

Final Audit Report

Audited Body	
Puro.earth Project Proponent	American BioCarbon CT, LLC
Name of Contact for Puro.earth Project Proponent	Erwin Bogner
Production Facility Operator	American BioCarbon CT, LLC
Name of Contact for Production Facility Operator	Erwin Bogner
Production Facility name	American BioCarbon CT, LLC
Production Facility ID	543800
Production Facility Location	White Castle, LA – United States

Audit Description	
Type of Audit	Output Audit
Number of CORCs under Audit	812
Tonnes of dry biochar in stock at the start of the reporting period	0
Tonnes of dry biochar produced under Audit	964.6
Tonnes of dry biochar used under Audit	467.5
Tonnes of dry biochar in stock at the end of the reporting period	497.1
CORC conversion factor under Audit	1.738 tCO ₂ e per tonne dry biochar
Reporting Period Covered by Audit	8 April 2023 to 30 April 2024
Objective of Audit Engagement	Provide assurance opinion against requirements of Puro.earth Rules v3.1
Date of Auditor Engagement	1 November 2024
Date of Audit Report Submission	11 June 2025

Audit Outcomes	
Number of eligible CORCs	748
Tonnes of dry biochar in stock (start)	0
Tonnes of dry biochar produced under Audit	964.6
Tonnes of eligible dry biochar used	467.5
Tonnes of dry biochar in stock (end)	497.1
CORC conversion factor	1.602 tCO ₂ e per tonne dry biochar
Calculation Method	Biochar Methodology Edition 2022 v3

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 CO₂ 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 calculation of CORCs. 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

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20250611 Final Audit Report American BioCarbon Output 2024 F.0	11 June 2025	vF.0	Rodrigo Pardo Patron	Katherine Simmons

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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
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 American BioCarbon CT, LLC's CO₂ Removal calculation for the reporting period covered by the audit, from 8 April 2023 to 30 April 2024, against the eligibility requirements of 'the Puro Standard General Rules v3.1' (hereafter referred to as "the Puro Rules").

Details of Audited Body

Puro.earth Project Proponent	American BioCarbon CT, LLC
Production Facility Operator	American BioCarbon CT, LLC
Production Facility name	American BioCarbon CT, LLC
Production Facility ID	543800
Production Facility location	White Castle, LA – United States

Responsibility of the Audited Body's Management

The management of the audited body (i.e. American BioCarbon) is responsible for the application of the requirements of 'Biochar Methodology Edition 2022 v3' (hereafter referred to as "the Biochar Methodology") in quantifying CO₂ Removal Certificates (CORCs) from the production of biochar, which is reflected in the proof provided to EnergyLink Services.

The management of the audited body is responsible for preparation and presentation of the evidence in accordance with 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 body's 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 body's 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 body;
- assessing the audited body against eligibility criteria;
- conducting interviews and a (virtual) site visit to validate the evidence provided;
- analysing procedures that the audited body used to gather data;
- testing of calculations that the audited body 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 body and Puro.earth for the sole purpose of reporting on the audited body's 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 body 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 issued three corrective action requests, which were addressed during the course of the audit. Further, the auditor issued two recommendations and five carry forward recommendations to be implemented by the next audit.

Corrective Action Request 1: Data entry for the CORC calculations

In the CORCs Report Summary, the emissions values for E biomass, E production, and E use were incorrectly reported due to unit conversion issues. Most of the data was in kgCO₂e but was divided by 1,000 to convert from tonnes to kg. Additionally, the E biomass value for Week 6 of 2024 and E production for Week 26 2023 were divided by 100. Upon review, American BioCarbon corrected their data entry for the CORC calculations to reflect the appropriate units. **This error resulted in changes to the total number of eligible CORCs.**

Corrective Action Request 2: E use

In the CORCs Report Summary, the auditor requested that American BioCarbon review their E use inputs for the pure biochar sold, as the values did not align with their weekly LCAs. Following this request, American BioCarbon identified that some emissions from biochar application had not been included, and a copying error had occurred when transferring data from the weekly LCAs to the CORCs Summary. These errors were corrected, and the E use inputs for the pure biochar sold were amended accordingly. **This error resulted in changes to the total number of eligible CORCs.**

Corrective Action Request 3: GHG emissions

The auditor requested that American BioCarbon reassess the annual GHG emissions associated with E biomass, E production, and E use in the weekly LCAs and the CORCs Summary. In response, American BioCarbon identified an error in which all GHG emissions except for E stored were reported per tonne of biochar, rather than per total biochar production volume per week. The error was corrected, and the E biomass, E production, and E use values were amended accordingly. **This error resulted in changes to the total number of eligible CORCs.**

Recommendation 1: LCA – Weekly Records

Finding

The auditor noted that American BioCarbon provided weekly LCAs in different spreadsheets, following the same approach used in previous audits. However, this method resulted in frequent data handling errors when transferring information to the CORCs Summary. As outlined in Corrective Action Request 1, Corrective Action Request 2 and Corrective Action Request 3, the weekly LCA approach has been leading to difficulties in identifying discrepancies in biochar production over time.

Recommendation

To facilitate the identification of any discrepancies in biochar production over time, the auditor recommends that American BioCarbon consolidate the weekly LCAs in one spreadsheet for the reporting period.

Recommendation 2: Emissions from Application of Pure Biochar

Finding

The auditor requested clarification on how emissions associated with the application of pure biochar are accounted for in the LCA. American BioCarbon explained that the actual fuel use for applying biochar to soil was generally not available. As a result, American BioCarbon included a conservative estimate of 100 truck miles per shipment of 100% pure biochar in the LCA to reflect emissions from land application activities.

Recommendation

Although the use of a 100-mile estimate for biochar application is a conservative approach, the auditor recommends that American BioCarbon enhance its record-keeping and quality assurance procedures to ensure emissions from biochar application are based on clearly documented assumptions or reasonably quantified, where information is available.

Carry Forward Recommendation 1: LCA data inputs

Finding

Due to the findings outlined in Corrective Action Request 3, the auditor has carried forward the previous audit recommendation for reassessment in the next audit. In addition, the auditor reviewed the emissions calculation procedures and confirmed that, although American BioCarbon provided electricity consumption estimates based on equipment runtime, load, and power ratings, the plant operating data (i.e., electricity and diesel use) was derived from estimates rather than actual recorded values.

Recommendation

EnergyLink Services recommends that American BioCarbon reviews its LCA data inputs to reflect the actual production and plant operating data. To improve data accuracy, the auditor recommends American BioCarbon enhance its data collection practices, for example, by installing submeters for the biochar and pellet facilities and using vehicle odometers to record diesel consumption.²

Carry Forward Recommendation 2: Fuel Consumption

Finding

American BioCarbon maintained a main fuel tank on-site and kept weekly records of loader and forklift usage based on biochar production activities. However, these vehicles are also used for other purposes, such as transporting sugar and supporting construction projects at the sugar mill. While American BioCarbon provided evidence of diesel deliveries through invoices, the fuel was used across all on-site operations and was not specifically metered for the biochar facility. As a result, the fuel consumption for the biochar production was estimated, based on the number of trips required to transport the wet bagasse, using the front loader and its associated fuel demand.

Recommendation

The auditor recommends that American BioCarbon enhance its data management collection procedures for fuel consumption by measuring the fuel used by an asset (even if it is used for other activities) and make more accurate fuel consumption estimations. Any estimates should be presented with corresponding fuel records for reference. This will increase the accuracy of the LCA.

Carry Forward Recommendation 3: Record Keeping

Finding A

The auditor found inconsistencies and errors with the calculations used in the LCA and CORCs Summary. The errors varied in nature and materiality and included errors such as incorrect references to source data and incorrect formulas. All errors were corrected during the course of the audit. A summary of the errors found by the auditor are provided in Appendix C.

² Note: The previous audit recommendation has been amended to enhance the intent of the recommendation.

Finding B

American BioCarbon used an industrial scale to measure the biochar production. The scale's daily calibration was verified by placing a calibrated weight. There were no records of this activity that could be provided to the auditor.

Recommendation

The auditor recommends that American BioCarbon enhance its record keeping procedures to ensure that relevant data and information are clearly documented and stored. This should be achieved by American BioCarbon developing and adopting a documentation and procedures standard. For example, the auditor recommends that American BioCarbon implement a procedure to document each check of the industrial scale, including the date, the staff member who performed the check, and the responsible person's signature.³

Carry Forward Recommendation 4: Quality Assurance

Finding

Because of the findings described in Corrective Action Request 1, Corrective Action Request 2 and Corrective Action Request 3, the auditor has carried forward the previous audit recommendation, to be assessed in the next audit.

Recommendation

The auditor recommends that American BioCarbon enhance its quality assurance procedures to ensure that relevant data and information are imputed correctly to the Calculation formula of CO₂ removal.

Carry Forward Recommendation 5: No double counting

Finding

The auditor requested American BioCarbon to provide evidence of a "no double counting" statement in the invoices and/or agreement terms signed by end users. American BioCarbon was unable to locate historical documents with signed contracts or invoice statements for all end users. American BioCarbon followed up with each customer to confirm that CORC ownership remained with them. However, American BioCarbon was unable to provide written confirmation for all customers.

The auditor was able to confirm no double counting via the provision of:

- For two clients, American BioCarbon provided email exchanges confirming that CORC ownership remained with American BioCarbon and that the clients had no rights to claim any CORCs; and
- For the remainder of the clients, the auditor confirmed no double counting via the provision of circumstantial evidence (such as the client's names and their sectors that relate to agriculture) and interviews with American BioCarbon.

Additionally, American BioCarbon stated that CORC ownership rights are consistently discussed with their biochar customers during early-stage conversations. Furthermore, American BioCarbon provided template documents (e.g., binding term sheets and contracts) that include a no double counting clause.

³ Note: The previous audit recommendation has been amended to enhance the intent of the recommendation.

Recommendation

The auditor recommends that American BioCarbon provides evidence of no double-counting by demonstrating the ownership of the carbon removals through a signed contract or agreement between American BioCarbon and all their client(s).

Overall Conclusion

Adverse Conclusion (Production Output Audit)

Production Output Audit

The auditor assessed the evidence provided by the audited body (American BioCarbon) and verified that, noting the effects of Corrective Action Request 1, Corrective Action Request 2 and Corrective Action Request 3 and the matters discussed in Basis for Adverse Conclusion, led to a net error of over calculation of 64 CO₂ Removal Certificates (CORCs). A summary of the CORCs under audit is provided in Table 1. The findings represent a material misstatement, and the auditor has in turn formed an adverse audit opinion.

As such, in the lead auditor's opinion, because of the effects of the matters described in Basis for Adverse Conclusion, 64 CORCs of the 812 CORCs calculated by the audited body for the reporting period are not fairly presented and free of material misstatement. Nevertheless, for the period 8 April 2023 to 30 April 2024, 748 CORCs are eligible for creation.

Table 1: Audited CORCs summary

Biochar	CORCs Under Audit	Net Error (CORCs)	Eligible CORCs	Net Error Rate (%)
Total	812	64 OC	748	7.9%

*OC = Overcalculation / UC = Undercalculation

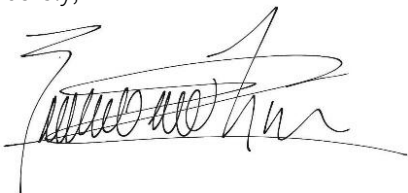
Basis for Adverse Conclusion

The auditor identified errors in the calculation of CORCs completed by the audited body that resulted in an error rate exceeding the 5% materiality threshold. Amongst the errors identified are:

- Change in E biomass, E production, and E use due to unit conversion issues;
- Change in E use inputs for pure biochar sold; and
- Change in E biomass, E production, and E use because these emissions were reported per tonne of biochar, rather than per total biochar production volume per week.

A detailed breakdown of the changes to the calculation of CORCs associated with these errors can be found in Appendix C.

Sincerely,



Rodrigo PARDO PATRON | Director of Engineering
EnergyLink Services Pty Ltd
Lead Auditor
11 June 2025

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 undertook 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 body were accurate, and that the metering used to quantify the output was appropriate and correctly calibrated (for details refer to Appendix B).

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	American BioCarbon sold both pure and mixed biochar. The mixed biochar was blended with bagasse boiler ash and topsoil, both sourced directly from the sugar mill. The topsoil came from bagasse mud filters, while the boiler ash was collected from the mill's bagasse-fired boilers. The auditor confirmed that the biochar produced was used as a soil amendment for agricultural purposes, with most end-users being agricultural and fertilizer companies.	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 by American BioCarbon using waste biomass. The feedstock consisted of sugarcane bagasse generated from raw sugar production. This bagasse was sourced from existing stockpiles at the sugar mill.	N/A.

Requirement	Requirement Met?	Verification Remarks	Corrective Action Request / Recommendations
<p>Confirm that the producer demonstrates net-negativity with results from a LCA that shows:</p> <ul style="list-style-type: none"> - [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. 	<p><u>Finding</u></p>	<p>The auditor requested that American BioCarbon reassess the annual GHG emissions associated with E biomass, E production, and E use in the weekly LCAs and the CORCs Summary. In response, American BioCarbon identified an error in which all GHG emissions except for E stored were reported per tonne of biochar, rather than per total biochar production volume per week. The error was corrected, and the E biomass, E production, and E use values were amended accordingly. This error resulted in changes to the total number of eligible CORCs.</p>	<p>Corrective Action Request 3</p> <p>Carry Forward Recommendation 3</p>
	<p><u>Finding</u></p>	<p>The auditor confirmed that American BioCarbon produced two streams of biochar:</p> <ul style="list-style-type: none"> • Mixed biochar: biochar mixed with ash obtained from biomass-burnt material, which was also available at the production facility. The materials were blended using a ribbon blender, and the associated emissions were accounted for under electricity use, as the process was fully electric, and batch based. No fossil fuel emissions were involved. According to section 4.5 of the Biochar Methodology, ‘all greenhouse gas emissions from the transportation and handling of biochar must be accounted for until it is used in a mineral matrix (such as soil or concrete) from which it cannot be separated’. Following the blending process, the biochar cannot be separated from the ash, marking the end of the biochar’s life cycle assessment (i.e. transportation and application emissions are excluded from the LCA). • Pure biochar: American BioCarbon accounted for the transportation of pure biochar by providing invoices that included end-user addresses, which were used to confirm the total transport distance. Regarding the application of pure biochar, the auditor requested clarification on how emissions associated with land application were reflected in the LCA. American BioCarbon explained that actual fuel use data for applying biochar to soil was typically unavailable. Therefore, a conservative estimate of 100 truck miles per shipment of 100% pure biochar was included in the LCA to account for emissions from application activities. As such, the auditor issued Recommendation 2 for American BioCarbon to ensure emissions from biochar application are based on documented or reasonably quantified assumptions. 	<p>Recommendation 2</p>

Requirement	Requirement Met?	Verification Remarks	Corrective Action Request / Recommendations
<p>Confirm that the biochar production process meets requirements 1.1.4 to 1.1.6 of the Biochar Methodology, namely that:</p> <ul style="list-style-type: none"> – 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	<p>The auditor confirmed that while the facility operates as an autothermal system— where the thermal energy required for operation is generated from the feedstock itself—natural gas was used only during start-up to preheat the dryer and the pyrolysis reactor to the required temperature. Once the system reaches steady-state conditions, it no longer relied on fossil fuels. Instead, the process was maintained entirely through the combustion of the pyrolysis syngas and the reuse of waste heat generated within the system.</p>	N/A.
		<p>The auditor confirmed during the virtual site visit that the pyrolysis gases were recovered and combusted by a thermal oxidizer. The heat from the combustion of the syngas was recovered and used to heat the pyrolysis reactor and feedstock dryer.</p>	
		<p>The auditor confirmed that the molar H/C_{org} ratio is 0.49, which is less than 0.7.</p>	
<p>Confirm that measures are taken for safe handling and transport of biochar to prevent fire and dust hazards.</p>	Y	<p>The auditor confirmed, through discussions with American BioCarbon personnel and the site visit, that appropriate safety measures were in place to ensure the safe handling and transport of the biochar. American BioCarbon presented a Safety Handbook for biochar production.</p> <p>Furthermore, during the virtual site visit, it was evidenced that quenching was carried out to ensure the safe handling and transport of the biochar. American BioCarbon procedures ensured that a moisture content of at least 25% was achieved for the safe handling and storage of biochar.</p>	N/A.

Confirmation of Production Facility Eligibility

Table 3: Production Facility assessment

Requirement	Requirement Met?	Verification Remarks	Corrective Action Request / Recommendations
<p>Confirm the Production Facility Eligibility under the general rules of Puro Standard.</p>	<p>Y</p>	<p>The auditor confirmed that the audited body had gone through a Production Facility Audit in August 2022 and achieved a positive outcome.</p>	<p>N/A.</p>
<p>Confirm that the Production Facility demonstrate Environmental and Social Safeguards.</p>	<p>Y</p>	<p>The auditor confirmed that the CO₂ Removal Supplier showed sufficient evidence to demonstrate that the Production Facility did no significant harm to the surrounding natural environmental and local communities.</p>	<p>N/A.</p>
<p>Confirm that the quantity of biochar produced and sold is documented via appropriate processes.</p>	<p>Y</p>	<p>The auditor confirmed, through discussions with American BioCarbon personnel and additional evidence provided upon the auditor's request, that American BioCarbon had procedures for managing all aspects of its biochar production data. The auditor confirmed during the virtual site visit that an industrial scale was used to quantify production output. As such, the auditor confirmed that the Production Facility documentation system was accurate and reliable.</p>	<p>N/A.</p>

Requirement	Requirement Met?	Verification Remarks	Corrective Action Request / Recommendations
<p>Confirm that metering infrastructure is in place to determine: the production output. the energy use of the Production Facility.</p>	<p><u>Finding</u></p>	<p>Production output American BioCarbon used an industrial scale to measure the biochar production. The scale’s daily calibration was verified by placing a calibrated weight. There were no records of this activity that could be provided to the auditor. Additionally, American BioCarbon used two BTS 110 Moisture Analyzers to measure moisture content. These analyzers were calibrated and tested daily for consistency by comparing the results from both units to ensure accuracy. During the reporting period, American BioCarbon also provided 12 laboratory test results, demonstrating stable moisture content throughout the year.</p>	<p>Carry Forward Recommendation 3</p>
	<p><u>Finding</u></p>	<p>Electricity consumption The auditor reviewed the emissions calculation procedures and confirmed that, although American BioCarbon provided electricity consumption estimates based on equipment runtime, load, and power ratings, the plant operating data (i.e., electricity and diesel use) was derived from estimates rather than actual recorded values.</p>	<p>Carry Forward Recommendation 1</p>
	<p><u>Finding</u></p>	<p>Diesel usage American BioCarbon maintained a main fuel tank on-site and kept weekly records of loader and forklift usage based on biochar production activities. However, these vehicles are also used for other purposes, such as transporting sugar and supporting construction projects at the sugar mill. While American BioCarbon provided evidence of diesel deliveries through invoices, the fuel was used across all on-site operations and was not specifically metered for the biochar facility. As a result, the fuel consumption for the biochar production was estimated, based on the number of trips required to transport the wet bagasse, using the front loader and its associated fuel demand.</p>	<p>Carry Forward Recommendation 2</p>

Quantification of CO₂ Removal

Table 4: Quantification of CO₂ Removal - Calculation Methodology

Requirement	Requirement Met?	Verification Remarks	Corrective Action Request / Recommendations
<p>Confirm that the quantification of CO₂ removal is calculated using the Calculation formula of CO₂ removal.</p>	<p>Y</p>	<p>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.</p>	<p>N/A.</p>
<p>Confirm that the inputs to the Calculation formula of CO₂ removal are appropriate and consistent with the evidence provided.</p>	<p><u>Finding</u></p>	<p>The auditor identified inconsistencies and errors in the inputs used in the CO₂ removal calculation formula. These errors varied in source and nature but were all corrected during the audit. To address this, the auditor has issued three carry forward recommendations to ensure that proper checks are conducted prior to the issuance of CORCs. A summary of the errors identified is provided below and in Appendix C.</p> <p>The recommendations aim to:</p> <ul style="list-style-type: none"> • Support American BioCarbon in strengthening its record-keeping procedures, ensuring that all relevant data and documentation are clearly recorded and securely stored; and • Encourage improvements to quality assurance processes, ensuring that all input data is accurately and consistently entered into the CO₂ removal calculation formula. <p>Ensure ongoing enhancement of plant operating data inputs, promoting consistency, accuracy, transparency, and completeness in the calculation of life cycle GHG emissions associated with biochar production.</p>	<p>Carry Forward Recommendation 1</p> <p>Carry Forward Recommendation 3</p> <p>Carry Forward Recommendation 4</p>

Requirement	Requirement Met?	Verification Remarks	Corrective Action Request / Recommendations
<p>(CONTINUED) Confirm that the inputs to the Calculation formula of CO₂ removal are appropriate and consistent with the evidence provided.</p>	<p><u>Finding</u></p>	<p>In the CORCs Report Summary, the emissions values for E biomass, E production, and E use were incorrectly reported due to unit conversion issues. The majority of the data was in kgCO₂e but was divided by 1,000 to convert from tonnes to kg. Additionally, the E biomass value for Week 6 of 2024 and E production for Week 26 2023 were divided by 100. Upon review, American BioCarbon corrected their data entry for the CORC calculations to reflect the appropriate units. This error resulted in changes to the total number of eligible CORCs.</p>	
		<p>In the CORCs Report Summary, the auditor requested that American BioCarbon review their E use inputs for the pure biochar sold, as the values did not align with their weekly LCAs. Following this request, American BioCarbon identified that some emissions from biochar application had not been included, and a copying error had occurred when transferring data from the weekly LCAs to the CORCs Summary. These errors were corrected, and the E use inputs for the pure biochar sold were amended accordingly. This error resulted in changes to the total number of eligible CORCs.</p>	<p>Corrective Action Request 1</p> <p>Corrective Action Request 2</p> <p>Corrective Action Request 3</p>
		<p>The auditor requested that American BioCarbon reassess the annual GHG emissions associated with E biomass, E production, and E use in the weekly LCAs and the CORCs Summary. In response, American BioCarbon identified an error in which all GHG emissions except for E stored were reported per tonne of biochar, rather than per total biochar production volume per week. The error was corrected, and the E biomass, E production, and E use values were amended accordingly. This error resulted in changes to the total number of eligible CORCs.</p>	

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 the standing data provided by American BioCarbon and except where noted throughout the audit report, confirmed American BioCarbon had procedures in place to ensure that this 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 ⁴ .	Finding	The auditor noted that American BioCarbon provided weekly LCAs in different spreadsheets, following the same approach used in previous audits. However, this method resulted in frequent data handling errors when transferring information to the CORCs Summary. As outlined in Corrective Action Request 1, Corrective Action Request 2 and Corrective Action Request 3, the weekly LCA approach has been leading to difficulties in identifying discrepancies in biochar production over time.	Recommendation 1

⁴ 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.

Requirement	Requirement Met?	Verification Remarks	Corrective Action Request / Recommendations
<p>(CONTINUED) Confirm that the necessary proof and evidence documents are maintained by the Production Facility as per Section 5 of the Biochar Methodology⁵.</p>	<p>Finding</p>	<p>The auditor requested American BioCarbon to provide evidence of a “no double counting” statement in the invoices and/or agreement terms signed by end users. American BioCarbon was unable to locate historical documents with signed contracts or invoice statements for all end users. American BioCarbon followed up with each customer to confirm that CORC ownership remained with them. However, American BioCarbon was unable to provide written confirmation for all customers.</p> <p>The auditor was able to confirm no double counting via the provision of:</p> <ul style="list-style-type: none"> For two clients, American BioCarbon provided email exchanges confirming that CORC ownership remained with American BioCarbon and that the clients had no rights to claim any CORCs; and For the remainder of the clients, the auditor confirmed no double counting via the provision of circumstantial evidence (such as the client’s names and their sectors that relate to agriculture) and interviews with American BioCarbon. <p>Additionally, American BioCarbon stated that CORC ownership rights are consistently discussed with their biochar customers during early-stage conversations. Furthermore, American BioCarbon provided template documents (e.g., binding term sheets and contracts) that include a no double counting clause.</p>	<p>Carry Forward Recommendation 5</p>

⁵ 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	<ul style="list-style-type: none">• 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 General Rules of Puro Standard General Rules Version 3.1.

Appendix A: Response to Previous Audit Recommendations

The Production Facility’s audit dated 15 September 2023 (EnergyLink Services Pty Ltd) contained four recommendations and one 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	Corrective Action Request / Recommendations
<p>Carry Forward Recommendation 1: EnergyLink Services recommends that American BioCarbon reviews its LCA data inputs to reflect the actual production and plant operating data.</p>	<p>Finding</p>	<p>The auditor requested that American BioCarbon reassess the annual GHG emissions associated with E biomass, E production, and E use in the weekly LCAs and the CORCs Summary. In response, American BioCarbon identified an error in which all GHG emissions except for E stored were reported per tonne of biochar, rather than per total biochar production volume per week. The error was corrected, and the E biomass, E production, and E use values were amended accordingly. This error resulted in changes to the total number of eligible CORCs.</p> <p>In addition, the auditor reviewed the emissions calculation procedures and confirmed that, although American BioCarbon provided electricity consumption estimates based on equipment runtime, load, and power ratings, the plant operating data (i.e., electricity and diesel use) was derived from estimates rather than actual recorded values.</p> <p>Therefore, the auditor has issued Carry Forward Recommendation 1 to ensure that American BioCarbon continues to enhance its plant operating data inputs, ensuring consistency, accuracy, transparency, and completeness in calculating the life cycle GHG emissions associated with biochar production.</p>	<p>Carry Forward Recommendation 1</p>

Requirement	Requirement Met?	Verification Remarks	Corrective Action Request / Recommendations
<p>Recommendation (1): Fuel Consumption</p> <p>The auditor recommends that American BioCarbon enhance its data management collection procedures for fuel consumption by measuring the fuel used by an asset (even if it is used for other activities) and make more accurate fuel consumption estimations. Any estimates should be presented with corresponding fuel records for reference. This will increase the accuracy of the LCA.</p>	<p>Finding</p>	<p>American BioCarbon maintained a main fuel tank on-site and kept weekly records of loader and forklift usage based on biochar production activities. However, these vehicles are also used for other purposes, such as transporting sugar and supporting construction projects at the sugar mill. While American BioCarbon provided evidence of diesel deliveries through invoices, the fuel was used across all on-site operations and was not specifically metered for the biochar facility. As a result, the fuel consumption for the biochar production was estimated, based on the number of trips required to transport the wet bagasse, using the front loader and its associated fuel demand.</p> <p>As such, the auditor has issued Carry Forward Recommendation 2 to ensure American BioCarbon continue augmenting its data management collection procedures for fuel consumption.</p>	<p>Carry Forward Recommendation 2</p>
<p>Recommendation (2): Record Keeping</p> <p>The auditor recommends that American BioCarbon enhance its record keeping procedures to ensure that relevant data and information are clearly documented and stored. This should be achieved by American BioCarbon developing and adopting a documentation and procedures standard.</p>	<p>Finding</p>	<p>The auditor found inconsistencies and errors with the calculations used in the LCA and CORCs Summary. The errors varied in nature and materiality and included errors such as incorrect references to source data and incorrect formulas. All errors were corrected during the course of the audit. A summary of the errors found by the auditor are provided in Appendix C.</p> <p>As such, the auditor has issued Carry Forward Recommendation 3 to American BioCarbon enhance its record keeping procedures to ensure that relevant data and information are clearly documented and stored.</p>	<p>Carry Forward Recommendation 3</p>
<p>Recommendation (3): Quality Assurance</p> <p>The auditor recommends that American BioCarbon enhance its quality assurance procedures to ensure that relevant data and information are imputed correctly to the Calculation formula of CO₂ removal.</p>	<p>Finding</p>	<p>Because of the findings described in Corrective Action Request 1 and Corrective Action Request 2, the auditor has issued Carry Forward Recommendation 4 to American BioCarbon enhance its quality assurance procedures to ensure that relevant data and information are imputed correctly to the Calculation formula of CO₂ removal.</p>	<p>Carry Forward Recommendation 4</p>

Requirement	Requirement Met?	Verification Remarks	Corrective Action Request / Recommendations
<p>Recommendation (4): Evidence of No Double Counting</p> <p>The auditor recommends that American BioCarbon provide evidence of no double-counting by demonstrating the ownership of the carbon removals through a contract or agreement between American BioCarbon and their client(s).</p>	<p>Finding</p>	<p>The auditor requested American BioCarbon to provide evidence of a “no double counting” statement in the invoices and/or agreement terms signed by end users. American BioCarbon was unable to locate historical documents with signed contracts or invoice statements for all end users. American BioCarbon followed up with each customer to confirm that CORC ownership remained with them. However, American BioCarbon was unable to provide written confirmation for all customers.</p> <p>The auditor was able to confirm no double counting via the provision of:</p> <ul style="list-style-type: none"> • For two clients, American BioCarbon provided email exchanges confirming that CORC ownership remained with American BioCarbon and that the clients had no rights to claim any CORCs; and • For the remainder of the clients, the auditor confirmed no double counting via the provision of circumstantial evidence (such as the client’s names and their sectors that relate to agriculture) and interviews with American BioCarbon. <p>Additionally, American BioCarbon stated that CORC ownership rights are consistently discussed with their biochar customers during early-stage conversations. Furthermore, American BioCarbon provided template documents (e.g., binding term sheets and contracts) that include a no double counting clause</p> <p>As such, the auditor has issued Carry Forward Recommendation 5 to American BioCarbon provide evidence of no double-counting by demonstrating the ownership of the carbon removals through a contract or agreement between American BioCarbon and their client(s).</p>	<p>Carry Forward Recommendation 5</p>

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 produced by American BioCarbon using waste biomass. The feedstock consisted of sugarcane bagasse generated from raw sugar production. This bagasse was sourced from existing stockpiles at the sugar mill.	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 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 confirmed that while the facility operates as an autothermal system— where the thermal energy required for operation is generated from the feedstock itself—natural gas was used only during start-up to preheat the dryer and the pyrolysis reactor to the required temperature. Once the system reaches steady-state conditions, it no longer relied on fossil fuels. Instead, the process was maintained entirely through the combustion of the pyrolysis syngas and the reuse of waste heat generated within the system. Additionally, the auditor confirmed during the virtual site visit that the pyrolysis gases were recovered and combusted by a thermal oxidizer. The heat from the combustion of the syngas was recovered and used to heat the pyrolysis reactor and feedstock dryer.	N/A.
Evidence of safe handling and transport is provided and adequate for the production facility.	Y	The auditor confirmed, through discussions with American BioCarbon personnel and the site visit, that appropriate safety measures were in place to ensure the safe handling and transport of the biochar. American BioCarbon presented a Safety Handbook for biochar production. Furthermore, during the virtual site visit, it was evidenced that quenching was carried out to ensure the safe handling and transport of the biochar. American BioCarbon procedures ensured that a moisture content of at least 25% was achieved for the safe handling and storage of biochar.	N/A.

Requirement	Requirement Met?	Verification Remarks	Corrective Action Request / Recommendations
<p>Check that the Production Facility’s documentation system is accurate and reliable for recording the quantity of biochar produced and sold.</p>	<p>Y</p>	<p>The auditor confirmed, through discussions with American BioCarbon personnel and additional evidence provided upon the auditor’s request, that American BioCarbon had procedures for managing all aspects of its biochar production data. The auditor confirmed during the virtual site visit that an industrial scale was used to quantify production output. As such, the auditor confirmed that the Production Facility documentation system was accurate and reliable.</p>	<p>N/A.</p>
<p>Check that appropriate processes are in place to quantify the inputs to the Calculation formula of CO₂ removal for the purpose of Preparing the Output Report and calculating CORCs.</p>	<p>Y</p>	<p>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.</p>	<p>N/A.</p>

Requirement	Requirement Met?	Verification Remarks	Corrective Action Request / Recommendations
<p>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.</p>	<p><u>Finding</u></p>	<p>Production output American BioCarbon used an industrial scale to measure the biochar production. The scale’s daily calibration was verified by placing a calibrated weight. There were no records of this activity that could be provided to the auditor. Additionally, American BioCarbon used two BTS 110 Moisture Analyzers to measure moisture content. These analyzers were calibrated and tested daily for consistency by comparing the results from both units to ensure accuracy. During the reporting period, American BioCarbon also provided 12 laboratory test results, demonstrating stable moisture content throughout the year.</p>	<p>Carry Forward Recommendation 3</p>
	<p><u>Finding</u></p>	<p>Electricity consumption The auditor reviewed the emissions calculation procedures and confirmed that, although American BioCarbon provided electricity consumption estimates based on equipment runtime, load, and power ratings, the plant operating data (i.e., electricity and diesel use) was derived from estimates rather than actual recorded values.</p>	<p>Carry Forward Recommendation 1</p>
	<p><u>Finding</u></p>	<p>Diesel usage American BioCarbon maintained a main fuel tank on-site and kept weekly records of loader and forklift usage based on biochar production activities. However, these vehicles are also used for other purposes, such as transporting sugar and supporting construction projects at the sugar mill. While American BioCarbon provided evidence of diesel deliveries through invoices, the fuel was used across all on-site operations and was not specifically metered for the biochar facility. As a result, the fuel consumption for the biochar production was estimated, based on the number of trips required to transport the wet bagasse, using the front loader and its associated fuel demand.</p>	<p>Carry Forward Recommendation 2</p>

Appendix C: Summary of Errors

A summary of the errors and the associated impacts on CORC calculation is provided in Table 8.

Table 8: Summary of Errors

Source of Error	CORC calculation	Corrected CORC calculation	Net Error (CORCs)	Net Error Rate (%)
1. Errors in E biomass, E production, and E use due to unit conversion issues.				
2. Incorrect E use inputs for pure biochar sold.	812	748	64 OC	7.9%
3. Misreporting of emissions per tonne of biochar instead of weekly production volume.				
Total	812	748	64 OC	7.9%

*OC = Overcalculation/UC = Undercalculation