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Mexican Company to Produce Ethanol from Algae at Sonora Plant

by LADB Staff
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The Mexican company Biofields has announced plans to construct a plant on the Sonora coast that will produce ethanol from algae. The company hopes its facility, which eventually could produce about 2 billion gallons of fuel per year, would provide a viable alternative to corn-based ethanol. The price of corn has risen sharply in the past two years, partly due to a US campaign to promote the use of that commodity in the production of ethanol.

Company officials said construction of the new plant at Puerto Libertad on the Sea of Cortez, is scheduled to begin in 2009 at a cost of US$850 million, with operations set to start by the end of 2010 or the early part of 2011. "By 2013, we expect to be producing 250 million gallons of ethanol from algae at the plant, said Sergio Ramirez, a spokesperson for Biofields. When the facility reaches its full capacity, production would increase significantly above that level. "The technology that we are going to use would allow us to produce as much as 2 billion gallons," added Ramirez.

The company has acquired a license to use technology developed by the US-based company Algenol Biofuels, in a process that employs the same enzymes used to ferment sugar or other materials to produce beer, wine, and energy drinks. As part of its operation, Biofields will grow blue green algae in tanks similar to those used in shrimp farms or other types of aquaculture. This type of algae, said Ramirez, produces natural ethanol, which will then be refined into fuel. This production process is cleaner than that used in the manufacture of ethanol produced from corn, sugar cane or cellulose. Production of these types of ethanol uses industrial processes that tend to cause pollution, said Biofields.

PEMEX a likely customer

Biofields has reached an agreement with the state utility company (Comision Federal de Electricidad, CFE) to provide the carbon dioxide and the hot water that will be needed in the operation. The water, which is used in the cooling process for the CFE's hydroelectric plant in Puerto Libertad, Sonora, will be transported to the facility rather than dumped in the Sea of Cortez, officials said. The company hopes to sell the lion's share of its production to the state-run oil company PEMEX, which announced plans in 2007 to incorporate ethanol into a gasoline mix that will be distributed in Mexico City, Guadalajara, and Monterrey (see SourceMex, 2007-06-06).

The production from the Biofields plant will provide another option for the state-run oil company, which expects to initially use ethanol produced from sugar and African palm in 2010, Agriculture Secretary Alberto Cardenas said at a conference on biofuels in Guadalajara in early May. Cardenas said Mexican farmers would set aside 300,000 hectares by 2012 for crops that can be used for ethanol output. Mexico has rejected the use of corn and other food grains to produce ethanol. Strong demand for corn by the US ethanol industry is partly blamed for the increase in global food prices over the last couple of years (see SourceMex, 2007-09-05 and 2008-04-16 and NotiCen, 2008-04-17).
"Our cost structure does not depend on agriculture inputs, and therefore our technology does not compete with the food market," Biofields director Alejandro Gonzalez said at that same conference. With the strong demand for ethanol in the US, Biofields also sees a potentially strong market north of the border. "We are 300 km. from the world's largest market for ethanol, which is California," said Gonzalez. He estimated that demand for ethanol in the US would reach 30 billion gallons by 2020, far above its production capacity of between 12 billion and 18 billion gallons.

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