

Smart Biorefinery

Waste Flow

Organic Waste (Food Waste)

Impact on PESTEL categories

Technical

Location of the good practice

Amsterdam Metropolitan Areas

Stakeholders involved

Institutions, environmental organizations, enterprises, researchers, associations that are active on the territory

Keywords

Biodegradable, Sustainable, Waste reduction

Description

The proposed solution uses a smart biorefinery to produce maltodextrin in a process which maintains the value of its stored energy. The projected smart biorefinery allows for the efficient production of high quality, dense energy fuel for EFCs. This solution has long been heralded as a clean alternative to internal combustion engines due to their ability to convert chemical energy to electric energy efficiently. Moreover, smart biorefinery have little moving parts, require little maintenance and operate quietly. Unfortunately, fuel cells require expensive materials such as platinum and use highly combustible fuels. In contrast, an Enzymatic Fuel Cell has all the benefits of fuel cells but does not rely on expensive materials or combustible fuel. Instead, it uses enzymes to convert sugar into electricity at 83%. These sugars can easily be extracted from starchy or cellulose-rich food waste.

Objective

This EIS aims to created novel possibilities for food waste processing in a completely safe manner. Moreover, by being a bio-based solution, smart biorefinery aims to mitigate greenhouse gas emissions and ensure stable and renewable resources.

For further information

<http://h2020repair.eu/wp-content/uploads/2019/03/Deliverable-5.2-Catalogue-of-solutions-and-strategies-for-Amsterdam.pdf> (page 223)

