

## Final Audit Report

Audited Body	
Puro.earth Project Proponent	Ecoera (Sweden)
Name of Contact for Puro.earth Project Proponent	David Anderrson
Production Facility Operator	Ecoera
Name of Contact for Production Facility Operator	David Anderrson
Production Facility name	ECOERA Millennium 1 Hammenhög Skånefrö
Production Facility ID	706975
Production Facility Location	Hammenhög 27650, Sweden

Audit Description	
Type of Audit	Output Audit
Number of CORCs under Audit	186.00
Tonnes of dry biochar in stock at the start of the reporting period	0
Tonnes of dry biochar produced under Audit	84.04
Tonnes of dry biochar used under Audit	84.04
Tonnes of dry biochar in stock at the end of the reporting period	0
CORC conversion factor under Audit	2.21 tCO <sub>2</sub> e per tonne dry biochar
Reporting Period Covered by Audit	2 August 2023 to 31 March 2024
Objective of Audit Engagement	Provide assurance opinion against requirements of Puro.earth Rules v3.1 (Edition 2023)
Date of Auditor Engagement	24 June 2025
Date of Audit Report Submission	3 November 2025

Output Audit Outcomes	
Number of eligible CORCs	113.54
Tonnes of dry biochar in stock (start)	0
Tonnes of dry biochar produced under Audit	52.35
Tonnes of eligible dry biochar used	52.35
Tonnes of dry biochar in stock (end)	0
CORC conversion factor	2.169 tCO <sub>2</sub> e per tonne dry biochar
Reporting Period given assurance	2 August 2023 to 31 March 2024
Calculation Method	Biochar Methodology Edition 2022 v3

Auditing Body	
Auditor	EnergyLink Services Pty Ltd
Lead Auditor	Rodrigo Pardo Patron
Additional Audit Personnel	Tom Croxford, Jazz Ousangdikul
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<sub>2</sub> Removal Supplier Production Facility under the requirements of Biochar Methodology v3.0 (Edition 2022) and 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

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20251103 Ecoera Output Final Audit Report vF.0	3 November 2025	vF.0	Rodrigo Pardo Patron	Katherine Simmons

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Abbreviation	Description
'H'	Hydrogen
'O'	Oxygen
CO <sub>2</sub>	Carbon Dioxide
CORC	CO <sub>2</sub> Removal Certificate
C <sub>org</sub>	Organic Carbon
EBC	European Biochar Certificate
GHG	Greenhouse Gas
LCA	Life Cycle Assessment
LPG	Liquid Propane Gas
OC	Overcalculation
UC	Undercalculation
The Puro Rules	the Puro Standard General Rules v3.1 (Edition 2023)
The Biochar Methodology	Edition 2022 v3

## PART A: Auditor's Report

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To: Puro.earth

Dear Sir / Madam,

EnergyLink Services Pty Ltd (EnergyLink) were engaged to perform a reasonable assurance audit of Ecoera's CO<sub>2</sub> Removal calculation for the reporting period covered by the audit, from 2 August 2023 to 31 March 2024, against the eligibility requirements of 'the Puro Standard General Rules Version 3.1.' (hereafter referred to as "the Puro Rules").

### Details of Audited Body

Puro.earth Project Proponent	Ecoera
Production Facility Operator	Ecoera
Production Facility name	ECOERA Millennium 1 Hammenhög Skånefrö
Production Facility ID	706975
Production Facility location	Hammenhög 27650, Sweden

### Responsibility of the Audited Body's Management

The management of the audited body is 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<sub>2</sub> 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 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*<sup>1</sup>.

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*.

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<sup>1</sup> Fortum (2020), Fortum – Supplier Code of Conduct, available at: [www.fortum.com/about-us/contact-us/suppliers/code-of-conduct](http://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 four (4) corrective action requests, which were addressed during the audit. Further, the auditor issued two (2) recommendations, and one (1) carried forward recommendation to be implemented by the next audit, and lastly, two (2) suggestions for improvement, which are optional to be implemented.

### Corrective Action Request 1: LCA Inputs

The auditor noted that the following parameter inputs in the LCA were not supported by adequate evidence:

- Electricity for pyrolysis per tonne biochar (774 kWh);
- Power requirement (16 kW);
- Average density of biochar from both pyrolysis machines (0.248 ton/m<sup>3</sup>);
- LPG for startup (1.51 GJ);
- Average truck delivery distance (327 tkm); and
- Average sea delivery distance (14 tkm).

Upon request for clarification, Ecoera provided the necessary assumptions and evidence. It was found that there was an error in the calculations of electricity consumption for the pyrolysis process. Ecoera corrected the electricity consumption to 838 kWh in accordance with evidence provided.

**This resulted in the over calculation of 0.07 CORCs.**

### Corrective Action Request 2: CORC Calculation Formulas

The auditor found errors in the calculation formula of CO<sub>2</sub> removal in the initial LCA. The errors found varied in source and nature and were corrected during the course of the audit. The details are:

- In the LCA, Ecoera incorrectly used the carbon content ( $C_{org}$ ) of biomass instead of biochar in the calculation of  $E_{store}$ . This misrepresentation led to traceability issues within the LCA calculations. However, this error did not carry through to the final CORC calculation as the  $C_{org}$  input in the CORC summary report was correct.
- Minor unit conversion errors in the calculation of  $E_{biomass}$  in the initial LCA.
- Rounding error of the intercept coefficient ( $c$ ) used to calculate permanence factor ( $F_p^{TH,TS}$ ).

**The latter two errors led to an overcalculation of 1.14 CORCs.** The auditor has issued a recommendation (Recommendation 1) to ensure checks are performed to the calculations prior to the creation of CORCs.

### Corrective Action Request 3: Total Biochar Sold

The auditor noted that the dry mass of biochar was calculated from the total sales from of August 2023 to August 2024. This value (84.04 tons) mistakenly accounted for biochar sold 4 months after the end of the reporting period (i.e. the reporting period covered 2 August 2023 to 31 March 2024). Upon review and discussion with Puro.earth, Ecoera amended its calculation to reflect sales within the reporting period (52.35 tons). **This error resulted in the over calculation of 69.57 CORCs.**

### Corrective Action Request 4: Biochar Moisture Content

The auditor identified an error in the biochar moisture content input of the LCA calculation. Ecoera had accidentally used the moisture content of biomass which was 10.3% instead of the moisture content of biochar which was 38.2% as evidence in the lab tests results provided. This error was corrected upon request, and resulted **in the over calculation of 1.68 CORCs.**

## Recommendation 1: Evidence Management and Quality Assurance

### Findings

There were missing evidence and discrepancies of various sources that led to the findings described in Corrective Action Request 1 to Corrective Action Request 4 and the following discrepancies found in the sales records:

- For order number 600795, the records listed the product name as 1 m<sup>3</sup> bags, however, the invoice showed the product as 2.4 m<sup>3</sup> bags. This did not change the quantity of biochar sold; and
- For order number G59199, the records listed 40,000 L sold, whilst the invoice stated 40,800 L. This invoice was dated outside of the reporting period; thus, this error did not impact the quantity of biochar sold with respect to this report.

### Recommendation

Ecoera should strengthen its data management and evidence collection processes, including:

- Providing supporting documentation for all calculations and assumptions;
- Verifying input values against reliable primary data sources; and
- Implementing internal quality control checks before submission.

A systematic data management procedure will allow for easier investigation should an error or discrepancy arise during document reviews. This is expected to increase the transparency, accuracy, and completeness of Ecoera's claims.

## Recommendation 2: Mass Measurements of Biochar

### Finding

Biochar production and sales are currently tracked by volume, but CORCs are claimed on a mass basis. Ecoera estimated the dry biochar weight using the dry bulk density by volume method based on 2.4 m<sup>3</sup> and 1 m<sup>3</sup> standardised bags. The auditor identified limitations with this method, including:

- Variation in moisture content and thereby, wet weight;
- Variation in bulk density between biochar produced from the P500 (229 kg/m<sup>3</sup>) and P1500 (272 kg/m<sup>3</sup>) pyrolysis machine; and
- The bulk density used for calculation was based on one (1) laboratory test result which may not be representative of the production over the reporting period.

The auditor acknowledged that the density and assumptions used in the calculation were conservative. However, the actual weight of each bag of biochar sold was not recorded.

### Recommendation

The auditor recommends Ecoera to measure the (wet) weight of each bag of biochar sold with more frequent moisture content sampling (daily or weekly). Ecoera should consider the following:

- If wet weight data is unavailable, the average weight of each respective size bag (1 m<sup>3</sup> and 2.4 m<sup>3</sup>) may be used, if there was a representative number of wet weight data that can be used as reference; and
- If moisture content data is unavailable, the sample data of the nearest date(s) may be used as a proxy.

This approach will provide a more accurate reporting, as CORCs claims are made on a mass basis (i.e. the tonnes of biochar sold).

## Carry Forward Recommendation 1: Metered Electricity

### Finding

The auditor noted that Ecoera had metering installed to measure the electricity consumption at the facility. However, Ecoera had not used this metering for the entire reporting period of 2 August 2023 to 31 March 2024. More information can be found in Appendix A.

### Recommendation

For next crediting period, the actual metered electricity must be laid down instead of being based on the nominal output declared by the manufacturer.

## Suggestion for Improvement 1: Biomass Transport

### Observation

The evidence for the quantity of biomass pellets used (i.e. 'TransportPellets.pdf'), only stated the date, supplier, and costs.

### Suggestion for Improvement

Ecoera should augment their record keeping procedures for biomass transport. Information such as the mass and type of biomass should be stated. Furthermore, the location of the supplier and destination of transport should be included to ensure transparency, completeness, and traceability.

## Suggestion for Improvement 2: Biochar Density

### Observation

The basis for the biochar density values applied to production calculations was not fully documented. While density data exists for each pyrolysis machine, the justification for applying a single density value across different machines was not clearly supported by traceable evidence. This creates an inconsistency risk of biochar production.

### Suggestion for Improvement

It is recommended that the project proponent:

- Provide documented evidence to support the density values applied to each pyrolysis machine, ensuring traceability ; and
- Clearly justify any assumptions (e.g., use of a single density across multiple machines) with reference to accepted standards or guidelines.

## Overall Conclusion

### Qualified Conclusion (Output Audit)

#### Production Output Audit

The lead auditor is able to express a qualified reasonable assurance opinion that, noting the effects of Corrective Action Request 1 through Corrective Action Request 4 and the matters discussed in Basis of Qualified Conclusion, the quantification of 113.54 CO<sub>2</sub> Removal Certificates (CORCs) by Ecoera for the period 2 August 2023 to 31 March 2024, in all material respects, is correct. The auditor identified that the eligible CORC quantity has been calculated in accordance with the Puro Standard General Rules v3.1 (Edition 2023).

A summary of the CORCs under audit is provided in Table 1.

Table 1: Audited CORCs summary

Biochar	CORCs Under Audit	Abs. Error (CORCs)	Net Error (CORCs)	Eligible CORCs	Abs. Error Rate (%)	Net Error Rate (%)
Total	186.00	72.46	72.46 OC	113.54	38.96%	38.96%

\*OC = Overcalculation / UC = Undercalculation

### Basis of Qualified Conclusion

The auditor identified several errors in the calculation of CORCs completed by the audited body that resulted in a material error rate but are not pervasive in nature and were corrected during the course of the audit.

Amongst the errors identified are:

- Several LCA inputs were not supported by traceable evidence;
- Sales inputs were inconsistent with the CORCs reporting period agreed upon with Puro.earth; and
- Biochar produced was recorded in volume and the subsequent calculation to mass relied on limited laboratory results and assumptions.

Upon request, as detailed in Corrective Action Request 1 to Corrective Action Request 4, all errors were addressed during the audit. Nonetheless, to ensure Ecoera improves their processes, controls and systems, the auditor issued two recommendations and carried forward a partially addressed recommendation made by the previous auditor. The response to these recommendations and evidence of their implementation will be evaluated in a subsequent audit. A detailed breakdown of the changes to the calculation of CORCs associated with these errors can be found in Table 8 of Appendix C.

Sincerely,



Rodrigo PARDO PATRON | Director of Engineering

EnergyLink Services Pty Ltd

Lead Auditor

3 November 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 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	The auditor confirmed that the produced biochar was used for soil amendment in applications such as in animal bedding and soccer fields. The distribution of biochar to end-users was carried out by Ecoera.	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 from agricultural residues from seed screenings, in compliance with the European Biochar Certificate (EBC) which is a voluntary industry standard in Europe.	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"> <li>- [A1 Biomass and A2 Transport of biomass] carbon footprint of the biomass production and supply.</li> <li>- [A3 Production] emissions from the biochar production process.</li> <li>- [A4 Transport of biochar to site] carbon footprint of the biochar end use.</li> <li>- [B1 Application and use] cradle to grave.</li> </ul>	Observation	<p>The auditor confirmed that the LCA provided by Ecoera included all information on the emissions of the various stages of the biochar cradle to grave life cycle, based on the following:</p> <ul style="list-style-type: none"> <li>- A1 Biomass and A2 Transport: No emissions were considered for biomass collection as the sourced biomass was waste. The emissions for biomass palletisation and transport were calculated using electricity records and delivery receipts with weighted average distances. The evidence provided for biomass transport lacked information on the mass and locations. Clarification was provided upon request.</li> <li>- A3 Production: Emissions from biochar production were accounted for, including pyrolysis operation, packaging, and other infrastructure at the facility.</li> <li>- A4 Transport to Site: Emissions from transporting biochar to purchasers were calculated by determining the weighted average delivery distance, based on the percentage share of the top 80% of biochar sales and the corresponding transport distances.</li> <li>- B1 Application and Use: Emissions from applying biochar were estimated based on the amount of biochar sold and emissions factors from a database source.</li> </ul>	Suggestion for Improvement 1
<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"> <li>- It has considered the emissions related to the use of fossil fuels (coal, oil, natural gas).</li> <li>- there is no co-firing of fossil fuels and biomass in the same reaction chamber.</li> <li>- the pyrolysis gases are recovered or combusted.</li> <li>- the molar H/C<sub>org</sub> ratio is less than 0.7.</li> </ul>	Y	<p>The auditor verified that liquid propane gas (LPG) was used for the startup of the pyrolysis reactors and no co-firing of fossil fuel and biomass occurred in the reaction chamber.</p> <p>The pyrolysis gases are recovered. Heat was recycled in the reactor and also recycled into the district heating grid. Ecoera also used other pellet furnaces with the same pelletized biomass to supply heat to the district.</p> <p>The auditor confirmed that the H/C<sub>org</sub> ratio is 0.23, which is less than 0.7.</p>	N/A.

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	<p>In accordance with the requirement to confirm that measures were taken for the safe handling and transport of biochar to prevent fire and dust hazards, the following observations were made during the audit of Ecoera's operations:</p> <ul style="list-style-type: none"> <li>- Fire extinguishers were available on-site to mitigate potential fire risks.</li> <li>- Prior to packaging, biochar was treated with water and nutrients, which help reduce dust and lower the risk of combustion.</li> <li>- The final biochar product had an average moisture content of 38.2%, contributing to its safe handling characteristics.</li> <li>- Bags of biochar that exhibit elevated temperatures (above approximately 60°C) are relocated outdoors to cool, preventing overheating and potential ignition.</li> </ul> <p>Based on the above measures, the auditor confirmed that Ecoera had implemented appropriate controls to ensure the safe handling and transport of biochar, effectively mitigating fire and dust hazards.</p>	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 body had already gone through a Production Facility Audit in 2020 and achieved a positive outcome.	N/A.
Confirm that the Production Facility demonstrate Environmental and Social Safeguards.	Y	The auditor confirmed that the CO <sub>2</sub> Removal Supplier showed sufficient evidence to demonstrate that the Production Facility did no significant harm to the surrounding natural environmental and/or local communities.	N/A.

Requirement	Requirement Met?	Verification Remarks	Corrective Action Request / Recommendations
<p>Confirm that the quantity of biochar produced and sold is documented via appropriate processes.</p>	<p><b>Finding</b></p>	<p>The auditor noted that Ecoera recorded and sold biochar based on volumes (rather than weight). While this approach is quantifiable, and the industry use volume to trade, it is not fully accurate for CORCs creation as CORCS are claimed on a tonnage basis.</p> <p>The dry mass of biochar was calculated from the wet volume of biochar and the dry bulk density of biochar. The assumption required for this calculation was that the volume of wet biomass and dry biomass are equal. Additionally, the bulk density of biochar produced from the pyrolysis equipment (P500 and P1500) was reported to be different. The auditor noted the smaller density was used, and whilst this calculation does not reflect the dry mass of biochar, it is a conservative approach.</p> <p>Additionally, the auditor reviewed Ecoera’s sales records and supporting invoices. The auditor found the following discrepancies:</p> <ul style="list-style-type: none"> <li>– For order number 600795, the records listed the product name as 1 m<sup>3</sup> bags, however, the invoice shows the product as 2.4 m<sup>3</sup> bags. This did not change the quantity of biochar sold.</li> <li>– For order number G59199, the records listed 40,000 L sold, whilst the invoice stated 40,800 L. This invoice was dated outside of the reporting period; thus this error did not impact the quantity of biochar sold with respect to this report.</li> </ul> <p>Except where noted above, the auditor confirmed that Ecoera quantified and documented the biochar produced and sold was documented via appropriate processes.</p>	<p>Recommendation 1</p> <p>Recommendation 2</p> <p>Suggestion for Improvement 2</p>

Requirement	Requirement Met?	Verification Remarks	Corrective Action Request / Recommendations
<p><b>Confirm that metering infrastructure is in place to determine:</b></p> <ul style="list-style-type: none"> <li>- the production output.</li> <li>- the energy use of the Production Facility.</li> </ul>	<p><u>Finding</u></p>	<p>The auditor confirmed during the virtual site visit and through additional evidence, that appropriate metering infrastructure was in place to quantify the produced biochar, and that the equipment used (onsite scale) was calibrated.</p> <p>The auditor noted that Carry Forward Recommendation 1 was partially addressed by Ecoera by their installation of an electricity submeter to measure the electricity consumption at the facility. However, whilst an electricity meter was installed at the facility, consumption data was not recorded and the electricity used in the LCA was calculated based on the nominal power requirement from the manufacturer. Upon review, the electricity consumption was corrected from 774 kWh (Initial LCA) to 838 kWh (Final LCA). <b>This resulted in the over calculation of 0.07 CORCs.</b></p>	<p>Corrective Action Request 1</p> <p>Carry Forward Recommendation 1</p>

## Quantification of CO<sub>2</sub> Removal

Table 4: Quantification of CO<sub>2</sub> Removal - Calculation Methodology

Requirement	Requirement Met?	Verification Remarks	Corrective Action Request / Recommendations
<p>Confirm that the quantification of CO<sub>2</sub> removal is calculated using the Calculation formula of CO<sub>2</sub> removal.</p>	<p><u>Finding</u></p>	<p>The auditor found errors in the calculation formula of CO<sub>2</sub> removal in the initial LCA. The errors found varied in source and nature and were corrected during the course of the audit. The details are:</p> <ul style="list-style-type: none"> <li>- In the LCA, Ecoera incorrectly used the carbon content (<math>C_{org}</math>) of biomass instead of biochar in the calculation of <math>E_{store}</math>. This misrepresentation led to traceability issues within the LCA calculations. However, this error did not carry through to the final CORC calculation as the <math>C_{org}</math> input in the CORC summary report was correct.</li> <li>- Minor unit conversion errors in the calculation of <math>E_{biomass}</math> in the initial LCA.</li> <li>- Rounding error of the intercept coefficient (<math>c</math>) used to calculate permanence factor (<math>F_p^{TH,TS}</math>).</li> </ul> <p><b>The latter two errors led to an overcalculation of 1.14 CORCs.</b> The auditor has issued a recommendation to ensure checks are performed to the calculations prior to the creation of CORCs.</p>	<p>Corrective Action Request 2  Recommendation 1</p>
<p>Confirm that the inputs to the Calculation formula of CO<sub>2</sub> removal are appropriate and consistent with the evidence provided.</p>	<p><u>Finding</u></p>	<p>The LCA report supplied by Ecoera contained errors varying in nature and sources. Additionally, inputs such as power consumption, average delivery distance, and biochar density, were not supported by sufficient evidence. Upon request, such discrepancies were amended, and clarification was provided to the auditor. The details are outlined below and in Appendix C.</p> <p>In the LCA, Ecoera incorrectly used the carbon content (<math>C_{org}</math>) of biomass instead of biochar in the calculation of <math>E_{store}</math>. This misrepresentation led to traceability issues within the LCA calculations. However, this error did not carry through to the final CORC calculation as the <math>C_{org}</math> input in the CORC summary report was correct.</p>	<p>Corrective Action Request 1  Corrective Action Request 2</p>

Requirement	Requirement Met?	Verification Remarks	Corrective Action Request / Recommendations
Confirm that the inputs to the Calculation formula of CO <sub>2</sub> removal are appropriate and consistent with the evidence provided (Cont.).	<u>Finding</u>	The dry mass of biochar was calculated from the total sales from of August 2023 to August 2024. This value (84.04 tons) mistakenly accounts for biochar sold 4 months after the reporting period (i.e. the reporting period covered 2 August 2023 to 31 March 2024.) Upon review and discussion with Puro.earth, Ecoera amended its calculation to reflect sales within the reporting period (52.35 tons.) <b>This error resulted in the over calculation of 69.57 CORCs.</b>	Corrective Action Request 3
		The auditor identified an error in the biochar moisture content input of the LCA calculation. Ecoera had accidentally used the moisture content of biomass which was 10.3% instead of the moisture content of biochar which was 38.2% as evidence in the lab tests results provided. This error was corrected upon request, and resulted <b>in the over calculation of 1.68 CORCs.</b>	Corrective Action Request 4
		Except where noted above, the auditor confirmed that the calculation inputs for CO <sub>2</sub> removal were appropriate and consistent with the methodology applied and the available evidence.	Recommendation 1

## 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 body and confirmed this was consistent with desktop testing and the virtual site visit.	N/A.

Requirement	Requirement Met?	Verification Remarks	Corrective Action Request / Recommendations
<p>Confirm that the necessary proof and evidence documents are maintained by the Production Facility as per Section 5 of the Biochar Methodology<sup>2</sup>.</p>	<p>Y</p>	<p>The auditor confirmed all necessary evidence has been provided as per Section 5 of the Biochar Guidelines.</p>	<p>N/A.</p>
<p>Confirm the biochar properties are based on laboratory analyses performed in laboratories accredited by national authorities and comply with international testing standards (e.g. ASTM, ISO, AS, D)</p>	<p>Y</p>	<p>The auditor confirmed the EBC certificate presented by Ecoera was sourced from Eurofins Umwelt, accredited under DIN EN ISO/IEC 17025:2018. Furthermore, Ecoera provided the auditor with their EBC Certification Monitoring Plan, which followed the EBC sampling requirements.</p>	<p>N/A.</p>

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<sup>2</sup> 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

<b>Name of the peer reviewer</b>	Katherine Simmons
<b>Peer reviewer's credentials</b>	<ul style="list-style-type: none"><li>• Bachelor of Engineering (Honours) in Polymer Engineering (minoring in Chemical Engineering).</li><li>• Category 1 Registered Greenhouse and Energy Auditor with the Clean Energy Regulator (Australia).</li><li>• Climate Active Registered Consultant.</li><li>• Integrated Management Systems Lead Auditor ISO 19011, ISO 9001:2015, ISO 14001:2015, ISO 45001:2018.</li></ul>
<b>Peer reviewer contact details</b>	Email: <a href="mailto:katherine.simmons@kreaconsulting.com.au">katherine.simmons@kreaconsulting.com.au</a> Phone: +61 431 612 950
<b>Outcome of the evaluation undertaken by the peer reviewer</b>	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 previous audit dated 8 August 2024 (Bio.inspecta AG) contained two recommendations. The recommendations and the auditor’s responses to the implementation of those recommendations by Ecoera are provided in Table 6.

Table 6: Previous Audit Recommendations

Requirement	Requirement Met?	Verification Remarks	Corrective Action Request / Recommendations
<p><b>Recommendation (1):</b>                      For next crediting period, the actual metered electricity must be laid down instead of being based on the nominal output declared by the manufacturer.</p> <p>Electricity calculation continues to be based on nominal kWh output data provided by the manufacturer since the SCADA technology which enjoys a full overview and monitoring of all electricity consumption has only recently been installed (mid of the crediting period), reason why the approach based on the nominal output is more accurate at this stage.</p>	Partially	The auditor noted during the site visit that an electricity meter was installed. However, the quantity of electricity used for the pyrolysis process as stated in the LCA remained to be calculated, based on nominal power requirements. Therefore, the auditor has considered this recommendation to have been partially addressed and carried it forward to be verified in the subsequent audit.	Carry Forward Recommendation 1
<p><b>Recommendation (2):</b>                      Both Supplier and Auditor were not able to fully calculate the CO<sub>2</sub> removal independently because of the sophisticated LCA reporting templates which requires expert knowledge inherent to LCA developers. Open issues have been resolved in a conference call with the LCA provider.</p>	Y	The auditor confirmed that the LCA followed the Puro.earth reporting template. This allowed for Ecoera and the auditor to calculate and understand the LCA and CO <sub>2</sub> removal calculation independently.	N/A

## Appendix B: 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 from agricultural residues from seed screenings, in compliance with the European Biochar Certificate (EBC) which is a voluntary industry standard in Europe.	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 verified that liquid petroleum gas (LPG) was used for the startup of the pyrolysis reactors and no co-firing of fossil fuel and biomass occurred in the reaction chamber. Furthermore, the auditor confirmed the pyrolysis gases were recovered and combusted. Heat was recycled in the reactor and used for the district heating grid. Ecoera also used other pellet furnaces with the same pelletized biomass to meet the heat demand of the district.	N/A.

Requirement	Requirement Met?	Verification Remarks	Corrective Action Request / Recommendations
<p><b>Evidence of safe handling and transport is provided and adequate for the production facility.</b></p>	<p>Y</p>	<p>In accordance with the requirement to confirm that measures were taken for the safe handling and transport of biochar to prevent fire and dust hazards, the following observations were made during the audit of Ecoera’s operations:</p> <ul style="list-style-type: none"> <li>- Fire extinguishers were available on-site to mitigate potential fire risks.</li> <li>- Prior to packaging, biochar was treated with water and nutrients, which help reduce dust and lower the risk of combustion.</li> <li>- The final biochar product had an average moisture content of 38.2%, contributing to its safe handling characteristics.</li> <li>- Bags of biochar that exhibit elevated temperatures (above approximately 60°C) are relocated outdoors to cool, preventing overheating and potential ignition.</li> </ul> <p>Based on the above measures, the auditor confirmed that Ecoera had implemented appropriate controls to ensure the safe handling and transport of biochar, effectively mitigating fire and dust hazards.</p>	<p>N/A.</p>

Requirement	Requirement Met?	Verification Remarks	Corrective Action Request / Recommendations
<p><b>Check that the Production Facility's documentation system is accurate and reliable for recording the quantity of biochar produced and sold.</b></p>	<p>Finding</p>	<p>The auditor noted that Ecoera recorded and sold biochar based on volumes (rather than weight). While this approach is quantifiable, and the industry use volume to trade, it is not fully accurate for CORCs creation as CORCS are claimed on a tonnage basis.</p> <p>The dry mass of biochar was calculated from the wet volume of biochar and the dry bulk density of biochar. The assumption required for this calculation was that the volume of wet biomass and dry biomass are equal. Additionally, the bulk density of biochar produced from the two pyrolysis equipment (P500 and P1500) was reported to be different. The auditor noted the smaller density was used, and whilst this calculation does not reflect the dry mass of biochar, it is a conservative approach.</p> <p>Additionally, the auditor reviewed Ecoera's sales records and supporting invoices. The auditor found the following discrepancies:</p> <ul style="list-style-type: none"> <li>– For order number 600795, the records listed the product name as 1 m<sup>3</sup> bags, however, the invoice shows the product as 2.4 m<sup>3</sup> bags. This did not change the quantity of biochar sold.</li> <li>– For order number G59199, the records listed 40,000 L sold, whilst the invoice stated 40,800 L. This invoice was dated outside of the reporting period, thus this error did not impact the quantity of biochar sold with respect to this report.</li> </ul> <p>Except where noted above, the auditor confirmed that Ecoera quantified and documented the biochar produced and sold was documented via appropriate processes.</p>	<p>Recommendation 1</p> <p>Recommendation 2</p> <p>Suggestion for Improvement 2</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>Finding</p>	<p>The auditor confirmed during the virtual site visit and through additional evidence, that appropriate metering infrastructure was in place to quantify the produced biochar, and that the equipment used (onsite scale) was calibrated.</p> <p>While an electricity metered was installed at the facility, the electricity used in the LCA was still calculated based on the nominal power requirement from the manufacturer. The limitation with this calculation method is its reliance on other calculation parameter such as total biochar production volume and bulk density. In the initial LCA, the wrong bulk density value was used resulting in an error in electricity calculation.</p> <p>Upon review, this has been corrected from 774 kWh (Initial LCA) to 838 kWh (Final LCA). <b>This resulted in the over calculation of 0.07 CORCs.</b></p>	<p>Corrective Action Request 1</p> <p>Carry Forward Recommendation 1</p>
<p>Check that appropriate processes are in place to quantify the inputs to the Calculation formula of CO<sub>2</sub> removal for the purpose of Preparing the Output Report and calculating CORCs.</p>	<p>Finding</p>	<p>The LCA report supplied by Ecoera contained error varying in nature and sources. Additionally, inputs such as power consumption, average delivery distance, and biochar density, were not supported by sufficient evidence. Upon request, discrepancies were amended, and clarification were provided. The details are outlined in Appendix C.</p> <p>Except where noted above, the auditor confirmed that the calculation inputs for CO<sub>2</sub> removal were appropriate and consistent with the methodology applied and the available evidence.</p>	<p>Corrective Action Request 1</p> <p>Corrective Action Request 2</p> <p>Corrective Action Request 3</p> <p>Corrective Action Request 4</p> <p>Recommendation 1</p>

## Appendix C: Summary of Calculation Errors

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

Table 8: Summary of Calculation Errors

Source of Error	CORC calculation	Corrected CORC calculation	Abs. Error (CORCs)	Net Error (CORCs)	Abs. Error Rate (%)	Net Error Rate (%)
Error in biochar produced (sales) input	186.00	116.43	69.57	69.57 OC	37.40%	37.40%
Error in calculation of electricity consumed	116.43	116.07	0.07	0.07 OC	0.06%	0.06%
Error in biochar moisture content input	116.07	114.68	1.68	1.68 OC	1.44%	1.44%
Unit conversion and rounding error in formulas	114.68	113.54	1.14	1.14 OC	0.99%	0.99%
<b>Total</b>	<b>186.00</b>	<b>113.54</b>	<b>72.46</b>	<b>72.46 OC</b>	<b>38.96%</b>	<b>38.96%</b>

\*OC = Overcalculation/UC = Undercalculation