



**CARBON STANDARDS**  
international

# Global Cooling Services

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**GLOBAL  
COOLING**

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# AGENDA

- CDR Needs a Paradigm Shift: Global Cooling
- Calculations and costs
- Current Status

GLOBAL  
COOLING



# CDR Needs a Paradigm Shift

- Temporary AND long-term sequestration
  - Cycling and sequestration
- From product thinking to service model
- From transactional to legacy mindset
- Affordable, realistic, trustworthy (ART!) credits



# CDR Needs a Paradigm Shift – from Temporary AND Long- term

- Global cooling services acknowledge the importance of temporary C-sinks.
- A C-sink maintained for 50 years has same global cooling effect as a geological C-sink's first 50 years.
- A temporary C-sink has a global cooling effect for as long as the C-sink persists.
- A temporary C-sink is as valuable as a geological, long-term C-sink if that the temporary C-sink is continuously replaced by another C-sink of a same or larger size.



# CDR Needs a Paradigm Shift – from Temporary AND Long- term

- Carbon Cycling AND Sequestration
- Both are necessary
- “Permanent” sequestration reduces amount of carbon for use in shorter term sinks



# CDR Needs a Paradigm Shift – from Products to Services

- Carbon credits currently sold as a product to credit buyer
  - Who sells products for ETERNITY!
  - Who owns what?
    - Buyer owns a claim? a quitclaim deed?
- Carbon ‘caretaker’: roles, responsibilities and revenues

*A quitclaim deed transfers the title of a property from grantor (biochar producer and/or biochar end user) to grantee (e.g., carbon credit buyer), with little to no buyer protection*



# CDR Needs a Paradigm Shift – from Products to Services

- Instead of selling a geological C-sink, the climate cooling service or utility is sold.
- **Global cooling services sells the temporary climate effect of a C-sink**



# CDR Needs a Paradigm Shift: Transactional to Legacy

- Most CDR focuses on a transactional or annual emissions
  - This ignores the cumulative emission impact
- To materially rebalance carbon, a legacy perspective is required.
  - Companies may start from 1990 (or later for newer companies)
  - Individuals start from 1990 or from age of 18





# CDR Needs a Paradigm Shift: HOW?

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- **Affordability**
  - Most current buyers of biochar or other geological storage are only including this as 1% of overall CDR portfolio due to cost
  - Most individuals/companies could not afford to neutralize legacy emissions
- **Realistic**
- **Trustworthy**



# Calculations & Costs: Balancing Global Warming Effects

- Over 15 years, 179 t CO<sub>2</sub> emitted

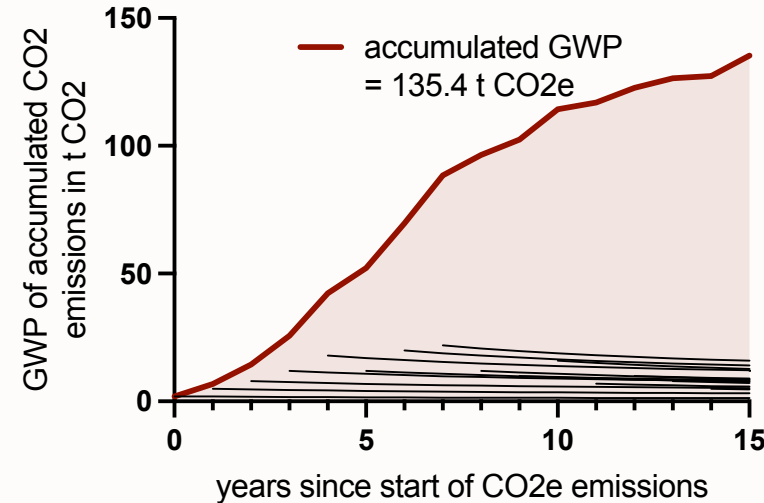
To live a climate neutral year, the person or company must establish/buy a global cooling effect of 179 t CO<sub>2</sub>e for one year.

At 3€ / t aCO<sub>2</sub>e

= 537 € / y or

= 1.40 € / d

Accumulated GWP of 15 years CO<sub>2</sub>e emission



- 2007 - 2 t CO<sub>2</sub>
- 2008 - 5 t CO<sub>2</sub>
- 2009 - 8 t CO<sub>2</sub>
- 2010 - 12 t CO<sub>2</sub>
- 2011 - 18 t CO<sub>2</sub>
- 2012 - 12 t CO<sub>2</sub>
- 2013 - 20 t CO<sub>2</sub>
- 2014 - 22 t CO<sub>2</sub>
- 2015 - 12 t CO<sub>2</sub>
- 2016 - 10 t CO<sub>2</sub>
- 2017 - 16 t CO<sub>2</sub>
- 2018 - 7 t CO<sub>2</sub>
- 2019 - 10 t CO<sub>2</sub>
- 2020 - 8 t CO<sub>2</sub>
- 2021 - 5 t CO<sub>2</sub>
- 2022 - 12 t CO<sub>2</sub>



# Calculations & Costs: Balancing Global Warming Effects

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- If a CO<sub>2</sub> compensation of 1 t CO<sub>2</sub> costs 150 € (100y time horizon), the global cooling service of 1 t CO<sub>2</sub>e for one year could cost
- (150 € / 100 years \* 2 =) 3.00 € per t aCO<sub>2</sub>e



# Global Cooling Services Current Status


- CSI is beta testing 99 individuals/companies  
NOW
- You can participate NOW
- Looking for partners



# Biochar C-Sink registration – soil application

## The next generation of carbon removal standards

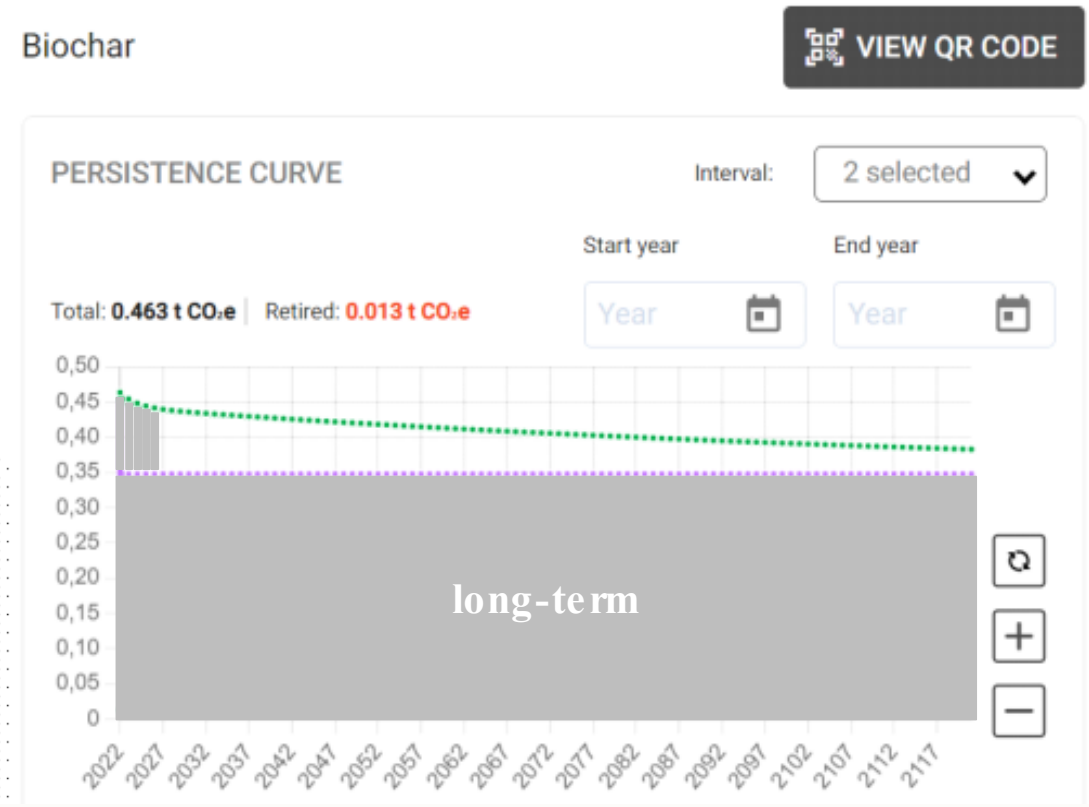
Search  Filter

 **Biochar** ✔ Realised

Stock ID: 1542

Date of sink establishment: 03-05-2023  
Issue date: 03-05-2023

Amount CO <sub>2</sub> e in tonnes	Amount C	Emission backpack	Standard
0.463 t CO <sub>2</sub> e	0.126 t C	Compensated	Global Artisan C-Sink



- Visualisation of **actual C-Sink** value - yearly
- Visualisation of **long-term C-Sinks** and **temporary C-Sinks**
- **Retirements** of C-sinks





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# QUESTIONS?

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