SUSTAINABLE CERTIFICATION for the Ethanol Process

Access to additional markets and plant efficiencies give bottom-line significance and meaning to the often-generalized term—sustainability.

By Luke Geiver

For most industries—ethanol production included—the practice of sustainability is a grey-area topic: It’s hard to define and even harder to put a value on. Gary DeLong, an Urbandale, Iowa-based, sustainability consultant and auditor who has traveled the world through his role at Degart Global, has a clear understanding of how sustainability can impact U.S. ethanol producers. “The idea of sustainability is always a good topic [for ethanol producers] to be involved in,” DeLong says. “Producers can play in a worldwide market if they have the right certifications.”

Although the current opportunity for U.S. producers to export to Europe is limited because of tariffs and the European Union’s Renewable Energy Directive requirements on renewable energy sources and feedstocks, DeLong works with ethanol clients to help them understand the opportunities for exports into South America, Japanese or other overseas markets that require some form of sustainability certificates. He also works with ethanol clients focused on serving future markets that might open as soon as they are certified sustainable, including California’s. Based on DeLong’s experience and expertise on providing the appropriate certifications for the right markets all over
Current and Former ISCC Certified U.S.-based Entities

Plymouth Energy LLC, Merrill, Iowa
Green Plains Inc., Omaha, Nebraska
Renewable Products Marketing Group, Shakopee, Minnesota
Lyondell Chemical Co., Houston, Texas
Alcoa North America Inc., Houston, Texas
Merex LLC Ltd., Texas City, Texas
Astra Oil Co. LLC, Houston, Texas
Arlon Ethanol LLC, Liberal, Kansas
Cargill Inc., Wayzata, Minnesota
Central Indiana Ethanol LLC, Marion, Indiana
Platinum Ethanol LLC, Arthur, Iowa

Lansing Ethanol Services LLC, Overland Park, Kansas
Poet Ethanol Products, Wichita, Kansas
Petrotek America Inc., Houston, Texas
Noble Americas Corp., Stamford, Connecticut
Arkalan Ethanol LLC, Liberal, Kansas
Lyondell Chemical Co., Houston, Texas
International Feed.com Corp., Long Lake, Minnesota
M-Pact BioFuels LLC, Chesterfield, Missouri
Central Indiana Ethanol LLC, Marion, Indiana
Platinum Ethanol LLC, Arthur, Iowa
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U.S. producers eyeing export markets in Europe have to become ISCC certified, and Gary DeLong predicts those looking to serve the California market will, too.

Earning A Sustainability Certificate

The ISCC is a set of sustainability certification criteria developed by Germany. The ISCC group is a nonprofit and was formed to address the EU’s Renewable Energy Directive requirements that call for a reduction in greenhouse gas (GHG) emissions and a verification system to ensure land use change has not occurred during the production of renewable energy. According to DeLong, there are currently more than 10,000 ISCC certification holders in the world and only two sets of other standards meet the same requirements of the ISCC. U.S. producers exporting export markets in Europe have to become ISCC certified, and DeLong predicts those looking to serve the California market will, too.

The California Air Resources Board held meetings with the ISCC earlier this year to discuss the possibility of adopting or finding compatibilities between ISCC’s standards and CARB’s. As a possible indication of things to come, the ISCC set up an office last year in San Francisco. Although the discussions are still ongoing, DeLong says the two entities are a good match.

Some ethanol producers in the U.S. are certified already. DeLong has worked with more than 10 to perform the auditing and approval process. The ISCC’s objective has three main elements: The feedstock used to produce a biofuel must meet land use requirements; workers linked to the feedstock and fuel production process must be paid fairly; and the biofuel product must provide a 50 percent GHG reduction when compared to standard gasoline blends.

During a three- to five-year period, a third-party auditor will visit the corn growers, the elevator or grain storage facilities and the ethanol production site. Farmers must sign a statement of conformity that signals their feedback is in compliance.
CERTIFICATION

The Certification Process Information used by the third-party auditor to certify feedstock traceability:

- Statements of conformity from farmers supplying feedstock.
- Chain-of-custody verification of grain handling, conducted at the elevator or other first gathering point.
- Chain-of-custody verification and grain evaluation, conducted at the ethanol plant.

with the requirements of the certification protocol. The farmers are not paid any extra to go through the process. “Farmers are always happy to participate,” DeLong says. “They are participating in marketing of corn and ethanol by going through the process.”

On average, nearly 90 percent of all feedstock providers participate in the process.

After the auditor gains the statement of conformity from the farmers, the next step takes place at the first gathering point of the feedstock, typically an elevator or warehouse. At this point in the process, the auditor must certify the chain of custody and the type of grain that will be sent to the ethanol plant. Next, the auditor must visit the feedstock conversion facility, or the ethanol plant, to once again verify the chain of custody and type of grain received. The auditing process utilizes a mass balance system, so an ethanol plant doesn’t need to separate grain that can be used for the certification process from other grains not being used in the ISCC process. The goal throughout the process is to provide a certifiable traceability of the grain used that results in a certain finished ethanol blend. The ISCC’s final ethanol blend is tighter than that of the U.S. ASTM’s standard.

Following the conversion facility step, the auditor then meets with the biofuel supplier or marketer to certify the chain of custody of the biofuel once more. The supplier can then pass the certificate granted by the ISCC on to the buyer. “All along the way, the idea is to keep track of the product before it arrives to places such as the Port of Rotterdam,” DeLong says. The third-party certification is required annually.

Producers that have participated to date have done so to keep their market opportunities open in the future. “They need to keep informed on the markets due to the fact that some may open up,” he says. In many cases, some plant rework has to be performed. “Tooling and revamping was needed. You need a drier ethanol product,” DeLong says. In some cases, his clients had to add molecular sieves to take more water out of ethanol product and give it a higher alcohol content.

For producers yet to be certified but interested in the process, the first step is to become informed about sustainability and what it means to be certified sustainable in different markets, DeLong says. Next, producers should get an understanding of what their particular biofuel products’ lifecycle GHG thresholds would be. After that, a discussion with a consultant or certification body is necessary to help the producer understand if the work, time and investment into the process is worth it for the chance to have access to certain fuel markets, DeLong says. Currently, 22 U.S. ethanol-related entities are on the ISCC’s list of certificate holders.

More Than One Meaning

ISCC certification isn’t the only push to sustainability. Mark Marquis, CEO of Marquis Energie, says sustainability for his production entity is measured in carbon intensity, but it is also viewed as an economic driver used to push down production costs. “Marquis continually evaluates technology to remain on the cutting edge in ethanol production and our sustainable investments allow us to more efficient producer pathway status within the Renewable Fuel Standard,” Marquis said. To date, the company has worked to reduce its carbon footprint by investing in CO2 scrubbing, efficient steam generation systems and plant automation.

The plant’s automation system helps prevent errors and reduces the variability of process streams. Process automation also helps sustain production by preventing unforeseen downtime. “Reduced variability and increased operational efficiency improve our sustainability and bottom line,” Marquis says. Automation also is used to highlight how close the plant is to reaching key production indicators, he says. Although the Marquis team places a major emphasis on sustainability of production and feedstock used—the company’s website has its own tab devoted to the topic of sustainability—the producer is not currently on the ISCC’s list. But, based on the goals of the Marquis team, certifications of sustainability such as the ISCC or others could be of interest in the future to Marquis or producers looking to expand. “We believe in moving from being an ethanol producer to being in a biofueling mode, which is aimed at dividing co-mingled streams into new sources of revenue,” he says. “It’s our goal to have five sources of revenue (up from our current three) in the next five years.”

Author: Laura Gaiser IBJ International Staff Editor 760-736-4944 lgaiser@ibjinternational.com

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