

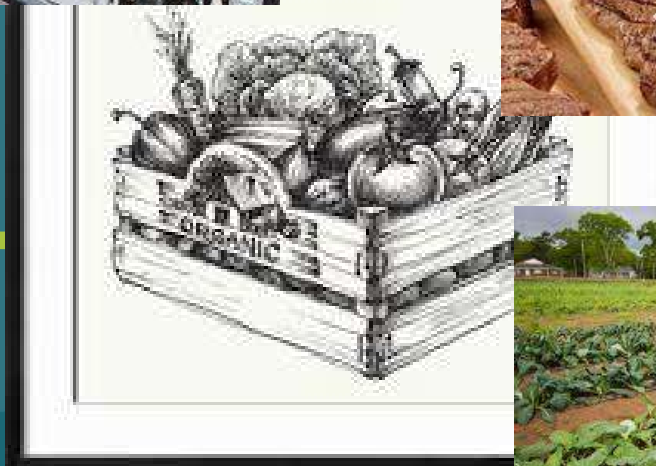


# CARBON MARKETPLACE

OPPORTUNITIES FOR AGRICULTURE

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# Carbon Markets





# LETS STIR YOU THOUGHTS OF THE FUTURE



- California all electric mandate 2030
- Narrowing margins
- Foreign market access for commodities?
- Farm Bill in 2023
- How big will it get?



# TODAY'S AGENDA

1. Learn Carbon 101
2. A basic formula of Carbon weight.
3. How the market works?
4. Impact on row crop farming?
5. Risks/Opportunities
6. Legislative impact.
7. What's to come!
8. Who is involved in the Carbon Market team?

# ESG



## ENVIRONMENTAL

Climate change strategy,  
Biodiversity,  
Water efficiency,  
Energy efficiency,  
Carbon intensity,  
Environmental  
management system



## SOCIAL

Equal opportunities,  
Freedom of association,  
Health and safety,  
Human rights,  
Customer &  
products responsibility,  
Child labour



## GOVERNANCE

Business ethics,  
Compliance,  
Board independence,  
Executive compensation,  
Shareholder democracy

*Source: ANEVIS*

- What is it?
- How is it impacting product, capital, policy, market access?



# THE SCALE OF ESG

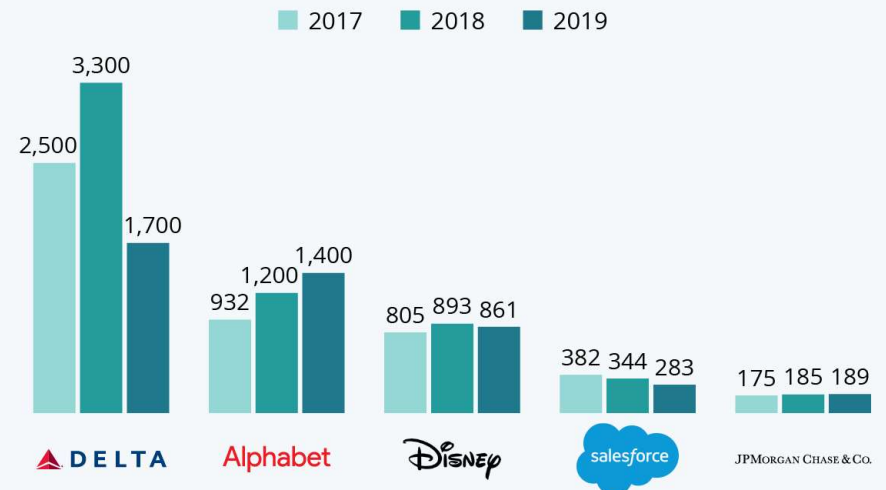


=\$1 trillion

Oct 26 (Reuters) - Tesla Inc (TSLA.O) surpassed \$1 trillion in market value on Monday, overshadowing the combined value of five of its biggest rivals, Toyota Motor Corp (7203.T), Volkswagen AG (VOWG\_p.DE), Daimler AG (DAIGn.DE), Ford Motor Co (F.N) and General Motors (GM.N).

## Trend in Carbon Offset Purchases

Carbon offsets purchased by select companies, 2017-2019 (in thousand metric tons of CO<sub>2</sub> equivalent)



Sources: Company filings, Bloomberg



\*Traded Carbon Equivalents will break \$1Billion in 2021



| TRAVEL |

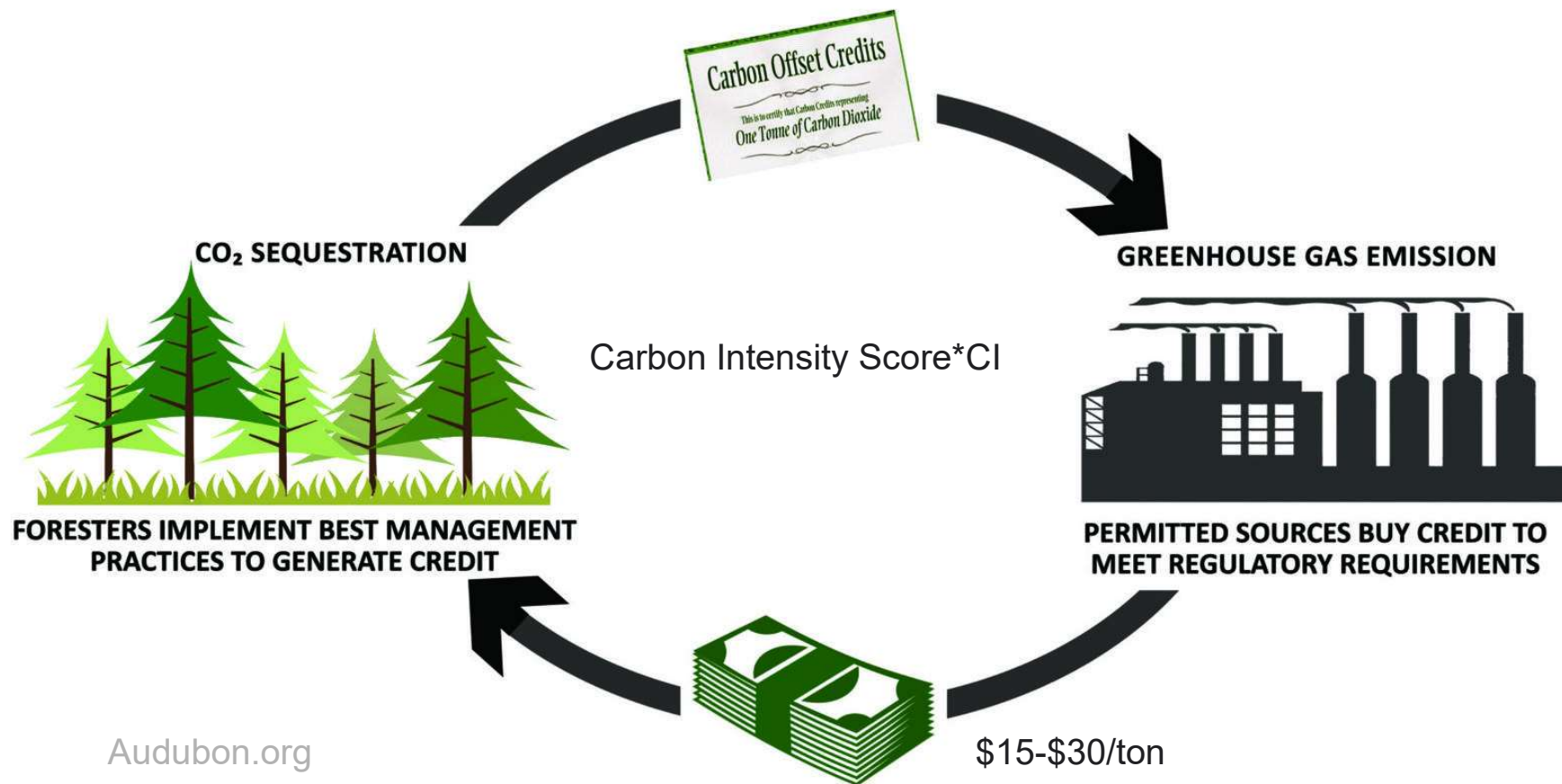
## Should you buy carbon offsets for your air travel?

More than a third of Americans would pay extra to offset their flights' CO2 emissions, a new National Geographic survey finds.

BY NATIONAL GEOGRAPHIC STAFF

PUBLISHED JANUARY 21, 2022

# CARBON MARKETPLACE 101





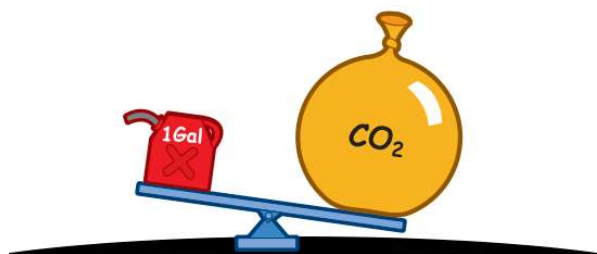


## POLL TIME

Carbon offsets are measured in metric tons of carbon dioxide-equivalent (CO<sub>2</sub>e) and may represent six primary categories of greenhouse gases: carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), perfluorocarbons (PFCs), hydrofluorocarbons (HFCs), and sulfur hexafluoride (SF<sub>6</sub>). One carbon offset represents the reduction of one metric ton of carbon dioxide or its equivalent in other greenhouse gases.

- **How many lbs of carbon does 100 gallons of gasoline release?**

# HOW MUCH IS A TON OF CARBON?

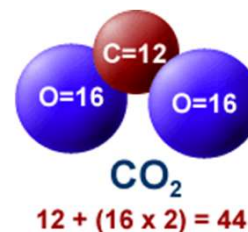


- 1 Gallon of Gas=6.3lbs
- Burning will produce 20lbs of Carbon
- 100 gallons of gas=1 ton of carbon
  - 1 month or 4 tanks of fuel

Why are we talking 1 ton of Carbon...because that is the trade equivalent.

[climatekids.nasa.gov](http://climatekids.nasa.gov)

***How can a gallon of gasoline produce 20 pounds of carbon dioxide?***



Check with a chemist. It just seems unfathomable. Well its because of combustion. When air is mixed in a reaction with a hydrocarbon like gasoline in an engine, it explodes separating the hydrocarbon and energy producing energy. Because the hydrocarbon of the fuel attaches to the mixture of air, it separates all the particles and recombines them to other molecular compounds. A carbon atom has a weight of 12, and each oxygen atom has a weight of 16, giving each molecule of CO2 an atomic weight of 44 (12 from carbon and 32 from oxygen). One gallon of gas is 87% carbon and 13% hydrogen. The carbon weighs 5.5 lbs in a gallon of gas but releases 3.7 times that when combined with air in combustion cycle. So it is 5.5 lbs x 3.7 or 20lbs of CO2 released per gallon.

# GODFATHER OF CARBON

Where did the marketplace come from?

- UN COP (Conference of Parties) – 1995
- Low Carbon Fuel Standard – CA, 2009
- Cap and Trade – CA, 2013
- Paris Agreement – 2016
- 2021 and beyond COP 26

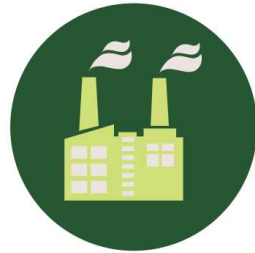


# HOW THE CARBON MARKET WORKS

## HOW CARBON TRADING WORKS



Carbon credits are received from auctions, or given for free to firms by governments



Carbon credits are used as greenhouse gases are emitted



Unused carbon credits can be sold, and more credits can be bought

### Compliance

Paris Agreement

CA – Air Resource Board

RGGI – NE US

EU

Ag Climate Alliance

### Voluntary

Amazon

Microsoft

Shopify

Starbucks

Nestle



## POLL TIME

*How many Google searches are done per year?*



Carbon neutral since 2007



## POLL TIME

*How many Google searches are done per year?*

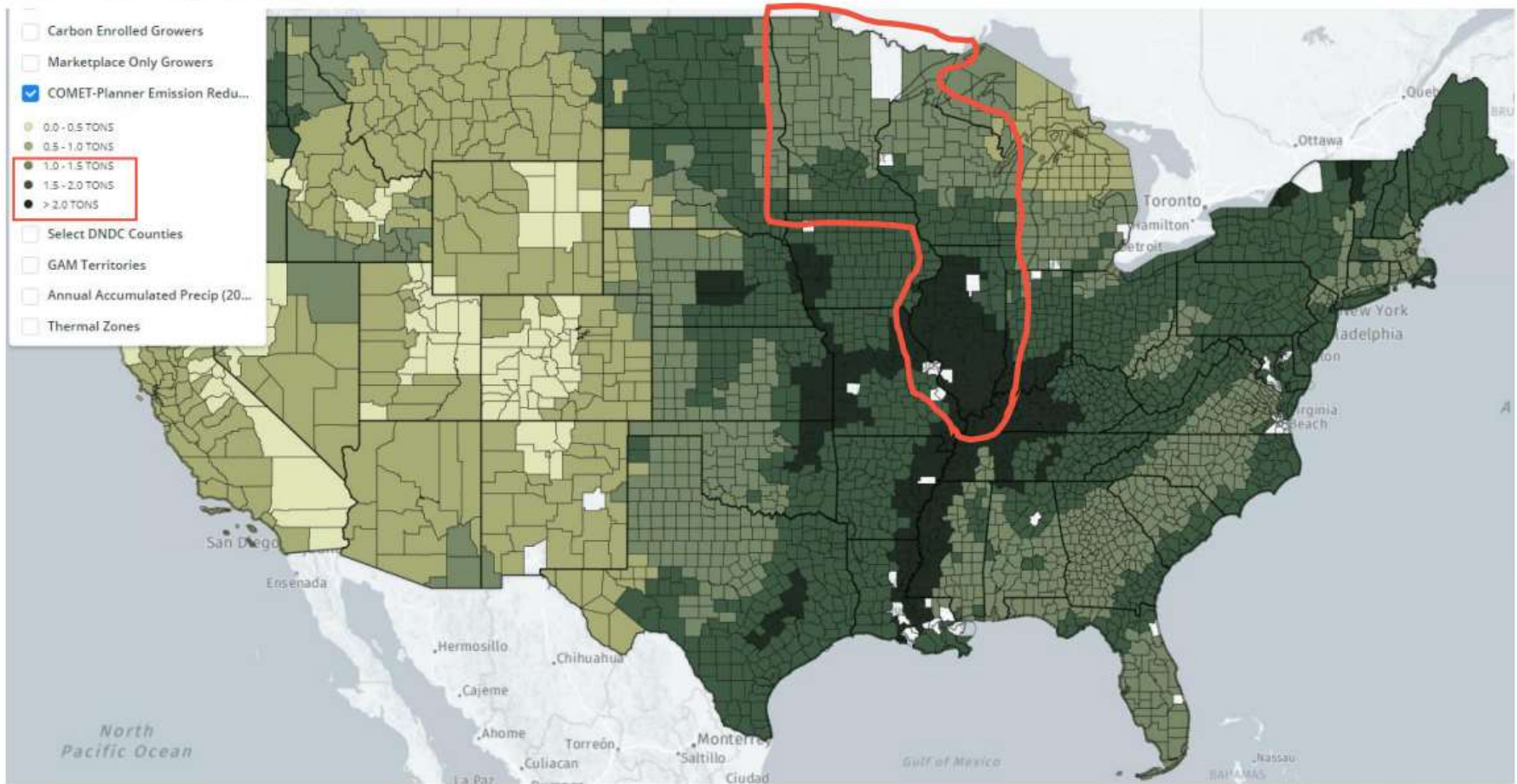
- **2 trillion per year**
- **Estimated 12 million tons of CO2 in 2019 according to Google search.**
- **Why do I bring this up?**



Carbon neutral since 2007

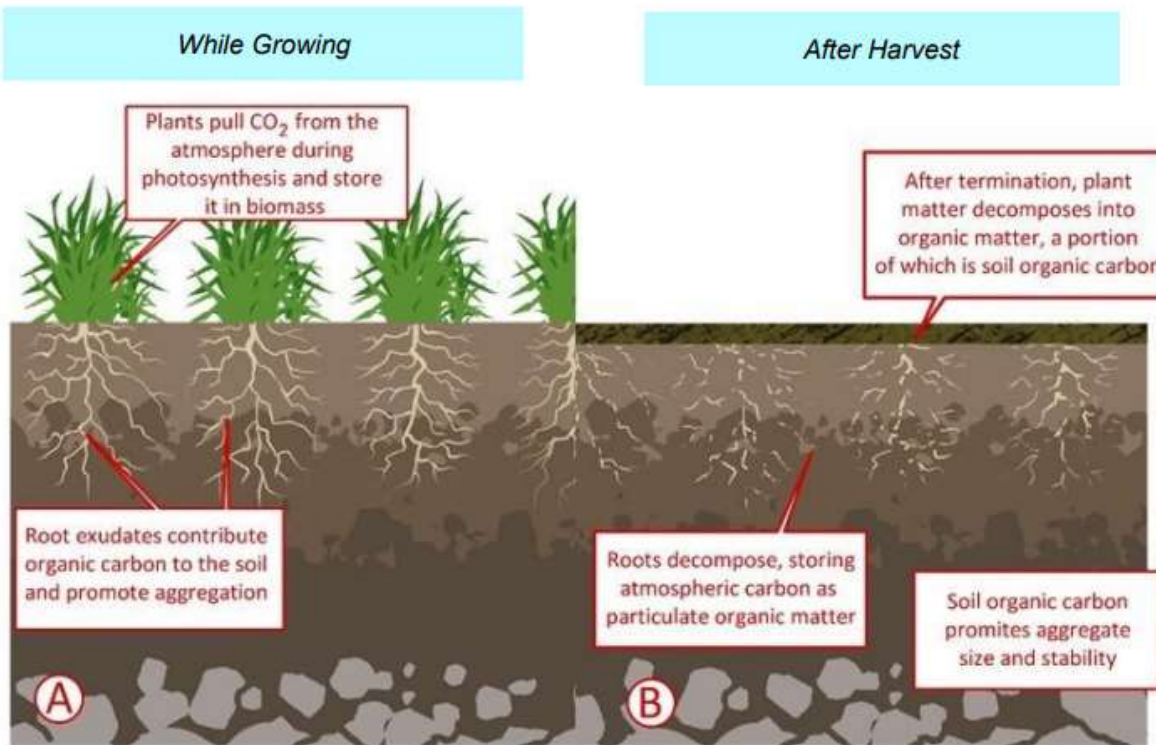


# Carbon Sequestration Potential is High in Illinois, Wisconsin, and Minnesota



# What is soil sequestration?

Long-term storage of carbon dioxide (and other forms of carbon) in the soil



## Agronomic Practices that Support Carbon Sequestration

### **No-till**

1. Plowing / digging up the field before planting
2. Tillage oxidizes the soil and releases the carbon back into the atmosphere

### **Cover Crops**

1. Prevents run off, reduces compaction, and increases soil aggregation
2. Popular cover crops are rye, clover, winter wheat, barley, etc.

### **Rotational Grazing**

1. Prevents overgrazing which leads to plant destruction, compaction, erosion & runoff

*Fun Fact: 300m+ acres of land in the US alone*

# Growers that have already adopted carbon farming practices may still be able to qualify for additionality

## • What is Additionality?

- Newly adopted practices that increase soil organic carbon and/or reduce greenhouse gas emissions

## • Why is Additionality Important?

- It ensure that the environmental impacts that occur as a result of a grower's participation in Carbon by Indigo are incremental to what would have happened without a carbon credit payment
- Provides buyers confidence that they are “actually” reducing their carbon footprint when purchasing Indigo carbon credits

## Qualifying Practice Changes

Practice changes implemented within the last 24 months will count towards additionality (Lookback Period)

Largest Contributor to Carbon Sequestration



### Reduce Tillage

- **Reduce** the total # of tillage passes
- **Delay** Tillage from directly post-harvest to closer to plant
- Reduce the tillage impact through **changing tillage implements**



### Cover Crops

- **New** cover crop adoption on a field
- Longer duration of a cover crop through **delayed termination**
- Longer duration of a cover crop through **earlier planting** (e.g., inter-seeding)



### Rotate Crops

- **Add a legume** specie to an existing cover crop blend without a legume currently in the blend
- Add a new cash crop to crop rotation (i.e., add wheat to corn-soybean rotation)



### Reduce Inputs \*

- **Delaying** nitrogen application timing (>30 days before planting)
- **Adding** a stabilizer or inhibitor to at least 50% of total nitrogen fertilizer application while not increasing total N applied

A grower will qualify for additionality if he/she adopts **or enhances** an approved practice change

The examples provided are at a summary level. We can/will provide greater detail to meet additionality standards

\* Reduce Inputs are lower on the spectrum of effectiveness and should be paired with other practice changes



# What does it take to make a carbon credit?

The production, verification, and sale of carbon credit

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## What does it take create and sell a carbon credit?

1. Enroll farmer
2. Record field
3. Sample soil for baseline carbon reading
4. Monitor and validate farming practices
5. Resample soil for new carbon reading
6. Register credit
7. Purchase credit from farmer
8. Hold or sell credits to third party
9. Monitor and manage permanence requirements



# The Carbon Farming Market is quickly maturing

There are multiple ag carbon programs available...



...Compeer partnered with Carbon by Indigo because of the strong advantages

1 Only Registry-Approved Program at Scale

2 Operating At Scale

3 Grower Aligned with Market Upside

4 Credits Sold-Out to Major Corporations

5 Robust Quantification Capabilities

6 No Cost to Participate



# WHAT PROGRAMS ARE AVAILABLE

- Row Croppers
  - USDA programs
  - Additional 3rd party programs
  - Who gets the Payment-landlord or tenant

Regenerative Ag  
Permaculture

- CAFO Units
  - Methane capture programs
  - Potential program stacking; water quality programs etc.
  - *Methane is 84 times more potent than CO<sub>2</sub> in green house gas. Dairy and swine farms represent the best “bang for the buck” reduction compared to other alternatives (at least 5 times the contribution of solar and wind on a comparable basis)*
- Timber Tract Owners
  - Forestry Carbon is some of the oldest methodology



# TWO NEW CARBON PROGRAMS

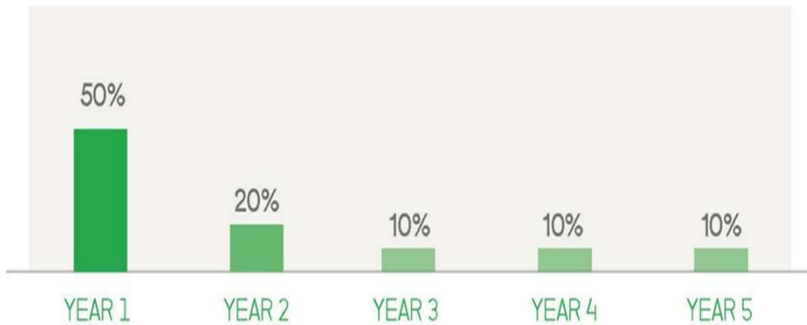
Soil Carbon and Forestry Carbon



# COMPEER SOIL CARBON PROGRAM

Carbon is being marketed today for \$27/ton. Minimum of \$15/ton

Client receives 75% of the revenue and Indigo 25%. We are paid on Indigo's cut, not the clients.





# COMPEER SOIL CARBON PROGRAM



- We are working with Crop insurance team at Compeer
  - Pairs well with crop insurance data collection.
- Ramping up as a team and we are already hosting learning sessions.
- We can accept leads and applicants today.
- No acreage limits
- Income is perpetual

# COMPEER FORESTRY CARBON PROGRAM

-BlueSource is the largest aggregator of Carbon and LCF in North America. Toronto Company

Target market is those acreages of 5000 acres or more initially

-Bluesource contracts are fully customizable depending on logging practices.





## WHAT ARE THE RISKS

- **There will be a contract....contracts tend to be binding**
- **We might lose some flexibility in property management**
- **More carbon has to be stored tomorrow than today...continuously.**
- **The carbon could be worth more...or less**
- **Government(s) influence**
- **Transparency**
- **Case law is mostly untested in disputes**

# WHAT IS HAPPENING IN WASHINGTON?

- 2023 Farm Bill will focus on Carbon
- Growing Climate Solution Act
  - Reintroduced to the Senate & passed
- Food & Ag Climate Alliance formed in 2020
  - Farm Credit Council has joined this group
- Build it Back Better BBB???second version coming???





# CLIMATE POLICY ACTIVITY AT THE FEDERAL LEVEL

## **Growing Climate Solutions Act (GCSA). Legislation directs USDA to:**

- Certify technical assistance providers to assist farmers participating in carbon markets, and establish a 3<sup>rd</sup> party verification program
- Publish website to provide a one-stop shop for information for farmers on how to participate in carbon markets
- Establish an advisory council with majority being farmers, ranchers, or private forest owners
- GCSA overwhelming passed the U.S. Senate earlier this year with bi-partisan support. Legislation has been introduced in U.S. House but has yet to receive a hearing in the House Agriculture Committee
- GCSA supported by Food and Agriculture Climate Alliance (FACA), which includes the Farm Credit Council

# CLIMATE-RELATED PROVISIONS FOR AGRICULTURE IN BUILD BACK BETTER (BBB)

- **BBB:** \$1.75 trillion package, including \$500 billion in climate-related funding
- **Agriculture provisions:**
  - Conservation Security Program (CSP): \$4 billion in additional funding
  - Environmental Quality Incentive Program (EQIP): \$9 billion in additional funding
  - \$25/acre cover crop incentive payments (up to 1,000 acres)
- BBB has passed U.S. House on party-line vote, but modifications expected if legislation is to pass the U.S. Senate. Modifications to legislation and timing of Senate consideration TBD

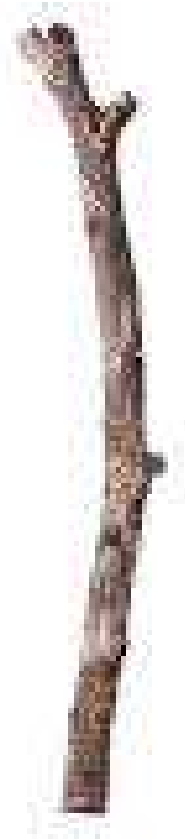


## USDA ACTIONS ON CLIMATE

- Climate-Smart Agriculture and Forestry Partnership Initiative announced by USDA Secretary Vilsack earlier this year
- USDA seeking input on the adoption of pilot projects in order to quantify and monitor the carbon and greenhouse gas benefits associated with those practices
- USDA expected to start funding pilot projects in 2022, using its Commodity Credit Corporation (CCC) authority

Will it be  
the

**vs.**





## WHAT IS COMPEER DOING

- Team formed to Explore the Carbon Marketplace
  - Started work in January 2020
  - Developing external network of key stakeholders?
  - We have ongoing collaboration with Indigo, BlueSource RNG, Bluesource Timber and several others.
  - CNG, Row Crop, Timber, Solar, Etc.
  - Looking to understand the credit risks associated to contracts
- Focus on becoming comfortable that this market is “permanent”
- Bigger is the idea that we can develop market access our Clients
- Advocate at the policy maker level



# WHAT IS THE FUTURE FOR CARBON AND COMPEER?

- We need to be involved?
- How involved do farmers want to be?
- Is there money to be made by our clients?
- Is there a need for more transparency to the market?
- Will we be forced into action or will we lead?
- What are the long-term risks?

## What does carbon farming involve?

### Sign up

You map or import field boundaries and enroll in the program

### Make practice changes

You add new practices that increase soil carbon & reduce emissions on your farm, with agronomic support from Indigo

### Enter farm records

You enter historical & current season records in our software, and Indigo takes soil samples on some growers' fields to measure soil carbon

### Get paid

After Indigo submits verified results and the registry issues credits, Indigo pays you for the carbon credits you produced





## FINAL THOUGHTS

- Take your time this year to do your research!
- Keep on the look out for cover crop incentives.
- Your business plan is your business plan. Do what works for you.
- Know that you are not alone. Compeer is working quickly to stay diligent of the options, strategies and give market opportunity to those who choose to endeavor.
- Good luck with your spring planting season. Stay safe.
- Give me or your Compeer team a call anytime!



A large, light blue outline of a house with a chimney on the left side. The house is centered on a dark teal background. A small yellow horizontal line is positioned below the text.

**THANK YOU!**