

SOUTHERN COMPANY

and Renewable Energy

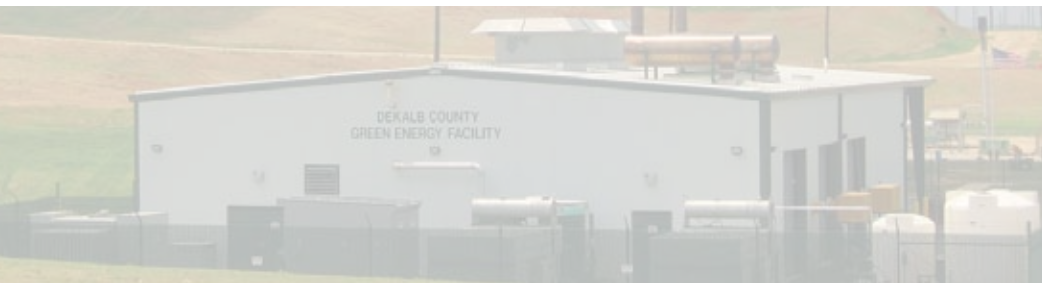
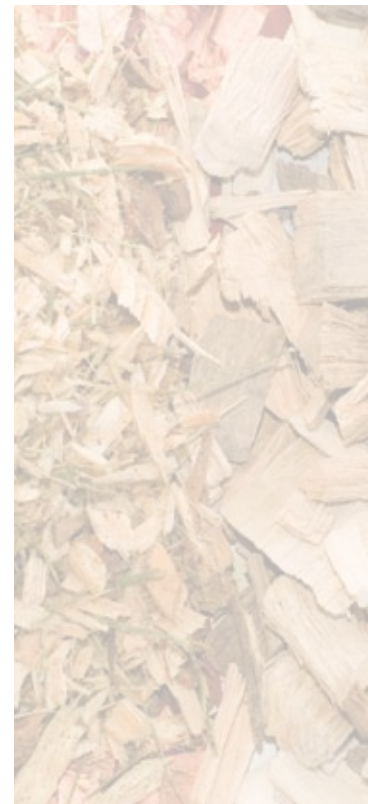


SOUTHERN COMPANY

Overview



Southern Company, which serves one of America's fastest-growing regions, projects it will add more than 1.1 million customers by 2025 and need almost 15,000 megawatts of new electric generating capacity to meet the increased demand for energy. Renewable energy may provide a part of the needed capacity. But the relative scarcity of renewable resources in the Southeast limits the extent of renewable energy's overall potential contribution to Southern Company's electricity generation. Southern Company believes renewables should be considered as part of a diverse energy supply portfolio, and we are pursuing options, such as biomass, that can help us continue to provide reliable and affordable energy to our customers. Although renewable sources cannot be relied upon for a large share of electricity in the Southeast, Southern Company is engaged in research projects aimed at addressing issues of resource availability, technology and cost to facilitate the development of those sources that show promise.



Biomass

A Natural Option

Biomass, whether derived from agricultural crops or from wood, has the highest potential for providing renewable electricity generation in the Southeast. Biomass is considered “carbon neutral” – meaning that carbon dioxide emissions from burning biomass are offset by the CO₂ that was absorbed by the biomass as it grew.

A Home-Grown Energy Source

Switchgrass is a hardy, highly productive native American prairie grass that has potential as a renewable energy fuel. Southern Company has conducted co-firing tests of switchgrass with coal since 2001. In these co-firing tests, the grass is shredded to smaller than 1-inch pieces and conveyed pneumatically into the furnace through dedicated burners.

Ongoing tests are looking at the handling, operating, combustion and emissions characteristics of the co-firing process. With switchgrass replacing 5 percent of the coal, boiler efficiency has been found to be somewhat less than for coal-alone operation. Emissions of sulfur and mercury have been reduced with co-firing, and nitrogen oxides are essentially unchanged.



A small amount of electricity produced during the switchgrass co-firing tests has been made available for sale to customers through a renewable pricing program at Southern Company subsidiary Alabama Power.

Fuel from the Forest Floor

Southern Company and Alabama Power are participating with the federal government in a project to explore the feasibility of using “woody biomass,” primarily small-diameter wood available from forest thinning activities, as an energy source by blending it with coal.

The wood is being harvested from the Talladega National Forest, in cooperation with the U.S. Forest Service. Initial wood chip production tests have been encouraging, and co-firing tests are planned.

In addition to gauging the environmental benefits of the process, including the potential to reduce power plant emissions, and providing renewable fuel, this program also will benefit the National Forest System by thinning select trees, thus improving habitat for bird species such as the red-cockaded woodpecker and wild turkey.

The Next Step Forward

Southern Company has initiated a study to examine the feasibility of generating electricity from 100 percent biomass, in contrast to co-firing.

The overall goal is to learn if this process can generate power on a cost-effective basis.

The project, in partnership with the Electric Power Research Institute, will define capital costs, operating and maintenance requirements, and commercially available options



for converting one or more small generating units from coal to 100 percent biomass as a fuel source. The evaluation to date indicates that the generating unit tentatively selected for the testing, now rated at 165 megawatts with coal, would produce about 80 megawatts using biomass.

Wind

Exploring Wind Power Off the Coast of Georgia

It has long been assumed that there is no wind resource for power generation in the Southeast except in small isolated areas. Southern Company and Georgia Tech recently completed a study of the feasibility of generating electricity from wind off the coast of Georgia. Results of the study show that current wind turbine technology is insufficient to economically harvest the wind resources available there. The viability of a wind project in this location is further hampered by higher construction costs for offshore installations and the risk of wind farm destruction from hurricane-force winds sometimes encountered on our southern coasts.

While the Southeast in general does not have sufficient wind speeds to effectively support wind power generation, the study found the conditions are better starting about five miles off the Georgia coast, with average wind speeds of about 16-17 mph. These “Class 4” winds have been used in other areas of the country for land-based wind farms

but offshore wind resources must be greater to overcome the higher construction and operational costs.

Furthermore, the wind resources off the Georgia coast are lowest – and well below the operating range of existing wind turbines – during the summer months when the electricity is needed most.

The study concluded that based on today’s prices for wind turbines, the 20-year levelized cost of electricity produced from an offshore wind farm would be significantly higher than the current production costs from existing power generation facilities.

Southern Company will continue to pursue the potential development of wind energy resources in the state’s coastal waters by urging the development of lower-speed and more hurricane-tolerant wind turbine designs and by continuing to monitor the area’s wind resources. Should the economic, regulatory and technological hurdles be overcome – and if the communities we serve are supportive – we will explore the possibility of developing wind energy for our customers. Nonetheless, it is important to note that, even if these hurdles are overcome, the insufficient available resources in the Southeast, as well as the intermittent nature of wind energy (customers need electricity around the clock, whether or not the wind is blowing) make wind’s potential contribution to the energy needs of the Southeast low.





Landfill Gas

Yesterday's Trash, Today's Energy

Southern Company's subsidiary Georgia Power in 2006 began offering customers the opportunity to purchase "green" power from a new landfill gas generating plant at the DeKalb County landfill near Atlanta. The plant's generating capacity is 3.2 megawatts. This power can be purchased at a premium of \$4.50 per 100 kilowatt-hour block per month, an additional charge to the customers' regular electric bills.

Landfill gas is about one-half methane, a greenhouse gas that is 20 times more powerful than carbon dioxide. This gas typically escapes from municipal landfills into the atmosphere. In recent years some landfills around the country have installed flares to burn the methane, which forms carbon dioxide. But other landfills – such as the one in DeKalb County – have begun to combust the gas in reciprocating engines to produce power. This power is generally recognized as green energy.

As of September 2007, the Georgia Power program was about 80 percent subscribed.

Solar

Harnessing the Sun is a Challenge

Southern Company has evaluated numerous solar energy options over the past 20 years, including solar thermal and photovoltaic arrays. There are serious limitations to the use of solar power in the Southeast, primarily because of extremely limited availability and high costs, especially for photovoltaics, compared with other sources of electricity generation. For example, because of cloud cover and night skies, tests have shown solar would provide power during



only about 15 percent of a 24-hour period, requiring another power source during the remaining time. Current cost estimates for photovoltaic solar are more than 25 cents per kilowatt-hour, compared with the average of 7-8 cents for our residential customers.

To encourage the advancement of cost-effective solar power, the company supports a number of small-scale demonstration initiatives. Under one such program, the "Solar for Schools" program in Florida, subsidiary Gulf Power has worked to install solar technology at schools and a museum, which has provided educational and cost-saving benefits.



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