

Biochar - ECOERA Millennium 1 - Sweden

Price 0 € / CORC



ITEM

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DEALER

ECOERA AB

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DESCRIPTION

ECOERA is a Swedish biochar innovation company awarded the WWF Climate Solver company label. We have been in the biochar field for over ten years and in 2009 created Sweden's first large scale biochar carbon sequestration in agricultural fields. We were part of developing the Biochar Carbon Offset Methodology and specifically the Biochar Carbon Stability Test Method under the International Biochar Initiative. The biochar is produced from residue biomass streams from industrial seed production that would otherwise be wasted or decompose. Each ton of biochar is 78% pure carbon and embodies 2,57 tonnes of CO<sub>2</sub>e, while manufacturing it emits only 0,05 tonnes of CO<sub>2</sub>e. For a detailed carbon footprint description email [contact@puro.earth](mailto:contact@puro.earth)

Our company's mission is to be part of removing carbon dioxide from the atmosphere at an industrial capacity, with the aim to reach pre-industrial levels of 350 ppm CO<sub>2</sub> before the end of the century, while making the agricultural land fertile enough to feed 10 billion people on this planet.

How it works

The pyrolysis process is a way to condense the CO<sub>2</sub> from the biomass and stabilize it into our biochar for hundreds of years. The carbon stability in the biochar is 3rd party verified through being compliant with the standards of the European Biochar Certificate (EBC) and the strict Puro.earth methodology. The facility in Hammenhög, the foundation for ECOERA Millennium 1 is producing EBC certified biochar along with district heating.

The system is possible to be replicated at many new sites. The carbon removal purchases enable and accelerate our work to establish a new biochar production site and support sustainable agriculture using biochar as a soil amendment.

The location for the biochar production system is 55.506702, 14.154831. An overview of the production facility can be viewed here <https://vimeo.com/387794862>

Additional audit information

[Production output audit statement](#)

CARBON REMOVAL INFORMATION

<b>Carbon removal method :</b>	Biochar
<b>Capture of CO<sub>2</sub>:</b>	Photosynthesis
<b>Stabilization of CO<sub>2</sub>:</b>	Pyrolysis
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<b>Permanence:</b>	Over 1000 years
<b>Status of production:</b>	Audit scheduled
<b>Unit of product volume:</b>	tonne
<b>Embodied carbon in product:</b>	2,57
<b>Year or years of CORCs issued:</b>	2020
<b>Minimum amount to negotiate:</b>	500
<b>Examples of usage:</b>	

The Biochar from the Hammenhög facility corresponding to ECOERA Millennium 1 is used in three main storage systems:

- 1: Agricultural fields, close to the production facility.
- 2: Green Urban Infrastructure - green roofs, tree plantations, and rain gardens. Reference: [www.biokol.org](http://www.biokol.org)
- 3: Soccer fields where the biochar is part of the bedding material preventing water and nutrient runoff as well as increasing the density of the grass-root zone and hence the total biomass. Reference: Lund Municipality.

**Co-benefits:**

The LCA system boundary as defined in Puro.earth standard covers cradle-to-gate GHG impact. Outside of LCA our biochar has the following climate impacts:

- 1: Biochar has agricultural benefits, and our own growth trials have resulted in 10-33% yield increase.
- 2: Use of biochar can lower the need for artificial fertilizers. Most of our biochar is applied to farmlands and avoid N2O emissions from fertilizers.
- 3: Methane emission reduction through avoided decomposing of feedstock biomass to CO2 and CH4. Our biochar is made of biomass residues from grain production which would otherwise be composted or burnt. Those emissions are avoided by stabilizing the GHG into our biochar.
- 4: Replacement of synthetic turf grass in soccer fields. Synthetic turf is made from polyethylene, which is a form of plastic.

**Explanation of avoided emissions:**

**Avoided decomposing of biomass:** To make biochar we use agricultural biomass residue from grain production, which would in normal case be composted or burnt. Those emissions are avoided by stabilizing the carbon in the residue into our biochar for hundreds of years. 230 kg of CO2eq per mt ton biomass residue is avoided.

**Avoided emissions from fertilizers and irrigation:** If our biochar had not been spread to farms, parks and soccer fields, they would have needed more fertilizers and water to grow and remain green. Making mineral fertilizers would have caused emissions and also spreading them and irrigating.

**Economic acceleration impact:**

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The revenue acquired by carbon removal suppliers propels their growth, compounding the climate effect, and accelerating the carbon net-negative economy.

The payments for the carbon removal would increase our capacity to produce biochar in three ways:

1: a project start for installing an optimized version of the current system, with the potential to increase the size of the pyrolysis unit for lowering of CAPEX, increasing carbon sequestration.

2: usage of algae biomass for biochar production

3: usage of urban carbon streams (municipal sludge) as feedstock

**Additional information**

Ecoera's biochar carbon removal project was reviewed by Carbon Plan, a non-profit research organization that analyzes carbon removal opportunities based on the best available science and data. Their report and comments are publicly available for carbon removal mechanism, volume, negativity, permanence, cost, additionality and specificity, at <https://carbonplan.org/reports> (search for Ecoera)

**Posted on :**

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**AUDIT INFORMATION****Audit statement :**

[https://static.puro.earth/live/uploads/tinyMCE/Suppliers/Ecoera/Puro\\_\\_Facility\\_audit-statement\\_Ecoera\\_22.12.2020.pdf](https://static.puro.earth/live/uploads/tinyMCE/Suppliers/Ecoera/Puro__Facility_audit-statement_Ecoera_22.12.2020.pdf)

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