



SAVANNAH RIVER SITE BIOMASS COGENERATION PROJECT



About the Project Savannah River Site, Aiken, South Carolina

Ameresco was selected by the Department of Energy to design and implement the nation's largest energy savings performance contract at \$795 Million. The centerpiece of this project will be a biomass-fueled steam cogeneration plant and two smaller biomass-fueled plants at the DOE Savannah River Site in Aiken, GA that Ameresco will also operate and maintain over the term of the 20 year contract.

"This project demonstrates the Department's commitment to design and construct facilities that promote clean, efficient operations," said DOE Savannah River Operations Office Manager Jeffrey Allison. "Awarding this contract allows the Savannah River Site to move forward in

implementing energy improvements that provide significant public health and environmental benefits and real energy and cost savings to the Department of Energy."

This delivery order is a prime example of "smart contracting." The project was competitively awarded at a firm, fixed price, and the government does not start paying the contractor until actual energy savings are realized. The contractor will then be paid with savings in energy and other operations and maintenance costs. The community also receives the health and environmental benefits tied to the reduction in greenhouse gas emissions.

Ameresco guarantees the energy improvements will generate cost savings which start at \$34 million annually. After the contract ends, all additional and continuing savings accrue to DOE. Construction of the cogeneration facility is anticipated to start in August 2009 and be operational by December 2011.

The new Biomass Energy Center will have an output capacity of 240,000 PPH of steam that will replace the existing outdated D Area coal-fired cogeneration plant. The two smaller plants in the K and L Areas will each have one 10,500 PPH steam boiler to replace the aging fuel oil-fired packaged boilers currently serving the site.



The facilities will have the capacity to combust 385,000 tons of forest residue annually although the site's current annual steam and electricity needs require about 325,000 tons of biomass. More than 20,000,000 tons of forest residue are generated annually in the state of South Carolina. There are numerous sources of clean biomass within a 100 mile radius of the project site, including within the Savannah River Site Forest.



The use of renewable energy fuel sources provides many positive economic and environmental benefits to the Savannah River Site and to the entire Central Savannah River Region.

Biomass Sources

Clean biomass and bio-derived fuels (BDF) will be the primary fuel source for all of the new boilers. The clean biomass consists of various types of forest residues that were previously left on the forest deck to rot including tree tops, limbs, and small non-merchantable timber.



Cogeneration Facility

Biomass will be used to fuel 2 steam boilers capable of producing 240,000 lb/hr of high pressure steam, as well as to power a steam turbine capable of generating up to 20 MW of electricity.

Produces Thermal & Electrical Energy

The cogeneration facility produces clean, green renewable energy to meet SRS needs for steam used in the Site's industrial processes and building heating systems, and electricity to power much of the SRS. The K and L Area plants will provide biomass-produced steam for the Areas' heating and industrial processes.

Key benefits of the Savannah River biomass project include:

- Over 2,000,000 MBtu/yr of thermal renewable energy production and a minimum generation of 77,000,000 kWh of green power.
- Annual Energy Reductions of approximately 500,000 MBtu/yr

- No-cost Renewable Energy Credits (RECs)
- Support of the South Carolina Biomass Council Goals
- Decrease of water intake from the Savannah River by 1,400,000 kgal/yr, supporting water conservation efforts in the regional drought situation.
- Reduction of 400 tons/yr of Particulate Matter (PM) emissions
- Reduction of 3,500 tons/yr of Sulfur Dioxide (SO2) emissions
- Reduction of 100,000 tons/yr of Carbon Dioxide (CO2) emissions

Ameresco

Ameresco, Inc. is the largest independent energy services provider in North America. We deliver long-term customer value and environmental sustainability through alternative energy solutions, energy efficiency and innovative facility renewal strategies. The company has more than 650 employees in 50 regional offices throughout North America, and it has constructed more than \$4 billion in energy projects throughout the world.