Carbon Markets and Credits – The Basics

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To demystify carbon credits and markets and help you navigate this new national topic, we've put together a series of three articles on the subject. Find out whether it's better for your farm to keep its own carbon credit certificates or sell them and turn them into a new source of profit.

What unit is used?

The unit used to determine the amount of credits on the market is the CO_2 equivalent (CO_2-eq), which is the same unit used for a Greenhouse Gas (GHG) emissions evaluation sheet. The CO_2-eq is the official unit used to compare and calculate the various GHGs: carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O). This equation also takes into account their climate-affecting power (Figure 1). In carbon markets, calculated quantities of GHGs expressed in CO_2-eq are traded, after

applying a market price at the time of the transaction.

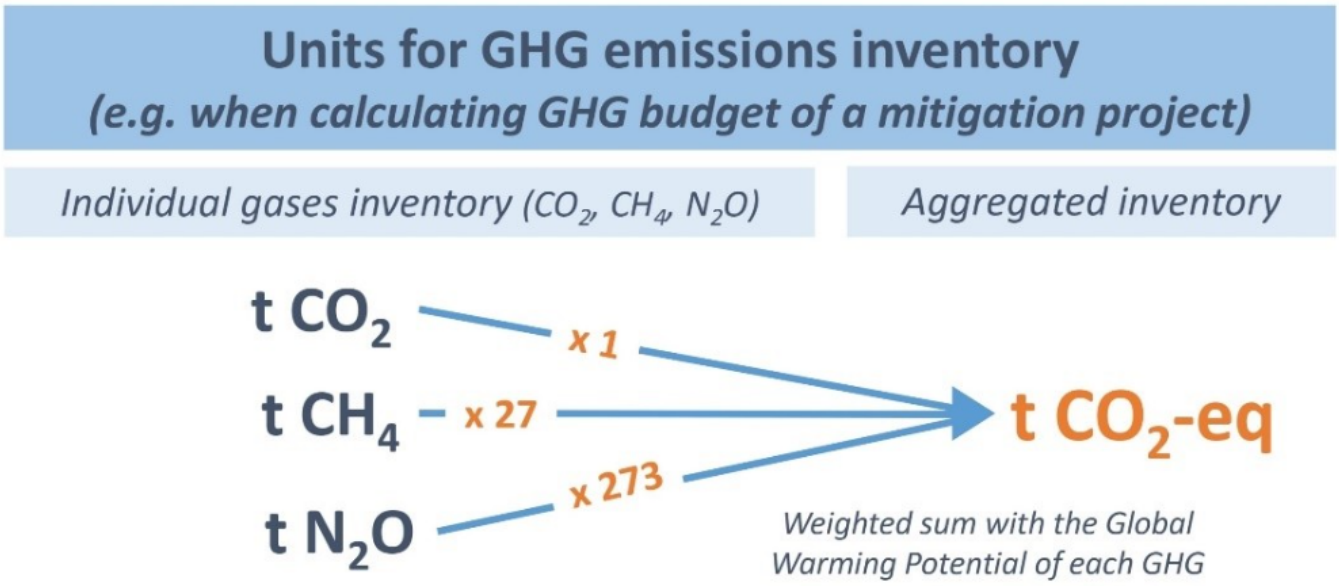


Figure 1. Calculation of tonnes of CO_2-eq for various GHGs

Why and how were carbon markets created?

The basic principle behind carbon markets is to enable Entity A (which may be a company, a municipality, an individual or an association seeking to offset its residual GHG emissions) to purchase certificates representing a reduction in a quantity of GHGs by another Entity B (a dairy farm, for example). For these certificates to exist, Entity B must first have implemented mitigation projects to reduce its GHG emissions or enhance GHG sinks, either between two points in time or relative to a reference scenario. These mitigated GHG quantities must then be certified so that they can be sold on the market. A carbon market is therefore the exchange for buying and selling GHG certificates, also known as “carbon credits” (Figure 2).

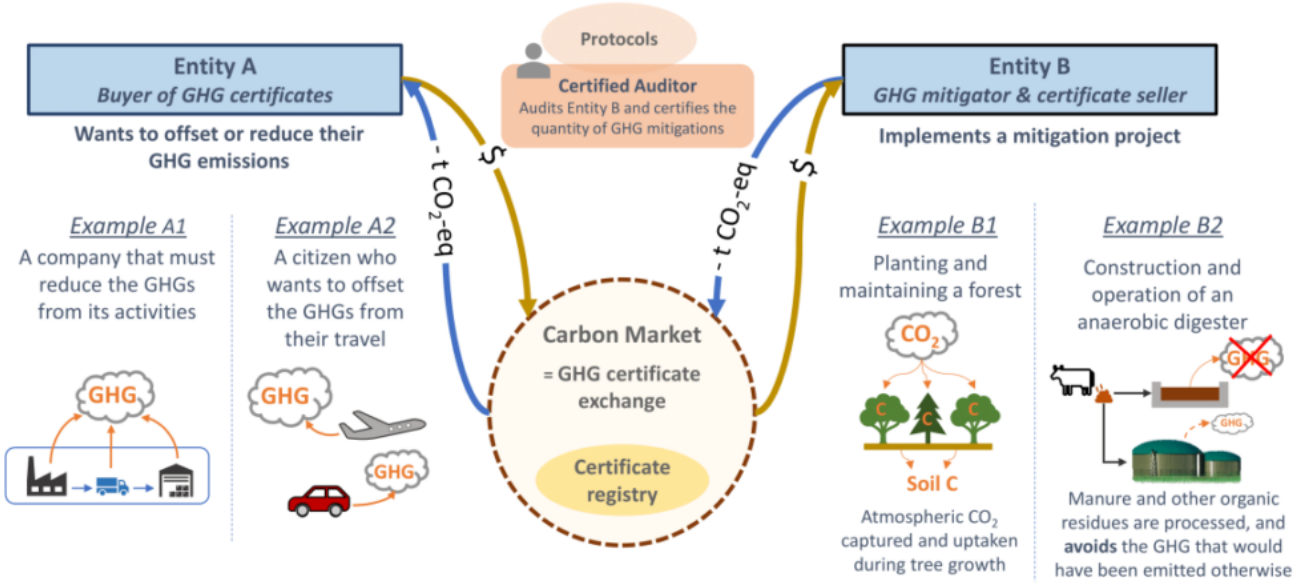


Figure 2: Basic principle of a carbon market and examples of GHG certificates trading ("carbon credits").

The certification aspect is very important for several reasons: the reductions achieved by Entity B must first be certified by an accredited body. The accredited body ensures that they are real and have been calculated correctly according to precise, independently-approved approved protocols (e.g. specific to anaerobic digestion or afforestation, to take examples B1 and B2 from Figure 2). A certificate registry then ensures that each certificate is unique, and tracks transactions between A and B so that a carbon credit is claimed only once. Thus, as soon as B puts a certificate up for sale, it can no longer claim the credits in its own GHG balance sheet, and as soon as A has bought it, the certificate disappears from the market and only it can claim the GHG credit in its environmental balance sheet.

Voluntary and regulated markets

A bit like the stock market, there are several carbon markets, such as regulated and voluntary markets.

A regulatory market is governed by a government. In Quebec, there is the SPEDE, and at the federal level in Canada we have the STFR[1] .Their

aim is to reduce emissions in their jurisdiction by targeting very large GHG emitters (e.g. cement plants, aluminum smelters, refineries), which the government first subjects to an annual GHG emission maximum (also referred to as a cap). Dairy farms and milk processing plants are not legally subjected to a cap. However regulatory markets (such as that of Quebec or the federal government) is open to voluntary offsetting, and any other entity can participate provided that the credits sold come from mitigation projects governed by protocols recognized by these governments, which is very restrictive[2].

Voluntary markets are therefore more relevant to the dairy sector. These markets are not supervised by governments (e.g. for the protocols, auditing, and the price of the CO_2-eq). Rather, it's much more deregulated, and the operation is unfortunately not always very well controlled[3]. The advantage is that many more projects are open to voluntary markets. They mainly enable organizations to reduce the GHG footprint of their activities. Many of these organizations, including all the major dairy processors, now include their GHG footprint in their annual reports in order to demonstrate their environmental commitment and responsibility to their customers and shareholders.

For the past ten years, these organizations have been committed to improving their balance sheets each year, extending them to include GHG emissions from the value chain[4], and setting short- and medium-term reduction targets. So, in addition to reducing the GHG emissions of their own operations and supporting their suppliers in reducing theirs, they resort to the purchase of offset credits to reduce their overall balance sheet. In some cases, the mitigations of these credits unfortunately have no physical connection with their field of activity, nor with the value chain of their products.

Stay tuned for the following article to learn more about integrated offsetting, a way of financing projects that are directly linked to an

organization’s value chain.

[1] SPEDE : Système de plafonnement et d’échange de droits d’émission de gaz à effet de serre (Quebec provincial government cap & trade system) STRF: federal performance-based pricing system (Government of Canada).

[2] To date, dairy farms in Quebec are eligible for three types of SPEDE projects: i) carbon sequestration through afforestation and reforestation on private land, ii) methane mitigation through slurry pit covering, and iii) biomethanization of slurry. There are none yet in the STRF.

[3] It should be noted that abuses and irregularities do exist (e.g., GHG mitigation that is not real or is only temporary, creation of indirect impacts on biodiversity, infringement of human rights).

[4] In other words, Scope 3 GHGs emitted along the value chain (e.g. GHGs from milk production purchased by dairy processors) are included in the balance sheet, in addition to the GHGs directly emitted by the organization (scope 1) and its electricity purchases (scope 2).

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By

