

**Puro Standard:** Annex A: Biochar Methodology, edition 2022

**Compliance requirement:** 1.2.3 Additionality

1.2.3. CO2 Removal Supplier shall be able to demonstrate additionality, meaning that the project must convincingly demonstrate that the CO2 removals are a result of carbon finance. Even with substantial non-carbon finance support, projects can be additional if investment is required, risk is present, and/or human capital must be developed. To demonstrate additionality, CO2 removal Supplier must provide full project financials and counterfactual analysis based on Baselines that shall be project-specific, conservative and periodically updated. Suppliers must also show that the project is not required by existing laws, regulations, or other binding obligations.<sup>18</sup>

Note: In Puro Standard and related verification, a project specific additionality assessment is required. Puro Standard does not work with automatic additionality criteria or placement on a positive list.

**Notice. These answers are public information**

\*\*\*\*\*This statements are filled in at the end of the process by the officials\*\*\*\*\*

\*\*\*\*\*This section is filled in by the project with calculations attached\*\*\*\*\*

#	Additionality	No/yes. If yes, describe	Project response	+++
	Is the project required by existing laws, regulations, or other binding obligations	NO		
	Dependency on carbon finance.	YES	The revenues anticipated from carbon removal credits are required for the financial feasibility of the project.	
	Is investment required	YES	This completed demonstration plant with 5,000+ tons annual capacity project ultimately leads to a construction of a significantly larger commercial plant that requires significant investment for engineering and construction. The future commercial plant will manufacture up to 100,000 tons annually of Biochar using Sugar Cane Bagasse as the feedstock. The Sugar Cane Bagasse would otherwise be burned in the fields or left to decompose in large piles for years to come.	

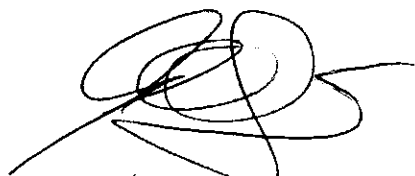
	Is risk present	YES	The International Biochar Initiative estimates the total production of Biochar in the U.S. at approximately 100,000 tons. There is great risk in that this plant being certified is the stepping stone to the larger commercial plant that will be the largest producer of biochar in the United States at a time when biochar markets are just beginning to show signs of development but are not yet proven. The risk of introducing such capacity of biochar supply to the market relies upon the potential revenue stream from sales of corresponding Carbon Removal Credits.	
	Is there a need to develop human capital, is there lack of skilled activity locally?	Skills Transfer	There exists opportunity to not only take advantage of skills transferability, but also to enhance and further develop those skills. The human capital skills development in engineering and technical expertise will be an added benefit of this project.	
	Is your project first-of-its-kind?	YES	There are patented processes designed and proven in the demonstration plant that will be key to the success of the larger 100,000 ton capacity commercial plant. This will be first large-scale Bagasse based biochar production facility of its design that we are aware of in the United States.	
	How is the project not economically feasible without carbon finance?		Without carbon finance this project would carry a level of risk that would be far higher than any investor would find reasonable. Simple supply and demand principles lead to the expectation of pricing for biochar being depressed upon the introduction of significant biochar supply. This 5,000 annual ton demonstration plant has been developed and is operating with the greater goal of constructing the larger 100,000 annual ton commercial plant. This larger plant would face the real possibility of becoming a stranded asset but for the availability of the associated carbon removal credit market revenue.	

	Attach a simple cost analysis and sensitivity analysis.		<div><p><b>Following is a simple cost/sensitivity analysis for each \$1,000.00 in revenue assuming the minimum expected price per unit for product:</b></p><p><b><u>Scenario with assumed CORC revenue</u></b></p><table><tr><td>Revenue for all products</td><td>\$ 1,000.00</td></tr><tr><td>Production expenses</td><td>\$ 963.00</td></tr><tr><td>Operating Margin</td><td>3.7%</td></tr></table><p><i>There remains room for other expenses and motivation for investors towards commercial plant development.</i></p><p><b><u>Scenario with ZERO assumed CORC revenue</u></b></p><table><tr><td>Revenue for all products</td><td>\$ 1,000.00</td></tr><tr><td>Production expenses</td><td>\$ 1,150.00</td></tr><tr><td>Operating Margin</td><td>-15.0%</td></tr></table><p><i>There remains no room for other expenses, and fails to provide confidence to attract investors.</i></p></div>	Revenue for all products	\$ 1,000.00	Production expenses	\$ 963.00	Operating Margin	3.7%	Revenue for all products	\$ 1,000.00	Production expenses	\$ 1,150.00	Operating Margin	-15.0%	
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	What are the key variables impacting the cost analysis?	Describe variable and sensitivity limits	There are really two key variables. 1) Biochar pricing. As supply increases, market pricing will respond. 2) Carbon Removal Credit Market: With demand currently exceeding supply and expected to rise, the market will respond. There is an expectation for demand to settle at some point in the future as technology and understanding both advance.													

What else is preventing your project implementation? Do you have to change industry norms or market practises or to build new infrastructure to carry out the project ?		Supply chain challenges have impacted the cost and timing of the project implementation to some extent, but the most impactful hurdle is the acceptance of biochar for use in agriculture. We have identified a path to overcome this challenge, and there is dependency on Carbon Removal Credit value as a key element of the solution succeeding.	
What is the activity substituting the proposed activity in the baseline case? Or is there a direct substitute?		Without an alternative use for sugar cane bagasse, this agricultural by-product, leftover from sugarcane harvest and processing activities, would either be burned or left to decompose. The original plan had sought to develop a manufacturing plant to produce a torrefied fuel pellet to burn. Instead, the current project is motivated by environmental need and is feasible due to the financial benefit of CORC's. This project will now lead to sequestering of carbon for centuries to come.	

**Project signature and date**

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



5-29-2022