

Use of biomass

Cluster 5 of Food Pro-tec-ts pursues the goal of developing concepts and technologies for the conversion of previously poorly used or unused biomass material flows into high-quality products.

The activities are based on the bio-economic strategy, which is oriented towards natural material cycles and aims to contribute to a structural change from an economy based on finite fossil sources to an economy based more strongly on renewable resources.

Food production technologies for trans-boundary systems

Food Pro-tec-ts is designed to bring top class technology innovation right into the heart of both the Dutch and German corporate landscape.

In the project, entrepreneurs from both countries cooperate with innovation experts in different clusters with the aim of jointly developing new technologies and learning how to use them.

www.foodprotects.eu



HYDROTHERMAL CARBONIZATION

Key technology in global waste treatment



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Project partners Cluster 5



Co-financiers

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www.deutschland-nederland.eu




Project objective

Aim of this subproject is the development of a concept for the environmentally friendly and resource efficient utilization of unused biomass from municipal and agricultural waste biomass streams.

By converting organic waste by means of hydro thermal carbonization (HTC) into a storable energy storage, the biochar can be used to generate energy (electricity and heat) and nutrients can be recovered from the input material.

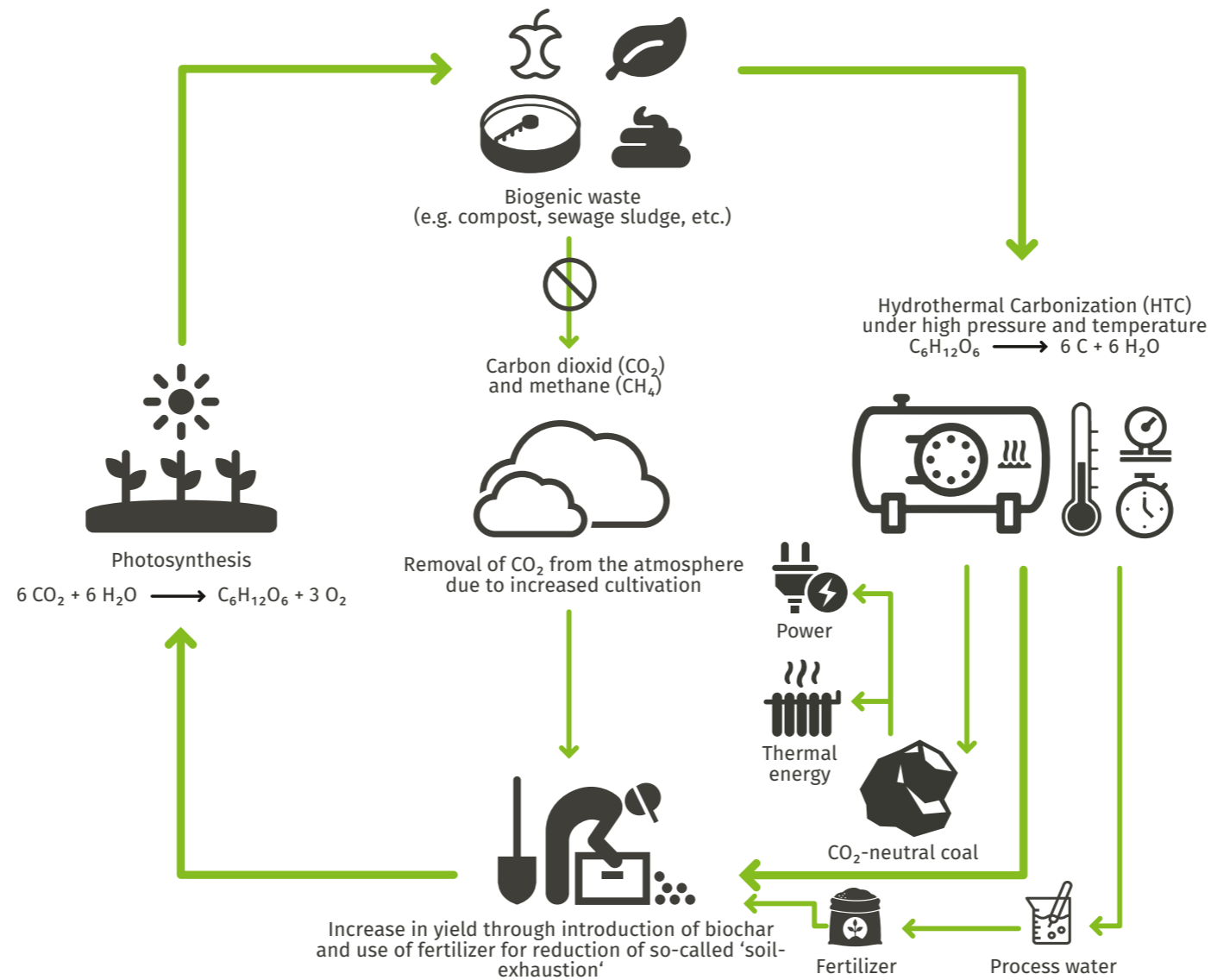
Hydrothermal carbonization is the key technology in the processing of biological waste and thus the closure of the waste cycle.

 **Cluster 5**
Material and energetic use of biomass

Processinnovation

We aim developing a process that converts organic residues in an environmentally friendly, climate friendly and hygienic way and enables both the energetic use and recycling of plant nutrients for agriculture.

The core of the project is a continuously operating system for hydrothermal carbonization (HTC).



Motivation

- › Creation of a new CO₂-neutral energy source through the conversion of otherwise only poorly used biomass
- › Offer a solution for the nitrogen problem in the agriculture
- › Promotion of the production of soil improvers and fertilizers in addition to the energetic use of the produced biochar
- › A sustainable and meaningful use of biomass, with a CO₂-neutral, renewable energy storage system

Examples of application

- › Fermentation residue treatment in biogas plants
- › Sewage sludge utilisation/phosphorus recovery
- › Utilization of horse and chicken manure
- › Use of food waste from food industry or from supermarket surpluses
- › Slurry processing using HTC technology



Benefits for consumer

- › Coverage of own electricity and heat demand
- › The use of biochar as soil optimizer enables CO₂-reduction from the atmosphere due to higher yields

Benefits for economy & society

- › At present, the use of regenerative energies lacks a meaningful energetic processing of biomass
- › Until now, wet and moist biomasses have had to be dried and processed in an energy-intensive way before they can be used