



MICROALGAE BASED BIOREFINERY AS A BUSINESS ANSWER TO CLIMATE CHANGES

Lambertus A.M. van den Broek

Background

With the world population constantly growing, chemical, energy, material and fuel industries among others are all seeking for sustainable feedstocks. MicroAlgae Biorefinery (MAB2.0) offers an innovative and sustainable technology and B2B business model, which makes large-scale production of algae biomass possible based on waste streams and use of CO₂. Microalgae are among the most promising sustainable feedstocks because of the high productivity per hectare and the range of potential products. Apart from the economic benefits of the solution, it answers the present climate challenge by delivering energy saving, closed loop production, enhanced resource recovery and the production of CO₂ neutral feedstock for many applications (www.algaerefinery.eu).



Objective

The MAB2.0 project aims to demonstrate two breakthrough technological and commercial concepts for (1) integration of algae technology into a municipal waste water treatment plant (Figure 1) to enhance water quality and biogas yield (2) biorefinery of algae into high value and biobased products (Figure 2). At Wageningen UR Food & Biobased Research the objective is the biorefinery of the produced algae into different fractions (proteins, polysaccharides, pigments). Together with the industrial partners these fractions will be tested for their applications in the desired products.



Figure 1. Waste water treatment plant and (encircled) algae plant

Biorefinery of algae

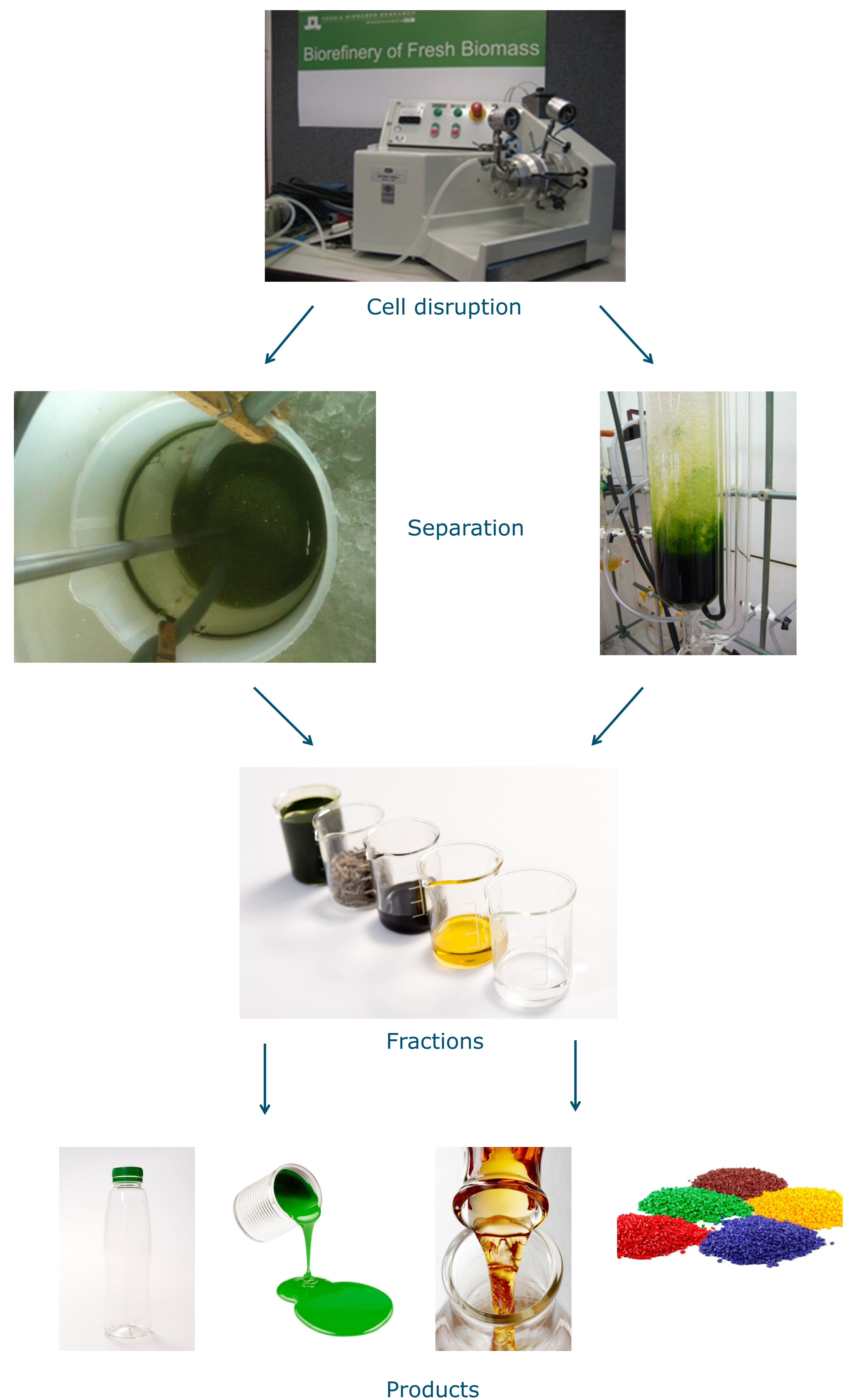


Figure 2. Algae biorefinery

Acknowledgements

MAB2.0-project has received funding from EIT Climate-KIC.

