

hot topic

Carbon offsets



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Individuals, organizations, and events seek to become **carbon neutral** by buying carbon offset credits to compensate for the carbon dioxide (CO₂) they emit. They buy these credits through a Carbon Exchange or by funding special offset projects.

How does a **carbon offset** work?

Carbon offset projects reduce atmospheric greenhouse gas (GHG) by

- preventing GHG emissions
- carbon sequestration - taking CO₂ out of the atmosphere

To be effective, carbon offset projects must ensure all of the following:

Results that are measurable & verifiable

Standardized methods and protocols must be used.

“Leakage” does not occur

Emissions must not be transferred elsewhere (e.g. preventing fuelwood harvesting within a park boundary may contribute to enhanced fuelwood harvesting outside the park boundary).

Additionality

The offset project must only be financially feasible with funds from the sale of offset credits. This ensures that the offset funds are supporting additional emissions reductions compared to business-as-usual.

Permanence

The emissions must be kept out of the atmosphere for a reasonable length of time. For example, CO₂ is locked within a tree as the tree grows, but once the tree is burnt or starts to decay, CO₂ is emitted back into the atmosphere.

Given these challenges, perhaps resources would be better spent reducing CO₂ emissions in the first place.

Offset Providers

To help Canadians assess the quality of carbon offsets, the David Suzuki Foundation and Pembina Institute have prepared a guide available online:

www.davidsuzuki.org/Publications/offset_vendors.asp



Carbon offsets

Carbon offset projects reduce atmospheric greenhouse gas (GHG) by **preventing GHG emissions** or by **carbon sequestration**

Preventing GHG Emissions

Offset projects can achieve GHG reductions by implementing more efficient technology and/or applying cleaner alternatives, e.g. replacing a coal-fired electrical plant with wind power.

Carbon Sequestration

Carbon sequestration involves trapping or removing GHG from the atmosphere. Carbon may be sequestered geologically or biologically.

Geological Sequestration

- **Physical** - trapping CO₂ within a cavity in the rock underground.
- **Chemical** - trapping CO₂ by chemically binding it to another substance in the ground.

Geological Sequestration in Manitoba

One pilot project is under way by Tundra Oil & Gas to sequester 25 tonnes of CO₂ per day in the Sinclair oil field using CO₂ carried by truck from Koch Fertilizer in Brandon.

Biological / terrestrial Sequestration

- GHG removal from the atmosphere by plants and micro-organisms and storage in vegetative biomass (biological) and in soils (terrestrial).

Biological Sequestration in Manitoba

One way Manitobans can sequester carbon biologically is by planting trees. The Manitoba Forestry Association (MFA) offers tree seedlings along with planting assistance. The MFA also has a Carbon Offset Program for large events: http://www.thinktrees.org/Carbon_Offset_Program.aspx

Compared to geological sequestration, biological sequestration offers several advantages:

- Potential to sequester relatively large volumes of carbon at comparatively low cost
- Protection or improvement of soils, water resources, habitat, and biodiversity
- Peneration of rural income and promotion of sustainable agriculture and forestry practices

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