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ITEM

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DESCRIPTION

In March 2023 we launched our first biochar facility in Concepción, Bolivia. With the remaining two set to begin operations by December 2023 and March 2024. Together, these facilities will leverage the power of Biochar to sequester up to 200,000 tons of CO2 annually. But our vision goes beyond environmental impact. Exomad Green is about creating a better, more sustainable world for everyone. We're striving to improve the quality of life for over 250,000 regional inhabitants, generate green jobs, foster local economic growth, and champion environmental justice across the region. Join us as we embark on this transformative journey, turning residues into wealth and cultivating a more sustainable future.

Our process begins at the source with the collection of biomass residues from local sawmills, providing us with an abundant, renewable source of biomass. The biomass is then transported to our state-of-the-art pyrolysis plant, where it undergoes a meticulous sorting and pre-treatment process that includes pre-drying and grinding, using energy-efficient machinery.

The biomass is then subjected to pyrolysis at approximately 600 degrees Celsius, during which the carbon in the biomass is trapped, preventing it from being released as carbon dioxide. This results in the production of biochar, a rich carbon product with a unique honeycomb-like structure, ideal for soil enhancement.

The biochar we produce improves soil fertility by increasing its capacity to retain water and

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nutrients, enhancing microbial activity, regulating soil pH, and aiding in soil remediation by absorbing toxins and heavy metals.

We then donate our biochar to local indigenous communities, empowering them to enhance their agricultural yields. By doing so, we not only support their livelihoods but also actively contribute to reducing deforestation, ensuring the preservation and sustainable use of our invaluable South American forests.

But the benefits of our project do not stop at soil improvement for the local communities. Exomad Green is committed to exceeding environmental standards. We adhere strictly to local and national regulations and have implemented a water treatment plan, enabling us to recycle and reuse water within the plant. We also employ a system for the effective capture and utilization of bio-oil and syngas by-products of the pyrolysis process, further minimizing our environmental footprint. By leveraging the pyrolysis process, we ensure that more than 70% of the heat generated is reused, further boosting our energy efficiency. The syngas produced during pyrolysis is also captured and used as a source of energy within the plant, reducing our reliance on external energy sources.

Through our operations, we not only reduce air pollution and fire risks associated with the improper disposal or incineration of biomass residues but also aim to improve air quality for around 250,000 people. We're proud to be contributing to an environmentally friendly solution that simultaneously improves community health.

In terms of social impact, we are currently creating green tech jobs for the community, with approximately 50 direct and 200 indirect employments. But we aim to triple this numbers by 2025. We comply with all local and national regulations regarding insurance and social benefits for our employees, providing dignified, sustainable employment.

Exomad Green's Sustainable Biochar Project is a shining example of a circular economy model that addresses multiple environmental challenges. The project embodies the true essence of sustainability, combining economic viability with environmental responsibility and social equity.

CARBON REMOVAL INFORMATION

Carbon removal method :	Biochar
Capture of CO2:	Photosynthesis

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Stabilization of CO2:	Pyrolysis
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Permanence:	Over 100 years
Status of production:	Audited
Unit of product volume:	tonne
Year of first issuance:	2023
Minimum amount to negotiate:	50
Avoided emissions (mention avoided emissions in tonnes):	200000
Examples of usage:	

Biochar, a product of pyrolysis, has the ability to sequester carbon dioxide (CO2) because of the nature of its production process and the properties of the resulting material. Here's how the sequestered CO2 in biochar is used or stored:

Carbon Capture during Production: During the pyrolysis process, organic matter is heated in an oxygen-limited environment. This prevents the full decomposition of the organic matter into CO2 and other gases. Instead, a significant portion of the carbon in the biomass is retained in a stable form within the biochar.

Stable Carbon Structure: Biochar is mostly composed of carbon in a very stable form. This means that it doesn't easily decompose or oxidize to release CO2 back into the atmosphere. As a result, when biochar is applied to soil, the carbon it contains remains sequestered in that stable form for a very long time—potentially hundreds to thousands of years.

Soil Application: When biochar is incorporated into the soil, it essentially locks away the carbon it contains. In other words, the carbon in the biochar is removed from the short-term carbon cycle because it won't be quickly returned to the atmosphere as CO2.

Enhancement of Soil Carbon Storage: Biochar addition to soils can also indirectly lead to increased soil organic carbon levels by promoting the microbial processes that incorporate CO2 from the atmosphere into soil organic matter.

Reduction of Greenhouse Gas Emissions: In addition to its carbon storage capabilities, biochar has been found to reduce the emissions of other greenhouse gases from soil, notably nitrous oxide (N2O). It can do this by influencing soil microbial processes.

Displacement of Fossil Fuel Carbon: The pyrolysis process that produces biochar also generates bio-oil and syngas, both of which can be used as energy sources. By utilizing these renewable energy sources instead of fossil fuels, there's a reduction in the net CO2 added to the atmosphere.

In essence, the CO2 sequestered in biochar isn't "used" in the way we think of fuel being used. Instead, the carbon is stabilized in a form that resists decomposition, preventing its release as CO2 and thereby serving as a form of carbon storage.

Co-benefits:

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Exomad Green's Biochar Production and Sustainability Project contributes to several United Nations Sustainable Development Goals (SDGs):

SDG 7 - Affordable and Clean Energy: The project harnesses pyrolysis technology to convert biomass into biochar, a process that generates syngas and bio-oil as by-products, which are reused within the plant as energy sources. This showcases our commitment to sustainable energy practices.

SDG 8 - Decent Work and Economic Growth: We create green jobs both directly and indirectly in the community, adhering to fair work conditions, insurance, and social benefits for our employees. This supports economic growth and provides a decent work environment.

SDG 9 - Industry, Innovation, and Infrastructure: Our innovative biochar production process using cutting-edge pyrolysis technology represents a significant contribution to developing a resilient infrastructure and fostering innovation.

SDG 11 - Sustainable Cities and Communities: By improving air quality and reducing the risk of fires through the responsible management of biomass residues, we help make communities safer and more sustainable.

SDG 12 - Responsible Consumption and Production: Our project embodies the principles of the circular economy, transforming residues into a valuable resource, and minimizing our environmental footprint through efficient use of resources.

SDG 13 - Climate Action: By converting biomass into biochar, we sequester carbon that would have otherwise been released into the atmosphere, helping mitigate climate change.

SDG 15 - Life on Land: By producing a soil conditioner that improves soil health, promotes plant growth, and aids in soil remediation, our project helps protect and restore terrestrial ecosystems.

In summary, Exomad Green's Biochar Production and Sustainability Project is a comprehensive initiative that targets multiple SDGs, promoting a sustainable, prosperous future.

Explanation of avoided emissions:

The Exomad Green project avoids emissions in several significant ways:

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Utilizing Waste Biomass: By recycling biomass residues that are often disposed of through incineration or left to decompose, Exomad Green prevents the direct release of CO2 and other greenhouse gases (GHGs) that would have resulted from these disposal methods.

Biochar Production: Instead of allowing biomass to decompose or be incinerated, Exomad Green transforms it into biochar. This process sequesters a significant portion of the carbon present in the biomass, turning it into a stable form that doesn't release CO2 into the atmosphere readily.

Heat Reuse: By reusing over 70% of the heat in the process, Exomad Green ensures that there is minimized need for external energy inputs. This reduces the emissions associated with energy production.

Syngas Reutilization: Instead of releasing syngas into the atmosphere, Exomad Green reuses it. Syngas can be a mixture of hydrogen, carbon monoxide, and other compounds. By reusing it, emissions associated with these gases are avoided.

Local Biomass Sourcing: By sourcing 50% of its biomass from its own factory and the rest from local sawmills within 10km, Exomad Green reduces emissions associated with long transportation routes.

Water Treatment and Reuse: With a water treatment plan in place, Exomad Green ensures that water is cleaned and reused, reducing the emissions and environmental impact associated with water extraction, treatment, and disposal.

Replacement of Non-Renewable Soil Enhancers: By producing a sustainable biochar, Exomad Green offers an alternative to non-renewable or less sustainable soil enhancers and fertilizers, reducing the emissions associated with their production and application.

Enhanced Soil Health: Healthy soils can act as carbon sinks, capturing more atmospheric CO2. By improving soil health, Exomad Green indirectly supports this natural carbon capture process.

Together, these strategies and processes ensure that the Exomad Green project not only reduces its own carbon footprint but also contributes positively to the broader effort to combat climate change and its associated emissions.

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Economic acceleration impact:

The proceeds from our Carbon Credit Sales play a pivotal role in the expansion and scale-up of Exomad Green's initiatives. Every purchase directly contributes to augmenting the project's scope, thereby amplifying its social and environmental impacts in and around the Bolivian forests. By supporting our venture, you're not only investing in carbon credits but also fostering sustainable development, community upliftment, and the preservation of one of the world's most vital ecosystems.