



### Hydrothermal carbonization of green waste to produce biocoal, carbons and biochemicals

SunCoal is using the hydrothermal carbonization process (HTC) to produce high quality biocoal that is comparable to brown coal. The HTC process works with pressure and heat in order to replicate the natural carbonization process of biomass. The biocoal has an energetic value that is 70% higher than that of the starting materials.

SunCoal can utilize the local green waste from municipalities (grass, leaves etc.) or organic waste from industrial processes (wood chips, bagasse, empty bunches etc.) for biocoal and biochemicals production with low waste disposal costs. In CarboRen plant, 100 kgCO<sub>2</sub>/GJ output can be avoided at a production capacity of 17 250 tonnes biocoal.

Biocoals can be produced in various forms (dust, pellets, granulates). Market price for biocoals produced with HTC obtains 230€ per tonne dry matter. In a CarboREN plant, around 17,250 tonnes biocoal, equivalent to 345,000 GJ energy can be gained from 50,000 tonnes/year green waste, and 33,000 tonnes CO<sub>2</sub> can be avoided.

Due the advantage of the high feedstock flexibility from residues, farmers and foresters can deliver their agricultural residues and wood waste to process them to biocoal. Fermentation for biogas and other chemicals production is possible as competitive usage. Green wastes can also be used for composting. Technical implementation and up-scaling is challenging to realize, legal framework for the utilization of green waste is missing.



Photo: SunCoal Industries

#### KEY WORDS

Biocoal, hydrothermal carbonization

#### COUNTRY

Germany

#### AUTHORS

Shalaja Weber (DBFZ)  
[shalaja.weber@dbfz.de](mailto:shalaja.weber@dbfz.de)

Laura Garcia (DBFZ)  
[laura.garcia@dbfz.de](mailto:laura.garcia@dbfz.de)

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## ADDITIONAL INFORMATION

The CarboREN process makes the use of biomass more efficient, is environmentally friendly and it does not produce harmful by-products.



Photo: SunCoal Industries

**Coordinator:** Johanna Routa - (Luke) johanna.routa@luke.fi

**Dissemination:** itabia@mclink.it

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## ABOUT BRANCHES

**BRANCHES** is a H2020 “Coordination Support Action” project, that brings together 12 partners from 5 different countries. The overall objective of **BRANCHES** is to foster knowledge transfer and innovation in rural areas (agriculture and forestry), enhancing the viability and competitiveness of biomass supply chains and promoting innovative technologies, rural bioeconomy solutions and sustainable agricultural and forest management.



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## THE PARTNERSHIP

