CARBON CREDIT TRADING

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PRAIRIE POLICY CENTRE
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NEWSLETTER

Carbon Credits: What does it all mean?

World activity in carbon trading has become a powerful force in reducing greenhouse gas emissions. 12.6 per cent of global CO2 reductions resulted from lowering emission levels of new projects in China.

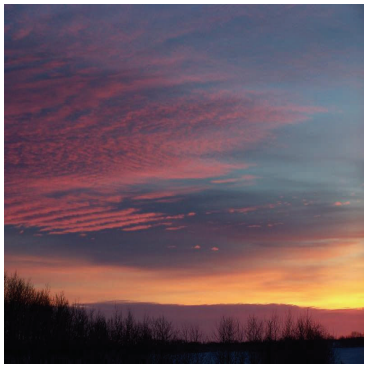
To place that in perspective, Chinese reductions over nine months equal the total annual emissions from generating electricity in Canada (130 megatonnes), and almost equal to the annual emissions from transportation (145 megatonnes).

The World Bank has reported that worldwide trading of carbon credits was valued at $21.5 billion during the first nine months of 2006, more than double the value for all of 2005.

The market suffers from volatility and will require some reforms, but is showing promise of achieving its goal of using financial incentives to curb emissions.

What are carbon credits and how do they work?

A 'carbon credit', sometimes referred to as an **offset**, is a permit to emit a specified amount of greenhouse gases, usually expressed in metric tonnes of **carbon dioxide equivalent (CO2e)**. 'Carbon credits' are named after the most prominent greenhouse gas, carbon dioxide, but can represent others such as methane and nitrous oxide.



Carbon dioxide equivalent (CO2e)

CO2e compares the global warming potential of various greenhouse gases. For example, the contribution of methane to global warming is rated as 21 over 100 years.

This means that an emission of one metric tonne of methane is equal to emissions of 21 tonnes of carbon dioxide.

Credits can be allocated by a government as part of a plan that sets a limit on the total amount of CO2 emitted in that jurisdiction, a **cap-and-trade** system. Companies are awarded a number of permits, and must emit only as much greenhouse gas (GHG) for which they have permits.

Carbon credits can be earned through projects that reduce emissions, or by companies that cut their own emissions and thereby free up credits they possess for trading.

Carbon markets exist where companies purchase and sell credits.

The **'Cap-and-Trade'** approach uses free market principles to achieve a reduction in emissions of a particular greenhouse gas.

A government or regulatory body sets a limit on the total amount of emissions that are allowed, and issues or auctions permits (carbon credits) for that amount.

Companies or organizations covered by the cap must only emit according to the permits they possess.

If companies exceed their allowable limits of emissions, they must obtain credits from other companies that have surplus credits, or by investing in projects that **offset** their emissions

(**Offset Projects**). Thus, emissions are 'capped', and emitters can 'trade' credits until their emissions match the amount of permits they possess.

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What does carbon trading accomplish?

Although it can be argued that purchasing carbon offsets amounts to "buying one's way out," it is clear that companies can never eliminate 100% of their emissions.

Purchasing carbon credits offer the opportunity for companies to better manage their climate impact.

Also, creating an emissions inventory, which is a necessary first step in determining how many offsets need to be purchased, is an important first step for many companies that can lead to emission reductions later.

Currently, the European Union possesses the only legally mandated carbon trading system, the **EU Emissions Trading Scheme**, which works as a cap-and-trade system.

Other jurisdictions have made legislation in preparation for future carbon trading markets, including California and a group of seven Northeast U.S. states.

Carbon trading that does not take place under Kyoto Protocol mechanisms is based on voluntary schemes.

What is happening in the United States?

The Chicago Climate Exchange (CCE), established in 2003, is North America's only, and the world's first greenhouse gas emissions registry, reduction and trading system for GHG's.

Members make voluntary but legally binding commitments to reduce emissions. Options to reduce those emissions include purchasing emissions offsets from landdfill and agricultural methane; sequestration in soils, and forest biomass.

The 50 member companies purchasing carbon credits through CCE include names such as Manitoba Hydro, DuPont, Ford Motor Company, IBM.

Carbon sequestration is a way of reducing emissions. It occurs when carbon dioxide in the atmosphere is trapped in a **sink**. A **Sink** is any natural reservoir that stores carbon.

The most commonly thought-of sinks are forests and vegetation. The world's oceans are also large sinks.

The Kyoto Protocol allows for carbon credits to be earned for sequestration projects, such as the planting of trees or farming practices that reduce impact on the environment.

The key issue is that the projects must represent an actual reduction of emissions compared to 'business as usual'.

Farmers can practice no-till, direct seeding cultivation that increases the amount of carbon in the soil.

There is no national or common emissions trading scheme in the United States. Several states are developing trading schemes, creating a potential patchwork of conflicting regulations.

What is needed is a national trading system linking American and European markets and beyond.

What is happening in Canada?

Canada has no federally approved carbon credit market.

With the new Clean Air Act announced in November 2006, the Government of Canada has agreed to set industrial targets for greenhouse gas reductions by 2010 and 2015.

This will move industry from voluntary compliance to legally enforceable regulations.

The government will permit the establishment of emissions trading programs but will not be purchasers of emissions credits or otherwise participate in the emissions trading market.

The Montreal Climate Exchange has been established and is waiting for federal decision regarding CO2 reduction requirements.

Canadian companies and individuals wanting to participate in an emissions offset program must use the Chicago Exchange.

Should a trading system be established within the United States, it opens up the possibility for integration with a Canadian system. With the level of trade between the two countries, it makes a lot of sense.

Carbon credit trading is a potential opportunity for prairie farmers to be paid for their environmentally friendly farming practices.

Why should GHG reduction matter to crop growers?

- Cultivated agricultural land makes up two-thirds of Canada's land base
- About 10 per cent of Canada's total emissions come from agriculture - mostly in methane from animal production, and nitrous oxide and methane from manure management and fertilizer use.

How does GHG reduction translate to farming operations?

- Significant potential for cultivated lands to absorb more carbon.
- Makes economic sense to use land management practices that increase the amount of carbon in agricultural soils. (sequestration)
- low- or no-tillage direct-seeding cultivation;
- reducing summer fallow;
- rotating crops;
- converting marginal cropland to perennial grassland or forest;
- managing nutrients and irrigation efficiently & effectively;
- rotational grazing;
- applying manure, compost and other organic amendments according to nutrient management plans; and
- shelter belt plantings

What are the benefits of changing farming operations to increase carbon in the soil?

- improves water and nutrient retention,
- reduces soil erosion,
- improves long-term soil quality and
- can increase yields.

Why should carbon credit trading matter to farmers?

- With a carbon trading permit system, farming practices that increase soil carbon could generate additional income in the form of carbon credits.
- no-till seeding is estimated to store about 1.22 tonnes of carbon dioxide per hectare each year. These stored tonnes represent potential credits that could be sold to large GHG emitters

What about livestock producers?

Farmers in the livestock sector can also participate in GHG reduction with methane capture and combustion from manure storage systems.

Eligible collection systems include covered lagoon, complete-mix; and plug-flow anaerobic digesters. Credits are issued on the basis of metric tons of methane destroyed; net of CO2 released with combustion.

Burning the methane for either electricity or heat generation is currently the only practice that would make a Canadian hog producer eligible for trading carbon credits on the CCX.

The Canadian Pork Council is a good contact for information.

What is it worth to farmers?

The currency at the Chicago Climate Exchange (CCX) is a Carbon Financial Instrument contract (CFI). Once CFI contract is equal to 100 metric tonnes of CO2. (one tonne of carbon = 3.667 tonnes of CO2 equivalent gas) as of November 2006.

Rules, Risks & Options

Risks:

- Government policy uncertainty regarding emissions caps and carbon credit trading
  - Will emissions become regulated?
  - Will agricultural land be regulated? If yes, will agricultural offsets be greater than emissions?
  - Will it be a national program tied to other world markets?
- Will carbon credits created in previous years be "banked" to offset future emissions
- Will producers be penalized for reverting to conventional farming practices which release stored soil carbon into the atmosphere?
- Who owns potential carbon credits: the owner of the land, the producer working the land, or even the government?
- Sequestration does not last forever, and may only be sustainable for 6-7 years, how does this affect carbon credit value to farmer?

Mitigating risk:

To minimize agricultural producer risks:
deal with aggregators

- an aggregator trades carbon credits (and assumes risks) on behalf of a large group of producers
- aggregators can generate a large block of credits, reducing the risk of liability for producers.

Aggregators

- All CCX eligible carbon sequestration projects that produce less than 12,500 tonnes of CO2 equivalent per year must be registered through an aggregator.
- Currently there is only one Canadian company registered to trade carbon credits at the Chicago Climate Exchange.
- Farmers make application with the aggregator for a specific contract timeframe and pay the aggregator a 10% service fee.
- Farmers must have practiced, and continue to practice, conservation tillage for a specified time to earn carbon credits
- Farmers must produce crop production statistics; fuel consumption records and equipment use; fertilizer consumption records for acreages in application
- The value of a particular farmer's carbon sequestered hectares is dependent on crop soil zone.
  - More carbon is held in black soil than in brown or dark brown.
- Once carbon credits are accepted, they are part of the company's pool which is offered on the market at spot price.
- The aggregator makes an agreement with each producer and then a single agreement to a seller.
- Proof of compliance is through membership in the Saskatchewan Crop Insurance Corp. or by contracting with SCIS to verify seeded hectares in Saskatchewan, and with Manitoba Agricultural Services Corp.
- One tonne of carbon = 3.667 tonnes of CO2e gas
- Buyers require minimum carbon credits of at least 10,000 tonnes of carbon (equal to about 75,000 acres)

Completed aggregator program in Saskatchewan

- C-Green Aggregators is registered to trade carbon credits and can be contacted at:

1560 – 2002 Victoria Ave.
Regina, SK S4P 0R7
306-790-1782
c-greenaggregators@hotmail.com

- 2200 Saskatchewan producers representing 5.1 million acres of minimum till farmland between 2004 – 2006.
- Credits have been trading at $4.30 US per tonne.
- Payment is 80% at final sale, with a 20% holdback pending spot audits.

Aggregator program planned

C-Green is currently contracting for 2006 – 2010 in Saskatchewan and Manitoba

What about Alberta?

At the time of writing, there was not yet an aggregator program in Alberta.

Negotiations are underway to establish a process for verifying acreage compliance.

For more information on the program, and their progress in Alberta, contact C-Green Aggregators in Regina.

Producers should seek legal council prior to signing any agreements

If you have any further questions, contact
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