



CO₂ALGAEFIX - CO₂ capture and bio-fixation through microalgal culture



Expedient	LIFE10 ENV/ES/000496	Date	01-SEP-2011 to 30-JUN -2014	Location	
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Consortium	Iberdrola Generación SA, Spain	EXELERIA SL., Spain	Universidad de Almería, Spain		
	Agencia Andaluza de la Energia, Spain	Madrid Network, Spain	Universidad de Sevilla, Spain		
Objective	<p>The key objective of the CO₂ALGAEFIX project is to demonstrate, at a one hectare surface scale, an efficient way to capture CO₂ from stationary sources (in this case, a power plant that uses natural gas). It aims to demonstrate that CO₂ emissions can be used as a substrate for biomass algae production.</p> <p>The project will use a 10 000 m² pilot plant constructed by Algaenergy for experiments in microalgae cultivation. It aims specifically to test and demonstrate a new photobioreactor concept based on flat panels as the basis for a highly efficient large-surface culture plant. The process proposed will include novel technologies to capture and concentrate CO₂, and make it available for culturing microalgae.</p> <p>Through ongoing evaluation and optimisation of the pilot plant's design, and its connection to the CO₂-generation plant, the project hopes to achieve increased CO₂ bio-fixation and the photosynthetic efficiency of microalgal cultures. The 1 ha demonstration plant is expected to capture and fix more than 200 tonnes of CO₂ per year. If successful, the technology should easily scale-up to industrial level.</p> <p>CO₂ALGAEFIX will also evaluate possible uses of the microalgae, for example, in the production of energy, or in the production of valuable compounds for different economic sectors.</p>				
Expected results	<p>Expected results:</p> <ul style="list-style-type: none">○ Successful operation of a demonstration plant for microalgae culture using CO₂ from stack gases;○ Optimisation of the plant's operation to achieve productivity in excess of 200 tonnes of algal biomass per year;○ Valorisation of microalgal biomass in a variety of sectors, including aquaculture and agriculture.				