

# Biofuels Market Alert

**Legal Action**

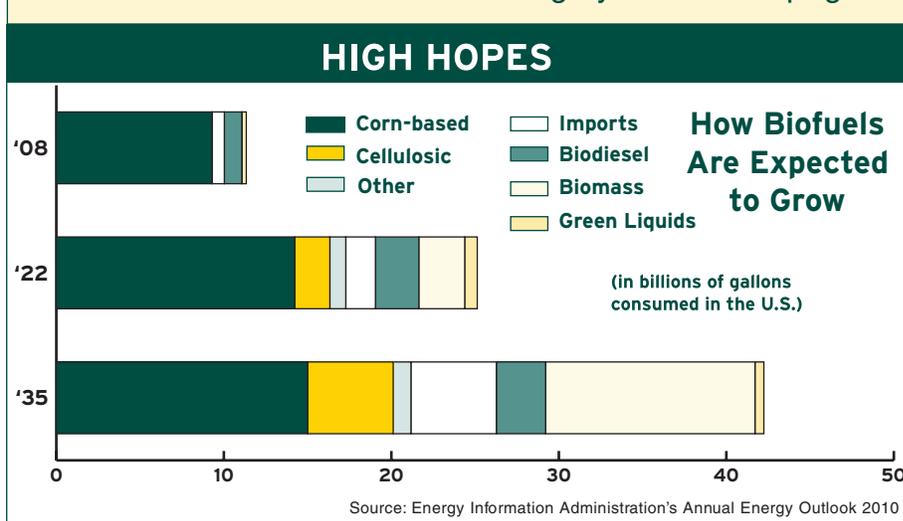
## California Suits Could Hint at Strategy vs. EPA

On Christmas Eve, the opening salvos were fired in what promises to be a major war over imposition of the low carbon fuel standard (LCFS) in California. One of the moves could outline the strategy of the biofuels industry in coming battles with the Environmental Protection Agency (EPA) over the proposed Renewable Fuel Standard (RFS2).

One lawsuit—filed by two leading trade groups, the Renewable Fuels Association (RFA) and Growth Energy—attacks the LCFS on constitutional grounds, while a second—filed by **Poet LLC**—weighs in on procedural and scientific grounds and gives a hint at upcoming strategy vs. the EPA.

The LCFS was adopted by the California Air Resources Board (CARB) last spring and calls for a

EIA Foresees Biofuels Use Doubling by 2035. See page 5.



10% reduction in the carbon content of fuels sold in California by 2020. It's to go into effect Jan. 1, 2011.

CARB used the theory of international indirect land use change—the idea that farmers in other areas of the world cut down forests to grow crops to make up for the crops used in the U.S. to make fuel—as part of its rating system for the carbon intensity of various alternative biofuels.

The EPA also plans to use some form of international indirect land use change in the RFS2, so the battle in California could presage what might come when the White House Office of Management and Budget releases the RFS2 soon.

Corn based ethanol is found to reduce carbon emissions by over 50%—until the international indirect land use provisions are factored into the equation. After the calculations, such ethanol is found to be deficient in its carbon reduction.

Poet and University of California-Davis Emeritus Professor James Lyons allege in their suit that CARB violated state

regulations because of “the failure of the CARB executive officer to keep an open mind and fully evaluate all relevant evidence bearing on environmental issues.”

Lyons was a petitioner to CARB during the rulemaking process and opposed the proposal and its use of indirect land use calculations.

In the lawsuit, Poet and Lyons ask the Superior Court of California for a “writ of mandate” and “injunctive relief” from CARB, alleging that it violated the California Environmental Quality Act, which requires CARB to mitigate the harm to the environment that might arise from the proposed regulation, identify alternatives and listen and respond to public comments in the regulatory process.

The Poet suit contends the LCFS will “needlessly increase air pollution levels,” noting that CARB’s Executive Officer James Goldstene acknowledged that the ruling would do nothing by itself to abate global warming.

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In addition, agency officials “had available to them, in comments submitted to them, methods of achieving the same levels of reductions as in proposed regulation, but without any adverse impacts on air pollution,” the Poet suit says.

The suit filed by the RFA and Growth Energy says the proposed standard violates the U.S. Constitution and jeopardizes the nationwide market for ethanol.

The measure would frustrate the Energy Independence and Security Act of 2007 (EISA), which calls for the use of 36 billion gallons of biofuels in the nation’s fuel supply by 2022, the suit says. By hindering the goals of that act, the California LCFS would violate the supremacy clause of the U.S. Constitution.

The standard “contradicts the sound judgment of Congress when it passed [EISA] and singled out the importance of domestic ethanol for our nation’s environment, energy security and economy,” the groups say.

Furthermore, the standard “erects new regulatory obstacles to ethanol, frustrates the federal [RFS], and threatens the nationwide market for domestic ethanol. Because congressional policy cannot coexist with California’s regulation, the latter must give way to the former, the supreme law of the land,” they add.

“Additionally, by closing California’s borders to corn ethanol from other states, LCFS will change how corn is farmed and ethanol is produced all over the country. The commerce clause specifically forbids state laws that discriminate against out-of-state goods and that regulate out-of-state conduct,” they continue.

“The LCFS imposes excessive burdens on the entire domestic ethanol industry while providing no benefit to Californians. In fact, in disadvantaging low-carbon, domestic ethanol, the LCFS denies the people of California a genuine opportunity to clean their air, create jobs, and strengthen their economic and national security.

“One state cannot dictate policy for all the others, yet that is precisely what California has aimed to do through a poorly conceived and, frankly, unconstitutional LCFS,” they conclude. ■

**IN WASHINGTON**

**EPA’s latest proposal for the new Renewable Fuel Standard (RFS2) is now under White House review.** The White House Office of Management and Budget (OMB) received the document from EPA the week before Christmas. The RFS2 is mandated by the Energy Independence and Security Act of 2007 (EISA). It requires EPA to define which fuels meet the greenhouse gas emissions standards under the act and therefore qualify as renewable fuels under the volume requirements mandated by EISA. ...EPA’s original proposal contained models of how to evaluate international indirect land use change caused by biofuels that were widely opposed by the biofuels industry and that even EPA later admitted had deficiencies, so all eyes are on how this final proposal comes down on the issue. ...OMB held up the original EPA proposal for almost five months—but that was during the transition from the Bush to the Obama administrations—and observers think it will act quickly at this point. Expect action by March at the latest. ...The RFS2 will mandate the use of grain based ethanol at the levels required by EISA—11.34 billion gallons in 2010—but will punt on the issue of mandated amounts of cellulosic ethanol and advanced biofuels, since they are in short supply. EPA may or may not require the use of 650 million gallons of biodiesel in 2010. ...**Expect the Senate to act swiftly on extending the biodiesel tax credit** when it reconvenes this month. The House passed a one-year extension of the \$1 credit, but the Senate was too bogged down with the health care issue to deal with much else. The credit expired Dec. 31, 2009, but Sens. Max Baucus (D-MT) and Chuck Grassley (R-IA) say it will be one of the first orders of business for the Senate—and it will be made retroactive. Therefore, both the biodiesel credit and the 45¢ per gallon ethanol credit will expire at the end of 2010—setting the stage for major tax action in Congress this year. ...**Senate Democrats will back away from cap and trade** for controlling carbon dioxide emissions in the coming month—Sen. John Kerry (D-MA) hinted as much at last month’s failed climate negotiations in Copenhagen, Denmark. After the bruising battle over health care, there are just too many Democrats from Rust Belt states who fear the job losses that such legislation could bring to their states. ...**But the Senate will pass energy legislation** to claim it’s moving on the issue. The bill will have lots of funding for biofuels and other renewable energy sources, as well as authorization for more oil drilling and funding for nuclear projects. It will look much like the American Clean Energy Leadership Act developed by the Senate Energy Committee last June with bipartisan support. ...**Growth Energy is urging EPA to put off implementation** of its proposed greenhouse gas reduction program until Growth Energy and the agency can cooperatively design an oversight program that is specific to ethanol producers. The lobbying group says that, as proposed, the regulations would cost plants \$150,000 each. The filing came just before EPA’s Dec. 28 deadline for comments on the proposal. ■

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## Investing

# Codexis Is Hoping 2010 Will Be Good Year for IPOs

**Codexis Inc.**—and several heavy-duty Wall Street firms—are betting that 2010 will be a turnaround year for initial public offerings (IPOs) in the biofuels arena.

The Redwood City, Calif.-based Codexis filed an S-1 registration statement for the offering with the Securities and Exchange Commission stating its intent to issue an IPO at some point this year.

The market for IPOs cooled significantly when the recession began, and venture capitalists who depend on IPOs to recoup their investments have been reluctant to fund start-ups because of the lack of an exit strategy.

This has been particularly true in the biofuels industry. **VeraSun Energy Corp.**'s inability to sell stock partially led to its subsequent bankruptcy and breakup.

**Credit Suisse Securities (USA) LLC** and **The Goldman Sachs Group Inc.** [GS] will be the book running managers for the proposed offering, and **RBC Capital Markets Corp.** and **Pacific Crest Securities LLC** will be comanagers.

Codexis is a biocatalyst developer for both the pharmaceutical and biofuels industries.

In the biofuels arena, Codexis, which was spun out of **Maxygen Inc.** in 2002, works as a research arm for **Royal Dutch Shell plc** [RDS.A]. In an exclusive agreement with Shell, it will work on developing catalysts to convert cellulosic material into sugars for biofuels production. It licenses the underlying technology from Maxygen, as does its competitor, **Novozymes** [NVZMY].

Shell makes bimonthly payments for the research as well as payments for reaching certain research and development milestones. The exclusive agreement lasts until November 2012, but Shell can pull the plug on the project “for any or no reason” after November 2010, if it gives nine months’ notice.

If Shell chooses to use the biocatalysts for biofuels production, it—or firms it selects—will have the right to design and build the commercial scale production facilities and distribute the final product, according to the S-1.

“If Shell commercializes our biofuels technology, we will collect a royalty for every gallon of fuel Shell produces using our technology,” Codexis officials say.

Most of Codexis’ revenue comes from such R&D contracts. The company lost \$45.1 million in 2008 and \$15.1 million during the first nine months of 2009.

Investors in Codexis include **Bio\*One Capital Pte Ltd.**, **Chevron Technology Ventures**, **CMEA Capital**, **FirstMark Capital LLC**, **GE Energy**, **Pfizer** [PFE], Maxygen and Shell. ■

# Hawkeye's Prepackaged Chapter 11 to Wipe Out Debt

**Hawkeye Energy Holdings LLC** subsidiary **Hawkeye Renewables LLC** will emerge from a prepackaged bankruptcy with its debt essentially wiped off its balance sheet. In such an arrangement, creditors agree to company reorganization prior to filing.

The subsidiary—which operates ethanol plants in Iowa Falls and Fairbank, Iowa—filed for bankruptcy protection in late December in the U.S. Bankruptcy Court in Wilmington, Del. But the first tier of lenders has already agreed to convert loans into equity in the firm, ensuring a swift exit from the Chapter 11 proceedings.

With a total capacity of 220 million gallons per year (Mgy), the plants will continue to operate normally during the bankruptcy proceedings, as will Hawkeye’s facilities in Menlo and Shell Rock, Iowa, which have an additional combined 220 Mgy output.

The company took on the debt—estimated somewhere between \$500 million and \$1 billion—in 2006 when a planned public offering fell apart because of market conditions.

“The U.S. biofuels industry is going through a period of historic change, and we are taking the necessary steps to position our business units to succeed in a dynamic and sometimes volatile business environment,” says Bruce Rastetter, chief executive officer for Hawkeye Energy Holdings. ■

**EDITOR'S NOTE:** As a convenience to readers, we will show basic stock information for publicly traded companies mentioned in an issue in a table like the one below. All of the prices are the closing prices on Monday of the week of publication, compared with the close prices two weeks earlier as reported by Google Finance and Thomson One Analytics.

### TALE OF THE TICKER: Companies in the News

Company	Symbol	12/21/09	1/4/10	Change \$	Change %
Bunge	BG	61.88	64.65	2.77	4.48
Goldman Sachs Group	GS	165.45	173.08	7.63	4.61
Green Plains Ren. Energy	GPRE	12.88	15.92	3.04	23.60
Novozymes	NVZMY	105.00	110.75	5.75	5.48
Petrobras	PZE	15.54	16.48	0.94	6.05
PetroChina	PTR	118.62	122.45	3.83	3.23
Valero Energy	VLO	17.10	17.89	0.79	4.62

Source: Google Finance, Thomson One Analytics

**Interview****Holmberg: VEETC Should Go to Producers, Not Blenders**

*Bill Holmberg is chairman of the Biomass Coordinating Council at the American Council on Renewable Energy, a 710-member organization that promotes all forms of renewable energy through a series of events such as RETECH, a conference and trade show scheduled Feb. 3-5 in Washington, D.C.*

**Q.** What are the major issues and challenges facing the biofuels industry today?

**A.** One of the major issues for 2010 is legislation that is coming this year in Congress to extend the tax credits for ethanol and biodiesel, and particularly shifting the Volumetric Ethanol Excise Tax Credit (VEETC) away from giving it to the blenders, but instead shifting it to the producers. Giving it to the producers would provide them a direct benefit, whereas the current system of providing the credit to the blenders does not always benefit the producer.

If we shift the tax credit to the producers, we could think about reducing the tariff on imported ethanol. Originally, the tariff was established to offset the blenders' credit; if it went directly to the producers, we wouldn't have that consideration.

There are a number of things at the Environmental Protection Agency (EPA), including the blend wall and the upcoming new Renewable Fuel Standard (RFS2). I think that EPA will increase the amount of ethanol to 15% of the fuel supply sometime this year because as it is, we can't get enough renewable fuels into the fuel supply at the 10% ethanol limit.

To move biomass energy forward, we really need a universal definition of biomass. It seems that every bill and regulation has a different definition.

**Q.** It is fairly clear that there is no way for producers to meet the requirement for 100 million gallons of cellulosic ethanol called for in 2010 under the RFS2. How much cellulosic ethanol do you think will be produced in 2010?

**A.** There will be about 20 million gallons in 2010, mainly from a bunch of demonstration plants with relatively small volumes. But I believe the EPA has the authority to lower the requirement. I believe that if everything goes right and VEETC is extended to the producer and the ethanol industry continues to improve its efficiencies and so do farmers, I think corn based ethanol can fill the gap. We can technically do everything right, but the question is whether we have the political capability of doing so.

**Q.** The RFS2 calls for 1.75 billion gallons of cellulosic product in 2014. Will that be met?

**A.** In 2014, the production will be closer to 1 billion gallons.

**Q.** When will the dream of turning trash into energy become a reality?

**A.** It's already a reality for electrical generation. I don't think it will happen in 2010 for liquid fuels.

**Q.** What are your thoughts on the indirect land use arguments?

**A.** Land is presently misused, underutilized and contaminated. The biofuels industry should take a leadership role in promoting the use of such land for biofuels production. If we managed our land in the U.S. as well as they do in western Europe, we would have plenty of land for biofuels. Already, we are seeing increasing production of corn on the same acreage. It is the responsibility of the biomass industry to promote the use of biomass on land that is currently misused or underused.

**Q.** Do you think cap and trade legislation will pass the Senate this year?

**A.** I don't think so. But I think they will consider some other techniques such as a carbon fee—they won't want to call it a tax. Sweden started out with a cap and trade program to reduce greenhouse gas emissions, but found that it didn't work very well, so went to a carbon tax system.

They may pass something like the American Clean Energy Leadership Act as proposed by the Senate Energy Committee, which has incentives for renewable energy development as well as some incentives for nuclear and increased oil drilling. Hopefully, the Congress will be wise enough to pass legislation that will create jobs. ■

**INDUSTRY INDICATORS**

	12/15/09	1/4/10	Change \$	Change %
Spot/\$gal.	2.04	2.03	-0.01	-0.5
Futures/\$gal.	1.88	1.97	0.09	4.8
Corn/\$bu.	4.08	4.18	0.10	2.5
WTI/\$bbl.	69.51	81.51	12.00	17.3
RBOB/\$gal.	1.83	2.1	0.27	14.8
RINs/cgal.	0.055	0.0625	0.01	13.6

Source: Kiplinger

## Looking Ahead

# EIA Foresees Biofuels Use Doubling by 2035

Beginning the new decade with a sense of unbounded optimism, the Energy Information Administration (EIA) will say in its *Annual Energy Outlook 2010*, to be released in March, that biofuels will account for more than 17% of total liquid fuel usage in the U.S. by 2035, up from about 8% today.

The increased use of biofuels—as well as a greater reliance on biomass to produce electricity—spells a significant decline in the reliance on imported oil over the next 25 years, according to a preview of the report.

EIA's forecasts are based on current policy and technology and do not consider the possibility of policy changes—such as the cap and trade legislation now in Congress—and include only technologies that are commercially available now or can reasonably be expected to be commercially available over the next decade.

The total consumption of liquid fuels over the period will grow from 19 million barrels per day in 2008 to 22 million barrels per day in 2035. EIA says biofuels will account for all of that growth.

But biofuels will not meet the 36 billion gallon mandate called for under the new Renewable Fuel Standard (RFS2) by 2022, required by the Energy Independence and Security Act of 2007. Biofuels will account for only 25 billion gallons in 2022 because of slower than expected growth in cellulosic ethanol supplies and other advanced biofuels.

Biofuels usage will surpass that goal by 2035, when they will account for over 42 billion gallons, the projections are expected to reveal.

“Our projections show that existing policies that stress energy efficiency and alternative fuels, together with higher energy prices, curb energy consumption growth and shift the energy mix toward renewable fuels,” says EIA Administrator Richard Newell.

However, even with the growth in biofuels over the coming 25 years, the fossil fuels' share of total U.S. energy consumption will fall only from 84% to 78%, EIA estimates.

The figures will also show a dramatic increase in imported biofuels—up from 740 million gallons in 2008 to over 5 billion gallons in 2035—due largely to imports of Brazilian ethanol, which will be competitive, even if the 54¢ per gallon tariff remains in place.

Cellulosic ethanol will continue to disappoint, with only 2.1 billion gallons produced in 2022, even though the proposed RFS2 calls for 16 billion gallons. But other biomass-to-liquid fuels will be a star, starting from a zero base in 2008 and accounting for 12.5 billion gallons of fuel in 2035.

Total electricity consumption—both purchases from electric power producers and on-site generation—will grow by 1% per year, EIA will predict, from 3,873 billion kilowatt-hours in 2008 to 5,021 billion kilowatt-hours in 2035. But once again, the use of biomass will make up a large part of the electricity generated.

In 2008, renewable electricity generation accounted for just over 100 billion kilowatt-hours of the total used. EIA will predict that, by 2035, the number will grow to almost 600 billion kilowatt-hours of the total, accounting for 41% of the growth in electricity generation from 2008 to 2035.

Almost half of the total growth will come from biomass generated electricity (around 300 billion kilowatt-hours), and a quarter of the growth will come from wind generated electricity, which will account for 150 billion kilowatt-hours. Solar, geothermal and electricity generated from waste will account for the rest of the growth in electric generating capacity from renewable sources.

The report will also show energy related carbon dioxide emissions in the U.S. rising over the period, with per capita emissions falling in the same time frame.

CO<sub>2</sub> emissions will climb 0.3% per year, growing from 5,814 million metric tons in 2008 to 6,320 million metric tons in 2035, with most growth in emissions coming from the electric power and transportation sectors. However, on a per capita basis, CO<sub>2</sub> emissions will fall 0.6% per year over 25 years, EIA will say. ■

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## Brazil Big Winner as China Slashes Ethanol Tariffs

China has slashed its tariffs on imported ethanol, but don't look for U.S. producers to export to that market: Ethanol prices in China are almost identical to those in the U.S. market, without the freight expense.

The big winner from the cuts—from 30% of the value of the import to 5%—will be Brazil.

In a related development, Brazil's state owned oil and gas giant **Petrobras** [PZE] signed a memorandum of understanding with **PetroChina Co. Ltd.** [PTE], that

nation's oil behemoth, to assess the technical and economic feasibility of jointly starting new ethanol production projects in Brazil as well as more ethanol exports to China.

Petrobras says PetroChina is a natural partner because of their "excellent" trade relationship.

But the ethanol won't start to flow soon. Brazil is currently short on product until the new sugarcane crop is harvested in the nation's Center South region in May. Prices of Brazilian ethanol are rising because of the shortages. ■

### BUSINESS BRIEFS

**Bunge Ltd.** [BG] will buy stakes in six Brazilian sugarcane mills from holding company **Usina Moema Participacoes S.A.** for \$896 million. Bunge, headquartered in White Plains, N.Y., will inherit Moema Par's 60% share of the mills' total crushing capacity of about 10 million tons. Bunge will have the opportunity in the coming weeks to acquire the remaining interests in the mills. If this occurs, the total value of all transactions will be nearly \$1.5 billion.

**A cellulosic demonstration plant is expected to open in Georgia** in the next few months. Announced by Gov. Sonny Perdue (R), the project is a partnership between **Diamond Alternative Energy LLC**, a subsidiary of **Valero Energy Corp.** [VLO] and **American Process Inc.** (API), an Atlanta-based engineering company. The facility, to be located in Thomaston, will incorporate API's proprietary American Value Added Pulping technology, which uses alcohol sulfite cooking liquor to break down wood chips to lignocellulose.

**Two Swiss entities are joining forces.** Baar-based commodity provider **Glencore International AG** will take a majority interest in biodiesel producer **Biopetrol Industries AG**, located in Zug. The deal is pending the approval of antitrust authorities. Glencore cited changes in biodiesel market conditions as its motive for adding production capability. It hopes that the combination of its "strong trading platform" with the production plants will utilize Biopetrol's full production capacities.

**A new biodiesel plant near Leavenworth, Wash.,** is in the works. L.A. Investment Capital of Beverly Hills, Calif., will invest \$12 million in the 10 million gallon per year (Mgy) facility. The firm intends to complete the deal by April and begin producing biodiesel by year-end, incorporating a wood fired gasification system. L.A. Investment Capital also announced it is investing \$10 million in a 10 Mgy bioethanol plant in the Republic of Moldova.

**New Generation Biofuels Holdings Inc.** [NGBF] is on thin ice with Nasdaq. It closed with a bid price under \$1 for 30 consecutive business days and has until June 21, 2010, to avoid delisting by closing at or above \$1 for 10 consecutive business days.

**Petrobras** [PZE] bought a 40% stake in an ethanol mill in the Brazilian state of Minas Gerais. Brazil's state-run energy firm paid \$84 million for the share in the **Total Agroindústria Canavieira** sugarcane-to-ethanol mill, which will see its production capacity rise to about 54 Mgy.

**Raven Biofuels Intl. Corp.** [RVBF] has a new Canadian partner. The New Jersey-based company will team up with **Raven Biofuels Ltd.** (RBL) to develop biofuels technology and renewable chemicals, working with Canada's forestry sector. Raven has picked a site in Kamloops, British Columbia, for a new 11 Mgy ethanol and chemical biorefinery, in conjunction with RBL and the Kamloops Indian Band, one of 17 tribes making up the Shuswap Nation. The band will be the primary feedstock supplier for the project, which will require 500 dry tons of wood per day. Raven has loaned \$170,000 to RBL for initial engineering and testing at the site.

**A major Canadian biofuels acquisition is a go.** **Summus Capital Corp.** of Calgary, Alberta, reached agreement to buy **ReNvision Biofuels Inc.** and its 5,365,667 shares for about 24¢ per share. Summus agreed to raise the number of shares purchased from the previously announced 2 million shares, after ReNvision was awarded \$804,000 in grants from the government of Alberta. ReNvision is eligible for an additional \$630,000 in grants, meaning an additional 2.6 million shares could be issued to the company's shareholders.

**In Europe, a new biofuels refinery is possible,** if Finnish papermaker **UPM-Kymmene Corp.** decides to invest in a project at its plant in Stracel, France, after it passes an environmental impact assessment. UPM would partner with **Fortum Corp.**, an energy company, and **Metso Corp.**, an engineering firm, to produce an unspecified amount of wood based biofuels as early as 2012. UPM is also developing biomass gasification technology at the Gas Technology Institute's Flex-Fuel Test Facility in Des Plaines, Ill., with **Carbona** (in association with Austria's **Andritz AG**).

**GreenShift Corp. is licensing its know-how** for corn oil extraction to **Global Ethanol's** 100 Mgy ethanol plant in Lakota, Iowa. Under the agreement, Global will extract over 2.2 million gallons of corn oil per year, based on GreenShift's technology. Global plans to begin producing and selling the oil within the next three months. ■