CARBON CREDITS OPPORTUNITY PROFILE

SouthGrow Regional Initiative

Creating Opportunities...

We Are...

City of Lethbridge
Town of Cardston
Town of Claresholm
Town of Coaldale
Town of Coalhurst
Town of Magrath
Town of Milk River
Town of Picture Butte
Town of Raymond
Town of Taber
Town of Vauxhall
Town of Vulcan
Village of Barons
Village of Carmangay
Village of Coutts
Village of Champion
Village of Milo
Village of Nobleford
Village of Stirling
Village of Warner
Cardston County
County of Lethbridge
MD of Taber
Vulcan County
County of Warner
Blood Tribe

There is no doubt that human activities have been linked to increased levels of greenhouse gases in the atmosphere. This has resulted in shifts in temperature, precipitation and weather patterns. There are two ways to reduce the build-up of greenhouse gases:

- Cut back emissions at the source.
- Pull carbon molecules out of the atmosphere and store them in soils and plants (sequestration).

The Potential

The Kyoto Protocol aimed at slowing human-caused climate change by requiring industrial countries to decrease their greenhouse gas (GHG) emissions. Canada agreed to reduce its GHG emissions by six percent below 1990 levels. In order to reach the six percent target by 2008, we need to reduce emissions by about 30 percent. In order to reduce emissions, Alberta is implementing its climate change plan, which includes emissions trading.

Emissions trading is a balancing or offset system that enables firms who have excess credits to sell them to those firms that use above the limits established. That is, emission limits are placed on certain sectors of the economy and certain companies. Firms can meet these limits by reducing emissions themselves or by purchasing emission reduction credits from others. An emission credit represents the amount of GHGs not sent to the atmosphere or the amount of carbon removed. By allowing the credit trading, the same level of reduction can happen without significantly increasing costs to the economy.

An Overview

Carbon is projected to be traded like any other agricultural commodity. Through the "Carbon Credit" or "Offset System", individuals, businesses and organizations will be able to earn offset credits when they implement projects resulting in emission reductions or removals beyond what they would have done under normal business activities (i.e. business as usual). Once created, verified offset credits can be sold to the Canadian Climate Fund, to Large Final Emitters (LFEs) i.e. sectors that contribute significantly to GHG emissions, and potentially to other domestic buyers.

There are two types of credits, permanent and temporary:

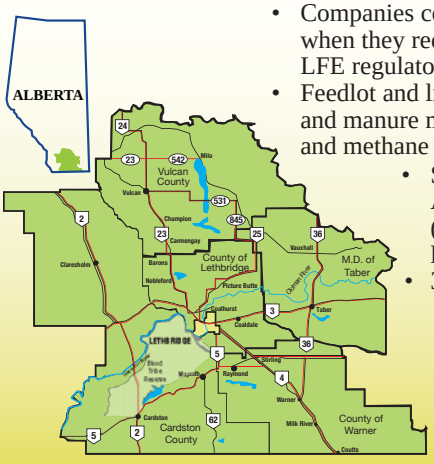
- Permanent – Liability rests with the seller, and there could be a liability period from 10 to 30 years. These will command the best price. However, credits would have to be guaranteed for the liability period. At the individual farm or feedlot level, this becomes impractical and risky, as there could be leakage, change in farming practices, changes in herd sizes and other changes.

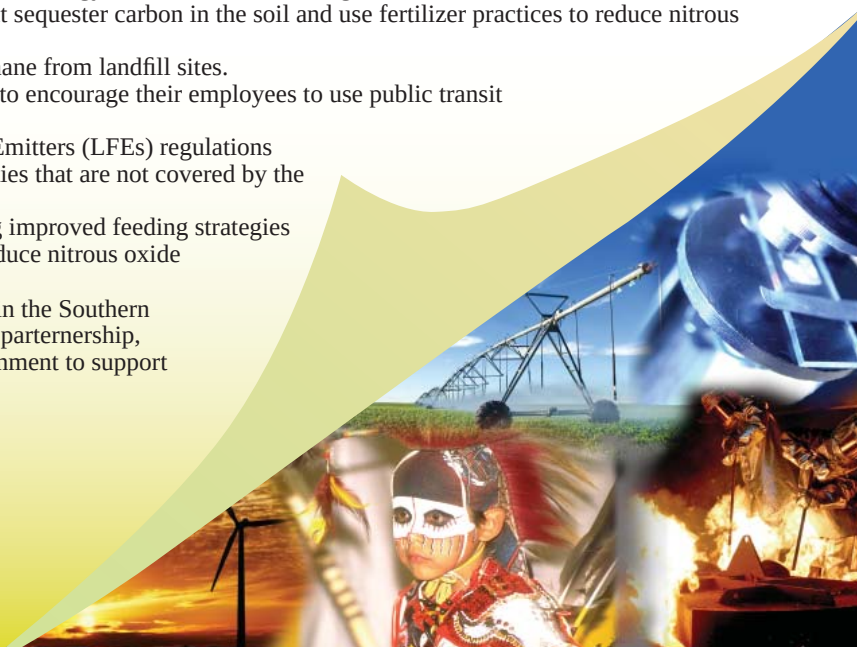
- Temporary – Liability rests with the seller and therefore these will command a lower price than the permanent credit. The price can be as low as 15% of that of a permanent credit. The liability period for the temporary credit could be in the order of 5 years.

The Opportunity

A substantial amount of carbon credits can be accumulated/generated in the SouthGrow Region, principally by farmers, feedlots and local governments. Potential offset projects in the region might include:

- Property developers that include renewable energy elements when building new sub-divisions.
- Farmers who adopt low-till practices that sequester carbon in the soil and use fertilizer practices to reduce nitrous oxide emissions.
- Municipalities that capture and use methane from landfill sites.
- Organizations that implement programs to encourage their employees to use public transit or telework.
- Companies covered by the Large Final Emitters (LFEs) regulations when they reduce emissions from activities that are not covered by the LFE regulatory requirements.
- Feedlot and livestock operators adopting improved feeding strategies and manure management practices to reduce nitrous oxide and methane emissions.
- SouthGrow's participation in the Southern Alberta Alternative Energy parternership, (SAAEP) creates an environment to support local usage and initiatives.
- 3C's on-farm audit





Fast Facts:

Emissions trading is a balancing or offset system that enables firms who have excess credits to sell them to those firms that use above the limits established.

A substantial amount of carbon credits can be accumulated/generated in the SouthGrow Region, principally by farmers, feedlots and local governments.

One carbon credit equals one tonne of carbon dioxide per year. In terms of emissions, one tonne of methane is equivalent to 21 tonnes of carbon dioxide; and one tonne of nitrous oxide (primarily emissions from fertilizers and manure) is equivalent to 310 tonnes of carbon dioxide.

Sector Supports:

The following are organizations and agencies that can provide support for those wishing to seize the opportunity:

Climate Change Central
climatechangecentral.com

Natural Resources Canada
www.nrcan.gc.ca

Environment Canada
www.ec.gc.ca/climate/home-e.html

Greenhouse Gas Measurement
www.greenhousegasmeasurment.com/Home/

Southern Alberta Alternative Energy Partnership
www.saaep.ca

Who Are The Players?

There are 6,300 farm units in the region. In terms of developing carbon credits in the SouthGrow region, options for these farmers and livestock operators, local governments and other organizations are as follows:

- Do it individually.
- Establish various pools to achieve quantities of interest to aggregators (middlemen who trade carbon credits and resell or trade them to LFEs or the Canadian Climate Fund).
- Establish a co-op.

For an individual farmer/livestock operator, project administration, evaluation, initiation and proposal costs are likely to amount to thousands of dollars. In addition, there will be verification costs by a third party. These costs can be substantially reduced on a per unit basis with a pooling or co-op arrangement. Temporary credit prices may not be sufficient to defray costs, and the liability incurred with permanent credits may be too onerous and risky for an individual operator.

The SouthGrowN Advantage

The potential for carbon credit in the SouthGrow region is great. In 2001, there were approximately 2.2 million acres in crop and summerfallow in the four counties/MD, not including some 638,000 acres which were already no-tillage before seeding. This no-tillage acreage may be eligible for carbon credits depending upon when the practice commenced, but is not included in the carbon sequestration potential presented below. There were an estimated 1.25 million domesticated animals, excluding poultry. There were 3,200 crop farms and 3,100 animal farms with some double counting of farms with both crops and animals, or several types of animals.

It is estimated that approximately 0.25 tonnes/hectare/year of carbon dioxide can be sequestered in the soil (soil sink) by changing farm management practices related to no-tillage and summerfallowing. For livestock, the amount of methane emitted varies with the types of animal, and also varies between pasture, feedlot and barn/confined.

Based on the potential for 0.25 tonnes/hectare/year and data in the 2001 Agriculture Census for the Counties of Lethbridge, Vulcan and Warner and the MD of Taber, a preliminary estimate of SouthGrow carbon dioxide equivalent annual emissions are as follows:

Farm Land Emissions	220,350 tonnes
Livestock Emissions	1,042,975 tonnes
TOTAL Emissions	1,263,325 tonnes

The extent to which these emissions can be reduced varies. For illustrative purposes, it is assumed that all farms in the region change their "business as usual'' management practices to no-till and that the 22,350 tonnes can be sequestered. In terms of livestock, it is assumed that feeding strategies and changes in pasture management (including no-till forage and rotational grazing) will result in a 15% reduction.

This results in assumed reductions of approximately 376,800 tonnes of carbon dioxide equivalent per year. At a permanent credit price of $10 - $15 per tonne, the permanent credit value is estimated at $3,768,000 to $5,652,000. At a temporary credit price of $1.50 to $2.25 per tonne, the temporary credit value is estimated at $565,200 to $847,800. In addition to these, one can assume that carbon credit action will also be taken with regard to fertilizer application, manure management and landfill management.

Potential for Carbon Credit Co-op

A co-op would have the greatest potential in the region, and would be the best vehicle for minimizing risk to individual members. With a large number of members, the following advantages can be realized:

- Risk Reduction - By spreading the risk, all credits can be permanent credits. Any leakage or reversal could be offset with new credits coming on stream, or by buying the leakage or reversal equivalent number as temporary credits on the open market.
- Lower Costs - Per unit administrative and transaction costs could be greatly reduced. Some estimates suggest that transaction costs per tonne could be as much as 35 times lower in a co-op arrangement as compared to costs for an individual operator. Verification costs might be reduced because of market size and power of a co-op.
- Elimination of Aggregators - Small individual operators that would be uneconomic on their own could join and participate in the benefits. Co-ops would eliminate aggregators and the mark-up taken by aggregators.
- Improved Net Returns - Financial returns to members would be better than for an individual operator. Size will be key to the market place. There may be higher prices for carbon credits.

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