

Turning algae into fuel

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Credit: AI-generated image ([disclaimer](#))

Blue-green in colour, slimy and present in seas and fresh water worldwide - the presence of microalgae is not generally met with great excitement. But this may be about to change. A team of European scientists is on a mission to prove that microalgae can be used to produce bioethanol as a biofuel for less than EUR 0.40 a litre.

The EU-funded project DEMA ('Direct Ethanol from MicroAlgae') is

focusing on cyanobacteria - a microalgae found in almost every terrestrial and [aquatic habitat](#), including in oceans, lakes and damp soil, and on rocks. They obtain their energy via photosynthesis.

The research team is seeking to improve biofuel production at two levels. First, the team will introduce the capacity to produce ethanol through [metabolic engineering](#) - by altering the chemical reactions that occur within its cells so that they can produce bioethanol effectively.

The bioethanol will then be secreted by the algae and filtered from the medium through a membrane.

The DEMA team will develop and demonstrate the technology, and is confident that the process, once fine-tuned, will be superior to any other put forward so far in scientific literature.

Biofuels have the potential to significantly reduce transport's output of carbon and reduce its impact on climate change. Using [microalgae](#) to produce biofuels has many advantages over other forms of biomass: it occurs naturally and grows quickly, and as it does not grow on land, it does not compete with [food crops](#).

The project brings together nine partners from both academia and industry from six EU countries. It is coordinated by the University of Limerick in Ireland and has received almost EUR 5 million from the EU under the energy strand of the Seventh Framework Programme (FP7). The project started work in December 2012 and completes its work in May 2017.

More information: Project factsheet
cordis.europa.eu/projects/rcn/106280_en.html

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