



Biodiesel Leaders Push for Unity

By Tina Caparella

Record high feedstock costs, plunging crude oil prices, and the collapse of financial markets have made the past year a turbulent one for the biodiesel industry. Nowhere was this more evident than at the National Biodiesel Conference and Expo in early February in San Francisco, CA. Last year, 3,600 individuals traveled to the meeting – this year attendance was estimated at just over 2,000. But those who did attend found no shortage of information and networking opportunities in a city that has embraced biodiesel with open arms.

National Biodiesel Board (NBB) Chief Executive Officer Joe Jobe opened the conference with a video highlighting San Francisco's involvement with biodiesel, from the city's grease collection program to the alternative fuel's usage in local trains and harbor fleets. In a separate video presentation, industry leaders agreed that it's a challenging time but reminded audience members that biodiesel has the highest energy balance of any alternative fuel and is the most sustainable heavy transportation fuel in the world. They urged everyone to recommit to unity and embrace the industry's diversity, including feedstocks. Greg Anderson, Nebraska Soybean Board, took a popular 2008 presidential campaign slogan, "Drill, baby, drill," which referred to drilling for oil, and created one for the biodiesel industry: "Recycle, baby, recycle all the used restaurant grease."

Steve Howell, who has served as NBB technical director and been involved in the biodiesel industry for 15 years, said the majority of the scientific community recognizes the environmental benefits of biodiesel. Dr. Rob Meyers, founder and director of the Thomas Jefferson Agricultural Institute, introduced a "Scientists for Biodiesel" declaration that intends to show the broad consensus among scientists about the benefits of biodiesel. The declaration also calls for more investment into the scientific needs associated with biodiesel and is available at www.biodieselsustainability.com.

Dr. Randall von Wedel, CytoCulture International, Inc., introduced a panel of local individuals involved in biodiesel to discuss their experiences. Marty Meller, San Francisco Municipal Transportation Agency, said as part of the city's efforts to reduce emissions within its fleet, every diesel vehicle now runs on a 20 percent biodiesel (B20) blend with no problems. Thanks to the efforts of San Francisco fireman Mike Ferry, the city's fire trucks also now run on a biodiesel blend to limit the firefighter's and public's exposure to harmful diesel fuel emissions that can cause cancer. In 2007, Norcal Waste Systems switched 335 waste collection trucks and 37 transfer trucks that service the City by the Bay to B20. Alcatraz Island, which sits in the San Francisco Bay, is in the final stages of running its generators on B20, with plans to soon increase that usage to 100 percent biodiesel.

Quality remains a top priority among biodiesel users

and each fleet ensures their fuel meets or exceeds quality standards. San Francisco performs its own testing to validate the supplier's certificate of analysis and relies on the National Renewable Energy Laboratory's (NREL's) published document on how to prepare storage tanks for biodiesel. Norcal also has its own testing program.

The second day's general session featured discussions on "a sustainable future for a sustainable fuel." NBB Chairman Ed Hegland discussed the industry's "5 x 15" goal – by 2015, biodiesel will make up five percent of all diesel fuel used in the United States – first announced two years ago, and said the industry shouldn't fear being under the microscope but instead should use it as an opportunity to educate.

North Dakota Governor John Hoeven appeared by telecast to discuss his biofuels coalition and congratulate the industry on producing 700 million gallons of biodiesel in 2008, creating 52,000 jobs, adding \$4 billion to the U.S. gross domestic product, and reducing greenhouse gas emissions by 11.3 billion pounds, equivalent to taking 980,000 vehicles off the road.

Don O'Connor, S&T Squared Consultants, said life cycle assessments (LCA) of biodiesel are a very challenging and complicated process that if done incorrectly show the solution becomes part of the problem. He said there are three important aspects of a LCA:

1. It needs to be relative – compare similar solutions;
2. It needs to be transparent – show inputs and outputs;
3. It needs to take a scientific approach – include forecasting and economic tools.

Emily Bockian Landsburg, Philadelphia Fry-o-Diesel, addressed the industry's sustainability that she described as meeting today's needs for environmental stewardship, economic prosperity, and quality of life. She highlighted NBB's nine sustainability practices that are also available at www.biodieselsustainability.com, and encouraged everyone to work on continuous improvement.

"We have an incredible product, but we can be even more sustainable," Landsburg declared.

Political analyst Kiki McLean, Dewey Square Group, spoke about how companies and industries need to be involved in international and national debates that affect them. She said there are moments an industry can come under risk, but two things will prepare them for any challenge: focus on the facts; and educate, educate, and educate. The industry can't assume the media, consumers, community leaders, or the government knows all the specifics about biodiesel.

No biodiesel conference would be complete without celebrity involvement. Actress Daryl Hannah made her annual appearance, commenting on the large amount of exportation of U.S. produced biodiesel. She was followed by a performance from Grammy-winning artist Melissa Etheridge, who explained how she became involved with biodiesel. In

While industry struggles in uncertain times

2004, when she was diagnosed and being treated for breast cancer, the singer decided she wanted to make a difference. Etheridge ran across country music legend Willie Nelson, a staunch biodiesel advocate, on a flight one day and asked him about this alternative fuel. She decided to use biodiesel on her next tour and was hooked; she now uses the fuel in her tour buses and personal vehicles. Etheridge said the message that was hard for her to understand at first and remains hard to get others to comprehend is, “any diesel engine can run on biodiesel.” The NBB proceeded to honor Etheridge’s biodiesel involvement with the group’s Influencer Award.

Wrapping up the conference on the third morning was an enlightened story-telling of two very different seafaring journeys with biodiesel. Bryan Peterson talked about his two-year, 35,000 mile trip around the world in *Sunrider*, a rigid inflatable powerboat that used 100 percent “soy diesel” in 1994, while Pete Bethune shared his record-breaking 61 day, 24,000 nautical mile jaunt around the globe in *Earthrace*, a wave piercing vessel that used biodiesel produced from 29 different feedstocks last year.

“That shows you how the industry has grown,” Bethune commented on the feedstocks used. The two men had harrowing experiences, such as pirates, sharks, and severe weather, but also encountered beautiful scenery and encouraging supporters as each used their vessels to educate the world about biodiesel. Nowadays when people ask whether they can trust the alternative fuel, Peterson offers them this food for thought: “The smallest powerboat in the world used it to go around the world and the fastest boat in the world used it to go around the world. How can you not trust it?” NBB then recognized both men’s efforts by presenting them with its Inspiration Award.

NBB also honored other biodiesel industry advocates with the following awards:

- Initiative – San Francisco Mayor Gavin Newsome, who issued an executive directive in 2006 designed to increase the pace of municipal use of biodiesel. Today, virtually all of the city’s 1,500 diesel vehicles run on B20.

- Industry Partnership – Ronald Hayes, Missouri Department of Agriculture, and Randy Jennings, Tennessee Department of Agriculture, who have both worked in conjunction with the National Conference on Weights and Measures Fuels and Lubricants Committee, and with ASTM International to create and enforce standards for biodiesel.

- Impact – Randall von Wedel, who was instrumental in bringing biodiesel to the West Coast by opening California’s first retail pump, implementing biodiesel in fleets such as Berkeley University’s, advising San Francisco on its biodiesel program, and helping establish marine uses of biodiesel.

- Pioneer – Kenlon Johannes, the first executive director of the National SoyDiesel Development Board, which later became the NBB.

Tracking All Aspects of the Industry

In various sessions during the conference, attendees could choose from educational “tracks” focusing on the future of feedstocks such as algae, how to make biodiesel more accessible to the general public, legislative activities both in the United States and Europe, technical advancements in production, fleets that successfully use biodiesel, establishing and maintaining fuel quality, and the role biodiesel can play in the new environmental world of carbon neutrality.

One session addressed ASTM International specifications and quality. Over the past 10 years, biodiesel has built a solid reputation within the ASTM community. Howell recapped current biodiesel specifications and disclosed that the acid number is usually the first thing to go out of spec. He stated that the new cold soak filtration test should only be performed on 100 percent biodiesel (B100), not on any blends, and that the test has nothing to do with the actual cold flow properties of biodiesel but is used to control minor compounds at the B100 level in order to ensure the cloud point is still an accurate measurement for B20 and lower blends. Howell confessed that some biodiesel companies will have to make process changes in order to meet the new biodiesel ASTM specification, with the monetary investment estimated to be high.

Teresa Alleman, NREL/U.S. Department of Energy, revealed the results of a 2008 survey where biodiesel blends were obtained and sampled for accuracy. Samples were collected across the United States in late spring and early summer from pumps labeled B20 and from some fleets. While the new ASTM specifications for finished B20 blends were not yet approved when samples were taken, almost all of the samples did meet the newly approved specification for the acid number, and all the samples met the new flash point

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The next generation of biodiesel producers? From left, Spencer Call, Alex Beaudette, Mike Keach, and Max Anderson of the Merrimack High School Biodiesel Crew.

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values. However, the survey found only 60 percent of samples were within the normal B20 range (18 to 22 percent biodiesel), which leaves room for improvement in blending practices.

Tammy Klein, Global Biofuels Center/Hart Energy Consulting, explained global biodiesel harmonization efforts. Currently, 30 countries are blending biodiesel, with many others interested. An International Biofuels Forum began in 2007 between the United States, the European Union, and Brazil to review ethanol and biodiesel specifications to determine the differences and similarities; only six of the 24 international specifications reviewed were in alignment, with the key difference being in feedstocks. Klein said there are 65-plus feedstocks contemplated and used around the world. Currently there are B100 specifications in 50-plus countries and blend specifications in just over 10 countries, generally addressing five percent or less biodiesel.

To show biodiesel in action, media representatives were invited aboard one of the Red and White Fleet's San Francisco Bay cruise tours. Joe Burgard, vice president of operations, said the four-boat fleet uses about 100,000 gallons of B20 per year and has been using the alternative fuel since August 2006. Their only requirement of the fuel is that it comes from a BQ-9000 certified supplier. The company has been very pleased with the switch, especially since the diesel engine smoke stacks exhaust out onto the top deck of each boat where tourists often sit for a prime view of the bay. During the tour, there was no visible exhaust and no odor that often comes from a diesel engine.

Biodiesel's Future Generation

Among the exhibitors at the conference's expo was the Merrimack High School Biodiesel Crew, a group of high school students from Merrimack, MA, who are researching biodiesel made from a variety of feedstocks. Ten of the 22 participating students attended the conference sessions to learn more about biodiesel and talked to booth visitors about their project.

What began in 2006 as part of an advanced placement chemistry class by

teachers Trey Sleeper and Sean Muller is now a year-long after school voluntary project that has students using a variety of fats and oils in their lab to make the alternative fuel in a 10-gallon tank on campus. Feedstocks used have included pumpkin seed oil, which one student said didn't work so well, turkey fat, and tallow produced from meat scraps brought in by a student who worked in a deli. The students are now growing algae as a future feedstock, but the consensus among those students asked is that fryer oil is preferred because it's easy to obtain. The project has received

various grants and also donations from private and community organizations.

For the third year in a row, *Render* exhibited at the conference's expo, this time jointly with the National Renderers Association. Copies of *Render* and NRA-produced brochures putting to rest some myths about animal fats used in biodiesel were handed out to passersby. Many who visited the booth were eager to share that they are successfully producing high-quality biodiesel using animal fats.

Next year's conference is February 7-10, 2010, in Grapevine, TX. **R**