols.

FOR MORE INFORMATION

WWW.AGRICULTURE.ALBERTA.CA/AGCARBONOFFSETS
OR CALL THE AG-INFO CENTRE, TOLL-FREE IN ALBERTA
310-FARM (3276)

AGRICULTURAL CARBON OFFSETS

OPPORTUNITIES FOR FARMERS IN ALBERTA'S CARBON MARKET



OPPORTUNITIES

By voluntarily adopting an agricultural practice improvement to create carbon credits for trade in Alberta's carbon market, you can earn extra income and realize long-term benefits to your farm operation.

BENEFITS include:

Gaining experience with green markets and the records needed to access them

Getting paid to improve agricultural management and record keeping

Improving efficiencies

Increasing sustainability

Reducing your carbon footprint

Contributing to the positive reputation of Alberta's agricultural industry

IMPROVEMENTS TO AGRICULTURAL PRACTICES CAN REDUCE AND/OR REMOVE AND/OR REPLACE GREENHOUSE GAS EMISSIONS.

CARBON MARKET BASICS

The carbon market is part of Alberta's pioneering strategy to reduce greenhouse gas emissions. Since 2007, large industrial facilities have been regulated to reduce their greenhouse gas emission intensities. Regulated companies can meet their requirements by buying carbon offset credits from others who voluntarily lower emissions.

OFFSET CREDITS USING THE CONSERVATION CROPPING PROTOCOL ARE BASED ON PRACTICES THAT INCREASE CARBON STORAGE IN SOILS AND LOWER EMISSIONS FROM FUELS AND FERTILIZERS.

The offset credits must be Alberta-made. Management improvements to lower emissions must be:

Based on sound science

Above and beyond "business as usual"

Verifiable by an independent third party

Amounts of offset credits are based on approved protocols. Verifiable records are needed to demonstrate that the improvement did occur.

AGRICULTURAL CARBON OFFSETS

The price for offsets in Alberta's carbon market depends on how much buyers are willing to pay.

An alternative option for regulated companies is to pay per tonne of carbon dioxide equivalent (t CO₂e) reduction required into a fund dedicated to innovations that reduce greenhouse gas emissions. Prices are scheduled to increase as listed in Table 1. Offsets provide lower priced options to meet regulated requirements.

Table 1. Carbon prices for regulated companies choosing to pay into the fund.

Year	Cost/t CO ₂ e
2015	\$15
2016	\$20
2017	\$30

Agricultural emissions represent only 8% of Alberta's total emissions and are not large per field or animal. Offsets accumulate over large areas, large livestock numbers, time, or when a number of improvements are combined in one agricultural operation.

Several Alberta companies are in the business of aggregating agricultural credits and can help with contracts, records and the verification needed for regulation quality carbon offsets.