Q. How does Southern Company view, assess and manage carbon risks?

Southern Company is committed to providing clean, safe, reliable, and affordable energy – and reducing emissions of carbon dioxide (CO_2) and other greenhouse gases (GHG) by developing the full portfolio of energy resources. Southern Company understands that operating in a CO_2-constrained future will be a reality, and we have been planning for over a decade for a CO_2-constrained future. Climate change is a challenging issue for our world and our nation, and Southern Company is committed to a leadership role in finding solutions that make technological, environmental and economic sense. The focus of our efforts is on developing and deploying technologies that reduce GHGs while making sure that energy remains reliable and affordable. Southern Company believes that this is the most responsible approach to meeting the needs of the environment, our customers and our shareholders.

Southern Company's most recent Carbon Disclosure Report is available under "Corporate Responsibility" in the "Reports" section. The report details actions the Southern Company system is taking to address GHG emissions and incorporates information requested through the Carbon Disclosure Project.

Assessing and Managing Carbon Risks:

To appropriately consider risk and uncertainty related to future CO_2 policies, a scenario process is employed by the Southern Company system for long-term resource planning across all our electric utility companies. While each electric utility company in the Southern Company system owns and operates its generating resources, Southern Company's electric generating fleet is economically dispatched together to serve customer needs regardless of location or company ownership. A range of planning scenarios is established, developed and modeled through the work of a coordinated planning team consisting of internal subject matter experts, company planning managers and external experts that provide input on key parts of the analysis.

Planning scenarios identify important drivers in the ongoing evolution of the energy industry, including possible CO_2 policies and other environmental pressures, fuel markets, economic growth and technology development. Scenarios consider multiple views of CO_2 policies and fuel prices to appropriately reflect risk and uncertainty. Using a coordinated approach, the state-regulated electric operating companies (Alabama Power, Georgia Power, Gulf Power, and Mississippi Power) analyze the scenarios using a fully integrated multisector energy economic model. Model outputs characterize the evolution of the U.S. energy economy – including the electricity, transportation, manufacturing, industrial, commercial and residential sectors – for each of the scenarios, while capturing the interconnected nature of these sectors.

Interrelated factors are considered in the system's scenario modeling process. For example, higher CO_2 and fuel costs would increase electricity prices and tend to reduce growth in overall economic activity. Additionally, placing costs and restrictions on CO_2 and other GHG emissions, along with varying projections of fuel prices, would drive generation investment choices through retirements of existing capacity, installation of new environmental control technologies and construction of new replacement capacity from appropriate generation resources.

Customer impacts must be at the heart of generation resource planning, and the resulting resource strategy must consider a range of potential outcomes. Impacts include the direct cost effectiveness of the resource strategy as compared to alternative resource strategies, as well as local community impacts such as jobs and taxes.

A major goal of the resource planning process and environmental compliance strategy process, which includes environmental control plans for the next 10 years, is to maintain flexibility by including as much information as possible before making final decisions. A key advantage of this process is that it allows decision-making on an incremental basis. For example, final decisions on specific pollution control projects are not made until commitments are required for construction to commence early enough to meet any required compliance date. While environmental controls may be planned on a unit, no firm commitment will be made until necessary to assure the control equipment is in place and operational when needed. This flexibility enables each state-regulated electric operating company to adapt to changing requirements and keep costs as low as possible for customers.

Additionally, for many rules, such as the Clean Power Plan (CPP), the possibility that litigation will result in policy changes is present. Maintaining a flexible process and one that is reviewed at least on an annual basis, provides opportunities for refinement and adaption to changing regulations and requirements.

Q. How do Clean Power Plan activities change Southern Company's plans and if the CPP is withdrawn or otherwise held invalid, how will it affect the company's carbon asset risk?

Regardless of the outcome for the CPP, Southern Company understands that operating in a CO_2-constrained future will be a reality. The company currently considers policy risk and uncertainty through its scenario process for long-term resource planning. At least on an annual basis, the company ensures that this process is durable by employing necessary changes to accurately reflect current and future environmental requirements. However, since the company's long-term resource planning horizon spans across decades, the associated CO_2 scenarios are less susceptible to short-term directional shifts.

Q. What are Southern Company's fleet transition activities, including retirements, renewable strategy, fuel diversity and reliability?

With a focus on providing the best possible service to our customers, a dedicated team works to ensure the Southern Company system is at the forefront of the production, delivery and end-use of energy by leveraging a portfolio of existing and new technology options that seek to balance reducing environmental impact, increasing customer value, improving reliability, increasing efficiency and minimizing cost.

Southern Company's long-term strategy is based on taking advantage of the competitiveness of existing technologies, while still focusing on affordability, reliability, safety and the need for clean energy. For example, the large amount of renewable generation being added to the system is incorporated in planning scenarios, potentially displacing generation from existing central station power plants. In turn, the changing generation mix will help minimize the risks of future GHG constraints and other environmental requirements as they are known and incorporated into the planning process.

Renewable strategy:

Southern Company's state-regulated electric subsidiaries are highly focused on strategically increasing the role of renewables. Our state-regulated electric subsidiaries continue to expand their utilization of renewable energy resources, including solar, wind, biomass and other sources. For example, Georgia Power is developing the nation's largest voluntary solar portfolio, and the Southern Company system is the only utility partnering with all four branches of the armed forces to develop solar installations at U.S. military bases. Southern Company's wholesale subsidiary – Southern Power – has acquired renewable energy projects across America. Since 2014, Southern Power's renewable capacity has grown from 620 MW to more than 3,400 MW. In December 2016, Southern Power signed a 3,000 MW wind generation joint development agreement with RES. By the end of the decade, Southern Power's renewable portfolio is expected to approach nearly 7,000 MW.

Fuel diversity and reliability:

It is unlikely that the United States will be able to meet its long-term energy and environmental objectives without retaining high capacity factor electric generation sources (i.e., generation available 24 hours a day, 365 days a year). Since most generation from renewable sources is weather and time of day dependent – thus, intermittent in output – there must be sufficient generation sources to support this variability. Reliable and flexible generation sources will be needed to react to customer electricity needs as wind and solar generation fluctuates. Failing to properly ensure the development of these resources will not only lead to much higher costs, but may have serious reliability consequences. In order to remain safe, reliable, and cost effective for our customers, one resource alone cannot meet our future energy needs. Public policy must be formulated to ensure all energy resources, including nuclear, natural gas, 21st century coal and other high capacity factor power resources remain viable resources for future development.

Retirements:

Southern Company considers retirement options for existing generating units as part of its overall resource strategy. For example:

- If an electric generating unit is not able to achieve required environmental compliance in a cost-effective manner, the company evaluates other options, such as switching fuels, finding alternate methods to comply or retirement of a unit.
- If environmental controls are mandated for a specific unit, then the economic value of the generating unit, including future operating costs, must be considered to determine whether it is in the best interest of customers to install the required control technology or to retire the generating unit and replace it with another resource. After the process is completed and analyzed across various planning scenarios, an environmental strategy is compiled on a unit level and reviewed annually based on the most current information.
- Along with a quantitative economic review, the Company also considers other qualitative factors such as fuel diversity, tax base and jobs for local communities, and operational flexibility and value.

Southern Company's environmental compliance strategy involves the continuous monitoring of policy developments, compliance options and other factors which may impact the long-term viability of units in the future. Southern Company's recent resource planning process and environmental compliance strategy led to 3175 MWs of coal-related retirements since 2015. The below table details these retirements.

Unit	Nameplate Capacity (MW)	Retirement Date
Barry 3	225	Retired Aug-15
Branch 1	250	Retired Apr-15
Branch 3	490	Retired Apr-15
Branch 4	490	Retired Apr-15
Gorgas 6	100	Retired Aug-15
Gorgas 7	100	Retired Aug-15
Kraft 1	50	Retired Oct-15
Kraft 2	50	Retired Oct-15
Kraft 3	100	Retired Oct-15
Mitchell 3	155	Retired Aug-16
Scholz 1	40	Retired Apr-15
Scholz 2	40	Retired Apr-15
Smith 1	125	Retired Apr-16
Smith 2	180	Retired Apr-16
Sweatt 1	40	Retired Jul-16
Sweatt 2	40	Retired Jul-16
Watson 1	75	Retired Jul-15
Watson 2	75	Retired Jul-15
Yates 1	100	Retired Apr-15
Yates 2	100	Retired Apr-15
Yates 3	100	Retired Apr-15
Yates 4	125	Retired Apr-15
Yates 5	125	Retired Apr-15

Q. How does Southern Company's evolving business model prepare for grid modernization?

Southern Company, with its state-regulated electric operating companies, plans, builds and operates an exceptionally reliable electricity transmission and distribution network serving the electricity needs of customers in large portions of four southeastern states as well as providing reliable interconnection with surrounding areas.

Grid modernization is broadly defined as actions taken to make the electricity system more resilient, responsive and interactive. Typical topic areas are smart grid and advanced metering infrastructure, regulatory reform, utility rate reform, energy storage, distributed energy resources, microgrids and demand response.

The U.S. electricity grid is in a state of transition from what has been traditionally a "one-way feed" grid from central station generation to a "two-way feed" grid from both central station and distributed generation resources.

By 2030, the company expects some significant changes in some of the basic functioning of the grid:

NOW

One-way flow
Scheduled generation
Central dispatch
Time-based maintenance
Mostly mechanical
Reactive expansion

2030

Bi-directional flow
Uncontrolled variable generation
High-performance infrastructure
Condition-based maintenance
Inverter-based growth
Proactive expansion

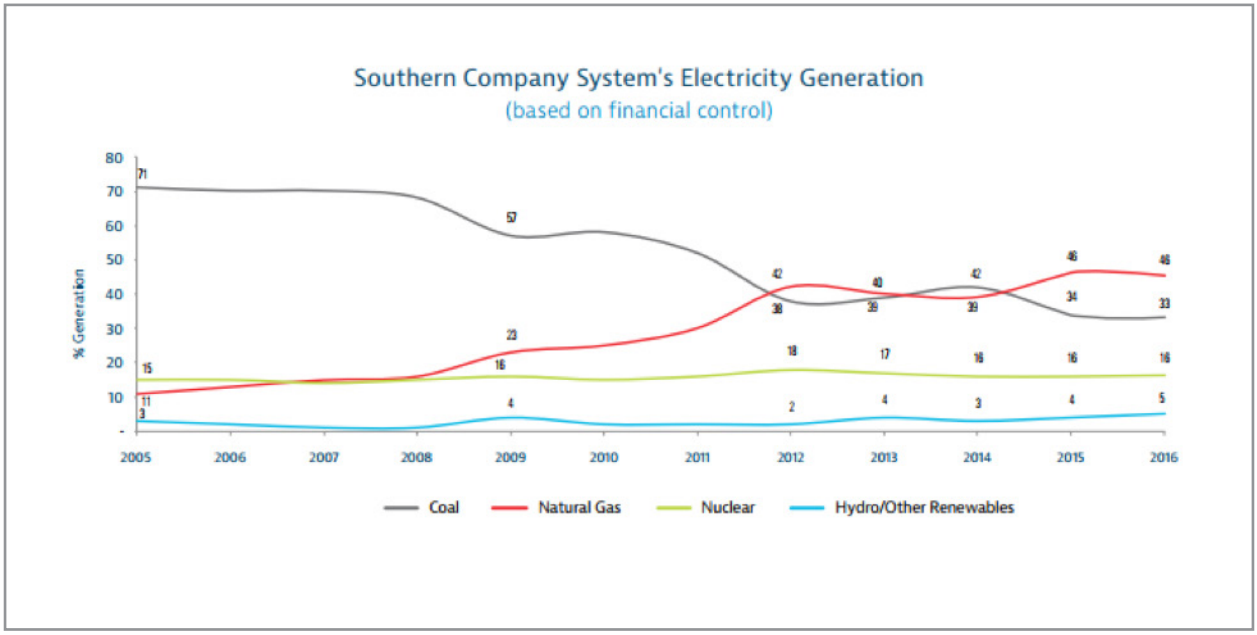
These changes will be enabled by advances in communication protocols, power electronics, analytics and flexibility. Examples of company activities to enable these transitions include:

- **Monitoring and visualization:** The company is engaged with the industry's collaborative research organization, the Electric Power Research Institute (EPRI), in ongoing development of a transmission monitoring, diagnostics and visualization tool for the transmission system that will facilitate decisions and mitigating measures to enhance system performance, efficiency and reliability.
- **Synchro Phasors:** Phasor measurement units provide high-speed, synchronized measurements of systemwide phasor voltages and currents that are unavailable with the current monitoring supervisory control and data acquisition (SCADA) systems. Their deployment is helping to improve real-time stability of the grid.
- **Analytics center:** The company is developing a Transmission Visualization and Analytics Center for testing next generation hardware and software for grid control before implementation. The facility will also serve as a training center for system operators.

Q. What are Southern Company's historical and planned activities related to resource diversity, distributed energy resources, energy efficiency and demand response.

Southern Company and its electric and natural gas operating companies provide more than 9 million customers with clean, safe, reliable and affordable energy. This presents an evolving set of opportunities and challenges.

Generating resource diversity: The company produces electricity from the full suite of fuels—natural gas, coal, nuclear, hydro, solar, wind and biomass. The mix of these fuels has changed over the company's history, beginning with the company being entirely hydro-powered. The figure below shows the evolution of this mix over the past decade. Over this period, it shows a significant shift from coal to natural gas. A diverse generating fleet allows flexibility to produce electricity in the most economical manner, mitigating the effects of volatile fuel price swings.



Distributed Energy Resources:

The company has a long and successful history of incorporating distributed generation into its energy mix. Our state-regulated electric operating companies purchase energy from distributed generation resources such as distributed renewable generation, qualifying facilities, and standby generation. They also own or buy energy output from cogeneration operations located alongside customer facilities that have large electric and thermal energy needs. Georgia Power's solar programs also include enhanced customer support and education to residential customers interested in installing rooftop solar and its Energy Services business is now providing solar installation and sales services to customers interested in installing solar at their home or business.

In 2016, Southern Company acquired PowerSecure, a company known for its proprietary distributed infrastructure expertise, energy efficiency, and utility infrastructure solutions. With over 1.5 GW of distributed energy resources under management, PowerSecure has a national footprint and continues to grow. In October 2016, PowerSecure announced a strategic venture with Bloom Energy where Bloom Servers (fuel cells) are being paired with PowerSecure's energy storage solution with a portfolio of customers. PowerSecure also acquired an estimated 50 MW of Bloom Energy Servers under long-term power purchase agreements with high-quality commercial and industrial customers.

In June of this year, PowerSecure and Advanced Microgrid Solutions (AMS) announced a strategic alliance with the goal of accelerating the cost-effective deployment of distributed energy resources.

Most recently, PowerSecure extended its distributed infrastructure offering by acquiring Power Pro-Tech Services, a Florida-based distributed power system service provider that specializes in the service and installation of distributed power systems including generators, switchgear, solar inverters and fuel cells. Power Pro-Tech will service PowerSecure's existing customers, and is well-positioned to support future expansion of the behind the meter energy solutions offered by PowerSecure.

Energy Efficiency and Demand Response:

Southern Company is a leader in offering significant and innovative energy efficiency programs. Over the past 16 years, for example, its energy efficiency programs have helped the electric system reduce peak electricity demand by more than 4,800 MW and avoid more than 2 billion kilowatt-hour (kWh) of energy use. That amount of energy equates to more than 700,000,000 loads of laundry, or enough kWh to meet the electrical charging needs for 450,000 electric cars for one year. The company is currently on the path to invest over $1 billion in electricity-related efficiency initiatives in the ten-year period that ends in 2020.

Southern Company Gas' natural gas energy efficiency programs offer customers a wide array of energy saving measures and incentives. Since 2011, energy efficiency programs have helped Southern Company Gas' natural gas system reduce demand from natural gas by more than 90 million therms.

The My Power Usage program enables electric customers to view their daily energy usage in dollars or kWh, set up and maintain personal energy-use budget alerts, subscribe to energy efficiency reminders and view their projected electric bill amount.

Alabama Power is partnering with Signature Homes, Oak Ridge National Laboratory and several technology vendors to develop and offer Smart Neighborhood by Alabama Power – a community of 62 high-performance homes featuring emerging technology and energy-saving materials.

A sampling of energy efficiency and demand-response programs offered to residential customers by the company includes:

- Home energy audits
- Low-income weatherization and direct install programs
- Pre-K through Grade 12 energy efficiency education program
- Variable pricing and smart thermostat combinations
- Solar thermal water heating and home-building guidelines

For larger-volume small business, commercial and industrial customers we offer:

- Energy services
- Energy audits
- Real-time pricing
- Equipment rebates
- Interruptible customer rate programs
- Guided customer energy "six-sigma" type programs
- Standby generation and commercial construction programs

Q. What are the innovative ways that Southern Company is directly or indirectly interacting with customers, including large business customers, to gather information and data to better serve customer needs and provide energy sourcing choices?

Following through on a customer-focused commitment, Southern Company aims to be the preferred energy provider and a source for solutions to help meet energy needs by analyzing residential, commercial and industrial data.

Residential:
Residential customers can utilize our online energy check-up tool, My Power Usage, to help them make energy related decisions.

My Power Usage helps customers monitor how much electricity they are using each day and projects monthly bills. It is updated every 24 hours, so customers can adjust energy consumption according to lifestyle and budget.

Commercial and Industrial:
Energy Direct is a powerful online energy management tool for commercial and industrial customers that helps manage and conserve electricity.

Most of our significant interaction with large customers on energy sourcing choices is through one-on-one contact coupled with data obtained from Energy Direct. Power Quality information is also obtained by account managers having access to power quality meters (PQView).

Q. What are Southern Company's investments in new/emerging technologies and partnerships?

Southern Company is an industry leader in the research, development and deployment of new, innovative energy technologies. For over 100 years Southern Company has been committed to innovation with a focus on the research and development of emerging energy solutions. Since the 1960s, the Southern Company system has managed approximately $2.3 billion in research and development(R&D) investments – placing the company at the forefront of technology development for the production, delivery and end-use of energy. Over the past decade, the Southern Company system's leveraged R&D investment of $436 million has returned benefits exceeding $3.4 billion.

We actively work with the U.S. government, utilities, universities and technology developers in innovative partnerships to provide customers with clean, safe, reliable, affordable energy. For more than 40 years, we have collaborated with the EPRI to research and develop solutions to meet customers' current and future energy needs. Through our partnership with Nest, Southern Company is among the first energy companies in the U.S. to offer Nest's third-generation product line to customers. In addition, Bloom Energy, Southern Company and its subsidiary PowerSecure have announced the acquisition of an estimated 50 megawatts of distributed fuel cells. This strategic alliance will include project investment and joint-technology development to provide innovative behind-the-meter energy solutions for customers. With the slowing of electricity usage, we have positioned Southern Company to serve a nationwide base of customers on both sides of the meter more reliably and efficiently.

Additional examples of Southern Company's current research and development include: the U.S. Department of Energy-sponsored National Carbon Capture Center, a full spectrum of energy storage demonstrations, the Southeastern Solar Research Center, advanced nuclear reactor technology development, connected microgrid community demonstrations, electric transportation charging and connectivity, indoor agriculture demonstrations, Georgia Power's Water Research Center and smart grid technologies. Other examples include:

- Southern Company remains at the forefront of accelerating the development and deployment of energy storage systems that will offer many benefits and great promise to the electric utility industry. From greater reliability to increased use of renewable energy to reduced prices for customers, energy storage has the potential to further enable the smart grid and help utilities meet customers' needs.

- Southern Company and its Gulf Power subsidiary in July 2017 officially launched the latest battery storage research project in Southern Company's operating territory. The project represents another important milestone in the company's work to build the future of energy. The McCrary Battery Energy Storage Demonstration will demonstrate the capabilities and requirements of an energy storage system designed to help industrial and commercial customers store and use energy on demand, while improving resiliency and potentially helping customers save on energy costs in the future. It will provide information on the advantages battery storage can offer customers and energy providers through peak saving, demand management, ancillary services, energy arbitrage and backup power.

- Southern Company innovations include the recently-announced strategic alliance between subsidiary PowerSecure and AMS to jointly develop and deploy behind-the-meter distributed energy resources across the U.S.

- Southern Company's Energy Innovation Center, located in Atlanta's Technology Square, is the home of our most inventive ideas and programs that work to bring better, more reliable and more efficient energy across the country. The Energy Innovation Center is the place where creative problem-solving and smart investment come together to improve lives.

- Our employees and partners collaborate to answer the energy industry's most pressing issues. By tapping into the talents of our employees, we generate our brightest ideas from within our own walls, as well as with like-minded partners.

Q. What policy activities, such as regulatory and legislative, are Southern Company undertaking to support grid modernization?

Activities underway today in the U.S. include: active studies/investigations that are legislative or regulatory-led around grid modernization topic areas, changes to utility planning processes that consider non-wires alternatives and changes to state and wholesale market regulations enabling market access, and utility business model and rate reform that include performance based rates, time of use rates, residential demand charges, etc.

Southern Company's electric utility companies have been actively deploying technologies that will enable the future state of energy delivery. Smart grid investments have exceeded $1 billion and include the deployment of grid automation, AMI, Conservation Voltage Reduction, remote fault indicators, numerous SCADA operated devices and sensors, solar photovoltaics, Distribution Management Systems, and storage demonstration projects.

Southern Company and Alabama Power are partnering with a developer in Birmingham, Alabama to create the "Smart Neighborhoods." This research project will include: solar, battery storage, advanced distribution equipment, new homes with smart appliances, enhanced communication and sensors to integrate new technologies with the aim of providing new, creative energy solutions for customers. The Company and developer expect to gain information on the operation and performance of these advanced technologies, and hope to understand the usage patterns and value that the homeowner perceives.

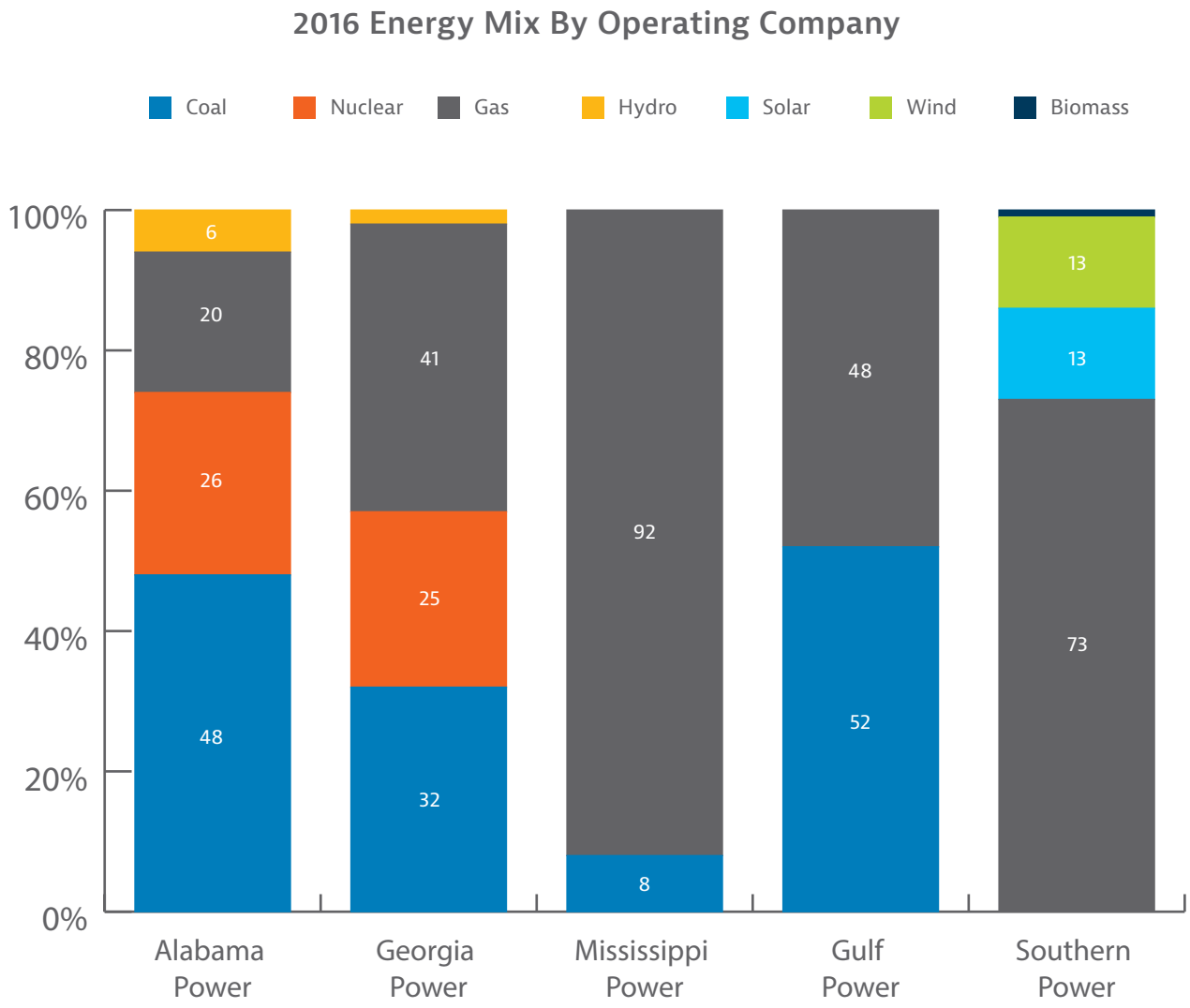
Southern Company and Georgia Power are in discussions with a developer in Atlanta, Georgia to create "Connected Communities." The research project will include; rooftop solar, battery storage, backup generators, emerging energy efficiency technologies, electric vehicle charging stations and smart home automation platform. The Company and developer expect to gain information on the operation and performance of these advanced technologies and customer adaptation.

Georgia Power is currently in discussions around building a microgrid "living lab" in partnership with Georgia Tech at Technology Square in midtown Atlanta, Georgia. The lab will incorporate a Bloom Energy fuel cell, battery storage, a microturbine and gas/diesel generation. The technology to integrate and operate the microgrid is the primary focus of this project. In addition, the ability to achieve optimal asset utilization and efficiency by integrating the energy management system of a smart building with the microgrid will be another focus for the project.

One of the greatest challenges to grid modernization will be cybersecurity. As utility systems and customer equipment become more digitally enabled and interconnected, the risk of cyber-attacks will be more prevalent and disruptive. Cybersecurity must be an integral part of planning, developing and implementing the next generation of the electric grid and customer digitalization.

Q. What is the mix of fuel sources for generation of power for each of Southern Company's operating utilities and Southern Power?

The 2016 energy mix by operating company is shown below.



Today, the Southern Company system generates 27 percent of its electric power from coal and 47 percent from natural gas, 16 percent from nuclear and 10 percent from renewables. This is significantly different from the company's energy mix in 2005 when the system generated about 71 percent of its electricity from coal and 11 percent from natural gas.