

Biomass appeal: Stockton plant focused on clean way to turn wood waste into power

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Project manager John Reis leads a tour Thursday of the biomass plant, which is up and running at the Port of Stockton.



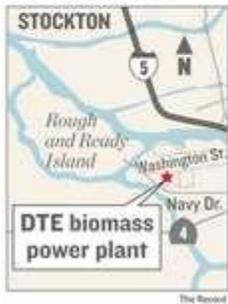
Operations manager Larry O'Neal, left, shows Port of Stockton Director Richard Aschieris the boiler at the new biomass power plant at the port.



Biomass fuel burns in the boiler of the new power plant.

Green and clean

The new \$100 million biomass power plant at the Port of Stockton is now online. The plant burns up to 1,200 tons per day of green waste from local cities and farms, and should be much cleaner than the old coal power plant that once occupied the site.



The first thing John Reis does, as he turns a corner and his new power plant comes into view, is clear up any misunderstanding about the great clouds of gas billowing from its 75-foot stack.

"It's not smoke," he says.

It's steam. Indeed, as you gaze up toward the plume, tiny drops of water wet your face on this otherwise clear, 77-degree day.

Resting on the footprint of what was once the county's grossest-polluting business, this new \$100 million biomass plant went online just a few weeks ago.

Perhaps you've seen the steam, a noticeable addition to the Port of Stockton skyline west of downtown.

But despite appearances, the new plant should burn much cleaner than its predecessor, the old POSDEF power plant that closed in 2009. Instead of coal, the biomass plant will burn wood

waste collected from across the region - perhaps trimmings from a farmer's orchard that otherwise would have been burned, or perhaps construction waste that otherwise would have been buried in a landfill.

In the meantime, the plant will produce 45 megawatts of electricity, enough in theory to keep the lights on for half the homes in Stockton.

"This is one of the cleanest plants you're going to see," said Reis, project manager for the plant's owner, Michigan-based DTE Energy. "This plant is setting standards that the rest of the country is going to have to adhere to."

This is the company's third biomass plant in California, and one of the largest in the state.

Why is a Michigan energy company so interested in California? The answer is our state's push for renewable sources.

Biomass is considered a form of renewable energy, just like solar or wind. But in California, biomass has remained a very small slice of our energy pie. As of 2010, just 2 percent of Pacific Gas and Electric Co.'s renewable energy came from biomass, while tens of millions of tons of material that could be burned to create power were otherwise discarded in less useful ways.

That's slowly changing.

Historically, San Joaquin Valley farmers got rid of orchard waste by burning it. But in recent years, air-quality regulators have banned 80 percent of all agricultural burning, despite concerns that there are not enough biomass plants to provide any other affordable method of disposal.

In other words, with ever-stricter environmental rules coming into play, California offers plenty of fuel to feed DTE's biomass plants.

"We expect DTE to burn ag waste, so, yes, they will help satisfy the demand brought about by the no-burn regulations for agriculture," Dave Warner, director of permit services for the San Joaquin Valley Air Pollution Control District, said in an email.

Thirty-five people work at the new plant, which is staffed around the clock and - unlike wind or solar facilities - can produce power all the time, regardless of weather conditions.

From an open deck on the fourth floor of the plant Thursday, you got a pretty good idea how the operation works.

Big rigs rumbled into a loading area on the far side of Washington Street. They pulled onto ramps which then tilted the large trucks up to almost a 90-degree angle, allowing their contents to spill into a conveyance shaft. The shaft leads to a storage area, and then crosses the street to the plant itself.

The woody material meets its demise in the boiler, where flames shoot temperatures up to 1,800 degrees.

"Just a big barbecue," one plant employee said, watching the glowing fire through a small viewing glass.

Steam from the combustion turns a turbine, which creates energy that is sold to PG&E and distributed into the grid.

In all, the plant can handle between 1,100 and 1,200 tons of fuel per day, collected mostly from sources within a 50-mile radius of Stockton. Those sources include chippers and recycling businesses.

While cleaner than coal, biomass plants can still emit harmful pollutants. In 2011, two plants in the south Valley were fined a total of \$800,000 by the air district and the federal government for failing to comply with their permits.

DTE was delayed in its efforts to open the Stockton plant because of difficulty obtaining its own permit, but Reis and air-quality officials said those issues have largely been resolved.

Reis said the Stockton plant benefits from a new kind of technology that uses a large wet scrubber at the base of the stack to remove pollutants before the steam spews up into the air. That makes it cleaner even than most other biomass plants, he said.

It's a far cry from the POSDEF days, though portions of the old plant remain.

DTE officials kept and refurbished the coal plant's turbine generator, along with existing pumps, motors and conveyance systems. The stack and boiler are new.

"Unlike other areas of the country, you actually have growing demand for power out here," Reis said. "It's great. A big draw for us was the decommissioning of the coal plants because that's a perfect repurposing for us. You had the structures here that we needed."

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