

your energy CONNECTION

a newsletter from the South Carolina Energy Office

SC Company Advancing Energy Generation with Biofuels

Berkeley County Water & Sanitation (BCWS) in Monck's Corner may seem like just another landfill and water treatment plant, but great things are popping up at their facility. Berkeley is the second-largest county in South Carolina and the only county whose water and sanitation needs are processed by a single entity. Recognizing a need to find alternative solutions for much of the waste that BCWS was processing, the County has taken a partnership approach that will help give the landfill a longer lifespan and will result in the generation of clean energy. BCWS has already begun harnessing landfill gases to produce electricity, which is then sold to state-owned utility Santee Cooper, and is now working toward a goal that will allow the recycling of most types of waste entering the facility.

This latest project was born out of simple necessity. BCWS was having difficulty managing the heavy stream of fats, oils and greases (referred to as "FOGs") coming in from restaurant-heavy Charleston. Enter Sumter-based GenEarth Technologies and Greg Thompson, who had been looking to get into the biofuel business. An engineer by trade, Thompson saw the potential to construct a plant that could generate power by using not only the FOGs from Berkeley County, but also waste from poultry processing facilities in Sumter and Mauldin. GenEarth opened in April 2013, and is now converting organic waste products into gas that will, once fully operational, be transformed into roughly 1.6 megawatts of electricity. By taking advantage of net metering, GenEarth will sell the electricity that it does not use to Santee Cooper. Once the gases have been siphoned into the electrical generator, leftover waste will be pasteurized and converted into bio-solids for agricultural use, making GenEarth a zero-waste facility.

In addition to finding a new home for FOGs, BCWS has partnered with McGill Environmental Systems of North Carolina to construct an indoor compost manufacturing plant. McGill-Berkeley will be a fully-enclosed processing facility utilizing a scientifically-enhanced composting process. The company will accept and process a wide variety of biodegradable materials from municipal, commercial and industrial generators for use as feedstock in the production of its line of premium compost products for the professional sports turf, landscaping and storm water/erosion control markets. Biosolids, yard waste and construction debris will all be funneled to McGill's facility rather than placed into the BCWS landfill.

Over the next decade, BCWS plans to continue growing its alternative fuel and recycling facility with the addition of an algae plant as well as plastic and metal recycling.



SCEO staff tour the GenEarth Facility at the Berkeley County Water and Sanitation Complex (top); pipes feed in and out of the main solid waste intake area (bottom); GenEarth anaerobic digester and mix tank (bottom left)



SCEO Calendar of Events June 2013

- 13 **Governor's Nuclear Advisory Council**
Room 209 Gressette Building
SC Statehouse Complex
1:00 p.m. - 4:00 p.m.

ASCEM Honors Best and Brightest of 2012

The Association of South Carolina Energy Managers (ASCEM) held their annual conference at SCE&G's Pine Island Club on May 2, 2013. Following a morning of lectures, ASCEM distributed awards for Energy Manager of the Year, Energy Project of the Year and representatives from the SC Energy Office (SCEO) and the Tremaine Foundation recognized state agencies and school districts who met their 20 percent by 2020 energy reduction mandate.

Energy Manager of the Year was awarded to Charles Stevenson, Assistant Director for Energy Management in the University of South Carolina Facilities Department. Stevenson, a long-time USC employee, has worked to significantly reduce energy usage on USC's Columbia campus by establishing an energy policy for the University and energy guidelines for projects undertaken on campus. Stevenson's efforts have resulted in more than \$5 million a year in energy savings for the University. Mr. Stevenson manages a \$28 million utility budget while simultaneously managing a \$50 million performance contract. In addition, he managed energy efficiency stimulus funding for the Columbia campus.

Energy Project of the Year was awarded to the Georgetown County School District. District Energy Manager Tony Holcombe oversaw the implementation of a new EcoScreen system, a real-time monitoring and customizable educational energy dashboard supplied by their HVAC/lighting controls vendor. Through this system, Holcombe is able to show real-time energy usage data for each school and hopes to create friendly competition among schools to enhance existing energy saving efforts. Educational displays and animations in the program show numerous techniques for energy efficiency and reduction. The District expects to see a five to eight percent reduction in energy usage attributable to the awareness tool.

Finally, 14 South Carolina agencies and school districts have reached a significant milestone; they have reduced their annual energy consumption by 20 percent. The South Carolina Energy Efficiency Act (Section 48-52-620, Code of Laws of South Carolina) requires all state agencies, school districts and public colleges and universities to develop energy conservation plans to reduce their energy consumption by one percent annually during fiscal years 2009-2013 and by a total of 20 percent by 2020, as compared to 2000 levels. The Act also requires SCEO to verify progress made by public entities toward reducing their energy intensity (defined as total site energy consumption per gross square foot).

With generous support from the Emily Hall Tremaine Foundation, the SC Energy Office is focusing attention on the mandated goals by recognizing those public entities which have already met the significant milestone of at least a 20 percent reduction in energy intensity over the year 2000 baseline. Recognized this year were:

Clover School District (York SD2)	Patriots Point Development Authority
Darlington School District	Rock Hill School District 3
Georgetown School District	SC Department of Corrections
Greenwood School District 50	SC Department of Parks, Recreation & Tourism
Lancaster School District	Williamsburg School District
Laurens School District 55	Williamsburg Technical College
Newberry County School District	
Northeastern Technical College	



University of South Carolina's Charles Stevenson (right) is honored by Jim Dimarest while accepting the Energy Manager of the Year Award (top); Tony Holcombe accepts the project of the year award on behalf of the Georgetown County School District

News You Can Use: What's a Solar Water Heater?

Although it's not in the news as often as solar electric (PV) systems, solar water heaters are also a great way to save money and go solar.

Solar water heaters use the heat of the sun to preheat water for your water tank. A liquid substance, similar to antifreeze, is pumped to panels on the roof where it is heated. The heated liquid is then pumped back through though coils in your water heater, heating your water and offsetting some of your electricity or gas use.

On average, installing a solar water heater can reduce your water heating bills by 50 to 80 percent. And, because the sun is free, you're protected from future fuel shortages and price hikes.

Solar water heaters are also less expensive than PV systems. Depending on your location and the size of your home, a system can cost from \$2,000 to \$6,000. Although that price is higher than that of a traditional gas or electric system, you will save significantly more in energy costs over the life of the system.

Find out more about solar in South Carolina on our website:
<http://energy.sc.gov/renewable/solar>