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Fuel-blending tool is sign of the times

Distributors, producers invest in gear to handle shift toward biofuels

BY TOBY VAN FLEET ✉
The Portland Tribune, Aug 21, 2007

Last week, Carson Oil Co. unveiled its brand-new biofuel blending rack at the Nu-Star Energy terminal on Northwest St. Helens Road, north of the St. Johns Bridge.



PHOTOS COURTESY OF CARSON OIL CO. Carson Oil Co.'s new \$2 million rack mixes biofuel with petroleum-based fuel as the fuel is transferred into a tanker truck at a rate of 1,163 gallons per minute.

The rack, with its \$2 million price tag, will help Carson meet the biodiesel and ethanol demand expected to spike with the city's biofuels ordinance taking effect.

"There's nothing like this rack in town – or on the West Coast," says Jeff Rouse, alternative fuels manager at Pacific Biofuels, a subsidiary of Carson.

City Commissioner and biofuel enthusiast Randy Leonard credits Rouse with a crucial role in the passage of the city's Renewable Fuels Standard, which requires 5 percent biodiesel and 10 percent ethanol at every pump in Portland.

Carson's rack blends biofuel with petroleum-based fuel as it's pumped into the giant tanks that the fuel is hauled in.

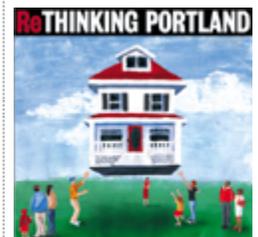


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Tidings

The rack is a collection of 10-inch-diameter steel pipes and bright orange meters mounted across a metal frame about the height and length of a tanker truck.

As trucks fill their tankers at the rack, it allows “ratio-blending,” that is, the mixing of biofuel with petroleum-based fuel.

Ratio blending differs from the more common “sequential” blending, in which the fuels are loaded separately into a tanker and the pressure of the liquid shooting into the tank acts to blends them.

Blending is necessary because biodiesel and ethanol are shipped separately from the petroleum-based fuel they eventually mix with.

At the NuStar terminal, for example, biodiesel comes in 25,000-gallon rail cars and then is filtered and stored in tanks. Petroleum diesel is delivered primarily either through a pipeline or by tanker ship.

Portland-based Carson is a distributor, primarily of diesel, that caters to high-volume companies, including Shell Oil, that sell biodiesel and ethanol at their filling stations. NuStar provides the infrastructure for Carson: storage and handling at its terminal.

And Pacific Biofuels is the subsidiary of Carson Oil through which the biodiesel and ethanol are sold.

With 5 percent biodiesel (known as B5) now required at every pump in the city, the three players in the Portland biofuel game are investing millions of dollars in the tools they need to help them compete as the demand for biofuel grows.

Last month, with a little help from investor Willie Nelson, Portland-based SeQuential Biofuels announced its intention to increase its biodiesel production from 1 million to 5 million gallons per year at its Salem plant, the only biodiesel production plant in the state. And last year, McCall Oil installed a rack similar to Carson’s.

McCall has long served as a loading terminal like the one that Carson will provide with NuStar.

Ron Brown, terminal manager at McCall, says the company has invested about \$500,000 in the project to date.

Brown has seen Carson’s new rack: “There is no great significance between theirs and ours,” he says, pointing out small differences like a second loading arm on Carson’s rack that allows it to load a truck and a trailer simultaneously.

Rack is built for speed

In addition to the ratio-blending, which proponents claim yields a higher quality fuel, Carson says its rack also allows for speed. It can fill a full load, 9,750 gallons, in about 10 minutes.

“It’s definitely incredibly fast,” Rouse says, adding that Carson tested the speed of the rack last week and found that it loaded 1,163 gallons per minute.

And since time is money, speed may soon be more necessary. The other half of Portland’s renewable fuels standard – 10 percent ethanol, or E10, at every gas pump in the city – takes effect Nov. 1.

“Nationwide, take any market, there’s twice as much gas as diesel sold,”

says Tomas Endicott, a SeQuential founder and manager. “And the (renewable fuels standard) for biodiesel is 5 percent, and the (standard) for ethanol is 10 percent, and so effectively the ethanol mandate is twice the percentage and twice the volume.”

In other words, the increase in demand for ethanol is expected to far outreach the increased demand for biodiesel.

Carson expects its volume to triple, at least. The company sold 1 million gallons of pure ethanol and 1.2 million gallons of 100 percent biodiesel last year.

It’s so sure of the increase in demand that it invested more than \$2 million to install the rack.

The cost was split about evenly between Carson and NuStar. Carson’s share was subsidized by city and state funds.

The city’s Office of Sustainable Development awarded the company a \$40,000 grant toward the project.

“I think it paid for, like, that phone,” Rouse jokes.

At the state level, the Business Energy Tax Credit, increased in the last legislative session, allowed Carson to recoup just under half of its cost – about \$500,000.

New rule keeps them hopping

Although there are various differences among the companies – Carson and McCall are the middlemen between fuel production and the pump, whereas SeQuential focuses primarily on production and retail – for now, the three remain the only biodiesel distributors in the Portland region.

The new mandate should keep them all busy. SeQuential’s Endicott says it’s estimated that Portland’s new biodiesel requirement will double demand in the first year, from 4 million to 8 million gallons.

Kevin Considine of the Oregon Environmental Council believes that more investment in local biofuel production is essential.

“I don’t know how many dollars leave our state in petroleum funds, but I’d much rather see it go to a Carson or to a SeQuential or to a McCall, because at least then I know that it’s going to remain here and get used several times over,” he says.

As McCall and Carson try to differentiate themselves with rack technology, SeQuential – named for the sequential blending technique that Carson claims to be improving on – remains the only local source for biodiesel.

But even SeQuential has to supplement its supply with sources from elsewhere.

With the demand for biofuel sure to skyrocket on the wings of public policy, millions more will likely be invested in both fuel sources and infrastructure.

That’s why Carson is confident that its recent investment will pay off.

“We plan on being the leader,” Rouse says.

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Signposts on the road to other fuels

Portland's Renewable Fuels Standard, often called the RFS, was approved by the City Council in July 2006. Here's the timeline:

- **Aug. 15, 2007:** All diesel pumped in Portland must contain at least 5 percent biodiesel (B5).
- **Nov. 1, 2007:** All gas pumped in Portland must contain 10 percent ethanol (E10).
- **July 1, 2010:** All diesel pumped in Portland must contain at least 10 percent biodiesel (B10).

There's one exception on the biodiesel mandate: If a filling station offers diesel that contains at least 20 percent biodiesel, the station can also offer regular 100 percent petroleum diesel. The exception came out of concern that the higher price of biodiesel could cause trucks to fill up outside Portland, potentially resulting in lost revenue for city businesses.

For information about the mandate and biofuels in general, visit the the city's Office of Sustainable Development Web site: www.portlandonline.com/osd, click on Energy and Biofuels under the Programs tab.

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