Final Audit Report

Audited Body	
Puro.earth Project Proponent	Accend AS
Name of Contact for Puro.earth Project Proponent	Paul Fergusson
Production Facility Operator	Wakefield Biochar
Name of Contact for Production Facility Operator	Thomas Marrero
Production Facility Location	Brunswick, GA – United States

Audit Description	
Type of Audit	Output Audit
Number of CORCs under Audit	10,529
Tonnes of dry biochar under Audit	14,056
Reporting Period Covered by Audit	1 October 2022 to 30 September 2023
Objective of Audit Engagement	Provide assurance opinion against requirements of Puro.earth Rules v3.1 (Edition 2023)
Date of Auditor Engagement	3 November 2023
Date of Audit Report Submission	19 December 2023

Reporting Requirements	
Number of eligible CORCs	10,482
Tonnes of eligible dry biochar	14,151
CORC conversion factor	0.741 tCO_2e per tonne dry biochar
Calculation Method	Biochar Methodology

Auditing Body	
Auditor	EnergyLink Services Pty Ltd
Lead Auditor	Rodrigo Pardo
Additional Audit Personnel	Thais Monteiro Voll Brandon Melyadi
Peer Reviewer	Mark Wallace

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 Annex A: Biochar Methodology to the Puro Standard General Rules v3.1 (Edition 2023).

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 – J0475				
Document File Name	Date Issued	Version	Lead Auditor	Peer Reviewer
20231219 Audit Final Report_ Brunswick vF.0	19 December 2023	vF.0	Rodrigo PARDO	Mark WALLACE

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 v3.1 (Edition 2023)
The Biochar Methodology	Edition 2022 v2 Annex A: of the Puro Rules

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 Wakefield Biochar Production Facility 002-Brunswick's CO_2 Removal calculation from the production of biochar for the period 1 October 2022 to 30 September 2023 against the eligibility requirements of 'the Puro Standard General Rules v3.1 Edition 2023' (hereafter referred to as "the Puro Rules").

Details of Audited Bodies

Puro.earth Project Proponent	Accend AS
Production Facility Operator	Wakefield Biochar Facility 002 – Brunswick GSRN: 643002406801000718
Production Facility location	GP Brunswick Cellulose, 1400 W 9th St. Brunswick, GA – the United States

Responsibility of the Audited Bodies' Management

The management of the audited bodies (that are, Accend AS and Wakefield Biochar) are responsible for the application of the requirements of 'Annex A: Biochar Methodology of the Puro Rules Edition 2022 v2' (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

Three corrective action requests were addressed during the audit process, and the auditor issued one carry forward recommendation.

Corrective Action Request 1: LCA

The auditor requested Wakefield Biochar (Brunswick) to review its biochar shipment tonnage calculation. In response to the request, Wakefield Biochar identified a typographical error in categorising the biochar purpose as '/Land Application' instead of 'Land Application', leading to the exclusion of 106 dry tons of biochar from the overall calculations. The formula error was corrected, and the biochar shipment tonnage calculation was amended.

Corrective Action Request 2: Emission Factor

The auditor requested Wakefield Biochar (Brunswick) to review its electricity emission factor. In response to the request, Wakefield Biochar identified a minor error due to the choice of the electricity emission factor, initially set for high voltage and subsequently modified to medium voltage for grid-exported electricity.

Corrective Action Request 3: LCA

The auditor requested Wakefield Biochar (Brunswick) to review its Euse calculations. In response to the request, Wakefield Biochar identified a discrepancy where the calculation of the tonnage of wet-applied biochar for land application purpose was based on dry tons of biochar instead of wet tons of biochar. Additionally, the Euse was derived from 'Emissions from biochar transport' instead of 'Total transport and application'.

Corrective Action Request 4: Transport of bark to production site

The auditor requested Wakefield Biochar (Brunswick) to review transport of bark to production site. In response to the request, Wakefield Biochar identified a discrepancy where the calculation of “transport of bark to production site” emissions was based on inconsistency units.

Carry Forward Recommendation 1: LCA

EnergyLink Services recommends that Wakefield Biochar augment its LCA calculation procedures, so that:

- All relevant emissions sources are properly included in the LCA emissions boundary; and
- All data, assumptions, and formulae used for the calculation of emissions associated with the biochar life cycle are consistent with the supporting evidence.

Overall Conclusion

Positive Conclusion (Production Output Audit)

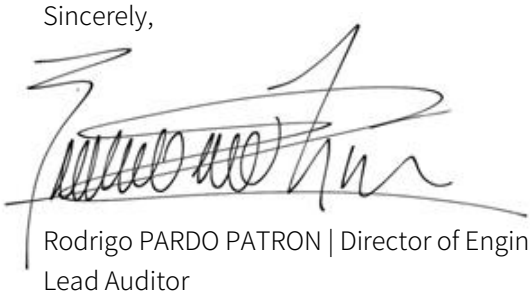
Production Output Audit

The lead auditor is able to express a reasonable assurance opinion that, in all material respects, the quantification of 10,482 CO_2 Removal Certificates (CORCs) for the reporting period 1 October 2022 to 30 September 2023 by the audited body was correct. The audit procedures indicated that an overcalculation of 47 CORCs was made by the audited bodies. The error is not considered material as it is below the 5% materiality threshold.

CORCs Under Audit	Abs. Error (CORCs)	Net Error (CORCs)	Eligible CORCs	Abs. Error Rate (%)	Net Error Rate (%)
10,529	193	47 OC	10,482	1.833%	0.446%

*OC = Overcalculation / UC = Undercalculation

Sincerely,



Rodrigo PARDO PATRON | Director of Engineering – EnergyLink Services Pty Ltd
Lead Auditor
15 December 2023

Part B: Detailed Findings

Audit Findings and Conclusions

Table 1 to Table 4 summarises 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 (for details refer to Appendix C).

Eligibility Assessment

Table 1: 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 that the produced biochar subject to this audit was used in a mixed material with biochar and lime, which was applied on soil for land remediation and landfill disposal in the surrounding coastline of the GP Brunswick mill Production Facility.	N/A.
Confirm that the biochar is produced from sustainable forest or waste biomass raw materials.	Y	The auditor confirmed that the biochar produced in the GP Cellulose boiler 4 was produced from sustainably sourced biomass. The feedstock was composed of bark from the internal de-barking process and sourced externally.	N/A.
Confirm that the producer demonstrates net-negativity with results from a LCA that 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.	Finding	The auditor identified an error in the calculation of the biochar shipment tonnage. The error was due to a typographical error in categorising the biochar purpose as '/Land Application' instead of 'Land Application', leading to the exclusion of 106 dry tons of biochar from the overall calculations. This error resulted in the under-calculation of 73 CORCs.	Corrective Action Request 1: LCA
	Finding	The auditor identified a minor error in the electricity emission factor. The error was due to the choice of an incorrect factor initially set for high voltage and subsequently modified to medium voltage for grid-exported electricity. This error resulted in the over-calculation of 1 CORC.	Corrective Action Request 2: Emission Factor

Requirement	Requirement Met?	Verification Remarks	Corrective Action Request / Recommendations
(CONTINUED) Confirm that the producer demonstrates net-negativity with results from a LCA that 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.	Finding	For the transport and application of biochar emissions, the auditor identified a discrepancy where the calculation of the tonnage of wet-applied biochar for land application purposes was based on dry tons of biochar instead of wet tons of biochar. Additionally, the Euse was derived from 'Emissions from biochar transport' instead of 'Total transport and application'. **This error resulted in the over-calculation of 65 CORC.**	Corrective Action Request 3: LCA
	Finding	For the transport of bark to production site emissions, the auditor identified a discrepancy where the calculation of those emissions was based on inconsistency units. **This error resulted in the over-calculation of 54 CORC.**	Corrective Action Request 3: LCA
	Finding	Except when noted above, the auditor confirmed that the LCA provided by Wakefield Biochar (Brunswick) included all information on the emissions of the different stages of the biochar life cycle (cradle-to-grave).	Carry Forward Recommendation 1: LCA
Confirm that the biochar production process meets requirements 1.1.4 to 1.1.6 of the Biochar Methodology, namely that: – no fossil fuel is used for heating the pyrolysis reactor – the pyrolysis gases are recovered or combusted – the molar H/C_{org} ratio is less than 0.7	Y	The auditor confirmed that although the majority of the thermal energy required by the Production Facility power plant is created from the biomass (bark) being processed, the system also relies on natural gas, fuel oil, and tire-derived fuel (TDF) to maintain and operate the boiler. Based on the previous audit, the auditor confirmed through e-mail correspondence with Puro.earth that even though fossil fuel is used to create the energy used in the process, when the biochar is co-generated in a boiler it is a multi-functional unit whereby the biomass is gasified and turned into co-products (i.e. steam and biochar), this meets the eligibility requirements of the Puro Rules. The auditor confirmed that the associated emissions from the multi-functional system were accounted for in the LCA and properly allocated to the co-products.	N/A.
		The pyrolysis gases and heat are used for steam production, which is converted to electricity.	
		The average of molar H/Corg ratio was 0.25.	

Requirement	Requirement Met?	Verification Remarks	Corrective Action Request / Recommendations
Confirm that measures are taken for safe handling and transport of biochar to prevent fire and dust hazards.	Y	The auditor confirmed that moisture was added to the ash and biochar produced in the power plant. The ash and char from the boiler were flushed to a pond and pre-settling basin.	N/A.

Confirmation of Production Facility Eligibility

Table 2: 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 2022 and achieved a positive outcome.	N/A.
Confirm that the quantity of biochar produced and sold is documented via appropriate processes.	Y	The audit identified that the weights of 3,152 dry tons of biochar shipped during October and November 2022 for the Lone Wolf Project were calculated based on average values. Wakefield used commonly used trucks at Brunswick for estimation. Due to the weighbridge limitations for the 30-ton ADT Lone Wolf trucks, an average weight of 20.8 tons was undertaken for a conservative approach. Considering the notes above and discussions with Wakefield Biochar personnel, the auditor confirmed that Wakefield Biochar has implemented daily moisture measurements and ensured appropriately calibrated weighbridge shipments from the site. As such, the auditor confirmed that the Production Facility documentation system was accurate and reliable.	N/A.

Quantification of CO_2 Removal

Table 3: 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	Except for the summary of the errors found by the auditor in Appendix C, the auditor examined the CORC calculator provided by the audited body and confirmed that the formula applied in the quantification of CO2 removal was as per 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.	Finding	The auditor found a few errors in the inputs to the Calculation formula of CO_2 removal, specifically those detailed in Appendix C. Consequently, Carry Forward Recommendation 1 was issued to ensure Wakefield continues augmenting its emissions calculations procedures and checks.	Carry Forward Recommendation 1: LCA

Verification of Proofs

Table 4: 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 confirmed that all relevant standing data collected was complete and consistent.	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 Guidelines.	N/A.

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

Peer Reviewer Conclusion

Name of the peer reviewer	Mark Wallace
Peer reviewer's credentials	o Bachelor of Systems Engineering (Honours), majoring in Mechanical and Materials – Australian National University. o Certified Performance Measurement and Verification Analyst (PMVA), Efficiency Valuation Organisation (EVO). o Climate Active Registered Consultant. o Certificate IV in Project Management.
Peer reviewer contact details	Email: mark@energylinkservices.com.au Phone: +61 475 894 971
Outcome of the evaluation undertaken by the peer reviewer	Amendments to the report.

- 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.

Appendix A: Response to Previous Audit Recommendations

The Production Facility's audit dated 7 November 2022 (EnergyLink Services Pty Ltd) contained two recommendations. The recommendations and the auditor's responses are provided in Table 5.

Table 5: Previous Audit Recommendation

Requirement	Requirement Met?	Verification Remarks
Recommendation (1): LCA **EnergyLink Services recommends that Wakefield Biochar augment its LCA calculation procedures, so that:** - All relevant emissions sources are properly included in the LCA emissions boundary; and - All data, assumptions, and formulae used for the calculation of emissions associated with the biochar life cycle are consistent with the supporting evidence.	Partially	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. Nevertheless, the auditor found a few errors in the LCA, in particular the errors listed in Appendix C. As such, the auditor issued Carry Forward Recommendation 1 to ensure Wakefield continue augmenting its emissions calculations procedures and checks.
Recommendation (2): Record-Keeping EnergyLink Services recommends that Wakefield Biochar augment its record-keeping procedures so that all supporting evidence of the tests carried onsite are properly maintained, and the biochar shipment records are accurate and consistent between the daily logs and electronic records.	Y	The auditor observed that Wakefield Biochar has improved its record-keeping practices, incorporated daily moisture measurements, and weighed shipments from the site. Moreover, discussions with Wakefield Biochar personnel revealed ongoing efforts, including the testing of an advanced blockchain system for managing shipment data. The system is anticipated to be implemented in 2024, promising further enhancements to record-keeping capabilities. Consequently, the auditor is satisfied this recommendation has been addressed.

Appendix B: Table of Site Visit Findings

Table 6: 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 material type was eligible under the Biochar Methodology and was sustainably sourced. The auditor confirmed that the feedstock was composed of bark from the internal de-barking process and from external sources.	N/A.
Check that the LCA provided is consistent with observations on site.	Y	The auditor confirmed LCA provided was an accurate representation of the Production Facility and used appropriate assumptions where necessary.	N/A.
Confirm that no fossil fuel is used for heating the pyrolysis reactor, and the pyrolysis gases are recovered or combusted.	Y	The auditor confirmed that the thermal energy required by the boiler is created from the biomass (i.e. bark) being processed, and the combustion of natural gas, fuel oil, and TDF to maintain and operate the system.	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 audit identified that the weights of 3,152 dry tons of biochar shipped during October and November 2022 for the Lone Wolf Project were calculated based on average values. Wakefield used commonly used trucks at Brunswick for estimation. Due to the weighbridge limitations for the 30-ton ADT Lone Wolf trucks, an average weight of 20.8 tons was undertaken for a conservative approach. Considering the notes above, the auditor confirmed that an appropriate system was in place to quantify the biochar produced and shipped during the reporting period. The auditor was provided with the weighbridge calibration process followed. Additionally, Wakefield provided scale tickets as evidence of shipping the pure biochar.	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 verified the presence of appropriate metering infrastructure, specifically focusing on daily moisture measurements and weighed shipments from the site. Through discussions with Wakefield Biochar personnel and the examination of additional evidence provided, the auditor confirmed that the Production Facility has established relevant procedures for managing various aspects of its biochar production process. The Production Facility documents the consumption data of the power boiler, encompassing the usage of feedstock (i.e., bark), TDF, natural gas, and fuel oil, along with steam production. Additionally, the facility has implemented procedures to quantify the electricity and diesel consumed during its operations. Total electricity consumption was determined by calculating the maximum energy consumption of the equipment used by the Production Facility for biochar production, accounting for continuous 24/7 operations. Diesel consumption, on the other hand, was determined by considering the average fuel consumption rate of each respective equipment and machinery, coupled with the operating hours during the production period.	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 found a few errors in the inputs to the Calculation formula of CO_2 removal, specifically those detailed in Appendix C. Consequently, Carry Forward Recommendation 1 was issued to ensure Wakefield continue augmenting its emissions calculations procedures and checks.	N/A.

Appendix C: Summary of Calculation Errors

A summary of the calculation errors and the associated impacts on CORC calculation is provided in Table 7.

Table 7: Summary of Calculation Errors Biochar Screenings Stream

Source of Error	CORC calculation	Corrected CORC calculation	Abs. Error (CORCs)	Net Error (CORCs)	Abs. Error Rate (%)	Net Error Rate (%)
Errors in the calculation of biochar shipment tonnage	10,529	10,602	73	73 UC	0.693%	-0.693%
Errors in electricity emission factor	10,602	10,601	1	1 OC	0.009%	0.009%
Errors in A4 Transportation and Application	10,601	10,536	65	65 OC	0.613%	0.613%
Errors in A2 Transport of bark to production site	10,536	10,482	54	54 OC	0.513%	0.513%
Total	**10,529**	**10,482**	**193**	**47 OC**	**1.833%**	**0.446%**

*OC = Overcalculation/UC = Undercalculation