



Novus Pacific to build full-scale Oregon renewable energy plant

By [Katie Fletcher](#) | November 10, 2014

Novus Pacific LLC will soon break ground on an approximately \$20 million renewable energy plant at the Port of Morrow in Boardman, Oregon, upon finalizing its financial package. About one year after commencement, the plant is expected to produce biogas, organic fertilizer and clean water for sale as valuable commodities derived primarily from onion and potato waste.

Novus Energy has been testing its trademarked Novus Bio-Catalytic (NBC) system on a mobile, 50-foot semi-trailer-mounted demonstration plant. According to Jeff Zierdt, vice president of process operations with Novus, it was time to move forward with a full-scale plant. "It is really the right time, we're a leading-edge technology; it's a sweet spot in terms of the alternative fuels, the low-carbon economy that people are pushing towards, and we'll have a positive impact on the climate," Zierdt said.

The company's NBC process differs from traditional anaerobic digestion (AD) systems in that it requires only about four days to convert waste to biogas instead of around 20 like other AD operations. Surya Pidaparti, vice president of NBC Systems, understands the science of the AD process and helped the company optimize each of the critical steps in biogas production to achieve higher conversion of carbon and higher methane content in the gas stream. "We're able to do basically six times more biogas production than a traditional anaerobic digester, so it really starts with understanding the science, and Surya Pidaparti plays that key role," Zierdt said.

According to Zierdt, the company is basically shovel ready. Leading up to this point the company has worked with the USDA to receive a Rural Energy for America Program grant for their rural development in the area, demonstrated their pilot plant using similar feedstock in the area, received approval from the Oregon Department of Environmental Quality, obtained both air and solid waste permits, and developed strategic partnerships with British Petroleum, Siemens, PacificAg, Harris Companies and Adolfsen & Peterson.

The 1-million-gallon anaerobic digester will consume 442,000 tons of waste per year, broken down into about 120 tons of onion waste a day and approximately 275 tons of potato waste solids from a local fry plant. An additional 10,000 gallons of manure per day will be added to the mix from a local dairy farm.

The digester will produce about 987,000 MMBtu of biogas annually, which will be cleaned and treated to become renewable natural gas (RNG). The RNG will be injected into the interstate pipeline. The company has a 10-year agreement with BP to use the fuel as alternative transportation fuel in a San Diego bus fleet for public transportation.

Besides RNG, the NBC system will create 237,000 gallons of fertilizer and 86 million gallons of clean water. Novus creates a soil amendment with about 50 to 60 percent water moisture, but looks and feels like a peat moss. The liquid fertilizer product, which is left after all the carbon is removed, is ran through a filtration process from which it is sold as a liquid fertilizer. This fertilizer can be used for irrigation in the dry Eastern Oregon area. Combined, the facility's diverse income stream makes up about \$10 million in revenue annually and create 14 direct jobs within the community.

This project by Novus Pacific is the company's first full-scale renewable energy plant, and Novus plans to continue to develop and look at projects throughout the industry after the first commercial plan is up and going. This facility is 500 times the size of the demo. Even so, the company is confident in the technology, and because of the demonstration plant, Zierdt believes, they are equipped with a good understanding of how the process works and how to quickly evaluate and resolve any foreseen problems with startup. "That demo plant allowed us to engineer and put in processes and systems that would prevent some of the things that we actually observed and had to manage on the demonstration plant," Zierdt said.



Novus Energy demonstration plant methanogenesis reactors are housed on the 50-foot heat and ventilated semi-trailer. Novus Energy

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