



# CALIFORNIA is Hot Spot for Biodiesel

By Tina Caparella

**A**s momentum grows for using biodiesel as part of meeting California's low carbon fuel standard (LCFS), the California Biodiesel Alliance (CBA) presented a full-day forum in Las Vegas, NV, just prior to the National Biodiesel Conference and Expo in early February. A good attendance indicated there is interest in the renewable fuel's future in the Golden State.

Eric Bowen, former CBA chairman, declared these are interesting times in California.

"We are at a point of seeing a shift from tens of thousands [of gallons] to a marketplace of hundreds of thousands to the potential of millions of gallons of biodiesel," he optimistically stated about the requirements of the LCFS beginning to kick-in. An array of speakers provided detailed information on the standard, which was established by executive order from Governor Arnold Schwarzenegger in 2007, as well as other alternative and renewable fuel programs in California.

Greg Staiti, Weaver and Tidwell, LLP explained that although the law putting in place the LCFS, Assembly Bill 32, is currently being challenged in court with a decision expected any time, California's Air Resources Board (CARB) has the authority to move forward with the program while under appeal. The LCFS aims to reduce greenhouse gas (GHG) emissions in the state by reducing the carbon intensity of all transportation fuels, except those used in aircraft, military, racing, ocean-going vessels, or certain locomotive applications. Staiti noted that various factors go into the carbon intensity rating of a fuel, which is based on a "wells-to-wheels" analysis of the emissions, including feedstock and location of feedstock. The lower the carbon intensity rating, the better the fuel is at reducing GHG emissions, according to CARB. Of much interest is the favorable rating for biodiesel produced from tallow and used cooking oil and renewable diesel using tallow. Both fuels have a carbon intensity value of below 40, compared to ultra-low sulfur diesel's value of 98 and Midwest soybean-based biodiesel's value of 83.25 (table 1).

Staiti then described the state's credit generation scheme as a "real opportunity that is becoming monetized." In early December, credits were between \$15 and \$20 per metric ton; in early February, credits were above \$30 per metric ton. He mentioned that Oregon implemented phase one of its LCFS in December and British Columbia, Canada, is implementing low carbon objectives via renewable fuel mandates in the gasoline and diesel supply pool.

Shawn Garvey, The Grant Farm, declared that over the next decade, federal and state government agencies will invest a transformative \$250 billion in private companies working to build a clean energy future. He said new grant and loan opportunities regularly become available for commercial-scale biofuels production, co-products commercialization, and waste diversion, and presented various resources to find

funding such as [grants.gov](http://grants.gov), [recovery.gov](http://recovery.gov), [FedConnect.net](http://FedConnect.net), and affiliate organizations. Garvey pointed out the multitude of programs currently financed and awaiting applicants for bioenergy and biomass projects.

Stephen Kaffka, California Biomass Collaborative, University of California, Davis, believes California's LCFS is a good tool for encouraging in-state biofuel production and reminded attendees that fuel producers must also comply with blending requirements under the federal Renewable Fuel Standard (RFS), although he believes the LCFS is a better regulation.

Stephen Silva, E.B. Wakeman Commodities, educated the group on rendered fats and oils, explaining that all used cooking oil is yellow grease, but not all yellow grease is used cooking oil, which can be a combination of animal fats and used cooking oil. He said there is no industry standard for used cooking oil so buyers will get 10 different products from 10 different suppliers. Silva mentioned that natural beef programs require vegetarian diets, driving feeders to source used cooking oil-based yellow grease, which is increasing demand and now accounts for 25 to 30 percent of the overall California market. Yellow grease exports to Mexico are also rising for the expanding poultry, pork, and aquaculture industries, thus further driving demand. Silva predicted that yellow grease prices will increase this year to 2011 highs and a reduced national cattle slaughter could cause a surge in tallow prices as well.

Randall von Wedel, CytoCulture International, Inc. focused on oil seed cultivation, but admitted that used cooking oil is generating most of the biodiesel production in California and Nevada. Joe Jobe, National Biodiesel Board (NBB) chief executive officer, spoke during the conference's luncheon, revealing that NBB invests a lot of resources in California because "we think it's an important state, especially the regulatory agenda."

A panel from CARB joined the forum by video to update the industry on the board's activities. It was stipulated that CARB does not "hate" biodiesel and, in fact, diesel with a five percent blend of biodiesel is legal to sell as CARB diesel (California requires its own type of diesel fuel to meet stringent air quality standards). The board continues to examine increased blends of biodiesel and renewable diesel, both of which CARB expects to play a significant role in the LCFS.

Steve Howell, Marc-IV, declared that biodiesel works in new technology diesel engines and that over \$15 million has been spent in engine testing since 2004, not including internal equipment manufacturer testing. He pointed out that ongoing studies in evaluating the effect of alkali metals in biodiesel are using soy-based fuel because it's the most common biodiesel.

“All our work we do is supposed to be feedstock neutral,” Howell commented, adding that specifications for metals are the same no matter the feedstock. He stated that 75 percent of original equipment manufacturers support a 20 percent blend of biodiesel in diesel fuel, with NBB’s goal being 90 to 100 percent of manufacturers. Howell said testing will help convince the rest, which are mainly light duty manufacturers from Europe.

Peter Moulton, Washington Department of Commerce, revealed his state has provided various financial incentives and market development for biofuels, including a RFS for the inclusion of two percent biodiesel in the state’s diesel fuel with a clause to increase to five percent once in-state production meets certain requirements. However, what looked promising six years ago has suffered under the national recession, feedstock limitations, and inconsistent government policies, thus the RFS is not yet in effect. The bright spot is state agencies are required to use at least 20 percent biodiesel in their fleets.

Providing an Australian experience was Andrew Hill, Biofuels Association of Australia, who explained that the politics of his country and the United States are not so different. He noted that ethanol gets a production subsidy while biodiesel gets a clean fuel grant and with no forcible mandate in Australia, biodiesel must be priced close to diesel fuel. Hill mentioned that New South Wales has a “sort of” mandate, but if the biodiesel’s not available, fuel blenders can ask for an exemption.

“Everybody wants to save the world, but nobody wants to pay for it,” he announced.

Carlo Luri, Bentley Biofuels, provided a Nevada biodiesel

producers perspective on doing business with California, which is home to eight biodiesel plants with a capacity of 35 million gallons per year compared to Nevada’s two plants that have a capacity of five million gallons per year. Nevada’s regulatory incentives only apply to state and local government fleets that have over 50 vehicles with the focus being on air quality in the state’s two most populated counties, which include the cities of Las Vegas and Reno. The biggest constraint in Nevada is feedstock availability and the

minimal, if any, government support for alternative fuels. On the bright side, Nevada has no corporate taxes and government is easy to work with because of the size of the state.

Mike Lewis, Pearson Fuels, explained the large amount of work for California fuel retailers in keeping track of renewable identification numbers obligated under the federal RFS and now meeting requirements of the state’s LCFS. However, he said the biggest challenge has been declining demand for biodiesel and petroleum fuels in general.

Wrapping up the day was Lisa Mortensen, Community Fuels, who tried to weave attendees through the maze of complex regulations that could affect California businesses.

“The challenge is finding every regulation that affects the biodiesel producer, from construction to on-going production, both federal and state,” she commented, adding that California’s Division of Occupational Safety and Health often has more rigorous requirements than federal laws. Mortensen briefly covered waste cooking oil collection regulations in the state, which she declared as “highly regulated,” and described human resources rules in California as dynamic and ever-changing.



Stephen Silva, E.B. Wakeman Commodities, explains that not all yellow grease is used cooking oil.

**Table 1. Select carbon intensity values for diesel and its substitutes.**

Fuel	Pathway identifier	Pathway description	Carbon intensity value (gCO <sub>2</sub> e/MJ) <sup>1</sup>
Diesel	ULSD001	ULSD – based on average crude oil delivered to California refineries	98.03
Biodiesel	BIOD001	Conversion of Midwest soybeans	83.25
	BIOD002	Conversion of used cooking oil in California	15.84
	BIOD006	Conversion of North American canola	62.99
	BIOD007	Conversion of corn oil, from distillers grain pre-drying	4.00
	BIOD009	Conversion of tallow originating in California to biodiesel produced in California	34.11
Renewable diesel	RNWD001	Conversion of Midwest soybeans	82.16
	RNWD002	Conversion of tallow	39.33

Source: Title 17, California Code of Regulations, Section 95486(b), table 7.  
 Note: ULSD – ultra-low sulfur diesel.  
<sup>1</sup>In grams of carbon dioxide equivalent per mega joule.