

Supplier Onboarding Manual

Guideline for Biochar Producer and Wholesaler

How to get remunerated for effective climate protection services through Carbonfuture

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Carbonfuture GmbH

Authors:
Hannes Junginger-Gestrich
Marcel Eichler



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1 Preface - About this Manual

This manual is designed to help C-Sink providers with the onboarding process on the Carbonfuture platform.

It provides insights to specific standards and procedures that suppliers need to be aware of, in order to successfully register biochar-based carbon sinks. Besides this manual, Carbonfuture may provide context sensitive help for additional questions and problems if needed.

The manual aims to inform producers and wholesalers of biochar as well as other traders and end users. Also, organizations that intend to produce and distribute biochar in the near future may use this manual to find all the necessary information, documents and to understand processes required to be remunerated for the climate benefit from persistent biochar applications with Carbonfuture.

The manual is organized in the following manner:

- I. The first chapter provides a general overview of the relevance carbon sinks
- II. The second chapter names reasons and incentives for producers and traders to enter the carbon market and introduces the reader to necessary standards and processes that suppliers need to uphold in order to generate credits with Carbonfuture
- III. The third chapter provides more information about the calculation of the carbon sink value
- IV. The fourth chapter contains a detailed manual with all the steps that are necessary to register a biochar-based carbon sink at the Carbonfuture platform

2 Overview

2.1 Why Carbonfuture?

In order to limit global warming below catastrophic levels, significant emission reductions are essential but by no means sufficient. There is already too much CO₂ in the atmosphere, and we must capture and safely store billions of tons over the next decades. That is, we need carbon sinks. Carbon sinks are fundamentally different to emission reductions. Scalable and readily available technologies are rare but available:

- Carbon forestry
- Soil organic carbon
- Biochar

Many emission compensation schemes realized in various carbon markets already exist. However, very few strictly distinguish between carbon sinks from emission reduction projects (e.g., renewable energy). In addition, all existing schemes are vague on the duration of carbon sequestration. Third, the measurability, verifiability of carbon credits is weak and therefore may create a lack of trust. Many of them are oversupplied and many have specific additionality requirements which are much more tailored to emission reductions and seem in their current forms less suited for negative emission technologies (NET) and true carbon rebalancing. The Carbonfuture platform was created to address these shortcomings of existing schemes. In contrast to other carbon markets, Carbonfuture offers:

- True carbon sinks only
- Carbon sink tracking
- Persistence over 100 years¹
- Guaranteed unalterable documentation and end-to-end auditability on the Carbonfuture Blockchain²

2.2 What is Carbonfuture and What's in it for You as Biochar Producer and Wholesaler?

The Carbonfuture platform provides both registry services and a trading platform for carbon sinks. Each individual carbon sink is represented and unalterably documented on the Carbonfuture blockchain by a **cf-Certificate**.

Each carbon sink certificate must meet our basic requirements in order to qualify to be eligible on the Carbonfuture platform. The Carbonfuture [C-Sink Certification Standards](#) describe in detail the criteria that the already existing and traded biochar-based C-sinks fulfil. Biochar-based sinks are the starting point and first use-case for Carbonfuture. By remunerating the climate benefit of persistent biochar applications, Carbonfuture injects money into the biochar value chain and fosters the creation of an additional revenue stream for biochar applications.

Reverse the Flow of Greenhouse Gases

¹ If a sink cannot be guaranteed to be fully stable over 100 years, e.g., through decomposition processes, more carbon must be stored initially in order to guarantee 1 ton over 100 years on average (a physicist would speak of "100 ton years").

² We use a permissioned, non-energy intensive blockchain and guarantee data confidentiality; accordingly, we do disclose sensitive sink details only to admitted auditors and not to the general public.

2.3 Standards and Processes

For biochar-based sinks, the C-Sink Credits are based on two elements, the **Production Certificate** and the sink documentation as evidenced by the **Carbonfuture Coupon** (see section 1.3.1). In general, Carbonfuture may accept production certificates from any independent institution, provided they fulfil our Standards. Currently, the [European Biochar Certificate](#) (EBC), established by the [Ithaka Institute](#) is the only issuer of eligible production certificates. We encourage alignment and collaboration between the respective national, regional and global standards and the EBC in order to ensure comparability and a level playing field.

Suppliers of biochar are obliged to follow the [EBC guidelines](#) to prevent any hazard for the health and for the environment while producing and using biochar. Furthermore, the EBC ensures that the feedstock used for the biochar production is harvested in a sustainably way, not causing environmentally harmful land-use changes.

There are two aspects to the production certificate:

- The pyrolysis plant must be certified. This includes in particular an assessment of the emissions and energy consumption of the pyrolysis process. The manufacturer of your pyrolysis plant must provide the required information on this to the reviewer.
- The individual production process must be certified. This includes an assessment of the feedstock production and preparation process and the energy used.

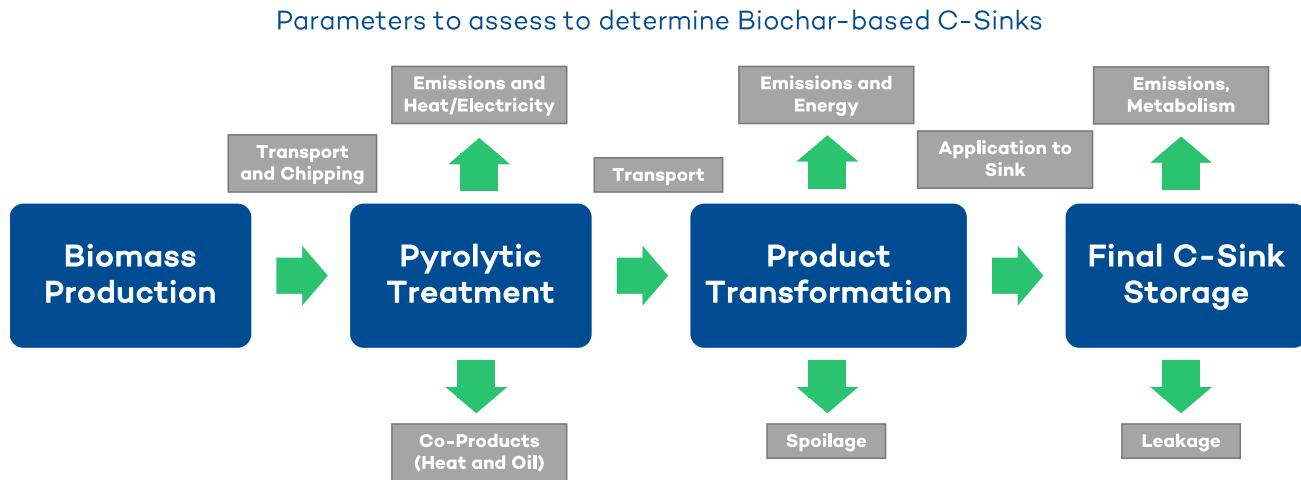
With the registration of the production certificate, the producer assures not to realize the carbon sink potential which is registered with and traded through Carbonfuture under the respective certificate outside the Carbonfuture platform. This is key to prevent double counting.

2.3.1 Biochar Assessment and Tracking³

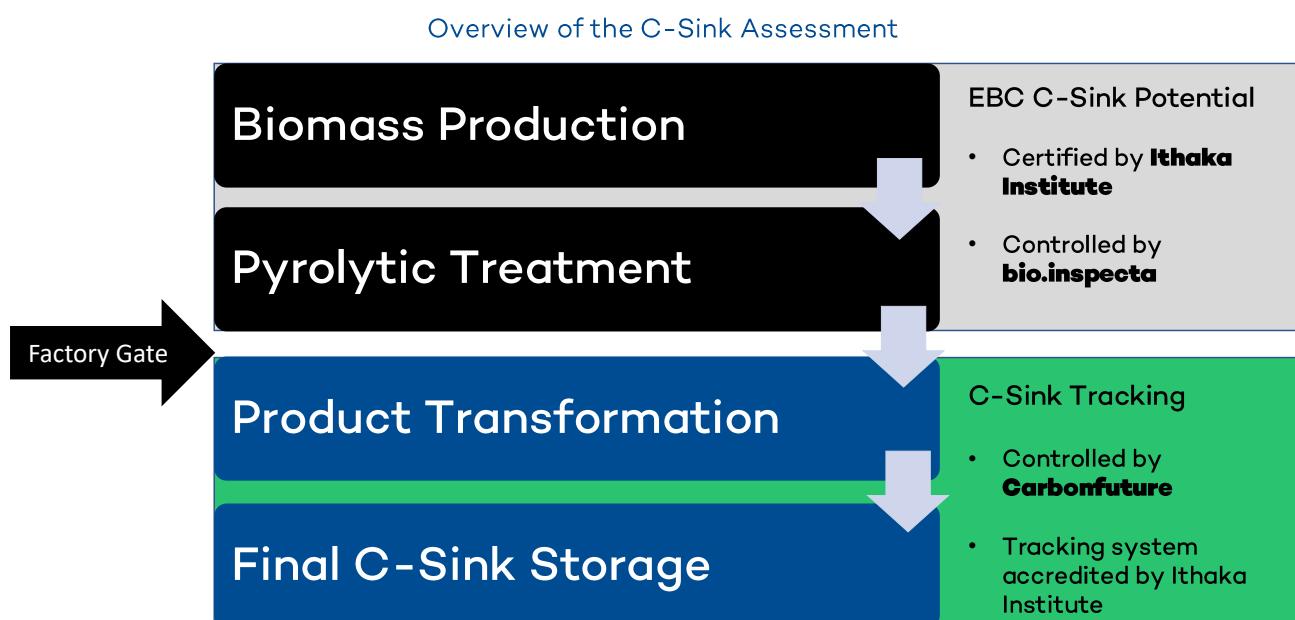
Biochar as a raw material comes in a huge variety of qualities and respective price levels. In addition, biochar has a vast range of potential applications ranging from filtration material, construction additive to agricultural use. Not all of these applications lead necessarily to a stable carbon sequestration and hence to not qualify as a stable carbon sink. Therefore, Carbonfuture requires that wholesalers and producers must follow the [EBC C-Sink](#). According to the EBC-Sink methodology also greenhouse gases emitted from the time of leaving the factory gate until the

³ An example of the Carbonfuture Coupon is provided in the Appendix

biochar is applied to soil or mixed into long-lasting construction materials must be accounted for and subtracted from the C-sink value. Thus, all important steps in the biochar's life-cycle, from its production until its final application need to be tracked and accounted for.



Following the EBC C-Sink, the biochar must be taken over at the factory gate by a tracking system that assesses and registers all carbon expenditures and greenhouse gas emissions that occur on its pathway (i.e. transporting, milling, processing). A service that **Carbonfuture** provides for its suppliers. As soon as the biochar is mixed into agricultural substrates such as [fodder](#)⁴, compost, liquid manure, and fertilizer or into durable materials such as concrete or resins, the C-sink potential can be converted into tradable C-sink certificates.



⁴ Additional parameters and analytical methods for the EBC-certification of biochar as animal feed additive ([EBC FEED](#)) are outlined in the linked document

The key to creating an accurately quantified carbon sink based on biochar lies in confirmation and documentation of the actual carbon preserving application of the material. To ensure that the biochar is used in a manner that does actually sequester the carbon, the biochar wholesaler together with the end user must document the use of the material on the Carbonfuture platform.

This documentation validates the actual sinks in a very granular way. For each shipping of biochar from the wholesaler to the end user, an individual Carbonfuture Coupon, filled out and signed by the end user of the biochar, provides the required evidence. Furthermore, with this document, the end user **warrants to transfer all rights that come with the respective carbon sink creation**. This is key to prevent double counting.

Carbonfuture

CO₂-Senken Zertifikat carbonfuture Coupon

To be filled out by the biochar wholesaler / sink registrar	Return coupons to	
Name / firm		Email: registrar@carbonfuture.earth
Date	2021-02-22	
Shipping note (external ID)	LS00003	
Batch-No. ¹	21.04.2021	
Quantity ²	Gross weight 3.0 t	Volume n/a m ³
Optional Information	Coupon-No. 1008	Sealing-Nr

¹ Alternatively, the production date may be provided

² Either gross weight or volume must be provided

To be filled out by the end client / biochar user		
Name / firm	Beerwein AG	
Address	Head Office	Address / location of sink if different
Street	Musterstr. 1	Musterstr. 1
City, ZIP	12345 Musterstadt	12345 Musterstadt
Country	Germany	Germany
Type of application (please tick as appropriate)	<input type="checkbox"/> Direct soil application <input type="checkbox"/> Compost additive <input type="checkbox"/> Liquid manure treatment <input type="checkbox"/> Bedding for farm animals <input type="checkbox"/> Feeding of farm animals	<input type="checkbox"/> Silage additive <input type="checkbox"/> Additive for anaerobic digestion (biogas facility) <input type="checkbox"/> Biochar-based organic fertilizer

By signing this document, the biochar user confirms and agrees:

- The biochar and the manure (in case of biochar application as bedding or feeding) and the digestate (in case of anaerobic digestion) will be brought into soil and will **not be burnt or pyrolyzed**.
- He or she explicitly warrants that **the claim on the carbon sink service provided is transferred to the wholesaler / sink registrar indicated above**. He or she will not claim any rights related to this service. In particular, he or she will not claim any such rights in relation to any private or public subsidy or support program in the context of soil organic carbon or as part of the CO₂ accounting in his or her own sustainability report.
- He or she explicitly agrees that his or her **data** which is registered and stored in relation to the referenced sink may be used by carbonfuture. They will be made public in an anonymized way, e.g. as part of statistics on the carbonfuture platform. In addition, they will be disclosed in complete and not anonymized form for control and audit purposes to persons who are authorized for this by carbonfuture or under the EBC certificate.

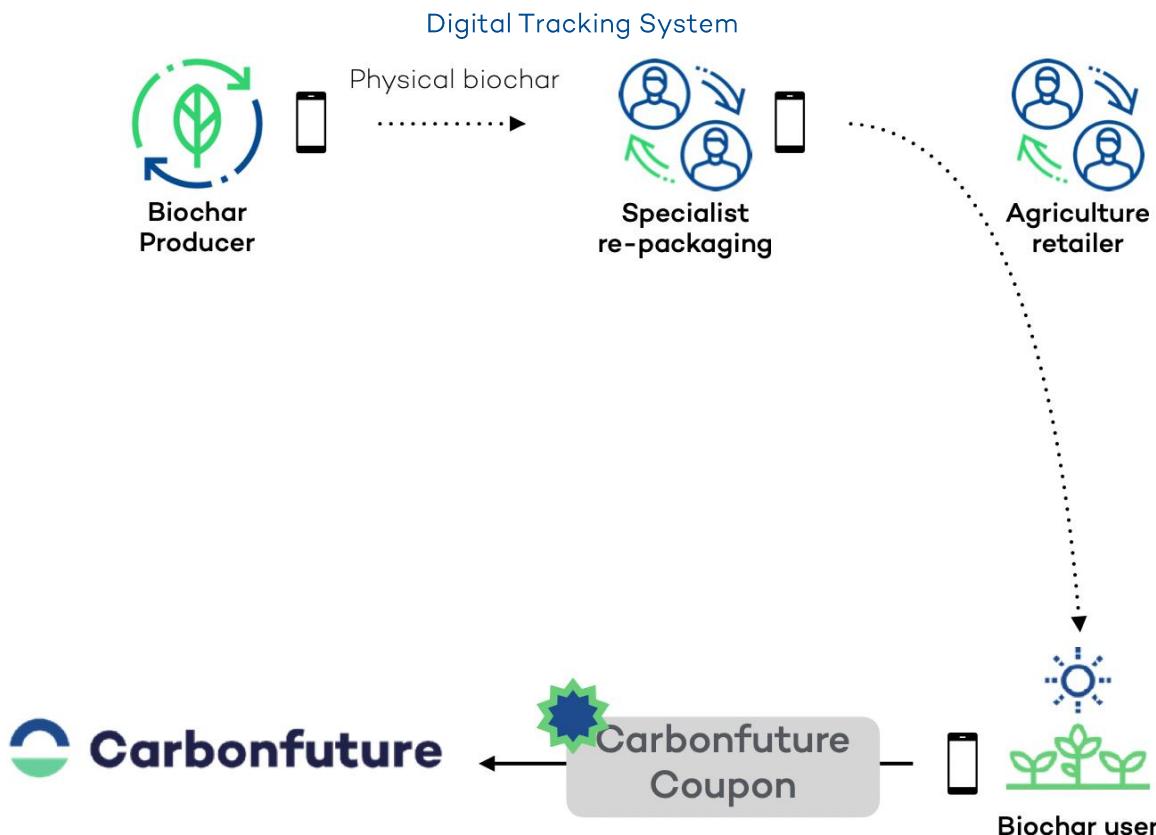
Optional:

- I consent to the **publication of the exact sink location** on the carbonfuture platform

Place and date

Signature biochar user

From Q2 2021, a fully digital sink tracking will be available, including a digital Coupon. Physical signatures are still possible and accepted, but a **fully digital and streamlined process** will be available.



2.3.2 Linking Production and Sink Certificates in the cf-Certificate

The Production Certificate and the Carbonfuture Coupon are linked on the Carbonfuture platform. After the validation of both documents, Carbonfuture issues a cf-Certificate for each individual sink. This cf-Certificate represents the claim on the climate service provided by the sink and therefore has a monetary countervalue in the carbon market. After issuance, it is assigned to the registrar of the sink (which is typically the wholesaler or the end user), who is then the registered owner of the cf-Certificate.

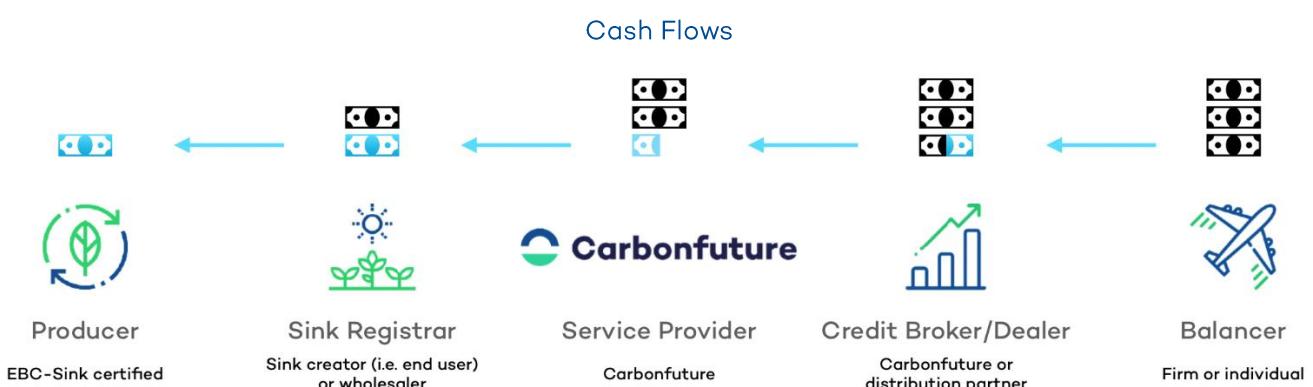
2.3.3 Cash-Flows

The owner of the cf-Certificate may sell it to any entity which acts as Broker on the Carbonfuture platform. Initially, Carbonfuture GmbH will act as the primary Broker and will buy cf-Certificates from the sink registrar (e.g., the wholesaler). As the marketplace evolves, we expect and encourage new brokers to join.

In essence, Carbonfuture compensates the sink registrar in exchange of the cf-Certificate. However, both the biochar producer and the end user are key contributors to the climate service:

- **The producer** sells certified biochar with a sink potential. This sink potential has a value as in the end, it can be turned into a sink and reimbursed. Some producers are billing the sink potential in a separate line item in addition to the material, others just calculate it in with the biochar price.
- **The end user** signs the Coupon, providing relevant data and substantiating the claim related to the climate service (i.e. carbon sequestration), and transferring all claims related to the climate service. Some wholesalers issue a credit note (reverse bill) to the end users in return of the Coupon.

These two parties deliver their service to the wholesaler and, strictly speaking, the monetary compensation is subject to the respective contractual relations. Together with our pilot partners we currently have a model where the sink registrar reimburses the end user in exchange of a signed Carbonfuture Coupon. In this model, the sink registrar keeps a handling margin, and the end user receives a fair share. The biochar producer benefits as the demand for the certified product is strengthened and better prices can be realized. In buying the C-Sink Credits from the wholesaler, Carbonfuture injects money into the biochar value chain and fosters the creation of an additional revenue stream.



Additionally, **Carbonfuture compensates the producer** when registering a production certificate in exchange of the assurance not to claim the sink potential registered and traded with Carbonfuture outside the perimeter of the Carbonfuture platform.

3 Quantifying the Climate Benefit of Biochar-Based Sinks

In order to quantify the climate benefit of the biochar, it is decisive to determine the overall emission balance of the biochar including pyrolysis, further processing and application. If this balance is overall positive, meaning more carbon has been permanently sequestered than emitted, we can speak of a true carbon sink. The biomass production must be climate-neutral, i.e. it must not diminish existing carbon sinks. This can be ensured, for example, by using agricultural or other waste, rapidly growing biomass or other material recovered from the care and maintenance of biodiversity areas, the countryside and roadsides. Wood from sustainably managed forests can also meet the criteria.

In order to calculate the net CO₂ equivalent value of a biochar-based sink, the following calculation steps are performed.

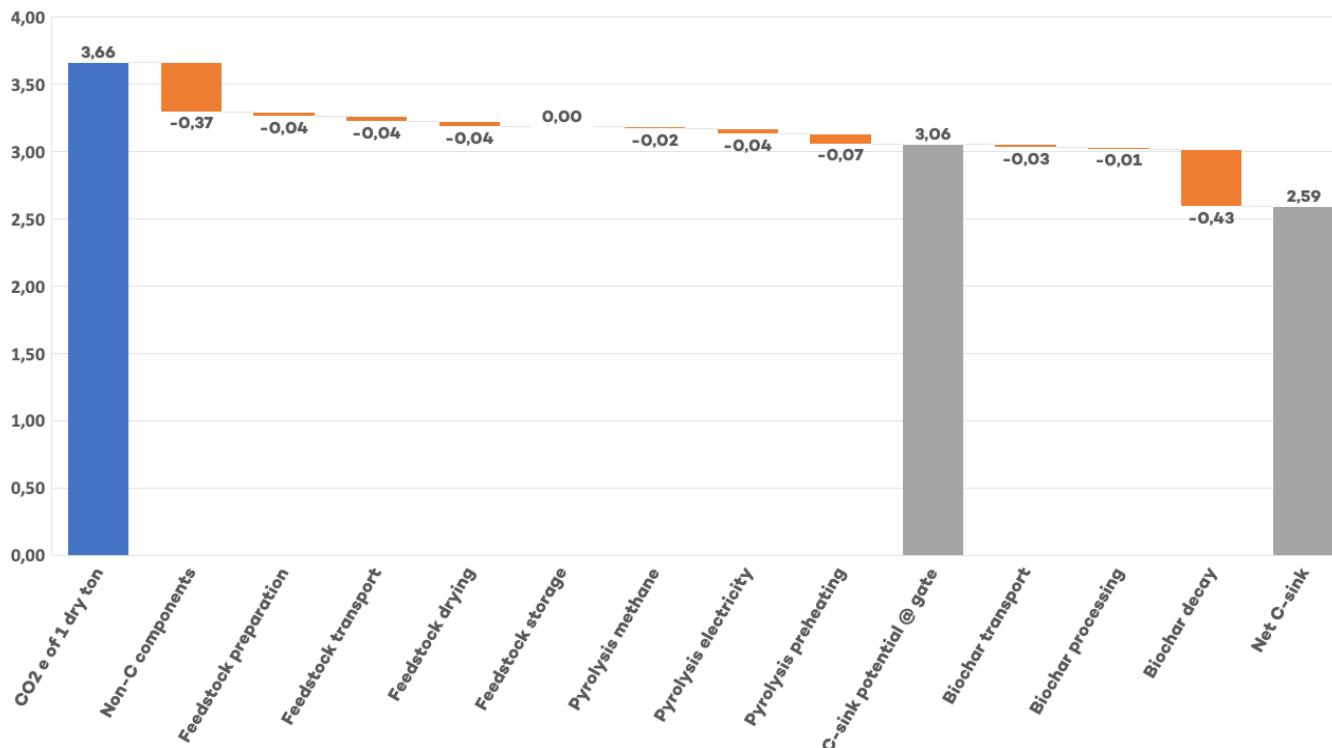
- All deductions based on dry mass biochar which are made to come up with the net CO₂ sink value after pyrolysis (i.e., at production site), are provided by the (EBC) production certificate, namely the non-carbon part of the biochar and the production emissions.
- The conversion of the gross weight of a unit biochar into dry mass needs to be provided by the sink registrar, either based on individual measurement of moisture content (the protocols must be stored and disclosed upon request) or based on bulk density measurements.
- Further deductions for transport and processing are based on data provided by the sink registrar on the Carbonfuture platform. The respective calculations are performed by Carbonfuture. The annual decay is determined to be 0.3% provided the production certificate asserts H/Corg < 0.4.⁵

Figure 1 shows an example for the calculation of the net C-Sink value, as employed by Carbonfuture. More detailed information about the methodology and its scientific basis can be found in the [EBI Whitepaper⁶](#).

⁵ This decay rate is a conservative estimation based on Lehmann, Johannes & Abiven, Samuel & Kleber, Markus & Pan, Gen-Xing & Singh, Bhupinder Pal & Sohi, Saran & Zimmerman, Andrew. (2015). Persistence of biochar in soil. Biochar for Environmental Management: Science, Technology and Implementation. 235-282. (see Figure 10.5).

⁶ EBI stands for European Biochar Industry Consortium e.V.

Calculation of the net C-Sink Value of the Soil Application of 1 dry metric Ton of Biochar



4 How to get EBC certified

4.1 EBC-Requirements

Carbonfuture provides a checklist and [survey](#) for suppliers to conduct an initial assessment in order to identify if they are eligible for the EBC certificate. Thus, potential obstacles to the EBC certification can be detected prior to the fee-based certification process. This helps interested suppliers to save time and expenditures.

4.2 EBC-Labels

The EBC distinguishes between four different **application classes**:

- Feed
- AgroBio
- Agro
- Material

The suitability of the produced biochar for these classes is analyzed in the EBC Basic Analysis Package. For the EBC-Feed an additional analysis package is required. The application classes are categorized according to the limit values shown in the table below:

Important Limit Values for EBC Application Classes⁷

EBC-Classes	EBC-Feed	EBC-AgroBio	EBC-Agro	EBC-Material
Elemental Analysis				
H/Corg	< 0.7	< 0.7	< 0.7	< 0.7
O/Corg	< 0.4	< 0.4	< 0.4	< 0.4
Heavy Metal Contamination				
Pb	10 g t ⁻¹ (88%DM)	45 g t ⁻¹ DM	150 g t ⁻¹ DM	250 g t ⁻¹ DM
Cd	1 g t ⁻¹ (88% DM)	0.7 g t ⁻¹ DM	1,5 g t ⁻¹ DM	5 g t ⁻¹ DM
Cu	100 g t ⁻¹ DM	70 g t ⁻¹ DM	100 g t ⁻¹ DM	250 g t ⁻¹ DM
Ni	30 g t ⁻¹ DM	25 g t ⁻¹ DM	50 g t ⁻¹ DM	250 g t ⁻¹ DM
Hg	0.1 g t ⁻¹ (88% DM)	0.4 g t ⁻¹ DM	1 g t ⁻¹ DM	1 g t ⁻¹ DM
Zn	400 g t ⁻¹ DM	200 g t ⁻¹ DM	400 g t ⁻¹ DM	750 g t ⁻¹ DM
Cr	80 g t ⁻¹ DM	70 g t ⁻¹ DM	90 g t ⁻¹ DM	250 g t ⁻¹ DM
As	2 g t ⁻¹ (88% DM)	13 g t ⁻¹ DM	13 g t ⁻¹ DM	15 g t ⁻¹ DM
Organic Containments				
16 EPA PAH	4±2 g t ⁻¹ DM	4±2 g t ⁻¹ DM	6.0+2.2 g t ⁻¹ DM	30g t ⁻¹ DM

4.3 Certification Process

The EBC certificate is issued by the Ithaka institute, Arbaz, Switzerland. The Ithaka institute is a third party and completely independent from Carbonfuture. An audit and inspection will be conducted by the accredited inspection and certification body bio.inspecta AG. The figure below shows an overview of all the necessary steps towards a successful certification:

⁷ A full overview of all limit values can be viewed [here](#).



- **Registration** on [EBC Website](#)
 - Offer [request](#) and registration at [bio.inspecta](#)
-
- **Audit** appointment and confirmation of audit date with preparation checklist
 - Initial on-site audit via IT software Ecert
 - EBC Audit report
-
- **Follow-up.** Deadline management if applicable (open to non-conformities)
 - Submission of corrective measures within timeframe
-
- Review of Audit information and corrective measures by certifier
 - **Certification** of EBC biochar batch IDs
 - Publication of EBC Web certificate at [www.easy-cert.com](#)

4.3.1 EBC Registration

To acquire an EBC certification it is necessary to create an EBC-account at the [EBC website](#). During the initial registration you must choose a company type as outlined in the picture below. A multiple selection is possible, if applicable.

Step 1: EBC Company Registration

Company type

<input type="checkbox"/>	Biochar producer
<input type="checkbox"/>	Biochar based product processor
<input type="checkbox"/>	Biochar product distributor
<input type="checkbox"/>	Analytical laboratory
<input type="checkbox"/>	Carbon sink broker
<input type="checkbox"/>	Technology provider
<input type="checkbox"/>	EBC Manager

After the registration you are requested to provide further information about the company and the pyrolysis technology in use. Optionally, you can upload flowcharts of your production processes, starting with the delivery of the biomass until the packaging of the biochar products. This may help to speed up the process and avoid later inquiries.

Step 2: Provide initial Information

your profile is not complete !

please add a pyrolysis-unit

Please describe in three to five sentences your company and its products and services related to biochar and C-sinks.

please upload a company description

As a next step you can register a production batch. Production conditions within a registered batch should not deviate.

Step 3: Batch Registration

Register new batch

Ident	[]
Start of batch production	20.04.2021
Expected end of batch production	dd.MM.yyyy
Expected biochar production [t dry matter]	
Pyrolysis temperature (HTT) [°C]	
Which biomass did you use to produce the biochar?	
Pyrolysis feedstock	
What mineral additives did you use for the co-pyrolysis of your biomass?	
Mineral additives	
Additional notes for this batch	
Batch remark	

Pyrolysis unit

Ident	pu-de-104-1
Name of pyrolysis unit	Testanlage
Production site [city]	Bad Kreuznach13
Manufacturer of pyrolysis unit	TestTyp
Type name of pyrolysis unit	A123
Year of machine commissioning	1111
Process type	Continous process

Now it is possible to request a sample for the EBC analysis. You can choose between two sampling options, namely a cross flow sample and a pile sample. If your production has a continuous outflow of the finished material, a more representative

cross flow sampling is possible. If the finished material is emptied all at once (batch process), please select the second option.

Step 4: Sampling Options

Cross flow sample Pile sampling

Sample milled to below 3 mm
Please select

I confirm that the sampling was carried out according to the EBC guidelines.

As a last step the application class needs to be selected (see section 4.2). To acquire the C-Sink certification (obligatory to join the Carbonfuture platform), please select “yes” as outlined in the picture below. If a C-Sink value check is requested the EBC will control relevant parameters during the on-site control and query additional data necessary (e.g., CO₂ emissions of the electricity used for the pyrolysis plant) to determine the sink potential of the batch.

Step 5: Sampling Details

Additional notes (e.g. irregularities, observation, difficulties)

Sample remark

Sampler first name _____ Sampler name _____

Order details

Sample to be sent to EBC authorised laboratory:

Laboratory
Please select

Parameters for first analysis

Volatile organic compounds (VOC)
no
PCB, dioxins/furans
no

Analytical packages:

Application class
Please select

C-Sink Value Certification
yes

Additional Parameters

Gross calorific value
no
Net calorific value
no
Water holding capacity (WHC)
no
Ash content (815°C)
no

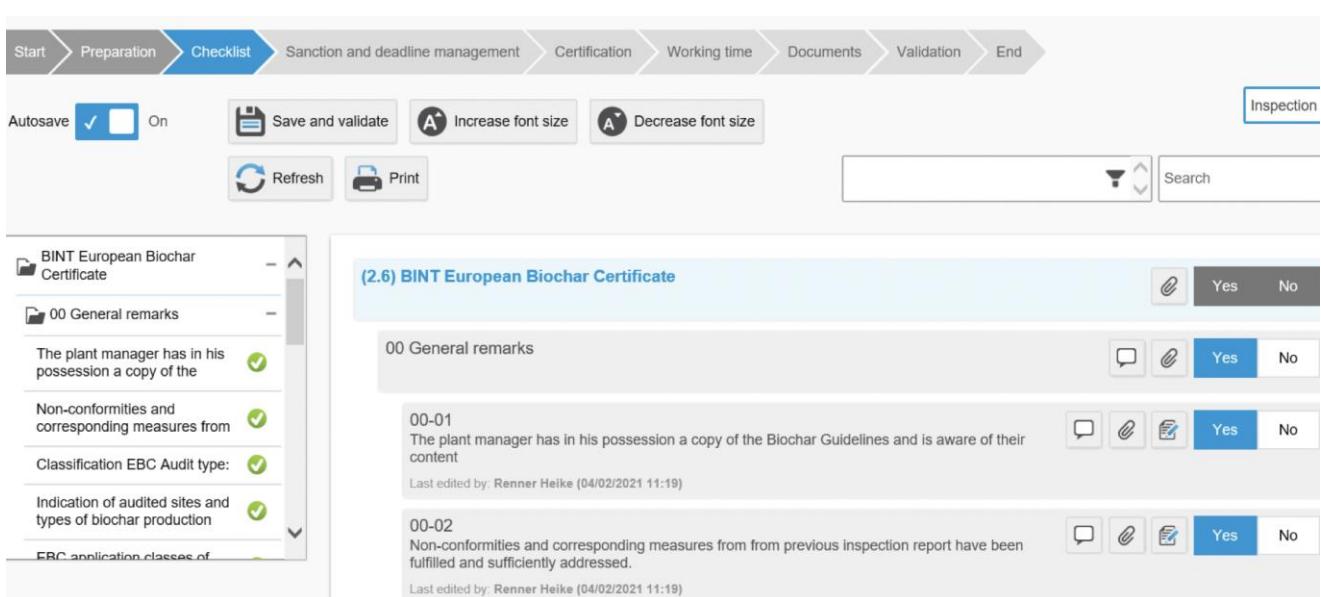


After completing the registration, you will receive a PDF document for signature by email, which you should then enclose with your sample when posting it to the selected laboratory.

4.3.2 Initial Audit and Inspection

Following a first verification of the technical information and personal phone contact with the producer through the EBC, the company information is transmitted to the accredited inspection and certification body: bio.inspecta AG (<https://www.bio-inspecta.ch/en/services.html>). The producer will then need to sign the inspection contract for the EBC certification from bio.inspecta AG. Once the producer has signed the inspection contract, the Ithaka Institute will coordinate an appointment for the initial EBC audit with the biochar producing company. The on-site inspection is conducted using a checklist on the software Ecert.

[Ecert Checklist](#)



The screenshot shows the Ecet software interface. At the top, there is a navigation bar with steps: Start, Preparation, Checklist (which is highlighted in blue), Sanction and deadline management, Certification, Working time, Documents, Validation, and End. Below the navigation bar are several buttons: Autosave (with a checked checkbox), Save and validate, Increase font size, Decrease font size, Refresh, Print, and a search bar. The main area displays a checklist for the "BINT European Biochar Certificate". On the left, there is a sidebar with sections like "BINT European Biochar Certificate", "00 General remarks", "Non-conformities and corresponding measures from", "Classification EBC Audit type:", "Indication of audited sites and types of biochar production", and "EBC application classes of". The main content area shows a list of items under "00 General remarks": "00-01 The plant manager has in his possession a copy of the Biochar Guidelines and is aware of their content" (status: Yes) and "00-02 Non-conformities and corresponding measures from previous inspection report have been fulfilled and sufficiently addressed" (status: Yes). Each item has edit and delete icons.

The operators are sent preparatory documents in order for them to prepare for the inspection. At the end of the inspection the results are discussed, and any measures required are summarized and a timescale is set in which these must be implemented. The inspection report is then signed by both parties and is forwarded to the certification body. The inspection and certification of a product are therefore never conducted by the same person (4 eyes principle).

During the initial audit, a company-specific quality assurance and sampling plan will be drawn up. This plan is laid down in an instruction manual that will be signed by both parties. In addition, instruction is given in regard to the EBC methodology, the EBC documents, and the protocols to be kept and the procedure for the annual inspection by bio.inspecta AG. The company to be certified appoints a quality manager who will be the direct contact person for bio.inspecta AG.

A representative sample of a production batch is taken during the initial audit and thereafter during each annual inspection by an accredited sampler in accordance

with the sampling plan contractually specified in the initial audit and sent to an EBC accredited laboratory. The representative sample of a production batch has to be carried out within the first two months after the registration.

On three consecutive days, 8 samples of 3 liters each are taken at intervals of at least one hour directly at the discharge of the freshly produced material. sampler. The 24 subsamples are combined to form a composite sub-sample. The taking of each of the 24 samples (= 3 x 8 daily samples).

Biochar Sampling

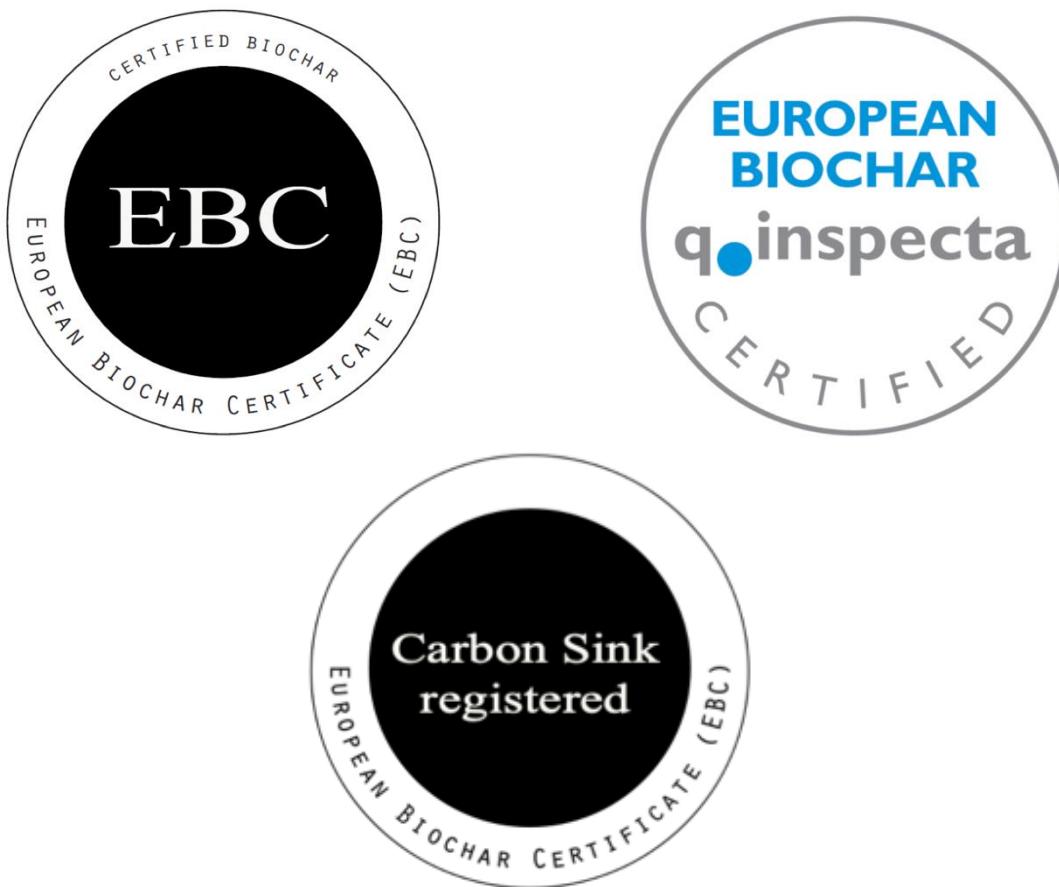


In addition to the EBC analysis sample, the manufacturer is obliged to take regularly (in general every day) retention samples. The exact procedure will be determined during the initial audit. If no deviating protocol is determined during the initial audit, the following applies: Daily, a fresh sample of one liter, either from the cross-flow or from the collected daily production has to be taken. A monthly retention sample of at least 30 liter must be kept dry and protected for two years

4.3.3 EBC Certification

Finally, the certifier checks all the information arising from the inspection process. If the products are given approval, a production certificate will be issued, and the certification process is concluded. Biochar producers that acquired an EBC certification and that want to participate in the carbon market can additionally request the certification of the C-sink potential of their biochar. This is a service provided by the EBC to all EBC certified producers in Europe, USA, and Canada. For biochar producers in all other parts of the world, we tailored specially dedicated EBC packages to allow for C-sink certification.

Certified operators are allowed to use the EBC Logo for marketing and product labeling:



4.4 EBC Certification Costs

Depending on the size of the plant and its complexity the costs for the certification may vary. An overview can if initial and annual costs can be found in the table below:

Costs	
Annual control	1,500 – 2,000 €
Biochar analyses per batch	700 – 1,000 €
EBC label fee	300 – 450 €
Inscription and first audit	400 €
C-sink certification	1 € per t CO ₂ -eq

5 Detailed Manual for the Carbonfuture Platform

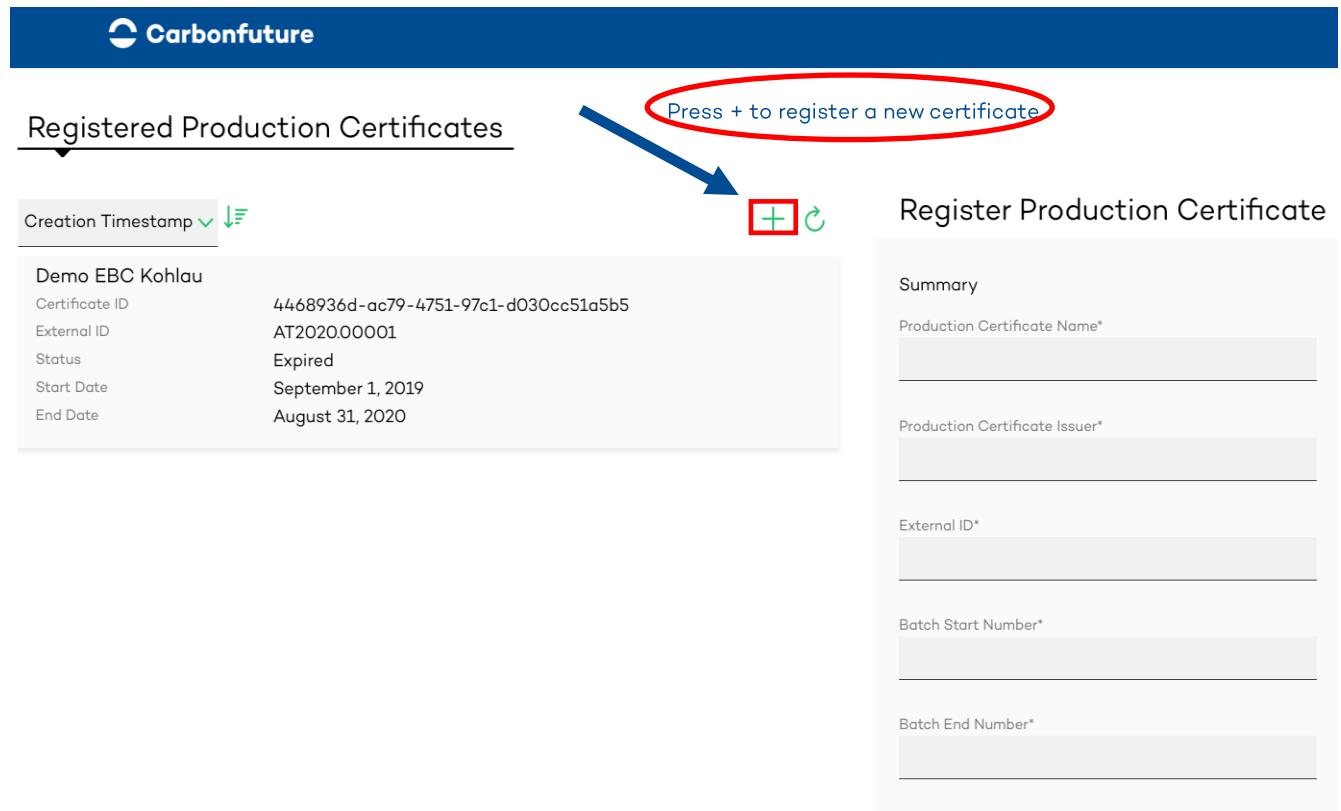
This chapter provides a pictorial manual for suppliers who wish to list their production certificate and to register biochar-based carbon sinks on the Carbonfuture platform. An additional manual, outlining the application for the EBC-Sink production certificate at the Ithaka institute can be found in Appendix B.

5.1 Registering a (EBC) Production Certificate on the Carbonfuture Platform

Once the Biochar Producer has been certified and a carbon sink potential has been calculated for their biochar production facility as above, an account can be set up on the Carbonfuture platform (<https://platform.Carbonfuture.earth/>). Production certificates can be registered in a simple web-form on the Carbonfuture platform where the relevant values are entered, most importantly the **C-sink potential**, and the pdf certificate will be uploaded. This has to be done only once for each production

certificate. The current EBC⁸ production certificates are typically valid for the duration of one year.

Step 1: Registering a new (EBC) Production Certificate



The screenshot shows the Carbonfuture web interface. On the left, under 'Registered Production Certificates', there is a table with one row:

Demo EBC Kohlau	
Certificate ID	4468936d-ac79-4751-97c1-d030cc51a5b5
External ID	AT2020.00001
Status	Expired
Start Date	September 1, 2019
End Date	August 31, 2020

A blue arrow points from the '+ to register a new certificate' text to the '+ icon' in the 'Register Production Certificate' form. The form fields are as follows:

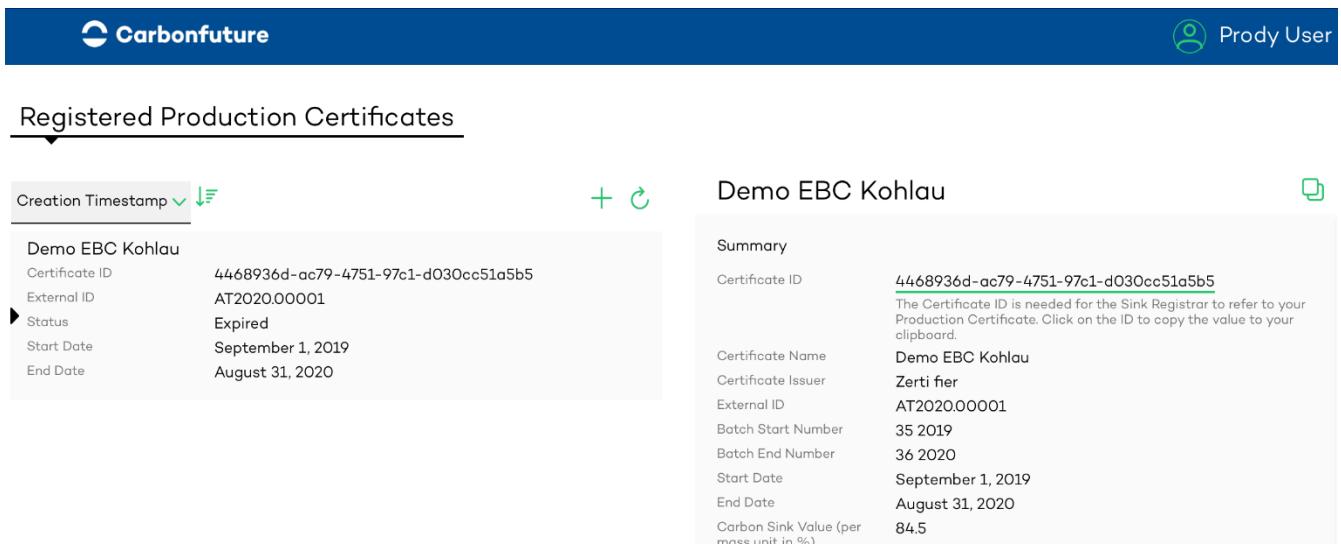
- Summary
 - Production Certificate Name*
- Production Certificate Issuer*
- External ID*
- Batch Start Number*
- Batch End Number*

In order to register a sink based on the biochar produced under your production certificate, the ID of your production certificate will be needed. This ID is generated automatically by the Carbonfuture platform. Accordingly, you need to provide this information to the wholesaler of your biochar. Clicking on the ID (top of detail view) on copies it into your clipboard and you can just paste it into an email.⁹

⁸ Currently, the EBC sink certificate is the only eligible production certificate on Carbonfuture

⁹ This will be simplified and more automated using QR codes printed on shipping notes and big bag labels soon

Example for a registered (EBC) Production Certificate

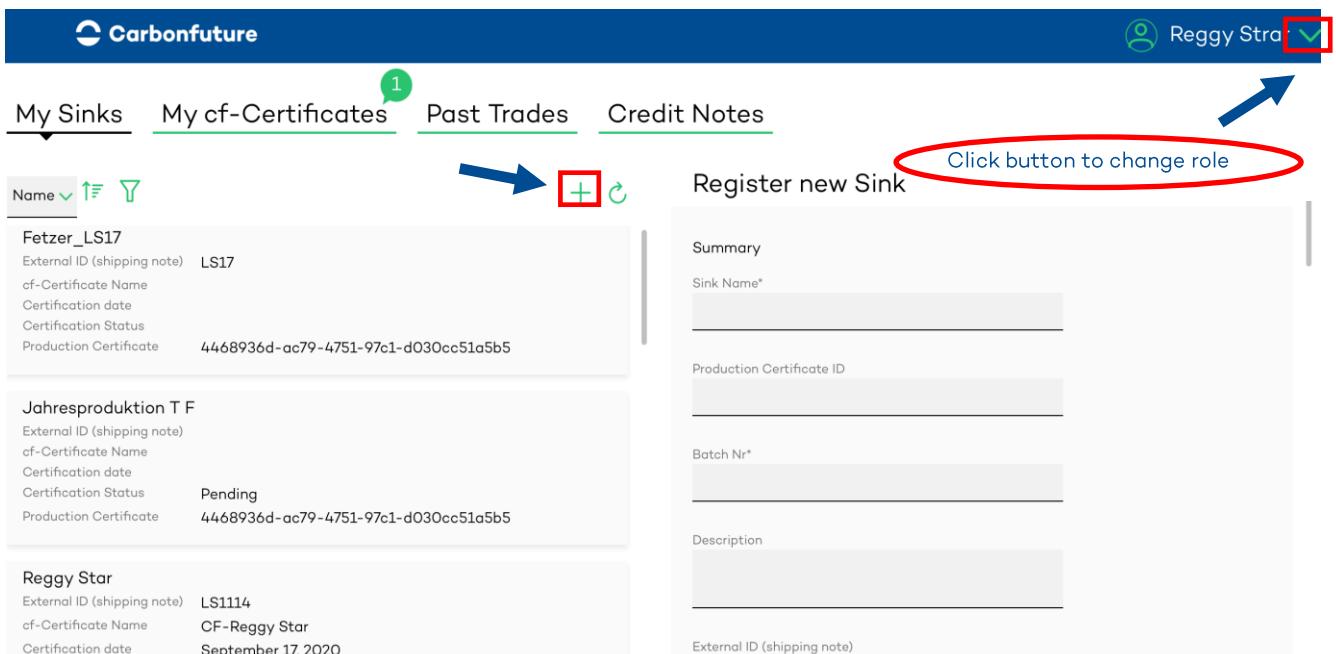


The screenshot shows the Carbonfuture interface with a navigation bar at the top. On the left, there's a sidebar titled "Registered Production Certificates". A table displays a single entry for "Demo EBC Kohlau" with columns for Creation Timestamp, Certificate ID, External ID, Status, Start Date, and End Date. To the right, a detailed view of the same certificate is shown under the heading "Demo EBC Kohlau". This view includes a "Summary" section with fields like Certificate ID, Name, Issuer, External ID, Batch Start Number, and more. A green "copy" icon is visible next to the Certificate ID.

5.2 Wholesaler / Sink Registrar

Enlisted producers and wholesaler who sold the certified biochar for the use in soils, feed additives, building materials or other uses that will sequester carbon, can proceed to the next step in the cf-process, namely registering a carbon sink. To proceed with this registration, you have to change your role to “registrar” by clicking on the button next to your account name (see picture below). Once you are logged in as a “registrar” you may press the + sign and register a new carbon sink.

Step 2: Registering a new Carbon Sink



The screenshot shows the Carbonfuture interface with a navigation bar at the top. The user is logged in as "Reggy Star" (indicated by a green profile icon with a checkmark). Below the navigation bar, there are tabs: "My Sinks" (selected), "My cf-Certificates" (with a red box around the number 1), "Past Trades", and "Credit Notes". A blue arrow points from the "My Sinks" tab to a red box around the "+" button in the "Register new Sink" section. Another blue arrow points from the "My cf-Certificates" tab to a red circle around the "Click button to change role" text, which is located above the "Register new Sink" form. The "Register new Sink" form contains fields for Sink Name*, Production Certificate ID, Batch Nr*, Description, and External ID (shipping note).

Required information includes:

- Production certificate ID number
- Relevant post-production data including gross and dry weight of the material, transport means (e.g. truck, train) and transport distance
- Upload the Carbonfuture Coupon, which is filled out and signed by the end-user; with this document, the end-user confirms the application of the biochar in a carbon preserving manner, and the client confirms to transfer all rights related to the climate service provided by the biochar application (including but not limited to getting public or private funding for the same climate service, or using it for the own sustainability report¹⁰)

The Coupon can be generated automatically based on the data entered into the sink registration form. Alternatively, a template can be downloaded from the [Carbonfuture website](#).

Once the sink registration is complete, it is eligible for purchase by the Broker. For this, the sink registrar must request cf-Certification by Carbonfuture as outlined in the picture below.

¹⁰ For the avoidance of doubt: Referencing to participation in Carbonfuture climate services in own marketing activities is possible, provided it is clear that the carbon balance is sold and the claim on it is made by a third-party. This is to prevent explicit and implicit double counting.

Step 3: Request the cf-Certification

Biochar Delivery February



Summary

Sink Id	b0507510-46bf-42b6-bc58-b858f2c3e1c4
Sink Name	Biochar Delivery February
Batch Number	21.04.2021
External ID (shipping note)	LS00003
Coupon Number	1008
Sink Type	Biochar
Gross Weight (t)	3
Transport	100km by means of Truck

Sink Location

Street	Musterstr. 1
City	12345 Musterstadt
Country	Germany

Responsible Person

Name	Beert Vingaard
Company Name	Beerwein AG
Email	Michael.beerwein@beerwein.ag
Street	Musterstr. 1
City	12345 Musterstadt
Country	Germany

Attached Documents

Document name	uploaded on
 Demo_Coupon_21.02.2021.pdf	22 Feb 2021, 14:32

[Add document](#)

[Request cf-Certification](#)



Carbonfuture will then validate the information and issue a **cf-Certificate**. This cf-Certificate represents the rights on the climate service provided. Accordingly, this is the certificate which actually has value.

The owner of the cf-Certificate can offer this certificate for sale to a broker on the Carbonfuture platform. Once the broker has ordered your cf-Certificate, you see the open order.

Step 4: Accept Order of the cf-Certificate

Carbonfuture

My Sinks My cf-Certificates ¹ Past Trades Credit Notes

Certification timestamp  

CF-Reggy Star		2020 - 2119
Sink	Reggy Star	
cf-Certifier	Certy Fiar	
Certification date	17 Sep 2020, 12:48	
Amount (ta)	423	
Open Orders		

Sink

Summary	
Sink Id	8a1fa387-3c1b-4460-8803-beef5ae19381
Sink Name	Reggy Star
Batch Number	1 2020
External ID (shipping note)	L1114
Sink Type	Biochar
Moisture (%)	30
Volume (m³)	10
Certification Status	Certified
Transport	10km by means of LKW
Description	verschiedene stabile Anwendungen
Production Chain	Direkte Lieferung

cf-certificate

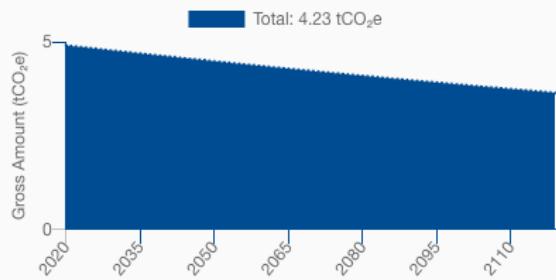
Summary

Certificate ID	dac41f8d-ee5c-4837-9aa1-d2234a0338bd
Certificate Name	CF-Reggy Star
Certification date	17 Sep 2020, 12:48
Start Year	2020
End Year	2119
Sink	Reggy Star
Amount (ta)	423

cf-Certifier

Name	Certy Fiar
Email	certifier@carbonfuture.earth

Sequestration Curve



Open Orders

Brock R	17 Sep 2020, 12:48
Transaction Id	0ad2cdc0-ae2c-4e73-a0ae-b691924ff7ef
Amount (ta)	€ 0.55
Price per tonne and year	€ 233.20

   [Read our Terms and Conditions](#)



After you accepted the broker's buy order, ownership of the cf-Certificate will be transferred to the broker¹¹.

¹¹ In the currently established workflow with Carbonfuture acting as broker, we are reimbursing the selling party through a self-billing note (so we need the selling party's bank details and VAT-Reg. No. as applicable).