

Preliminary Assessment Public Summary

This *Preliminary Assessment Public Summary*, prepared by Puro.earth, contains general information about the CO₂ Removal Supplier and its project, as evaluated at the time of the Preliminary Assessment (PA). It also includes a *Non-Technical Project Summary* and a *Criteria Assessment Report* detailing: i) key criteria assessed and their associated outcomes, ii) Puro's comments, and iii) evidence provided by the CO₂ Removal Supplier.

The *PA Public Summary* serves as a transparent communication tool, enabling potential investors, buyers, and stakeholders to quickly understand the supplier's carbon removal capabilities and assessment status.

The supplier has also received an extended *Preliminary Assessment Report*. This confidential document offers in-depth insights, including specific remarks and actionable recommendations to guide the supplier's progression through the certification journey.

1. Supplier and Project Information

CO ₂ Removal Supplier	
Company name	Econew Energia Sustentável Ltda
Company address	Rua Almerinda de Souza Aguiar, nº 350, Distrito Industrial, 39260-000 Várzea da Palma, Minas Gerais, Brazil
Business ID	CNPJ 24.688.099/0001-24
KYC status	Completed (07/10/2025)
CO ₂ Removal Project	
Methodology	Biochar, Edition 2022, Version 3
Production Facility name	VZP Industrial Plant
Facility registration date	07/30/2025
Production Facility ID	739147
Production Facility location	Rua Almerinda de Souza Aguiar, nº 350, Distrito Industrial, 39260-000 Várzea da Palma, Minas Gerais
Host Country of removal	Brazil
Has this facility been registered in another registry?	☒ No ☐ Yes, additional information:
Preliminary Assessment Details	
Date of assessment	17/10/2025
Status of assessment	Final
Conclusion of assessment	Passed

2. Non-Technical Project Summary*

The EcoNew Brazil Biochar Project is redefining how Brazil turns waste into climate value. Led by EcoNew Energia Sustentável Ltda in Minas Gerais, the project transforms sustainably sourced eucalyptus residues, once burned or left to decompose, into high-quality biochar that locks away carbon for centuries.

At the heart of EcoNew's operations is an advanced BST-50 continuous pyrolysis system, engineered for precision, safety, and environmental integrity. Through closed-loop heat recovery and state-of-the-art emissions controls, the process achieves durable carbon removal with a minimal environmental footprint. All by-products are responsibly managed, ensuring full compliance with Brazilian environmental standards.

The resulting biochar improves soil health, fertility, and water retention - helping farmers cultivate more productive and resilient lands. By valorising eucalyptus residues from FSC, PEFC, and CERFLOR certified plantations, EcoNew supports sustainable forestry and reduces open burning across regional supply chains.

Combining technological innovation with tangible community benefit, the EcoNew Brazil Biochar Project demonstrates how industrial ingenuity can power natural regeneration - advancing Brazil's low-carbon transition, one tonne of carbon at a time.

*Filled by the Supplier. Between 150-200 words

The definition of CO₂ 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 CO₂ 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 CO₂ Removal Supplier must undergo a third-party audit before issuing CO₂ Removal Credits (CORCs). **Passing the preliminary assessment does not guarantee a success in the third-party audit.**

Important Notice Regarding Biochar Methodology Update: This Preliminary Assessment has been conducted against Edition 2022, but to some extent, reflected some important changes in the updated Biochar Methodology – Edition 2025.

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			<i>Passed if required sub-criteria are met</i>	
c1.1	<i>Biomass feedstocks are identified and compatible with EBC positive list</i>	Passed	The supplier has reported feedstock as waste eucalyptus residues sourced from Brazil (State of Minas Gerais) plantation operators.	[EcoNew] Project Description v1.0.docx; [Econew] Biomass Types and Origins List – BCH	Required to be passed	Technical eligibility
c1.2	<i>Biomass feedstock sustainability and chain-of-custody can be demonstrated, if applicable</i>	Passed	The supplier has reported that the eucalyptus plantations follow national certification schemes in Brazil (CERFLOR). CERFLOR is PEFC-endorsed, and the CO ₂ Removal Supplier will be sourcing biomass from CERFLOR certified plantations, meeting Puro's sustainability requirements under Edition 2022. <i>For Biochar</i>	[Econew] Biomass Types and Origins List – BCH; [EcoNew]_Relationship Between CERFLOR and PEFC in Forest Certification	Required to be passed	Technical eligibility

			<i>Methodology Edition 2025, this feedstock must be categorized according to Puro Biomass Sourcing Criteria.</i>			
c1.3	<i>Bioenergy leakage related to feedstock use is minimal</i>	Assessed	The feedstock – eucalyptus residues - would otherwise be burned openly or discarded in a waste pile, both resulting in the release of CO ₂ or methane. Under these baselines, bioenergy is not produced and therefore the risk of bioenergy leakage is minimal.	[EcoNew] Baseline and Additionality Questionnaire signed; [EcoNew] Project Description v1.0.docx	Required to be assessed	Technical eligibility
c1.4	<i>Land use change related to feedstock use is minimal</i>	Assessed	The selected feedstocks and their sources are deemed to have minimal to no effects on land use change.	EcoNew] Project Description v1.0.docx, [Econew] Biomass Types and Origins List – BCH	Required to be assessed	Technical eligibility
c1.5	<i>Sourcing of biomass is secured (e.g. letters of intent, contracts)</i>	Assessed	Although no specific evidence has been provided to demonstrate that biomass sourcing is secured, the supplier has other biomass-based products and can benefit from sourcing experience.	[EcoNew] Website Homepage	Not required	Maturity & Quality
c2	Planned biochar production equipment is technically sound	Passed			<i>Passed if required sub-criteria are met</i>	
c2.1	<i>Several options of reactor design have been identified</i>	Passed	The supplier has selected Beston BST-50 carbonization system to convert biomass into biochar via pyrolysis. It is a rotary kiln continuous system. A modification has been made to the standard design: Installation of a double chamber heated deduster cyclone and heating all bio-gas pipeline. Both improvements will minimize or even eliminate the bio-gas condensation to bio-oil.	[EcoNew] Biochar Production Equipment Questionnaire, [EcoNew] Biomass Carbonization Plant BST-50	Required to be passed	Technical eligibility
c2.2	<i>Reactor design has been decided, contracted, or purchased</i>	Passed	Reactor was assembled in 2024, and is planned to be commissioned and start in Q3 2025. Further tests will be performed then.	[EcoNew] Biochar Production Equipment Questionnaire,	Required to be assessed	Maturity & Quality
c2.3	<i>Reactor design is vetted, regarding production of biochar with H/C ratio below 0.7</i>	Passed	The BST-50 is expected to be able to produce biochar from eucalyptus woodchips that leads to biochar of sufficient persistence (H/Corg < 0.7) and sufficient environmental quality for soil applications if operated according to normal operating conditions. The EcoNew operation will be verified during regular facility and output audit.	[EcoNew] Biochar Production Equipment Questionnaire, [EcoNew] Biomass Carbonization Plant BST-50	Required to be passed	Technical eligibility
c2.4	<i>Reactor design is vetted, regarding risk for CH₄ emissions</i>	Passed	The pyrolysis gas is combusted, with energy recovery back to the pyrolysis system. Remaining gases are burned at the flares. It is important that combustion devices, such as flares, are monitored to ensure that any deviations from normal operating conditions can be detected and the resulting GHG emissions accounted for. The EcoNew operation will be verified during regular facility and output audit.	[EcoNew] Biochar Production Equipment Questionnaire, [EcoNew] Carbonization Process Mass Balance	Required to be passed	Technical eligibility
c2.5	<i>Reactor design is vetted, regarding air pollutant emissions in line with local regulation</i>	Passed	Post combustion of pyrolysis gases, there are two deduster cyclones, one to each reactor furnace combustion gases exhaust pipeline. One deduster cyclone to the dryer exhaust and a desulfurization tower and spray tower for final treatment before the combustion gases release to the atmosphere. The excess gas	[EcoNew] Biochar Production Equipment Questionnaire,	Required to be passed	Technical eligibility

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			combustion chamber is equipped with a flare, and flare monitoring is in place, to ensure that emissions to air are in line with local regulation. Compliance with local regulation must be demonstrated during the Facility Audit.			
c2.6	<i>Facility design is vetted, regarding disposal of waste streams, including any liquid streams (wastewater, oil, tars)</i>	Passed	The BST-50 does condense small quantities of oil and tar. While the quantities are expected to be small, management plans for the liquid waste products have been described, with protocols for collection and storage, treatment and disposal, as well as monitoring and reporting, included in the documentation.	[EcoNew] Biochar Production Equipment Questionnaire,	Required to be passed	Technical eligibility
c2.7	<i>Facility is co-producing bioenergy (e.g. heat, power) for internal use</i>	Assessed	Yes. The pyrolysis gas is combusted with energy recovery back to the pyrolysis system.	[EcoNew] Biochar Production Equipment Questionnaire,	Required to be assessed	Maturity & Quality
c2.8	<i>Facility is co-producing bioenergy (e.g. heat, power, fuel) for external use</i>	Assessed	No. Bioenergy produced during the pyrolysis process is not planned for external use.	[EcoNew] Biochar Production Equipment Questionnaire,	Required to be assessed	Maturity & Quality
c3	Biochar planned end-use(s) is(are) eligible	Passed			<i>Passed if required sub-criteria are met</i>	
c3.1	<i>Biochar end-uses are eligible</i>	Passed	Produced biochar is collected, stored, tested for WBC limits and prepared for agricultural use.	[EcoNew] Project Description v1.0.docx	Required to be passed	Technical eligibility
c3.2	<i>Plans of biochar end-uses are tangible</i>	Assessed	The sale of biochar to end-users is identified as the main revenue source, and EcoNew looking for with potential intermediaries and end-users for soil amendments. Several companies in Brazil are actively developing biofertilizers, and this market has high synergy with biochar, both as a carrier for microbial inoculants and as a soil amendment.	[EcoNew] Statement on End Use, [EcoNew] Project Description v1.0.docx	Required to be assessed	Maturity & Quality
c3.3	<i>Biochar environmental quality thresholds are known for the identified end-uses</i>	Assessed	It has been demonstrated that the equipment can be operated with certain biomass feedstocks (eucalyptus woodchips) in a way that leads to biochar of sufficient persistence ($H/C_{org} < 0.7$) and sufficient environmental quality for soil applications (using limit values from the WBC). The equipment manufacturer Beston has provided laboratory test results from same technology and same eucalyptus feedstock showing high fixed carbon content and permanence. Site specific lab results will be part of the full audit package.	[EcoNew] Beston Eucalyptus Sample Test Results, [EcoNew] Pending Lab Results for Eucalyptus Biochar	Required to be assessed	Maturity & Quality
c4	Additionality is demonstrated	Passed			<i>Passed if required sub-criteria are met</i>	
c4.1	<i>Carbon storage additionality to baseline</i>	Passed	If not diverted to biochar production, the biomass would otherwise be burned openly or discarded in a waste pile, both resulting in the release of CO ₂ or methane.	[EcoNew] Baseline and Additionality Questionnaire signed, [EcoNew] Project Description v1.0.docx,	Required to be passed	Technical eligibility

c4.2	<i>Financial additionality of facility</i>	Passed	Carbon credit revenues are required to make the biochar production process financially viable. CORC revenues allow the project to be profitable if reasonable CORC price levels can be reached to push the IRR above the cost of capital for the project and make the NPV positive.	[EcoNew] Baseline and Additionality Questionnaire signed, EcoNew Financial Model.xlsx	Required to be passed	Technical eligibility
c4.3	<i>Regulatory additionality</i>	Passed	The project is not required by any local, state, or national laws or regulations.	[EcoNew] Baseline and Additionality Questionnaire signed,	Required to be passed	Technical eligibility
c4.4	<i>Production equipment is newly built (i.e. not an existing facility or a retrofit of existing facility)</i>	Assessed	The biochar equipment is newly built, planned to be commissioned and starting operations in Q3 2025.	[EcoNew] Baseline and Additionality Questionnaire signed,	Required to be assessed	Maturity & Quality
c5	Facility has monitoring, reporting, and LCA capabilities or tangible plans	Passed			<i>Passed if required sub-criteria are met</i>	
c5.1	<i>Protocol for biomass and biochar record keeping is prepared</i>	Assessed	Small samples will be taken at least every operating day, and combined into a blended or composite sample each month to be sent to a validated laboratory.	[EcoNew] Monitoring Plan	Required to be assessed	Maturity & Quality
c5.2	<i>Protocol for dry mass determination of biochar is prepared</i>	Assessed	The combination of the net wet mass delivered and the moisture content will be used to calculate the dry mass. Dry mass determination needs to be refined further into a detailed operations procedure.	[EcoNew] Monitoring Plan	Required to be assessed	Maturity & Quality
c5.3	<i>Protocol for biochar sampling and laboratory analysis is prepared (permanence and environmental quality)</i>	Assessed	The Supplier has provided the outlines of their biochar sampling and analysis program. The plan includes a list of parameters to measure for biochar sampling and laboratory analysis. It must be further refined and turned into actual protocol that can be followed (i.e., step-by-step operating procedures).	[EcoNew] Monitoring Plan	Required to be assessed	Maturity & Quality
c5.4	<i>Monitoring and reporting plan of facility emissions is prepared</i>	Assessed	A high-level monitoring plan has been drafted describing what will be monitored at the facility to be able to quantify and report emissions for LCA.	[EcoNew] Monitoring Plan	Required to be assessed	Maturity & Quality
c5.5	<i>An LCA model specific to the facility's operation is prepared</i>	Assessed	A preliminary LCA model has been prepared following Puro templates. High-level activity boundaries have been defined, along with preliminary estimates of key monitoring parameters, resulting in initial estimates of project emissions. Overall, the LCA model is expected to align with the requirements of the Methodology; however further refinement is still needed.	[EcoNew] Puro Facility Audit LCA_August 2025	Not required	Maturity & Quality
c6	Facility has likely co-benefits and positive SDG impacts	Passed			<i>Passed if required sub-criteria are met</i>	

c6.1	<i>Facility-specific co-benefits have been identified</i>	Assessed	EcoNew is not currently aligned with specific SDG targets but plans to assess the feasibility of SDG integration and monitoring at a later stage in the project's development,	EcoNew] Project Description v1.0.docx	Required to be assessed	Maturity & Quality
c6.2	<i>Facility-specific SDG targets or indicators have been identified</i>	Assessed	Currently, EcoNew does not intend to pursue any additional SDGs.	EcoNew] Project Description v1.0.docx	Required to be assessed	Maturity & Quality
c7	Facility team has access to relevant knowledge and skills	Passed			<i>Passed if required sub-criteria are met</i>	
c7.1	<i>Relating to biomass sourcing, handling, processing</i>	Assessed	The team has experience operating an industrial biomass processing plant since 2016 and has experience in sourcing, handling, and processing biomass.	[EcoNew] Website Homepage	Not required	Maturity & Quality
c7.2	<i>Relating to thermochemical processes</i>	Assessed	The team has experience in managing thermochemical processes.	[EcoNew] Website Homepage	Not required	Maturity & Quality
c7.3	<i>Relating to biochar use</i>	Assessed	The team is developing their biochar capacity as this venture is new to their current operations.	[EcoNew] Project Description v1.0.docx	Not required	Maturity & Quality
c7.4	<i>Relating to monitoring and carbon accounting</i>	Assessed	The team has provided carbon accounting (LCA) document for the project. They are building their competence for carbon removal accounting with partnerships.	[EcoNew] Project Description v1.0.docx	Not required	Maturity & Quality
c8	Environmental and social safeguards	Passed			<i>Passed if required sub-criteria are met</i>	
c8.1	<i>Stakeholder consultations have been planned or conducted</i>	Assessed	A stakeholder consultation is planned to be conducted, and the results will be submitted in a later phase. The team has a good understanding of the social and environmental risks. EcoNew facility is in an industrial zone. The environmental impacts are limited to waste disposal and gas emissions resulting from the carbonization of biochar. The occupational health and safety risks associated with the production and handling of biochar, as well as the maintenance of the plant at EcoNew, include exposure to noise, contact with hot surfaces, exposure to dust, falls from height	[EcoNew] Environmental Evaluation Report – Signed, [EcoNew] Commitment to Stakeholder Engagement Prior to Facility Audit Signed	Required to be assessed	Maturity & Quality
c8.2	<i>Regulation applicable to facility has been identified</i>	Assessed	EcoNew facility being built is in an industrial zone next to its existing production site. EcoNew has reported that a [new] Environmental Impact Assessment (ERA) was not legally required.	[EcoNew] Permits and English translations, EcoNew] Project Description v1.0.docx	Required to be assessed	Maturity & Quality
c8.3	<i>Procedures to acquire relevant permits have been identified, started, or completed</i>	Assessed	EcoNew facility being built is in an industrial zone next to its existing production site. EcoNew has reported that a [new] Environmental Impact Assessment (ERA) was not legally required.	EcoNew] Project Description v1.0.docx	Required to be assessed	Maturity & Quality