

A wide-angle photograph of a field of tall, golden-brown grasses, likely a cover crop, stretching towards a horizon under a warm, orange sunset sky. The grasses are in sharp focus in the foreground, creating a sense of depth.

# A Farm Primer on Canada's Market Landscape for Carbon

NEW RULES, NEW PLAYERS, AND NEW RISKS

SEPTEMBER 4, 2024



# ROADMAP

## COUNTRY TO COUNTRY TRADING

### TRADING IN CANADA

#### PROTOCOL & SERIAL NUMBER

#### NO PROTOCOL OR NO SERIAL NUMBER

Regulated

Volunteer

Foundations

Private

Cash

Ad Space

Market Access

AB

CDN  
Backstop

CAD

Non  
CAD

ISO/Non ISO  
based

Agreements

Cross  
Border

Bonds

Investing

NFC/Bitcoin

EGS

Supply Inset

EGS  
(non-Carbon)

## SUMMARY

This document outlines a summary of the state of the marketplace as of September 4, 2024.

## THE BOTTOM LINE

Carbon is a new business commodity. Carbon includes data, offsets, emission reductions, and soil sink improvements.

All businesses, including agriculture, currently need to address carbon footprinting, scope their supply chain emissions (including data from ag commodity suppliers), and meet the non-uniform demands of customers and investors.

The World Trade Organization (WTO) was created in 1995. The signatories build rules to facilitate trade in goods and financial instruments every five years. Before that, there was GATT, the General Agreement on Tariffs and Trade. From 1947 until the WTO, GATT addressed anti-dumping and tariff (market access and protection) issues.

In addition, we have the United Nations Climate Change Conference, also known as COP##. The last one was COP28 in Dubai.

At its base is an agreement to limit greenhouse gas emissions. Each country shall determine the limits for emissions and policy mechanisms to reduce the emissions down to these limits.

Out of Dubai came both new and revised initiatives. A quick summary includes:

- Additional transparency.
- Connect the reduction of emissions to nature conservation.
- Started to connect emission reductions to food.

Climate markets are essential.

Final emitters paying a levy or buying an offset cover a portion of the total emission map. Climate markets mean the buying and selling of actual reduction. The approval of Article 6 in Glasgow makes this now a reality. Emissions now go beyond a zero-sum game (Kyoto), and markets offer a cheaper and easier method to reach emission limits<sup>1</sup>.

When a farm wants to know about selling into a carbon market, there is not just one. Instead, the farm is entering a new commodity market with new rules, players, and risks.

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<sup>1</sup> Carbon Brief

*“If we don’t have a market, maybe for some places it will be really hard to get to zero...”*

Sha Yu,  
Pacific Northwest  
National  
Laboratories

*“A government program and a carbon levy do not make a market.”*

Hon. C. Deacon,  
Senate of Canada

## AGRICULTURAL MARKET OVERVIEW

Two factors impact the supply of agricultural credits:

1. Farm emissions are dispersed over extensive timelines and large landscapes. There are also inexact outputs and less-than-homogenous biological processes.<sup>2</sup>
2. The second issue is the sector needs to be a reporting emitter. The lack of reporting leaves policymaking making decisions without good farm-based data.

## MARKET CONFIDENCE

The relationship between a buyer and seller is critical. The distance between the two adds price risk.

A well-functioning markets meet five confidence tests:

1. The process is transparent.
2. The credit is an actual reduction with no political adjustments.
3. Buyers and investors accept the offset for their intended purpose.
4. Offsets move seamlessly across borders.
5. Market integrity and transparency to see equity and well-being outcomes.

Since we last published this primer, the US Congress has allowed the US Department of Agriculture (USDA) to regulate the voluntary market in the US. This will be a game changer as voluntary market rules challenge both quality supply and price.

In May 2024, the USDA and several other Departments outlined their regulatory map and responsible participation outcomes for the voluntary market.

1. Credits will be accurate and have integrity.
2. Generating activities should avoid environmental harm.
3. Generating activities should support co-benefits and have benefit sharing attributes.
4. Buyers should prioritize purchases in their direct supply chain.
5. There is public disclosure of purchases and retirements.
6. Only use high-quality credits.
7. Market participants should endorse market rules and the rule development process.

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<sup>2</sup> IETA

Canada is still waiting to sign memorandums of understanding under Article 6. Canada's first Article 6 response is the cap on emissions for the oil and gas sector expended in late 2024.

## MARKET PRICE OUTLOOK

Bloomberg Professional Services recently offered a long-term outlook for voluntary carbon prices. Significant supply and demand volatility exists, and with Article 6 not yet fully implemented, the marketplace is regionally segregated. Long-term supply estimates overtake demand, putting price pressure on available credits. Supply sources continue to be projects that include avoiding deforestation, reforestation, and agriculture.

Bloomberg's long-term forecast continues to recognize supply pressure and is hard-pressed to overtake \$40 USD, with nearly prices pressed to break beyond \$12-18 USD.

## COUNTRY TO COUNTRY

### ARTICLE 6 – COUNTRY TO COUNTRY TRADING

In short, Article 6 is the set of rules for trading carbon between Countries. The rules include country-to-country exchanges and business exchanges across borders. It allows for a known set of rules for the private business sector to move from a zero-sum game to a path making positive emission changes.<sup>3</sup>

International Emissions Trading Association's (IETA)<sup>4</sup> recent 20-21 Greenhouse Gas Market Report stated the following;

*Core to Article 6 requires all post-2020 internationally transferred mitigation outcomes (ITMOs) to require corresponding adjustments (CAs) in national inventories for NDCs or other global GHG abatement purposes. This effectively means airlines must buy adjusted units to comply with their CORSIA offsetting mechanism for international air travel. So far, only Japan, Switzerland, South Korea, New Zealand, and Australia have indicated interest in buying ITMOs to help meet their NDCs, with dozens of developing nations interested in selling.*

<sup>3</sup> Attributed to Chirag Gajjar, World Resources Institute, in a GreenBiz article.

<sup>4</sup> <https://www.ieta.org/> International Emissions Trading Association

# PROTOCOLS & SERIAL NUMBERS

## CANADIAN MARKET OVERVIEW

### Protocol Based Markets

#### What is a Protocol?

A protocol is a methodology that applies the current state of science to measuring changes in greenhouse gasses that result from a change in practice. It outlines the acceptable project evidence and, when successful, outputs the number of tonnes per output unit.

One example is the Nitrous Oxide Emissions Reduction Protocol, where protocol output is based on the dry matter of the crop yield.

#### What is Verification?

Verification is a process that compares the project and all the evidence to the protocol. The verifier is a third party to both the project and the registry.

Both Alberta and Canada have set standards on the qualifications of a verifier.

### Regulated Markets

#### Alberta's Regulated Market

Alberta continues to have an offset market. Final emitters are subject to a carbon levy and can choose to pay the levy or purchase an offset. Alberta has set a standard for Protocol design, project verification, and serialization registry.

Approved agricultural protocols for 2024 are:

- Aerobic Composting
- Agricultural Nitrous Oxide Emissions Reduction
- Reducing Greenhouse Gas Emissions from Fed Selection for Low Residual Feed Intake Markers in Beef Cattle

#### Canada's Federal Backstop Regulated Market

The Federal Backstop legislation was passed in 2019, and offset regulations will be final in 2022. In addition, the

*Canada and Alberta have completed an MOU that allows Alberta offsets to be used in the federal OBPS.*

*Four Alberta protocols are approved for federal use: Pneumatic devices, Composting, Bioreactors, and two for feedlot cattle.*

Ministry has formed teams to work on soil carbon and livestock protocols.

These protocols may be out for public comment late in 2024.

Canada has set a standard for Protocol design, project verification, and serialization registry.

### Enforcement

Both Alberta and Canada have enforcement systems to ensure the certificate submitted for compliance is true.

In 2023, Alberta charged a business for being a non-approved verifier.

There is no regulatory body to ensure transaction certainty.

### What is sold?

Nothing has been sold to date.

The seller is creating and selling a compliance certificate. Each serial number represents a tonne of greenhouse gas reduction and sink improvement.

An offset created in a backstop province is eligible for use by a regulated emitter in another backstop province.

The price is bilateral. There is no price discovery; historically, it has been traded at a discount to the levy.

### Voluntary Markets Protocols

Approved agricultural protocols for 2022 are:

- Canadian Grassland Protocol

#### Repurposed Protocols

Two companies in Canada are repurposing the protocols below for the volunteer market and registering voluntary registry projects.

- Nitrous Oxide Emissions Reduction
- Conservation Cropping Protocol

## Grasslands

*As of late 2024, several projects have been registered on the Climate Action Reserve registry, but there are delays in verification.*



## Protocol Standards

There are several approaches to protocol design. The most well-known approaches are based on ISO 14064, the Verified Carbon Standard (65-70% of the project), and the Gold Standard.

A more extensive list of designs for protocols is below.

- Clean Development Mechanism (CDM)
- Gold Standard (GS)
- Voluntary Carbon Standard (VCS)
- VER+
- The Voluntary Offset Standard (VOS)
- Chicago Climate Exchange (CCX)
- The Climate, Community & Biodiversity Standards (CCBS)
- Plan Vivo System
- ISO 14064-2
- WRI/WBCSD GHG Protocol for Project Accounting

## Verification

The voluntary marketplace has not set uniform performance standards for verifiers.

## Registries

Registries are a system for registering a project, forcing transparency, tracking verification, and tracking sales and retirement.

Canada has a voluntary registry delivered through the CSA.

## Enforcement

It's important to note that in Canada, there is currently no regulating body in place to ensure buyer and seller protection.

## What is sold?

The seller is creating and selling a certificate. Each serial number represents a tonne of greenhouse gas reduction and sink improvement.

## NO PROTOCOLS & NO SERIAL NUMBERS

### Non-Protocol Markets

#### Insetting

Based on the private business use of scope one, two, and three emission calculations, these supply chains understand and report on their current greenhouse emissions and commit to markets and shareholders on their plans to lower their footprint.

Sustainability now equates to ESG reporting.<sup>5</sup>

#### What is sold?

The seller is both a hard commodity and a data package.  
Access to a supply chain and the marketplace.  
Preferred access to third-party money.

#### Foundations and Charities

Canada has a strong group of foundations and charities that build capital pools and invest in the agricultural community.

The investments are by:

- Purchasing management agreements.
- Purchasing easements with management conditions.
- Purchasing land trusts.
- Purchasing lands.

Foundations and charities must put back a portion of their capital into their community each year.

Carbon and carbon sinks may be part of these arrangements.

#### What is sold?

This agreement defines this issue.

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<sup>5</sup> Canadian Securities Administrators Staff Notice 81-334

*Scope 3 Sales*  
*In 2024, ADM Canada (ADM USA) is buying scope 3 data from Canadian farms.*  
*In 2023, a pea plant in Alberta bought Scope 3 data for their product's GHG footprint.*

Limits  
Recent changes  
to Canada's  
Competition  
legislation may  
limit advertising  
to tested  
claims only.

### Private Placement

Corporations are attempting to package carbon change data into a sellable product. To date, they are not using an approved protocol. They are looking to remove additionality and permanence from the transaction. The corporation may also own the registry and conduct the verification in-house.

#### What is sold?

The seller is selling a data package.

They are also selling GHG reductions based on existing protocols but need to build a protocol project for serialization. Examples in Canada include Maple Leaf.

### Advertising

Agriculture and other industries are packaging emissions data with increasing production performance data. As a result, the green news story is that the emissions per output are improving.

An example is the Dairy Farmers of Canada program.

#### What is sold?

The seller currently sells nothing.  
The sector is creating an atmosphere of customer goodwill.

Maple Leaf  
2023  
Maple Leaf  
signed such an  
agreement in  
2022 for  
\$2,300 million.

They report  
Scope 1&2 at  
295.8 kT, up  
from 284.9  
(2018). Scope 3  
is reported to  
be 2.3 mT  
down from 2.6  
mT (2018)  
CO<sub>2</sub>e.

### Cash Derivative and Bonds

In the financial markets, bonds exist with environmental attributes.

The credit purchasers are bound by the environmental performance agreement attached to the credit facility. Performance is rewarded with a market interest rate discount.

Other instruments are now secured with highly secure data movement (i.e., blockchain) backed by a greenhouse gas reduction. Like the mortgage derivative market, the instrument is derived from a GHG reduction.

#### What is sold?

The seller currently sells a reduction into a derivative market. There may be an agreement for performance.

### Environment Good and Service

An industry organization is working in Alberta on a payment for a biodiversity index scheme. The project bundles private and public rights into an index.

#### What is sold?

The buyer pays to maintain or improve a biodiversity index based on the available information.

### Carbon-backed Utility Tokens

Utility tokens provide token holders with privileged services. They are not investments[6], as they are speculative and act more like promotional tools for the issuing company.

#### What is sold?

A company investing in a GHG project will issue an initial coin offering (ICO) to raise the funds necessary to develop the project.

*Credit In-house  
Although not a  
voluntary  
credit, Nutrien  
does buy from  
farmers a GHG  
data package  
and credits  
accounts.*

### Others

Across Canada, a variety of offsets are connected to wetlands, urban development, and other specific targeted development instruments designed to raise the cost of urban and energy development.

#### What is sold?

A regulatory document.

### Non-Market and Exempt Lands

Federal and provincial climate programming and money have prohibited project acres from entering regulated markets. In some jurisdictions, this moratorium now includes voluntary markets, too.

#### What is sold?

A parcel taking government money cannot sell a regulated credit from that parcel.

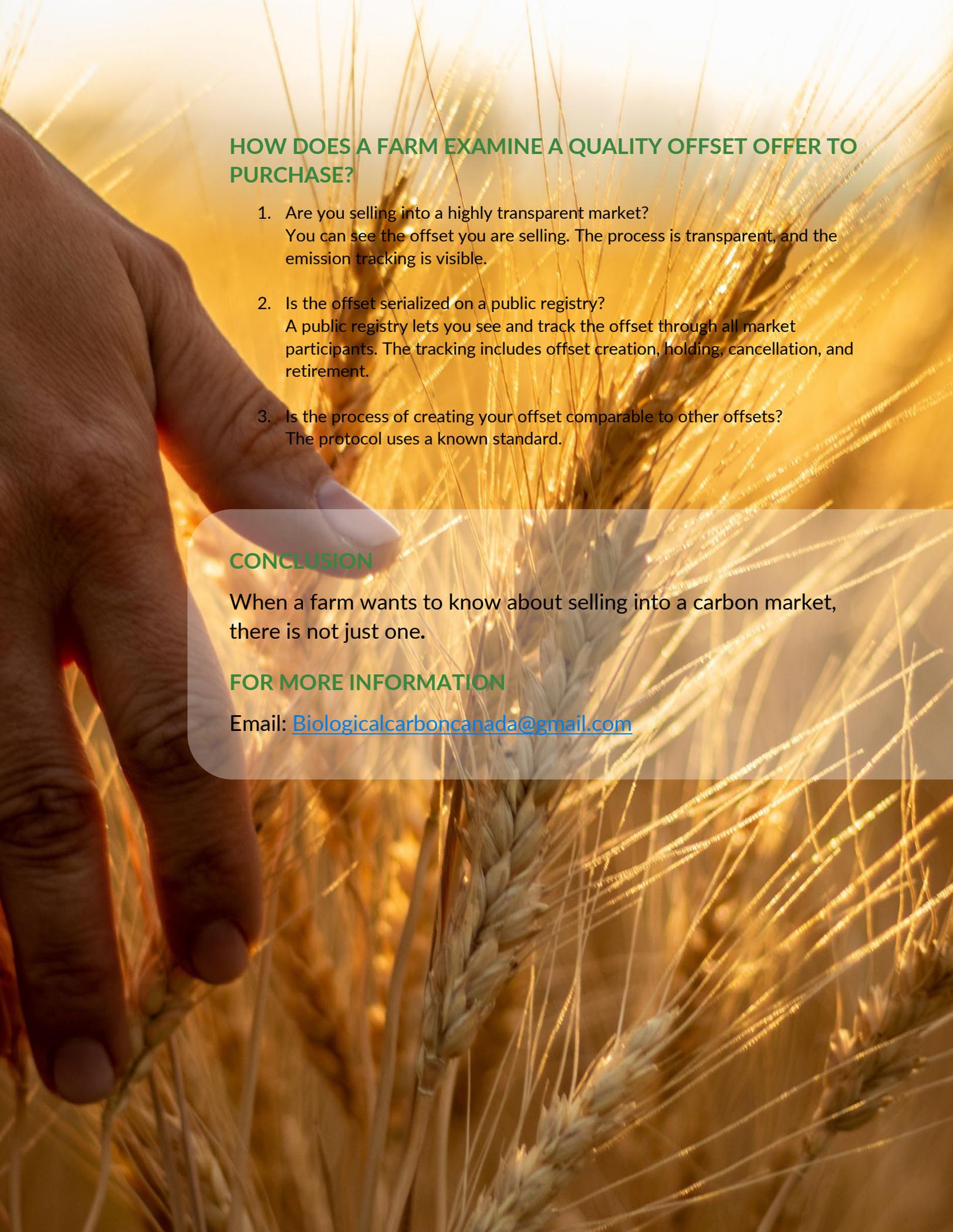
This moratorium also applies to private lands where species at risk are located.

### Certification

Regenerative Organic Certification and other certification systems promote soil health, animal welfare, and farmworker fairness. However, they are not carbon instruments and do not currently measure changes in greenhouse gas emissions.

#### What is sold?

Certification is a promise of attributes that a commodity buyer wants.



## HOW DOES A FARM EXAMINE A QUALITY OFFSET OFFER TO PURCHASE?

1. Are you selling into a highly transparent market?  
You can see the offset you are selling. The process is transparent, and the emission tracking is visible.
2. Is the offset serialized on a public registry?  
A public registry lets you see and track the offset through all market participants. The tracking includes offset creation, holding, cancellation, and retirement.
3. Is the process of creating your offset comparable to other offsets?  
The protocol uses a known standard.

### CONCLUSION

When a farm wants to know about selling into a carbon market, there is not just one.

### FOR MORE INFORMATION

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