



Evaluation report for the Puro.earth - Biochar OA dated 09/08/2023

Based on our audit we confirm that your operation largely meets the requirements of the following standards:

- Puro.earth - Biochar Methodology

The evaluation process has shown that your production method does not fully comply with all requirements. In order to maintain the Puro.earth requirements, you must address the noncompliances listed below. Please implement and document corrective actions by the deadline indicated.

The following noncompliances have been identified:

6.05.01.01 Puro.earth Methodology: Weight taken and moisture measured for each big bag. The average moisture for all big bags produced between 28.09.22 - 10.06.23 is 25,72%; however, the moisture taken for calculation of produced and shipped biochar (dry) is 23,2%, corresponding to the analytically obtained moisture level (EBC Analysis-09-2022 AR-22-FR-043234-01).

According to Puro.earth biochar methodology care must be taken to exclude any moisture, as including water would lead to an overestimation of the carbon actually sequestered. Please provide as accurate moisture reading as possible for every big bag. Please use the average moisture for each period based on the big bag measurements.

Sanction level: A

Notes on graduated sanctions in accordance with:
Puro.earth CO2 Removal Marketplace

Type of Sanction	Explanation
O	Recommendations: no sanction
A	Implementation of corrective actions will be verified during the next audit.
B	Evidence of corrective actions must be provided prior validation.
C	Notification to relevant authorities. Bio.inspecta may require an additional audit at the operator's expenses.
D	Non-Recognition / Derecognition – If certification is withdrawn, it is no longer permitted, with immediate effect, to market the products under the certified standard. Buyers must be informed about the withdrawal of certification.
E	Penalty

Right to appeal

The undersigned has reviewed the outcome of the audit documented in this report and confirms the completeness and accuracy of the information provided in the audit and the content of this report.

He/ she has taken note of the non-conformities, measures, deadlines, and sanctions described in this report.

The undersigned has the option of submitting a counter-notification in writing to bio.inspecta AG within three working days of receipt of this report. If no reply is received within this period, the contents of this report shall be deemed to be acknowledged.

bio.inspecta AG

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bio.inspecta



q.inspecta

Novocarbo GmbH

Triebornstrasse 15 - 17

56281 Dörth

Germany

Operator No. PE-70401.002

18/09/2023, HR

**Evaluation report for the Puro.earth Output Audit dated
09/08/2023**

Dear Sir or Madam

Based on the findings and on the evaluation of the documents submitted in relation to this inspection, some noncompliances according to the standards listed below were identified:

- Puro.earth Methodology

However, the evaluation process has shown that your methods does not fully comply with all requirements. In order to maintain the approval, you must address the noncompliances listed in the attached report. Please implement and document corrective actions by the deadline indicated.

For any questions, please do not hesitate to contact us.

We thank you for your cooperation.

Yours sincerely,

bio.inspecta AG

Renner Heike

Certification Officer

Enclosures:

- Evaluation report



Audit Report 2023

In accordance with the following requirements:

Puro.earth - Biochar Methodology

Novocarbo GmbH

56281 Dörth

Operator's No.: PE-70401.002

Contact details operator

Name and address

Novocarbo GmbH
Triebornstrasse 15 - 17
DE-56281 Dörth

Phone/Fax

Fixnet: +49 6747 95388 222
Mobile: +49 177 766 16 23
Fax: -
Email: info@novocarbo.com

Contact person(s)

Audit visit details

Date

09.08.2023 - 01.09.2023

Persons present including their function

HEBERLING Jens, Werksstudent
GROSS Kimberly, Carbon Removal Manager
Philipp Seitz, bio.inspecta AG, Auditor

	very good			not satisfactory		
Clarity of documentation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Audit visit preparation:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

O.K.
Corrective action required
Not verified
Not relevant

Puro.earth - Biochar Methodology

				1	Audit Description
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.01	Audited Standard: <i>Puro.earth CO2 Removal Marketplace General Rules 3.0 – Biochar Methodology (Annex A)</i>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.02	Type of Audit: <i>Output Audit</i>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.03	Auditing Body: <i>bio.inspecta AG, Ackerstrasse 117, CH-5070 Frick www.bio-inspecta.ch</i>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.04	Audit order assigned to an impartial auditor, free from any conflicts of interest, capable and qualified to complete this audit according to Puro Standard. <i>Auditor (name/surname): Philipp Seitz</i>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.05	Audit ID: <i>PE-70401.002</i>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.06	Audit Date: <i>09.08.23</i>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.07	Production Facility Location: <i>Trinkbornstrasse 15 - 17, 56281 Dörth</i>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.08	Production period: <i>28.09.22 - 10.06.23</i>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.09	Audit could be finished within the scheduled time frame <i>Audit could not be finished within the scheduled time frame. The mail of the sender incl. audit package was sent to the spam folder.</i>
				2	Standing Data Confirmation

O.K.
Corrective action required
Not verified
Not relevant

Puro.earth - Biochar Methodology

				2	Standing Data Confirmation
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.01	<p>The standing data has been collected from Puro and checked for consistency against other evidence. (GL Ref.1.2.5.)</p> <p><i>Trade registry available; location evidenced; removal method eligible; calculation based on period partially comprising ba-de-30-1-4 (24.09.22 - 23.09.23), specifically from 28.09.22 - 10.06.23; no public support!</i></p>
				3	Evidence Confirmation
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3.01	<p>All necessary evidence has been provided to the auditor by the Production facility and has been used to complete the compliance checklist. (GL Ref. 5.)</p> <p><i>Proof of product quality: (1) EUROFINS laboratory analysis AR-22-FR-043234-01; Proof of output volume: 192,21; Proof of sales: 182,14 t. The reported volumes were sold to 3 major clients: Hasselfors Garden AB, BVB Landscaping, Beiselen GmbH, and several small clients. Delivery notes and invoices checked on a full-scale basis; Proof of no double counting: Written declaration of buyers available stating that said volumes will not be burnt, and that they have not been reported in any carbon accounting. Additionality statement available.</i></p>
				4	Eligibility Checklist
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4.01	<p>Biochar is used in applications other than energy. (GL Ref. 1.1.1.)</p> <p><i>Carbon Credit Withdrawal Rights available for all customers, transferring the right to generate a carbon credit from the carbon content of the biochar and assuring that the biochar will not be burned and will be used in such a way that it will not be taken out of the application or subsequently combusted.</i></p>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4.02	<p>Biochar is produced from sustainable forest or waste biomass raw materials (consult positive list of biomasses). (GL Ref. 1.1.2)</p> <p><i>Evidence of sustainable forest management of sub suppliers to main supplier TERNIS available. PEFC certificate valid; FSC certificate renewed in 03/23 (https://www.wald.rlp.de/de/nutzen/nachhaltigkeit/zertifizierung/).</i></p>

O.K.
Corrective action required
Not verified
Not relevant

Puro.earth - Biochar Methodology

				4 Eligibility Checklist
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<p>4.04 Pyrolysis reactor input fuel for heating is not a fossil fuel. Unless only used for ignition/pre heating or in a mobile unit and the emissions are fully included in the LCA. The use of waste heat from other industrial processes (eg. Biodigesters, cement production) is permitted. (GL Ref. 1.1.4.)</p> <p><i>No external energy sources required other than LPG gas for ignition.</i></p>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<p>4.05 Pyrolysis gases are combusted or recovered. Bio-oil and pyrolysis gases can be stored for later use as renewable energy or materials. (GL Ref. 1.1.5.)</p> <p><i>Gases recovered and converted into heat.</i></p>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<p>4.06 The molar H/Corg ratio is less than 0.7.</p> <p><i>The molar H/Corg ratio significantly below 0.7 according to EUROFINS analytical reference report AR-22-FR-043234-01 (=0.17).</i></p>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<p>4.07 Evidence of safe handling and transport is provided and adequate for the production facility. (GL Ref. 1.1.7.)</p> <p><i>Moisture b/ween 20 - 30% confirmed through moisture measurements of each individual big bag.</i></p>
				5 LCA Checklist
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<p>5.01 LCA complete and shows: carbon footprint of the biomass production and supply , emissions from the biochar production process , carbon footprint of the biochar end use - cradle to grave. (GL Ref. 1.1.3)</p> <p><i>Emissions from biomass harvesting to factory gate provided in EBC Sink Certificate 12DE00300102; the certificate, however, does neither account for the carbon expenditures necessary to transport the biochar from the production site to the location of the final C-sink (via a merchant and/or processor) nor the carbon expenditures when manufacturing or blending the biochar into a carbon sink product.</i></p>

O.K.
Corrective action required
Not verified
Not relevant

Puro.earth - Biochar Methodology

				5	LCA Checklist
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5.02	<p>The CO2 Removal Supplier provides a life cycle assessment (LCA) for biochar activity including disaggregated information on the emissions arising at different stages. The system boundary is set cradle-to-grave and includes emissions from production and supply of the biomass, from biomass conversion to biochar, and from biochar distribution and use. (GL Ref. 3.1)</p> <p><i>Emissions from cradle to factory gate provided in EBC Sink Certificate 12DE00300102, but not further up to grave.</i></p>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5.03	<p>Life cycle assessment (LCA) follows ISO standard, WRI GHG protocol or similar method. (GL Ref. 3.2)</p> <p><i>See 5.02</i></p>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5.04	<p>The default baseline emission scenario for the project activity feedstock is zero, which is a conservative assumption since it is not taking into account methane emissions derived from decay of manure or combustion of waste biomass. If a non-zero baseline presented, needs to be accepted by Puro.earth</p>
				6	Production Facility Checklist (Desktop and Verbal Confirmation).
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6.01	<p>Evidence of Production Facility eligibility under the general rules of Puro Standard. (GL Ref. 1.2.1)</p> <p><i>Proof of product quality: (1) EUROFINS laboratory analysis AR-22-FR-043234-01; Proof of output volume: 192,21; Proof of sales: 182,14 t. The reported volumes were sold to 3 major clients: Hasselfors Garden AB, BVB Landscaping, Beiselen GmbH, and several small clients. Delivery notes and invoices checked on a full-scale basis; Proof of no double counting: Written declaration of buyers available stating that said volumes will not be burnt, and that they have not been reported in any carbon accounting; Additionality statement available.</i></p>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	6.02	<p>The Production Facility demonstrate Environmental and Social Safeguards. (GL Ref. 1.2.2.)</p> <p><i>No environmentally and socially harmful effect apparent. The production facility is known and has been visited several times.</i></p>

O.K.
Corrective action required
Not verified
Not relevant

Puro.earth - Biochar Methodology

				6	Production Facility Checklist (Desktop and Verbal Confirmation).
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6.03	<p>CO2 Removal Supplier shall be able to demonstrate additionality, meaning that the project must convincingly demonstrate that the CO2 removals are a result of carbon finance. Even with substantial non-carbon finance support, projects can be additional if investment is required, risk is present, and/or human capital must be developed. To demonstrate additionality, CO2 removal Supplier must provide full project financials and counterfactual analysis based on Baselines that shall be project-specific, conservative and periodically updated. Suppliers must also show that the project is not required by existing laws, regulations, or other binding obligations. (GL Ref. 1.2.3)</p> <p><i>An additionality questionnaire submitted by Puro has been filled. It has convincingly demonstrated that CO2 removals are a result of carbon finance.</i></p>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6.04	<p>The Production Facility's documentation system is accurate and reliable (GL Ref. 1.2.4)</p> <p><i>Weight taken and moisture measured for each big bag. The average moisture for all big bags produced between 28.09.22 - 10.06.23 is 25,72%; however, the moisture taken for calculation of produced and shipped biochar (dry) is 23,2%, corresponding to the analytically obtained moisture level (EBC Analysis-09-2022 AR-22-FR-043234-01). Apparently, this has been accepted by Puro Earth.</i></p>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6.05	<p>The quantity of the biochar produced and sold is quantified and documented in a reliable manner (GL Ref. 1.2.4)</p> <p><i>Weight taken and moisture measured for each big bag. The average moisture for all big bags produced between 28.09.22 - 10.06.23 is 25,72%; however, the moisture taken for calculation of produced and shipped biochar (dry) is 23,2%, corresponding to the analytically obtained moisture level (EBC Analysis-09-2022 AR-22-FR-043234-01). Apparently, this has been accepted by Puro Earth.</i></p>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6.06	<p>Relevant meters are in place and they are calibrated (GL Ref. 1.2.4)</p> <p><i>Weighing scale and moisture meter calibrated.</i></p>

O.K
Corrective action required
Not verified
Not relevant

Puro.earth - Biochar Methodology

				6	Production Facility Checklist (Desktop and Verbal Confirmation).
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6.07	<p>The emissions from the cultivating, harvesting and transporting of the biomass are estimated and calculated in a reliable manner (GL Ref 1.2.4)</p> <p><i>Emissions form the cultivation, harvesting and transportation of biomass are provided in EBC Sink Certificate 12DE00300102.</i></p>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6.08	<p>The energy use of the Production Facility can be quantified and the emissions from the process calculated (GL Ref. 1.2.4)</p> <p><i>Emissions form energy use of the production facility have been quantified and calculated in EBC Sink Certificate 12DE00300102.</i></p>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	6.09	<p>The auditor goes through the Quantification of CO2 Removal requirements with the CO2 Removal Supplier, so that the Supplier is able to calculate the CO2 Removal independently in its Output Report</p> <p><i>Limited to quantification of produced and shipped biochar mass flow (moist and dry).</i></p>
				7	Calculation Checklist
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	7.01	<p>Q_{biochar} = Quantity of biochar produced and sold to end user. (dry char) (GL Ref. 4.2.)</p> <p><i>Proof of output volume: 192,21 t; Proof of sales: 182,14 t. The reported volumes were sold to 3 major clients: Hasselfors Garden AB, BVB Landscaping, Beiselen GmbH, and several small clients. Delivery notes and invoices checked on a full-scale basis.</i></p>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	7.02	<p>$F_{\text{pTHTs}} = c + m \times H/\text{Corg}$ (GL Ref. 4.2.)</p> <p><i>Provided in the Gross embodied CO2 calculator at given soil temperature and selected time horizon (CORC calculator for biochar attached).</i></p>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	7.03	<p>C Biochar = carbon content of biochar (GL Ref. 4.2.)</p> <p><i>Carbon content 81.3% according to EUROFINS analytical reference report > EBC Analysis-09-2022 AR-22-FR-043234-01 (attached).</i></p>

O.K.
Corrective action required
Not verified
Not relevant

Puro.earth - Biochar Methodology

				7	Calculation Checklist
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	7.04	<p>Estored = biochar carbon storage = Qbiochar x Cbiocharorg x FpTHTs x 44/12 (GL Ref. 4.2.)</p> <p><i>Provided in the Gross embodied CO2 calculator at given soil temperature and selected time horizon (CORC calculator for biochar attached).</i></p>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	7.05	<p>Ebiomass = LCA emissions of production and supply of biomass (GL Ref. 4.3.)</p> <p><i>Emissions of production and supply of biomass provided in EBC Sink Certificate 12DE00300102.</i></p>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	7.06	<p>Eproduction = LCA emissions from biochar manufacturing (GL Ref. 4.4)</p> <p><i>Emissions from biochar production provided in EBC Sink Certificate 12DE00300102.</i></p>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	7.07	<p>Euse = LCA emissions of the use of biochar, including distribution up to the point of final use (GL Ref 4.5)</p> <p><i>Emissions from cradle to factory gate provided in EBC Sink Certificate 12DE00300102, but no emissions from the use of biochar including distribution up to the point of final use (factory gate up to grave).</i></p> <p><i>Emissions from cradle to factory gate provided in EBC Sink Certificate 12DE00300102, but no emissions from the use of biochar including distribution up to the point of final use (factory gate up to grave). An add-on EBC Sink Certificate, or alternative LCA, must be submitted that covers all emissions from cradle to grave.</i></p>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	7.08	<p>CORCs = Estored - Ebiomass - Eproduction - Euse</p> <p><i>434.343 CORC for 182,14 t dry matter shipped and accounted for within ba-de-30-1-4 (28.09.22 - 10.06.23).</i></p>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	7.09	<p>Quantity of CORCs (in evidence).</p> <p><i>434.343 CORC for 182,14 t dry matter shipped and accounted for within ba-de-30-1-4 (28.09.22 - 10.06.23).</i></p>

O.K
Corrective action required
Not verified
Not relevant

Puro.earth - Biochar Methodology

				7	Calculation Checklist
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	7.10	<p>Confirm consistency.</p> <p><i>Reliance on reputed LCA provider EBC/Ithaka; site visit to confirm LCA consistency.</i></p>
				9	Overall conclusion
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9.01	<p>Overall conclusion:</p> <p><i>The validator confirms that the LCA calculation for crediting period 28.09.22 - 10.06.23 (as part of ba-de-30-1-4) and calculation of shipped volumes provides a credible and faithful account of output volumes and emissions, and thus of declared carbon dioxide removals eligible for CORCs as stated in the Output statement. The validator is confident that the conservativeness has been applied to a sufficient degree to say that declared CO2 removals are fully justified.</i></p>

Auditor's evaluation and recommendation

Non-compliance	Corrective action	Deadline
Puro.earth - Biochar Methodology		
5.01 EBC Sink Certificate 12DE00300102 does neither account for the carbon expenditures necessary to transport the biochar from the production site to the location of the final C-sink (via a merchant and/or processor) nor the carbon expenditures when manufacturing or blending the biochar into a carbon sink product.	An add-on EBC Sink Certificate, or alternative certificate, must be submitted that covers emissions from factory gate to grave.	
5.02 Emissions from cradle to factory gate provided in EBC Sink Certificate 12DE00300102, but not further up to grave.	An add-on EBC Sink Certificate, or alternative LCA, must be submitted that covers emissions from factory gate to grave.	
5.03 Emissions from cradle to factory gate provided in EBC Sink Certificate 12DE00300102, but not further up to grave.	An EBC Sink Certificate, or alternative certificate, must be submitted that covers all emissions from cradle to grave.	
6.05 Weight taken and moisture measured for each big bag. The average moisture for all big bags produced between 28.09.22 - 10.06.23 is 25,72%; however, the moisture taken for calculation of produced and shipped biochar (dry) is 23,2%, corresponding to the analytically obtained moisture level (EBC Analysis-09-2022 AR-22-FR-043234-01). Apparently, this has been accepted by Puro Earth.	A written statement by Puro Earth has to be submitted that states that factoring of the inferior analytical moisture level has been accepted.	

The Right to be Heard

The undersigned has reviewed the outcome of the audit documented in this report and confirms the completeness and accuracy of the information provided in the audit and the content of this report.

He/ she has taken note of the non-conformities, measures, deadlines and sanctions described in this report.

The undersigned has the option of submitting a counter-notification in writing to bio.inspecta AG within three working days of receipt of this report. If no reply is received within this period, the contents of this report shall be deemed to be acknowledged.

Frick, 01.09.2023



Dörth, 01.09.2023.....

bio.inspecta AG / q.inspecta GmbH
International Department

Novocarbo GmbH



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Philipp Seitz

name, first name.von.Ziegner,Caspar.....

Auditor

function.CEO.....