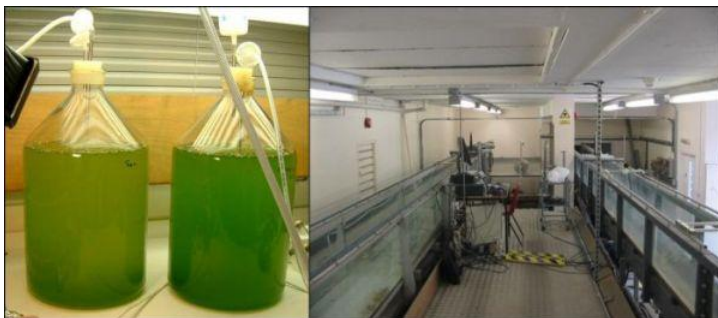




## System requirements for low-cost energy-efficient algal biomass cultivation for biofuel production

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<b>Related website</b>	<a href="http://www.carbontrust.co.uk/emerging-technologies/current-focus-areas/algae-biofuels-challenge/">http://www.carbontrust.co.uk/emerging-technologies/current-focus-areas/algae-biofuels-challenge/</a>

This research was funded by the Carbon Trust's Algal Biofuels Challenge programme, and aimed to provide the basis for design and engineering of cost-effective mass culture systems for algal production. A key component in this is the requirement for carbon supplementation to maximise algal productivity in an open system. Innovative low-energy methods for carbon enrichment are being developed based on gas injection. The efficiency of these will be matched to the system demand for carbon in open channels where the controllable variables include flow depth and velocity. Both gas-lift systems that can also provide downstream mixing and innovative low-energy carbonation devices are being developed. Performance will be tested in practice using both laboratory rigs and large-scale test facilities. Carbon demand and conversion efficiency will be assessed in a pilot-scale open channel system able to simulate different surface areas and retention times. The work is being carried out within the framework of an integrated assessment of energy and carbon inputs.



- Algae and flumes in Southampton

### Collaborators

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