



## New System for Producing Biofuels from Marine Plankton

**Recently, the Spanish company Biofuel Systems SL announced the development of a new system for producing energy from plankton that would contribute to reducing CO<sub>2</sub> emissions.**

Working with researchers from the University of Alicante, the Spanish company Biofuel Systems SL (BFS) has designed a new system for producing biopetroleum from phytoplankton by means of an energy converter. The company has announced that this system could help to reduce CO<sub>2</sub> emissions. This new technology, which is expected to be operative in a limited space and at a moderated cost, will be operational in late September 2007.

The system that produces this new biofuel from plankton is very different from existing systems producing biodiesel in other countries. It uses tiny ocean plants known as *phytoplankton* as feedstock. These organisms obtain energy through a process called photosynthesis, meaning that they are dependent on light and CO<sub>2</sub> for their food. Through photosynthesis, phytoplankton are responsible for much of the oxygen present in the Earth's atmosphere, they must therefore live in the well-lit surface layer of an ocean, sea, or lake.

According to the company, the production of this biofuel is an accelerated version of the natural process that takes place to form fossil petroleum, which usually takes millions of years under extremely high pressure and temperature conditions.

This new fuel will have the advantages of petroleum but will not contribute to CO<sub>2</sub> emissions, will not emit SO<sub>2</sub>, and there will be hardly any toxic by-products. Indeed, it has been estimated that CO<sub>2</sub> emissions from this process would be reduced by 78% in comparison with the process to obtain fuels from traditional fossil sources. This is due to the fact that the amount of CO<sub>2</sub> released during extraction, processing and fuel burning will be offset by the amount of CO<sub>2</sub> fixed by the phytoplankton during the photosynthesis process.

It is predicted the system will produce massive amounts of biopetroleum at a competitive price. The price of the biofuel obtained has been calculated at 35 euro cents per litre before tax. As regards productivity, this system could produce 400 times more oil than any other source of biofuel. For example, soya produces 50 cubic metres per square kilometre per year, colza (rape seed) produces 100 to 140 cubic metres, mustard yields 130 and palm oil 610 cubic metres, while algae produce 10,000 to 20,000 cubic metres of biofuel per square kilometre per year.

The company is planning to develop the technology to increase production of algae per hectare, before completing construction of its first factory, whose planned location is on Spain's Mediterranean coast.

### Sources:

- Biofuel Systems web site <http://www.biofuel-systems.com/>
- [http://www.cincodias.com/articulo/empresas/sacarle/petroleo/algas/cdscdi/20060720cdscdiemp\\_16/Tes/](http://www.cincodias.com/articulo/empresas/sacarle/petroleo/algas/cdscdi/20060720cdscdiemp_16/Tes/)
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