Biochar - ECOERA Millennium 1 - Sweden

Price 535 € / CORC

ITEM

Item URL: https ://puro.earth/100015

Item reference number #100015

DEALER

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DESCRIPTION

ECOERA is a Swedish biochar innovation company awarded the WWF Climate Solver company label. They 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. They 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 agricultural seed production. Residues that would otherwise be wasted or decompose. Each ton of biochar is 70% pure carbon and embodies 2,57 tonnes of CO2e, while manufacturing it emits only 0,05 tonnes of CO2e. For a detailed carbon footprint description email contact@puro.earth

The Ecoera 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 CO2 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 CO2 from the biomass and stabilize it into 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 Puro.earth Biochar methodology. The facility in Hammenhög, the foundation for ECOERA Millennium 1 is producing EBC certified biochar and the heat generated is supplied to a district heating grid.

The system is possible to be replicated at many new sites. The carbon removal purchases enable and accelerate their 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 herehttps://vimeo.com/387794862

Additional audit information
Production output audit statement

CARBON REMOVAL INFORMATION

Carbon removal method :	Biochar
Capture of CO2:	Photosynthesis
Stabilization of CO2:	Pyrolysis
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Permanence:	Over 1000 years
Status of production:	Audit scheduled
Unit of product volume:	tonne
Embodied carbon in product:	2,57
Year of first issuance:	2020
Minimum amount to negotiate:	100

Examples of usage:

The Biochar from the Hammenhög facility corresponding to ECOERA Millennium 1 is used is 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
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 the 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 payments for the carbon removal would increase their 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 (biosolids) as feedstock

Posted on :	11/09/2020

AUDIT INFORMATION

Audit statement :

https://static.puro.earth/live/uploads/tinymce/Suppliers/Ecoera/Puro__Facility_audit-statement_Ecoera_22.12.2020.pdf

Facility ID:	6430024068010001l4
Independently verified by:	bio.inspecta