



### EU cofin Project Annual Report 2018

The EU projects that receive co-finance from the top sectors must submit an annual report on their technical and financial progress. This format is to be used for reporting the technical progress. The report must be submitted by 15 February 2019 to Hans van der Kolk

#### General information

TKI Number of the project	AF-EU-16003
Title	MACROFUELS - Macro-algae as a sustainable source for biofuels
project leader WR (e-mail address)	Ana.lopez-contreras@wur.nl
Address project website	<a href="http://www.macrofuels.eu">www.macrofuels.eu</a>
Start date	01-January-2016
End date	31-December-2018

#### Short description/aim project (this information can be published on a website of the TKI/Topsectors)

Macrofuels aims to develop technologies to produce liquid advanced transportation biofuels from seaweed (also called macroalgae). Our proposed processes encompass all steps from seaweed cultivation to production of (precursors of) advanced biofuels for the transport sector, i.e.: aviation, cargo and truck fuels. At WFBR, we develop fractionation technologies for seaweeds, and innovative biotechnology processes. WFBR is the Work package leader of the Bioconversion work.

#### Planning and progress Is the project going according to plan? Are there any substantive bottlenecks? If yes, please explain with a brief description of the current situation

The project is proceeding according to plan.

#### Highlights and deliverables in 2018 / so far (this information can be published on a website of the TKIs/Topsectors)

In the third year of the project, the cultivation systems for *Saccharina latissima* and *Alaria esculenta* have been extended in Scotland and in Denmark. At WFBR we have characterized in detail the composition and fermentability of the biomass of *Saccharina latissima* from the harvest of 2017. Hydrolysates have been prepared and desalted using ion exchange and ion exclusion chromatography and tested for fermentation. Up to now, ion exchange seems the best option for desalting at small scale. For the fermentation, strains of *Clostridium* have been adapted successfully for growth on the *Saccharina latissima* hydrolysate to produce fuel precursors. In addition, fermentation of *Palmaria palmata* hydrolysates for butanol production has been studied.

#### Number of delivered products in 2018 (in an appendix, please provide the titles and/or

description of the products or a link to the products on public websites)			
Academic articles	Reports	Articles in journals	Introductions/workshops
1	5 deliverables (not public)		1 (EFIB presentation)

## **Appendix: Names of the products or a link to the products on a public website**

### **Scientific articles**

Diallo, Mamou, Andre D. Simons, Hetty van der Wal, Florent Collas, Bwee Houweling-Tan, Servé WM Kengen, and Ana M. López-Contreras. "L-Rhamnose metabolism in *Clostridium beijerinckii* strain DSM 6423." *Appl. Environ. Microbiol.* 85, no. 5 (2019): e02656-18. Open access: <https://aem.asm.org/content/85/5/e02656-18.abstract>

### **Reports**

Flyers and public reports from Macrofuels are available at: [www.macrofuels.eu](http://www.macrofuels.eu)

### **Lectures**

López-Contreras AM. 2018. "Production of fuels and chemicals from sugars in seaweeds" presented at the Clostridium XV congress, Munich (DE), 18-20 September.

### **Non-scientific congresses**

Stand at EFIB 2018, Toulouse (France), 16-18 October 2018.