Final Audit Report

Audited Bodies	
Puro.earth Project Proponent	GECA Environnement
Name of Contact for Puro.earth Project Proponent	Melissa Leung
Production Facility Operator	Oregon Biochar Solutions
Name of Contact for Production Facility Operator	Karl Strahl
Production Facility name	Oregon Biochar Solutions
Production Facility ID	753518
Production Facility Location	White City, Oregon – United States

Audit Description	
Type of Audit	Output Audit
Number of CORCs under Audit	5,575 (Stream A: 1,937 and Stream B: 3,638)
Total tonnes of dry biochar under Audit	4,567.7 (Stream A: 1,074.7 and Stream B: 3,493.0)
CORC conversion factor under Audit (Stream A)	1.803 tCO_2e per dry tonne biochar
CORC conversion factor under Audit (Stream B)	1.042 tCO_2e per dry tonne biochar
Reporting Period Covered by Audit	1 October 2022 to 31 October 2023
Objective of Audit Engagement	Provide assurance opinion against requirements of Puro.earth Rules v3.1
Date of Auditor Engagement	11 July 2024
Date of Audit Report Submission	27 August 2024

Audit Outcomes	
Number of eligible CORCs	**5,575 (Stream A: 1,937 and Stream B: 3,638)**
Tonnes of eligible dry biochar	**4,567.7 (Stream A: 1,074.7 and Stream B: 3,493.0)**
CORC conversion factor under Audit (Stream A)	**1.803 tCO_2e per dry tonne biochar**
CORC conversion factor under Audit (Stream B)	**1.042 tCO_2e per dry tonne biochar**
Calculation Method	Biochar Methodology

Auditing Body	
Auditor	EnergyLink Services Pty Ltd
Lead Auditor	Rodrigo Pardo Patron
Additional Audit Personnel	Thais Monteiro Voll
Peer Reviewer	Katherine Simmons

This document details the nature and scope of the services provided by a member of EnergyLink Services in respect of the eligibility of the CO_2 Removal Supplier Production Facility under the requirements of Biochar Methodology v3.0 (Edition 2022) and the Puro Standard General Rules v3.1.

This document is issued to Puro.earth detailing audit procedures conducted and the auditor's opinion in relation to the eligibility of the Production Facility. It should not be used for any other purpose.

Because of the inherent limitations in any internal control structure, it is possible that fraud, error, or non-compliance with laws and rules may occur and not be detected. Further, the audit was not designed to detect all weakness or errors in internal controls so far as they relate to the requirements set out above as the audit has not been performed continuously throughout the period and the procedures performed on the relevant internal controls were on a test basis. Any projection of the evaluation of control procedures to future periods is subject to the risk that the procedures may become inadequate because of changes in conditions, or that the degree of compliance with them may deteriorate.

The audit opinion expressed in this report has been formed on the above basis.

Copies of relevant documentation are available on the Puro.earth website: puro.earth

COMMERCIAL AND CONFIDENTIAL

Version Control Record

Project Number – J0533				
Document File Name	Date Issued	Version	Lead Auditor	Peer Reviewer
20240827 Oregon Biochar Final Output Audit Report 2024 vF.0	27 August 2024	vF.0	Rodrigo Pardo	Katherine Simmons

Contents

Abbreviation	Description
'H'	Hydrogen
'O'	Oxygen
CO_2	Carbon Dioxide
CORC	CO_2 Removal Certificate
C_{org}	Organic Carbon
GHG	Greenhouse Gas
LCA	Life Cycle Assessment
OC	Overcalculation
UC	Undercalculation
The Puro Rules	the Puro Standard General Rules v 3.1
The New Puro Rules	the Puro Standard General Rules v4.0 (Edition 2024)
The Biochar Methodology	Edition 2022 v3

PART A: Auditor's Report

To: Puro.earth

Dear Sir / Madam,

EnergyLink Services Pty Ltd (EnergyLink Services) were engaged to perform a reasonable assurance audit of Oregon Biochar Solutions' CO_2 Removal calculation for the reporting period covered by the audit, from 1 October 2022 to 31 October 2023, against the eligibility requirements of 'the Puro Standard General Rules v3.1' (hereafter referred to as "the Puro Rules").

Details of Audited Bodies

Puro.earth Project Proponent	GECA Environnement
Production Facility Operator	Oregon Biochar Solutions GSRN: 643002406801000220
Production Facility name	Oregon Biochar Solutions
Production Facility ID	753518
Production Facility location	2350 Avenue G, White City – Oregon, United States

Responsibility of the Audited Bodies' Management

The management of the audited bodies (that are, GECA Environnement and Oregon Biochar Solutions) are responsible for the application of the requirements of 'Biochar Methodology of the Puro Rules Edition 2022 v3' (hereafter referred to as "the Biochar Methodology") in quantifying CO_2 Removal Certificates (CORCs) from the production of biochar, which is reflected in the proof provided to EnergyLink Services.

The management of the audited bodies are responsible for preparation and presentation of the evidence in accordance with Section 5 the Biochar Methodology. This responsibility includes the design, implementation, and maintenance of internal controls relevant to the preparation and presentation of proofs that are free from material misstatement, whether due to fraud or error.

Our independence and quality control

EnergyLink Services have complied with the relevant ethical requirements relating to assurance engagements, which include independence and other requirements founded on fundamental principles of integrity, objectivity, professional competence, due care, confidentiality, and professional behaviour. These include all the requirements defined in the *Fortum – Supplier Code of Conduct*[1].

Furthermore, EnergyLink Services maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards, and applicable legal and regulatory requirements, in accordance with *ISQC 1 Quality Control for Firms that Perform Audits and Reviews of Financial Reports and Other Financial Information.*

[1] Fortum (2020), Fortum – Supplier Code of Conduct, available at: www.fortum.com/about-us/contact-us/suppliers/code-of-conduct

Our responsibility

EnergyLink Services' responsibility is to express an opinion on the audited bodies' quantification of CORCs and compliance with the *Puro Rules* based on the procedures we have performed and the evidence we have obtained.

We have conducted a reasonable assurance engagement in accordance with the *Puro Rules* and relevant international standards, as listed below:

- International Standards on Assurance Engagements ISAE 3000 Assurance Engagements other than Audits or Reviews of Historical Financial Information.
- ISQC 1 Quality Control for Firms that Perform Audits and Reviews of Financial Reports and Other Financial Information, and Other Assurance Engagement.

A reasonable assurance engagement in accordance with relevant international standards involves performing procedures to obtain evidence about the Production Facility process controls and quantification of CORCs in accordance with the Puro Rules. The nature, timing and extent of procedures selected depend on the assurance practitioner's judgement, including the assessment of the risks of material misstatement, whether due to fraud or error. In making those risk assessments, we considered internal controls relevant to the audited bodies' preparation of proofs. We believe that the assurance evidence we have obtained is sufficient and appropriate to provide a basis for our assurance conclusion.

Summary of procedures undertaken

The procedures we conducted in our reasonable assurance engagement included:

- reviewing evidence provided by the audited bodies;
- assessing the audited bodies against eligibility criteria;
- conducting interviews and a (virtual) site visit to validate the evidence provided;
- analysing procedures that the audited bodies used to gather data;
- testing of calculations that the audited bodies performed; and
- identifying and testing assumptions supporting the calculations.

Use of our reasonable assurance engagement report

This audit report has been prepared for use by the audited bodies and Puro.earth for the sole purpose of reporting on the audited bodies' quantification of CORCs and compliance with the *Puro Rules*. Accordingly, EnergyLink Services expressly disclaim and do not accept any responsibility or liability to any party other than Puro.earth and the audited bodies for any consequences of reliance on this report for any purpose.

Inherent limitations

There are inherent limitations in performing assurance audits - for example, assurance engagements are based on selective testing of the information being examined - and because of this, it is possible that fraud, error, or non-compliance may occur and not be detected. An assurance engagement is not designed to detect all misstatements, as an assurance engagement is not performed continuously throughout the period that is the subject of the engagement, and the procedures performed are based on a test basis. The conclusion expressed in this report has been formed on the above basis.

Additionally, non-financial data may be subject to more inherent limitations than financial data, given both its nature and the methods used for determining, calculating, and sampling or estimating such data.

Corrective Action Requests / Recommendations

During the audit process, the auditor did not issue any corrective action requests or recommendations.

Overall Conclusion

Positive Conclusion (Production Output Audit)

Facility Production Stream Summary

Below is a summary of the eligible CO_2e removal per tonne of biochar for each of the production streams.

Production Stream	Tonnes of dry biochar	Eligible CO_2 Removal
Primary biochar – Stream A	1,074.7	1.803 tCO_2e per dry tonne biochar
Biochar screenings – Stream B	3,493.0	1.042 tCO_2e per dry tonne biochar

Production Output Audit

The lead auditor is able to express a reasonable assurance opinion that, in all material respects, the quantification of **5,575 CO_2 Removal Certificates (CORCs)** for the reporting period 1 October 2022 to 31 October 2023 by the audited bodies was correct.

Table 1: Audited CORCs summary

Biochar	CORCs Under Audit	Abs. Error (CORCs)	Net Error (CORCs)	Eligible CORCs	Abs. Error Rate (%)	Net Error Rate (%)
Primary biochar	1,937	0	0	1,937	0.0%	0.0%
Biochar screenings	3,638	0	0	3,638	0.0%	0.0%
Total	5,575	0	0	5,575	0.0%	0.0%

*OC = Overcalculation / UC = Undercalculation

Ongoing Issuance and Digital Monitoring, Reporting and Verification

As per Appendix A of the Puro Rules, the auditor has considered the Production Facility and the internal processes, controls and systems to form an opinion over the ongoing issuance and digital monitoring, reporting and verification (dMRV).

In the auditor's opinion, the Oregon Biochar Solutions Facility has:

- Demonstrated regular industrial operations; and
- Completed a performance verification review (i.e. this audit) for the previous monitoring period with over three months of Output.

Additionally, the Output Audit Report provided a Positive Conclusion and did not include any recommendations. In the lead auditor's opinion, Oregon Biochar Solutions should be eligible for the ongoing issuance and dMRV of certificates.

Sincerely,

Rodrigo PARDO PATRON | Director of Engineering
EnergyLink Services Pty Ltd
Lead Auditor
27 August 2024

Part B: Detailed Findings

Audit Findings and Conclusions

Table 2 to Table 5 summarise the findings from the Production Output Audit. As part of the audit procedures, the auditor performed interviews with site representatives and a (virtual) site visit to the Production Facility. Where possible, the findings from these procedures were used to validate that the eligibility criteria under the methodology had been met, that the proofs and evidence provided by the audited bodies were accurate, and that the metering used to quantify the Output was appropriate and correctly calibrated.

Eligibility Assessment

Table 2: Eligibility Assessment

Requirement	Requirement Met?	Verification Remarks	Corrective Action Request / Recommendations
Confirm that the biochar is used in applications other than energy.	Y	The auditor confirmed the primary biochar (stream A) was transported to be used for agricultural purposes and/or water filtration. Additionally, the auditor confirmed the biochar screenings (stream B) were sent to landfill.	N/A.
Confirm that the biochar is produced from sustainable forest or waste biomass raw materials.	Y	The auditor confirmed that the biochar was produced predominantly from waste biomass raw materials. Moreover, the auditor confirmed through the evidence provided by Oregon Biochar Solutions that the portion of feedstock used for biochar production that was sourced from forestry and wood processing (waste, landscape chips, and chip fines), was derived from sustainable raw materials.	N/A.

Requirement	Requirement Met?	Verification Remarks	Corrective Action Request / Recommendations
Confirm that the producer demonstrates net-negativity with results from a LCA that shows: – [A1 Biomass and A2 Transport of biomass] carbon footprint of the biomass production and supply. – [A3 Production] emissions from the biochar production process. – [A4 Transport of biochar to site] carbon footprint of the biochar end use. – [B1 Application and use] cradle to grave.	Y	The auditor confirmed that the LCA provided by Oregon Biochar Solutions included all information relating to the biochar end-use.	N/A.
Confirm that the biochar production process meets requirements 1.1.4 to 1.1.6 of the Biochar Methodology, namely that: – It has considered the emissions related to the use of fossil fuels (coal, oil, natural gas). – there is no co-firing of fossil fuels and biomass in the same reaction chamber. – the pyrolysis gases are recovered or combusted. – the molar H/C_{org} ratio is less than 0.7.	Y	The auditor verified that while the gasification system operated as an auto-thermal process, generating the necessary thermal energy from the processed feedstock, it initially relied on natural gas to start the process and heat the reactor to the required temperature and pressure. The auditor confirmed that the emissions related to the use of fossil fuels for ignition, pre-heating, or heating of the pyrolysis reactor were considered and there is no co-firing of fossil fuels and biomass in the same reaction chamber.	N/A.
		The pyrolysis gases are recovered and used for electricity generation.	
		Primary biochar (stream A): The molar H/C_{org} ratio is 0.24. Biochar screenings (stream B): The molar H/C_{org} ratio is 0.13. Both H/C_{org} ratios are less than 0.7.	
Confirm that measures are taken for safe handling and transport of biochar to prevent fire and dust hazards.	Y	The auditor confirmed via discussions with Oregon Biochar personnel that appropriate safety measures were taken to ensure the safe handling and transport of the biochar.	N/A.

Confirmation of Production Facility Eligibility

Table 3: Production Facility assessment

Requirement	Requirement Met?	Verification Remarks	Corrective Action Request / Recommendations
Confirm the Production Facility Eligibility under the general rules of Puro Standard.	Y	The auditor confirmed that the audited bodies have already gone through a Production Facility Audit in 2021 and achieved a positive outcome.	N/A.
Confirm that the quantity of biochar produced and sold is documented via appropriate processes.	Y	The auditor confirmed during the virtual site visit that an appropriate system was in place to quantify the biochar produced and sold during the reporting period for the primary biochar and the biochar screenings.	N/A.

Quantification of CO_2 Removal

Table 4: Quantification of CO_2 Removal - Calculation Methodology

Requirement	Requirement Met?	Verification Remarks	Corrective Action Request / Recommendations
Confirm that the quantification of CO_2 removal is calculated using the Calculation formula of CO_2 removal.	Y	The auditor examined the CORC calculator provided by the audited bodies and confirmed that the formulas applied in the quantification of CO_2 removal for both biochar streams were in accordance with the Puro Rules.	N/A.
Confirm that the inputs to the Calculation formula of CO_2 removal are appropriate and consistent with the evidence provided.	Y	The auditor confirmed that the inputs to the calculation formula of CO_2 removal are appropriate and consistent with the evidence provided.	N/A.

Verification of Proofs

Table 5: Verification of proofs and documentation

Requirement	Requirement Met?	Verification Remarks	Corrective Action Request / Recommendations
Confirm that the standing data for the Production Facility meets the requirements of the Biochar Methodology and is consistent with other evidence.	Y	The auditor reviewed and validated the standing data provided by the audited bodies and confirmed it was consistent with desktop testing and the virtual site visit.	N/A.
Confirm that the necessary proof and evidence documents are maintained by the Production Facility as per Section 5 of the Biochar Methodology[2].	Y	The auditor confirmed all necessary evidence has been provided as per Section 5 of the Biochar Methodology.	N/A.

[2] Information in Section 5 of the Biochar Methodology includes:

- Proof of sustainability of raw material for forest and/or waste biomass.
- LCA data for biomass and biochar production.
- Justification on the soil temperature used for the calculation of the biochar sequestration.
- Proof of product quality, production volume, sales and end use of biochar.
- Proof of no double counting/C positive marketing.

Peer Reviewer Conclusion

Name of the peer reviewer	Katherine Simmons
Peer reviewer's credentials	• Bachelor of Engineering (Honours) in Polymer Engineering (minoring in Chemical Engineering). • Category 1 Registered Greenhouse and Energy Auditor with the Clean Energy Regulator (Australia). • Climate Active Registered Consultant. • Integrated Management Systems Lead Auditor ISO 19011, ISO 9001:2015, ISO 14001:2015, ISO 45001:2018.
Peer reviewer contact details	Email: katherine.simmons@kreaconsulting.com.au Phone: +61 431 612 950
Outcome of the evaluation undertaken by the peer reviewer	I have reviewed the engagement letter, audit report and supporting work papers / source data and am satisfied that the audit has been performed in accordance with the eligibility requirements of Puro Standard General Rules Version 3.1.

Appendix A: Response to Previous Audit Recommendations

The Production Facility's audit dated 24 February 2023 (EnergyLink Services Pty Ltd) contained one (1) recommendation, and one (1) carry forward recommendation. The recommendations and the auditor's responses are provided in Table 6.

Table 6: Previous Audit Recommendation

Requirement	Requirement Met?	Verification Remarks
Recommendation (1): EnergyLink Services recommends that Oregon Biochar augment its quality assurance procedures, so that the calculations in the biochar LCA undergo a quality control check prior to audit commencement. Evidence of the quality control check should be provided to the auditor as part of the audit package.	Y	The auditor reviewed the calculations in the biochar LCA and confirmed Oregon Biochar had augmented its quality assurance procedures. Evidence of the quality control check was provided to the auditor.
Carry Forward Recommendation (1): EnergyLink Services recommends that Oregon Biochar augment its emissions calculations procedures, so that all emissions sources and the biochar LCA are updated to reflect changes such as change of equipment, processes, and procedures prior to audit commencement.	Y	The auditor reviewed the emissions calculations procedures, and confirmed all emissions sources and the LCA calculations were updated to reflect changes of equipment, processes, and procedures.

Appendix B: Table of Site Visit Findings

Table 7: Site visit summary table

Requirement	Requirement Met?	Verification Remarks	Corrective Action Request / Recommendations
Check that the raw material is of eligible type and sustainably sourced.	Y	The auditor confirmed that the biochar was predominantly produced from waste biomass raw materials. Oregon Biochar Solutions was able to provide the necessary evidence to demonstrate that the portion of feedstock used for biochar production that was sourced from forestry and wood processing (waste, landscape chips, and chip fines), was derived from sustainable raw materials.	N/A.
Check that the LCA provided is consistent with observations on site.	Y	The auditor confirmed the LCA provided was an accurate representation of the Production Facility and used appropriate assumptions where necessary.	N/A.
Confirm that the LCA considered the emissions related to the use of fossil fuels (coal, oil, natural gas) for ignition, pre-heating, or heating of the pyrolysis reactor. Additionally, there is no co-firing of fossil fuels and biomass in the same reaction chamber.	Y	The auditor verified that while the gasification system operated as an auto-thermal process, generating the necessary thermal energy from the processed feedstock, it initially relied on natural gas to start the process and heat the reactor to the required temperature and pressure. The auditor confirmed that the emissions related to the use of fossil fuels for ignition, pre-heating, or heating of the pyrolysis reactor were considered and there is no co-firing of fossil fuels and biomass in the same reaction chamber.	N/A.
Evidence of safe handling and transport is provided and adequate for the production facility.	Y	The auditor confirmed via discussions with Oregon Biochar personnel that appropriate safety measures were taken to ensure the safe handling and transport of the biochar.	N/A.
Check that the Production Facility's documentation system is accurate and reliable for recording the quantity of biochar produced and sold.	Y	The auditor confirmed during the virtual site visit that an appropriate system was in place to quantify the biochar produced and sold during the reporting period. The auditor confirmed that the sales records used for the CORCs calculation accurately reflect the information presented in the evidentiary invoices.	N/A.

Requirement	Requirement Met?	Verification Remarks	Corrective Action Request / Recommendations
Check that appropriate metering infrastructure is in place and calibrated correctly to quantify the Production Facility output and the energy use of the Production Facility.	Y	The auditor confirmed appropriate metering infrastructure was in place, in particular, the belt scanner calibration verification certificate was provided to the auditor. This enabled Oregon Biochar to correctly quantify the Production Facility biochar screening stream output (stream B). Additionally, the primary biochar (Stream A) was calculated by multiplying the bulk density by the total volume of bags sold. For measuring bag volume, Oregon biochar used the SR Measurement app from Stockpile Reports. According to the app's statements, its automatic scale estimation is accurate to within scaling errors of less than 3%. Lastly, the auditor confirmed the Production Facility had appropriate metering infrastructure to quantify the energy use on site.	N/A.
Check that appropriate processes are in place to quantify the inputs to the Calculation formula of CO_2 removal for the purpose of Preparing the Output Report and calculating CORCs.	Y	The auditor reviewed the evidence provided by the audited bodies and confirmed that the inputs to the calculation formula of CO_2 removal had been correctly determined.	N/A.