

Gevo Ramps Up Post-IPO

Executive Team Leads Next Round of Renewables

Biobased chemical firm Gevo (Englewood, CA) is bullish about prospects after building considerable momentum behind its isobutanol production technology. So far this year, Gevo has had a successful initial public offering (IPO), two commercial-scale projects, and a number of strategic relationships with global leaders in fuels and chemicals. Early stage investors in Gevo include Khosla Ventures (Menlo Park), Total, and Lanxess.

Founded in 2005 on biobased methanol technology licensed from the California Institute of Technology (Pasadena, CA), Gevo was “rebooted” after the arrival of CEO Patrick Gruber in 2007 to focus on isobutanol. Formerly chief technology officer at NatureWorks (Minnetonka, MN), Gruber is a veteran of the Cargill team that commercialized Ingeo, the world’s first biobased polymer produced at commercial scale. Other NatureWorks veterans tapped for Gevo include president and COO Christopher Ryan and executive v.p./technology David Glassner.

After NatureWorks, Gruber vowed he would never do “new” again. The NatureWorks technology “worked great, the plants worked great,” Gruber told investors at a recent meeting in New York. “Market development was hard.” At over \$500 million, the cost of market development for Ingeo was also nearly twice as expensive as developing the technology and building the plants, he says.

In isobutanol, Gruber found that biobased sweet spot: large existing markets and production costs that rival the established and well-integrated economics of petroleum-based fuels and chemicals. The four-carbon chemical can be sold directly in the marketplace as a solvent and a gasoline blendstock, or it can be converted into butenes, the precursors for 40% of all petrochemicals and 100% of all hydrocarbon fuels, Gruber says.

The chemical also “plays well” with the petroleum industry, sidestepping many of the infrastructure compatibility issues that have created an ethanol blend wall, and allowing refiners to blend higher quantities of low-cost natural gas liquids into gasoline. Potential specialty chemi-



LUVERNE, MN: Gevo's first commercial-scale unit.



BEEN THERE: Gevo execs draw on past experience.

cal market applications for isobutanol total 1 billion gals/year, while the annual fuel blending opportunity is as high as 40 billion gallons, Gruber says. Penetrating just 1% of the fuels market and 5% of chemicals market translates into 9 billion gals.

The global market for isobutanol to date has been limited by the high cost of petroleum-based routes, which Gevo, at \$1.60/gal, cuts by a dollar, Gruber says.

The company raised \$107 million in its February IPO, funds it is using to advance commercial-scale projects at Luverne, MN and Redfield, SD. Gevo bought the Luverne ethanol plant from Agri-Energy in 2010, and has been retrofitting the unit to produce 18 million gals/year of isobutanol. Start-up is expected in the first half of 2012. Gevo has also signed a joint venture deal with Redfield Energy (Redfield, SD) to convert an ethanol plant at Redfield to 38 million gals/year of isobutanol capacity. Startup is expected in late 2012.

Revenues for the second quarter of 2011 were \$14.5 million compared with \$500,000 in the same period in 2010, as a result of revenues from Agri-Energy.

Offering a retrofit technology allows Gevo to ramp up capacity at lower cost

and in less time than if it were constructing new plants, says David Black, executive v.p./upstream development. Retrofitting to isobutanol is also a win-win in that it improves economics for beleaguered ethanol producers; even the largest and most efficient producers are struggling with low margins, oversupply, and disappearing credits and tariff protections, he says. Gevo technology can increase margins three-fold while keeping existing corn and feed arrangements. Black adds that this advantage means Gevo does not have to limit itself to pursuit of distressed assets. “We’re targeting the best facilities with the strongest management teams.” The company is aiming to have done six retrofits by 2014 for a total of 200 million gals/year.

Gevo’s commercialization efforts have not been without hurdles. A patent litigation dispute with Butamax Advanced Biofuel (Wilmington, DE), an isobutanol JV between DuPont and BP, continues, but Gevo says the challenge has not diminished interest in its process. Butamax alleges Gevo infringes on pivotal isobutanol patents covering foundational methods for low-cost biobased production and biocatalysts used in the production of isobutanol.

Gevo maintains that its technology is fundamentally different, and last month filed a countersuit. The company says the dispute will “eventually reveal the superiority of Gevo’s innovations in this field.” Calls to Butamax were not returned.

Meanwhile, Gevo has been lining up customers ahead of commercial-scale production at Luverne and Redfield. The company recently signed definitive off-take agreements with Sasol and Mansfield Oil Company. The deal with Sasol covers most of Gevo’s 2012 and 2013 production capacity, and the Mansfield agreement allows Mansfield to blend Gevo’s isobutanol for its own use and to be a distributor of Gevo’s isobutanol. Gevo also has non-binding agreements with Lanxess for use in its butylene chain, Total for use as a gasoline blendstock, United Airlines for jet fuel, and Toray for biobased paraxylene production.

—REBECCA COONS