From: CFAES News
Subject: Going to Waste: Ohio State Wooster Campus Gets 30% of Its Electricity from Refuse-generated Biogas
Date: Friday, March 22, 2013 3:07:48 PM

Going to Waste: Ohio State Wooster Campus Gets 30% of Its Electricity from Refuse-generated Biogas

WOOSTER, Ohio -- Rotten produce. Animal fat. Bad soda. Manure. The Wooster campus of Ohio State University's Ohio Agricultural Research and Development Center (OARDC) is slowly going to waste. And that's a good thing.

OARDC is using those and many other agricultural and food-processing wastes to meet close to one-third of the 12-megawatt-hour annual electricity needs of its main campus. That's 3.6 MWh of green energy, enough to power 313 average U.S. homes, according to the U.S. Energy Information Administration.

Many U.S. colleges and universities are turning to renewable energy sources to meet all or some of their power needs, as part of a growing trend that also involves the implementation of additional sustainability initiatives such as construction of "green" buildings and comprehensive campus recycling.

While most of these institutions, including Ohio State's Columbus campus, have turned to solar and wind to reach their alternative energy goals, the OARDC campus has gone about it in a different way -- employing anaerobic digestion technology, which turns a variety of organic wastes into biogas that is then converted to electricity.

This renewable energy is produced by quasar energy group, a Cleveland-based company that built its flagship anaerobic digester on OARDC's BioHio Research Park in 2010. The 550,000-gallon digester can process 30,000 wet tons of biomass annually, keeping a variety of refuse out of landfills and incinerators.

quasar energy group's digester on the OARDC campus. (Photo

OARDC biosystems engineer Yebo Li (front) and quasar's Clemens Halene collaborate on a variety of projects to improve biogas production efficiency. (Photo by Ken Chamberlain)

Connect with us:

On Sustainability
Facebook
College VP
College News

by Ken Chamberlain)

"Our setup is very different because we have a private company located on campus that we partner with, and which produces the biogas, converts it to electricity and sells it to us," said John Ott, head of OARDC's Facilities Services department. "Most other schools run their own power-generation facilities, whether solar, wind, geothermal, biomass or biogas."

Today, 74 percent of the electricity generated by the Wooster digester is sold to OARDC, according to quasar. But this public-private partnership goes beyond energy transactions. The renewable energy company has also set up its engineering office in the BioHio Research Park and runs a lab elsewhere on OARDC's campus, where it collaborates with faculty and students on several research projects. Together, they have attracted several million dollars in state and federal grants to Wooster.

Advancing research to transform organic waste into clean energy and using that energy to run the campus are highly compatible with OARDC's scientific and development missions, OARDC associate director David Benfield said.

"Our ideal goal is for this campus to become carbon-neutral," Benfield said. "To do that, we need an energy source that goes through the carbon cycle, which anaerobic digestion does. In the future, we would like to purchase additional energy from quasar to reach 50 percent biogas-derived electricity use."

OARDC's power-purchase agreement with quasar not only makes environmental sense, but also financial sense, according to Benfield.

"We are seeing 3 percent in savings compared to what we would pay to the electrical supplier," he said.

Because the OARDC campus has its own electrical grid, it was relatively easy to put quasar's electricity right on that grid, Benfield said.

In addition to electricity, OARDC has modified some vehicles in its fleet to run on compressed natural gas (CNG), which is also supplied by quasar and is significantly cheaper and less polluting than gasoline.

The campus is considering converting more vehicles to run on CNG down the road, Benfield said. For the past few years, OARDC has also been using trucks that run partly on biodiesel to transport feed to its outlying agricultural research stations across the state.

For quasar president Mel Kurtz, the partnership with OARDC

has been important to the growth of his company and the renewable energy industry it seeks to develop.
The company now has 10 digesters operating or under construction in Ohio, New York and Massachusetts.

"The public-private partnership with OARDC has been a major driver in quasar's evolution," Kurtz said. "Building an industry isn't something that happens in a vacuum --
it takes collaboration, innovation and a unique spirit of partnership to move from concept to reality."

Electricity and fuel are not the only areas in which OARDC is striving to be more sustainable.

Later this year, the campus will begin construction of its first green building, a LEED Silver-certified building for the Department of Food, Agricultural and Biological Engineering, whose previous structure was destroyed in a 2010 tornado that ripped through the campus.

-30-

Writer(s):
Mauricio Espinoza

espinoza.15@osu.edu
330-621-6541

Source(s):
David Benfield
benfield.2@osu.edu
330-263-3703

John Ott
ott.52@osu.edu
330-263-3915

Mel Kurtz
216-986-9999

---

releases/subscribe

Alt