

## ***Considering Carbon: Markets & More***

### **Overview**

An interest in reducing environmental impacts and achieving climate sustainability within the U.S. is growing significantly among both the public and private sectors. As a result, several different entities are considering carbon credit markets to encourage the reduction of greenhouse gases (“GHG”). Generally, these markets offer credits to market participants based on the amount of carbon dioxide they have sequestered in the soil. In turn, these credits are sold to companies in the carbon marketplace. Because of the creation of carbon markets and escalating interest in reducing GHGs, a carbon industry is beginning to emerge.

Meanwhile, agriculture has become a centerpiece of the climate discussion because the agricultural sector is capable of delivering natural climate solutions. Specifically, many agricultural producers across the nation are capable of reducing carbon emissions by undertaking certain “climate-smart” farming practices that sequester carbon. Agriculture’s ability to capture and sequester carbon has prompted the carbon industry to encourage agricultural producers to participate in carbon markets. Several carbon market operators offer market programs to agricultural producers who implement sustainable farming practices in order to boost market participation. Producers engaging in these markets are advancing the goal of climate sustainability, while also receiving a new source of revenue by selling credits on the carbon market.

While carbon market programs are currently operating, there is still some uncertainty surrounding the emerging carbon industry. Much of this uncertainty arises from the lack of information about carbon credit markets. Currently, the industry is operating almost entirely within the private sector because carbon markets are being operated by several different private companies. Because many of these market-operating companies rarely publicize details on business arrangements and how their carbon markets are operated, the industry continues to be complex and unclear.

Even though private market operators are dominating most of the carbon industry, the federal government is becoming involved in the climate policy debate. Specifically, Congress is seeking to develop the carbon industry by implementing practical solutions that reduce GHG emissions, while also generating economic opportunities for other sectors. Because agriculture and forestry sectors mitigate the release of carbon into the atmosphere through natural solutions, Congress has proposed legislation to assist both sectors.

Recently, Congress proposed a bipartisan bill known as the [Growing Climate Solutions Act](#). Overall, this bill enables the United States Department of Agriculture (“USDA”) to regulate certain aspects of the carbon industry, bring more clarity to the carbon marketplace, and expand opportunities for more producers to participate in the carbon industry. In other words, it makes it easier for agricultural producers and foresters to participate in carbon credit markets.

## **Agriculture Developing the Carbon Industry**

As the demand for climate sustainability increases, many different industries are seeking ways to participate in the carbon industry as a climate solution. Industries such as transportation, retail, manufacturing, and automotive are entering the climate policy debate to suggest measures they can implement to reduce GHG emissions. However, some of the climate-smart initiatives proposed by these industries will take time to implement, meaning it may be years before these industries can serve as climate solutions. Because it will likely take some time for other industries to implement carbon-reducing initiatives, both public and private sectors are looking to agriculture as a leader in the carbon industry.

The agricultural industry is the focus of the carbon industry primarily because many producers can offer existing solutions to mitigate climate change. In general, producers can reduce GHG emissions from entering the atmosphere—which mitigates the impacts of climate change—because they can store carbon dioxide in cropland and rangeland soil. Storing carbon into the soil is commonly known as *carbon sequestration*. Producers can sequester carbon when implementing certain [carbon farming](#) practices, such as conservation tillage, planting cover crops, or applying soil amendments to their fields. Accordingly, producers who implement at least some carbon-smart practices will reduce carbon emissions and provide a solution to mitigating climate change.

Another asset agriculture brings to the carbon industry as a current climate solution is that the agricultural industry does not have to collect data or develop new technology to mitigate climate change. This is because researchers have already found carbon-reducing practices, and the industry has created technology to help producers implement these practices. As a result, producers wanting to implement carbon farming practices can begin doing so. In fact, some producers across the nation have already reduced carbon emissions by implementing carbon farming practices within their farming operations.

Lastly, agriculture is a large focus in the carbon industry because there is already a market in place to offer a new source of income to producers, while also advancing climate sustainability. Currently, there are not many economic opportunities available to other industries in the carbon industry. Unlike other industries, agricultural producers have the ability to generate additional income by participating in the carbon credit markets. Because these carbon markets are offering an additional source of income for producers, producers are likely more inclined to participate in mitigating GHG emissions. Therefore, the more producers involved in carbon markets, more carbon is sequestered, and the risks of climate change are reduced.

### **“Considering Carbon” Series**

The carbon industry is still evolving, but it is clear that agriculture is playing a key factor in developing that industry. Because carbon markets have become an increasingly important aspect of the agriculture sector, the National Agriculture Law Center will discuss

various elements of the burgeoning industry in a new series titled “Considering Carbon: Legal Issues for an Emerging Industry.”

Over the next several months, the National Agricultural Law Center will provide resources addressing legal topics and issues that concern agriculture and the carbon industry. Each month, the Center will offer at least one new publication or webinar discussing certain areas of the carbon industry that may have an impact on agriculture. During this series, we will discuss topics such as contracts, insurance, monitoring and enforcement, administrative proposals, and taxation as it relates to agriculture’s role in developing the carbon industry.

To view the Growing Climate Solutions Act of 2021, click [here](#).

To read other blog posts in this series, click [here](#).

## ***Considering Carbon: Overview of Carbon Market Composition***

An interest in reducing environmental impacts and achieving climate sustainability within the U.S. is growing significantly among both the public and private sectors. As a result, several different entities are considering voluntary carbon credit markets to encourage the reduction of greenhouse gases (“GHG”). Generally, these markets offer credits to market participants based on the amount of carbon dioxide they have sequestered in the soil. In turn, these credits are sold to companies in the carbon marketplace. Because of the escalating interest in reducing GHGs, voluntary carbon markets are quickly developing a carbon industry.

Meanwhile, agriculture has become a centerpiece of the climate discussion because the agricultural sector is capable of delivering natural climate solutions. Specifically, many agricultural producers across the nation are capable of reducing carbon emissions by undertaking certain “carbon-smart” farming practices that sequester carbon. Agriculture’s ability to capture and sequester carbon has prompted the carbon industry to encourage agricultural producers to participate in carbon markets.

Currently, several voluntary carbon market operators offer market programs to agricultural producers who implement sustainable farming practices to boost market participation. While these market programs are currently operating, there is still some uncertainty surrounding these markets. Much of this uncertainty arises from the lack of information about carbon credit markets. Voluntary market programs within the U.S. are almost entirely operated by several different private companies, and because these market-operating companies rarely publicize details on business arrangements and how their voluntary carbon markets are operated, the industry continues to be complex and unclear.

Even though there is some uncertainty surrounding the existing voluntary carbon markets, these markets do have a potential to benefit the agricultural industry. Specifically, producers engaging in these markets are advancing the goal of climate sustainability, while also receiving a new source of revenue by selling credits on the voluntary carbon market. Thus, it is important for individuals and entities participating in the agricultural sector to understand the basic characteristics of carbon markets. This article discusses a general overview of the existing carbon market structure, the parties involved in these markets, participation requirements, and how these markets generate a new source of revenue for the agricultural industry.

### **Types of Carbon Markets**

Currently, there are two types of carbon markets within the carbon industry: compliance markets and voluntary markets. Compliance carbon markets (also known as “mandatory markets”) are usually organized by governments to target certain industries or sources that emits GHGs. Typically, the government places caps on GHG emissions, and the industry or source emitters is legally mandated to offset their emissions. In a compliance market, emitters obtain pollution permits or allowances in order to meet the emission cap

limits. These emitters are allowed to trade unused allowances to other emitters or financial intermediaries to make a profit. An example of a compliance market is California's Cap-and-Trade Program.

While compliance markets exist, most carbon markets within the U.S. are voluntary markets. Unlike compliance markets, voluntary markets are instituted by private companies who develop and operate their own marketplace to facilitate transactions of carbon offsets, the act of reducing emissions of carbon dioxide into the atmosphere. Voluntary markets are incentive-based markets that allow individuals and private entities to purchase carbon offsets or credits on a voluntary basis. In other words, the market-operators use their voluntary market to link buyers and sellers of carbon credits.

Overall, voluntary carbon markets are relatively flexible and far less regulated than compliance markets because voluntary markets operate in the private sector. Because voluntary markets are developed by several different private companies, each market can differ from one another. Specifically, each market operator sets their own verification standards, credit registries, participation requirements, and project criteria for their carbon market. While voluntary markets differ, most markets are structured the same and each implement similar operational practices.

### **Voluntary Market Structure**

In general, once private companies establish a voluntary carbon market, they seek participants who have the ability to capture and store carbon dioxide into soils, a process known as *sequestration*. Many agricultural producers have the ability to sequester carbon by implementing certain farming practices. Thus, various markets provide specific market programs for producers to encourage their participation in the carbon market. However, these programs have specific eligibility requirements that producers must satisfy in order to participate in an operator's market.

Producers choosing to participate in a carbon market must implement certain carbon-smart farming practices into their operation. Exercising carbon-smart practices is required to participate in a market because these practices sequester carbon, which is how carbon credits are quantified. The most common practices include crop rotation, cover crops, buffer strips, no-till/reduced-till, livestock grazing, and applying soil amendments to fields.

Producers who implement at least some of these practices will reduce carbon emissions, and depending on the market program, will be eligible to participate in a voluntary market to sell the carbon credits they produce. However, before a producer is enrolled into a market program, they are usually required to provide records and documents to certify they have incorporated carbon-smart practices in their farming operation. The market operator—or a third-party verifying company—reviews the producer's records and verifies the producer's farming practices to ensure the producer is capable of sequestering enough carbon to participate in that market program. If the verification deems the producer eligible to participate, the producer can accept the verification and enroll in the carbon market.

Typically, producers enrolling as a market participant must execute a contract provided by the market operator. The contract will likely contain provisions that allows the market operator to collect certain data from the producer's croplands. Basically, this data is necessary to measure and verify the amount of carbon the producer sequesters. Additionally, the contract will likely require the producer to hire an independent third-party company to verify the amount of carbon they sequestered. Once verified, the market operator issues carbon credits to the producer based on the amount of carbon they sequestered.

Because various different private companies operate their own voluntary carbon market, the data measurement procedures to calculate the amount of sequestered carbon may differ from one market to the next. However, many of these voluntary markets are using similar methods to determine the number of carbon credits a producer earns. Some markets issue carbon credits to producers who simply implement carbon-smart farming practices, but other market operators issue credits based on measured outcomes. These market operators choose to issue carbon credits either on a per-acre or per-metric-ton basis.

Many producers currently enrolled in a voluntary carbon market are likely participating in a market that measures sequestration on a per-acre or per-metric-ton basis. In these outcome-based markets, carbon credits quantify the amount of carbon the producer sequesters. If a producer participates in a market that uses a per-acre method, the producer receives the value of the market operator's carbon credit for each acre carbon was sequestered.

Producers participating in a market that measures carbon sequestration on a per-metric-ton basis, the producer receives carbon credits based on the tonnage amount. In some markets, one metric ton of sequestered carbon equals one carbon credit. Depending on the market's measurement procedures, the third-party verifier determines how many metric tons of carbon dioxide the producer sequesters. Once tonnage is verified, the market operator issues carbon credits to the producer based on the number of metric tons they sequestered.

### **Voluntary Carbon Marketplace**

In general, the voluntary carbon market is driven by numerous individuals and private companies who are taking steps to eliminate GHG emissions. Specifically, several businesses are setting net-zero or climate-neutral targets, but many entities face financial or technological difficulties to reach their goals. In some instances, it is less expensive for companies to pay others to reduce emissions instead of implementing emission-reducing practices within their own business operations. Thus, in order to meet their climate-neutral targets, many companies purchase carbon credits available in the voluntary market to reduce their GHG emissions.

Many voluntary carbon markets facilitate their own carbon marketplace. Private market operators use the marketplace to link buyers and sellers of carbon credits. In other words,

a carbon marketplace provides individuals and business entities the opportunity to purchase carbon credits a producer has generated. In most markets, either the market operator or a third-party broker will sell a producer's credits to a buyer. Once sold, the producer receives the proceeds from the sale.

### **Early Adopters**

One issue surrounding voluntary carbon markets is the idea of additionality. Currently, only some carbon markets provide programs for early-adopting producers, but only for a limited number of years. Many voluntary markets only offer market programs to producers who are implementing new carbon-smart farming practices in their operation. Thus, producers who previously adopted carbon-smart practices have difficulties enrolling in a voluntary carbon market. As voluntary carbon markets continue to develop, more market operators may offer programs for producers that previously incorporated carbon-smart practices in their farming operation.

### **Conclusion**

The development of voluntary carbon markets has the potential to benefit agricultural producers greatly. Producers enrolling to participate in a voluntary market implement carbon-smart farming practices, and these practices have the ability to enhance soil health, crop yields, and sustainability. Additionally, these carbon markets also provide producers a new source of revenue by selling credits in a carbon marketplace.

Although voluntary markets offer potential benefits for participating producers, these markets operate almost entirely in the private sector and are not currently regulated by the federal government. However, Congress recently proposed the [Growing Climate Solutions Act](#), a bill that provides the federal government the ability to assist in the development of voluntary carbon markets. Also, the United States Department of Agriculture recently began judging the feasibility of creating a carbon bank, which would reward producers who implement carbon-smart practices in their farming operation.

Overall, voluntary carbon market operators are currently enrolling producers across the nation to participate in their market programs. However, each voluntary market operates differently from one another, such as enrollment criteria, acreage requirements, credit value, and payment structure. Therefore, before signing a contract to participate in a market program, producers should seek legal advice to determine if enrolling in a carbon market will benefit their farming operation.

To read other blog posts in this series, click [here](#).

## ***Senate Advances Carbon Market Bill***

On April 20, 2021, the Senate unveiled the text of the proposed Growing Climate Solutions Act. The bill, which has been co-sponsored by 20 Democrats and 22 Republicans, is aimed at encouraging the development of voluntary carbon markets. Specifically, the bill would help provide technical assistance for farmers and private forest landowners to get involved in voluntary carbon markets. This is the second version of the Growing Climate Solutions Act, with the first proposed in the previous Congressional session.

### **Background**

The original Growing Climate Solutions Act was first introduced to Congress on June 4, 2020. Like its 2021 counterpart, the goal of the 2020 bill was to make it easier for farmers and foresters to gain entry the voluntary carbon marketplace.

Voluntary carbon markets are an emerging phenomenon meant to address the reduction of greenhouse gases (“GHG”) in the atmosphere. In general, these markets encompass transactions of carbon offsets, the act of reducing or sequestering a certain amount of carbon dioxide out of the atmosphere. Offsetting a certain amount of carbon generates a credit which can then be bought or sold on within the voluntary market. Because these carbon markets are voluntary, it is up to the organizations facilitating the markets to set their own standards for market participation, credit registries, and types of projects that will be regarded as reducing carbon or other GHGs.

Because voluntary carbon markets operate in the private sector, they are viewed as being more flexible than required “compliance” carbon markets. Compliance markets, such as the cap-and-trade program adopted by the state of California in 2013, are typically instituted by governments and may target a specific industry or type of GHG emitter. In a compliance market, the government will likely determine the maximum amount of GHG that a source may emit, how credits will be generated, and who may participate in the market. Participation and demand in compliance markets are determined according to regulatory requirements. In a voluntary market, demand is determined according to the participants, and who may participate is less formally regulated. Additionally, because voluntary markets can differ from one another, a potential participant has the option of exploring different markets to determine which would work best for the participant’s needs.

While the flexibility of voluntary carbon markets allows room for experimentation and innovation, it can also create certain obstacles. Access to reliable information about markets, access to qualified assistance to new participants, and lack of standardized quality criteria have become obstacles to getting farmers and private forest landowners involved in carbon markets. The Growing Climate Solutions Act of 2020 was introduced as a potential solution to those issues. Although the Senate Committee on Agriculture, Nutrition, and Forestry held hearings on the 2020 bill, it failed to receive the support needed to become law. This prompted the sponsors of the Growing Climate Solutions Act

to resume negotiations with other Senators in order to draft a new version of the bill. That version was reintroduced to the Senate this week.

### **Growing Climate Solutions Act of 2021**

According to the text of the Growing Climate Solutions Act, its purposes are to facilitate both “the participation of farmers, ranchers, and private forest landowners” in voluntary carbon markets, and the “provision of technical assistance [...] in overcoming barrier to entry,” as well as to establish the Greenhouse Gas Technical Assistance Provider and Third-Party Verifier Certification Program (“the Program”) and an Advisory Council to advise USDA regarding the Program. In other words, the purpose of the bill is to create a certification program under USDA to provide technical assistance to agricultural producers seeking to participate in voluntary carbon markets.

Under the Growing Climate Solutions Act, USDA would have 270 days after the Act becomes law to determine whether establishing the Program would further the goal helping to get farmers and private forest landowners involved in voluntary carbon markets. If USDA determines that establishing the Program would help advance that goal then the Department may proceed. If it finds that establishing the Program would not help advance that goal, then USDA must issue a report detailing its findings.

Once the Program is established, the Growing Climate Solutions Act directs that USDA must create “recognized protocols” for voluntary carbon markets that would ensure “consistency, reliability, effectiveness, efficiency, and transparency” with regards to a variety of procedures including sampling methodologies, account systems, and systems for verification. Additionally, USDA would be required to develop qualifications for “covered entities” under the Program. Those covered entities include both providers of technical assistance to agricultural producers looking to participate in carbon markets, as well as third-party verifiers conducting the verification processes for voluntary carbon markets. In developing both the protocols and qualifications, USDA would be required to give at least 60 days for public notice and comment.

USDA would then be required to maintain a website through which covered entities may receive Program certification. The website would also maintain a list of covered entities so that agricultural producers can easily access information on certified technical assistance providers and third-party verifiers.

Along with the Program, USDA would be required to establish the Greenhouse Gas Technical Assistance Provider and Third-Party Verifier Certification Program Advisory Council (“Advisory Council”). The purpose of the Council would be to review and recommend any appropriate changes to the Program’s protocols and qualifications, and to advise USDA on a number of topics, including current carbon market practices, and ways to reduce barriers to entry. At least 51% of members on the Advisory Council must be representatives from the agricultural industry. Four members will be from the forestry industry, and other members will include professionals familiar with carbon markets, and environmental and agricultural issues.

In addition to information generated by the Advisory Council, USDA would also be required to partner with the Environmental Protection Agency (“EPA”) to conduct an assessment regarding a variety of topics related to carbon markets. That assessment would include information on: the number of entities involved in voluntary carbon markets; overall demand for agriculture or forestry credits; the total number of agriculture or forestry credits that have been generated; barriers to entry; methods for reducing barriers to entry; the current state of monitoring and measuring technologies needed to quantify long-term carbon sequestration; and ways in which USDA can encourage voluntary carbon markets. After creating the initial assessment, USDA and EPA would be required to draft a new one every four years.

Comparing the latest version of the Growing Climate Solutions Act to the version that was introduced in 2020, the main differences involve the Advisory Council, and a new section in the bill titled “Fair Treatment of Farmers.” Under the 2020 bill, the Advisory Council would have had 25 members, only 10 of whom would have been representatives from agriculture. Under the 2021 bill, more than half of committee members are required to be members of the agricultural industry. Additionally, the Fair Treatment of Farmers provision will require USDA to ensure that covered entities act in good faith by providing farmers with realistic cost and revenue estimates. The provision will also require USDA-certified technical assistance providers to help farmers receive a fair distribution of the revenue generated from the sale of carbon credits.

### **What’s Next**

Currently, the Growing Climate Solutions Act has received [broad bipartisan support](#) in Congress, as well as support from various private organizations including the [American Farm Bureau Federation](#), and the [Environmental Defense Fund](#). However, the bill still has a way to go before it becomes law. On April 22, 2021, the Senate is expected to hold a “markup” for the bill, a process that gives senators an opportunity to amend and rewrite proposed legislation. The bill then must pass both the Senate, and the House before it can advance to the President for signing. While it is currently unclear whether the Growing Climate Solutions Act will be enacted, the wide base of support for the bill is encouraging for its supporters. On April 22, the Senate Agriculture Committee unanimously advanced the bill, and further co-sponsors have signed on. As of April 22, the Growing Climate Solutions Act is co-sponsored by 20 Democrats and 22 Republicans. Senators on the Agriculture Committee are hopeful that the bill could be given time on the Senate floor before the August recess.

To read the Growing Climate Solutions Act of 2021, click [here](#).

To read the Growing Climate Solutions Act of 2020, click [here](#).