ExxonMobil Tunes In To Drop-In Biofuels, Turns On To Algae

Jim Lane Biofuels Digest *[1] - July 16, 2009*

In California, more details have emerged on the $600 million ExxonMobil / Synthetic Genomics partnership, and an astonished group of writers at newspapers around the world have added reaction to the largest investment in biofuels history by its most prominent skeptic, ExxonMobil. The effort appears to be aimed at producing a drop-in fuel that utilizes continual harvesting of oil.

According to the Economist, "Other firms are working on ways to break up the cells of oil-rich algae to get at the oil [2]. Dr Venter, however, has succeeded in engineering a secretion pathway from another organism into experimental algae. These algae now release their oil, which floats to the surface of the culture vessel. That is why he refers to the process as biomanufacturing. It is not farming, he reckons, because the algae themselves are never harvested."

(Note: More on the the prospect of continuously harvested oils from bioproduction in the Biofuels Essay: "Drop In, Tune Out, Turn On [3]": "Turn on to the idea that, like moving from print to digital, we are moving from an era of batch production of feedstock to continuous harvest.")

The Economist continues: The next trick, which Exxon's money will help pay for, is to tweak the biochemical pathway [2] that makes the algal oil (which is known, technically, as a triglyceride, and has oxygen atoms in it as well as carbon and hydrogen) so that the oxygen-containing parts of the molecules are snipped off and a pure hydrocarbon is left. After that, it will be a question of looking through the thousands of species of algae around to see which would make the best "platform" for the new technology."

The Wall Street Journal opines, "After years of snubbing alternative fuels as a bad investment [4]," the company said Tuesday it will sink $600 million into researching how to turn algae into a biofuel that would also help fight global warming." In its Venture Capital Dispatch blog, the Journal has called the investment trend the "summer of algae".

According to The Financial Times quoted Synthetic Genomics founder J. Craig Venter warned with respect to the proposed technology "that commercial deployment could be 10 years away. [5]"

The New York Times adds "The venture will research the use of algae to produce biofuels resembling petrol and diesel [6], or a form of crude oil that could be processed in Exxon's existing refinery network, and its Greenwire editors add that

ExxonMobil Research and Engineering VP Emil Jacobs said that ,"Exxon Mobil's collaboration with Synthetic Genomics will last five to six years…and will involve the creation of a new test facility in San Diego to study algae-growing methods and oil extraction techniques." After that, Jacobs said ExxonMobil "could invest billions of dollars more to scale up the technology and bring it to commercial production."

The Independent confirms that the project will be the largest biofuels development yet attempted [7], but "spending on the algae fuels project will require only a fraction of Exxon's annual capital budgets of $25bn to $30bn."

The Australian is reporting that "The multinational, despised by green activists for its support of scientists sceptical of climate change, plans to invest $US600million ($763m) in a joint venture with Synthetic Genomics…Greenpeace was sceptical. "It fits their business model of finding something you can put in a car [8]," said Robin Oakley, a climate change campaigner. "

However, Sign On San Diego is reporting that Research director Kert Davies of Greenpeace said "This money is enormous compared with other money that has been spent on algae. So it's a game-changer as far as algae [9]." The online report also quoted algae pioneer Stephen Mayfield of The Scripps Research Institute, who said "This is a watershed day for algae biofuels," Mayfield said, "because one of the most sophisticated companies in the world has surveyed the entire field, and this is where they placed their bet."

Competitors in algae continue to exude a positive vibe. Andy Beck, VP Government Affairs for PetroAlgae, said that "ExxonMobil has looked at macrocrops for years, and passed. Their large investment in microcrops says it all, as far as validating what companies like PetroAlgae have been saying." Beck adds, "With our technology ready for licensing and commercialization today, not years down the road, we couldn't be happier."

Links:
[1] http://biofuelsdigest.com
[2] http://www.economist.com/sciencetechnology/displaystory.cfm?story_id=14029874
[3] http://biofuelsdigest.com/blog2/2009/05/04/drop-in-tune-out-turn-on/
[4] http://blogs.wsj.com/venturecapital/2009/07/14/the-summer-of-algae/
[5] http://www.ft.com/cms/s/0/bc44634e-70d4-11de-9717-00144feabdc0.html
[6] http://www.nytimes.com/2009/07/14/business/energy-environment/14fuel.html?_r=1&scp=1&sq=+
[7] http://www.independent.co.uk/news/business/news/oil-giant-exxon-sees-the-future-ndash-and-it-is-green-algae-1746491.html

[8] http://www.theaustralian.news.com.au/story/0,25197,25787302-11949,00.html
[9] http://www3.signonsandiego.com/stories/2009/jul/15/1n15algae001356-deal-blooms-algae-biofuel-research/?business&zIndex=132227