Public Project Description

This document is a project description made available in the Puro Registry to summarize the information available about a certified production facility. The project description is organized as follow:

1 Production Facility and Supplier information

This project description corresponds to the following **Production Facility** and **CO_2 Removal supplier**, acting as registering entity of the facility.

Production Facility	
Production Facility name	Foundation 1
Registration date (YYYY-MM-DD)	2025-02-12
Production Facility ID	526866
Location of facility	Soma Farm (Bati), Kna Village, Krang Thnong Commune, Bati District, Takeo Province, Cambodia
Host Country of removal	Cambodia
Has this facility been registered in another registry?	☒No ☐Yes, additional information (registration periods):
This table is filled in by the CO_2 Removal Supplier.	

CO_2 Removal Supplier	
Supplier name	Arukah Capital Pte Ltd
Supplier address	160 Robinson Road, #14-04, Singapore 068914
Business ID	202125948Z
KYC status	Completed
This table is filled in by the CO_2 Removal Supplier.	

The above-mentioned production facility has undergone the following audit, during which the project description, alongside other audit documents were verified.

Facility Audit	
Type of audit	Combined facility and output audit report
General Rules version	4.2
Methodology name	Biochar Methodology for CO_2 Removal
Methodology edition and version	Edition: 2022 Version: V3
Date of audit completion	16/02/2026
Conclusion of audit	The audit outcome is positive. The facility meets the applicable requirements, the methodology was properly applied, and 340.76 CORCs are verified as valid net CO_2 removals for the reporting period.

Auditing body	Earthood Services Limited
Start date of crediting period	01/10/2025
End date of crediting period	01/10/2030
This table is filled in by the Issuing Body.	

2 Overview of activity, its location, and operators

The information in this section provides an overview of how and where carbon dioxide removal is achieved, and by whom.

2.1 Non-technical description

Instructions	*Please provide a non-technical description of the carbon removal activity taking place at the production facility. Word limit: 100 words.*
Non-technical description	Arukah Capital, alongside local partner Soma Group, operates Southeast Asia's largest biochar carbon removal initiative in Cambodia. Project Foundation transforms agricultural waste into biochar using advanced continuous pyrolysis under 10-year equipment warranties, sequestering carbon for 100+ years and boosting supply of affordable domestic fertiliser production in a country that imports almost all of its fertiliser despite 26% of GDP from agriculture. Arukah's model commits 50% of carbon credit revenue to smallholders, raising annual incomes by 50%, assuming ~1,000 farmers involved. Founded post-pandemic for rural poverty alleviation and food security, Arukah is a leader in regional and global business model and digital innovation.
This table is filled-in by the supplier and verified by the auditor.	

2.2 Locations

Instructions	*Please provide a list of locations associated with the carbon removal activity. Additional locations or areas can refer to e.g. the location of the storage site, the spatial extent of the area of use of a carbon removal product or sourcing of a specific feedstock.*
Production Facility Location (as registered)	Soma Farm (Bati), Kna Village, Kraing Thnong Commune, Bati District, Takeo Province, Cambodia Coordinates (WSG84, decimal format): Latitude: 11.344235 Longitude: 104.816319
Additional location(s)	*Specify purpose, location, address, coordinates, to the extent possible, for one or multiple additional locations relevant to the removal activity.*
This table is filled-in by the supplier and verified by the auditor.	

2.3 Operators

Instructions	*Please provide a full list of operators or organizations that contribute to the removal activity. Add rows as necessary. For each entity, provide the name, a business ID, an address, and the role of the entity.*
CO_2 Removal Supplier	*Entity name:* **Arukah Capital Pte Ltd** *Entity business ID:* **202125948Z** *Entity address:* **160 Robinson Road #14-04, Singapore** *Role of entity:* **Project Developer**
Organization 2	*Entity name:* **Soma Farm (Cambodia) Co., Ltd.** *Entity business ID:* **Commercial Registration No. 00015191** *Entity address:* **The Commune, No. 15, 2nd floor, street 347, Boeung Kak 1, Toul Kork, Phnom Penh, 12151, Cambodia** *Role of entity:* **Land Provider, Government Liaison**
Organization 3	*Entity name:* **Quantum Engineering and Manufacturing Co., Ltd.** *Entity business ID:* **VATTIN K008-902002788** *Entity address:* **National Road 2, Kandal Village, Sangkat Rolous, Khan Dangkao, Phnom Penh, Cambodia.** *Role of entity:* **Pyrolysis Equipment Manufacturer**
This table is filled-in by the supplier and verified by the auditor.	

3 Technical description of the removal activity

The information in this section provides more technical details about the technologies and processes deployed to achieve carbon dioxide removal.

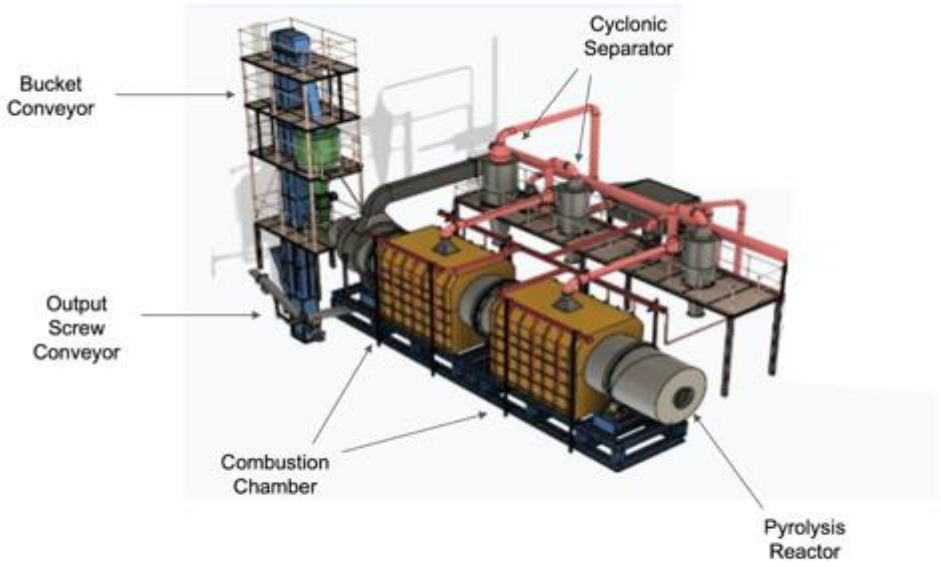
3.1 Technical description

Instructions	*Please provide a technical description of the carbon removal activity taking place at the production facility. Word limit: 500 words.*
Technical description	We deploy a continuous rotary-kiln pyrolysis line to convert waste rice husk and rubberwood residues into biochar, with a nominal output of 0.75 ± 0.1 t/h of biochar and a core reactor setpoint of 550°C ± 20%, on an input of 2.5 tons per hour of waste biomass at ≦15% moisture content. **Arukah has installed such a unit in Cambodia in March 2025, calibrated for rice husk as a single feedstock. Arukah's Takeo, Cambodia facility currently processes ~2.5 t/h of rice husk at ~550°C, consistently achieving H/C_{org} <0.4 in line with WBC and Puro.earth BCR requirements, and serves as the operational precedent for the proposed project's design and performance assumptions.** The integrated line comprises feed preparation and screening, a rotary dryer to reduce high-moisture feedstocks to below 15% moisture, a continuous rotary kiln carbonizer, syngas recirculation, emissions control, and water-jacketed screw cooling and water quenching for safe biochar discharge. Process heat is initially supplied by LPG during start-up and transitions to process-generated syngas for steady-state operation to minimize external fuel consumption and operational emissions.

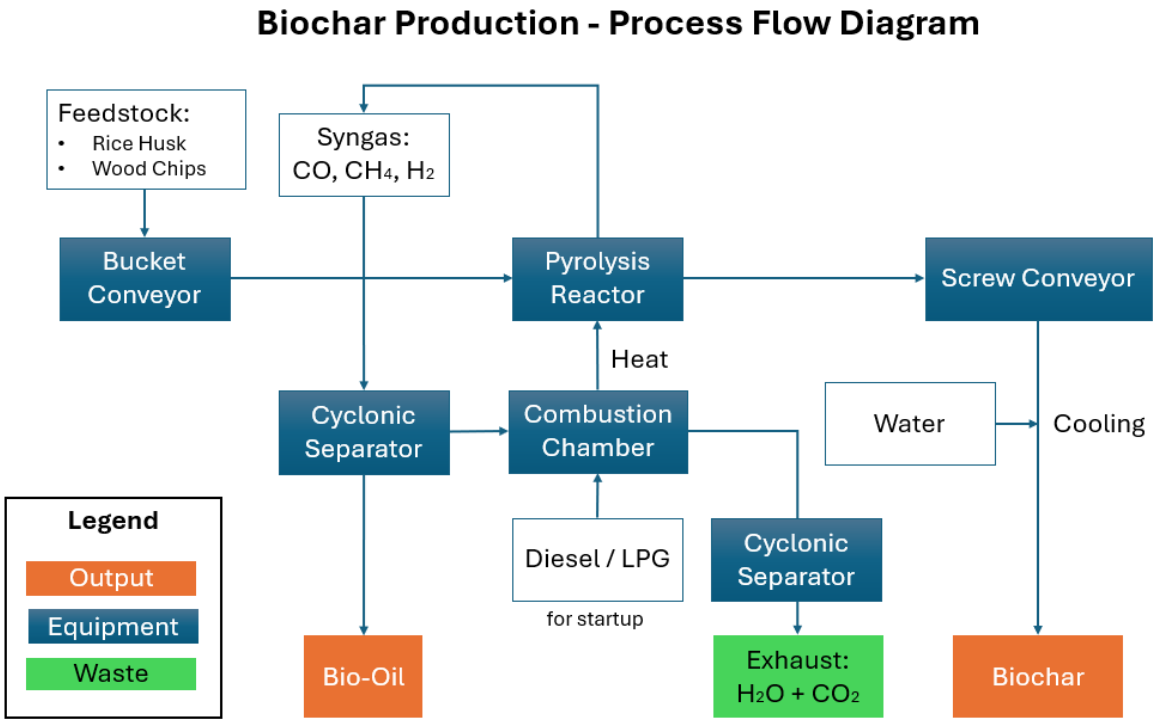
	A PLC-based automation system governs temperature, feed rate, and gas flows with interlocks and remote monitoring to stabilize operations and support digital MRV requirements. In our existing operations, rice husk arrives at ~15% moisture with appropriate particle size for direct processing. This capacity has been chosen based on several key factors to ensure that the continuous pyrolysis unit is not only economically viable but also capable of supporting commercial operations and meeting market demands effectively: 1. **Process Optimization**: At this scale, the pyrolysis process can be optimized for maximum efficiency. This includes better heat transfer, reduced energy losses, and improved conversion rates, leading to higher yields of biochar. 2. **Integration with Other Processes**: The scale of 2.5 tons input per hour allows for seamless integration with downstream operations such as biochar-based fertilizer production. This integration supports a continuous and efficient workflow, enhancing overall productivity. 3. **Emission Control**: Larger pyrolysis units incorporate advanced emission control technologies to meet stringent environmental regulations. This ensures that the pyrolysis process remains environmentally friendly and compliant with local Cambodian and international standards.
This table is filled-in by the supplier and verified by the auditor.	

3.2 Illustration

Instructions	*Please provide up to three illustrations of the process and technologies described above (e.g. picture of equipment, flowcharts of process).* *Note that you must own the rights to reproduce and publish the illustration and that you also authorize puro.earth to reproduce and publish the illustration in the Puro Registry.*
Authorization to reproduce and publish the illustration	☒ Puro.earth is authorized to reproduce and publish the illustrations below, for use in the Puro Registry.

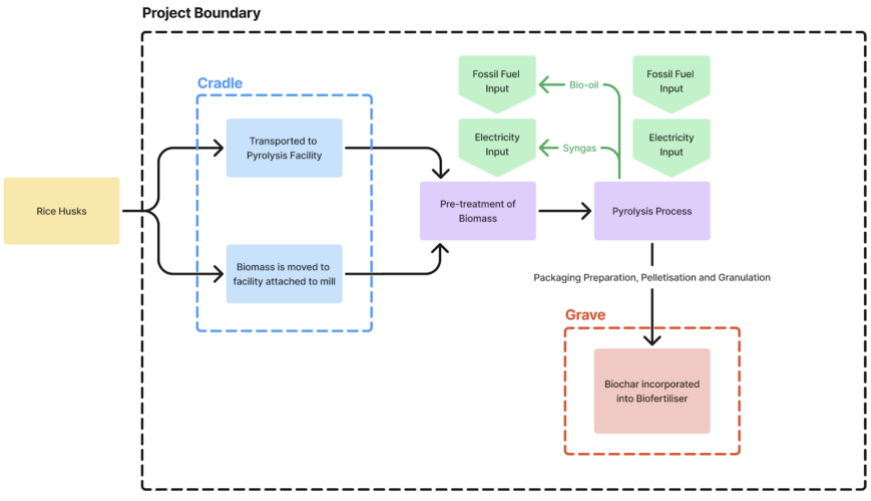


Rotary Kiln Continuous Pyrolysis Machine



4 Application of the Puro Standard (boundary, baseline, additionality, quantification)

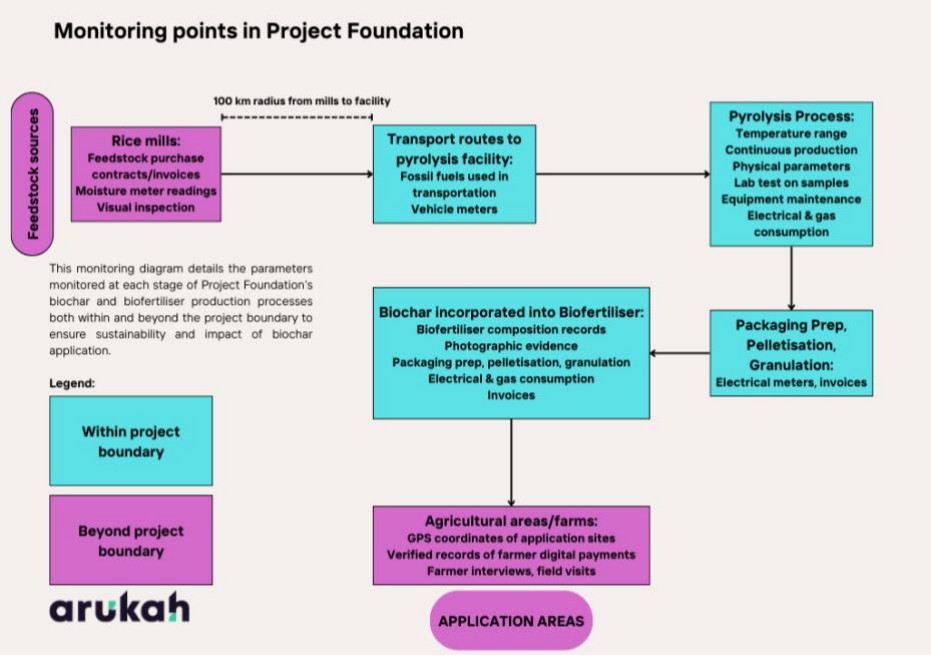
4.1 Scope and project boundary

Instructions	*Please provide a brief demonstration that the removal activity described above fits within the scope of the methodology and that the system boundaries of the removal activity correspond to the ones defined in the methodology. Word limit: 150 words.*
Scope and system boundary	The scope of the project is determined to begin at the collection of rice husk produced after the milling process, through the biochar conversion process, and ending when the biochar is sequestered into a mineral matrix as a soil amendment in its end-use application. The figure below demonstrates this boundary and the life cycle model. 

The processes included in the boundary include:

- Transport of rice husks to biochar processing facility from mills
- Pre-processing, processing and post-processing of waste feedstock
- On-site transport of biomass and biochar
- Transport of biochar to the location where it is incorporated into a mineral matrix

The project boundaries and monitoring systems diagram is shown in the figure below.



Monitoring points occur at the following levels included in the project boundary above:

- **Feedstock Sources:** Rice mills within 100km radius of production facility
- **Application Area:** Biochar and biochar-based fertiliser processing facility

	- **Transport Routes:** From rice mills → biochar & biochar-based fertiliser facility Additional monitoring points outside the project MRV boundary: - **Application Areas:** Agricultural fields beyond project boundary - **Transport Routes:** Biochar-based fertiliser facility → application sites All processes occur in Cambodia, hence all emissions from grid electricity used are calculated based on Cambodia's National Grid emissions factor (0.588 kgCO2e/kWh).
This table is filled-in by the supplier and verified by the auditor.	

4.2 Baseline scenario

*The information in this section provides a summary of the project-specific **baseline scenario**.*

Instructions	*Please provide a summary of the project-specific baseline scenario. The summary shall be based on the additionality questionnaire (available separately). Word limit: 150 words.*
Summary of the project-specific baseline scenario	
In the absence of the biochar project, rice husks from milling operations in Cambodia are typically sold for combustive purposes (majority) as biomass fuel for product drying and other industrial heating applications. Waste rice husk is also used at a lesser degree as livestock bedding, which is a direct agricultural application without any processing (some transportation). Alternatively open burning or disposal occurs, with limited regulatory governance for agricultural waste management. The baseline carbon impact means no durable carbon storage, since carbon from combustion or decomposition will re-enter the carbon cycle. The feedstock we are using is a waste material from the conventional rice milling process (i.e., rice husk), which would otherwise be sold to local businesses for (1) combustive purposes (such as required in product drying) and/or (2) livestock bedding. To be conservative and in line with the project boundary, we are assuming zero emissions at baseline (i.e., origin of the rice husk), as the rice milling and resulting rice husk waste would have occurred irrespective of the project.	
This table is filled-in by the supplier and verified by the auditor.	

Further information on the baseline scenario:

Instructions	*If the methodology explicitly defines one or several possible baseline scenarios for the removal activity, please specify which ones was selected:*

Selected baseline scenario	
This table is filled-in by the supplier and verified by the auditor.	

4.3 Demonstration of additionality

*The information in this section provides a summary of the project-specific **additionality assessment**.*

Instructions	*Please provide a summary of the project-specific additionality assessment, considering baseline removal, regulatory and financial additionality. The summary shall be based on the additionality questionnaire (available separately). Word limit: 150 words.*
Summary of additionality assessment	
1. **Financial additionality:** The project will not be financially viable without the sale of CDR credits. 2. **Regulatory additionality:** The project is not required by law, and there are no current regulations we are aware of around the sustainable disposal of waste rice husks in Cambodia. Sub-Decree No. 36 on Solid Waste Management (1999) tends to focus on municipal solid waste, industrial waste, and hazardous waste; while agricultural waste is a significant issue in Cambodia, there are no specific laws that directly regulate the disposal of agricultural and food waste. 3. **Carbon additionality to baseline:** There is excess feedstock with ~70-80 tons of rice husk produced every day by the supplying rice mills, currently used for: a. In-factory biomass energy for combustion to dry paddy rice (~30-40 tons/ day); b. Sale to local factories on an ad hoc basis for combustive purposes (~40-50 tons/ day). We will focus on the rice husk waste currently sold for biomass energy (3b), a combustive purpose that results in significant CO_2 emissions.	
This table is filled-in by the supplier and verified by the auditor.	

The following files are further made available in the Puro Registry.

Additionality questionnaire (required)	Filename	2a_Puro Additionality v1.9
	Description	Additionality questionnaire signed and audited, used to determine the additionality of the project following the Puro requirements for additionality.
Additional file (optional)	Filename	
	Description	
Additional file (optional)	Filename	
	Description	
Add rows as necessary, following same template as for additional file. The filename shall be the exact filename as provided in the audit documentation. The description shall be at most a 3-line summary of what the file contains. This table is filled-in by the supplier and verified by the auditor.		

4.4 Quantification of net carbon dioxide removal

*The information in this section provides a description of how **quantification of net carbon dioxide removal removals** is achieved, including **monitoring** of the removal activity, and calculation of **supply-chain emissions**.*

Quantification implementation

Instructions	*Please describe how the quantification of net carbon dioxide removal, as described in the methodology (see CORC equation), is implemented by the supplier. Word limit: 200 words.*
Description of quantification implementation	

The overall sequestration of carbon is calculated using Puro's methodology, with the following equation used in the life cycle assessment:

$$CORCs = E_{stored} - E_{biomass} - E_{production} - E_{use}$$

Calculation of $\mathbf{E_{stored}}$ monitoring:

$$E_{stored} = Q_{biochar} \times C_{org} \times F_p^{TH,T_S} \times \frac{44}{12},$$

where $Q_{biochar}$ represents the quantity of biochar produced, C_{org} the organic carbon content of biochar from random sampling and laboratory analyses, and F_p the permanence factor based on soil temperature and H/C_{org} ratio obtained from laboratory analyses.

$\mathbf{E_{biomass}}$ is calculated as the emissions from transport of biomass from the rice mill to the biochar facility. Other cultivation emissions are not accounted for, since rice husks are waste biomass from the milling of rice and emissions would have occurred even in the absence of Project Foundation. For $\mathbf{E_{production}}$ the additional variable for emissions from electricity consumption is included.

Fossil fuel emissions are calculated with reference to CDM TOOL03, but slight variations in methodology to accommodate different variables we have.

Fossil fuel emissions are calculated with this method for pre-processing, processing, post-processing, and transportation (transport within the facility, and transportation to and from the facility) emissions.

To calculate $\mathbf{E_{production}}$, the formula is:

$$E_{production} = PE_{FC,y} + PE_{EC,y}$$

Where $PE_{FC,y}$ refers to emissions from fossil fuel combustion and $PE_{EC,y}$ refers to emissions from electricity consumption.

$$PE_{FC,j,y} = \sum_i FC_{i,j,y} \times COEF_{i,y}$$

Calculation of $\mathbf{E_{use}}$ follows CDM TOOL 03 for transport emissions, and includes projected emissions from incineration of packaging. Should there be any new identified electrical or fuel emissions in the E_{use} process, they will be calculated similar to the methodologies used in $\mathbf{E_{production}}$.
This table is filled-in by the supplier and verified by the auditor.

Monitoring and reporting

Instructions	*Please provide a summary of the monitoring procedures and monitoring plan which are in place at the production facility to ensure i) the safety of the removal activity, ii) the eligibility of the removal activity, and iii) the precise quantification of CORCs. The summary shall be project-specific and based on related evidence pieces that were submitted in the audit documentation. Word limit: 500 words.*

Summary of monitoring and reporting plan

(i) Safety of Removal Activity

Arukah is ensuring that the project activity is compliant with Cambodian laws and regulations - through obtaining permits, workplace training programmes and standard safety protocols. The project activity shall abide by all environmental and social safeguards as listed in Section 5.2, and there is a constant feedback cycle from Stakeholder Consultations as listed in Section 5.1. Lab testing of the biochar and fertiliser trials are conducted to ensure that the soil application of biochar does not result in negative consequences.

(ii) Eligibility of Removal Activity

There are 3 main points where eligibility of the project activity is determined:

1. **Biomass Feedstock Sourcing:** Arukah shall ensure that only waste rice husk biomass is used and this can be verified through our (a) feedstock purchase contracts and invoices and (b) photographic evidence. Arukah will procure only dry biomass (<15% moisture content) for input into the facility for pyrolysis.
2. **Biochar Production and Quality:** Arukah shall ensure that biochar produced is lab-tested and is compliant with WBC-Agro thresholds. To reduce variability in biochar quality and ensure a low $H:C_{org}$ ratio, Arukah will monitor key production parameters including pyrolysis temperature and residence time. Lab-testing parameters will be used to calculate permanence of application of biochar, and the lab-testing protocol is attached.
3. **Biochar Application:** The project shall include a biochar-based fertiliser line into the plant setup, and at least a 1:2 biochar (by weight) to manure mix will be sold - ensuring a high quality product for immediate land application and reducing the risk of combustive use. Arukah is conducting fertilizer trials to determine the optimal mix. Participating farmers will submit photos of soil application of biofertiliser for compensation, reducing the risk of combustive use.

To ensure quality of our data, we currently engage an ISO-certified lab to conduct monthly testing of key biochar quality parameters based on our calibration and sampling procedures.

(iii) Precise Quantification of CORCs

A document will be attached with the submission containing a comprehensive MRV plan alongside formulas from methodology used.

- E_stored—amount of carbon sequestered

○ Quantity of biochar—Use of load cells in production facility and records from sale of biochar to farmers ○ Organic Carbon Content—Lab tests ○ Molar H:C_{org} Ratio—Lab tests ○ Soil Temperature—Default value applied based on IPCC guidelines ● E_production—includes use of electricity and fuel ○ Quantity of fuel combusted for treatment and pyrolysis—Gas consumption sensor within facility, checked against invoices for fuel ○ Quantity of fuel for transport—Calculated estimates from routes travelled and specifications of vehicles used ○ Emissions factors, Net calorific value and Density of fuel—Default values applied based on IPCC guidelines ○ Grid electricity used—Electrical meters for facility checked against invoices for electrical bills ○ Grid emissions factor—Default value applied for Cambodia ○ Estimated technical transmission and distribution losses—13.65% applied based on CEIC Data ● E_use—includes fuel consumption during transport ○ Quantity of fuel for transport—Calculated estimates from routes travelled and specifications of vehicles used ○ Emissions factors, Net calorific value and Density of fuel—Default values applied based on IPCC guidelines
This table is filled-in by the supplier and verified by the auditor.

Optionally, the following documents may be made available in the Puro Registry once the facility has completed its first Output Audit:

Can the monitoring plan and procedures be made available in the Puro Registry?	
Answer	☐ Yes, entirely. ☐ Yes, in a redacted version. ☒ No. If no, please provide a reason: **Arukah is able to provide the MMRV plan and report upon request, as our proprietary in-house dMRV systems are in development.**
Filename(s) to be made public	NA
This table is filled-in by the supplier.	

Supply-chain emissions

The determination of the supply-chain emissions of the removal activity shall be based on a project-specific life cycle assessment, made of a report and calculations. Calculations are updated at least annually, during the Output Audits, with data captured through above-described monitoring.

Instructions	*Please provide a summary or an abstract of the LCA performed. Word limit: 500 words.*
Summary of life cycle assessment	

1. Current LCA Overview

This LCA evaluates the environmental impacts of biochar production from rice husk waste at Arukah Capital's Project Foundation facility in Cambodia. The assessment follows a cradle-to-grave boundary, encompassing rice husk feedstock supply through incorporation of biochar into a mineral matrix either by direct use as a soil amendment or as a fertiliser component. Operating at maximum capacity (24 hours/day, 5 days/week), the facility processes 15,600 metric tons of rice husk annually, producing 5,460 metric tons of biochar with a 35% conversion yield.

The assessment demonstrates significant net carbon removal performance.Carbon storage calculations utilise a molar H:C_{org} ratio of <0.4 and a permanence factor of 0.758The functional unit of one dry metric ton of biochar produced.

Key emission sources include: biomass transport from rice mills, pyrolysis process energy consumption, on-site material handling, biochar transport to the point of incorporation into a mineral matrix.The assessment conservatively estimates 100km average transport distances, though over 20 rice mills operate within 50km of the facility, suggesting potential for emission reductions through supply chain optimisation.

2. Methodology Compliance

The LCA adheres to ISO 14040/14044 standards and incorporates Puro.earth's four-category emission framework (E_stored, E_biomass, E_production, E_use). Rice husk feedstock is treated as a zero-burden waste material classified under Puro.earth's category L, with emissions attributed solely to collection, transport, and processing activities. The assessment employs Cambodia-specific emission factors and IPCC default values for fuel combustion, ensuring regional relevance and methodological rigor. **Current Limitations and Validation Plan**

This LCA acknowledges limitations that will be addressed through operational data collection. Primary gaps include: absence of sensitivity analysis, lack of direct emission monitoring for CH_4 and PM in stack emissions. Storage emissions have been omitted given the maximum 4-week biomass storage period.

This ex-post framework establishes the methodological foundation for Project Foundation's Puro.earth certification while providing baseline projections for Arukah Capital's planned expansion activities. The assessment demonstrates clear net positive climate impact with significant carbon removal potential, positioning the project for successful verification once operational data becomes available.

This table is filled-in by the supplier and verified by the auditor.

Optionally, the following documents may be made available in the Puro Registry once the facility has completed its first Output Audit:

Can the LCA report be made available in the Puro Registry?	
Answer	☐ Yes, entirely. ☐ Yes, in a redacted version. ☒ No. If no, please provide a reason: **Arukah can provide the LCA model and report upon request.**
Filename(s) to be made public	NA

This table is filled-in by the supplier.

5 Social and environmental safeguards

The information in this section provides a summary of the project-specific measures taken to avoid and minimize negative social and environmental effects, as well as maximize positive impacts contributing to the sustainable development goals (SDGs).

5.1 Stakeholder engagement

In line with the Puro General Rules, the CO_2 Removal Supplier must have conducted a stakeholder engagement process and reported its outcome in a written format.

Instructions	*Please reproduce the summary of the stakeholder engagement report. Word limit: 500 words.*

Summary of stakeholder engagement

Identified Stakeholders

Arukah Capital has identified a diverse range of stakeholders relevant to the carbon removal project at Production Facility Foundation 1 (Facility ID: 526866). These stakeholders include local residents living near the pyrolysis plant, staff of the local partner organization operating at the site, farmers participating in the project and their families, and representatives from industry partners and key Cambodian government bodies including the Ministries of Environment and Agriculture. Engagement efforts have also extended to NGOs - starting with the World Bank IFC, Asian Development Bank, and CAPRED.

Consultation Activities and Outcomes

Community engagements have been ongoing informally since 2H2024 before the project was initiated – including in-depth meetings and site visits with local stakeholders. As the project progressed in 1H2025 and prior to official operations beginning, a comprehensive and transparent consultation process was conducted through multiple channels from late May to mid-June 2025. Key activities include an in-person public stakeholder consultation held on 30 May 2025, at the Royal University of Phnom Penh, dissemination of paper questionnaires during that event, and continuous collection of online feedback via an electronic questionnaire made available to all stakeholders.

Pictures: **https://photos.app.goo.gl/cxQC7TYHWxUC3scr7**

Invitations to participate employed a variety of communication methods such as emails, telephone calls including Telegram and verbal communications, and formal letters to ensure broad outreach to identified groups.

Feedback collected overall reflected positive support for the project's objectives, specifically regarding greenhouse gas emission reductions, education for local farmers on biochar benefits, and potential income opportunities through agricultural product sales. However, the consultation also surfaced important concerns and risks, notably in the areas of safeguarding principles: gender equality, community health and safety, fair economic benefits, and environmental impact.

Stakeholders expressed concerns about potential child labour risks, gender disparities in employment and benefits (favouring men over women), unsafe working conditions at the pyrolysis facility, fair and transparent distribution of cash rebates to farmers, and the unproven net economic benefits and environmental impacts of biochar application. Queries also addressed technical clarifications such as recommended biofertilizer dosages and the need for pre-assessment environmental impact studies.

In response, the project will ensure that safeguards are put in place – this includes strict employment guidelines prohibiting child labour, gender-inclusive outreach and alternative employment opportunities for women, strict operational health and safety protocols, a transparent and digitally traceable cash distribution system, and ongoing biochar fertilizer trials paired with farmer education programs. Research into optimal rice husk storage to mitigate emissions during pyrolysis is also underway, with results to be shared when ready.

Plans for Continued Consultation
Arukah is committed to ongoing, transparent stakeholder engagement throughout the project's lifecycle. The initial consultation period closed mid-June 2025; however, feedback collection will continue via online forms and email communication at stakeholders@arukahcapital.com. Future consultations will include targeted meetings with local farmers as fertilizer trials commence near the pyrolysis facility.

Additionally, contact information and multiple communication channels – including a forthcoming Telegram chatbot – can be used to keep stakeholders updated, and will remain open to ensure accessible grievance mechanisms and continuous dialogue.

This table is filled-in by the supplier and verified by the auditor.

In addition, the following documents are made available in the Puro Registry once the facility has completed its first Output Audit:

Stakeholder Engagement Report (required)	Filename	NA
	Description	Stakeholder engagement report completed and audited, following the Puro requirements for stakeholder engagement.
The filename shall be the exact filename as provided in the audit documentation. This table is filled-in by the supplier.		

5.2 Environmental and social safeguards

In line with the Puro General Rules, the CO_2 Removal Supplier must ensure that environmental and social safeguards are in place.

Instructions	*Please summarize the environmental and social impacts relevant to the project, based on the answers provided to the corresponding questionnaire in the audit documentation. Word limit: 500 words.*
Summary of environmental and social safeguards questionnaire	
Emissions to Water ● Heavy Metals and Polycyclic Aromatic Hydrocarbons (PAHs)- biochar produced from contaminated feedstocks can release heavy metals into water systems, and biochar containing PAHs if improperly stored or applied can cause PAHs to leach into water sources. Biochar is lab-tested for these parameters quarterly to ensure it meets the WBC-Agro thresholds for biochar, including low heavy metal and PAH levels. Lab tests are uploaded for verification. ● Nutrient runoff - caused by excessive use of biochar-based fertiliser. **Emissions to Air** ● The system will undergo annual gas testing by a 3rd party agency to verify and validate emissions produced. The facility's first assessment was conducted on 15 November 2025 The pyrolysis machine includes a flue gas treatment system which recirculates syngas into	

the combustion chamber to produce heat and burn off residual combustible substances, ensuring environmental compliance.

Emissions to Soil

- pH Alteration - biochar's alkaline nature can negatively impact highly alkaline soils. However, this is unlikely as Cambodia has predominantly sandy, acidic soils, where biochar's alkaline nature can neutralise acidic soils and improve soil health.
- Heavy Metals and PAHs - biochar produced from contaminated feedstocks can release heavy metals into soil when applied. PAHs can lead to soil contamination if present in biochar. Biochar is lab-tested quarterly to ensure it meets the WBC-Agro thresholds for biochar, including low heavy metal and PAH levels. Lab tests are uploaded for verification.
- Negative impact of over-application - The excessive application of biochar to soil can change the soil structure and microbial communities, potentially reducing the improvements in soil health and crop yields/quality. In our business model, the biochar-based fertiliser is a paid product, so it is unlikely to be used wastefully (vs. free biochar, as is common in some biochar project models).

Generation of Solid Waste

- Biochar Dust Residues, Ash Content - Expected to improve with the pyrolysis machine, and Ash content is viewed as a valuable product for biochar-based fertiliser and construction materials.
- Unconverted Biomass - pyrolysis system allows for ongoing calibration to maintain optimal temperature to ensure complete conversion of biomass.

Generation of Liquid Waste

- Bio-oil - byproduct of pyrolysis process. The pyrolysis system has been designed to combust all bio-oil and other contaminants in the combustion chamber, with further treatment.

Accumulation of Materials in Stock

- Feedstock residues - Project Foundation intends to pyrolyse 100% of feedstock on an ongoing first-in-first-out basis.
- Rice Husk Biochar - presents a potential fire hazard if stored incorrectly. To be held in jumbo totes in a separate area with rapid turnaround time.
- Biofertiliser - to be packaged and stored in a separate warehouse pending sale to customers.
- All storage units will conform to Cambodian health and safety regulations.

Social impacts

- **Economic opportunities:** Biochar production can create new economic opportunities and income streams for local communities, including rice mills and rubber plantations and processors, by adding value to what is typically a zero- to low-cost agricultural byproduct.
- **Health risks:** If not properly controlled, the biochar production process can release particulate matter and other pollutants that pose respiratory health risks to workers and surrounding communities. Project Foundation's biochar production equipment employs a cyclonic separator to remove particulate matter from the syngas stream. The cleaned gas is then routed through a high-temperature combustion chamber, where residual volatile and combustible substances are thermally broken down before final release to the environment.

This table is filled-in by the supplier and verified by the auditor.

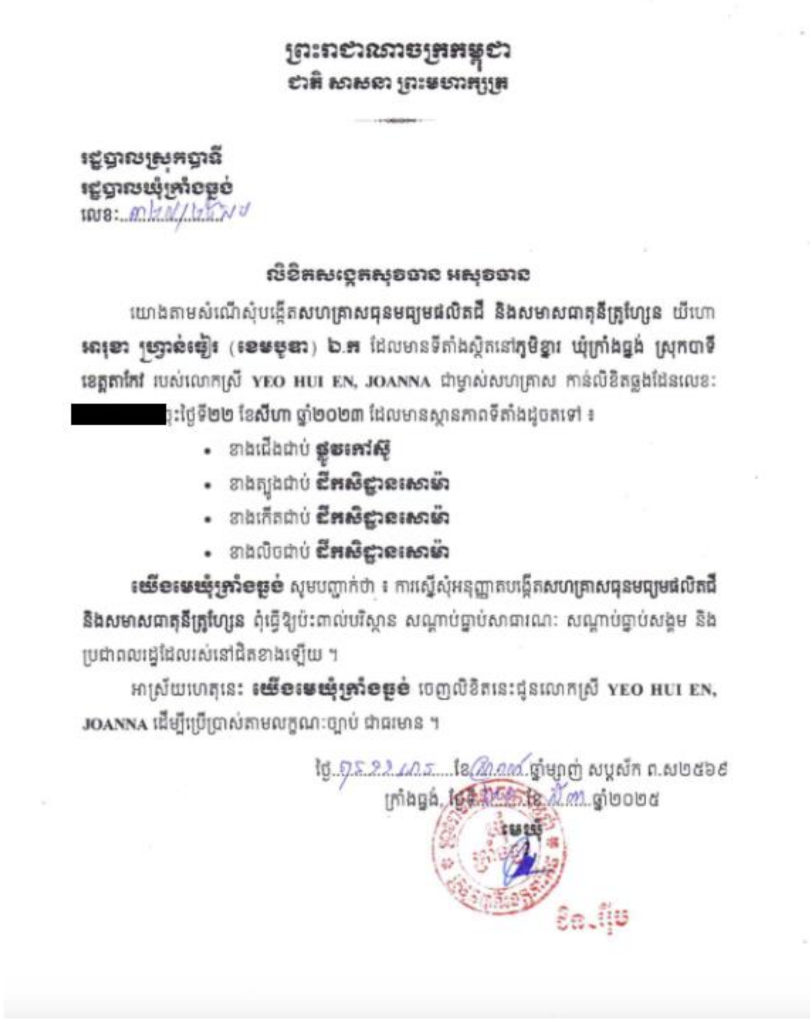
In addition, the following document is made available in the Puro Registry once the facility has completed its first Output Audit:

Environmental and Social Safeguards Questionnaire (required)	Filename	NA
	Description	Questionnaire based on a template provided by Puro, to ensure compliance with the Puro General Rules, regarding social and environmental safeguards.
The filename shall be the exact filename as provided in the audit documentation. This table is filled-in by the supplier.		

5.3 Permits, risk assessments and impact assessments

Depending on the nature and scale of the removal activity, the CO_2 Removal Supplier may have obtained permits or conducted specific environmental assessments (e.g. Environmental and Social Impact Assessment, Environmental Risk Assessment) for compliance with local laws and regulations.

Were the obtention of one or several construction or environmental permits required for the removal activity, for compliance with local laws and regulations?	
Answer	☒Yes, permits were required and successfully obtained. ☐ No, permits were not required.
Permits obtained	Name of permit: Health and Safety Observation Letter ID of permit: NA Issuer of permit: Kraing Thnong Commune Administration Date of issuance: 20 August 2025 This is the approval letter from the Commune Chief. Within this letter, the commune chief grants permission for the factory and agrees that the factory does not affect the environment, public order, social order, or the residents living nearby.

	 ព្រះរាជាណាចក្រកម្ពុជា ជាតិ សាសនា ព្រះមហាក្សត្រ រដ្ឋបាលស្រុកបាទី រដ្ឋបាលឃុំក្រាំងធ្នង់ លេខ:... **លិខិតសង្កេតសុខដុម អសុខដុម** យោងតាមសំណើសុំបង្កើតសហគ្រាសធុនមធ្យមផលិតជី និងសមាសធាតុនីត្រូហ្សែន យីហោ **អានុខា ហ្វ្រាន់ធៀរ (ខេមបូឌា) ឯ.ក** ដែលមានទីតាំងស្ថិតនៅភូមិខ្នារ ឃុំក្រាំងធ្នង់ ស្រុកបាទី ខេត្តតាកែវ របស់លោកស្រី YEO HUI EN, JOANNA ជាម្ចាស់សហគ្រាស កាន់លិខិតឆ្លងដែនលេខ: [redacted]ុះថ្ងៃទី២២ ខែសីហា ឆ្នាំ២០២៣ ដែលមានស្ថានភាពទីតាំងដូចតទៅ ៖ • ខាងជើងជាប់ **ផ្លូវកៅស៊ូ** • ខាងត្បូងជាប់ **ដីកសិដ្ឋានសោម៉ា** • ខាងកើតជាប់ **ដីកសិដ្ឋានសោម៉ា** • ខាងលិចជាប់ **ដីកសិដ្ឋានសោម៉ា** **យើងមេឃុំក្រាំងធ្នង់** សូមបញ្ជាក់ថា ៖ ការស្នើសុំអនុញ្ញាតបង្កើតសហគ្រាសធុនមធ្យមផលិតជី និងសមាសធាតុនីត្រូហ្សែន ពុំធ្វើឱ្យប៉ះពាល់បរិស្ថាន សណ្តាប់ធ្នាប់សាធារណៈ សណ្តាប់ធ្នាប់សង្គម និងប្រជាពលរដ្ឋដែលរស់នៅជិតខាងឡើយ ។ អាស្រ័យហេតុនេះ **យើងមេឃុំក្រាំងធ្នង់** ចេញលិខិតនេះជូនលោកស្រី YEO HUI EN, JOANNA ដើម្បីប្រើប្រាស់តាមលក្ខណៈច្បាប់ ជាធរមាន ។ ថ្ងៃ...ខែ...ឆ្នាំម្សាញ់ សប្តស័ក ព.ស២៥៦៩ ក្រាំងធ្នង់, ថ្ងៃទី...ខែ...ឆ្នាំ២០២៥ មេឃុំ Name of permit: Factory-Handicraft Operation License ID of permit: NA Issuer of permit: Ministry of Industry, Science, Technology and Innovation Date of issuance: 31 Oct 2025 Biochar production is considered a manufacturing activity in Cambodia. All Small and Medium Manufacturing activities are required to apply for an Operating License on Small and Medium Factory & Handicraft with the General Directorate of Small and Medium Enterprises & Handicraft of Ministry of Industry, Science, Technology, and Innovation (MISTI).

If several permits were obtained, provide the information for each of them. This table is filled-in by the supplier and verified by the auditor.

Was an environmental and social impact assessment study (EIA) conducted?	
Answer	☐ Yes, an EIA was legally required and thereby conducted. ☐ Yes, an EIA was not legally required but conducted voluntarily. ☒ No, an EIA was not legally required and not conducted.
EIA Report (if conducted)	Title of study: Filename of report: Can the report be published in the Puro Registry: Yes/No
This table is filled-in by the supplier and verified by the auditor.	

Was an environmental risk assessment study (ERA) conducted?	
Answer	☐ Yes, an ERA was legally required and thereby conducted. ☐ Yes, an ERA was not legally required but conducted voluntarily. ☒ No, an ERA was not legally required and not conducted.
ERA Report (if conducted)	Title of study: Filename of report: Can the report be published in the Puro Registry: Yes/No
This table is filled-in by the supplier and verified by the auditor.	

5.4 Positive impacts on SDGs

Depending on the nature of the removal activity, the activity may have positive impacts on the UN Sustainable Development Goals (SDGs).

Instructions	*Please provide a summary of the positive impacts on the SDGs that the removal activity has or plans to has. This summary shall be project-specific and based on related evidence pieces that were submitted in the audit documentation (SDG Reporting files). Word limit: 150 words.*
Summary	NA - not claiming additional SDGs (other than SDG 13) for this round.

This table is filled-in by the supplier and verified by the auditor.

In addition, the following document is made available in the Puro Registry once the facility has completed its first Output Audit:

SDG Reporting (required)	Filename	NA
	Description	SDG Reporting based on a template provided by Puro, disclosing with SDG indicators are reported and how they are or will be demonstrated.
The filename shall be the exact filename as provided in the audit documentation. This table is filled-in by the supplier.		

6 Other documents available in the Puro Registry

Alongside this project description, several other documents are made available in the Puro Registry for more details.

The documents referenced in this project description are compiled in the following table:

Instructions	To finalize the project description, please list the names of all the public documents to be made available in the Puro Registry, in the order they appear, specifying the number of pages of each document. Add rows as necessary.	
#	**Document names**	**No of pages**
1	2a_Puro Additionality v1.9	8
2	3a_Environmental and Social Safeguards	
3	3d_Puro Stakeholder Engagement Report	
4		
5		
6		
7		
8		
9		
10		
This table is filled-in by the supplier.		

Besides the documents referenced in this project description, the 3rd-party auditor has reviewed a complete audit package containing numerous documents, performed a site visit, and prepared an audit report and statement.

The facility described here will further be audited annually, in Output Audits, to verify the performance of the removal activity, resulting in the issuance of CORCs. All audits lead to audit reports and statements, which will be available in the Puro Registry, alongside further details on CORC quantification for each monitoring period.

Baseline and Additionality Assessment

The baseline and additionality assessment is a requirement for eligibility under the Puro Standard. The assessment is made by the CO2 Removal Supplier and verified by the independent 3rd party auditor. **The assessment made in this document will be publicly available in the Puro Registry.**

The Puro Standard only certifies durable carbon removals from the atmosphere that are net-negative and does not certify emissions reductions or avoidance. The CORCs (Carbon dioxide removal certificates), issued therefore represent a net carbon removal (1 $tCO_2eq.$ net) from the atmosphere to a durable storage of minimum 100 years, and for mineralization and geological storage minimum 1000 years. Net carbon removal is determined from stored gross CO_2 volume by subtracting supply-chain emissions from the project, any re-emissions over the guaranteed storage time, any baseline removals taking place in a baseline scenario, and any negative indirect leakage effects relative to the baseline scenario.

The CO_2 Removal Supplier must in this assessment:

- **Define** and quantify all reasonable **baseline alternatives** to the proposed project activity to remove carbon with carbon financing. A baseline is a scenario that reasonably represents the natural and anthropogenic carbon removals to a permanent storage (storage durability over 100 or 1000 years) in the absence of the carbon removal activity proposed by the CO_2 Removal Supplier. Although anthropogenic emissions may take place in the baseline scenarios, these emissions do not constitute a reference point for the quantification of CORCs (only the baseline removals do).
- Demonstrate **carbon additionality to the baseline**, meaning that the project must convincingly demonstrate that it is resulting to higher volumes of carbon removals than the likely baseline alternatives (question A1 and A2.).
- Demonstrate **regulatory additionality,** meaning that the project is not required by existing laws, regulations, or other binding obligations (question A4.).
- Demonstrate **prior consideration of carbon credits** through documentation demonstrating that the time period between the commitment date and production facility audit is max. 3 years. (question A5)
- Demonstrate **financial additionality**, meaning that the CO_2 removals achieved are a result of carbon finance. This means that the CO_2 Removal Supplier must show that the carbon credits were needed to secure the investment or to overcome specific barriers to the investment.
- To support the claim of financial additionality, the project activity cannot already be *common practice* without carbon finance (question A6).

Reference documents: Puro Standard general Rules v4.0, section 6.5 and Additionality Assessment requirements v2.0.

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1. General questions to all CO_2 Removal Suppliers

A1. Baseline Determination			
Activity name	**Activity description**	**Removals to storage (200+ yr) due to project activity (human activity)**	**Natural removals to storage (100+ yr), not man-made**
Baseline: *Rice husk disposal at milling operations in Cambodia*	Rice husks are typically disposed of through the following methods[1]: 1. Sold to local business for combustive purposes (e.g., as biomass fuel) 2. Livestock bedding	None - current human activity contributes to GHG emissions	Carbon from the resulting ash or decomposition process will re-enter the carbon cycle.
Project activity: *Biochar production*	Waste rice husks will be converted through continuous pyrolysis (carbonisation) into high-quality biochar, for use as a soil amendment. Biochar will initially be sold in its raw form to agriculture businesses who will mix it into a biofertiliser, or as a soil amendment. Supporting documents will be provided. At steady state after the first monitoring period, we intend to install a biochar-based fertiliser mixing line on site. Biochar will be mixed with livestock manure into a biochar-based fertiliser, to improve biochar adoption and usage rates by local farmers and other users in a non-combustive manner. Other pyrolytic by-products (e.g., syngas) are recirculated back into the reactor to sustain the pyrolysis process.	200+ when used as a soil amendment (at least 75%)	None
Alternative scenarios	N/A	N/A	N/A

[1] https://hal.science/hal-01166547/document#:~:text=Only%2010%25%20of%20rice%20husk,as%20a%20way%20of%20disposal.

A2. Does the project lead to higher volumes of durable carbon removal than the baseline?	Yes / No
At the pilot phase (2025), we are estimating approximately ~7,000 metric tonnes of carbon removal annually, and our full project plan across multiple plants, involves a ramp up to up to 250,000 metric tonnes of carbon removal annually. This will be net of any project-related emissions (e.g., from processing, transport) according to our LCA, as required by best practices. The feedstock we are using is a waste material from the conventional rice milling process (i.e., rice husk), which would otherwise be sold to local businesses for (1) combustive purposes (such as required in product drying) and/or (2) livestock bedding. To be conservative and in line with the project boundary, we are assuming zero emissions at baseline (i.e., origin of the rice husk), as the rice milling and resulting rice husk waste would have occurred irrespective of the project.	Yes

A3. Is the project scenario aligned with net-zero transition? The following activities are considered not to be aligned with net-zero transition: a) directly leading to an increase in the extraction of fossil fuels, b) relating to coal-fired electricity generation, or c) involving other unabated fossil fuel-powered electricity generation, other than new gas-fired generation that is part of increased zero-emissions generation capacity in support of national low carbon energy transitions	Yes / No
The project is aligned with net-zero transition. It does not encourage activities (a) - (c).	Yes

A4. Is the project required by existing laws, regulations, or other binding obligations?	Yes / No
The project is not required by law, and there are no current regulations we are aware of around the sustainable disposal of waste rice husks in Cambodia. Sub-Decree No. 36 on Solid Waste Management (1999) tends to focus on municipal solid waste, industrial waste, and hazardous waste; while agricultural waste is a significant issue in Cambodia, there are no specific laws that directly regulate the disposal of agricultural and food waste.	No

A5. What was the Commitment Date of this facility? Commitment Date is defined as "The calendar date on which the CO_2 Removal Supplier committed to implementing the CO_2 Removal activity (e.g., the date when contracts for the purchase or installation of equipment required for the mitigation activity were signed). In the case where a mitigation activity does not involve capital expenditure, it refers to the date when the first physical actions were taken to implement the mitigation activity." If an exception listed in clause 2.1.3 of the Additionality Assessment Requirement applies, describe the situation here.	Date
The date when contracts for the purchase or installation of equipment required for the mitigation activity were signed was in November 2024 (EPC Term Sheet), and a joint partnership agreement with Soma Farm (agricultural ops and local implementation partner) was signed in Feb 2025.	July 2024

A6. Is the Technological Readiness Level of the Methodology 8 or 9?	Yes/No
Referencing the Puro guidelines, Biochar methodologies as defined by IPCC are at TRL 6-7.	No

Table 1. Technology readiness levels of Puro methodologies as defined by IPCC[3] if available. Otherwise estimation by Puro.earth, marked with an asterisk (*).

Methodology	Technology readiness level
DACCS	6
Enhanced weathering	3-4
BECCS	5-6
Biochar	6-7
Carbonated materials*	5-6
Terrestrial storage of biomass*	3-4

Table extracted from Puro's Additionality Assessment Requirements v2.0: https://7518557.fs1.hubspotusercontent-na1.net/hubfs/7518557/Supplier%20Documents/Puro%20Additionality%20Assessment%20Requirements.pdf

If the answer to question A6 is Yes, please answer question A6.1 to A6.3. Questions A6.2 and A6.3 are different based on whether you are applying a distributed technology (such as enhanced rock weathering) or more centralized technology based on plants/factories producing something. See clauses 3.2.5 and 3.2.6 in the Puro Additionality Assessment Requirements with references for more information.

A6.1. Please define the region being considered and explain why it is the relevant level of aggregation for the assessment if different from the host country.

NA

A6.2. Market size or current installations
Distributed technology: What is your estimate for a realistic target market size and what constraints to the market size growth have you identified?

Centralized technology (plants): What projects have you identified that fulfil the criteria in Additionality Assessment Requirements clause 3.2.6?

a) output range of +/- 50% of the project,
b) located in the same region,
c) applying the same measure,
d) produce comparable goods or services in terms of quality, properties, and applications,
e) started commercial operation before the proposed start date of the project, and
f) are not registered in a carbon crediting program.
How many of them apply a different technology?

Please mention or link to any sources you have.

NA

A6.3. Market penetration rate
Distributed technology: What is your estimate of the market penetration rate of the activity? How common or widespread is the project activity or similar activities in the relevant sector and region, and what is the trend of adoption over time?

Centralized technology (plants): Provide your calculation of market penetration rate based on the formula in clause 3.2.6 in Additionality Assessment Requirements.

NA

A7. Does the carbon removal project have other income sources besides carbon finance? Include also information about any subsidies you receive or expect to receive. Please describe your business model here, in a short answer (max. 100 words).	Yes / No
Despite potential physical biochar sales, the project is financially non-viable without carbon credit revenue due to high capital costs for pyrolysis infrastructure and developing customised fertiliser blends for large-scale biochar storage. Biochar revenue alone does not allow the project to break-even, so financial additionality remains clear. Upfront investment for a pyrolysis facility is substantial for a frontier market like Cambodia (>$25 million at scale, >$1 million at unit level). Per-unit costs include equipment, warranty, and deposits for land, utilities, labour, and feedstock. We aim to further reduce the price for biofertiliser farmers, and increased carbon finance funding would enable this price reduction and ensure proper application.	Yes

Please note: Questions under headings '2. Simple cost analysis', '3. Investment analysis', and ' 4. Barrier Analysis' are mutually exclusive options.

2. Simple cost analysis or investment analysis

Some projects may demonstrate additionality through simple cost analysis: this is applicable for projects that have no other source of income besides carbon finance or where ex-ante investment analysis is not applicable, because capital expenditure (capex) is modest compared to operating expenditure (opex). This can include e.g. enhanced rock weathering projects.

B1. Describe how the criteria above applies to your project
NA - Using Section 3. Investment Analysis

B Simple cost analysis	Project response
B2. Please describe your cost structure here and include evidence in attachment.	NA
B3. Please summarize the simple cost analysis here. Please include any public subsidies received or expected. Compare with alternative scenarios, if relevant.	NA
B4. Please provide an additional calculation spreadsheet in attachment. All formulas used in the spreadsheet shall be readable to the verifier and all relevant cells shall be viewable and unprotected. Mark confidential when needed.	NA
B5. Are you willing to provide a full calculation spreadsheet to be visible in Puro Registry? **If yes, please specify the name of the file that has been provided. If not, please ensure that there is sufficient information provided in your answers in this document.**	NA
B6. Is the information shared here consistent with information presented to the company's decision-making management, investors or lenders?	NA
B7. Is the information shared here consistent with the information in the audit documentation presented to Puro and its verifiers (e.g. LCA model)? If not, please explain why there are differences.	NA

3. Investment Analysis

CO_2 Removal Suppliers can be guided by the CDM Methodological Tool 27 of the UNFCCC Clean Development Mechanism "Investment Analysis" to demonstrate financial additionality with Investment Analysis.

C. Financial Additionality – Investment analysis	Project response
C1. Describe the relevant alternative scenarios in terms of investments analysis. **If the only alternative scenario is to carry out the project without CORCs, please answer the following questions: Please show your calculations to determine the benchmark rate for either equity IRR or WACC, whichever you are using. Please include documentation of how the rate is suitable for the technology and region. Please specify the currency and whether the rate is nominal or real.**	We have initially funded the project with our company equity, a shareholder loan, prepurchase revenues, and also have secured a commitment on scale-up financing at 18% on 60% LTV, secured on our physical biochar plant in Cambodia, and written offers of $4 million in additional project financing, and $1 million in equity financing, with additional verbal offers in review and discussion. The project will continue to be funded by a combination of sales, balance sheet, and project financing.
C2. Please state how CORC revenues change the expected IRR or NPV of the project.	Without CORC revenues, the project is loss making. With CORC revenues, the project has a positive IRR.
C3. Please conduct a sensitivity analysis in relation to the investment analysis and summarize the results here.	We ran a sensitivity analysis by testing the variations in Biochar sales price, Carbon credit sales price, and Rice husk feedstock input price. We used three scenarios, holding each of the 3 base case assumptions constant, and varying the other 2. Our base case assumptions were determined as follows: 1. Rice husk price constant (based on market price), 2. Biochar sales price (based on price needed to breakeven), and 3. CORC price (based on market pricing, and contractual negotiations). The project's cashflow is more sensitive to carbon credit price than to biochar or feedstock prices: increasing the carbon credit price by USD40 typically improves cashflow by around significantly more than if a similar proportional increase in biochar price or decrease in feedstock price occurs.
C4. Is the information shared here consistent with information presented to the company's decision-making management, investors, or lenders?	Yes
C5. Is the information shared here consistent with the information in the audit documentation presented to Puro and its verifiers (e.g. LCA model)? If not, please explain why there are differences.	Yes
C6. Are you willing to provide a full calculation spreadsheet to be visible in	Not available for public viewing.

Puro Registry? If yes, please specify the name of the file that has been provided.	
C7. If you are not willing to disclose the full spreadsheet, please provide here a summary of the confidential file that has been provided to the Auditor and Puro.earth. Please include: • **Overall description of the spreadsheet, including type of terms (real/nominal), currency, forecasting periodicity** • **Capital structure, if the measure is based on equity return** • **Information sources on main revenues and costs** • **Expected breakdown of income from the different sources** • **Expected or already received public subsidies** • **Growth assumptions** • **Model duration and a comparison with expected lifetime**	• **Overall**: nominal rates, currency in USD, forecast is annual) • **Capital Structure**: Currently we finance each plant with a combination of Arukah equity, project financing secured on the equipment, and project revenues. On this optimised combination, we would not be able to get the project going without carbon revenues. • **Main revenues and costs**: Assumptions from relevant market prices • **Expected breakdown of income from the different sources**: Carbon Credit revenue, Biochar & Biofertiliser sales • **Expected or already received public subsidies**: none • **Growth Assumptions**: No growth assumptions on a single unit, as the plant is already planned to operate at full capacity. • **Model Duration**: 10 years, in line with expected lifetime of the pyrolysis equipment (as covered under manufacturer warranty)

4. Barrier Analysis

In Barrier Analysis only one barrier needs to be demonstrated but there needs to be clear, objective, and verifiable evidence to demonstrate its existence. If possible, please provide quantitative estimates for the barrier.

D. Barrier Analysis	No/ Yes	Project response
D1. Are there financial barriers? (e.g., financing is not accessible for the type of activity in the country due to the risks)		NA
D2. Are there institutional barriers? (e.g., the investor not being the beneficiary of cost savings associated with the investment)		NA
D3. Are there information barriers? (e.g., lack of awareness of the financial benefits of by-products)		NA
D4. Please explain how CORC revenues are crucial element in overcoming identified barrier(s)		NA
D5. Are there subsidies for the carbon removal activity? If yes, please explain how they are not sufficient to overcome the barrier.		NA
D6. Please attach verifiable evidence for the existence of the barrier and describe the evidence here. If the file can be included publicly in the Puro registry, please specify the name of the file here. If the evidence is not public, please ensure that you describe it in sufficient detail.		NA
D7. Please demonstrate that at least one other alternative in baseline determination (first question) does not face any significant barriers, including the barriers faced by your project.		NA

I hereby declare that all information provided is truthful and precise to the best of my knowledge.

X _____

Date, Place:
Representative name, title, organization

8 December 2025, Singapore
Ms Joanna Yeo Hui En, CEO, Arukah Capital Pte Ltd

Environmental and social safeguards questionnaire

CO_2 Removal Supplier	Arukah Capital
Production Facility	Foundation 1
Production Facility ID	526866
Date of report last update (YYYY-MM-DD)	2025-12-08

PURO.EARTH Puro.earth Oy, Tammasaarenkatu 1, 00180 Helsinki, Finland

Environmental and Social Safeguards Questionnaire

The purpose of this document is to provide a summary of how the CO_2 Removal Supplier complies with the environmental and social safeguards, as defined in Section 6.4 of the Puro General Rules 4.0. The responses from the supplier are expected to be commensurate with the identified impacts and risks.

This document consists of five sections, noting that the fifth section does not apply to all suppliers:

1. General overview and compliance
2. Labor practices and rights
3. Environmental impact and management
4. Social impact and community relations
5. Biomass sustainability

This document forms part of the evidence needed for the Production Facility Audit. It is corroborated by other documents and evidence provided by the supplier to Puro.earth and the 3rd-party auditors, demonstrating environmental and social safeguards. This questionnaire will be made **publicly available** in the Puro Registry.

1 General overview and compliance

Provide a description of your operations and the context where you are operating in, as relevant for environmental and social safeguards.
Processing of agricultural waste (starting with rice husks) using continuous pyrolysis into biochar, which will be converted into a biofertiliser (potentially with the addition of livestock manure) in Cambodia.

Provide an overview of the material environmental and social impacts and risks in your operations, and how they were determined.
Biochar produced from waste rice husks can have significant environmental and social impacts, both positive and negative, as described below: **Environmental impacts** • **Positive Impact - Reduced greenhouse gas emissions:** Biochar production from rice husks sequesters carbon in a stable form, potentially reducing net GHG emissions compared to alternative rice husk disposal methods like open burning or burning for thermal energy in factories that use old "dirty" technology. Biochar applied to soils can also reduce N_2O emissions. • **Improved waste management and potentially reduced black carbon carbon emissions:** Converting agricultural waste into biochar provides a productive use for abundant agricultural waste material in Cambodia, reducing the volume that ends up in landfills or are openly burned, which releases black carbon. This helps mitigate air pollution and other environmental issues associated with rice husk waste. • **Affordable source of climate smart fertiliser:** Biochar can improve soil quality, water retention, and crop yields. Processing biochar with compost and other traditional sources

of NPK provides an alternative to chemical fertilisers and can enhance sustainable agriculture practices, thereby improving both agriculture emissions (reduction via replacement of higher emitting chemical fertilisers) and - through positive impact on yields from otherwise degraded, dry, acidic soils - the food security of Cambodia. However, farmers also need to be made aware of the proper use of biochar-based fertilisers, in order to minimise / prevent the chance of over-application and to ensure that their application process matches the particular crop type - Hence Arukah's project will only begin to engage smallholder farmers on distribution after large agriculture conglomerates / fertiliser distributors have agreed on the fertiliser performance (e.g., after agronomist led or in-house trials) and are willing to purchase it directly.

Social impacts

- **Economic opportunities:** Biochar production can create new economic opportunities and income streams for local communities, including rice mills, by adding value to what is typically a zero- to low-cost agricultural byproduct.
- **Health risks:** If not properly controlled, the biochar production process can release particulate matter and other pollutants that pose respiratory health risks to workers and surrounding communities. To address these concerns, Project Foundation's biochar production equipment employs a cyclonic separator to remove particulate matter from the syngas stream. The cleaned gas is then routed through a high-temperature combustion chamber, where residual volatile and combustible substances are thermally broken down before final release to the environment., The factory has been inspected and approved by the Ministry of Industry, Science and Technology, and Innovation as of 31 October 2025. Proper emission controls and worker safety measures are in place in our plant, which has passed the Ministry of Environment's emissions test and threshold standards as of November 2025.
- **Misuse of biochar for energy production:** While biochar can be compressed into briquettes for use in cookstoves, the project is installing a biochar-based fertiliser production line to blend the rice husk biochar with livestock manure into a granulated mineral matrix, thereby ensuring the final product will be used as a soil amendment and plant fertiliser, not for thermal / combustive uses. Further, as documented in our MMRV plan, we will be clearly tracing with delivery and offtake records from production to final processing into fertiliser, and distribution, to ensure no biochar from the process is misdirected for energy production. Also, over time we will be adding additional monitoring technologies and processes.

Requirement: Abide by national and local laws, objectives, programs, and regulations and, where relevant, international conventions and agreements.	**Rule** 6.4.1.1.i
Do you comply with the requirement?	☒ Yes ☐ No

If not, how and why do you not comply? If yes, how do you know that you comply with the requirement? Please provide details considering the laws and regulations that are most relevant to your operations. Also, include any regulations that are specifically related to your carbon removal activities.
Project Foundation will comply according to the Cambodia Climate Change Alliance Phase 3 (CCCA-III) Programme[1] as determined by the RGC e.g. by: • Developing domestic biochar-based fertiliser production capacity and improving crop yields directly • Involving the Cambodian private sector involved in the sustainability industry for machine development and fabrication • Reserving up to 10% of the carbon credits generated for domestic use by the Cambodian state, if required - in this case as part of our 10% buffer pool.
Identify any documents or other records that you rely upon to verify compliance.
N/A

Requirement: Respect for **human rights** and avoiding discrimination; abiding by the International Bill of Human Rights and universal instruments ratified by the host country.	**Rule** 6.4.1.1.ii
Do you comply with the requirement? *Motivate below.*	☒ Yes ☐ No
Project Foundation is respecting internationally recognised human rights treaties and is not complicit in violence or human rights abuses of any kind, as defined by the Universal Declaration of Human Rights. Arukah's Projects respect internationally recognised human rights treaties and are not complicit in violence or human rights abuses of any kind, as defined by the Universal Declaration of Human Rights. The project activity does not endorse any form of discrimination based on gender, and it is not foreseen that the project reduces or puts at risk women's access to or control of resources, entitlements and benefits. The project will take into account gender roles and the abilities of women and men to participate and benefit from the project activities. The project is not contributing to an increase in women's workload or preventing them from engaging in other activities. The project is not foreseen to reproduce or deepen discrimination against women. They will have the same opportunity for giving feedback as any other community member. Furthermore, the project will not have any impact on women's ownership rights to inherit and own land, homes and other assets. The project applies the principles of non-discrimination and equal treatment and equal pay for equal work.	

[1] https://ncsd.moe.gov.kh/dcc/program/cambodia-climate-change-alliance-ccca-phase-iii

Finally, in our legally binding partnership agreements, which have been reviewed by local lawyers with extensive experience with FDI and commercial disputes in Cambodia, it is a breach of contract for our local partners to allow modern slavery in their business operations, and to the extent commercially reasonable, in their supplier operations. We also require them to comply with environmental, social and governance policies.

Requirement: Recognize, respect, and promote the protection of the rights of IPs & LCs (**indigenous peoples and local communities**) in line with applicable international human rights law, and the United Nations Declaration on the Rights of Indigenous Peoples and International Labor Organization (ILO) Convention 169 on Indigenous and Tribal Peoples.	**Rule** 6.4.1.1.iii
Do you comply with the requirement? *Motivate below.*	☒ Yes ☐ No
The project boundary is in the geographic boundary of Cambodia. However, the project does not represent harm for any indigenous people present within the area of influence. The project does not make any form of differentiation based on gender, race, nationality, ethnicity, social or indigenous origin, religion or belief, disability, age, or sexual orientation.	

Note that there is an additional question on free, prior, informed consent below (section 4), and there is a requirement to publish a separate stakeholder engagement report based on a Puro template.

2 Labor practices and rights

Requirement: Labor rights and working conditions, including prohibiting forced labour, child labour or trafficked persons whether in own operations or employed by third parties, fair treatment of employees.	**Rule** 6.4.1.1.iv
Do you comply with the requirement?	☒ Yes ☐ No
If not, how and why do you not comply? If yes, how do you know that you comply with the requirement?	
The project abides by the ILO conventions, local Cambodian labour, health, and safety laws, and international obligations as determined by the ILO. Finally, in our legally binding partnership agreements, which have been reviewed by local lawyers with extensive experience with FDI and commercial disputes in Cambodia, it is a breach of contract for our local partners to allow modern slavery in their business operations, and to the extent commercially reasonable, in their supplier operations. We also require them to comply with environmental, social and governance policies.	
Identify any documents or other records that you rely upon to verify compliance.	

Arukah can provide documents for verification upon request and where we are not restricted by privacy / confidentiality agreements, we can provide payment receipts and records of employment from the facilities owned by Arukah Capital.

Requirement: Ensuring a safe working environment and mitigating occupational health and safety hazards.	**Rule** 6.4.1.1.iv
Describe occupational health and safety hazards that you have identified.	
Our project will comply with national labour laws, e.g., Cambodian and foreign employees are protected primarily by the Constitution, International Labour Standard of ILO, 1997 Labour Law, and other governmental regulations. Other than these regular national labour laws, we have also identified two categories of the process which may impact worker conditions, and highlighted the necessary mitigating measures in the paragraph below.	
Describe the measures undertaken to mitigate the hazards.	

Biochar production line

1. **Personal protective equipment (PPE):** Workers are provided with and required to wear appropriate PPE, especially respiratory protection to avoid inhalation of biochar dust and hazardous air pollutants. This includes respirators with particulate filters, protective clothing, gloves, and eye protection.

2. **Ventilation and dust control:** The workplace is well ventilated to control smoke and dust exposure - the on-site gas analysis of the emissions from the exhaust stack of the pyrolysis machine test run by Cambodian Ministry of Environment in November 2025 confirmed that our emissions are within the thresholds for the required parameters. We will have biannual monitoring of the air quality by the Ministry of Environment. Exhaust gases are vented outside of the factory building, ensuring proper ventilation. Dust suppression methods, such as quenching biochar with a water spray, minimises secondary dust formation and inhalation risks.

3. **Training on hazards and safe work practices:** Workers are trained on the potential health hazards of biochar production, including exposure to dust, PAHs, VOCs, and other toxic air pollutants. Training covers the proper use of PPE, safe operating procedures, and emergency response. Hazards and safe work practices will also be emphasized at weekly toolbox meetings.

4. **Fire and explosion prevention:** Continuous kilns operate at elevated temperatures in a low oxygen environment and the sudden introduction of air can lead to combustion instability, posing fire and explosion risks. To mitigate these hazards, we have incorporated engineering controls, gas detection, and safety protocols into both the machinery and factory design, as well as operational procedures.Key measures include:
    a. Proper reactor air sealing using air locks and mechanical seals to minimize air intrusion.
    b. Slight positive pressure maintenance within the reactor to avoid vacuum conditions that could draw in oxygen
    c. Shut down procedures if flame is detected outside the combustion chamber
    d. Secondary flare tower that is located away from any flammable materials
    e. Storage of both rice husk and biochar in a physically separate warehouse from the pyrolysis machine
    f. Gas detector positioned near the LPG tank to monitor for leaks
    g. Portable extinguishers positioned to ensure they are within 20 meters reach at any point around the reactor

5. **Heat stress prevention:** Workers may be exposed to elevated temperatures near the kiln; insulation is installed around the high temperature zones to reduce heat transmission and appropriate protective equipment for workers is mandatory. A heat stress prevention programme with hydration, breaks, and monitoring has been implemented. This program is integrated in both worker training, and routine toolbox meetings to reinforce awareness and safe practices. Shift Leaders are specifically trained to recognize early signs of heat stress and appropriate interventions.

6. **Hazard communication and exposure monitoring:** Real time alerts to both workers in the factory and management via a digital communication channel (Telegram) in the event of any emergency such as gas leaks, fire risks, or equipment malfunctions. Longer term risks such as exposure to dust and fumes are mitigated via regular air monitoring for dust and other hazardous emissions will be conducted every 6 months to assess worker exposures.

7. **Emergency response procedures:** Emergency response plans and procedures have been established to handle potential fires or explosions. Workers have been trained on emergency evacuation, firefighting, and first aid. We have prepared Biochar and Working Environment Safety Guidelines for the project.

Biochar-based fertiliser production line This will be installed within 6 months of the completion of our fertilizer trial with our local partner.

1. **Engineering controls:** Adequate ventilation and moisture control will be in place to minimize airborne biochar and manure dust, especially at mixing points. The mixing process is enclosed and automated as much as possible to minimise worker exposure. Safety interlocks and emergency shut-off systems will be incorporated into the mixing equipment.

2. **Administrative controls and safe work practices:** Develop and implement detailed safe operating procedures for the mixing process. Train workers on the health hazards of biochar and manure dust, proper use of controls and safe work practices. Restrict access to the mixing area to essential personnel only. Implement good housekeeping to prevent dust accumulation on surfaces.

3. **Personal protective equipment (PPE):** Require workers to wear appropriate PPE including:
    a. Respirators with particulate filters to prevent inhalation of biochar and manure dust
    b. Safety glasses or goggles to protect the eyes
    c. Gloves to prevent skin exposure
    d. Train workers on proper PPE use and maintenance.

4. **Exposure monitoring:** Conduct regular air monitoring for inhalable biochar and manure dust to ensure controls are effective and exposures are below occupational limits.

5. **Hazard communication:** Ensure safety data sheets on biochar and manure are available and workers are trained on hazards. Label all storage vessels and use proper signage to alert workers to hazards.

Requirement: Providing for equal opportunities in the context of gender; providing equal pay for equal work and protecting against and appropriately responding to violence against women and girls.	**Rule** 6.4.1.1.v
Do you comply with the requirement?	☒ Yes ☐ No
If not, how and why do you not comply? If yes, how do you know that you comply with the requirement?	
The project activity does not endorse any form of discrimination based on gender, and it is not foreseen that the project reduces or puts at risk women's access to or control of resources, entitlements and benefits. The project will take into account gender roles and the abilities of women and men to participate and benefit from the project activities. The project is not contributing to an increase in women's workload or preventing them from engaging in other activities. The project is not foreseen to reproduce or deepen discrimination against women. They will have the same opportunity for giving feedback as any other community member. Furthermore, the project will not have any impact on women's ownership rights to inherit and own land, homes and other assets. The project applies the principles of non-discrimination and equal treatment and equal pay for equal work. The project partners have in place organisational policies to address respect for gender equality, as well as gender and sexual harassment policies, including the following aspects: ● Equal pay for equal work for men and women ● Non-discrimination in recruitment and non-termination based on gender	

• Non-discrimination in job assignment or promotion based on gender • Strict zero tolerance towards sexual harassment in any instance in all of our offices and among all of our employees • Trainings on gender issues led by men and women every 6 months • Incentive for feedback from both genders regarding their experience working with the project • Adjusting policies, benefits, and work environments to empower women, helping them thrive and reducing gender-specific barriers • A supplier code of conduct requiring partners and suppliers to adhere to principles of non-discrimination and prohibition of gender-based harassment and violence
Identify any documents or other records that you rely upon to verify compliance.
Arukah holds the following documents to verify its compliance, which may be provided upon request and where we are not restricted by privacy/confidentiality agreements: Employment records, HR procedures / policies / records, training records, employee feedback records, job advertisements.

3 Environmental impact and management

Requirement: Pollution prevention, including pollutant emissions to air, water, and soil as well as noise and vibration, and generation of waste and release of hazardous materials, chemical pesticides, and fertilizers.	**Rule** 6.4.1.1.vi
Does the carbon removal activity result in the following impacts? For **each potential impact,** please provide detailed information about its extent and the current measures in place to mitigate these negative impacts.	
a. *Pollutant discharges to air*	
The Project Foundation pyrolysis machine includes a flue gas treatment system to ensure environmental compliance. Syngas produced is passed through a cyclonic separator to remove particulate matter in the syngas before it is recirculated back into the combustion chamber which serves the dual purpose of producing heat that sustains the pyrolysis process, as well as burning off any residual combustible substances within the gaseous stream to prevent its release into the atmosphere. Keeping the syngas recycling loop short and appropriately insulated ensures that heavier substances within the flue gas stream do not condense out of the gaseous phase and pass efficiently into the combustion chamber where they are destroyed. Furthermore, for other fuel-powered equipment on the project site (e.g., payloaders), the selection of high-quality fuel and modern equipment minimises CO formation to within the required national legal limits. Finally, the system will undergo annual / biannual gas testing by a 3rd party agency to verify and validate the emissions produced by Project Foundation.	
b. *Pollutant discharges to water*	
There will be no direct pollutant discharges into water in our operations. Cooling water is kept in a closed loop that is not exposed to the byproducts of the pyrolysis process itself.	

Biochar production lots will be periodically sampled and sent for lab testing for heavy metal contaminants, PAHs, etc. (as per testing requirements for WBC certified biochar) before being used as a soil amendment or blended into a biochar-based fertiliser. If any are present, the biochar will be used for construction purposes (i.e., cement additive) or disposed of, in accordance with best practices.

As for the emissions to water via application of biochar to the soil, based on lab testing of samples of rice husk biochar produced during the project startup phase (Aug 2025), the biochar has demonstrated extremely low levels of heavy metals and other pollutants, and are well within the limits set by WBC-Agro biochar quality standards. Based on this data, we expect the biochar produced in the full project phase using the Project Foundation continuous pyrolysis line to demonstrate WBC-Premium quality results.

c. *Pollutant discharges to soil*

Biochar production lots will be periodically sampled and sent for lab testing for heavy metal contaminants, PAHs, etc. (as per testing requirements for WBC certified biochar) before being used as a soil amendment or blended into a biofertiliser. If any are present, the biochar will be used for construction purposes (i.e., cement additive) or disposed of, in accordance with best practices.

d. *Noise*

Noise pollution will not be significant, as the pyrolysis facility will be located on an area of land that is self contained and away from existing settlements. We expect to continue to scale our operations on similarly located plots.

The factory has obtained a Commune Letter (extracted in the next section on Permits) which grants permission for the factory and agrees that the factory does not affect the environment, public order, social order, or the residents living nearby.

e. *Vibration*

Vibration is not significant as the pyrolysis facility is on an area of land that is self contained and away from existing settlements. We expect to continue to scale our operations on similarly located plots.

The factory has obtained a Commune Letter which grants permission for the factory and agrees that the factory does not affect the environment, public order, social order, or the residents living nearby.

f. *Waste*

For potential sources of waste, the following mitigating measures have been identified:

- **Biochar dust residues:** Dust fines entrained in the syngas are removed by the cyclonic separator, while the biochar is maintained at a higher moisture content to suppress dust formation and prevent fines from becoming airborne particulate matter.
- **Ash content:** We expect the ash content percentage to improve and stabilise significantly with the pyrolysis system, now that it has been appropriately calibrated.
- **Unconverted biomass:** At the project level we have strong incentives to minimise its wastage, as the biomass is a high ongoing operating cost for the project. At the machine level, the continuous pyrolysis system uses temperature sensors and PLC controls to maintain optimal temperature and throughput time, resulting in total conversion of the original feedstock.

g. *Release of hazardous materials*
Potential hazardous materials that may be released as a result of project activities include heavy metals and PAH. Solutions and mitigating measures are outlined in the Environmental Evaluation Report.
h. *Chemical pesticides and fertilisers*
A biochar-based fertiliser will be produced as an end-product of this operation that will be sold into the fertiliser market, both to large agriculture processing businesses, as well as directly to smallholder farmers.

Requirement: Biodiversity conservation and sustainable management of natural resources, including avoiding or minimizing negative impacts on terrestrial and marine biodiversity and ecosystems; protecting the habitats of rare, threatened, and endangered species, including areas needed for habitat connectivity.	**Rule** 6.4.1.1.viii
Is the activity taking place in or near environmentally sensitive areas, including protected areas (e.g. nature reserve or national park), or other areas included in a conservation plan? Describe where the nearest such areas are.	
The sites of the pyrolysis biochar and biochar-based fertiliser production facility are not expected to have any impact on any protected areas, heritage sites or other environmentally or culturally sensitive areas. Each site / plant has to be approved / permitted by the Ministry of Environment, the Ministry of Industry, Science, Technology and Innovation- across our own feasibility assessments, our broad based stakeholder engagements, our local partners' local reputations and networks, and the checks required by the ministries, we do not anticipate any meaningful negative impact.	
Describe impacts and risks that you have identified	
N/A	
Describe the measures undertaken to minimise and address the impacts and the risks.	
N/A	

Requirement: Minimizing soil degradation and soil erosion.	**Rule** 6.4.1.1.viii
Describe impacts and risks to soil that you have identified.	
Arukah's projects will minimise any negative impacts which are not anticipated to be significant due to our business model and project design, e.g.: • **Release of contaminants:** Biochar produced from polluted feedstocks may release toxic compounds into the soil and groundwater, posing risks to soil health and water quality. In Foundation, all the rice husk feedstocks are produced during the rice milling process, and	

the husk is stored under safe conditions prior to pyrolysis. Similarly, the biochar will be stored in a dry area, to prevent contamination and/or fire hazards. Periodic inspections of the rice husk and biochar will be undertaken by the local implementation partner to ensure quality integrity.

- **Negative impact of over-application:** The excessive application of biochar to soil can change the soil structure and microbial communities, potentially reducing the improvements in soil health and crop yields/quality. We do not anticipate this issue for our project as Cambodia is a relatively undersupplied country for fertiliser (100% imports as of 2024), and in our business model, the biochar-based fertiliser is a paid product, so it is unlikely to be used wastefully (vs. free biochar, as is common in some biochar project models).
- **GHG emissions during production:** While biochar is lauded for its carbon sequestration capabilities, the production process itself can emit GHGs, especially when produced using poorly designed equipment. Our equipment recirculates the syngas back into the combustion chamber, both to sustain the pyrolysis reaction, and to ensure complete oxidation of any residual combustible gases. This prevents their release into the environment while improving overall energy efficiency.

Describe the measures undertaken to minimize and address the impacts and the risks.

The biochar is sampled on a quarterly basis and rigorously tested in an ISO-certified laboratory to ensure the levels of these contaminants are within range of acceptability (i.e., within the requirements of WBC-Agro biochar categories). Over time we may increase the frequency of testing as our operations continue to scale.

Requirement: Minimizing water consumption and stress.	**Rule** 6.4.1.1.viii
Are you located in an area impacted with water stress?	☐Yes **X** No
If yes, describe local conditions in terms of water stress and any risk analysis done on the impacts of the CO_2 removal activity on water stress	

The projects are not located in an area impacted with water stress. The current pyrolysis system does not present any significant additional burden on the available water resources, as minimal water (estimated at ~500m^3 per month) is required for biochar cooling and biochar-based fertiliser production. In addition, biochar cooling water will be recycled, where possible.

Cambodia is listed as Low Risk in the Water Stress Country Ranking by the Resource Watch[2], and 75 out of 164 countries assessed in the World Population Review[3].Currently, we do not expect

[2] https://resourcewatch.org/data/explore/wat036rw1-Water-Stress-Country-Ranking?section=Discover&selectedCollection=&zoom=3.3663724208047423&lat=2.942145765111706&lng=99.1322388936385&pitch=0&bearing=0&basemap=dark&labels=light&layers=%255B%257B%2522dataset%2522%253A%252247053e23-7808-40d9-b4ae-1af73c5c8bab%2522%252C%2522opacity%2522%253A1%252C%2522layer%2522%253A%25226d4963c4-c9fe-4284-befc-bd930741b35c%2522%257D%255D&aoi=&page=1&sort=most-viewed&sortDirection=-1

[3] https://worldpopulationreview.com/country-rankings/water-stress-by-country

water scarcity and water stress in the area to be significant, or pose any risks to the scaling of the project. We will monitor this over time.
Describe any agreements and/or regulations relating to water sourcing.
Arukah abides by all following agreements and laws related to water sourcing. • Law on Clean Water Supply and Management (2023) • Operators must obtain a permit for feasibility studies, a business licence, and an operating certificate from the Ministry of Industry, Science, Technology and Innovation (MISTI). Tariffs are determined based on various factors such as geographical area, source of water, and treatment systems, and are reviewed every five years by MISTI. We have obtained our MISTI Operating Certificate, dated 31 October 2025.
Describe the measures undertaken to minimise water consumption.
N/A

Requirement: The CO_2 Removal Supplier shall not convert **natural forests or high conservation value habitats.**	**Rule** 6.4.1.1.viii
Do you comply with the requirement?	☒ Yes ☐ No
If not, how and why do you not comply? If yes, how do you know that you comply with the requirement?	
The project will use agricultural residue as feedstock **exclusively,** and will not accept feedstock from natural forests or high conservation value habits. The project is designed to minimise impact on natural forests and conservation habitats and source directly for rice mills for feedstock.	
Identify any documents or other records that you rely upon to verify compliance.	
N/A	

4 Social impact and community relations

Requirement: Avoiding or minimizing adverse impacts **to community health and safety**.	**Rule** 6.4.1.1.vii
Describe potential sources of impact, taking into account all relevant factors in the given context. Consider both routine and non-routine circumstances.	
As the facility site location is expected to be located in a standalone building and away from any settlements, there are no negative impacts expected.	

Arukah has assessed that the project avoids forced physical and/or economic displacement, and direct or indirect impacts to indigenous peoples and their livelihoods.
Describe the measures undertaken to minimise and address the impacts and the risks.
N/A

Requirement: Preserves and protects **cultural heritage** and cultural and religious sites.	**Rule** 6.4.1.1.ix
Describe the impacts and the risks to cultural heritage and cultural and religious sites that you have identified.	
N/A	
Describe the measures undertaken to minimize and address the impacts and the risks.	
N/A	

Requirement: Avoiding **forced physical** and/or **economic displacement**. If avoidance is not feasible, CO_2 Removal Suppliers shall minimize physical and/or economic displacement. This applies also to any access restrictions to lands, territories, or resources, and any customary rights of local right holders.		**Rule** 6.4.1.1.x
Did/does the activity result either in forced physical or economic displacement?	☐ Yes ☒ No	
If yes, describe the impact to local communities and how it was assessed?		
N/A		
Provide a comprehensive description of the process that was undertaken, compensation arrangements and measures to mitigate the negative impacts.		
N/A		
Also describe in detail how you minimised forced physical or economic displacement.		
N/A		

Requirement: When the activity directly or indirectly impacts **indigenous peoples** or their livelihoods, ancestral knowledge or cultural heritage, the CO_2 Removal supplier shall develop the Production Facility with free, prior, informed consent (FPIC).	**Rule** 6.4.2
Is the CO_2 removal activity taking place in an area inhabited by or claimed by indigenous people, or does it influence such an area?	☐ Yes ☒ No
If yes: does the activity directly or indirectly impact indigenous peoples or their livelihoods, ancestral knowledge or cultural heritage? How was that determined?	
N/A	
If there is a direct or indirect impact:	
a. Provide a description of the impact and the measures that were taken to minimize the impact.	
N/A	
b. Describe how and when the indigenous communities were identified and approached for the FPIC process.	
N/A	
c. Describe the mutually agreed process for the negotiations.	
N/A	
d. Describe how the indigenous communities were informed about the potential impacts of the activity on their livelihoods, ancestral knowledge, or cultural heritage.	
N/A	
e. Describe the outcome of the negotiations.	
N/A	
f. Describe how the ongoing consent process is managed to ensure that the indigenous communities continue to agree with the activity as it progresses.	
N/A	
g. Describe grievance mechanisms that are in place for the indigenous communities.	
N/A	
h. Describe how the impacts on the indigenous communities are monitored and addressed during the operation of the Production Facility.	
N/A	

5 Biomass sustainability

Puro methodologies require that whenever biomass feedstock is used in the carbon removal activity, it must be sourced in a sustainable manner.	
Is your carbon removal activity based on using biomass feedstock?	☒ Yes ☐ No
Describe how you ensure that it is sourced sustainably.	
Together with our main local partner, Arukah will co-source rice husks. To meet minimum capacity, our local partner will also engage rice mills in the surrounding areas and purchase husk from the milling operations directly. For the amount that rice mills generate beyond what is required for their own operations - which is where Arukah is planning to source our rice husk - the balance could be sold to external parties, where it is typically used in a few ways: 1) biomass fuel in furnaces / boilers not in the rice mill e.g., cement manufacturing, 2) livestock bedding, and 3) added to compost as a bulking agent. The remainder (usually from smaller milling operations) is likely disposed of via open burning, which is prevalent in Cambodia. The milling of rice and discarding of rice husk would happen regardless of the project. There are direct emissions released from the activity. Both open burning and biomass fuel also result in release of carbon black. For livestock bedding and compost usage, the material also decomposes into the environment.	

Note that additional evidence will be required to demonstrate adequate biomass sourcing as per the Puro Biomass Sourcing Criteria, where applicable.

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Stakeholder Engagement Report

CO_2 Removal Supplier	Arukah Capital
Production Facility	Foundation 1
Production Facility ID	526866
Date of report last update (YYYY-MM-DD)	2025-08-15

Stakeholder Engagement Report

The purpose of this document is to gather results of the Stakeholder Engagement that has been conducted by the CO_2 Removal Supplier, for its Production Facility, in line with Section 6.4 of the Puro General Rules 4.0 and the Puro Stakeholder Engagement Requirements.

This report is divided in the following sections:

1 Identified stakeholders
2 Consultation activities and outcomes
3 Plans for continued consultation during crediting period
4 Summary

This report will be made **publicly available** in the Puro Registry. It shall not contain information about private individuals (e.g. name, personal address) for privacy reasons. Such information shall be provided separately (e.g. list of participants to consultation activity, as an appendix to the report).

1 Identified stakeholders

Provide an overview of the stakeholders that have been identified as relevant to include in the stakeholder engagement process, following the categories defined below:

Stakeholder categories	Identified stakeholders
Local Stakeholders, i.e. stakeholders in the immediate environment of the facility of the CO2 Removal Supplier, and most prone to experience direct or indirect effects of the respective carbon removal activity.	• Residents living in the vicinity of the pyrolysis plant • Staff of local partner working at the land where the factory is located
Stakeholders with **land-tenure rights** within the vicinity of the project boundary	• Participating farmers in the project, and their families
Representatives of relevant **local authorities** and relevant **local politicians**	• Representatives of Cambodia Ministry of Environment • Representatives of Cambodia Ministry of Agriculture • Representatives of Cambodia Ministry of Industry, Science, Technology & Innovation
Local **non-governmental organizations** (NGOs) or international NGOs who are active in the region and relevant to the topic	• World Bank • IFC (International Finance Corporation) • ADB (Asian Development Bank) • We are early in building partnerships with NGOs - initial discussion with CAPRED; intending to connect in 2H25 with additional groups like Heifer International, with advice from local partner
Representatives of relevant **working groups** or **vulnerable** and **marginalized**	• Support from local partner

groups within the vicinity of the project boundary	
Relevant **industry experts**, given there are any in the near environment	• Support from local partner
Other, please specify:	

Answers are to be written in the second column without disclosing private information. For instance, instead of the name of a specific resident, use terminology like "local residents". Likewise, instead of naming specific public employees, prefer to mention the roles and departments.
In case there are no identified stakeholders in a given category, provide a brief justification instead.

Activity directly or indirectly impacting indigenous peoples or their livelihoods, ancestral knowledge or cultural heritage:

Question	Answer
Does the list of identified stakeholders include any indigenous peoples or communities?	☐ Yes X No
If the answer is "Yes" to the question above, has the free, prior and informed consent (FPIC) been obtained from those indigenous peoples or communities?	☐ Yes. Please provide evidence of the obtention of the FPIC in a separate document.

As per rule 2.1.6 in the Puro Stakeholder Engagement Requirements, note that "FPIC is distinct from stakeholder engagement in that it is derived from indigenous peoples' right to self-determination. While stakeholder engagement involves consultation and collaboration with all parties affected by a project, FPIC goes a step further by requiring the explicit consent of indigenous peoples before proceeding with activities that impact them."

2 Consultation activities and outcomes

Provide an exhaustive list of all the **stakeholder consultation activities** that have been conducted. Add as many rows as necessary. The activity categories can for instance be one of the following (but not limited to these ones): public meeting, online webinar, paper questionnaire, electronic questionnaire, interviews, focus group, site visit, door-to-door visits, etc.

Activity categories	Activity name	Activity date (YYYY-MM-DD)
Public Meeting	Local Stakeholder Consultation (In Person)	2025-05-30
Paper Questionnaire	Sustainability Evaluation Form, Feedback Form	2025-05-30
Electronic Questionnaire	Online Feedback (Continuous)	Distributed as part of the invitation and held open until mid-June 2025

Provide a list of all the **stakeholder invitations** that have been sent out, grouping whenever relevant the invitations (e.g., for all local residents as one row). Add as many rows as necessary. The invitation format can be one of the following (but not limited to these ones): postal letters, email, social media publication, public board information, telephone calls, verbal communication, etc.

Invitation format	Invitation name	Invitation date (YYYY-MM-DD)
Email	Invitation to Project Foundation Stakeholder Consultation: Biochar CDR Project (Puro.earth Certification)	2025-05-20
Telephone/ Telegram/ Verbal Communication	Invitation to Project Foundation Stakeholder Consultation: Biochar CDR Project (Puro.earth Certification)	2025-05-16
Letter	Invitation to Project Foundation Stakeholder Consultation: Biochar CDR Project (Puro.earth Certification)	2025-05-21

As **supporting evidence** to this report, please provide in a separate subfolder, the following:

- Example of invitations sent out, for different consultation activities (e.g. letters, emails, website announcements).
- Lists of all stakeholders invited to the consultation activities and stakeholders participating in the consultation activities. The lists will not be made public, as they can contain private information.

Supporting Documents:

1. **Example Post:** Foundation Arukah_MAFFGDA-DLRM_executed.pdf
2. **Example Email:** Foundation Stakeholder Invitation Letter (30 May 2025) Final.pdf

In case identified relevant stakeholders (section 1) were not invited to the consultation activities, please provide clear **reasons for not inviting** them. Add as many rows as necessary. Leave blank if not applicable.

Identified stakeholders	Reasons for not inviting
Individual Local Farmers	Fertilizer trial will begin at a more centralised level (i.e. with local partner on a nearby farm where Pyrolysis Unit is located). Local farmers for large-scale trials will be identified at a later date, once the centralised trials are realised.

Provide an extensive summary of i) the **information that was provided to stakeholders** during the consultation activities, ii) the **feedback received** during the consultation activities (with a particular focus on concerns, potential issues and critiques), and iii) the **responses provided to stakeholders** about their feedback.

Summary of the feedback received during the consultation activities
Information provided to stakeholders: • **Project Description**: A non-technical summary of Project Foundation (Facility ID: 526866), including its design, anticipated impacts, and safeguards for environmental, social, and economic factors. • **Potential Impacts**: Information on possible positive and negative effects on stakeholders' rights, interests, and traditional livelihoods. • **Feedback Channels**: Ways to share your input in the future, even after the consultation period.

Feedback received from stakeholders:

General Feedback Form: Stakeholders generally had a positive impression for the project, citing the (1) Reduction in GHG emissions, (2) Education of local farmers on Biochar and its benefits, and (3) Potential of selling agricultural products as a source of income for local farmers. **Uptake and participation of local farmers in the project was cited as a possible issue by a stakeholder.**

Sustainability Evaluation Form: In the form, stakeholders were asked to select if (1) the project poses a risk, (2) the project *may* pose a risk, or (3) the project ***does not*** pose a risk to the safeguarding principles, and elaborate concerns or risks.

Of the safeguarding principles, **principles (2) Gender Equality and (3) Community Health, Safety and Working Conditions were repeatedly highlighted as areas of risk for the project.** All risks in regard to the safeguarding principles suggested by stakeholders are consolidated below:

(1) Human Rights: Risk of child labour
(2) Gender Equality: Risk of increased employment opportunities and cash rebates benefiting men instead of women in the future, risk of women not working the field and not involved in project
(3) Community Health, Safety and Working Conditions: Risk of poor working conditions in pyrolysis plant
(4) Corruption: Risk of unfair distribution of cash rebates to farmers
(5) Economic Impact: Unproven net economic benefit of use of biochar
(6) Environment, Ecology and Land Use: Risk of harm to land from land application of biochar

Online Questionnaire: In the form, stakeholders were given the option to key in general feedback. Generally, feedback was positive (see supporting document for exact responses):

- A stakeholder asked for clarification on the number of tons of biofertiliser recommended for rice fields or other types of crops.
- A stakeholder also suggested we should first identify suitable areas for the introduction of biochar to local farmers and education of local farmers, followed by testing the pyrolysis process and conducting a pre-assessment (EIA) to monitor annual GHG emissions to advise in calibration of pyrolysis process and emissions release.
- It was also suggested to research on appropriate storage for rice husks due to humidity during the rainy season, which may increase the energy requirement for pyrolysis and therefore fossil fuel use and emissions.

Responses provided to stakeholders:

Stakeholders will receive a short summary of the engagement (similar to the 500-word summary below), as well as the specific responses to their feedback below provided either through (1) Online Forms, (2) Written Feedback in 2 forms collected, and (3) Questions raised during the session.

Stakeholders' concerns are being addressed through a combination of targeted project safeguards and clear communication. The project strictly **prohibits child labour** and will enforce this through contractual clauses and regular monitoring in compliance with local labour laws.

To ensure **gender equality**, outreach and training efforts will specifically engage women, with participation data tracked and ongoing feedback sought from women in the community affected by the project.

Worker safety at the pyrolysis plant will meet international standards, with training and protective equipment provided. Distribution of carbon revenue for verified climate work will be transparent and digitally traceable, with a grievance mechanism and open line to Arukah via Telegram chatbot (in development). The **economic impact of biochar** will be evaluated through a phased rollout and pilot studies, with findings shared and adjustments made as needed.

Best practices will be followed for biochar application, including soil testing and farmer training to minimise environmental risks after initial fertilizer trials with our local partner to optimise the mix. Specialists will provide recommendations for biofertiliser dosages suited to different crops. The project will expand in the next phase by identifying suitable sites and farmer networks.

In case any relevant stakeholders **could not take part** in the consultation activities due to reasons such as lack of mobile access or physical disability, please describe and summarize how you engaged with them, what their specific feedback was, and how it was answered. Leave blank if not applicable.

Consultation of stakeholders that could not take part in the scheduled consultation activities

NA - those who could not take part were given various channels to provide feedback e.g. via online form, or telegram.

As **supporting evidence** to this report, please provide in a separate subfolder, the following:

- Materials presented during the consultation activities (e.g. presentations)
- Documentation of the feedback received (e.g. meeting notes, questionnaire answers)
- Documentation of the responses provided to stakeholders (e.g. consultation reports)

Provide an extensive description of the **changes made to the project** plans to address the concerns and issues raised during the consultation activities.

Description of the changes made to the project for addressing concerns and issues

The following table summarises the changes/ interventions Project Foundation is incorporating to address the concerns raised during the stakeholder consultations and other feedback gathered.

Safeguarding Principle	Identified Risk	Project Changes / Responses
General	Language barriers, collaboration gaps	Translations and translators provided; exploring collaboration with DPAX university; training on biofertiliser planned for Phase 2
Human Rights	Risk of child labour	Employment guidelines strictly enforced to prohibit child labour

contact@puro.earth Puro.earth Oy, Tammasaarenkatu 1, 00180 Helsinki, Finland https://puro.earth

Gender Equality	Employment and rebates favour men; women excluded from fieldwork and project	Alternative employment/involvement opportunities for women explored (e.g., factory management, plant operations)
Community Health, Safety & Working Conditions	Poor working conditions in pyrolysis plant	Implementation of strict operational guidelines and safety measures
Corruption	Unfair distribution of cash rebates	Digital tracking system established, auditable and based on verified climate work (e.g., photo evidence of fertilizer use)
Economic Impact	Unproven net benefit of biochar	Fertilizer trials to be conducted; results incorporated into farmer education materials
Environment, Ecology & Land Use	Potential harm to land from biochar application	Same fertilizer trials and education apply to minimize environmental risks

3 Plans for continued consultation during crediting period

Provide a description of the current plans for maintaining a continued engagement of the stakeholders during the crediting period.

Description of the plans for continued consultation of stakeholders during the crediting period

The following information was shared to stakeholders in the stakeholder engagement session and via email invitation:

Contact information for questions and general comments:

- Contact: Ms Nicole Mah and Mr Choeung Touch
- Email: stakeholders@arukahcapital.com and choengt@somagroup.com.kh
- Telegram: +855 86 975 646
- Online Feedback Form: Screenshot Extracts below and Link here
- Consultation Materials (included translated versions): Link here

For those wishing to send feedback via Post:

- Attention: Arukah Capital - Project Foundation
- Address: Building 113C, 3rd Floor (U07), #113C, Mao Tse Tung Blvd (245), Phum 7, Sangkat Tuol Svay Prey 1, Khan Beong Keng Kang, Phnom Penh

The initial open feedback round will be until ***20 June 2025****, and responses will be collated for inclusion in a stakeholder report. After this, feedback can continue to be submitted via the various channels.* The email contact stakeholders@arukahcapital.com will also be made available for all stakeholders, ensuring a mechanism to maintain continued engagement with stakeholders during the crediting period.

Online Form Questions:

Khmer Version

សំណុំបែបបទមតិយោបល់ពីការពិគ្រោះយោបល់របស់ភាគីពាក់ព័ន្ធនៃគម្រោងមូលដ្ឋាន (៣០ ឧសភា ២០២៥)

Arukah Capital និង **Soma Farm** កំពុងសហការជាមួយគ្នាដើម្បីបង្កើតគម្រោង **Project Foundation** ដែលជាគម្រោងដកឧស្ម័នកាបូនដោយប្រើបាយ៉ូឆា **(Biochar Carbon Dioxide Removal - CDR)** ដែលកំពុងចុះឈ្មោះក្នុងប្រព័ន្ធចុះបញ្ជីឥណទានកាបូនសកល **Puro.earth**។ គម្រោងនេះប្រើប្រាស់កាកសំណល់កសិកម្ម (អង្កាម) ដើម្បីផលិត **Biochar** (ធ្យូងអង្កាម) ដែលជាធាតុផ្សំសម្រាប់ប្រើប្រាស់ជាជីសរីរាង្គសម្រាប់វិស័យកសិកម្ម។

យើងកំពុងស្វែងរកមតិ និងធាតុចូលពីគ្រប់ភាគីពាក់ព័ន្ធ ដែលជាផ្នែកមួយនៃដំណើរការទទួលវិញ្ញាបនបត្របញ្ជាក់ពី **Puro.earth** តាមរយៈការពិគ្រោះយោបល់ជាមួយភាគីពាក់ព័ន្ធ នៅថ្ងៃ ៣០ ខែឧសភា ឆ្នាំ ២០២៥។

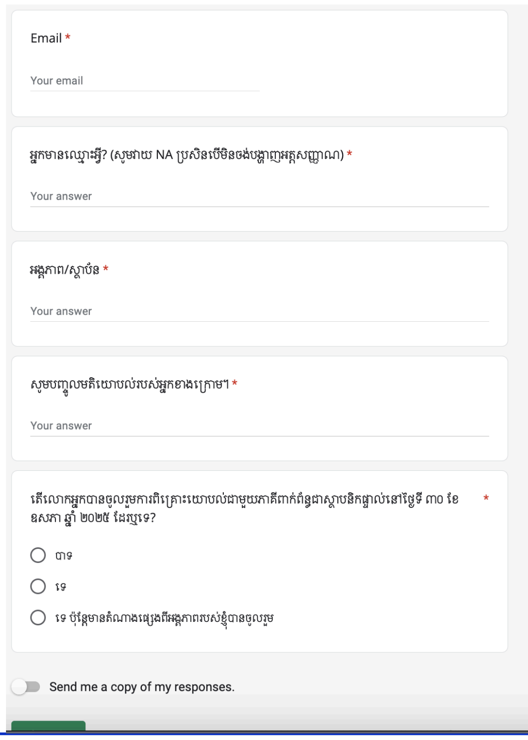
សម្រង់មតិនេះនឹងបើកសម្រាប់ទទួលយោបល់ បន្ទាប់ពីការរៀបចំសិក្ខាសាលានៅខែឧសភា ២០២៥។

សម្រង់មតិនេះ នឹងបន្តបើក និងត្រូវបានពិនិត្យជាប្រចាំ ក្នុងអំឡុងរយៈពេលអនុវត្តគម្រោង។

សូមផ្ញើអ៊ីមែលទៅ **stakeholders@arukahcapital.com** ប្រសិនបើអ្នកមានបញ្ហាក្នុងការចូលដំណើរការព័ត៌មាន។

nicole@arukahcapital.com Switch account

* Indicates required question



Email *

Your email

អ្នកមានឈ្មោះអ្វី? (សូមវាយ NA ប្រសិនបើមិនចង់បង្ហាញអត្តសញ្ញាណ) *

Your answer

អង្គភាព/ស្ថាប័ន *

Your answer

សូមបញ្ចូលមតិយោបល់របស់អ្នកខាងក្រោម។ *

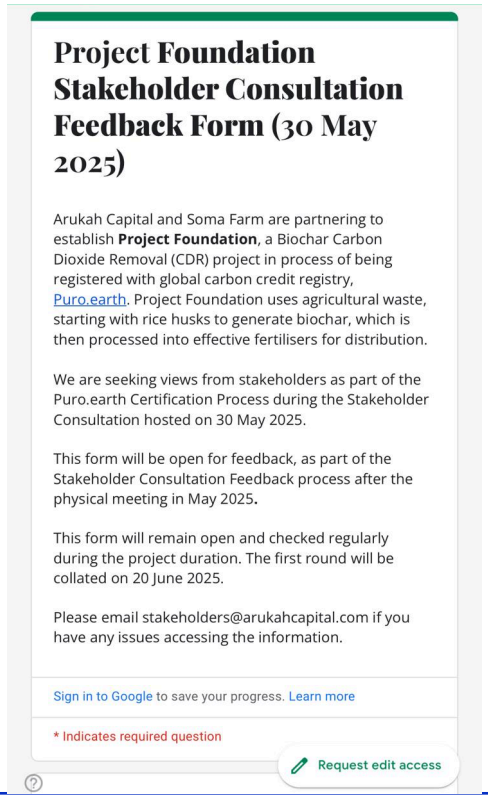
Your answer

តើលោកអ្នកបានចូលរួមការពិគ្រោះយោបល់ជាមួយភាគីពាក់ព័ន្ធជាស្ថាបនិកផ្ទាល់នៅថ្ងៃទី ៣០ ខែឧសភា ឆ្នាំ ២០២៥ ដែរឬទេ? *

- ○ បាទ
- ○ ទេ
- ○ ទេ ប៉ុន្តែមានតំណាងផ្សេងពីអង្គភាពរបស់ខ្ញុំបានចូលរួម

Send me a copy of my responses.

English Version



Project Foundation Stakeholder Consultation Feedback Form (30 May 2025)

Arukah Capital and Soma Farm are partnering to establish **Project Foundation**, a Biochar Carbon Dioxide Removal (CDR) project in process of being registered with global carbon credit registry, Puro.earth. Project Foundation uses agricultural waste, starting with rice husks to generate biochar, which is then processed into effective fertilisers for distribution.

We are seeking views from stakeholders as part of the Puro.earth Certification Process during the Stakeholder Consultation hosted on 30 May 2025.

This form will be open for feedback, as part of the Stakeholder Consultation Feedback process after the physical meeting in May 2025.

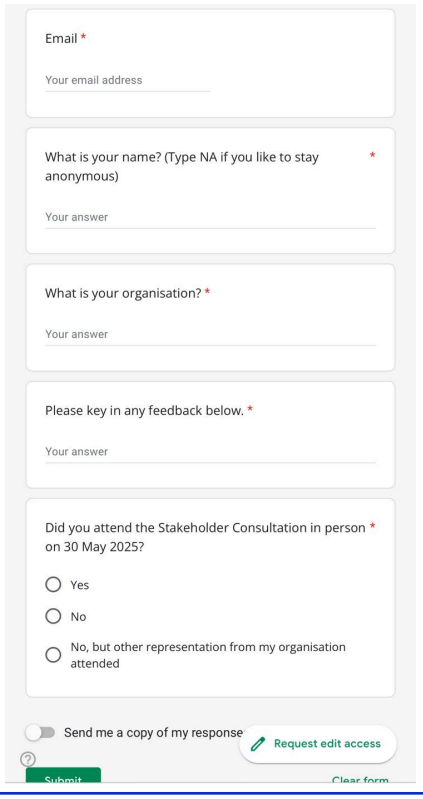
This form will remain open and checked regularly during the project duration. The first round will be collated on 20 June 2025.

Please email stakeholders@arukahcapital.com if you have any issues accessing the information.

Sign in to Google to save your progress. Learn more

* Indicates required question

Request edit access



Email *

Your email address

What is your name? (Type NA if you like to stay anonymous) *

Your answer

What is your organisation? *

Your answer

Please key in any feedback below. *

Your answer

Did you attend the Stakeholder Consultation in person on 30 May 2025? *

Yes

No

No, but other representation from my organisation attended

Send me a copy of my response

Request edit access

Submit

Clear form

4 Summary

Based on all the information provided above and the evidence provided separately, write an overall summary of the stakeholder engagement. This summary must follow the structure of this report, tackling identified stakeholders, consultation activities and outcome, and plans for continued consultation. This summary is limited to 500 words. This summary must be re-used in the Project Description.

Overall summary (500-word limit)

Identified Stakeholders

Arukah Capital has identified a diverse range of stakeholders relevant to the carbon removal project at Production Facility Foundation 1 (Facility ID: 526866). These stakeholders include local residents living near the pyrolysis plant, staff of the local partner organization operating at the site, farmers participating in the project and their families, and representatives from industry partners and key Cambodian government bodies including the Ministries of Environment and Agriculture. Engagement efforts have also extended to NGOs - starting with the World Bank IFC, Asian Development Bank, and CAPRED.

Consultation Activities and Outcomes

Community engagements have been ongoing informally since 2H2024 before the project was initiated – including in-depth meetings and site visits with local stakeholders. As the project progressed in 1H2025 and prior to official operations beginning, a comprehensive and transparent consultation process was conducted through multiple channels from late May to mid-June 2025. Key activities include an in-person

public stakeholder consultation held on May 30, 2025, at the Royal University of Phnom Penh, dissemination of paper questionnaires during that event, and continuous collection of online feedback via an electronic questionnaire made available to all stakeholders. See pictures here: **https://photos.app.goo.gl/cxQC7TYHWxUC3scr7**

Invitations to participate employed a variety of communication methods such as emails, telephone calls including Telegram and verbal communications, and formal letters to ensure broad outreach to identified stakeholder groups.

Feedback collected overall reflected positive support for the project's objectives, specifically regarding greenhouse gas emission reductions, education for local farmers on biochar benefits, and potential income opportunities through agricultural product sales. However, the consultation also surfaced important concerns and risks, notably in the areas of safeguarding principles: gender equality, community health and safety, fair economic benefits, and environmental impact.

Stakeholders expressed concerns about potential child labour risks, gender disparities in employment and benefits (favouring men over women), unsafe working conditions at the pyrolysis facility, fair and transparent distribution of cash rebates to farmers, and the unproven net economic benefits and environmental impacts of biochar application. Queries also addressed technical clarifications such as recommended biofertilizer dosages and the need for pre-assessment environmental impact studies.

In response, the project will ensure that safeguards are put in place – this includes strict employment guidelines prohibiting child labour, gender-inclusive outreach and alternative employment opportunities for women, strict operational health and safety protocols, a transparent and digitally traceable cash distribution system, and ongoing biochar fertilizer trials paired with farmer education programs. Research into optimal rice husk storage to mitigate emissions during pyrolysis is also underway, with results to be shared when ready.

Plans for Continued Consultation

Arukah is committed to ongoing, transparent stakeholder engagement throughout the project's lifecycle. The initial consultation period closed mid-June 2025; however, feedback collection will continue via online forms and email communication at stakeholders@arukahcapital.com. Future consultations will include targeted meetings with local farmers as fertilizer trials commence near the pyrolysis facility.

Additionally, contact information and multiple communication channels – including a forthcoming Telegram chatbot – can be used to keep stakeholders updated, and will remain open to ensure accessible grievance mechanisms and continuous dialogue.