

Questions & Answers About Carbon Credit Trading

A program offered by
The Pennsylvania Farm Bureau &
The Global Emissions Exchange



Q. **Who is Global Emissions Exchange (GEX)?**

A. The GEX is the first and only Fractional Carbon™ emissions registration and trading platform. It is a web-based system designed to allow easy access to the carbon markets for both registering emissions reductions and emissions footprints. The GEX is headquartered in New Jersey with offices in Chester and Lancaster, PA. The GEX was designed to support carbon credit programs that work for local communities, both rural and urban.

Q. **How long has GEX been trading on the open market?**

A. Since carbon markets are very new, the GEX has been involved in trading since 2007.

Q. **Why is PFB partnering with GEX?**

A. Pennsylvania Farm Bureau (PFB) members adopted a policy position directing that a viable carbon credit trading program be developed for Pennsylvania agriculture. PFB found GEX to be the best suited company to provide the nature and extent of services that members requested.

Q. **To whom and how does GEX sell the credits that are registered on its exchange?**

A. Carbon credits are typically bundled into larger units (of 100 tons per unit). Carbon credits derived from agriculture are being sought by companies such as electrical utilities, transportation companies, agribusiness, industry, state and local government. Companies are interested in reducing their carbon footprint and have found purchasing carbon credits from agriculture to be a viable source of offsets.

Q. **What is Carbon Sequestration?**

A. Certain biological and industrial processes remove carbon dioxide (CO₂) from the atmosphere and store it into other chemical structures. The most obvious examples are plants that convert CO₂ and water into cellular material like stalks and wood. Certain conservation tillage techniques sequester CO₂ into the soil, and cover crops use photosynthesis to convert CO₂ and water into oxygen and vegetation.

Q. **What is a “Carbon Footprint”?**

A. Everyone emits some amount of CO₂. A carbon footprint is the measurement of the total amount of CO₂ and “CO₂ equivalent” emissions from a specific entity. It can be a company, a facility, a building or even a household. Emissions generally fall into three categories: 1) Direct emissions such as vehicle exhaust, boiler emissions, and power generator emissions, 2) Indirect emissions that result from using electricity generated by a power utility that is the “direct emitter,” 3) Consequential or “fugitive” emissions resulting from processes like curing cement or off-gasses chemical production or venting. A carbon audit attempts to identify all forms of emissions within the appropriate category. Even the process of breathing produces CO₂, although it is not taken into account in calculating a carbon footprint.

Q. **What is Carbon Trading?**

A. Carbon trading brings together entities that produce CO₂ and those that can reduce CO₂. Carbon trading simply allows those who can reduce emissions to trade their reductions with those who cannot reduce emissions. So, for example, farmers who use no-till reduce CO₂ in the atmosphere and can trade those reductions with a utility that emits CO₂ to generate electricity.

Q. **When did carbon credit trading begin?**

A. Carbon credit trading is relatively new, with less than five years in the marketplace. GEX has been trading for two years.

Q. **How much carbon is sequestered in an acre of land?**

A. For no-till cropland, .6 tons/acre is the recognized unit for most Pennsylvania farmland. Some counties in northeastern and northwestern PA contain soils that have not been tested for carbon sequestration. The counties are: Bradford, Crawford, Erie, Lawrence, Lackawanna, Luzerne, Mercer, Monroe, Pike, Sullivan, Susquehanna, Tioga, Wayne and Wyoming. Until this testing is done, those counties are not eligible for soil carbon sequestration credits.

Q. How are carbon credits measured?

A. Carbon credits are usually measured in metric tons. However, the GEX Fractional Carbon™ model goes down to a single pound and is able to aggregate small fractional units into tradable tonnage.

Q. What are the rules guiding carbon credit trading?

A. Currently, there is no single set of rules for the voluntary U.S. carbon market. There are guidelines and practices that govern activity in accordance with an emerging set of industry standard practices that include scientifically qualifying and quantifying carbon offsets to create a sound protocol, scientifically measuring or calculating carbon offsets based upon the protocol, verifying emissions reductions, and certifying transactions. There is a strong interest on the part of participants to maintain a high level of integrity and viability in the carbon market.

Q. How much money will I earn from the sale of carbon credits?

A. Income depends upon the amount and price of credits. A 100-acre farm registered for no-till will generate 60 tons of carbon. If sold at a price of \$3/ton, the gross value before fees would be \$180 per year. The market price for carbon credits changes regularly.

Q. Do I have to live in one of the pilot counties to participate in selling through PFB?

A. PFB and GEX agreed to introduce the program in eight pilot counties because a carbon credit trading program for agriculture is relatively new. Introduction of the program in a limited territory will enable both PFB and GEX to learn from early experience prepare for a successful statewide launch. Pilot counties were selected on the basis of several considerations including intensive use of no-till, past crop production and indication of interest in carbon credit trading. The pilot counties are: Armstrong, Beaver, Berks, Centre, Chester, Columbia, Franklin and Lycoming.

Q. When will the non-pilot counties be eligible to participate in carbon credit trading through PFB and GEX?

A. PFB and GEX plan to expand the carbon credit trading program to additional counties during 2009.

Q. What can a farmer sell to generate carbon credits?

A. Currently, the PFB/GEX Phase 1 program calculates carbon credits for no-till, conversion of cropland to grassland, and biodiesel usage. The rules for no-till appear on the GEX website at www-the-gex.com under the farm and forestry link. Extensive information on no-till is also available from the Pennsylvania No-Till Alliance. The PFB/GEX Program plans to add forestry practices for carbon credit trading later in 2009. In addition, carbon credits can be calculated for any farm-based renewable or alternative energy project or energy conservation action that has an established procedure.

Q. What is the time period between when I register my credits and when they can be sold?

A. Once you register your carbon credits, you can sell during the second year of the contract, as long as verification is complete. The first year of registration is used to “store” carbon in the soil. The second year is when the “stored” carbon is eligible for sale. Therefore, those who enroll their 2009 practices are eligible to sell their credits in the spring of 2010. Those who enroll 2008 no-till during the early spring of 2009 are eligible to sell credits later in the year.

Q. When can I register my carbon credits on-line via the web?

A. The web-based registration is now available. You can register at www.the-gex.com – click on the Farm & Forestry or PFB link and follow the steps.

Q. What is the length of the farmer’s commitment?

A. The minimum contract length is 3 years for continuous no-till. The agreements are renewable at the end of every three-year period. Five-year agreements are more common and preferable.

Q. When registering on the GEX webpage, does a farmer need to use any special numbers to identify his/her farm and farm tract?

A. Yes. When registering, farmers are asked to use the same farm identification numbers and tract numbers by county that are used when reporting to the USDA Farm Service Agency (FSA). For non-FSA participants we ask for their own, local farm name and directions from the nearest state road – to help locate the farm for verification. We also ask for latitude and longitude, or township-range-section, or GPS coordinates if that level of detail about the farm location is available.

Q. What if I do not have access to the web to register, is there another way I can register my credits?

A. Yes, for those without access to the web – contact Pennsylvania Farm Bureau for a paper application as well as assistance for completing the paper application. Paper applications take longer to complete so everyone is strongly encouraged to use the web. To contact PFB, call 717-761-2740 and ask for a representative of the “PFB/GEX Program”. Fax to (717) 731-3575 or e-mail to Carbontrading@pfb.com. (See page 4 for PFB’s mailing address.)

Q. How do I get paid for my carbon credits?

A. Once you authorize the sale of your carbon credits, and a buyer purchases the credits, you will receive a check from GEX.

Q. Who do I call when I want to sell carbon credits?

A. You will be able to register the sale of your carbon credits via the web at www.the-gex.com, which you can access directly or through the PFB webpage at www.pfb.com/carbontrading. For those without access to the web, a paper application can be completed and submitted to the PFB at the mailing address below.

Q. Are there any “up front” costs to the farmer for enrolling in this program?

A. No

Q. How far back can acreage be claimed for carbon credits?

A. Credits can only be claimed for programs that are in place for the qualifying amount of time. The time period is at least one (1) year for no-till and cover crops. If the practice has been in place before registration, channels may be possible to quantify and sell “legacy” credits. Basically, 2008 credits can be registered until April 30, 2009.

Q. Are CRP (Conservation Reserve Program) lands eligible to participate in carbon credit trading?

A. Yes, when no-till or conversion of cropland to grassland is completed. The same rules apply as for cropland.

Q. Can a farmer apply manure and/or fertilizer to the land registered in the carbon credit trading program?

A. Yes

Q. If I plow or disk the ground prior to the end of my contract, do I have to repay the money?

A. Yes, any land under the contract that is tilled must be removed from the program. The farmer must replace the carbon credits sold on his/her behalf plus any interest or other costs. The current program contract period lasts 3 years. Tillage reduces the amount of soil carbon and therefore, reduces the quality of the soil for farming.

Q. What if the farmer needs to smooth over a gully or do some tillage on end rows?

A. If end rows or terrace bottoms are routinely tilled, those acres should not be included in your acreage when registering your carbon credits. A disk or field cultivator may be used to smooth ruts or gullies in the field. Disks or field cultivators shall be operated no deeper than 4 inches and only in the areas of the field where the ruts or gullies occur. No more than ten percent of the field should be disturbed. For severe compaction on end rows, a low disturbance subsoiler may be used without any additional tillage.

Q. Can WRP (Wetland Reserve Program) acres be enrolled in carbon credit trading?

A. The grass portion of WRP is eligible as long as the seeding occurred after January 1, 1999.

Q. Are crops with longer root systems better for carbon sequestration than crops with shorter root systems?

A. The greater the above and below ground biomass produced, the greater will be the carbon sequestered.

Q. What is the definition of “cover crops” for carbon credit trading, and how does that definition differ from cover crops that qualify for “nutrient trading”?

A. In general over the years, NRCS has defined an adequate winter cover crop to be one that either is 4 inches high or provides a minimum of 50% crop canopy going into the winter. This is the same guideline that the PFB/GEX program supports. It is very important to have a source of surface carbon residue to work its way into the soil.

Q. Can a farmer register the same acreage for both nutrient trading as well as carbon credit trading?

A. The PFB/GEX program does not limit acreage as long as the proper no-till methods for carbon sequestration are followed.

Q. Who will verify the information registered by the farmer?

A. Farmers are required to “certify” that they are registering the correct acreage and are adhering to the required rules and guidelines. It is a violation of law to falsify the information provided during registration because this information is the basis for selling and purchasing carbon credits. The GEX will use a third party to verify and visit farms to ensure they are in compliance. The GEX may also use satellite imaging and aerial photographs. In addition, some other no-till programs (such as those enrolled through NRCS), use field verification before payments are made. Proof of verification must be forwarded to the GEX so that double verification does not occur.

Q. How often will the verification process occur?

A. At least once per year.

Q. Is “rented” land eligible to be registered?

A. Yes. The land owner and the renter should agree on who earns the carbon credits each year. Only one check is issued for the sale of carbon credits. The GEX will send payment to the person who registers on the website. The land owner must understand that his farmland is in a minimum 3-year program so he does not use traditional tillage by mistake.

Q. Are previously converted lands eligible?

A. Yes. However, if federal or state legislation affecting the matter is enacted, the carbon credit trading program will adhere to the new law or regulation.

Q. Is there an “exit” clause if no market exists for the credits within an agreed upon amount of time?

A. Yes, a farmer can “exit” at the beginning of each year before they register credits for the next year. However, carbon credits that are already registered cannot be transferred. Remember that you can sell the carbon in the second year of the contract. In other words, carbon has to accumulate in the soil before it can be sold.

Q. Does GEX or PFB hold any credits in reserve?

A. Yes. To ensure compliance with the legal obligations of the sale of credits, 5% of the credits are held in reserve in the event of non-compliance by participants. These credits are returned to the farmer after verification.

Q. Why is it “good” to keep carbon in the soil? How much carbon should be in the soil?

A. The PA No-Till Alliance offers extensive information about the tremendous benefit of soil carbon. For details, visit <http://www.panotill.com>.

Q. Can “too much” carbon be stored in the soil?

A. Continuous no-till systems have been used for over 30 years and soil organic matter levels -- depending on the use of cover crops -- have risen to around 6 percent. So, experience indicates that with our climate and cropping systems, we cannot build up too much carbon in the soil.

Q. Does the PFB/GEX program offer carbon credit opportunities for other practices?

A. Yes. The service also enables registration for carbon credits by the users of biodiesel fuel in all PA counties.

Q. What is the PA First Initiative?

A. Carbon is currently sequestered all over the world. PFB and GEX are working to build a “Pennsylvania First Program” – where buyers and sellers are advanced within the Commonwealth. Environmental achievements and economic benefits can be greater for Pennsylvania when the carbon sequestration marketplace is focused within its borders. The program will strive to match Pennsylvania buyers and sellers first, before looking to other states or markets.

Q. Who do I call at GEX or PFB with questions?

A. Contact at GEX: Call Tom O'Donnell at 215-704-2087. Contact at PFB: E-mail to Carboncredits@pfb.com, or call 717-761-2740 and ask to speak with the PFB Carbon Trading Program representative.

Carbon credit trading is a voluntary opportunity that may be suitable for some farming operations throughout PA, but not others. The intent to participate is strictly a personal decision of what is best for you and your farm.

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Pennsylvania Farm Bureau

