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Ethanol Industry Hoping for Surge

By **KATE GALBRAITH**

CELLULOSIC ethanol could be poised for a surge — finally.

Around the country and especially in the Midwest, a number of proposed plants that would turn corn cobs, wheat straw and other plant-based feedstocks into fuel and sell it on the market are working to secure the last stages of financing, and some could become operational in the next few years. A smattering of smaller pilot plants are already operating, helping companies to hone the technology and economics of their product.

“With the right policies, we could unleash literally dozens of projects,” Brooke Coleman, executive director of the recently formed Advanced Ethanol Council, a coalition that includes cellulosic companies, said in an e-mail. “Companies are ready to go.”

Mr. Coleman said roughly a dozen advanced ethanol projects had all or nearly all of the pieces in place, including location, partners and financing. These are either already producing ethanol or moving ahead with plans to do so.

Another dozen or so companies also have plans, albeit somewhat less advanced. Mr. Coleman said those included large and small operations and companies that make ethanol from trash or algae, as well as from plant-based materials.

Of course, the cellulosic ethanol industry has had high hopes before. Four years ago, Congress ordered that 250 million gallons of cellulosic ethanol be produced in the United States in 2011. That would have equaled roughly 0.2 percent of the nation’s annual gasoline use, a small but measurable amount.

Instead, after companies struggled to find capital during the economic downturn, federal regulators ratcheted down the expectations. Now, only 6.6 million gallons of cellulosic ethanol must be produced this year.

New plants would push the numbers up. In January, Coskata, an Illinois-based biofuel company, announced that the Agriculture Department would award it a \$250 million loan guarantee to build a plant in Alabama capable of producing 55 million gallons of ethanol a

year from wood debris. Poet, an ethanol maker based in South Dakota, hopes to have a 25 million-gallon-a-year cellulosic plant under construction in Iowa by the end of this year, according to Jeff Lutt, the company's president.

Another **biofuels** company, Mascoma, plans a \$350 million, 40 million-gallon-a-year cellulosic plant in Michigan, and construction is expected to start this year, according to its chief executive, Bill Brady. Mascoma already operates a smaller demonstration plant in Rome, N.Y. Poet is operating one, too, in South Dakota.

The projected boom is coming at a time when rising **oil** prices stemming from Middle East unrest make ethanol more appealing. "It just further supports the need" for ethanol, said Mr. Lutt of Poet.

However, Mr. Coleman of the industry group noted that high oil prices might also make agricultural commodities more costly, and he said that the overall volatility of oil meant that "a short-term oil price spike is not going to suddenly result in biorefineries popping up all over the place," so government policies are vital.

Federal help is crucial to all these plants. Both Mascoma and Poet are awaiting loan guarantees from the federal government — an essential measure, says Mr. Lutt of Poet, because these are first-of-their-kind plants. Loans will cover about half the roughly \$200 million to \$250 million cost of Poet's plant, he said, and the project is also getting federal and state grants in addition to the equity Poet itself has put in.

But looming budget cuts could affect federal loan guarantees, Mr. Coleman said.

The federal government's support for the ethanol industry has come under sharp questioning in recent years, as opposition has grown against corn ethanol — the "first generation" type of ethanol produced in this country. Environmentalists argue that growing corn to make ethanol produces too many greenhouse gases, partly relating to land-use change it causes, and also cuts into food supplies.

However, the industry rebuffs such arguments and complains that corn ethanol has been unfairly singled out for such analysis. Ethanol makers say the integration of ethanol in the nation's gas pumps helped reduce reliance on foreign oil. It has also created infrastructure that will benefit later and more efficient types of ethanol, like cellulosic.

Right now, controversy is heating up in Congress over a 45 cents-a-gallon tax credit for blending ethanol with gasoline, known as the "volumetric ethanol excise tax credit," which was supposed to expire in December 2010 but was extended for one year. Senator **Tom**

Coburn, Republican of Oklahoma, is leading the charge to repeal the credit. Several ethanol industry groups — with some support from lawmakers in corn-growing places like Iowa — are trying to keep it.

The scheduled expiration is “going to force a serious conversation on how this country wants to incent ethanol,” said Mr. Coleman of the ethanol group. The current tax credit does not distinguish between corn and cellulosic ethanol, and Mr. Coleman said any reform “should and likely will contain” provisions that would specifically provide incentives for advanced ethanol.

Federal officials have used a variety of tools over the years to promote ethanol, including mandated production goals. But many of these are increasingly controversial; the latest example was an **E.P.A.** decision in January to allow a 15 percent blend of ethanol into vehicles at least as new as the 2001 model. Ethanol makers sought this as a way to expand their market, but automakers resisted — and whether gasoline retailers will actually carry higher blends anytime soon remains to be seen.

Partly as a result of the controversy over corn ethanol, environmentalists are approaching cellulosic companies with a skeptical eye.

Franz Matzner, the Washington-based climate and air legislative director for the **Natural Resources Defense Council**, said that “the verdict is still out on any feedstock” and that his group was especially concerned about “the push to turn our forests into fuel.”

Mr. Brady of Mascoma, whose Michigan plant will use a mix of hardwood pulpwood (the type of low-value trees that pulp and paper companies often use), said his company was confident that it would engage in sustainable harvesting. He also noted that several pulp and paper mills would be closing in the area in coming years, which should increase the supply of wood.

Oil companies, meanwhile, are showing an interest in the new fuel. In January, the refinery giant Valero announced plans to invest up to \$50 million in Mascoma's Michigan plant. Shell has created a joint venture with Iogen, a Canadian enzyme maker; the two companies have an Ottawa demonstration plant that produces fuel from wheat straw. In June, during the oil-spill cleanup in the Gulf of Mexico, **BP** spent \$98 million to acquire the cellulosic business of its biofuel partner, Verenium, including plants in Louisiana and San Diego.

When the first commercial-scale operations arrive in the coming years, prospects for cellulosic ethanol should brighten, Mr. Brady of Mascoma said.

“Once we all show the world that these plants can work and these plants can be commercially viable,” he said, “then things will really take off.”