

May  
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A MONTHLY SUMMARY  
OF HIGH-LEVEL  
SOUTHERN COMPANY INFO

# SO To Go



With 4.4 million customers and more than 43,000 megawatts of generating capacity, Atlanta-based Southern Company is the premier energy company serving the Southeast. A leading U.S. producer of electricity, Southern Company owns electric utilities in four states and a growing competitive generation company, as well as fiber optics and wireless communications. Southern Company brands are known for excellent customer service, high reliability and retail electric prices that are below the national average. Southern Company has been No. 1 in financial soundness among Fortune's "Most Admired Electric and Gas Utilities" three years in a row, and is consistently listed among the top-ranking U.S. electric service providers in customer satisfaction by the American Customer Satisfaction Index. Visit our website at [www.southerncompany.com](http://www.southerncompany.com)



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- Stewardship

### High-tech plant monitoring center adding value, boosting reliability

In its first full year of operation, Southern Company Operations' monitoring and diagnostics (M&D) center has made a significant difference to the company's bottom line.

Analysts at the center in Birmingham, Ala., use sophisticated software to continuously monitor units at Southern Company's fossil generating plants for reliability and heat rate. Reports are sent to plant operators in real time. The analysts have helped save \$4.2 million in fuel costs, avoid 402,000 megawatt-hours of potential lost generation and avert more than \$483,000 in maintenance costs.

"We are another set of eyes for plant operators," said Ken Carr, operations and performance manager. "All the staff analysts have operating experience, so they know what the data mean and how to communicate with the plant. We are staffed around the clock."

The type software used by the M&D center to monitor temperature, vibrations and other factors affecting heat rate and equipment reliability was originally developed by NASA after the Challenger shuttle disaster. It uses historical data from each plant's operational information system to establish normal operating conditions, then identifies any anomaly or condition outside of normal to analyze for potential impact.

"We can look at patterns across the fleet to see if there are indicators of future problems," Carr said.

The center responds accurately and quickly to mitigate risk and damage, prevent unplanned outages and reduce heat rate and emissions. Heat rate is an important measurement of how many megawatt-hours a fuel is producing; the more efficient the heat rate, the less fuel is used.

In addition, data can be used to identify issues that could affect more than one plant, leading to the development and implementation of best practices across the fleet.

Later this year, the center will participate in an Electric Power Research Institute (EPRI) pilot of a thermal performance monitoring tool. The tool is designed to take heat rate monitoring "to the next level," Carr said.

The vision of the center is to be the hub of information regarding the efficiency and reliability of the generating fleet.

## Environmental Leadership through Technology and Innovation

### Emission Reduction

also see: [www.southerncompany.com/corporateresponsibility/environment/](http://www.southerncompany.com/corporateresponsibility/environment/)

- Invested \$8.3 billion in environmental controls since 1990 and plans to invest at least an additional \$1.5 billion through 2014 to further reduce emissions of nitrogen oxides (NOx), sulfur dioxide (SO<sub>2</sub>) and mercury.
- Since 1990, emissions of NOx and SO<sub>2</sub> are down 70 percent while generation of electricity has increased more than 40 percent to serve the growing need for electricity.
- Managed \$740 million in environmental research and development over the past decade.
- Plant McDonough-Atkinson, near Atlanta, converting from coal to natural gas. First of three converted units now in operation.

### Carbon Capture

also see: [www.southerncompany.com/corporateresponsibility/environment/climatechange.aspx](http://www.southerncompany.com/corporateresponsibility/environment/climatechange.aspx)

- Managing the U.S. Department of Energy's National Carbon Capture Center in Alabama, testing the next generation of technologies to capture carbon dioxide (CO<sub>2</sub>) emissions.
- Demonstrating carbon capture and storage on an existing unit of Plant Barry in Alabama. The project is currently capturing CO<sub>2</sub> and ramping up to 150,000 tons per year for permanent underground storage.
- Building a commercial-scale, 582-MW generating plant in Kemper County, Miss., using locally mined lignite and the company's Transport Integrated Gasification (TRIG™) technology, with 65 percent carbon capture and re-use.
- A portfolio of major carbon capture and storage research projects are either complete or under way.

### New Nuclear

also see: <http://www.southerncompany.com/nuclearenergy/>

- Nuclear generation is carbon-free. Southern Company has a 30-year-plus record of safely operating nuclear plants.
- Nuclear power plants are among the safest and most secure industrial facilities in the nation and have operated throughout the United States for decades.
- Adding two 1,100 MW units at Plant Vogtle in Georgia in 2016 and 2017.
- The new Westinghouse AP1000 under construction at Plant Vogtle is the safest nuclear power plant technology available in the world, and is the only reactor to receive Design Certification from the U.S. Nuclear Regulatory Commission (NRC).
- Nuclear power plants produce uninterrupted electricity for extended periods of time — for as long as 24 months.

### Renewables

also see: [www.southerncompany.com/corporateresponsibility/electricity/building.aspx](http://www.southerncompany.com/corporateresponsibility/electricity/building.aspx)

- Hydroelectric: 33 facilities with total of 2,820 MW.
- 30-MW solar PV plant operating in New Mexico in partnership with Turner Renewable Energy.
- Biomass: Building a 100-MW wood biomass unit in Texas.
- Georgia Power signed agreements to purchase 50 MW of solar energy by 2015.
- Landfill gas: DeKalb County, Ga. – 3.2 MW; Perdido, Fla. – 3.2 MW; Savannah, Ga. – 6.4 MW.
- Solar panels and wind micro-turbines on billboards; solar panel demonstrations in Georgia and Alabama testing multiple technologies.
- Solid waste generation – purchasing power from refuse-fired generators, Bay County, Fla. – 11 MW.
- Offshore wind turbine studies – Georgia and Florida.

### Smart Grid

also see: [www.southerncompany.com/corporateresponsibility/electricity/](http://www.southerncompany.com/corporateresponsibility/electricity/)

- Southern Company has responsibility for approximately \$5.5 billion in transmission assets, including more than 27,000 miles of transmission lines, 3,300 substations, 154,000 miles of distribution lines, 3.6 million poles and more than 300,000 acres of right of way.
- Southern Company plans, designs, builds, operates and maintains the transmission system to meet growing demand and has budgeted \$4 billion in new capital expenditures over the next three years.
- Installing 4.4 million "smart meters," which will lower costs and help customers manage energy use.

### Energy Efficiency

also see: [www.southerncompany.com/corporateresponsibility/electricity/championing.aspx](http://www.southerncompany.com/corporateresponsibility/electricity/championing.aspx)

- Southern Company energy efficiency programs have reduced peak demand for electricity by 3,400 megawatts. That's enough energy to power nearly half a million homes.
- Between now and 2020, Southern Company plans to spend \$1 billion on energy efficiency and demand-control programs, reducing peak demand by an additional 1,000 megawatts.

### Stewardship

also see: <http://www.southerncompany.com/corporateresponsibility/stewardship/>

- Long-term commitment to wildlife and habitat conservation through three major programs – Longleaf Legacy/Longleaf Stewardship Fund, Power of Flight and Five Star Restoration – in partnership with the National Fish and Wildlife Foundation.
- Working with diverse partners to achieve measurable results, including 830,000 acres of longleaf pine and other critical habitat in Southeast to be restored.

## SOUTHERN COMPANY

**2011 revenues:**  
\$17.66 Billion

**2011 net income:**  
\$2.20 Billion

**2011 total assets:**  
\$59.3 Billion

### Diversified sources of energy (2011):

- 52% coal
- 30% gas
- 16% nuclear
- 2% hydro

**Electric generating capacity:** 43,555 MW

### Financial summary:

- Stable A credit rating
- Dividends – 258 consecutive quarters dating to 1948; 11 consecutive years of increases; 3.7% increase in 2012

### Operations summary:

- Safety – Goal is zero; dominated top quartile in safety as measured by Southeastern Electric Exchange
- Reliability – plant performance among best in industry; top quartile in forced outage rate
- Prices – below national average
- Customer Satisfaction – consistently ranked one of nation's best