



Carbonfuture MRV+



Carbon Removal
Supplier Services



Due
Diligence



Carbon Removal
Tracking

Introduction

The Most Comprehensive MRV Solution for Durable Carbon Removal

Carbonfuture MRV+ is the cutting-edge, data-powered monitoring, reporting, and verification (MRV) solution that brings trust to every stage of the carbon removal process.

Carbonfuture MRV+ seamlessly integrates the entire lifecycle of carbon removal, from the initial project support and due diligence to robust tracking, third-party verification, and certification, ensuring the highest standards of quality and reliability.

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Carbonfuture MRV+

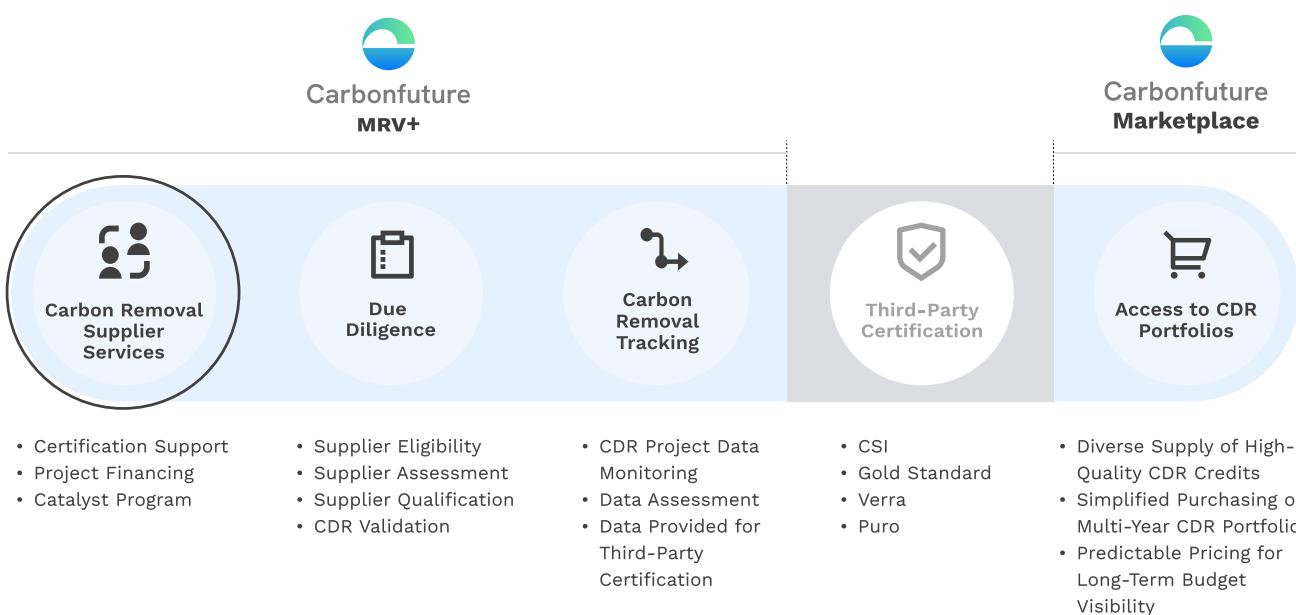


Carbon Removal Supplier Services

Carbonfuture MRV+ Carbon Removal Supplier Services

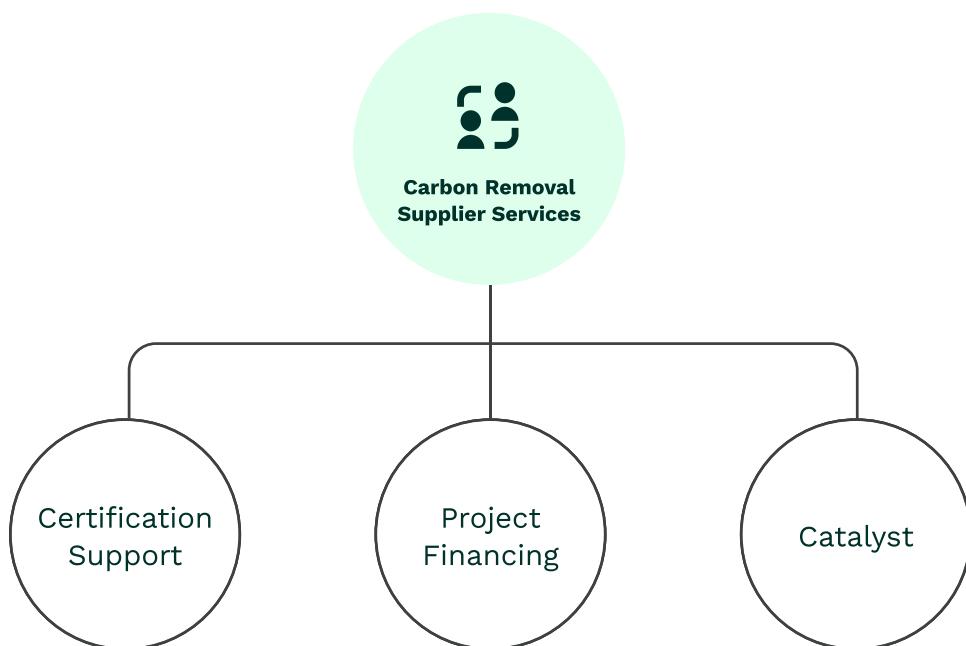
From project inception to navigating certification requirements, **Carbonfuture MRV+** provides CDR suppliers with comprehensive support to ensure their carbon removal projects succeed. Our **Carbon Removal Supplier Services** help them gain access to carbon finance and scale their climate impact more quickly by supporting them in the certification of their facilities under a third-party Standard. For companies working on carbon removal technologies with validated methodologies already in place, our team of carbon market experts and climate scientists provides guidance in efficiently navigating the certification process and gaining access to carbon and project financing. For organizations engaged in the development of nascent carbon removal technologies lacking established methodologies, we provide access to a network of scientists to help navigate the intricacies of MRV, certification, and credit generation.

CARBONFUTURE TRUST INFRASTRUCTURE FOR DURABLE CDR



A Comprehensive Suite of Services

Carbon Removal Supplier Services offers a comprehensive suite of support aimed at assisting CDR suppliers in successfully navigating the carbon removal certification process and securing financing for their carbon removal facilities.



CERTIFICATION SUPPORT

- STANDARD AND METHODOLOGY GUIDANCE: Navigate the voluntary carbon market and find the most suitable carbon removal Standard and methodology for your project.
- DE-RISKING CERTIFICATION: Proactively surface and address barriers to certification.
- VISIBILITY ON CERTIFICATION COSTS AND TIMELINES: Gain an understanding of projected costs and timelines associated with certification to a given methodology.
- VALIDATE BUSINESS MODEL: Benefit from access to removal market insights and expertise to inform and validate your business model.

PROJECT FINANCING

- **GROWING INVESTOR NETWORK:** Eligible projects are shared with a growing network of investors who recognize the value of projects that have undergone Carbonfuture's rigorous Due Diligence process.
- **INFORMED INVESTMENT DECISIONS:** Investors gain access to comprehensive project insights, Due Diligence reports, and validated financial models, enabling them to make well-informed investment decisions.

CATALYST

For companies developing novel carbon removal approaches that don't have validated methodologies yet, Carbonfuture provides access to a network of scientists to help navigate the intricacies of MRV, certification, and credit generation.

- **GUIDANCE ON MRV AND CERTIFICATION:** Receive guidance to navigate the voluntary carbon removal market, with a special focus on MRV, certification, and credit generation. The program aims to identify and co-create solutions to key challenges faced by companies developing similar carbon removal pathways.
- **CDR MARKET INSIGHTS AND EXPERTISE:** Understand key trends in the carbon removal market, validate pricing assumptions to help structure sound financial models, and glean insights on buyer preferences.
- **ACCESS TO A ROBUST COMMUNITY:** We foster collaboration and facilitate interactions with key stakeholders in the carbon removal space, including Standards, scientists, policymakers, and buyers, especially within our Catalyst program.

How to Get Started

For Companies Working on Carbon Removal Technologies with Validated Methodologies Already in Place

CDR suppliers approved during Carbonfuture's Due Diligence process will receive full Carbon Removal Supplier Services to ensure a successful path to certification.

1

APPLICATION

The CDR supplier submits information about their facility, project, and business for review by the Carbonfuture Supply team [here](#).

2

INTRODUCTORY CALL

If the application meets Carbonfuture's eligibility criteria, the CDR supplier is invited to an introductory call with a Carbonfuture Supply Manager to discuss their facility certification and sales needs, learn more about Carbonfuture MRV+ and Carbonfuture Marketplace, and determine the best Carbonfuture Marketplace offering. At this stage, we will already know, whether a methodology is available for the proposed project. If yes, we proceed with the process below; if not, the project can be further supported by Catalyst.

3

DUE DILIGENCE

The CDR supplier fills out a Due Diligence form for the type of Marketplace offering that the supplier is interested in. Carbonfuture's Due Diligence team reviews the profile across a range of technical and commercial facility risks and shares a determination of whether the project is eligible. If that is the case, they move on to the contracting process.

4

CONTRACTING WITH CARBONFUTURE

The CDR supplier signs an agreement for one of Carbonfuture's Marketplace offerings.

5

ONBOARDING TO CARBONFUTURE MRV+

One of our Supply Managers sets up an account and trains the CDR supplier's operational team on how to use Carbonfuture MRV+ to track and issue certified carbon removal credits. The Supply Manager provides ongoing support and training to ensure the supplier is fully onboarded and able to successfully use Carbonfuture MRV+ to issue credits.

6

CARBON REMOVAL CREDIT ISSUANCE AND SALES

Once the certification is complete, the supplier is ready to market and sell their carbon removal credits through the Carbonfuture Marketplace. They can do so directly or benefit from Carbonfuture's brokerage offering. In the latter case, Carbonfuture handles the entire marketing and negotiation process on the supplier's behalf.

How to Get Started

For organisations engaged in the development of nascent carbon removal technologies that are lacking established methodologies, reach out to us via **catalyst@carbonfuture.earth** to learn more about our Catalyst program.



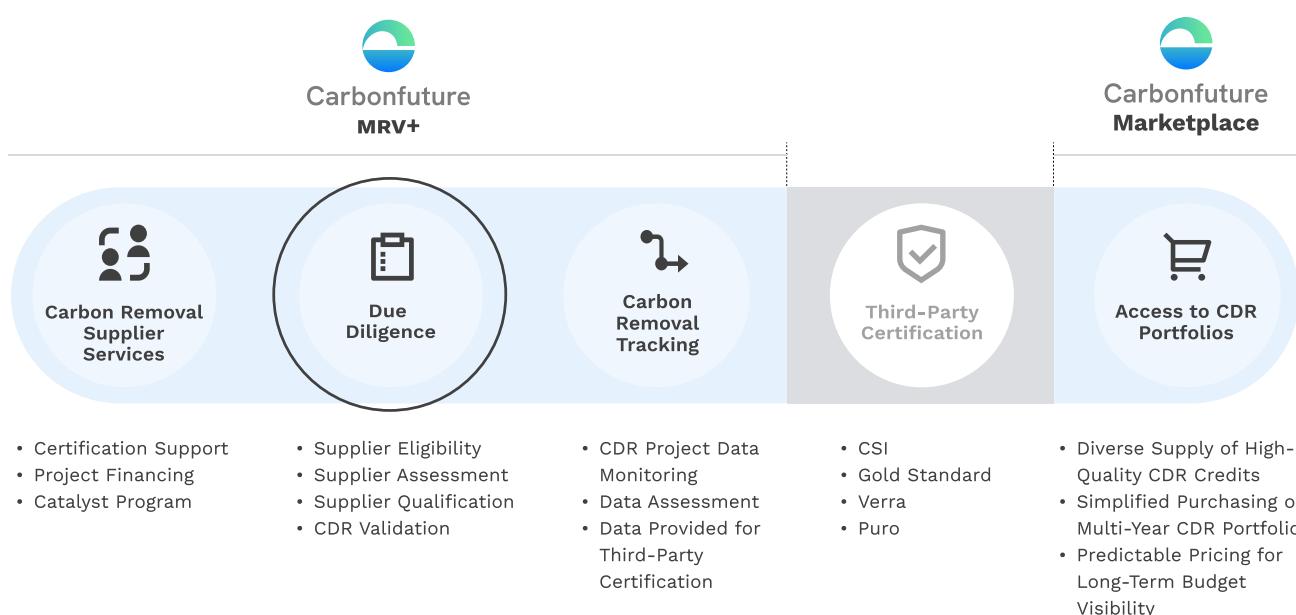
Due Diligence

Carbonfuture MRV+ Due Diligence

In the Voluntary Carbon Market (VCM), the landscape is not only rapidly evolving but also notoriously difficult to navigate. Both suppliers and buyers of Carbon Dioxide Removal (CDR) grapple with challenges rooted in its under-regulated nature and the glaring absence of a universally accepted standard. Such complexities mean that carbon removal initiatives can vary widely in terms of trackability, quality, durability, and verifiability. Consequently, meticulous Due Diligence is key to ensuring quality, permanence, and validity of carbon removal.

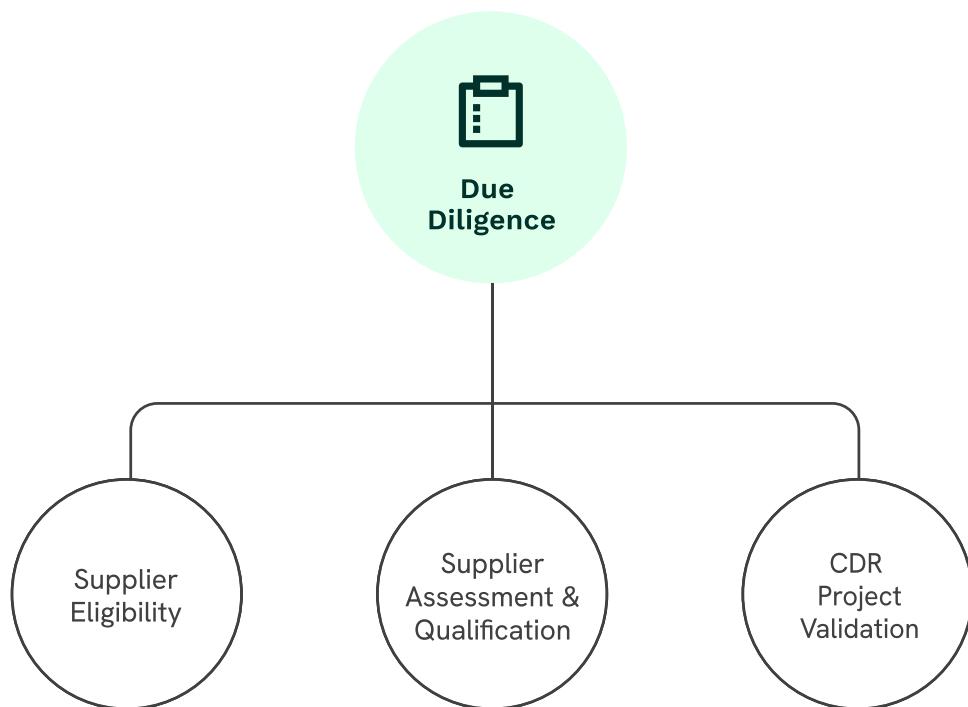
At Carbonfuture, we set out to build the enterprise-grade **Trust Infrastructure** for durable CDR. With our **Carbonfuture MRV+** product, we bring trust to every step of the carbon removal journey. As part of that, we have developed a meticulous Due Diligence process, ensuring that only credits from the highest-quality projects are sold through the **Carbonfuture Marketplace**.

CARBONFUTURE TRUST INFRASTRUCTURE FOR DURABLE CDR



As one of the three components of our Carbonfuture MRV+ product, our Due Diligence process includes rigorous fact-checking and assessment of both CDR suppliers and their respective projects. Our process combines widely accepted requirements set by established third-party Standards with practical buyer needs, such as financial plans, project feasibility, climate justice, and checks on reputational issues associated with the project. We draw on our team's real-life experiences in working on quality carbon removal projects over the years. This results in the most comprehensive and rigorous Due Diligence process, ensuring a thorough evaluation of each CDR project.

To progress onto Carbon Removal Tracking and subsequently qualify for the Carbonfuture Marketplace, CDR suppliers go through three distinct stages: supplier eligibility, supplier assessment and qualification, and CDR project validation. While the supplier eligibility and qualification assessments are performed internally, we rely on established third-party Standards and validation and verification bodies (VVBs) for the validation of the CDR project based on the data that is gathered by Carbonfuture's Carbon Removal Tracking.



1 Supplier Eligibility

Our Supplier Eligibility form is the initial stage for CDR suppliers to demonstrate their project's integrity and preliminary eligibility. During this stage, we assess technological, financial, and logistical aspects of the project, as well as the project status and readiness.



TECHNOLOGICAL REQUIREMENTS

Specific information about the equipment manufacturer (e.g. pyrolysis technology provider), the third-party certification that they plan to pursue, and any proof of conducted lab tests to evaluate a CDR project's technological feasibility.



PROJECT SCOPE

Estimation of the expected CDR volume per year to assess the project's production capacity and output.



PROJECT READINESS

Criteria used to determine the technological and economic status quo and readiness of the project and validate predictions of expected production and output.



RED FLAGS

Comprehensive checks of environmental, societal, legal, and financial aspects of the CDR project and supplier, such as carbon neutrality, environmental impact, additionality, and impact on social justice, following the Do-No-Harm principle. Rigorous evaluation of brand reputation, partnerships with high-risk industries, and involvement in high-risk countries.

2 Supplier Assessment and Qualification

This next stage provides a stringent and comprehensive framework for in-depth fact checking, focusing on project specifications, business plans, industry consensus, and three main pillars: reputational, financial, and technical due diligence.



SUPPLIER REPUTATIONAL DUE DILIGENCE

Rigorous checks are conducted to detect societal injustices, such as unjust stripping of land ownership or displacement, or allegations that could have adverse impacts if left undetected. Red flags are identified and addressed to ensure the integrity of the CDR project and by doing so protect a buyer's reputation.



SUPPLIER FINANCIAL DUE DILIGENCE

A detailed assessment of financial activities is performed to detect any evidence of fraudulent activities or association with high-risk industries. This ensures projects are just and share key benefits with the community. We also examine how revenue from carbon removal credit sales will be invested or utilized to determine whether the project can be deemed financially additional.



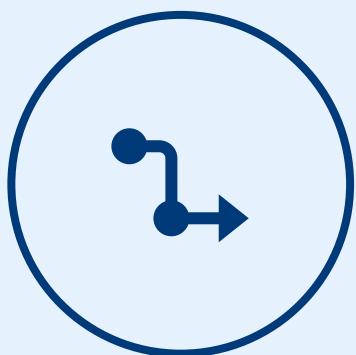
PROJECT TECHNICAL DUE DILIGENCE

Based on the third-party Standard body's requirements and scientific research, the CDR project is assessed, and scientifically questionable and non-verifiable claims are deemed to fail our Due Diligence. In-depth research into expansion projections is conducted to assess the project's feasibility and readiness. The project needs to prove its sustainability, adherence to the Do-No-Harm principle (doing no harm to the environment or society), and additionality.

3 Project Validation

As a third step, the CDR project must be validated by a third-party Standard body. Under a given CDR methodology, such as the European Biochar Certificate or Verra's Biochar Utilization Methodology, the CDR supplier provides detailed data required for the greenhouse gas (GHG) accounting of the planned project activities. Using the detailed data from the project documentation, a third-party auditor evaluates whether the project meets the requirements set by the Standard.

Carbonfuture MRV+



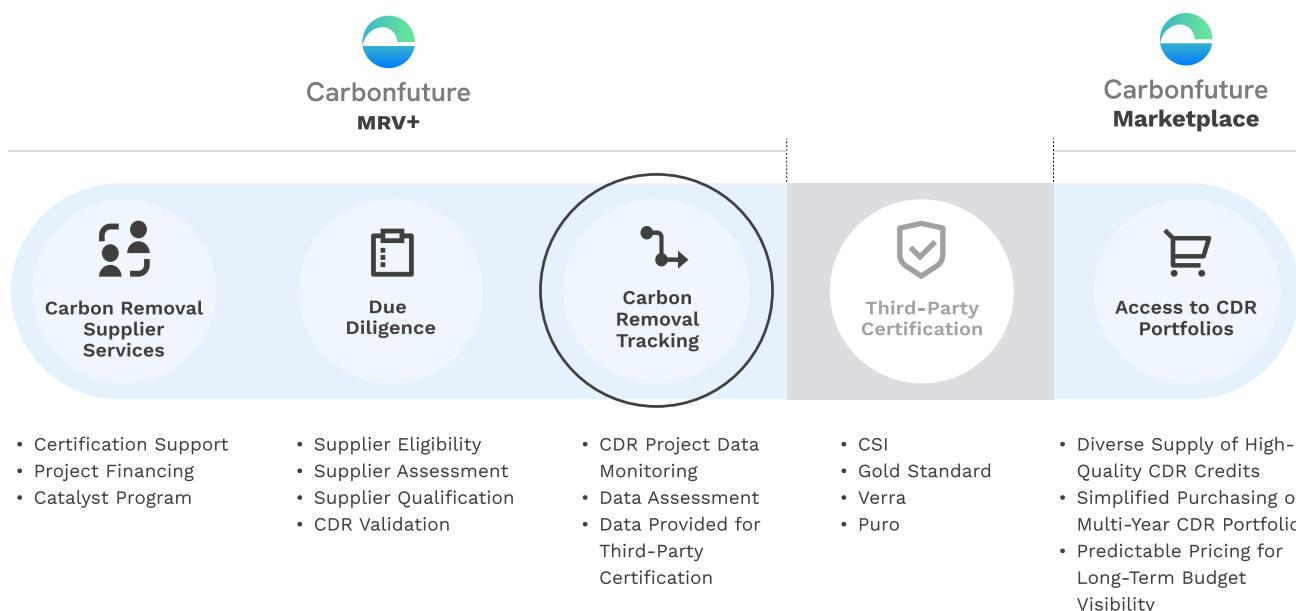
Carbon Removal Tracking

Carbonfuture MRV+ Carbon Removal Tracking

Carbonfuture MRV+ revolutionizes carbon removal with data-driven **Carbon Removal Tracking**, upholding credibility throughout the removal process. It empowers suppliers of durable carbon removal to generate carbon removal credits based on the certification requirements of established third-party Standards in a streamlined way. For carbon removal buyers it provides a complete look-through from the carbon removal credit to the supplier's carbon removal activities. As one of the key components of the Carbonfuture MRV+ product, our Carbon Removal Tracking provides accuracy and reliability throughout the entire carbon removal lifecycle and enhances efficiency in the creation of high-quality carbon removal credits.

Because Carbon Removal Tracking ensures transparency of carbon removal activities and supports net-zero claims by establishing accurate records of long-term storage, accountability, and value creation, it is crucial to accelerating durable carbon removal to climate-relevant scale. Continue reading to gain insights into what Carbonfuture's Carbon Removal Tracking is, why it is so important, and how it works.

CARBONFUTURE TRUST INFRASTRUCTURE FOR DURABLE CDR



What: Ensuring Quality and Reliability of Carbon Removal Credits with Carbon Removal Tracking

To ensure the effective and trustworthy management of carbon removals like Biochar Carbon Removal, BECCS, DACCS, and Enhanced Weathering, it's essential to track how certain attributes, such as materials, their location and ownership, change – and cause emissions – as they move through space and time. This is important because each of these carbon removal technologies involves a complex series of steps and ownership changes that need to be considered for the greenhouse gas accounting of the complete process. This accounting then is key to defining how much (net) carbon is removed and stored. Carbon Removal Tracking provides the end-to-end record needed to issue carbon removal credits. It captures essential data about the creation of a carbon sink – a natural or artificial reservoir that absorbs and durably stores carbon from the atmosphere – and seamlessly submits this digital information to be validated and verified by third parties, ensuring the quality and reliability of carbon removal credits. For CDR suppliers, our Carbon Removal Tracking replaces cumbersome monitoring reports by providing near-real-time, high-integrity records of carbon removal accounting and ownership attributes along the value chain.

The issuance of carbon removal credits is facilitated by converting CDR suppliers' real-world carbon removal efforts into verified digital records, confirming that these activities are aligned with the criteria outlined by a third-party Standard, such as Carbon Standards International, Verra, or the Puro Standard. A complete chain of contracts ensures that all parties engaged in generating a carbon removal credit – from capturing carbon dioxide from the atmosphere to storing it durably – are recorded and informed. This provides the basis needed to prevent double counting of carbon credits.

For each unique carbon removal process, Carbonfuture's Carbon Removal Tracking provides:

- All data necessary for calculating the net removal value in tCO₂eq, i.e., the gross removal potential and all emissions caused within activity scope,
- a closed chain of contracts as the basis to prevent double counting of carbon credits,
- and a verifiable carbon storage attestation, confirming the durable storage of the carbon.

Fully tracking the climate impact generated in the carbon removal process and accurately attributing its value to a certified removal credit furthermore enables buyers of carbon removal credits to purchase with full confidence. Carbon Removal Tracking is, therefore, a prerequisite for all credits sold through the Carbonfuture Marketplace, providing buyers with an unparalleled level of transparency throughout the carbon removal investment process.

Why: A Key Puzzle Piece to Scaling High-Quality Carbon Removal

ENHANCING TRANSPARENCY THROUGH A COMPREHENSIVE CHAIN OF CUSTODY

With various stakeholders and shared ownership in carbon removal activities, a detailed carbon chain of custody becomes essential. Carbon Removal Tracking systematically creates this documentation, offering maximum transparency to all stakeholders while ensuring confidentiality and enterprise-grade data security. The approach encourages all participants involved to understand their contributions and roles in the value-creation process. By granting users access to detailed information on the creation of a carbon sink, Carbon Removal Tracking fosters inclusivity in value chains and promotes equitable participation.

ENSURING ACCOUNTABILITY AND LIABILITY

To achieve durable carbon removal, it's vital to prove accurate net removal amounts and reduced reversal risk associated with various removal methods. Carbon Removal Tracking is key here, enabling thorough information storage throughout the value chain. For every carbon removal technique, clear records of storage locations and responsible parties are crucial to establish the foundation for liability for accomplished removals. The tracking process documents locations, oversees contracts, and maintains integrity among removal suppliers, landowners, and carbon removal buyers.

SUBSTANTIATING NET-ZERO CLAIMS WITH VERIFIED RECORDS

Carbon Removal Tracking facilitates the creation of precise and verifiable records for each individual carbon removal. These records serve as the basis for issuing accredited carbon removal certificates via our integration with third-party Standards. Without a robust Carbon Removal Tracking system, assertions of achieving net-zero targets lack credible, data-based proof.

SIMPLIFYING REPORTING WITH AUTOMATION

Monetizing carbon removal relies on demonstrating adherence to third-party Standards, not just physical delivery. Carbon Removal Tracking provides a user-friendly solution for CDR suppliers, automating the reporting of monitoring parameters for carbon removal accounting and attribute aggregation. This streamlines the process for carbon removal suppliers to demonstrate that activities were conducted as intended and in adherence to these Standards. At the same time, it streamlines data management among CDR suppliers and third-party auditors and Standards.

PRESERVING INTEGRITY THROUGH INDEPENDENT INCENTIVE STRUCTURES

Carbon Removal Tracking is managed by Carbonfuture - an intermediary between those who provide carbon removal methods and the organizations that verify these methods. This tracking relies on a third-party Standard to set and uphold benchmarks for turning project efforts into removal certificates. By keeping decision-makers separate from those who benefit, this method avoids conflicts of interest. By logging project data, Carbon Removal Tracking enables an initial independent data check to ensure project compliance against a given Standard's methodology. We're performing thorough checks on the data provided by CDR suppliers to ensure its accuracy. For example, we check the biochar bulk density against benchmarks. To boost the accuracy of our tracking processes, we are constantly growing our data set by integrating with carbon removal facilities and using IoT data. This protects the credibility and transparency of the carbon removal process, making sure that rules are not influenced by personal interests and maintain their reliability.

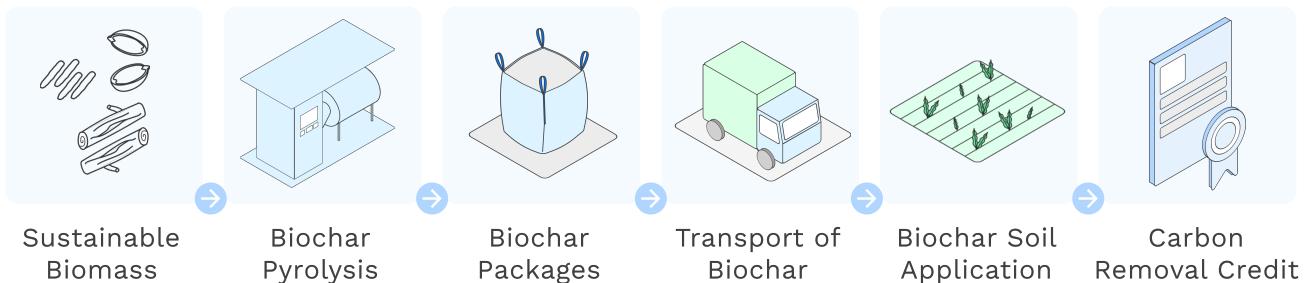
How: Effectively and Diligently Monitoring Carbon Removal

Carbon Removal Tracking involves the systematic monitoring and evaluation of carbon removal project activities - from capturing carbon dioxide from the atmosphere to storing it in a durable reservoir. Throughout this process, all the necessary monitoring details for precise carbon accounting, along with crucial attributes like confirming carbon storage and managing custody contracts, are collected.

To ensure thorough and careful monitoring of each carbon removal, it's important to create a simplified, functional model mirroring the actual journey from carbon capture to durable storage. This means setting clear project limits, gathering data regularly with meticulous precision for each step in the value chain, and maintaining accuracy. These systematic steps guarantee a reliable conversion of real-world processes into carbon removal certificates and ensure that all the factors needed to calculate the net removal value are taken into account.

Carbonfuture has developed a digital graph model that is able to capture this complex input data while remaining flexible and ultimately scalable. For each carbon removal credit, a buyer purchases on the Carbonfuture Marketplace, Carbon Removal Tracking provides a transparent end-to-end look-through by recording and streamlining the data for every step in the creation of the carbon sink. The tracking graph is the visual representation of this carbon removal data record. Attached to each step is the information required to calculate the net carbon removal as well as all relevant confirmations of ownership along the chain of custody. Providing transparency for how the carbon sink potential was established in addition to confirming the durable and irreversible carbon storage is what makes the environmental impact of the resulting carbon credit tangible and trustworthy. A closed chain of contracts provides the basis to prevent double-counting and enforce liability.

An illustrative supply chain for Biochar Carbon Removal is depicted in Figure 1, showcasing how each carbon sink is documented within Carbonfuture MRV+, with records that remain immutable over time.



Full Carbon Removal Tracking

Certification Scheme

Attested Carbon Sink Creation

Monitoring Reports

By meticulously tracking the complete carbon removal journey, Carbon Removal Tracking ensures transparency of carbon removal activities and supports net-zero claims by establishing accurate records of long-term storage, accountability, and value creation. This is a crucial element to accelerating durable carbon removal to climate-relevant scale and making substantial strides in tackling the climate crisis.



**Take confident
climate action today
with Carbonfuture!**

Get started

www.carbonfuture.earth