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 tCO2eq. net) from the atmosphere to a durable storage of minimum 100 years, from which are subtracted any supply-chain emissions from the project, any re-emissions over the guaranteed storage time, and any baseline removals taking place in a baseline scenarios.

The CO2 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 years) in the absence of the carbon removal activity proposed by the CO2 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.).
- Demonstrate **regulatory additionality,** meaning that the project is not required by existing laws, regulations, or other binding obligations (question A2.).
- Demonstrate **financial additionality,** meaning that the CO2 removals achieved are a result of carbon finance and that the project activity would not be economically viable without the carbon finance. The project activity can have substantial other non-carbon income sources, if the carbon finance through CORCs is significant for the economic viability of the project. To demonstrate financial additionality, CO2 removal Supplier must provide the responses in this form and must be able to provide full project financials for verification.

Reference documents: Puro Standard general Rules v3.0, rule 2.1.3 and Additionality Assessment requirements

Activity name	Activity description	Removals to storage (100+ yr) due to project activity (human activity)	Natural removals to storage (100+ yr)
Baseline: *Burning of forestry*	the current practice of biomass disposal at sawmills, which involves the burning of forestry residues. Sawmills, as an integral part of their operations, generate significant quantities of residues such as bark, branches, and sawdust. Due to limited economically viable alternatives, the most common and affordable method of disposing of these residues is through combustion, leading to their complete oxidation. In the absence of the biochar project, this practice of burning forestry residues at sawmills will persist. The economic viability of the sawmills heavily influences their waste management practices, and the cost-effective nature of burning residues incentivizes the continuation of this disposal method. The absence of a financially feasible alternative for residue utilization necessitates the ongoing implementation of the current biomass burning practice.	None	None
Alternative scenario 1: **Exomad Green Biochar Facility**	The implementation of the EXOMAD GREEN biochar facility, with an annual production capacity of 30,000 tons of biochar, plays a crucial role in removing CO2 and other greenhouse gases from the environment. By utilizing forestry residues instead of resorting to burning, the facility	Around 70000 tons per year	None / Some *(please quantify)*

	serves as a carbon sink, effectively capturing and storing carbon in the biochar it produces. It is worth noting that biochar has a significant carbon sequestration potential. Approximately 1 ton of biochar is equivalent to around 2.5 tons of CO2 removed from the atmosphere. This demonstrates the substantial carbon-negative impact of the EXOMAD GREEN facility, as each ton of biochar produced contributes to the removal and offset of greenhouse gas emissions. In addition to its carbon removal capabilities, the biochar produced by the facility offers numerous benefits when applied to the soil. It enhances soil fertility, improves water retention, and increases nutrient availability for plants. These soil-enhancing properties make biochar a valuable tool for sustainable agriculture, horticulture, and land restoration practices. The establishment of the EXOMAD GREEN biochar facility not only provides an environmentally friendly alternative to the traditional burning of forestry residues but also drives local economic growth. The facility creates employment opportunities within the community and supports sustainable waste management practices. Overall, the annual production of 30,000 tons of biochar by the EXOMAD GREEN facility makes a significant contribution to carbon		

	removal efforts. By actively removing and offsetting CO2 and other greenhouse gases, the facility plays a vital role in mitigating climate change and fostering sustainable development in the region.		
Alternative scenario 2: *[Name]*	*(Other likely activity that can replace the baseline activity, if none leave blanc)*	None / Some *(please quantify)*	None / Some *(please quantify)*
Alternative scenario 3: *[Name]*	*(Other likely activity that can replace the baseline activity, if none leave blanc)*	None / Some *(please quantify)*	None / Some *(please quantify)*
Project activity: *[Name]*	*(Other likely activity that can replace the baseline activity, if none leave blanc)*	None / Some *(please quantify)*	None / Some *(please quantify)*

A1. Does the project lead to higher volumes of carbon removal than the baseline?	Yes / No
Baseline scenario has no carbon removal	yes

A2. Is the project required by existing laws, regulations, or other binding obligations ?	Yes / No
The EXOMAD GREEN biochar facility is not mandated by Bolivian laws, regulations, or other binding obligations. However, it represents a voluntary initiative driven by a commitment to responsible waste management and sustainable practices. By choosing to implement the facility, the project demonstrates a proactive approach to address environmental concerns, even in the absence of legal requirements. This voluntary commitment showcases a dedication to environmental stewardship and sets an example for others to adopt sustainable practices.	

A3. Is the project first-of-its-kind?	Yes / No
Biochar production facilities prior to Exomad Green are non-existing in Bolivia	yes

A4. Is the project dependent on carbon finance?	Yes / No
The successful implementation of the EXOMAD GREEN biochar facility is dependent on carbon finance. As a voluntary initiative, the project requires financial support to cover its operational costs and realize its environmental objectives. Carbon finance, through mechanisms such as carbon offsetting or carbon credit trading, provides a means to generate revenue for the biochar facility. By monetizing the carbon removal and sequestration achieved by the project, carbon finance enables its sustainability and viability, allowing for the continued removal of CO2 and other greenhouse gases from the environment.	yes

A5. Does the project need a large investment to achieve carbon removal ?	Yes / No

Indeed, the development of the Exomad Green biochar facility necessitates a substantial investment to effectively achieve carbon removal objectives. The establishment of a biochar facility entails significant capital expenditures for infrastructure, specialized equipment, and operational costs. Additionally, ongoing expenses associated with the collection, processing, and conversion of forestry residues into biochar further contribute to the financial requirements of the project. Considering the ambitious scale and environmental goals of the facility, it is evident that a significant investment is essential to ensure the successful operation and the attainment of substantial carbon removal outcomes.	yes

A6. If investment is needed, is/was carbon finance considered when the investment decision is/was made?	Yes / No
Carbon finance was a fundamental factor considered when making the investment decision for the Exomad Green biochar facility. The absence of an established biochar market in Bolivia, coupled with the novelty of the biochar industry globally, necessitated the exploration of alternative revenue streams. Given this context, carbon finance emerged as the primary and essential source of income for the project. Without the opportunity to receive financial support through carbon offsetting or carbon credit trading, the investment in the project would not have been feasible. The reliance on carbon finance was a determining factor in enabling the project's implementation and ensuring its financial viability.	yes

Some projects may demonstrate additionality through simple cost analysis: this is applicable for projects where ex-ante investment analysis is not applicable, because a large investment is not needed. Example of such project could be charcoal producers starting to produce biochar for soil applications using existing equipment with minor adaptations.

Financial Additionality – large investment is not needed (Answer to A5 is "no")	Project response
Please describe adaptations needed and the related cost items and include evidence in attachment.	
Please summarize the simple cost analysis here and provide 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.	

If large investment is needed, , 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.

Financial Additionality – large investment is needed (Answer to A5 is "yes")	Project response
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.	In determining the benchmark rate for equity IRR or WACC for the Exomad Green biochar facility, we have conducted a detailed analysis considering several key factors. The project requires a total capital expenditure (CAPEX) of $4,000,000 and has annual operational expenditures (OPEX) of $1,000,000. The financing structure is designed with 50% equity and 50% debt. After careful consideration of the project's objectives and financial requirements, we have opted to utilize an equity Internal Rate of Return (IRR) of 20% as the benchmark rate. This rate is derived from a comprehensive assessment of the project's expected cash flows and represents the minimum rate of return required by equity investors to justify their investment. Taking into account the technology aspect, it is acknowledged that the appropriate biochar technology may not be currently available in

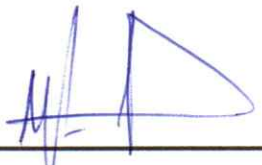
	Bolivia. However, the project benefits from a region abundant in forestry residues, ensuring a consistent and reliable feedstock supply. Moreover, the global market for carbon removals is witnessing substantial growth, with increasing demand for carbon offsets. This market trend, coupled with the project's focus on environmental cleanliness, positions the Exomad Green biochar facility favorably within the industry. Many prominent companies demonstrate a strong interest in offsetting their carbon emissions through carbon removal credits, further enhancing the revenue potential for the project. Based on these considerations, it is evident that carbon finance plays a pivotal role in the financial sustainability and success of the Exomad Green biochar facility. The absence of an existing biochar market in Bolivia, combined with the environmental benefits offered by the project, emphasizes the project's dependence on carbon finance as a primary source of income. The anticipated financial returns derived from carbon finance mechanisms are essential for the project's economic viability, ensuring long-term profitability and facilitating the realization of carbon removal goals.
Please state how CORC revenues change the expected IRR or NPV of the project.	Including CORC (Carbon Offset Revenue Credit) revenues in the financial projections of the project can have a significant impact on the expected IRR (Internal Rate of Return) or NPV (Net Present Value). Based on industry data, the average price range for CORCs is estimated to be between $100 and $150 USD per credit. The inclusion of CORC revenues introduces an additional revenue stream derived from the

	sale of carbon offsets. These offsets represent the carbon removal or emission reduction achieved by the Exomad Green biochar facility. By monetizing the project's environmental benefits, the sale of CORCs provides a valuable source of income. The potential financial impact of CORC revenues on the expected IRR or NPV depends on several factors such as the quantity of offsets generated, the timing of revenue realization, and the prevailing market prices. With the average price range of CORCs between $100 and $150 USD per credit, the project stands to generate substantial revenue from the sale of these credits. By incorporating CORC revenues, the project's cash inflows increase, leading to improved financial returns. The expected IRR, representing the rate of return required by equity investors, is positively influenced by the additional cash inflows from the sale of carbon offsets. Moreover, the inclusion of CORC revenues enhances the project's NPV by increasing the overall cash inflows over the project's lifespan.
Please conduct a sensitivity analysis in relation to the investment analysis and summarize the results here.	The sensitivity analysis conducted for the investment analysis of the Exomad Green biochar facility considered several key variables. Here is a summary of the results: 1. Carbon Offset Prices: The analysis considered the range of $100 to $150 USD per carbon offset credit. Higher prices within this range positively impacted the project's financial metrics, including the expected IRR and NPV. Lower prices had the potential to decrease the financial

	performance. It is crucial to monitor market dynamics to optimize revenue projections and financial strategies. 2. Operational Costs: The analysis factored in operational costs such as labor and maintenance. Labor costs were projected to increase by approximately 4% annually, and maintenance costs were expected to rise over time. Higher operational costs could potentially decrease the expected IRR and NPV. Implementing cost-control measures and efficient maintenance practices can mitigate their impact. 3. Biomass Feedstock Availability and Cost: The project benefited from an excess of biomass feedstock, which was currently available for free, with implied collection costs of around $5 USD per metric ton. However, there was a possibility that suppliers might start charging for it, with the project aiming not to pay more than $3 USD per metric ton. Ensuring a stable and cost-effective supply of biomass feedstock is crucial for financial performance. 4. Discount Rate: The sensitivity analysis did not include a specific discount rate. While this simplifies the analysis, it is important to note that discounting future cash flows is common practice to reflect the time value of money and accurately evaluate the project's financial viability and profitability over the long term. 5. Carbon Offset Demand: The analysis indicated a positive trend of increasing carbon offset demand, with expectations that it would continue to rise. This growing demand creates a

	favorable market environment for the project, enhancing revenue potential from the sale of carbon removal credits
Please provide full calculation spreadsheet file as an 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.	Attached.

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

X 

Date, Place: May 17th, Santa Cruz - Bolivia

Representative name, title, organization Marcelo Pereira Halters
Project Manager
Exomad Green.