

Advancing Energy Innovation

In a world where reducing dependence on fossil fuels grows more important every day, the U.S. government is focusing on using clean, renewable energy technologies to meet the changing energy demands of the nation and strengthen its energy independence.

But the challenge is *how to deliver* sources like solar, biomass, wind, wave, geothermal or other power generation technologies in a cost effective, large-scale manner that will satisfy the nation's energy requirements.

The U.S. Army and the U.S. Army Corps of Engineers are addressing the challenge through the development of Regional Energy Initiatives. These geographically-organized partnerships combine the energy demands of multiple federal partners within a region to develop large-scale, renewable energy projects at the best possible value.

"The goal is to create an attractive business case for financiers and utilities to develop renewable projects on available federal lands with a guaranteed base of federal customers," said Gordon Simmons, chief of the Savannah district Engineering division.

A regional initiative that is gaining momentum as an example of successful partnering is the Southeast Energy Initiative, spearheaded by the Savannah district and the Department of Energy's Savannah River National Laboratory (SRNL). Together, the agencies work to meet the energy demands unique to the

Southeast through alternative, non-fossil-fuel burning energy sources.

But why the Southeast? Several issues make the region unique. Census projections show a 32 percent population growth in the Southeast between 2000 and 2030—a rate that is significantly higher than any other region in the nation. Likewise, the demand for energy will rise 32 percent in a similar timeframe, according to the Energy Information Administration. This increasing trend in population and energy demand is complicated with the region's high temperatures and humidity rates, which demand controls for human comfort, equipment protection, and mold control.

To address these increasing energy demands, the Savannah district and the SRNL have teamed up as the technical and program management agency responsible for planning, execution, and oversight of the Southeast Energy Initiative.

"By addressing renewable energy needs on a regional basis, the Savannah district can help build solutions based on our existing knowledge and relationships with military installations, other federal partners, utility companies, and regional energy regulators," Simmons said. "It focuses on solutions that provide the best value for the region—complementing national solutions—and it allows for development of subject matter expertise related to regional issues."



The Savannah River National Laboratory plays a key role in the Southeast Energy Initiative as a leader in renewable energy technologies, such as biomass steam and electricity produced at the newly-constructed Ameresco Biomass Cogeneration Facility, located at the Department of Energy Savannah River Site.

Photo courtesy of SRS.



Speaking of expertise, the Savannah and Mobile districts were recently designated as the Joint Energy Regional Center of Expertise within the Corps' South Atlantic Division, which spans eight southeastern states. Together, the combined engineering staff includes more than 300 professionals that specialize in optimal energy planning and design.

The SRNL, located on the Savannah River Site (SRS) near Aiken, S.C., plays a key role in the Southeast Energy Initiative as a leader in renewable energy technologies, such as biomass, biofuel, and hydrogen systems, as well as alternate energy solutions in the form of small modular nuclear reactors.

The site is already implementing several renewable energy projects using private funding, according to Ben Cross, senior advisor for the Clean Energy Directorate with SRNL. For example, in the past three years,

SRS has built four biomass plants—three smaller units providing 60,000 pounds of steam per hour (pph) and one large unit providing co-generation of 20 megawatts of electricity (MWe) and 200,000 pph steam. These biomass plants provide 40 percent of the site's required electricity and 100 percent of the site's required steam, all constructed and operated with private support and minimal federal investment, Cross said.

"As we develop these types of energy projects with private-public partnerships, we plan to leverage and expand the relationships and lessons learned with the Southeast Energy Initiative," Cross said.

While the team is still a long ways from implementing projects, the partnerships formed are beginning to pave the way for a successful venture in energy innovation.

For more information on the initiative, contact Gordon Simmons at 912-652-5927 or e-mail Gordon.L.Simmons@usace.army.mil. 

By Tracy Robillard, Corporate Communications Office



As a leading agency in the Southeast Energy Initiative, the U.S. Army Corps of Engineers, Savannah District will expand its capabilities to deliver renewable energy sources, like solar panels (pictured) at the Maneuver Center of Excellence Headquarters at Fort Benning, Ga. The \$168 million renovation project was completed in September 2011 and includes 40,000 square feet of solar panels, a rainwater collection system for irrigation and cooling, among other sustainable features. *Photo courtesy of AECOM Technical Services, Inc.*