# Preliminary Assessment Public Summary

This *Preliminary Assessment Public Summary*, prepared by Puro.earth, contains general information about the $CO_2$ 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 $CO_2$ 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 | |
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| **Company name** | Tellus Ltda |
| **Company address** | Rua Professor Atilio Innocenti, 165<br>Sao Paulo – SP 04538-000 – Brazil |
| **Business ID** | 52084604000l-67 |
| **KYC status** | Completed |
| **$CO_2$ Removal Project** | |
| **Methodology** | **Biochar, Edition 2022, Version 3** |
| **Production Facility name** | Tellus – Plant I |
| **Facility registration date** | TBD |
| **Production Facility ID** | 184138 |
| **Production Facility location** | ROD PI - 115, KM 33<br>Campo Maior – PI 64280-000 – Brazil |
| **Host Country of removal** | Brazil |
| **Has this facility been registered in another registry?** | ☒No<br>☐Yes, additional information: |
| **Preliminary Assessment Details** | |
| **Date of assessment** | 07/17/2025 |
| **Status of assessment** | Draft |
| **Conclusion of assessment** | Passed |

## 2. Non-Technical Project Summary**

Tellus is developing a carbon removal and soil regeneration project in Piauí, Brazil, by converting residues from the processing of Copernicia prunifera (carnauba palm) leaves into high-quality biochar. This native Brazilian palm grows wild in the region; each year, rural communities sustainably harvest its leaves to extract powder derived from the epicuticular layer of the foliage. This species is not associated with palm oil production.

Our facility has the capacity to process over 35,000 tonnes of this biomass annually through controlled pyrolysis, producing a stable form of carbon that can remain in soils for hundreds of years. The resulting biochar will be applied as an organic soil amendment, enhancing soil structure, microbial activity, nutrient retention, and water holding capacity, while ensuring long-term carbon sequestration in soils.
The project supports a circular and sustainable agricultural model: it reduces reliance on imported synthetic fertilizers, boosts productivity through soil improvement, and enables a transition to regenerative practices. It also creates local jobs and strengthens rural value chains in a vulnerable region.

By embedding carbon in soil and improving fertility, Tellus delivers lasting climate and agricultural benefits. We are committed to scaling nature-based carbon removal while restoring soils across Brazil and beyond.

* The definition of $CO_2$ Removal Supplier and Production Facility can be found in the Puro Standard.
** Filled by the Supplier. Between 150-200 words

## 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**.

**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** | | | *Passed if required sub-criteria are met* | |
| *C1.1* | *Biomass feedstocks are identified and compatible with EBC positive list* | Passed | The identified biomass feedstock is palm leaf residue, generated directly during the in-field powder extraction process from *Copernicia prunifera* (Carnauba). It aligns with Category R-07 (Residues from Industrial Biomass Processing), as defined in the EBC/WBC Positive List of Feedstocks. | Biomass types and origins list – Tellus.xlsx ; Tellus – Preliminary Assessment Response v2.pdf | Required to be passed | Technical eligibility |

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| *c1.2* | *Biomass feedstock sustainability and chain-of-custody can be demonstrated, if applicable* | Passed | • Chain-of-custody is ensured through traceable procurement from members of the local rural population who, according to the supplier, process palm leaves into powder and retain ownership of the resulting biomass residues in the state of Piauí, Brazil. Comprehensive record-keeping will be required for the audit.<br>• Certification is not required for this feedstock type; however, evidence that it will be sourced sustainably, legally, and under safe working conditions will be required for the audit. | Biomass types and origins list – Tellus.xlsx ; Tellus – Preliminary Assessment Response v2.pdf | Required to be passed | Technical eligibility |
| *c1.3* | *Bioenergy leakage related to feedstock use is minimal* | Passed | Palm leaf residue is currently left to decompose in the field, and the supplier has not identified any alternative local uses of this biomass feedstock for energy production. Therefore, the risk of bioenergy leakage is deemed minimal. | Biomass types and origins list – Tellus.xlsx ; Tellus – Preliminary Assessment Response v2.pdf | Required to be assessed | Technical eligibility |
| *c1.4* | *Land use change related to feedstock use is minimal* | Passed | The supplier has indicated that palm leaf residue is neither cultivated nor harvested independently of the powder extraction process, and its use in biochar production does not lead to land conversion, displacement of other land uses, or changes in land management practices. Importantly, *Copernicia prunifera* (Carnauba) is not a palm species used for palm oil production and has no association with the environmental or social risks commonly linked to palm oil supply chains. | Biomass types and origins list – Tellus.xlsx ; Tellus – Preliminary Assessment Response v2.pdf | Required to be assessed | Technical eligibility |
| *c1.5* | *Sourcing of biomass is secured (e.g. letters of intent, contracts)* | Assessed | The provision of letters of intent from multiple farmers confirms that the biomass feedstock supply has been secured through established sourcing agreements. | Tellus – Preliminary Assessment Response v2.pdf; folder Letters of Intents | 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 evaluated several reactor technologies and selected the CNBC-500 pyrolysis reactor, manufactured by Haiqi Group. This reactor has been endorsed by Puro.earth. ***This Preliminary Assessment has been conducted based on the assumption that the supplier has selected the CNBC-500 reactor in the exact configuration endorsed by Puro.earth. Supporting evidence confirming this configuration will need to be submitted for the audit.*** | Tellus – Preliminary Assessment Response v2.pdf; Biochar production equipment questionnaire – Tellus.xlsx | Required to be passed | Technical eligibility |
| *c2.2* | *Reactor design has been decided, contracted, or purchased* | Assessed | Two CNBC-500 pyrolysis units, manufactured by Haiqi Group in 2024/2025, have already been purchased. They are expected to be delivered to the supplier by May 2025 and operational by Q3 2025. | Tellus – Preliminary Assessment Response v2.pdf; Biochar production equipment questionnaire – Tellus.xlsx | Required to be assessed | Maturity & Quality |
| *c2.3* | *Reactor design is vetted, regarding production of biochar with H/C ratio below 0.7* | Passed | The CNBC-500 pyrolysis reactor has been vetted by Puro.earth, with laboratory analyses provided by HaiQi during its vetting. If operated according to specifications, the selected equipment and biomass | Tellus – Preliminary Assessment Response v2.pdf; Biochar | Required to be passed | Technical eligibility |

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| | | | feedstock are deemed capable of producing biochar with a molar H/Corg ratio below 0.7. This will need to be confirmed by laboratory analysis during the audit. | production equipment questionnaire – Tellus.xlsx | | |
| *c2.4* | *Reactor design is vetted, regarding risk for $CH_4$ emissions* | Passed | The CNBC-500 pyrolysis reactor has been vetted by Puro.earth, with $CH_4$ emissions tests provided by HaiQi during its vetting. If operated according to specifications, the risk of $CH_4$ emissions is expected to be minimal. | Tellus – Preliminary Assessment Response v2.pdf; Biochar production equipment questionnaire – Tellus.xlsx | Required to be passed | Technical eligibility |
| *c2.5* | *Reactor design is vetted, regarding air pollutant emissions in line with local regulation* | Passed | The CNBC-500 pyrolysis reactor has been vetted by Puro.earth. HaiQi provided air pollution emissions test results during the vetting, demonstrating compliance with Chinese regulations where the equipment has been manufactured.<br>If operated according to specifications, the equipment is declared by the supplier to be compliant with Brazilian regulations, including CONAMA Resolution No. 382/2006 (air), No. 430/2011 (water), and No. 420/2009 (soil). Specifically, on-site environmental testing for CO, NOx, and particulate matter is required to obtain the environmental permit. | Tellus – Preliminary Assessment Response v2.pdf; Biochar production equipment questionnaire – Tellus.xlsx | 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 | The CNBC-500 pyrolysis reactor has been vetted by Puro.earth. If operated according to specifications, the equipment is expected to produce small amounts of tar and wood vinegar. Most of these byproducts are burned, with minor residual volumes of oil stored in tanks for later sale or appropriate treatment and disposal.<br>A limited amount of dust is also expected during operation, which will be captured by a dust collection system. Additionally, cleaning the pyrolysis gas pipeline will produce small amounts of ash and sludge, for which disposal routes have been clearly described. | Tellus – Preliminary Assessment Response v3.pdf; Biochar production equipment questionnaire – Tellus.xlsx; Environmental assessment report – Haiqi.pdf | Required to be passed | Technical eligibility |
| *c2.7* | *Facility is co-producing bioenergy (e.g. heat, power) for internal use* | Assessed | The facility uses pyrolysis gases and oils for internal energy production. These byproducts feed a boiler that generates both thermal energy and steam. The thermal energy sustains the pyrolysis process, while steam drives a turbine for electricity generation. The generated electricity powers all facility operations, including industrial equipment, lighting, air conditioning, computer systems, and safety systems. | Tellus – Preliminary Assessment Response v3.pdf; Biochar production equipment questionnaire – Tellus.xlsx; Environmental assessment report – Haiqi.pdf | Required to be assessed | Maturity & Quality |
| *c2.8* | *Facility is co-producing bioenergy (e.g. heat, power, fuel) for external use* | Assessed | The internally generated electricity (C2.7) primarily meets the facility's operational requirements. Expected surplus electricity will be sold to the Brazilian open market.<br>The equipment will also produce minor residual volumes of oil, which is intended to be sold for co-processing in licensed industrial kilns (cement, lime, or ceramic factories), where they can serve as alternative fuel under controlled combustion with gas treatment. If | Tellus – Preliminary Assessment Response v3.pdf; Biochar production equipment questionnaire – Tellus.xlsx; Environmental assessment report – Haiqi.pdf | Required to be assessed | Maturity & Quality |

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| | | | no viable market exists, these materials will be properly treated and disposed of according to regulations. | | | |
| **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 | The biochar will be applied pure, directly into the topsoil of agricultural lands. This intended end-use is eligible. | Tellus – Preliminary Assessment Response v2.pdf | Required to be passed | Technical eligibility |
| *c3.2* | *Plans of biochar end-uses are tangible* | Assessed | The supplier intends to sell pure biochar directly to farmers and land restoration projects in the state of Piauí, Brazil. Experiments conducted in partnership with a Brazilian Federal University tested the biochar's agronomic benefits across various application rates, soil types, and crops. However, no information has been provided regarding how the biochar will be distributed to end-users. | Tellus – Preliminary Assessment Response v2.pdf | Required to be assessed | Maturity & Quality |
| *c3.3* | *Biochar environmental quality thresholds are known for the identified end-uses* | Assessed | Environmental quality thresholds from the Ministry of Agriculture, Livestock, and Supply (MAPA) relevant to the intended biochar end-use have been identified. Additionally, the supplier is aware of international standards such as the European Biochar Certification (EBC) and intends to meet these thresholds as well. This will need to be confirmed by laboratory analysis during the audit. | Tellus – Preliminary Assessment Response v2.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 | Without the project, biomass would be left in the field to decompose. Therefore, the carbon storage is deemed additional to the baseline. | Tellus – Preliminary Assessment Response v2.pdf; Puro Additionality – Tellus.pdf | Required to be passed | Technical eligibility |
| *c4.2* | *Financial additionality of facility* | Passed | The supplier has demonstrated with a cash flow model (and a sensitivity analysis) that the production of biochar without CORC revenue is unviable; minor refinement is required. Despite the sale of biochar as a soil amendment and of surplus energy from the facility, the sale of CORCs is integral to the profitable running of the project and the payback of the initial investment. | Tellus – Preliminary Assessment Response v2.pdf; Puro Additionality – Tellus.pdf; Investment Analysis.xslx | Required to be passed | Technical eligibility |
| *c4.3* | *Regulatory additionality* | Passed | The project is not required by any existing law, regulations, or other binding obligations in Brazil. | Tellus – Preliminary Assessment Response v2.pdf; Puro Additionality – Tellus.pdf | 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 equipment will be newly built. | Tellus – Preliminary Assessment Response v2.pdf | 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 preliminary protocol for biomass and biochar record-keeping has been outlined, highlighting key elements such as biomass feedstock | Protocol for Biomass and Biochar Record Keeping.pdf | Required to be assessed | Maturity & Quality |

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| | | | registration, biochar mass balance tracking, batch documentation, sales tracking, and data management and verification. | | | |
| *c5.2* | *Protocol for dry mass determination of biochar is prepared* | Assessed | A preliminary protocol for determining the dry mass of biochar has been drafted, specifying sampling frequency and representativeness. It differentiates between measuring wet biochar mass (per truckload or production lot) and moisture content (daily). The protocol outlines where and how frequently samples will be taken within the production lot to determine moisture content, which is used to calculate dry biochar mass. This plan needs to be refined into a detailed, step-by-step operating procedure. | Protocol for Dry Mass Determination of Biochar.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 protocol for biochar sampling and laboratory analysis has been developed, based on the EBC Guidelines (Version 10.4E, 2024) and Brazilian MAPA legislation. It outlines two sampling procedures: one for elemental analysis, carbon sequestration potential, and environmental quality; the other focused on environmental quality (heavy metals). Both specify sampling periods, methods for representative sub-samples, frequency, composite sample preparation, and sub-sample retention for quality disputes or regulatory checks. | Protocol for Biochar Sampling and Laboratory Analysis.pdf | Required to be assessed | Maturity & Quality |
| *c5.4* | *Monitoring and reporting plan of facility emissions is prepared* | Assessed | A preliminary monitoring and reporting plan for facility emissions has been outlined, defining the project scope, key monitoring parameters, and greenhouse gases to be quantified. Monitoring methods and frequency (e.g., monthly or batch-wise data logging) are still under development. The protocol will be revised and finalized following completion of system commissioning and testing, finalization of monitoring capabilities, and collection of the first month of operational data. | Monitoring and Reporting Plan of Facility Emissions.pdf | Required to be assessed | Maturity & Quality |
| *c5.5* | *An LCA model specific to the facility's operation is prepared* | Assessed | A preliminary LCA model has been provided, prepared by Offsteam, an official LCA partner recognized by Puro.earth. High-level activity boundaries have been defined, along with preliminary estimates of key monitoring parameters, resulting into initial estimates of project emissions. The model does not yet specify the types or values of the emission factors. Overall, the LCA model is expected to align with the requirements of the Methodology; however further refinement is still needed. | LCA_Model.xlsx | 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 | Multiple facility-specific co-benefits have been identified, including improved soil structure, water retention, and nutrient availability; job creation supporting the local economy and regional | Tellus – Preliminary Assessment Response v2.pdf | Required to be assessed | Maturity & Quality |

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| | | | development; and renewable energy production that exceeds internal demand, allowing productive use of surplus energy. | | | |
| *c6.2* | *Facility-specific SDG targets or indicators have been identified* | Assessed | The supplier has declared their intention to obtain certification as contributors to SDG 2 – Zero Hunger, SDG 7 – Affordable and Clean Energy, and SDG 12 – Responsible Consumption and Production. | Tellus – Preliminary Assessment Response v2.pdf; Puro Project Description – Tellus.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 | • Biomass sourcing, handling, and processing (C7.1) & Monitoring and carbon accounting (C7.4): The company's CEO previously held a leadership role at a Fortune 500 company, gaining hands-on experience in commodities sourcing, handling, and processing. He also holds a Master's degree in Sustainability and practical expertise in carbon accounting.<br>• Thermochemical processes (C7.2) & Biochar use (C7.3): The Production Manager holds a PhD specializing in thermochemical biomass conversion, with direct experience in biochar production, characterization, and agricultural application.<br>• The project also involves external consultants with recognized expertise in their respective fields. | Tellus – Preliminary Assessment Response v2.pdf | Not required | Maturity & Quality |
| *c7.2* | *Relating to thermochemical processes* | | | | Not required | Maturity & Quality |
| *c7.3* | *Relating to biochar use* | | | | Not required | Maturity & Quality |
| *c7.4* | *Relating to monitoring and carbon accounting* | | | | 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 | Stakeholder engagement activities have started with early consultations involving the Secretary of the Environment of Piauí, municipal authorities, and local community representatives. All relevant stakeholders— including community members, land-rights holders, NGOs, local officials, and vulnerable groups—have been identified. Formal stakeholder consultations are planned for June 2025, alongside a continuous feedback and grievance mechanism. | Tellus – Preliminary Assessment Response v2.pdf; Puro Stakeholder Engagement Report.pdf | Required to be assessed | Maturity & Quality |
| *c8.2* | *Regulation applicable to facility has been identified* | Assessed | The supplier has identified permitting requirements at the state level for compliance with local environmental regulations and at the federal level for agricultural inputs in Brazil, including soil conditioners and organic fertilizers, ensuring these products meet national safety and quality standards. The supplier has also declared compliance with regulations governing air, water, and soil pollutant emissions. | Puro Environmental and Social Safeguard.pdf; Puro Project Description – Tellus.pdf | Required to be assessed | Maturity & Quality |
| *c8.3* | *Procedures to acquire relevant permits have been identified, started, or completed* | Assessed | The State Environmental License has already been obtained. The application process for the MAPA License, from the Ministry of Agriculture, Livestock, and Food Supply, has been initiated. | Puro Environmental and Social Safeguard.pdf; Environmental Permit.pdf; MAPA_Submission_ Protocol.pdf; Puro Project Description – Tellus.pdf | Required to be assessed | Maturity & Quality |