ALL-GAS PROJECT

Biofuels from algae

All-gas

Project Description

One of the challenges in the water sector is to avoid the production of residuals at the different stages in the water cycle, or at least take maximum advantage of them. Our aim is to achieve the highest possible degree of sustainability and efficiency.

With current technology, such as the activated sludge process that is already 100 years old, wastewater treatment involves high energy needs and sludge production.

In fact, the resources contained in wastewater, energy and nutrients, are only partially recovered, and mostly at the end of the process - making the economical return difficult.

All-gas is a change of paradigm, systematically transforming the resources into value, such as biofuel, lipids or fertilizer. Without high electricity input such as aeration, a positive energy balance is created since only a small part of the inherent energy in wastewater is used for internal process needs (mixing and harvesting: about 0,1 kwh/m^3) and all of the biomass produced (more than 20 g/m^2/d) is available for beneficial use, either vehicle fuel (biomethane), lipid products or biofertilizer. Instead of a cost to the community, wastewater becomes a resource! Only about 1 ha is needed to treat 1000 m^3/d, which will produce fuel for about 10 cars... as was proven in the initial 2 year pilot phase (6 raceways of 35 m^2) and confirmed during the subsequent 2 year prototype operation (2 raceways of 500 m^2).

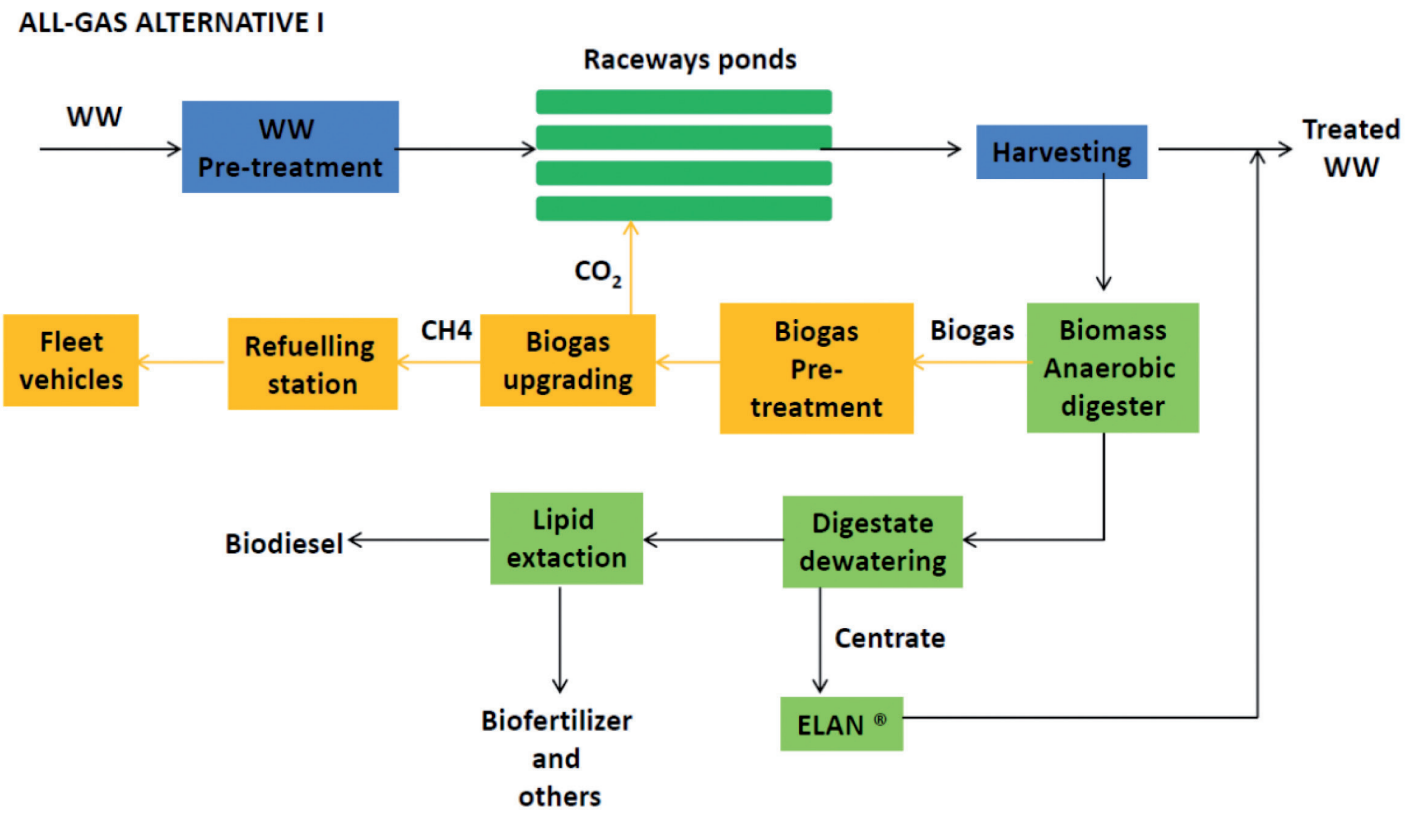
In a final phase, the All-gas project seeks to demonstrate this sustainable large-scale production of biofuels based on the low-cost cultivation of microalgae. The complete process chain - from cultivation ponds, biomass separation, extraction of oils and other chemicals to the downstream production of biofuels and their use in vehicle fleets - will take place based on a cultivation area of up to 10 hectares, with the goal of wastewater treatment becoming a net energy producer. The demo will be accompanied by the operation of 4 biomethane vehicles supplied by VW to prove the reliable fuel production during at least 30 000 km.

aqualia

Location: EDAR El Torno, Chiclana de la Frontera, Cádiz

Estimated Duration: From the 1st of May 2011 to 9th July 2018

Total Budget in Euro: 11,820,564.14 € **Aqualia:** 8,098,099.82 €



PROJECT PARTICIPANTS

- FCC aqualia S.A. (leader)
- BDI Bio Energy International
- Hygear B.V.
- Universidad de Southampton
- Fraunhofer – Gesellschaft
- Volkswagen

DETAILS OF FUNDING

Funding: 7th Framework Programme of the European Union (FP7).
Organism: European Commission (EC).
Project: ENER/FP7/268208
Grant: Subsidy of 57% of budget.

Funding Received
Total Budget in Euro: 7,106,680 €
Aqualia: 4,646,749.91€

Contact: innovacion@aqualia.es
http://www.all-gas.eu/