Preliminary Assessment Public Summary

This is a *Preliminary Assessment Public Summary* prepared by Puro.earth, which contains general information about the CO2 Removal Supplier, a non-technical summary of the project, and a table containing details about the criteria assessed. The CO2 Removal Supplier has received an extended Preliminary Assessment Report that includes additional remarks and recommendations for the continuation of the certification journey.

1. Supplier and project information

CO_2 Removal Supplier	
Company name	A Healthier Earth Limited
Company address	5 Fleet Place, London EC4M 7RD United Kingdom
Business ID	14036321
KYC status	Completed (March 6, 2024)
CO_2 Removal Project	
Methodology	**Biochar, Edition 2022, Version 3**
Production Facility name	Pure Biochar
Facility registration date	2024-05-29
Production Facility ID	263933
Production Facility location	Park Grounds Brinkworth Rd Royal Wootton BassettSN4 8DW United Kingdom
Host Country of removal	United Kingdom
Has this facility been registered in another registry?	☒No ☐Yes, additional information:
Assessment details	
Date of assessment	2024-09-19
Status of assessment	Final
Conclusion of assessment	Pass

2. Non-technical project summary*

A Healthier Earth is a climate-tech catalyst committed to finding the solutions that tackle the most urgent regional and global sustainability challenges. With our technology agnostic approach, we bring together the idea, technology and investment to develop, deliver and operate climate solutions at scale. We develop investable business plans, secure finance and deliver and operate planet-positive infrastructure that restores the world we live in and enables its people and societies to thrive.
Our project located in Swindon, UK will be one of the largest biochar facilities in the country, producing ~10k tonnes of biochar annually at scale. Built and operating alongside a waste management and recycling company, the operation will utilise an end-of-life waste stream (urban green waste) that has no onward use case and is currently sent to landfill. We will produce high-quality, EBC certified, biochar for use in agricultural, construction and urban environment applications.
Our project is using PYREG's class-leading PX1500 pyrolysis technology and we are partnering with a leading MRV provider to ensure robust project accountability alongside high-quality biochar.

*Filled by the Supplier. Between 150-200 words

The definition of CO_2 Removal Supplier and Production Facility can be found in the Puro Standard.

3. Criteria assessment report

Reminder: Sub-criteria either concern the Production Facility's technical eligibility or its maturity and quality. There are three types of sub-criteria:

- **Required to be passed:** These correspond to the core criteria related to the eligibility of a Production Facility. Suppliers must meet these criteria, as they may otherwise be impossible or costly to change at a later stage of the certification journey.
- **Required to be assessed**: These criteria are important for evaluation but do not necessarily determine pass or fail at this stage, as it is understood that the suppliers may be at different stages of development.
- **Not required:** These criteria are optional at this stage. They may provide additional information about the project maturity but are not essential for passing the preliminary assessment.

For a facility to be considered eligible for listing, all the sub-criteria that condition eligibility must be met (i.e. passed or assessed). If one of those sub-criteria is not met, the facility in its current state of development is not eligible for listing.

Disclaimer: The assessment has been made against the criteria in the current version of the methodology. Puro.earth relied on the CO_2 Removal Supplier for the correctness of the provided information during the time of the preliminary assessment and will make no representation as to the accuracy or completeness of this report. The CO_2 Removal Supplier must undergo a third-party audit before issuing CO_2 Removal Credits (CORCs). **Passing the preliminary assessment does not guarantee a success in the third-party audit.**

Overall evaluation: Preliminary Assessment is **passed**.

Table 1. Criteria and sub-criteria assessment by Puro based on the documents submitted.

ID	Criteria / Sub-criteria	Outcome	Comment	Evidence reviewed	Requirement for listing	Purpose of criteria
C1	**Planned biomass feedstock(s) is(are) eligible**	**Passed**			*Passed if required sub-criteria are met*	
C1.1	*Biomass feedstocks are identified and compatible with EBC positive list*	Passed	The biomass is type R-01: Compost over-size from urban green waste, and is compatible with EBC positive list.	Biomass types and origins list.xlsx	Required to be passed	Technical eligibility
C1.2	*Biomass feedstock sustainability and chain-of-custody can be demonstrated, if applicable*	Passed	Not applicable, as it is urban green waste.	Biomass types and origins list.xlsx	Required to be passed	Technical eligibility
C1.3	*Bioenergy leakage related to feedstock use is minimal*	Assessed	Leakage is minimal as the alternative fate of the biomass is landfilling or combustion without energy recovery.	Biomass types and origins list.xlsx	Required to be assessed	Technical eligibility
C1.4	*Land use change related to feedstock use is minimal*	Assessed	Not applicable, as it is urban waste.	Biomass types and origins list.xlsx	Required to be assessed	Technical eligibility

c1.5	*Sourcing of biomass is secured (e.g. letters of intent, contracts)*	Assessed	At least verbal agreements have been made between the supplier and the owner of the site and biomass at *Crappers & Sons Landfill.*	Puro Stakeholder Engagement Report.pdf	Not required	Maturity & Quality
c2	**Planned biochar production equipment is technically sound**	**Passed**			*Passed if required sub-criteria are met*	
c2.1	*Several options of reactor design have been identified*	Passed	The supplier has identified the PX1500 from PYREG GmbH as a suitable pyrolysis unit. This model has been vetted by Puro.	Biochar production equipment questionnaire.xlsx	Required to be passed	Technical eligibility
c2.2	*Reactor design has been decided, contracted, or purchased*	Assessed	The equipment is not operational yet, but it has been decided that 4 newly manufactured PX1500 units & 1 re-furbished used PX1500 unit will be used. The contract for the equipment has been signed.	Biochar production equipment questionnaire.xlsx; Puro Additionality v1.9.docx	Required to be assessed	Maturity & Quality
c2.3	*Reactor design is vetted, regarding production of biochar with H/C ratio below 0.7*	Passed	Equipment vetted by Puro. If operated correctly, the threshold H/C ratio should not be exceeded. Actual evidence will have to be provided for the audit.	Biochar production equipment questionnaire.xlsx	Required to be passed	Technical eligibility
c2.4	*Reactor design is vetted, regarding risk for CH_4 emissions*	Passed	Equipment vetted by Puro. If operated correctly, CH_4 emissions should remain negligible.	Biochar production equipment questionnaire.xlsx	Required to be passed	Technical eligibility
c2.5	*Reactor design is vetted, regarding air pollutant emissions in line with local regulation*	Passed	A gas filter is planned to be used to minimize atmospheric emissions, which is expected to clean the flue gas sufficiently to meet local regulations. The production emissions will need to be monitored as required by the Environmental Permit. During Puro vetting of the equipment, the manufacturer demonstrated compliance with EU regulations and multiple other jurisdictions, and provided emission tests.	Biochar production equipment questionnaire.xlsx; Environmental Evaluation Report.pdf	Required to be passed	Technical eligibility
c2.6	*Facility design is vetted, regarding disposal of waste streams, including any liquid streams (wastewater, oil, tars)*	Passed	Equipment vetted by Puro. Therefore, it includes mechanisms to combust all pyrolysis tar and oils. Solid waste and waste water generation is expected to be minimal.	Biochar production equipment questionnaire.xlsx	Required to be passed	Technical eligibility
c2.7	*Facility is co-producing bioenergy (e.g. heat, power) for internal use*	Assessed	The facility will use part of the thermal energy generated from combustion of pyrolysis oil and gas to sustain the pyrolysis.	Biochar production equipment questionnaire.xlsx	Required to be assessed	Maturity & Quality
c2.8	*Facility is co-producing bioenergy (e.g. heat, power, fuel) for external use*	Assessed	The process is expected to result in excess energy, which is planned to be fed into the local grid.	Biochar production equipment questionnaire.xlsx; SDG and co-benefits overview.pdf	Required to be assessed	Maturity & Quality
c3	**Biochar planned end-use(s) is(are) eligible**	**Passed**			*Passed if required sub-criteria are met*	

c3.1	*Biochar end-uses are eligible*	Passed	Biochar is intended to be used in both soil and non-soil applications. The planned end-uses are in agriculture, construction materials, and 'living walls'. These end-uses are normally eligible, but additional clarifications will be needed regarding end-of-life of living walls and the specific construction materials.	LCA Report.pdf; SDG and co-benefits overview.pdf	Required to be passed	Technical eligibility
c3.2	*Plans of biochar end-uses are tangible*	Assessed	The supplier intends on establishing off-take agreements with their customer base that specify the end use requirements prior to sale. Customers for offtake of biochar will be required to give a delivery address when placing an order.	MRV Procedures.pdf SDG and co-benefits overview.pdf	Required to be assessed	Maturity & Quality
c3.3	*Biochar environmental quality thresholds are known for the identified end-uses*	Assessed	The supplier will adhere to the EBC certification requirements to ensure a safe biochar product for end-use, particularly regarding soil application.	Environmental Evaluation Report.pdf	Required to be assessed	Maturity & Quality
c4	**Additionality is demonstrated**	**Passed**			*Passed if required sub-criteria are met*	
c4.1	*Carbon storage additionality to baseline*	Passed	The over-size green municipal waste material is either landfilled or combusted with no energy recovery. Carbon storage will only occur if the project is implemented.	Puro Additionality v1.9.docx ; Biomass types and origins list.xlsx	Required to be passed	Technical eligibility
c4.2	*Financial additionality of facility*	Passed	The project will have two other revenue streams in addition to CORCs: 1) sales of the physical biochar product into streams that ensure long-term sequestration; 2) excess electricity generated by the process will be sold. However, if CORC revenue is excluded, this leads to a negative IRR and the project will not be financially viable.	001 - Financials UK Biochar – PURO.xlsx; Puro Additionality v1.9.docx	Required to be passed	Technical eligibility
c4.3	*Regulatory additionality*	Passed	According to the supplier, there is no legal or regulatory requirement for the project to produce biochar.	Puro Additionality v1.9.docx	Required to be passed	Technical eligibility
c4.4	*Production equipment is newly built (i.e. not an existing facility or a retrofit of existing facility)*	Assessed.	The production equipment (aside from the fully refurbished first PX1500 unit) will be newly built for the project.	Puro Additionality v1.9.docx	Required to be assessed	Maturity & Quality
c5	**Facility has monitoring, reporting, and LCA capabilities or tangible plans**	**Passed**			*Passed if required sub-criteria are met*	
c5.1	*Protocol for biomass and biochar record keeping is prepared*	Assessed	A high-level protocol plan for biomass and biochar record keeping was shared, including	MRV Procedures.pdf	Required to be assessed	Maturity & Quality

			automated systems and a centralized system for record keeping.			
c5.2	*Protocol for dry mass determination of biochar is prepared*	Assessed	Dry mass measurements are planned to be reported at bag level, but precise procedures are not yet developed.	MRV Procedures.pdf	Required to be assessed	Maturity & Quality
c5.3	*Protocol for biochar sampling and laboratory analysis is prepared (permanence and environmental quality)*	Assessed	A preliminary plan for biochar sampling was shared. The quality control manager will attend Carbon Standard International training and accreditation courses for EBC-standard biochar sample taking. This plan must still be turned into an operational protocol for the facility.	MRV Procedures.pdf	Required to be assessed	Maturity & Quality
c5.4	*Monitoring and reporting plan of facility emissions is prepared*	Assessed	A high-level monitoring plan was shared by the supplier that mentions aspects relevant to both environmental monitoring and quantification of climate impact. This plan includes biomass production, site building infrastructure usage, water use, electricity import/export, fuel consumptions, transport, noise monitoring, production emissions monitoring (NOx, CO, C, dust, SO_2, HCl). This plan must still be developed into an operational protocol and aligned with the LCA model.	MRV Procedures.pdf	Required to be assessed	Maturity & Quality
c5.5	*An LCA model specific to the facility's operation is prepared*	Assessed	An LCA model and report has been shared. The model is parameterized and can be updated based on data monitoring.	LCA Report.pdf; Puro_LCA Model_A_Healthier_Earth (2024-06-19).xlsm	Not required	Maturity & Quality
c6	**Facility has likely co-benefits and positive SDG impacts**	**Passed**			*Passed if required sub-criteria are met*	
c6.1	*Facility-specific co-benefits have been identified*	Assessed	The supplier identified specific co-benefits including 15 new operational roles across maintenance, excess energy creation, waste use, and synergies with biochar green applications.	SDG and co-benefits overview.pdf	Required to be assessed	Maturity & Quality
c6.2	*Facility-specific SDG targets or indicators have been identified*	Assessed	The supplier has Identified SDGs 7, 8, 9, 10, and 13.	SDG and co-benefits overview.pdf	Required to be assessed	Maturity & Quality
c7	**Facility team has access to relevant knowledge and skills**	**Passed**			*Passed if required sub-criteria are met*	
c7.1	*Relating to biomass sourcing, handling, processing*	Assessed	The Site Manager has previous experience of Biomass sourcing and handling at a biomass gasification plant.	AHE Team.pdf	Not required	Maturity & Quality

c7.2	*Relating to thermochemical processes*	Assessed	The Site Manager has over 25 years in large-scale industrial processes ranging from polypropylene manufacturing, 2000MW coal fired power station operations, energy from waste (circa 30MW) and plasma gasification of biomass fuels.	AHE Team.pdf	Not required	Maturity & Quality
c7.3	*Relating to biochar use*	Assessed	Science lead has a PhD in Plant, crop and tree biology, which is relevant for developing biochar applications.	AHE Team.pdf	Not required	Maturity & Quality
c7.4	*Relating to monitoring and carbon accounting*	Assessed	The internal team and collaborators seem to have enough expertise to ensure that monitoring and carbon accounting are performed properly.	AHE Team.pdf	Not required	Maturity & Quality
c8	**Environmental and social safeguards**	**Passed**			*Passed if required sub-criteria are met*	
c8.1	*Stakeholder consultations have been planned or conducted*	Assessed	The operations will take place in a landfill and composting site owned by *Crappers & Sons Landfill*. They are the only stakeholders in the immediate environment. No other stakeholders have been identified. There is a plan to hold public consultations for the operation.	Puro Stakeholder Engagement Report.pdf Puro Environmental and Social Safeguard.pdf	Required to be assessed	Maturity & Quality
c8.2	*Regulation applicable to facility has been identified*	Assessed	The supplier has identified relevant regulations, including Control of Substances Hazardous to Health (COSHH) and Health and Safety at Work etc. Act 1974.	Environmental Evaluation Report.pdf	Required to be assessed	Maturity & Quality
c8.3	*Procedures to acquire relevant permits have been identified, started, or completed*	Assessed	According to the supplier, the site already has the required planning and permitting to commence operations.	Puro Environmental and Social Safeguard.pdf	Required to be assessed	Maturity & Quality